New Women of the Ice Age

Forget about hapless mates being dragged around by macho mammoth killers. The women of Ice Age Europe, it appears, were not mere cavewives but priestly leaders, clever inventors, and mighty hunters

By HEATHER PRINGLE

THE BLACK VENUS OF DOLNI Vestonice, a small, splintered figurine sensuously fashioned from clay, is an envoy from a forgotten world. It is all soft curves, with breasts like giant pillows beneath a masked face. At nearly 26,000 years old, it ranks among the oldest known portrayals of women, and to generations of researchers, it has served as a powerful—if enigmatic—clue to the sexual politics of the Ice Age.

Excavators unearthed the Black Venus near the Czech village of Dolní Vestonice in 1924, on a hillside among charred, fractured mammoth bones and stone tools. (Despite its nickname, the Black Venus is actually reddish—it owes its name to the ash that covered it when it was found.) Since the mid-nineteenth century, researchers had discovered more than a dozen similar statuettes in caves and open-air sites from France to Russia. All were cradled in layers of earth littered with stone and bone weaponry, ivory jewelry, and the remains of extinct Ice Age animals. All were depicted naked or nearly so. Collectively, they came to be known as Venus figurines, after another ancient bare-breasted statue, the Venus de Milo. Guided at least in part by prevailing sexual stereotypes, experts interpreted the meaning of the figurines freely. The Ice Age camps that spawned this art, they concluded, were once the domain of hard-working male hunters and secluded, pampered women who spent their days in idleness like the harem slaves so popular in nineteenth-century art.

Over the next six decades, Czech archeologists expanded the excavations at Dolní Vestonice, painstakingly combing the site square meter by square meter. By the 1990s they had unearthed thousands of bone, stone, and clay artifacts and had wrested 19 radiocarbon dates from wood charcoal that sprinkled camp floors. And they had shaded and refined their portrait of Ice Age life. Between 29,000 and 25,000 years ago, they concluded, wandering bands had passed the cold months of the year repeatedly at Dolní Vestonice. Armed with short-range spears, the men appeared to have been specialists in hunting tusk-wielding mammoths and other big game, hauling home great mountains of meat to feed their dependent mates and children. At night men feasted on mammoth steaks, fed their fires with mammoth bone, and fueled their sexual fantasies with tiny figurines of women carved from mammoth ivory and fired from clay. It was the ultimate man’s world.

Or was it? Over the past few months, a small team of American archeologists has raised some serious doubts. Amassing critical and previously overlooked evidence from Dolní Vestonice and the neighboring site of Pavlov; Olga Soffer, James Adovasio, and David Hyland now propose that human survival there had little to do with manly men hurling spears at big-game animals. Instead, observes Soffer, one of the world’s leading authorities on Ice Age hunters and gatherers and an archeologist at the University of Illinois in Champaign-Urbana, it depended largely on women, plants, and a technique of hunting previously invisible in the archeological evidence—net hunting. “This is not the image we’ve always had of Upper Paleolithic macho guys out killing animals up close and personal,” Soffer explains. “Net hunting is communal, and it involves the labor of children and women. And this has lots of implications.”

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ANY OF THESE IMPLICATIONS make her conservative colleagues cringe because they raise serious questions about the focus of previous studies. European archeologists have long concentrated on analyzing broken stone tools and butchered big-game bones, the most plentiful and best preserved relics of the Upper Paleolithic era (which stretched from 40,000 to 12,000 years ago). From these analyses, researchers have developed theories about how these societies once hunted and gathered food. Most researchers ruled out the possibility of women hunters for biological reasons. Adult females, they reasoned, had to devote themselves to breast-feeding and tending infants. “Human babies have always been immature and dependent,” says Soffer. “If women are the people who are always involved with biological reproduction and the rearing of the young, then that is going to constrain their behavior. They have to provision that child. For fathers, provisioning is optional.”

To test theories about Upper Paleolithic life, researchers looked to ethnography, the scientific description of modern and historical cultural groups. While the lives of modern hunters do not exactly duplicate those of ancient hunters, they supply valuable clues to universal human behavior. “Modern ethnography cannot be used to clone the past,” says Soffer. “But people have always had to solve problems. Nature and social relationships present problems to people. We use ethnography to look for theoretical insights into human behavior, test them with ethnography, and if they work, assume that they represent a universal feature of human behavior.”

