

anthro notes

National Museum of Natural History Newsletter for Teachers

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IN TO AFRICA

There I sat, squeezed into the back seat of the Land Rover with my knees pressed up against my chest, sandwiched between two prominent paleoanthropologists, each looking rather pale from the not-so-fine cuisine of the night before. We had been on the "road" (if one could call it a road) for over 12 hours. We were now in the mountains, and, naturally, it was raining. Water drizzled through the cracks, thick and sweet, and began to stick to our hair as the 50 lb. bag of sugar strapped to the roof slowly turned to syrup.

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Again the Land Rover coughed in protest and then refused to move forward. Those who had the energy piled out while the technician attempted another make-shift repair. Another graduate student still lay in the far back of the Rover, almost buried under pack sacks, potatoes, plastic bags, and pineapples. He was asleep, and so we left him undisturbed since he, too, had fallen prey to the flora and fauna in yesterday's salad.

This was not quite how I imagined the legendary Louis Leakey had travelled to Olduvai Gorge! But here I



was, at last, on my way into Africa, to spend the summer in eastern Zaire as a member of the Semliki Research Expedition. The expedition's work would include a survey of the banks of the upper Semliki River and Lake Amin (ex-Edward) for fossil- and artifact-bearing deposits of Pliocene through Holocene age (last five million years). Additionally, we would conduct preliminary excavations once we located significant exposures. Our team included several specialists: geologists, paleontologists, and archaeologists--all of whom were seasoned Africanists. I was a graduate student and assistant to one of the archaeologists. It was my first trip to Africa; I felt a little green.

Life in the field is never what one expects. For me it was more difficult, more intense, and more wonderful than I ever could have imagined from a living room sofa flipping through the National Geographic Magazines' glossy photos of African expeditions. Though the Semliki expedition's discoveries were both significant and exciting, I would like here to share the joys and the pitfalls of being a new field worker in Africa's hinterland.

At Ishango, the point where the Semliki River flows north out of Lake Amin, we established a permanent field station. A place of remarkable beauty and still largely unspoiled by man, Ishango, during the Colonial days, served the king of Belgium as the royal summer resort in what was then the Belgian Congo. Ishango is in the midst of a national park, where high up on a bluff one can look down on hippos, waterbuck, cape buffalo, cormorants, and pelicans. From here one can also watch the sun rise over the snow-capped Ruwenzoris and set over the mountains of the western rift, while one listens to the piercing cries of fish eagles. For me this was paradise.

Three dilapidated, bat-ridden, and flea-infested guest houses stand as a reminder of the bygone days of Belgian colonialism. We preferred to live in tents. Although no running water or electricity existed, a lake free of parasites (and crocodiles) did serve our bathing needs--a real luxury on this sort of expedition.

Of course, we had to share our beach with other bathers: more than 100 hippopotami live in this small stretch of the river. They spend all day "in the cool of the pool" and were often curious about the pink, two-legged swimmers. Hippos may be cute, but two tons of curiosity should not be left unchecked. When one of the inquisitive sort would pop up from underwater, less than 20 feet from where one was soaping up, and reveal his six inch canines in a leisurely yawn, there was no doubt whatsoever as to who was king of this watering site.

Apart from being our beach buddies, the hippos were also our camp mates. Although these amphibious herbivores spend all day in the river, they don't eat much from their bath water. Instead, they emerge from the deep after dark and climb up the river banks to eat grass on the savannahs until close to dawn when they again retreat to relax in the jacuzzi current of the Semliki.

Many a night after I had bedded down in my rather flimsy canvas tent, I would be awakened by the grinding, squeaking, crunching, and munching of hippos mowing the grass around my tent. At times they were so close that I could hear the water in their stomachs sloshing as they moved, and gurgling as they swallowed. It was distressing to realize that less than five feet from my head was an animal that could squash me flat with one false move. But I slowly learned to relax, assuring myself that no sensible animal would purposely step on a large, immovable object.

We had other midnight visitors, too. Hyenas, the garbage men of Africa, were naturally attracted to our camp and their whoops and cackles were a familiar lullaby. Hyenas can be very dangerous, but they were usually just a nuisance to us. Their indiscriminating culinary tastes meant that just about anything left unattended was potential prey. Sneakers, if left outside the tent, made a satisfactory hyena entree, especially when followed by a dirty T-shirt or a bar of soap to cleanse the palate.

For several nights in a row, a number of us were awakened by very loud snoring. Vicious accusations punctuated breakfast conversation. It was not until the culprit was exposed that the snide remarks subsided. The snorer was the resident leopard, grumbling while making his evening rounds.

