

A REPORTER AT LARGE

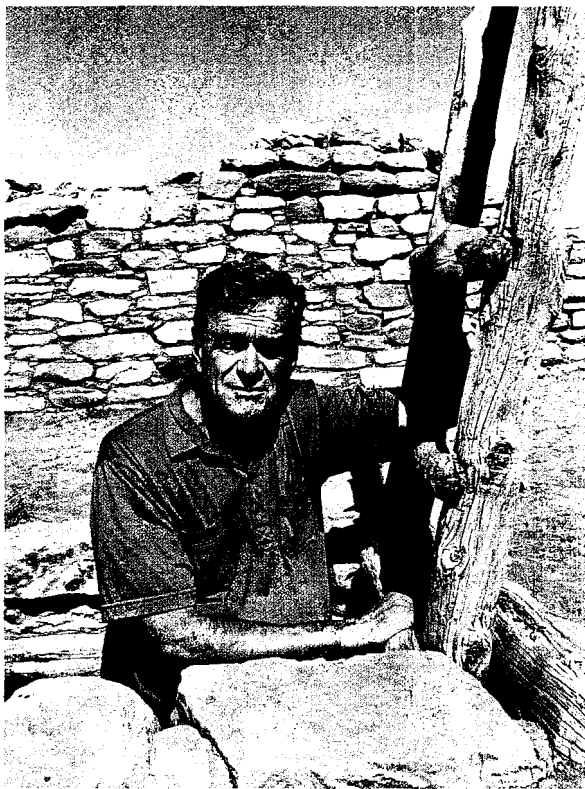
## CANNIBALS OF THE CANYON

*Has a controversial anthropologist uncovered the truth about a great Southwestern civilization?*

BY DOUGLAS PRESTON

**M**ORE than a century ago, American travellers in the Southwest were astounded to find ruined cities and vast cliff dwellings dotting the desert landscape. Surely, they thought, a great civilization had once flourished here. It looked to them as if the people who created it had simply walked away and vanished: the ruins were often littered with gorgeous painted pottery and also contained grinding stones, baskets, sandals hanging on pegs, and granaries full of corn. The Navajo Indians, who were occupying much of the territory where this lost civilization once existed, called them the Anasazi—a word meaning “Ancient Enemy”—and they avoided the ruins, believing they were inhabited by *chindi*, or ghosts.

Not surprisingly, American archeologists focussed on the Anasazi and their great works, and they became the most intensely studied prehistoric culture in North America. A standard picture emerged, based on wide-ranging excavations of sites and on detailed ethnographic research among the Hopi, Zuni, and other Pueblo Indian tribes, who are the Anasazi's descendants. The Anasazi were—so the findings suggested—peaceful farmers, and they attained astonishing results in engineering, architecture, and art. The center of this cultural flowering, from the tenth century to the twelfth, seems to have been Chaco Canyon, New Mexico, a windswept gulch in the apparently endless sagebrush desert of the San Juan Basin. Chaco is marked by immense stone structures, some up to four stories high, called Great Houses. The largest, Pueblo Bonito, contains some six hundred and fifty rooms, and its construction required more than thirty thousand



tons of shaped sandstone blocks. The Chaco Anasazi also built hundreds of miles of roads that stretched out from Chaco Canyon across the landscape in arrow-straight lines—an engineering marvel achieved without compass, wheel, or beast of burden. They erected shrines, solar and astronomical observatories, irrigation systems, and a network of signalling stations. They constructed more than a hundred Great Houses outside Chaco Canyon, spreading them over fifty thousand square miles of the Four Corners region of the Southwest. Many of these outlying Great Houses seem to have been connected to Chaco by the radiating pattern of roads. Archeologists today call this cultural explosion “the Chaco phenomenon.” But the phenomenon ended abruptly around 1150 A.D., when a vast collapse apparently occurred, and Chaco, along with some of the outlying sites, was largely abandoned.

Equally remarkable was the Chaco society. It seemed to be almost utopian. The Anasazi, the traditional view held, had no absolute rulers, or even a ruling class, but governed themselves through consensus, as the Pueblo Indians do today. They were a society without rich or poor. Warfare and violence were rare, or perhaps unknown. The Anasazi were believed to be profoundly spiritual, and to live in harmony with nature.

As a result, the Anasazi captured the fancy of people outside the archeological profession, and particularly those in the New Age movement, many of whom see themselves as the Anasazi's spiritual descendants. The ruins of Chaco Canyon have long been a New Age mecca, to the point where one of the sites had to be closed, because New Agers were burying crystals and illegally arranging to have their ashes scattered there.

During Harmonic Convergence, in 1987, thousands gathered in Chaco Canyon and joined hands, chanting and praying. People have also flocked to the villages of the present-day Pueblo Indians—the Hopi in particular—seeking a spirituality outside Western civilization. The Hopi themselves, along with other Pueblo Indian descendants of the Anasazi, feel a deep reverence for their prehistoric ancestors.

In 1967, a young physical anthropologist named Christy Turner II began looking at the Anasazi in a new light. He happened to be examining Anasazi teeth in the Museum of Northern Arizona, in Flagstaff, attempting to trace a peculiar trait known as the three-rooted first molar. On the last day of his research, he asked the curator to pull down a large, coffin-shaped cardboard box from a top shelf. The accession record said that the box contained remains from a remote area along Polacca

Fractures  
to the  
cranial vault

Cut marks  
from a  
stone tool

"Pot polish,"  
evidence that  
these humerus  
(arm) bones were  
boiled in a  
ceramic pot

Bones broken  
mid-shaft, probably  
so they would  
fit into a typical  
Anasazi cooking  
pot. The marrow has  
been scooped out

Burning damage  
to the parietal bone  
(back of skull),  
indicating that  
the head was set  
face up, on the  
coals, to cook  
the brain

Wash, an arroyo situated below First Mesa, on the Hopi Indian Reservation. The remains had been excavated in 1964 by an archeologist named Alan P. Olson. Turner removed the lid and found himself gazing at a bizarre collection of more than a thousand human bone shards. Thirty years later, when he described the experience to me, the memory was still vivid. "Holy smokes!" he recalled having exclaimed to himself. "What happened here? This looks exactly like *food* trash." The fragments reminded him of broken and burned animal bones that he had found in prehistoric Anasazi garbage mounds. As he looked more closely, another thought struck him. Like many physical anthropologists, he had sometimes done forensic work for police departments. Once, in California, the police had asked him to examine some remains that had been found in the Oakland Hills—a skeleton still wearing a pair of boots. Turner had informed the police that the person had been savagely beaten to death. "Now," he told me, "I could see the same violence done to the Polacca Wash bones."