But when researchers began turning to ethnographic descriptions of hunting societies, they unknowingly relied on a very incomplete literature. Assuming that women in surviving hunting societies were homebodies who simply tended hearths and suckled children, most early male anthropologists spent their time with male informants. Their published ethnographies brim with descriptions of males making spears and harpoons and leaving these weapons at reindeer, walruses, and whales. Seldom do they mention the activities of women. Ethnography, it seemed, supported theories of ancient male big-game hunters. “When they talked about primitive man, it was always ‘he,’” says Soffer. “The ‘she’ was missing.”

Recent anthropological research has revealed just how much Soffer’s colleagues overlooked. By observing women in the few remaining hunter-gatherer societies and by combing historical accounts of tribal groups more thoroughly, anthropologists have come to realize how critical the female half of the population has always been to survival. Women and children have set snares, laid spring traps, sighted game and participated in animal drives and surrounds—forms of hunting that endangered neither young mothers nor their offspring. They dug starchy roots and collected other plant carbohydrates essential to survival. They even hunted, on occasion, with the projectile points traditionally deemed men’s weapons. “I found references to Inuit women carrying bows and arrows, especially the blunt arrows that were used for hunting birds,” says Linda Owen, an archeologist at the University of Tübingen in Germany.

The revelations triggered a volley of new research. In North America, Soffer and her team have found tantalizing evidence of the hunting gear often favored by women in historical societies. In Europe, archeobotanists are analyzing Upper Paleolithic hearths for evidence of plant remains probably gathered by women and children, while lithics specialists are poring over stone tools to detect new clues to their uses. And the results are gradually reshaping our understanding of Ice Age society. The famous Venus figurines, say archeologists of the new school, were never intended as male pornography: instead they may have played a key part in Upper Paleolithic rituals that centered on women. And such findings, pointing toward a more important role for Paleolithic women than had previously been assumed, are giving many researchers pause.

Like many of her colleagues, Soffer clearly relishes the emerging picture of Upper Paleolithic life. “I think life back then was a hell of a lot more egalitarian than it was with your later peasant societies,” she says. “Of course the Paleolithic women were pulling their own weight.” After sifting through Ice Age research for nearly two decades, Soffer brings a new critical approach to the notion—flattering to so many of her male colleagues—of mighty male mammoth hunters. “Very few archeologists are hunters,” she notes, so it never occurred to most of them to look into the mechanics of hunting dangerous tusked animals. They just accepted the ideas they’d inherited from past work.

But the details of hunting bothered Soffer. Before the fifth century B.C., no tribal hunters in
Asia or Africa had ever dared make their living from slaying elephants; the great beasts were simply too menacing. With the advent of the Iron Age in Africa, the situation changed. New weapons allowed Africans to hunt elephants and trade their ivory with Greeks and Romans. A decade ago, keen to understand how prehistoric bands had slaughtered similar mammoths, Soffer began studying Upper Paleolithic sites on the Russian and Eastern European plains. To her surprise, the famous mammoth bone beds were strewn with cumbersome body parts, such as 220-pound skulls, that sensible hunters would generally abandon. Moreover, the bones exhibited widely differing degrees of weathering, as if they had sat on the ground for varying lengths of time. To Soffer, it looked suspiciously as if Upper Paleolithic hunters had simply camped next to places where the pachyderms had perished naturally—such as water holes or salt licks—and mined the bones for raw materials.

Soffer began analyzing data researchers had gathered describing the sex and age ratios of mammoths excavated from four Upper Paleolithic sites. She found many juveniles, a smaller number of adult females, and hardly any males. The distribution mirrored the death pattern other researchers had observed at African water holes, where the weakest animals perished closest to the water and the strongest farther off. “Imagine the worst time of year in Africa, which is the drought season,” explains Soffer. “There is no water, and elephants need an enormous amount. The ones in the worst shape—your weakest, your infirm, your young—are going to be tethered to that water before they die. They are in such horrendous shape, they don’t have any extra energy to go anywhere. The ones in better shape would wander off slight distances and then keel over farther away. You’ve got basket cases and you’ve got ones that can walk 20 feet.”