Surveying the Semliki was not as simple as walking up and down the riverbank. The vegetation was often dense and impenetrable, and the only paths were those cut by local hippos. Since humans are not shaped quite like hippos (at least not most of us), the use of these trails often necessitated our surveying on hands and knees.

When passage along the water's edge was simply impossible, we took to the water. Usually this meant a survey on soggy feet, but sometimes a survey by boat. Clusters of submerged hippos made a challenging obstacle course for even the most sporting paleoanthropologist, particularly because these animals, previously unseen, delight in moving at the last minute or on popping up directly in front of the boat. The game is made even more challenging by the fact that the "obstacles" are bigger than the boat and can move equally as quickly upstream. Adrenalin and prayers were the most frequently employed strategies for collision-avoidance. However, the first time an over-zealous hippo gave the boat a not-so-gentle bump from underneath and

practically dumped us all overboard, I retreated--permanently--to dry land.

Apart from discovering fossil- and artifact-yielding exposures, we also discovered snake-, wart-hog-, cape buffalo- and lion-yielding localities. One roar from the lioness was sufficient incentive for us to alter our survey transect to bypass her home territory. And when the cape buffalo rose to greet us, we rudely rejected their hospitality with a 90 degree turn in our path. The puff adder never even acknowledged our presence, and we might have been able to quietly slip away except our technician rushed forward and picked up the five foot long viper and excitedly demanded that we take pictures for his family.

Once one of us could stop shaking long enough to click the shutter, the technician nimbly laid the snake down and beheaded it with one easy blow of the machete. He claimed he knew that the snake was ill, but we had other suspicions about where the illness really lay. With great enthusiasm he then examined the one-inch long venomous canines. Back in camp our technician-cum-herpetologist skinned and tanned the "hide" of this beast and the next morning presented us with his special breakfast treat--puff adder on toast. A delicacy not to be missed!

Excavation posed several new problems not encountered in America. It seemed that all of the most promising archaeological sites were either lying on, or directly next to, hippo trails. Of course, hippos are fine excavators. They cut paths quite efficiently, sometimes to a depth of about six feet. However, they had not yet grasped the concept behind two and four inch arbitrary levels nor the importance of piece-plotting. Surprisingly, as dainty as they are, they kept tripping over the unit strings.

How do you keep such enthusiastic amateurs off the site after hours? Acacia trees, with the largest and sharpest thorns we could find, proved effective when seven or eight were piled on each unit. However, hippopotamus bathroom etiquette complicated this protective strategy. Hippos have the rather unpleasant habit of marking territory with their excrement through a rapid swirling and swishing of the tail during defecation. This behavior serves to "spray" fecal matter in all directions, often to a height of several feet. Thus, each morning after we removed the acacia trees from our units, we were faced with the task of scraping off the hippos' contribution to our stratigraphic sequence. It was all in a day's work.

But it was nice to return to camp, have a delicious dinner of fresh fish, and curl up in bed with a good book ...along with the fleas, mosquitos, domestic beetles, and an occasional reptile. Army ants were less welcome tent mates. When they marched in unannounced, it usually meant that one would be forced to "abandon ship," perform a midnight striptease to get them out of one's pants, and spend the rest of the night in the Land Rover.

The field season went so quickly that before we knew it we were again piled into the Land Rover. We had a plane to catch at 6:00 p.m., but to kill time we thought it would be fun to visit the rare mountain gorillas in Rwanda. At 3,000 meters we slipped and slid through the damp forest, huffing and puffing with every step. Vines and branches formed a matting beneath our feet, and we soon realized that we were not walking on the ground but about one meter above it. We were constantly losing our balance and grabbing for the nearest supporting object, which was often a stinging nettle bush.

We searched for over two and a half hours before we encountered the group; evidence of their presence in

the form of their prodigious feces revealed that we were hot on their trail. During one particularly tricky maneuver around a hole and over some vines, I lost my balance and landed on my rear smack in the middle of a fresh pile of gorilla droppings. However, every slip and sting along the way was well worth the effort to see the gorillas in their natural habitat leisurely eating their forest salad.

As the afternoon wore on, we realized that we had better move quickly if we were to catch our evening flight to Paris. Scrambling out of the forest and into the Land Rover, we drove down mountain roads without any brakes or a muffler. We arrived at the airport with little more than enough time to change our dirty clothes. I threw my soiled trousers in the top of my pack and headed for the baggage check. The clerk manually inspected my bags and immediately encountered my trousers, complete with their fresh souvenir of our gorilla expedition. Needless to say, he looked no further, and I knew I was hastily on my way out of Africa.