Turner borrowed the bones from the museum and took them to Arizona State University, where he was a professor. In 1969, he presented his findings in a paper he read at an archeological meeting in Santa Fe. Word of what the paper would say had got around, and the room was packed. Co-written

with a colleague of Turner's named Nancy Morris, the paper was entitled "A Massacre at Hopi." Turner informed the audience that the bones belonged to a group of thirty people—mostly women and children—who had been "killed, crudely dismembered, violently mutilated," and that the heads, in particular, showed extreme trauma: "Every skull is smashed, chiefly from the front, and massively so. . . . The faces were crushed while still covered with flesh." Most of the skulls had received a number of "blunt, heavy, club-like fracturing blows." The bone material had still been "vital" at the time the blows were struck. "The many small pieces of unweathered teeth and skulls and postcranial scrap suggest, but do not prove, that the death of these people occurred at the burial site." Moreover, "every skull, regardless of age or sex, had the brain exposed." Heads had been placed on flat rocks and smashed open, apparently so that the brain could be removed.

He went on to say that most of the bones—not only the skulls—also showed marks of cutting, chopping, dismemberment, butchering, "defleshing," and roasting. The larger bones had been broken apart and the marrow scraped out, or, in the case of spongy bone, reamed out. Turner and Morris concluded that the Polacca Wash bones represented "the most convincing evidence of cannibalism in all Southwest archaeology."

Turner said that Olson, the original excavator, had been wrong in assuming that the bones were prehistoric, for Turner had had the bones radiocarbon-dated, and the results had come back as 1580 A.D. plus or minus ninety-five years. Given the date, Turner wondered whether some record or legend might still exist relating what happened.

When he talked with me, he said, "We knew who the bods were. There were a certain number of kids and females. We looked at dental morphology. We got a good match with Hopi. So we asked ourselves, 'What is there in oral tradition about a whole bunch of Hopi being killed and eaten, or massacred, of this age and sex composition, at this date?'"

Turner eventually concluded that the Polacca Wash site was a place known in Hopi legend as the Death Mound. Hopi informants had first described the legend to an anthropologist at the end of the nineteenth century. According to the story, sometime in the late sixteenth century a Hopi village called Awatovi had been largely converted to Christianity under the influence of Spanish friars. In addition, the people of Awatovi practiced witchcraft, which the Hopi considered a heinous crime. Eventually, five other Hopi villages decided to purge the tribe of this spiritual stain. An attack was organized by the chief of Awatovi himself, who had become disgusted with his own people. Warriors

from the other villages attacked the errant village at dawn, surprising most of the men inside the kivas—sunken ceremonial chambers of the Pueblo Indians—and burning them alive. After killing the men, the warriors captured groups of women and children. As one of these groups was being marched away, a dispute broke out over which village would get to keep the captives. The argument got out of hand. In a rage, the warriors settled it by torturing, killing, and dismembering all the captives. Their bodies were left at a place called Mas-teo'-mo, or Death Mound. "If the stories are correct," the anthropologist who first collected these legends wrote, "the final butchery



*"Go ahead. Don't think of it as plagiarism, think of it as an homage."*

at Mas-teo'-mo must have been horrible."

Turner recalls that the lecture room was quiet when he finished arguing that the bones were the remains of a cannibal feast. "You could *smell* the disbelief," he said. Most of his colleagues felt that there simply had to be another explanation for the strange bone assemblage. To suggest that the Hopi could have deliberately tortured, murdered, mutilated, cooked, and eaten a defenseless group of women and children from their own tribe seemed to make a mockery of a hundred years of cautious, diligent scholarship. The paper was looked upon with deep skepticism by many of Turner's peers, and the Hopi objected to what they considered a crude slur on their ancestors.

Over the next thirty years, Turner looked deeper into the archeological record for signs of cannibalism—going all the way back to the Hopi's Anasazi ancestors. To his surprise, he discovered that a number of claims of Anasazi violence and cannibalism had been published by archeologists, but the profession, perhaps blinded by the conventional wisdom, had ignored the reports, the notes, the evidence, the very bones.

Turner has identified many Anasazi sites that he believes represent "charnel deposits"—heaps of cannibalized remains. Next month, the University of Utah Press will publish the results of his work, under the title "Man Corn: Cannibalism and Violence in the Prehistoric American Southwest." The term "man corn" is the literal translation of the Nahuatl (Aztec) word *tlacatlaolli*, which refers to a "sacred meal of sacrificed human meat, cooked with corn." (The book had a co-author, in Turner's wife, Jacqueline—also an anthropologist—who died in 1996.)

"Man Corn" reexamines seventy-two Anasazi sites at which violence or cannibalism may have occurred. Turner claims that cannibalism probably took place at thirty-eight of these sites, and that extreme violence and mutilation occurred at most of the others. He calculates that at least two hundred and eighty-six individuals were butchered,



*"He just up and died. Typical."*

cooked, and eaten, with a mean of between seven and eight individuals per site. As a test to see how widespread cannibalism might have been, Turner also examined a collection of eight hundred and seventy Anasazi skeletons in the Museum of Northern Arizona. He found that eight per cent—one skeleton in twelve—showed clear evidence of having been cannibalized.

Turner's book does more than attack the traditional views of the Anasazi. It also addresses one of the great unsolved problems of American archeology: What caused the collapse of the Chaco culture around 1150? There was a severe drought at the time, but most researchers don't believe that it alone could have brought about such a cultural implosion. Other, unknown factors must have played a role.

After the Chaco collapse and abandonment, many Anasazi moved into deep, remote canyons, building their dwellings in cliffs or on high, often fortified, mesas. A century later, they abandoned even these defensive positions, leav-

ing almost the entire Four Corners region uninhabited. To some archeologists, it seemed as if the Anasazi had been seized with paranoia—that they were protecting themselves from some terrible enemy. But, no matter how hard archeologists looked, they could find no such enemy.