To Soffer, the implications of this study were clear. Upper Paleolithic bands had pitched their camps next to critical resources such as ancient salt licks or water holes. There the men spent more time scavenging bones and ivory from mammoth carcasses than they did risking life and limb by attacking 6,600-pound pachyderms with short-range spears. “If one of these Upper Paleolithic guys killed a mammoth, and occasionally they did,” concedes Soffer dryly, “they probably didn’t stop talking about it for ten years.”

But if Upper Paleolithic families weren’t often tucking into mammoth steaks, what were they hunting and how? Soffer found the first unlikely clue in 1991, while sifting through hundreds of tiny clay fragments recovered from the Upper Paleolithic site of Pavlov, which lies just a short walk from Dolní Vestonice. Under a magnifying lens, Soffer noticed something strange on a few of the fragments: a series of parallel lines impressed on their surfaces. What could have left such a regular pattern? Puzzled, Soffer photographed the pieces, all of which had been unearthed from a zone sprinkled with wood charcoal that was radiocarbon—dated at between 27,000 and 25,000 years ago.

When she returned home, Soffer had the film developed. And one night on an impulse, she put on a slide show for a visiting colleague, Jim Adovasio. “We’d run out of cable films,” she jokes. Staring at the images projected on Soffer’s refrigerator, Adovasio, an archeologist at Mercyhurst College in Pennsylvania and an expert on ancient fiber technology, immediately recognized the impressions of plant fibers. On a few, he could actually discern a pattern of interlacing fibers—weaving.

Without a doubt, he said, he and Soffer were gazing at textiles or basketry. They were the oldest—by nearly 7,000 years—ever found. Just how these pieces of weaving got impressed in clay, he couldn’t say. “It may be that a lot of these [materials] were lying around on clay floors,” he notes. “When the houses burned, the walked-in images were subsequently left in the clay floors.”

Soffer and Adovasio quickly made arrangements to fly back to the Czech Republic. At the Dolní Vestonice branch of the Institute of Archeology, Soffer sorted through nearly 8,400 fired clay pieces, weeding out the rejects. Adovasio made positive clay casts of 90. Back in Pennsylvania, he and his Mercyhurst colleague David Hyland peered at the casts under a zoom stereomicroscope, measuring warps and wefts. Forty-three revealed impressions of basketry and textiles. Some of the latter were as finely woven as a modern linen tablecloth. But as Hyland stared at four of the samples, he noted something potentially more fascinating: impressions of cordage bearing weaver’s knots, a technique that joins two lengths of cord and that is commonly used for making nets of secure mesh. It looked like a tiny shred of a net bag, or perhaps a hunting net. Fascinated, Soffer expand-
ed the study. She spent six weeks at the Moravian Museum in Brno, sifting through the remainder of the collections from Dolní Vestonice. Last fall, Adovasio spied the telltale impressions of Ice Age mesh on one of the new casts.

The mesh, measuring two inches across, is far too delicate for hunting deer or other large prey. But hunters at Dolní Vestonice could have set nets of this size to capture hefty Ice Age hares, each carrying some six pounds of meat, and other furbearers such as arctic fox and red fox. As it turns out, the bones of hares and foxes litter camp floors at Dolní Vestonice and Pavlov. Indeed, this small game accounts for 46 percent of the individual animals recovered at Pavlov. Soffer, moreover, doesn’t rule out the possibility of turning up bits of even larger nets. Accomplished weavers in North America once knotted mesh with which they captured 1,000-pound elk and 300-pound bighorn sheep. “In fact, when game officials have to move sheep out west, it’s by nets,” she adds. “You throw nets on them and they just lie down. It’s a very safe way of hunting.”

In many historical societies, she observes, women played a key part in net hunting since the technique did not call for brute strength nor did it place young mothers in physical peril. Among Australian aborigines, for example, women as well as men knotted the mesh, laboring for as much as two or three years on a fine net. Among native North American groups, they helped lay out their handiwork on poles across a valley floor. Then the entire camp joined forces as beaters. Panning out across the valley, men, women, and children alike shouted and screamed, flushing out game and driving it in the direction of the net. “Everybody and their mother could participate,” says Soffer. “Some people were beating, others were netting or holding the net. And once you got the net on these animals, they were immobilized. You didn’t need brute force. You could club them, hit them any old way.”