Catherine Cockshutt Smith



SUMMER FIELD WORK OPPORTUNITIES

Each spring Anthro.Notes offers a sampling of field schools in anthropology and archeology in the United States and abroad. Some field schools require early registration or may limit the number of their registrants. Teachers may want now to plan ahead to apply for a 1987 field season.

Anthropology departments of local universities and colleges, state historic preservation offices, and state archeological societies often engage in local archeological excavations and frequently accept volunteers with no previous fieldwork experience. For a more comprehensive array of summer fieldwork opportunities, field school listings are available from the American Anthropological Association (AAA) and the Archaeological Institute of America (AIA). The AAA field school listing is available to members for \$4.50 and to nonmembers for \$6.00 by writing: AAA, 1703 New Hampshire Ave., N.W., Washington, D.C. 20009. Send a self addressed envelope with 56 cents postage with your check. The AIA listing is available for \$4.00 (members) and \$6.00 (nonmembers) by writing: AIA, P.O. Bx 1901, Kenmore Station, Boston, MA 02215.

A Summer Institute in Historical Archaeology (July 2 - August 2) at Flowerdew Hundred Plantation on the James River in Tidewater Virginia is given especially for high school and college history teachers and museum educators, under the direction of James Deetz. For more information, write or call Thomas Young, Flowerdew Hundred Foundation, 1617 Flowerdew Hundred Road, Hopewell, VA 23860; 804-541-8897.

The University of California Santa Cruz offers two summer sessions: session I, June 23-July 25, in Zooarchaeology (archeological faunal analysis) at the university campus; and session II, July

28-August 29, in Archaeological Field Study including both archeological survey along the Big Sur coast and salvage excavation of two prehistoric shell middens. Write or call: Summer Session, University of California, Santa Cruz, CA 95064; 408-429-2524.

Underwater Archaeology Field School in Jamaica, organized by Texas A&M University and the Institute of Nautical Archaeology, will be held from June 3 - August 11, with the first week of July left open for local travel. Participants will excavate Port Royal, Jamaica, a town that sank into Kingston Harbour in the earthquake of 1692. For more information, write or call Dr. D. L. Hamilton, Texas A&M University, Anthropology Department, College Station, TX 77848; 409-845-6398.

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Archeology in the Ozarks, a University of Arkansas field school, conducted in July, will focus on the Mississippian Period Huntsville mound group, an agriculturally-based society. Write or call: Archeology Field School Coordinator, Department of Anthropology, University of Arkansas, Fayetteville, AR 72701; 501-575-2508.

Summer Field School in Sardinian Archaeology (May 25 - July 6) is offered by Pennsylvania State University. The six week field school will involve excavation of Bronze/Iron Age settlements of the Nuragic culture. For more information, write or call Dr. Gary Webster, Pennsylvania State University, Mont Alto Campus, Mont Alto, PA 17237; 717-749-3111.

Human Origins and Prehistory in Kenya: The Koobi Fora Field School is offered by Harvard University and the National Museums of Kenya, June 12-July 23 and July 28-September 7. Write: H.V. Merrick, Koobi Fora Field School, c/o Harvard Summer School, Dept. 008, 20 Garden St., Cambridge, MA 02138; or call 617-495-2494.

Film and Anthropology is a workshop (June 23-August 15) given by distinguished filmmakers that includes screenings of more than 50 films as well as field trips and demonstrations of equipment. Write: Harvard Summer School, Dept. 208, 20 Garden St., Cambridge, MA 02138; or call 617-495-2494.

Excavations at Catamura Del Chianti is being offered by the Department of Classics, Florida State University. The tentative schedule for excavation of this principal Etruscan site in the Chianti region of Italy is June 27-August 8. Write: Excavations at Catamura Del Chianti, Department of Classics, Florida State University, Tallahassee, FL 32306-4031.

Center for American Archeology, Kampsville Archeological Center conducts educational research programs throughout the summer for junior and senior high school students, college students, and the non-professional as well as workshops for teachers. Write: Admissions Office, Kampsville Archeological Center, Kampsville, IL 62053; or call 618-653-4395.

University of Chicago Archeology Field School is offering a summer field session at Kampsville (see above), which is also open to high school seniors, excavating a Middle Woodland burial mound and a 6,000 year old cemetery. Write: The University of Chicago, Archeology Field School, 1116 East 59th St., Chicago, IL 60637, Attn: Summer Quarter Office; or call 312-962-6033.

Middle Mississippian Mortuary Site Archeological Field School, sponsored by Western Illinois University and the Upper Mississippi Valley Archeological Research Foundation (UMVARF), is open to students, teachers, and interested public for periods ranging from two to eight weeks. Write or call: Western Illinois University, Archeological Research Lab, Macomb, IL 61455; 309-298-1188 (in Illinois call toll free 1-800-322-3902) or UMVARF, 2216 West 112th St., Chicago, IL 60643, 312-239-1208.