#### BONE CAKES

I HAVE been following Turner's work for about ten years. He is one of the country's leading physical anthropologists and has a reputation for being something of a loner—brilliant, arrogant, even intimidating. When I heard rumors that he was finishing his monumental treatise on cannibalism, I paid him a visit at Arizona State University, in Tempe, just outside Phoenix. The door to his office led me into a dim dogleg space created by the backs of shelves and filing cabinets that stood in the middle of the room. At one end of a scarred oak table lay an untidy heap of plastic bags containing broken human

bones, including skulls. Dental picks, a tiny magnifying glass, and other instruments rested nearby. The far wall was covered with photographs of skulls, of a grimacing mummy head, and of Hopi medicine men, among other things. A crude photocopy of an old sideshow bill was taped on another wall, near a computer terminal. The bill read, "The Head of the Renowned Bandit Joaquin! Will be exhibited for one day only, April 19, 1853. Plus the hand of the notorious robber and murderer Three Fingered Jack."

Turner sat behind an old desk next to a window, which overlooked a pleasant courtyard with two palm trees. He is sixty-four, and has sandy hair and bleached, watery brown eyes behind large glasses. His skin is rough and leathery from years of outdoor work in the sun.

Turner was born in Columbia, Missouri, and grew up in Southern California. "I was baptized without being consulted," he told me. "Presbyterian. I hated it so much it turned me quickly to Darwin." He had been a premedical student at the University of Arizona, but he switched to anthropology. Best known for work he has done on dental morphology—the shapes of human teeth—he has spent most of his academic life attempting to trace the various waves of human migration from Asia to America by looking at teeth.

I spent three days with Turner. He is a mercurial man, who can be by turns gracious, witty, charming, aggressive, and vituperative. It is perhaps a good thing that he has surrounded himself with the dead, because in dealing with the living he is legendarily difficult. "I have no friends, but I have no scars," he told me. He seems to relish being on the unpopular side of an academic fight. According to his daughter, Korri, "He loves it, being branded politically incorrect."

After chatting with Turner for a while, I asked him about the heap of bones on his table. He said that they were from a site called Sambrito Village, on the San Juan River, in New Mexico. It had been excavated thirty-five years before, when the area was to be drowned by Navajo Reservoir. The excavating archeologist had concluded that cannibalism had occurred there, but his finding was ignored. Turner was

now reexamining the bones for his book.

"All the makings of cannibalism are here," he said enthusiastically, pointing to the charnel heap. He lifted a plastic bag holding a piece of skull, and slid the piece into his hand, cradling it gently. "This is a good one to illustrate the roasting of the head. A lot of the heads have this burning pattern on the back." He indicated a patch on the skull where the bone was crumbling and flaking off. He handed it to me, and I took it gingerly. "Clearly," he continued, "they were decapitating the heads and putting them in the fire face up."

"Why?" I asked. "To cook the brain?"

"It would have cooked the brain, yes," he said, rather dryly.

"What happens when a brain is cooked?"

"Thinking stops. Except among some of my students."

Turner pointed to the broken edge of the skull, which showed several places where sharp blows had opened the brainpan: small pieces of broken skull were still adhering to the edges. "These are perimortem breaks. This cannot happen except in fresh bone," he said. "Perimortem" refers to events at the time of death. Most of the bones, he said, showed numerous perimortem breaks; the crushing, splintering, and breaking of the bones had thus occurred just before, at, or just after death.

"How old was this person, and of what sex?" I asked.

## CONVERSATION

This conversation is like a long walk together in the autumn woods.

Mossy silence of shadow, eloquent longing of birds, thunder softened by distance.

A stag crosses the trail up ahead,  
a wildness we had thought extinct.

Leaves, the shades of earth, fall at our feet,  
gifts from the wind we have to accept.

And now, just at goodbye, where the trail divides,  
sudden pathos of sweet rain.

—LEONARD NATHAN

Turner took the skull and flipped it over. "No signs of sutural closing. I'd put it at eighteen to twenty years. Sex is female. There are very light brow ridges, orbit is sharp, mastoid is relatively small, bone is light. I couldn't rule out a very light male."

He rummaged through the pile and showed me other bones. Some had cuts and marks of sawing near the joints, caused by dismemberment with stone tools. He pointed out similar cuts where the muscles had been attached to the bone—evidence that meat had been stripped off. He showed me percussion marks from stone choppers used to break open bones for marrow and to hack through the skulls.

Turner was the first person ever to quantify what a set of cannibalized human remains looks like. Eventually, in the course of his work, he identified five characteristics that he felt had to be present in a bone assemblage before one could claim that the individual had been cooked and eaten:

(1) Bones had to be broken open as if to get at the marrow.

(2) Bones had to have cutting and sawing marks on them, made by tools, in a way that suggested dismemberment and butchering.

(3) Some bones had to have "anvil abrasions." These are faint parallel scratches, which Turner noticed most often on skulls, caused when the head (or another bone) is placed on a stone that serves as an anvil, and another

stone is brought down hard on it to break it open. When the blow occurs, a certain amount of slippage takes place, causing the distinctive abrasions.

(4) Some bone fragments had to be burned; heads, in particular, had to show patterns of burning on the back or top, indicating that the brain was cooked.

(5) Most of the vertebrae and spongy bone had to be missing. Vertebrae and spongy bone are soft and full of marrow. They can be crushed whole either to make bone cakes (something the Anasazi did with other mammal bones) or to extract grease through boiling. (Fresh bone is full of grease.)

While Turner was involved in his multi-decade project, Tim D. White, a well-known paleoanthropologist, made another discovery. In examining a six-hundred-thousand-year-old fossilized skull from Africa, he noticed some peculiar scratches. They looked as if someone had scraped and carved the flesh from the skull with a stone tool. He wondered whether the skull was evidence of cannibalism deep in the human fossil record.

