Teaching

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The Cutting Edge of Prehistoric Technology

Joey Pulone for The Chronicle

Students in an experimental-archaeology course at Washington College, in Maryland, learn how to skin a carcass with a stone blade from Tom Pitre, an avid local deer hunter and a friend of Bill Schindler, the professor.

By Don Troop

Galena, Md.

It is a gusty autumn day on Maryland's Eastern Shore, and two deer carcasses lie stretched on the lawn of a small farm, gutted and ready to be butchered.

Twelve students from an experimental-archaeology course at nearby Washington College crouch over the animals with razor-sharp stone blades that their professor, Bill Schindler, helped them produce weeks earlier using flint-knapping techniques that are as much as 2.5 million years old.

"Are we all set, or are we kind of dreading this?" he asks, scanning the young faces. Mr. Schindler, an assistant professor of anthropology, has overseen this exercise twice before, and he knows that not everyone is keen to butcher Bambi.

Enlarge Image

Joey Pulone for The Chronicle

Students in Washington College's experimental-archaeology class create primitive-style stone cutting tools like these and test their efficacy.

"Don't worry," he reassures them. "I won't make you do anything you don't want to do."

But when the cutting begins no one hangs back, not even the three vegetarians. Most of the students lean into the work with businesslike calm, slicing at the connective tissue that binds hide to flesh and comparing the effectiveness of the different blades—flint, argillite, obsidian, quartzite. Only one student is outwardly squeamish. "This is so surreal," announces Connie Carpenter to no one in particular as she peels the skin from the thigh of Deer No. 1, a small buck. "Jesus, this is so weird."

After the animal has been skinned, Mr. Schindler tells the students to place the hide on the grass, hair side down, and put the rest of the deer on top of it.

"So we're using the skin as a tarp?" Ms. Carpenter asks.

"Exactly," Mr. Schindler replies. "And later a blanket and a loincloth."

He crouches to show Rebecca Akdeniz how to cut the head of Deer No. 2 from its spine.

"Remember," he says, "this is just like our spine. Get your blade in between the bones." He points with his finger. "Cut right into there."

"Just as if you were cutting off a human head," another student deadpans.

Mr. Schindler holds the deer steady as Ms. Akdeniz finishes decapitating it with a tiny stone blade.

"Don't cut my hand," he cautions her. "This is the one I grade with."

As it turns out, the professor manages to nick his own hand. Before the day is over, three of the students will cut themselves as well. Two years ago, at the deer slaughter in Mr. Schindler's inaugural "Experimental Archaeology and Primitive Technology" course, a visiting grad-school friend cut his finger to the tendon when his stone blade slipped.

Properly knapped obsidian blades, when new, are 300 to 500 times as sharp as a surgeon's scalpel, says Mr. Schindler. When his wife was scheduled to have the couple's first baby in a C-section delivery, he persuaded the surgeon to use an obsidian blade, at least for the initial incision. But the surgeon was changed at the last minute, and the new one refused to even consider it. He did, however, allow Mr. Schindler to cut the umbilical cord with it.

"It went through ... like butter," the professor recalls proudly. He created special blades to cut the cords of his two younger children as well.

Mr. Schindler has spent more than a dozen years honing his flint-knapping skills, and he has developed a sculptor's instinct for judging a stone's potential. "If you have the right kind of rock, it will fracture predictably," he says, weighing a fist-size chunk of argillite in his hand. "I could look at this and picture a tool on the inside, and at a very basic level would just need to take off everything I didn't want."

The deer-butchering project, Mr. Schindler tells his students, has a special significance this year because it involves both "experiential" and "experimental" archaeology. Producing stone tools and testing their efficacy in different types of butchering is experiential. But the students' work will also contribute to an experimental-archaeology study that he and Aaron R. Krochmal, a colleague from the biology department, are working on with Katie Eckenrode, a senior majoring in biology.

The Washington College researchers have been recording the weights of deer whole and butchered for a study that Mr. Schindler says will show that the portion of the animals that is both edible and nutritious is above 90 percent. Such a finding, he says, would challenge a figure of 55 to 60 percent that scholars frequently cite when reconstructing the diets of early humans and pre-humans.

The hunters who shot the deer weighed and gutted them and then bagged the organs to keep them from releasing enzymes that can spoil the rest of the meat. Likewise, Mr. Schindler had his students separate, bag, and refrigerate the various parts of the deer during the butchering. By the end of this fall, the researchers will have collected weight data from 11 does and bucks.

Organ meats, animal fats, and bone marrow, he maintains, are valuable sources of nutrition that have largely disappeared from the modern Western diet.

Mr. Schindler points to a celebrated discovery reported in August in *Nature* that prehumans used stone tools to carve meat as far back as 3.4 million years ago, some 800,000 years earlier than was previously known.

"Animals have been in our diet forever," he says. "We should be looking into the past to understand what we should be eating now and into the future—both for health and for sustainability."

In addition to stone-tool making, students in Mr. Schindler's course learn to produce prehistoric ceramic technology, make composite tools of stone blades and antlers, and gather and (when necessary) detoxify wild foods.

A native of New Jersey, Mr. Schindler spent his childhood hunting, fishing, foraging, and trapping with his father. Trapping was particularly lucrative, with furriers paying handsomely for muskrat, raccoon, and fox pelts. After high school, he was recruited to wrestle for Ohio State University, which he did until a degenerative eye disease sent his grades into the tank and eventually rendered him legally blind.

Six years later, corneal transplants and contact lenses restored his vision to nearly 20-20. Mr. Schindler finished his bachelor's degree and, after developing an interest in stone-tool making and other primitive skills, pursued a Ph.D. in anthropology at Temple University. His adviser there allowed him to reach beyond traditional academe to acquire skills in prehistoric technologies.

"I sought out the best people I could find within a reasonable distance," he says. "Luckily there were a lot of very skilled people in the Northeast and on the East Coast." He learned stone-tool work, basketry, prehistoric ceramics, and brain tanning—"actually taking the skin of the deer and turning it into leather using the brains of the animal."

In 2004, Mr. Schindler and more than a dozen students and volunteers, including his parents, his wife, and his nine-month-old daughter, spent two weeks on an island in the Delaware River. They tried to live as the Indians would have 2,000 years ago, sharing a shelter of saplings and tulip-poplar bark, starting fires without matches, catching fish in a net woven from local plants, and cooking in clay pots they had created themselves.

"Once we were on the island, we were testing fishing, we were testing food storage, food processing, we were rendering fish for oil, we were drying fish, storing it," he says. "All of that set me up, and I didn't even realize it, for the things I'm doing now. I had a teaching collection to use as soon as I was done, one that I use all the time."

The day winds down back here at the farm in Galena, and Katherine (Kat) Miller hollers over at the professor. "Dr. Schindler? Thanks for teaching this class. This was awesome."

She says later that while she is primarily interested in cultural anthropology, she appreciates the hands-on nature of experimental archaeology. And though she has hunted with her dad's friends, they have always gallantly insisted that cutting up a deer is a man's job.

"Professor Schindler is very engaging and patient, and he challenges us to try new things," she says. Not just skinning a deer: Students who attend the final session of the course, at his home, get to savor the taste of closure. Among the items on the menu is venison from the two deer that they butchered.

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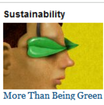

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