Landscape and People in Ireland and England is a summer field program for high school juniors and seniors and college undergraduates, offered by the School of Arts and Sciences in Berkeley, California. The program provides an opportunity to learn about life today in Ireland (June 17-July 12) and England (July 1-August 3). Academic credit can be arranged and financial assistance may be available. Write: School of Arts and Sciences, Summer Programs, P.O. Box 5545, Berkeley, CA 94705; or call 415-549-1482.

TEACHER'S CORNER: EXPLORING HISTORIC CEMETERIES

In the Washington metropolitan area during the 16th, 17th, and early 18th centuries most "graveyards" were located in churchyards (e.g. Pohick Cemetery in Fairfax) and usually near the center of town (e.g. Christ Church Cemetery in Alexandria). However, overcrowding of graves and new sanitation laws mandated the closing of most of these early "graveyards" by the 1850's. The new cemeteries were located on the periphery of towns--distinct and separate from the focus of activity among the living. By the mid-19th century, a new genre of formal cemeteries was being established in America. (The Mount Auburn Cemetery in Boston is one of the earliest examples of these new burial places.) Most existing cemeteries in the Washington metropolitan area were created during this time and are generally referred to as "rural cemeteries." What was this new genre?

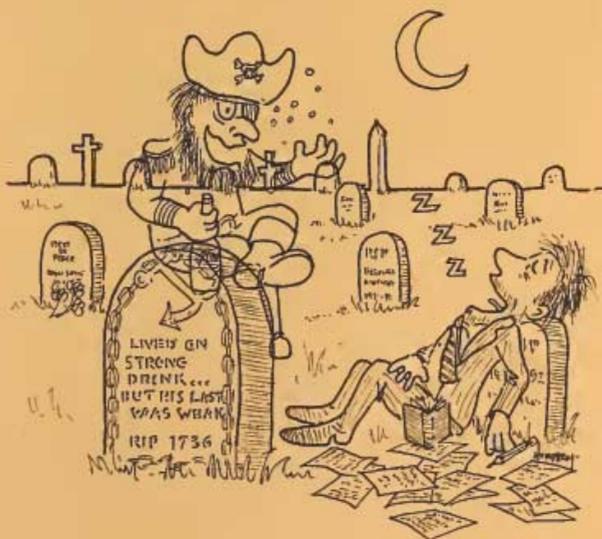
The newly established 19th century "cemeteries" (replacing earlier terms such as "graveyards") were not simply a place to inter the dead but represented a new type of cultural institution. Cemeteries were now formally designed to resemble gardens. The dead were not simply interred but memorialized. New rules defined such things as the proper care of the grounds and the appropriate attire and demeanor while visiting the cemetery.

The boundaries of most 19th century rural cemeteries are marked, for instance, by fences or shrubbery. Often a centrally located entrance leads to symmetrical paths or roadways which divide the cemetery into sections. These sections may be further divided into family plots or other areas (e.g. military graves). Planting may mark sections, plots or individual graves. Such features set off the individual graves as well as

the entire cemetery, both physically and visually, from the surrounding area.

In metropolitan Washington, the most common gravestone styles are tablets, obelisks, blocks, and slabs. Occurring in the late 18th century to the mid-19th century, tablets are single vertical stones that average two to four inches in thickness and are made of limestone, marble, or sandstone. These stones, often with a sculpted top, are placed directly in the ground with no bases used. All the surfaces of these stones have been cut (or finished) but are not polished.

Shaped like the Washington Monument, obelisks, usually made of marble, are tall and square in cross-section and dominate gravestones in the late 19th to early 20th century. The obelisk may be topped with an urn,



ball (known as an orb), or other figure and may have one or several bases of varying sizes. While most gravestones are lettered only on the front, obelisks may show lettering on all sides.

Blocks, which are square grave-stones, vary in size, may or may not have bases, and generally show cut but not polished surfaces. Made of a variety of different stones, these markers are characteristic of the 20th century. A variation of a block stone, the pulpit style marker has a slanted face on which is carved the individual's name, other information, and decoration. Made of marble or granite, pulpit stones rest on bases.

Slabs typify the 20th century and are still the most common gravestone used today. Slabs, often composed of granite, are usually placed vertically on a base and vary in thickness from six to eight inches. While the front of a slab is polished, the sides and sometimes the back are roughhewn.

Other gravestone styles may be noted as well--elaborate figural sculptures, crude stones, or simple wooden crosses. Often greater numbers of unusual gravestones are found during transition periods from one general style (e.g. tablets) to another style (e.g. obelisks).