To learn more about what cannibalism does to bones, White turned his attention to the American Southwest. In 1973, in Mancos Canyon, Colorado, an archeological team had found the broken and burned remains of approximately thirty people scattered on the floors of a small ruined pueblo. White borrowed the bones in the summer of 1985 and studied them intensively for the next five years. He found all five of the indications of cannibalism that Turner had identified. But he also noticed another peculiar trait: a faint polishing and beveling on many of the broken tips of bones. White wondered if this polishing might have been caused by the bones' being boiled and stirred in a rough ceramic pot, to render their fat. To test the idea, White and his team performed an experiment. They broke up several mule-deer bones and put the pieces in a replica of an Anasazi corrugated clay cooking pot, partly filled with water, and then heated the mixture on a Coleman stove for three hours, stirring it occasionally with a wooden stick. The fat from the bones rose to the surface and coagulated around the

waterline, forming a ring of grease about half an inch thick. They decanted the contents, and White took a bone piece and scraped off the ring of fat around the inside of the pot.

Under magnification, the deer bones showed the same microscopic polishing that White had observed on the Mancos bones. Furthermore, the bone used to scrape out the ring of fat showed a pattern of scratches that exactly matched that of one Mancos bone. White called this "pot polish."

On learning of White's discovery, Turner took a second look at many of his cannibalized assemblages. He found pot polish on most of them, including the Polacca Wash bones, and he added pot polish to his list. (For the most part, Turner and White communicate with each other via scholarly journals; they have no personal relationship.)

I asked Turner if there were any examples of pot polish among the bones in his office. He searched around and pulled out a tiny fragment. He went to his desk for a hand-held magnifier and examined the fragment in the brilliant Arizona light. "This is polishing," he said, with a grin, holding it up like a jewel. "I wanted you to see this. It's from Burnt Mesa, in New Mexico. Alan Brew is the excavator. The interesting thing is that the polishing occurs only on the ends of the fragments, not on the mid-portion. The physics of a pot prohibit it. We also don't get the polishing on the

large pieces that won't fit into the pot."

He handed me the bone and the magnifier. As I examined it in the light, I could see a bright polished line along one fractured edge of bone.

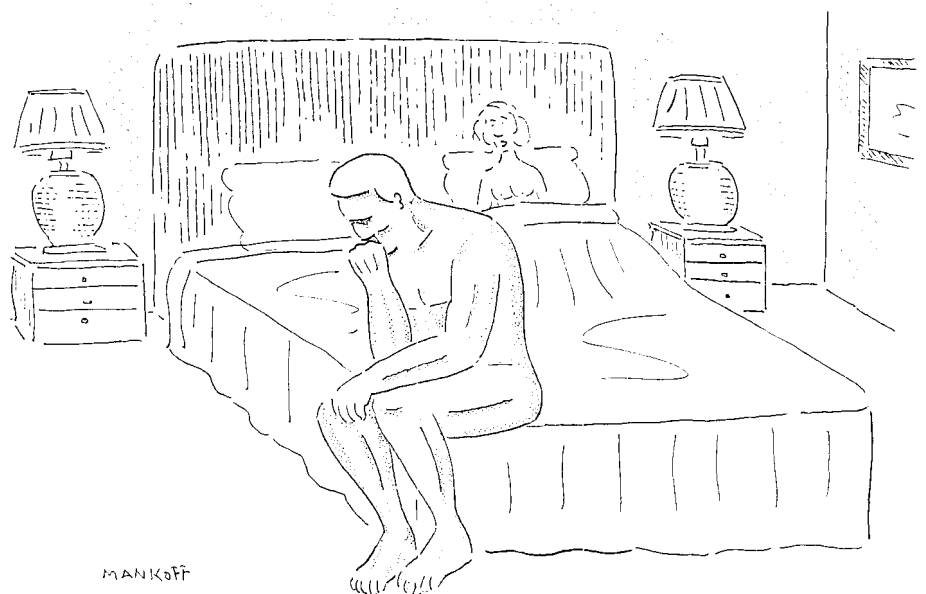
"Just a delightful break," Turner said.

"Did you experiment with deer bones, like Tim White?" I asked, handing the bone back.

"We can't get deer in the grocery store," he said. "We used beef and chicken."

## SENSITIVITIES

TURNER'S work on Anasazi cannibalism took place during a much larger debate on cannibalism worldwide. In 1979, William Arens, a professor of anthropology at the State University of New York at Stony Brook, published an influential book entitled "The Man-Eating Myth." The book questioned the very existence of cannibalism in human societies, and it was widely reviewed. (*The New Yorker* called it "a model of disciplined and fair argument.") Arens argued that there were no reliable, firsthand accounts of cannibalism anywhere in the historical or ethnographic record. He showed that published reports of cannibalism were mostly hearsay, from unreliable witnesses, who talked about something they had not seen personally. Despite a diligent search, he said, he had been unable to find even one anthropologist, living or dead, who claimed to have witnessed cannibalism. (Apparently, not



*"Believe me, you're just thinking about it too much."*

even D. Carleton Gajdusek, who in 1976 won a Nobel Prize in Medicine for identifying a cannibalistic disease called *kuru* among the Fore tribe of New Guinea, had ever seen it.) Arens documented how some anthropologists in Brazil and elsewhere had badgered and hectoring their informants until they finally "admitted" that their ancestors had been cannibals. He argued that vivid accounts of cannibalism collected by the Spanish in the Caribbean and in central Mexico were mostly written by people who were attempting to justify conquest, conversion, and enslavement.

Calling one's neighbor a cannibal, Arens went on to say, was the ultimate insult. It was always members of some tribe down the river or over the mountains who were cannibals. Or it was

one's bad old ancestors, before contact with "superior," European civilization. Arens took his profession to task for not demanding more rigorous evidence before making such claims. "You have to ask anthropologists why they need cannibalism," he wrote, and he went on to give an answer: that anthropologists love cannibalism because they thrive on the exotic, the weird, the strange; they want to perpetuate the idea that some people are radically different from us and thus worth studying. Arens's book leaves little doubt that anthropologists have accepted, eagerly and uncritically, many dubious accounts of cannibalism. Naturally, when the book was published many anthropologists objected to it, but a surprising number of scientists (particularly archeologists) felt that Arens

had made a valid point, which needed to be tested. "The Man-Eating Myth" bolstered Turner's critics and contributed to an atmosphere in which his assertions were regarded with suspicion.