Initial studies of local 19th century cemeteries have yielded some unexpected results. The striking similarity among contemporaneous cemeteries representing distinct socioeconomic and religious groups proved the most surprising observation. Formally marked boundaries, landscaping, symmetrical paths, and, in particular, the style of gravemarkers and the stone from which they are carved create a uniform visual impression. Economic class or religious affiliation are not immediately apparent. This suggests that the accepted "rules" for rural

cemeteries--that is, how the grave is to appear in the landscape and the elements which it must contain--superceded differences within society. Only when individual grave data is examined do differences in community and religious cemeteries become evident. Contrasts in epitaphs, religious symbols, decorations, and the spatial arrangement of graves seem to be the ways in which class structure and religious affiliations are expressed in these 19th century cemeteries.

Nineteenth century cemeteries distinctly differ from earlier American graveyards. The differences are not limited to changes in gravestone styles, epitaphs, and symbols. Earlier graveyards express mortuary ideology and attitudes of death through individual graves. Nineteenth century institutionalization of rural cemeteries suggests that variation in individual graves is subsumed under the proscribed or implied elements of the institution. Rural cemeteries cannot simply be analyzed or understood as clusters of graves. Individual graves are an integral part of the overall cemetery "design." Interpretation of these 19th century cemeteries must, therefore, not only account for the variety among individual graves but also for the overriding common elements expressed in all such cemeteries.

CLASS EXERCISE

The exercise below focuses on historic cemeteries. These cemeteries provide archeologists with an interesting opportunity to examine how artifacts (in this case gravestones) vary at different times and in different places. Such variations often reflect how a culture is changing, how cultures differ from one another, and how artifacts reflect these changes and differences. To understand differences in gravestones, archeologists observe both the

individual markers and the larger context or setting of these graves.

In general, they ask how important are artifact patterns and the context of these patterns to archeological interpretations.

Select a cemetery to study and answer the questions for each part of the exercise.

1. What is the name of this cemetery? Spend about 15 minutes just walking around the cemetery. Pay particular attention to fences, paths, paved drives, chapels and other buildings, plantings, and other features of the landscape. Identify the boundaries of the cemetery. Is it marked by a fence, sidewalk, shrubs, or in some other way?

2. Make a rough sketch map showing the location of the fences, paths, and other features you have identified. Note the earliest and most recent gravestones and sketch in their locations. Does the cemetery seem planned or are the graves located haphazardly?

3. Using a standard form (see below), record 20 gravestones. Try to find different styles of gravestones to record. Do you find certain gravestone styles in only some areas of the cemetery and not others? Are these styles associated with only certain time periods? What does this tell you about the size of the cemetery at different times and how gravestone styles changed over time?

4. Locate at least five gravestones, from different time periods, which have epitaphs. What do these epitaphs say? What might they reflect about attitudes toward death? How does the use of epitaphs and what epitaphs say change over time? What might this mean?

5. Locate a family plot or several gravestones with the same surname. Do you think these individuals are related or are husband and wife? How can you

tell? Are other relatives buried in the same area? Are these family burial areas more common in earlier graves or more recent graves? What might this tell you about the changing use of family plots over time?

6. Select five gravestones with men's names and five gravestones with women's names from different time periods. How are men's and women's gravestones similar? How are they different? What might this tell you about the changing roles and statuses of men and women over time?

Questions 1 and 2 are designed to have you take a close look at the cemetery and to notice the importance of elements other than just the gravestones themselves. Question 3 treats each gravestone as an artifact and focuses on the same kind of details an archeologist would find useful in understanding how artifacts reflect change over time. Questions about particular aspects of the cemetery, similar to 4, 5, and 6, can be added or substituted. For example, you can examine the special features of military gravestones or children's gravestones or holiday decorations of graves. Comparisons of different parts of the same cemetery or of different cemeteries are also interesting.

Anyone interested in recording gravestones may request copies of standard gravestone and cemetery forms from Ann Kaupp or Dr. Ann M. Palkovich. Also, Dr. Palkovich will be conducting a special field course (Anth. 325, May 27-June 24, 10 a.m.-12 p.m. daily) on studying and recording cemeteries this summer at George Mason University. Anyone interested in registering for this course may contact the Summer Session Office, George Mason University, Fairfax, Virginia 22030; (703-323-2300).

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Suggested Readings:

Aries, Philippe. The Hour Of Our Death. New York: Alfred Knopf, 1981.

Deetz, James. "Remember Me As You Pass By," In In Small Things Forgotten. New York: Doubleday, 1977.

Dethlefsen, Edwin. "The Cemetery and Culture Change: Archaeological Focus and Ethnographic Perspective," In Modern Material Culture edited by R. Gould and M. Schiffer. New York: Academic Press, 1981.

Dethlefsen, Edwin and James Deetz. "Death's Heads, Cherubs and Willow Trees: Experimental Archaeology in Colonial Cemeteries." American Antiquity 31 (1966):502-510.

Dethlefsen, Edwin and Kenneth Jensen. "Social Commentary in the Cemetery." Natural History (November 1977):32-39.

Mrozinski, Mary Anne. "Resources for the Classroom Teacher: An Annotated Bibliography (for Studying Cemeteries)." Markers 1 (1980):172-173.

Stannard, David. The Puritan Way of Death: A Study in Religion, Culture and Social Change. Oxford: Oxford University Press, 1977.

Stannard, David, editor. Death in America. Pittsburgh: University of Pennsylvania Press, 1975.

Weitzman, David. "Resting Places," In Underfoot: An Everyday Guide to Exploring the American Past. New York: Scribner's Sons, 1976.

Also of interest is the journal Markers published by the Association for Gravestone Studies.

Ann Palkovich
Anthropology Program
George Mason University

Summer Fieldwork Opportunities
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Flintknapping Technology is a basic training course, taught by Errett Callahan, for the beginner and advanced student. The course will be offered from August 2-15 at Manitoga Nature Center, a Late Woodland wigwam encampment in a forest overlooking the Hudson River. Write: Susan Eirich-Dehne, Manitoga Nature Center, Old Manitou Rd., Garrison, NY 10524.

Summer Field School Program in Mexico and Central America: Mesoamerican Archeology and History (July 3-July 23) examines ancient and modern Maya culture from an interdisciplinary perspective. Write: Professor Robert Humphrey, Department of Anthropology, George Washington University, Washington, D.C. 20052, or call 202-676-4880.

Archeology of the Pawtuxent Chiefdom is an excavation and field school, sponsored by George Washington University and the Jefferson Patterson Park and Museum, from June 26-August 8. Captain John Smith recorded several Indian villages of the Pawtuxent Chiefdom during his 1608 voyage; one of those may be located on the grounds of the Jefferson Patterson Park. Write: Jefferson Patterson Park, Star Route 2, Box 50A, St. Leonard, MD 20685 or Department of Anthropology, George Washington University, Washington, D.C. 20052. Volunteer opportunities are also available by writing to Dennis J. Pogue at Jefferson Patterson Park.

A CHINESE/AMERICAN EXCHANGE

Guo Mingjing, one of two exchange students from Beijing Middle School in Beijing, China, studied for a semester at The Sidwell Friends School in Washington, D.C. this past year. During the first year of this new program, two students from Washington, D.C. studied in China. While at Sidwell, Guo Mingjing took courses in biology, art history, beginning computer, and writing. He returned to China at the beginning of January in order to begin studies at Beijing Normal University. Before he departed, he shared his thoughts on what he had learned about the United States with Anthro.Notes editor JoAnne Lanouette who also teaches at The Sidwell Friends School.

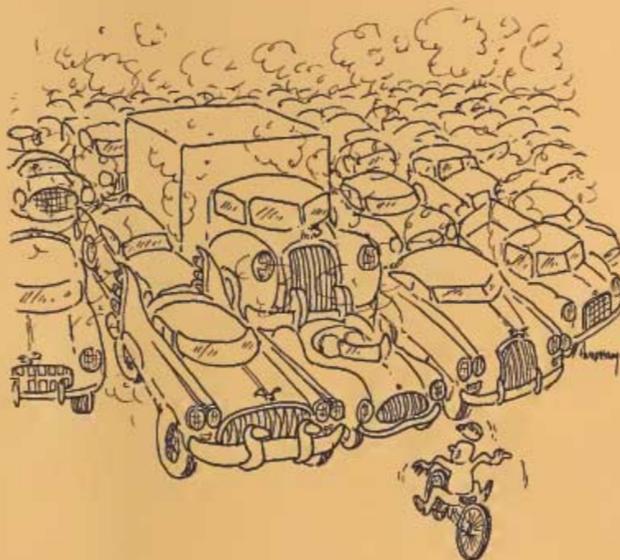
Q: What knowledge did you have about the U.S. before you arrived?

A: Surprisingly little. My father is a professor of Classical Chinese literature, had studied in Moscow, and had been to Hungary. My mother taught Chinese at Stanford University during two summer sessions. I came to the U.S.A. to experience another country and to gain the friendship of Americans.

Q: What surprised you when you first arrived?

A: People are more friendly and informal in the U.S.A. It is impossible in China to say "Hi" to strangers. When I first went to the mailbox here, strangers said "Hi" to me. When I took a dog for a walk, I met another stranger walking a dog, and he started talking to me. That is much harder to do in China, and, of course, dogs are forbidden in the cities.