I called up Arens to find out what he thought of Turner's work, twenty years later. Surprisingly, he turned out to be a Turner believer. Cannibalism, he said, was "a possible interpretation, even a good interpretation," of Turner's bone assemblages. He worried, however, that most people would conclude that all the Anasazi were cannibals—and, by extension, all Native Americans. "There's a whole discipline in existence looking for 'savage' behavior among the people we have colonized, conquered, and eradicated. That point almost *has* to be made—that the people here before us were cannibals—to justify our genocide of Native Americans."

Turner still has many articulate detractors. One of the most outspoken is Kurt Dongoske, a white man who is the archeologist for the Hopi tribe. Dongoske doesn't take issue with Turner's analysis of how the bones were processed, but he objects to Turner's conclusion that any people were actually eating the cooked meat. There is simply no proof that the meat was consumed, he told me, nor does he believe that Turner has sufficiently considered other alternatives, such as bizarre mortuary practices. Leigh J. Kuwanwisiwma, who is the director of the Hopi Cultural Preservation Office, wonders why Turner assumed that the Polacca Wash bones, if they were cannibalized at all, represented Hopi-on-Hopi cannibalism. He points out that Navajo, Apache, and Ute all raided the Hopi, killing men and stealing women and children. He feels that it was unfair of Turner to pursue this research without the Hopi tribe's being involved. "Turner has never sat down with us," Kuwanwisiwma says. "There was an open invitation, back in 1993, to come before the Hopi people and see if he was able to explain his research to us, and he refused. He never made contact with us before or after." Turner, for his part, says that the invitation was extended for only one visit and that he couldn't come for personal reasons. He says he offered to come at another time but never received a response. As for the possibility that other tribes had carried out these acts against the Hopi, Turner



*"Thanks for getting married on such short notice."*



said that the Awatovi story best fitted the facts.

Others have accused Turner of insensitivity in presenting such inflammatory findings. Duane Anderson, an archeologist who is the vice-president of the highly respected School of American Research, in Santa Fe, has said that Turner, in common with some other physical anthropologists, doesn't show much concern about how his work might affect living, related people. "There's a tendency when dealing with bones to treat the material as *objects*, rather than as *subjects*."

Many of Turner's critics have proposed alternative explanations. J. Andrew Darling, the executive director for the Mexico-North Research Network, in Chihuahua, wrote a paper (not yet published) suggesting that the bones might be those of witches executed in a particularly grisly fashion. The utter destruction of the witch's body through dismemberment, defleshing, burning, boiling, and crushing was an attempt to efface his or her evil powers. He cites known instances of Pueblo Indian witches' being killed, violently mutilated, and dismembered. Debra L. Martin, a professor of biological anthropology at Hampshire College, in Massachusetts, and an authority on Anasazi violence, also feels that Turner rejected other explanations out of hand. "I don't see why those bones couldn't have been stomped on, cut up, broken apart, and boiled ritually" without being eaten, she said. "And why isn't there anything about cannibalism in the ethnographic record? I would like to see just one clan history, one story, one early Spanish account, that confirms this." Martin herself examined some of Turner's bone assemblages. "Christy homogenizes all these assemblages in his publications," she pointed out. "He makes them all seem alike. But they're not. What if the explanation is a lot more interesting? What if it's something grander than this? Maybe some cannibalism, some witchcraft executions, and some really unusual or interesting mortuary practices?" She made another point. Because Turner did not collaborate with Native Americans, "they are making a special effort to reclaim and bury those bones," she said. "He'll have been the only person who's looked at them, and that's too bad."

Others are even more blunt in de-

scribing Turner. "He's not nice," one colleague said. "He's a pain in the ass." Another called him "loud" and "a bully."

There is a high level of apprehension at some of the museums where Turner has done his research. At the Museum of Northern Arizona, his longtime hangout, I was firmly denied permission even to enter the collection area, let alone look at the bones Turner had worked on. "We're walking a tightrope here," Noland Wiggins, a collections supervisor, said apologetically. "Because, as you may imagine, the tribes are not too happy with Christy's research."

Turner doesn't shy away from responding forcefully to his critics. In a recent paper he accused one of them of "playing to the choir" and called Dongoske "self-serving." He also considered it strange that his critics and the Hopi were more exercised over cannibalism than over violence and mutilation. "How can you tolerate killing, murder, and torture and then be so horrified by cannibalism? Why is it that the Hopi can admit killing eight hundred at Awatovi as if it were nothing, but then the whole universe falls apart when they are accused of cannibalism?"

I asked him why he felt that there had been so much opposition to his ideas.

"There's a simple answer," he said, with a mirthless smile. "In our culture, cannibalism is a food taboo. That's the essence of this whole problem."

Although Turner admitted that he had no direct evidence that human meat was eaten at any of the sites, he said that he based his fundamental conclusion of cannibalism on the scientific principle of Occam's razor: the simplest explanation fitting the facts is probably the right one. "There's still a chance," he said sarcastically, "that aliens are doing this." Nevertheless, his critics continue to point out that he lacks proof. In 1996, Kurt Dongoske was quoted in *National Geographic* as saying that Anasazi cannibalism would not be proved until "you actually find human remains in prehistoric human excrement."

**I**n the early nineteen-nineties, a firm called Soil Systems won a contract to excavate a group of archeological sites at the base of Sleeping Ute Mountain, in Colorado, on the Ute Mountain Ute

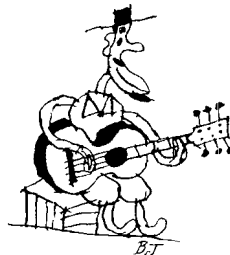
Indian Reservation. The Ute planned to irrigate and farm seventy-six hundred acres of land, and the law required them to excavate any archeological sites that would be disturbed. The project director at Soil Systems was a young man named Brian Billman, who is now an assistant professor at the University of North Carolina at Chapel Hill.

He and his team began work in 1992, and at one unremarkable site along Cowboy Wash, called 5MT 10010, he and two colleagues, Patricia Lambert and Banks Leonard, made a grotesque discovery. The results have not yet been published, but Billman was willing to talk to me about them—up to a point. We spoke by telephone the day before he was to go off to Peru to do fieldwork. Bill-

man spoke slowly and carefully, weighing every word, and this is the story he told:

When the team began excavating, they uncovered what seemed at first a typical Anasazi site—some rooms, a trash mound, and, lined up in a row, three kivas. As the team dug out the first kiva, they found a pile of chopped-up, boiled, and burned human bones at the base of a vent shaft leading up and out of the kiva. It looked as though the bones had been chopped up and cooked outside, on the surface, and then dumped down the shaft. There were cut marks on the bones made by stone tools, and the long bones had been systematically broken up for marrow extraction.