I was also surprised by escalators--just the fact that stairs were moving--and I was astonished by the number of cars just as visitors to



China are awed by the number of bicycles.

At first I could not believe that students would stay inside to study when they had grass and benches outside. In China grass is confined to parks; people do not have front or back lawns. But it is also more than that. Maybe I am influenced by my father, but I see nature as a source of intellectual stimulation--I think and write better when I am outside.

Q: In our conversations, you have mentioned that you have discovered differences in sports and cultural values between China and the U.S. What are those differences?

A: People do not exercise as much in the U.S.A., and that is obvious even in the fact that so many Chinese bicycle to work. I hope that maybe the Chinese

can learn from America's mistakes, and if we have a wise leader we will not decline to a nation of physically unconditioned people. In China sports encourage health, friendship, and nationalism, whereas in the U.S.A. sports seem to support commercial business success and enjoyment. Although we have no sports facilities as good as in America, everyone in China is active in exercising. Every morning, many people are running, which makes the school playground very crowded. You can see the old people doing Maiyiquam. The youths practice Wushu, and the kids are doing their gymnastics. Chinese people regard good health as the most important aim of sports. Once during a Chinese national match, there was a race and one player fell down. Another player stopped at once to help him. China is a country which has old customs of modesty, friendship, and kindheartedness. America is full of youthful spirit; it has more exciting business--movement, risk, and good dreams. But too often American sports seem more like fights than friendships.

Q: How did your experience in a U.S. high school differ academically from your experience in a Chinese high school?

A: In China the middle school (Junior 13-15 and Senior 16-18) generally offers Chinese, English, math, politics (including economics and philosophy), physics, chemistry, history, and sports. Each student has to take all the courses; no choice exists. We have class six periods a day, six days a week. You can imagine how hard Chinese students must work since we have homework in almost every class. Every day, much homework is heaped on the students, and they must do all of it by the next day. Students respect their teachers, and the classroom is a place for lectures, reading, and writing. The Vice Premier heads the Education Commission and decides on the curricula. All provinces have the same

textbooks and the same exams for applying to the universities.

In the U.S. I have found much more laboratory work and the importance of biology. I think biology is important for the future. Biology was a whole new world for me. In all my classes here there was much more discussion and more emphasis on thinking for yourself than in China. The teachers and students seemed more like friends. Students also have more choice in courses, and they seem more active and more independent than Chinese students.

Q: As you have gained fluency in English, what differences have you noticed between the English and Chinese languages?

A: I think Chinese characters are more difficult than English words. In English it is easy to read out the words just by looking at them. But you can't know most of the pronunciations of the Chinese characters only by looking at the shape of them, because Chinese characters have changed from the pictures thousands of years ago.

On the other hand, Chinese grammar is simpler than English grammar. English grammar has many different tenses; Chinese students often get very confused with them. Because in Chinese we have no tenses, we just use the same adverbs such as "yesterday," "now," "the next year." These adverbs are almost enough to express the different tenses.

Another important difference is that the verb is more important in Chinese than in English and the preposition is more important in English than in Chinese. In Chinese, to describe the motions of a finger, we can find scores of verbs. Each verb has its own lively meaning. Verbs are difficult for foreigners to master. The same thing happens to Chinese students with English prepositions. We

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A NATURAL WAY TO LEARN

"Last Friday's field trip...was fantastic....I've never touched a hawk, or a duck, or a mole before, not to mention a dog's skeleton....The questions we had to answer were strictly thought questions, and it was fun to have an intelligent discussion with my two good friends. It was an excellent brain exercise, and it made me realize what intelligent people we are."

"We discussed how outer coverings are specialized for [an animal's] environment and the concept is really incredible. We could discuss questions intelligently and yet have fun while we were doing it."

"My group had shells. It was neat because you actually had to think to answer the questions."

These student responses reflect involved, enthusiastic participation in workshops held at the National Museum of Natural History's Naturalist Center.

The Naturalist Center is a unique public learning facility containing study collections of over 25,000 natural history specimens. These specimens include fossils, plants, rocks, minerals, insects, stone and pottery artifacts, and animal and human skeletal materials. Several thousand natural science reference books and study guides as well as specialized scientific equipment are at researchers' disposal. The Center encourages individual study but more recently has held highly successful workshops for school classes.