In the second kiva, they found the remains of five individuals. In this case, it appeared that the bones had been processed inside the kiva itself. "Instead of boiling," Billman recalled, "it looked more like roasting going on." Here cut marks at muscle attachments suggested that the bones had been defleshed, and again they had been split open for marrow. The skulls of at least two of the individuals had been placed upside down on the fire, roasted, and broken open, and the cooked brains presumably scooped out. In that same kiva, the team found a stone tool kit such as was typically used in butchering a mid-sized mammal. The kit contained an axe, hammerstones, and two large flakes with razor-thin cutting edges. Billman





submitted the tool kit to a lab, and the two flakes tested positive for human blood.

The third kiva contained only two small pieces of bone, which had apparently been washed down from the surface. In the dead ashes of the central hearth, however, the team made an "extremely unusual" find. It was a nondescript lump of some material, which was field-classified as a "macrobotanical remain"—a piece of an unidentified plant. A worker put it in a bag, and when the team had a chance to examine it more closely, back in the laboratory, they realized that it was a desiccated human turd, or coprolite. "After the fire had gone cold," Billman said, "someone had squatted over this hearth and defecated into it."

Billman sent the coprolite off to a lab at the University of Nebraska for analysis. The first oddity the lab noted was that it contained no plant remains; other tests indicated that the coprolite had formed from digested meat. From a pollen analysis, the lab could tell that the coprolite had been deposited in the late spring or early summer, at the same time of year that the site was abandoned.

In three nearby ruined sites, another group of excavators also found chopped-up, boiled, and burned bones scattered about. The four sites, which seemed to constitute a small community, contained a total of twenty-eight butchered individuals. Mysteriously, all four sites were filled with valuable, portable items, such as baskets, a rabbit blanket, pots, and ground-stone tools. Little, if anything, seemed to have been taken.

"This site has a frozen instant of time in it," Billman said. "You could almost read it." What he read was: The year was approximately 1150. Times were hard. The area was in the grip of a severe drought. Pollen samples showed that a crop failure had probably occurred the previous year. One late-spring day, the community was attacked. The people were killed, cooked, and eaten. Then, in an ultimate act of contempt, one of the killers defecated in a hearth, the symbolic center of the family and the household. Instead of looting the site, the invaders left it and its many valuables for all to see.

"When I excavated it," Billman told me, "I got the sense that it may have been taboo. We are proposing that this

may have been a political strategy. One or several communities in this area may have used raiding and cannibalism to drive off people from a village and prevent other people from settling there. If you raided a village, consumed some of the residents, and left the remains there for everyone to see, you would gain the reputation of being a community to stay away from."

Billman, Lambert, and Leonard presented their findings at the 1997 Society for American Archaeology meetings, in Nashville, and they were subsequently reported by Catherine Dold in *Discover*. At the end of the Nashville symposium, a man came up to Billman, introduced himself as Richard Marlar, and said, "I'm a biochemist, and I think I can tell you if there is human tissue in that coprolite"—in other words, he could determine directly whether or not cannibalism had occurred. Billman sent some samples of the coprolite off to Marlar for analysis, along with some pieces of a ceramic Anasazi cooking pot found at the site.

I recently called up Richard Marlar, who is an associate professor of pathology at the University of Colorado Health Sciences Center, in Denver. "I heard his talk," Marlar said. "I said to myself, 'I can figure that out. We can answer that question.'" The basic problem, he realized, was that he needed a way to identify human tissue that had passed through the digestive system of another human being. He had to make sure he was not picking up traces of human blood in the intestinal tract (from internal bleeding) or cells naturally shed from the lining of the intestine. He finally decided to test the coprolite for the presence of human myoglobin, a protein that is found only in skeletal and heart muscle, and could not get into the intestinal tract except through eating. (As a control, Marlar tested many stool samples from patients in his hospital, to verify that none had traces of myoglobin in them.)

Marlar set up an immunological assay of the kind that is normally used in clinical medicine to determine whether

someone has a disease. So far, he explained to me, he had performed seven tests, each in triplicate, using twenty-one samples of the coprolite. He also ran six tests on the ceramic pottery to see if it had traces of human protein from cooking. All the results, he told me, were the same.

"And what were those results?" I asked.

He declined to answer. The Ute tribe had asked all the excavators to keep the results confidential until the paper could be published.

In the small world of Southwestern archeology, very little can be kept secret, and I soon began to hear rumors about the results. I tracked them down and established that the tests had been positive. All of Marlar's assays, I learned, had shown the presence of human myoglobin protein in the coprolite and on the interior walls of the cooking pot.

#### THE GREAT TERROR

FOR thirty years, Turner had been documenting cannibal sites, but for a long time he had not tackled the question "Why?" It is this question that he takes up in the last, and what is certain to be the most controversial, chapter of "Man Corn." He advances a theory of who the cannibals were, where they came from, and what role the eating of "men, women, and children alike" may have played in Anasazi society. For this was not, he says, starvation cannibalism, such as befell the Donner party. Starvation cannibalism did not explain the extreme mutilation of the bodies before they were consumed, or the huge charnel deposits, consisting of as many as thirty-five people (that's almost a ton of edible human meat), or the bones discarded as trash. Furthermore, there was no evidence of starvation cannibalism (or any other kind of cannibalism) among the Anasazi's immediate neighbors, the Hohokam and the Mogollon, who lived in equally harsh environments and endured the same droughts.

A colleague of Turner's, David Wilcox, who is a curator at the Museum of Northern Arizona, had prepared a map showing the distribution of Chaco Great Houses and roads. Using Wilcox's map, Turner was able to chart charnel deposits in time and space. "When we found that Dave's Chaco



maps coincided with my cannibalized assemblages," Turner recalls, "that's when it came together." Turner decided that the civilization centered in Chaco Canyon was probably the locus of Anasazi cannibalism.