Such workshops offered throughout the year give students an opportunity when presented with a problem to think like a scientist, using skills in observation, comparison, and interpretation of specimens. Independent thinking as well as collaborative problem solving with fellow students is encouraged. The following are examples of problems presented to workshop participants, problems designed to fine tune students' problem-solving skills

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and problems teachers may find useful to adapt to their own classrooms:

A. A visitor presents you, a museum curator, with a large bone found on a weekend excursion to the country. The excited visitor believes the specimen to be a dinosaur bone and wishes to donate it to the museum. As the resident expert, you must first identify the bone (a fossil or perhaps a modern cow bone) and decide if the museum should accept the donation (the museum collections may already contain a good representation of similar bones in addition to the museum being hard pressed for space).

B. You are the museum's resident "shell expert" and one day you receive a package containing a shell sent by a researcher studying in Florida. The researcher is enthusiastic because he does not recognize the shell as one normally found in Florida and asks for your opinion. Once you identify the shell, you will have to determine if it is indigenous to Florida. If not, provide some suggestions on how it might have gotten there.

In the "Adaptation Exercise" described below, students must rely on their inductive reasoning, since referral to any reference books in this exercise is prohibited. Students in small groups are given about a half dozen objects to study. Adaptation themes are explored. For example, students discover the function and physical characteristics of locomotion, using a frog, a jumping mouse, a dog skeleton, a duck and a hawk. Students then answer questions such as: 1) what are the differences between these specimens? 2) how important are these specimens to the animals' survival? and 3) how do differences in the specimens contribute to behavioral differences between species? Other adaptation themes can be explored by using bird beaks, body coverings, and shells.

What makes the Naturalist Center unique? What are its great strengths? How can a naturalist center be established in your school or community?

The National Museum of Natural History's Naturalist Center has existed for almost ten years. Last year it received 11,000 visitors, 3,000 of which were students. Many of these students return with friends or family eager to introduce them to the array of hands-on specimens and to the investigative process in which they have participated. The Center's Manager, Richard Efthim, explained that initially the museum feared the possible extent of object damage, but users have shown great respect for the specimens and very little damage has occurred.

Besides assisting individuals in scientific projects and research, the Center encourages public use by offering to identify specimens brought into the Center and by holding a bimonthly Sunday "Draw-In", providing an opportunity for the public to draw from the Center's collections. A scientific illustrator is on hand to answer questions and give advice such as providing information on career opportunities in scientific illustration.

A miniature version of the Museum's Naturalist Center could be established in your school, local museum, or community center. School field trips and donations from private individuals can contribute to study collections of fossils, plants, rocks, minerals, and insects. Many of the Naturalist Center's specimens were derived from private collections, such as the selection of several thousand mineral micro-mounts and a large portion of the shell collections. In addition to private donations, the Center also received museum collections that had minimal research value. These collections were sorted and catalogued

by volunteers, many of them amateur naturalists.

Students can take primary responsibility for setting up a naturalist center, perhaps in a section of a science laboratory or library. Parents, senior citizens, and amateur naturalists can donate time assisting students with special projects, creating center exhibits and managing such a facility. The Museum's Naturalist Center now includes two paid staff positions and 80 volunteers, but it began with only part-time staff and a few volunteers. Students can learn the skills of documentation--to assign specimens a number and to keep a record of where the specimens came from and when and how they were collected--and skills of identification. A naturalist center can be a place where students can be encouraged to carry out individual science projects and where teachers can instruct their students in problem solving. Building a good sampling of specimens takes time, but there is great satisfaction in contributing to the growth of a potentially permanent natural history facility.

If you would like more information on teacher workshops at the Naturalist Center or on establishing a naturalist center, write or call The Naturalist Center, Room C-219, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560; (202) 357-2804.

P. Ann Kaupp

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often make mistakes with prepositions, such as when we say, "He will leave to New York" instead of "He will leave for New York."

Q: In your four and a half months here, have any Americans asked you puzzling questions?

A: Many people have asked me, "Do the Chinese have any freedom since the Communists?" Americans think that with a communist form of government a person can't have freedom. That is just not true.

I have noticed that many Americans take care of their private lives but do not take care of their public lives. I watch the news every day on television, and there is so little information on the rest of the world unless the country is involved with the U.S., like Libya. In China the TV news covers most all areas of the world. If Americans want a good future, they must know more about the rest of the world.

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SI AWARDS FOR MINORITY MUSEUM PROFESSIONALS

The Smithsonian Institution's Office of Museum Programs offers Museum Practices Training Awards for minority professionals, in the U.S. and abroad. The awards help defray expenses incurred during the Office of Museum Program's annual, two-week Workshop Series at the SI.

The workshops focus on current theories and practices in the museum field and make the Smithsonian's resources available to the larger museum community. For more information, write: Awards for Minority Museum Professionals, Office of Museum Programs, Arts and Industries Eldg., Room 2235, Smithsonian Institution, Washington, D.C. 20052.

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