The maps, Turner says, showed that the charnel deposits were often situated near Chaco Great Houses and that most of them dated from the Chaco period. The eating of human flesh seems to have begun as the Chaco civilization began, around 900; peaked at the time of the Chaco collapse and abandonment, around 1150; and then all but disappeared (Polacca Wash being a notable exception).

Turner theorized that cannibalism might have been used by a powerful elite at Chaco Canyon as a form of social control. "It was order by terrorism," he said to me. "Big-stick order." In "Man Corn" he writes:

Terrorizing, mutilating, and murdering might be evolutionarily useful behaviors when directed against unrelated competitors. And what better way to amplify opponents' fear than to reduce victims to the subhuman level of cooked meat, especially when they include infants and children from whom no power or prestige could be derived but whose consumption would surely further terrorize, demean, and insult their helpless parents or community? . . . The benefits would be threefold: community control, control of reproductive behavior (that is, dominating access to women), and food. From the standpoint of sociobiology, then, cannibalism could well represent useful behavior done by well-adjusted, normal adults acting out their ultimate, evolutionarily channelled behavior. On the other hand, one can easily look upon violence and cannibalism as socially pathological.

The second question Turner asked was "Who were these cannibals and where did they come from?" He looked around for a source. The Anasazi's immediate neighbors showed no evidence of being cannibalistic. "I couldn't find cannibalism in California or on the Great Plains, either," Turner said. "Where is it? In Mexico."

Turner directed his attention to central Mexico, to the empire of the Toltecs—the precursors of the Aztecs—which lasted from about 800 to 1100 A.D. Central Mexico, he writes, developed a "very powerful, dehumanizing sociopolitical and ideological complex," centered on human sacrifice and cannibalism used as a form of social control. Furthermore, cannibalism spread from central Mexico "into the jungle world

of the Mayas and the desert world of Chichimeca" in northern Mexico. Turner concludes, "It takes nearly blind faith in the effectiveness of geographical distance . . . to believe that this complex and its adherents failed to reach the American Southwest."

During the Toltec period, Turner hypothesizes, a heavily armed group of "thugs," "tinkers," or perhaps even "Manson party types" (as he put it to me in various conversations) headed north, to the region we refer to as the American Southwest. "They entered the San Juan Basin around A.D. 900," he surmises in "Man Corn," and "found a suspicious but pliant population whom they terrorized into reproducing the theocratic lifestyle they had previously known in Mesoamerica."

In other words, the flowering of Chaco society that we have so long admired—in engineering, astronomy, architecture, art, and culture—was the product of a small, heavily armed gang from Mexico, who marched into the Southwest to conquer and brutalize.

Archeologists have long known that there was a strong Mesoamerican influence on the Anasazi. There was extensive prehistoric trade between Mexico and the Southwest. Turquoise from Santa Fe has been found throughout Mesoamerica, and tropical parrots and macaws brought up live from Mexico have been found in Chaco graves. Indeed, corn, pottery, and cotton originally came into the Southwest from Mexico. There is good evidence, Turner writes in "Man Corn," that Mexicans did in fact make the journey northward. He notes that a skull found in Chaco Canyon had intentionally chipped teeth—a decorative trait thought to be restricted almost entirely to central Mexico. He also details many parallels between Hopi and Toltec mythology.

A number of Pueblo Indian myths seem to support Turner's cannibalism theories. For example, a Pueblo legend collected by the anthropologist John Gunn and published in 1916 describes a drought and famine in the past which reduced the people "to such an extremity that they killed and ate their children or weaker members of the tribe."

The Navajo tell many stories about Chaco Canyon that paint a very different picture from the popular Anglo





view—stories that may also have been taken from the Pueblo Indians. While doing research for a book on the Navajo creation story, I was told a number of these stories. Chaco, some older Navajo say, was a place of hideous evil. The Chaco people abused sacred ceremonies, practiced witchcraft and cannibalism, and made a dreaded substance called corpse powder by cooking and grinding up the flesh and bones of the dead. Their evil threw the world out of balance, and they were destroyed in a great earthquake and fire.

**C**ANNIBALISM seems to have peaked in the Southwest at the time of the Chaco collapse because the system of terror, Turner theorizes, could not be sustained. Terror begat social chaos. "The evidence is that cannibalism—and this chaos that ensued—started in the north and it rippled southward and it wiped the Southwest out," Turner told me. In other words, cannibalism and social terror may have been a factor—perhaps the *missing* factor—in the Chaco collapse. Turner doesn't reject the standard explanations of the Chaco implosion: he hypothesizes that social pathology and cannibalism, combined with one or more of the standard theories (drought, erosion, disease, famine), sparked chaos, violence, and

the "near-extinction of the entire prehistoric Southwest population." The subsequent retreat of the Anasazi into inaccessible cliff dwellings and mesas now makes sense. The long-sought elusive enemy of the Anasazi was, in fact, themselves.

Turner gave me a paper he had just written and was planning to deliver at a conference. Entitled "The Darker Side of Humanity," the paper extends some of the ideas in the last chapter of "Man Corn." Turner writes, "I can easily imagine the cancerous random fractals of social chaos branching all over the Southwest, starting in the north with the collapse of Chaco and like a wildfire erupting here and there in hot spots of human violence. . . . Think of the hundreds of thousands of socially pathological killings and mutilations committed in central Africa these last few years. Think about Pol Pot."

Cannibalism was not "normal" behavior among the Anasazi, he argues, even if it was widespread. It was the product of a few socially pathological individuals who whipped up the emotions of their followers, like the chief of Awatovi who plotted the grim extinction of his own village. Turner compares such men as the Awatovi chief to Adolf Hitler, Genghis Khan, and Joseph Stalin.

This argument leads Turner into even stranger territory. In his paper he calls on archeologists to give up the time-honored "concept of culture." The problem with archeology is that it is a science of generalization. The archeologist digs a site and then extrapolates the findings into a description of a culture. The orientation of the archeologist is always toward matters like "What was usual and customary in this culture?" and "What was the norm?" There is no provision for abnormality, for the

charismatic or sociopathic individual—the deranged Great Man. "In my thirty-five years of teaching I have never heard of a graduate student specializing in archeology who had taken a course or a seminar in abnormal psychology," Turner writes. "Why should they? . . . The very idea of abnormal behavior is alien to Southwest archaeological thinking." He suggests replacing the paradigm of culture with a "Darwinian paradigm of evolutionary psychology" that "emphasizes identification of individuals and seeks to understand their actions wherever possible." Only through this paradigm shift, Turner asserts, will archeologists be able to understand the darker side of human nature in the archeological record.

#### PLACE OF GHOSTS

**O**N my last day with Turner, he decided to visit a cannibal locale in Monument Valley, straddling the border of Utah and Arizona.

We left the cool ponderosas of Flagstaff on a June morning. By three o'clock, we had arrived at the escarpment that looks down on Monument Valley—surely one of the most dramatic landscapes on earth. We descended into the valley on a rutted dirt road, our two cars kicking up cork-

screws of red dust, and after a few miles the Three Sisters came into view on the right, three spires of rock. According to a photograph that Turner had of the site—his only clue to where it was—it lay less than a mile from this valley landmark. As we bounced along the valley floor, the spires began to move into the alignment seen in the photograph.

Turner lurched off the road to follow a track in the bottom of a dry wash. We skirted the base of a large mesa, stopped, backtracked, and stopped again. Turner finally got out, squinting in the brilliant sunlight and clutching the photograph. "This is it," he said. "This is it, exactly."

We scrambled up the sandy rise above the wash. The site lay about twenty feet above the valley floor, on the talus slope of Thunderbird Mesa. It was a small patch of sand sheltered among giant plates of stone that had spalled from the cliff behind—a sheer wall of red sandstone four hundred feet high and streaked with glossy desert varnish. It was a breathtaking spot, commanding a sweeping view of Tse Biyi Flats, Rain God Mesa, the Three Sisters, Spearhead Mesa, and dozens of other buttes and mesas layered one against another, receding into vast distances. The afternoon sun was invading the valley, sculpting and modelling the buttes in crisp yellow light.

The site itself was covered with windblown sand and clumps of Indian rice grass and snakeweed. In the center lay a large, exquisite piece of a painted Anasazi pot, white with a black geometric design. Near the pot, the edge of a slab-lined hearth stuck up from the sand. The smashed, chopped, and burned bones of seven people had been found piled in this hearth. They were the remains of an old man and an old woman, a younger man, two teen-age girls, a third adolescent, of undetermined sex, and an infant. Turner believed that they had been ambushed, killed, mutilated, dismembered, and cooked right there, for the hearth seemed to have been custom-built for that purpose. After it had been used, the cracked and burned bones were left there in the fire pit and the site was abandoned.

Turner poked around the site, scowling and squinting, with two cam-

eras swinging from his neck. "Dogoszhi black-on-white," he said, glancing at the potsherd and referring to a common Anasazi pottery type. He took a careful series of photographs of the site and its surroundings.

"Do you think that potsherd was left at the time of the massacre?"

"Yes," he replied.

"Why here?"

"That's a bit of a mystery. It's not at anything. But I wouldn't be surprised if there was a Great House near here, and somebody got waylaid." He pointed to a wedge of green growth nearby. "There must be an intermittent spring there. That would be part of the story—perhaps this was a hunting camp for deer or antelope. Perhaps it was in wintertime. This is a nice place in the winter."

As we were tramping around the site, an old Navajo man came by in a pickup truck, which had two dazed, dust-covered tourists in the back. He was wearing a straw cowboy hat and was missing his front teeth. He stopped the truck.

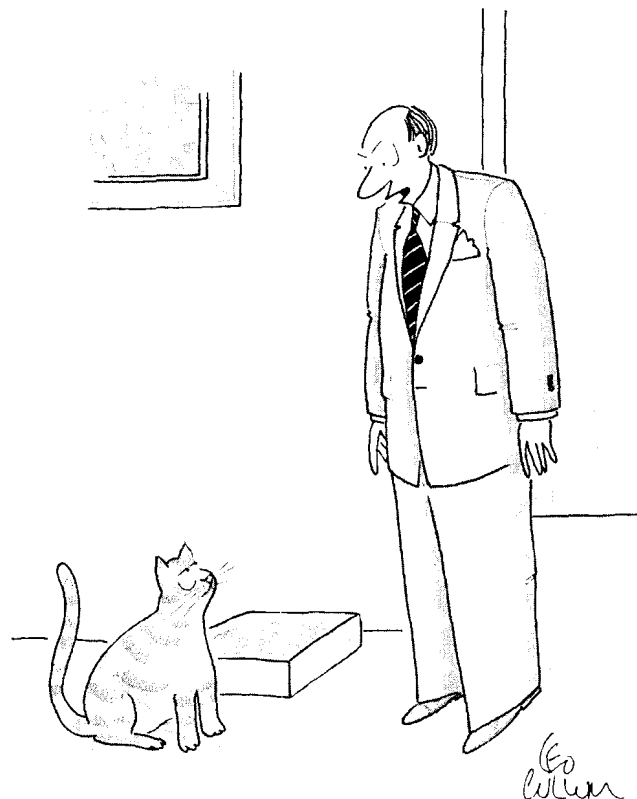
"Any Anasazi ruins around here?" Turner called out.

"Over there," the man said, his hand waving obscurely across thousands of

desolate acres. He seemed reluctant to talk more about the Anasazi, and drove on.

"That fellow was vague about ruins," Turner said to me. "But there must be some nearby. This is a *chindi* place"—a place of ghosts. He continued to move restlessly around the site—a skinny man with a potbelly and sticklike arms and legs—staring into every recess. Only the occasional click of his camera broke the stillness. I remembered my first interview with Turner, when I had asked him why he was investigating cannibalism. He had replied breezily, "I think it's interesting. It's fun. Here's an unsolved problem." As I looked at his face, I could see that he was indeed having a marvellous time.

Turner moved back to the car. I remained at the spot and looked around, trying to arrive at an understanding of what had happened here. The age and sex of the remains suggested that they might have been an extended family—two parents, three teen-age children, a son-in-law, and a little grandchild, perhaps. I thought of my own family. The light deepened. A grasshopper began scratching among the dry stones, and a faint breeze brought with it the scent of sun-warmed sand. ♦



"Never, ever, think outside the box."