People seldom returned home empty-handed. Researchers living among the net-hunting Mbuti in the forests of Congo report that they capture game every time they lay out their woven traps, scooping up 50 percent of the animals encountered. “Nets are a far more valued item in their panoply of food-producing things than bows and arrows are,” says Adovasio. So lethal are these traps that the Mbuti appear to have been ritually destroyed in secluded parts of the site.

Soffer doubts that the inhabitants of Dolní Vestonice and Pavlov were the only net makers in Ice Age Europe. Camps stretching from Germany to Russia are littered with a notable abundance of small-game bones, from hares to birds like ptarmigan. And at least some of their inhabitants whittled bone tools that look much like the awls and net spacers favored by historical net makers. Such findings, agree Soffer and Adovasio, reveal just how shaky the most widely accepted reconstructions of Upper Paleolithic life are. “These terribly stilted interpretations,” says Adovasio, “with men hunting big animals all the time and the poor females waiting at home for these guys to bring home the bacon—what crap.”

In her home outside Munich, Linda Owen finds other faults with this traditional image. Owen, an American born and raised, specializes in the microscopic analysis of stone tools. In her years of work, she often noticed that many of the tools made by hunters who roamed Europe near the end of the Upper Paleolithic era, some 18,000 to 12,000 years ago, resembled pounding stones and other gear for harvesting and processing plants. Were women and children gathering and storing wild plant foods?

Most of her colleagues saw little value in pursuing the question. Indeed, some German archeologists contended that 90 percent of the human diet during the Upper Paleolithic came from meat. But as Owen began reading nutritional studies, she saw that heavy meat consumption would spell death. To stoke the body’s cellular engines, human beings require energy from protein, fat, or carbohydrates. Of these, protein is the least efficient. To burn it, the body must boost its metabolic rate by 10 percent, straining the liver’s ability to absorb oxygen. Unlike carnivorous animals, whose digestive and metabolic systems are well adapted to a meat-only diet, humans who consume more than half their calories as lean meat will die from protein poisoning. In Upper Paleolithic times, hunters

4 New Women of the Ice Age
Owen began sifting for clues through anthropological and historical accounts from subarctic and arctic North America. These environments, she reasoned, are similar to that of Ice Age Europe and pose similar challenges to their inhabitants. Even in the far north, Inuit societies harvested berries for winter storage and gathered other plants for medicines and fibers. To see if any of the flora that thrived in Upper Paleolithic Europe could be put to similar uses, Owen drew up a list of plants economically important to people living in cold-climate regions of North America and Europe and compared it with a list of species that botanists had identified from pollen trapped in Ice Age sediment cores from southern Germany. Nearly 70 plants were found on both lists. “I came up with just a fantastic list of plants that were available at that time. Among others, there were a number of reeds that are used by the Eskimo and subarctic people in North America for making baskets. There are a lot of plants with edible leaves and stems, and things that were used as drugs and dyes. So the plants were there.”

The chief plant collectors in historical societies were undoubtedly women. “It was typically women’s work,” says Owen. “I did find several comments that the men on hunting expeditions would gather berries or plants for their meals, but they did not participate in the plant-gathering expeditions. They might go along, but they would be hunting or fishing.”

Were Upper Paleolithic women gathering plants? The archeological literature was mostly silent on the subject. Few archeobotanists, Owen found, had ever looked for plant seeds and shreds in Upper Paleolithic camps. Most were convinced such efforts would be futile in sites so ancient. At University College London, however, Owen reached a determined young archeobotanist, Sarah Mason, who had analyzed a small sample of charcoal-like remains from a 26,390-year-old hearth at Dolní Věstonice.

The sample held more than charcoal. Examining it with a scanning electron microscope, Mason and her colleagues found fragments of fleshy plant taproots with distinctive secretory cavities—trademarks of the daisy and aster family, which boasts several species with edible roots. In all likelihood, women at Dolní Věstonice had dug the roots and cooked them into starchy meals. And they had very likely simmered other plant foods too. Mason and her colleagues detected a strange pulverized substance in the charred sample. It looked as if the women had either ground plants into flour and then boiled the results to make gruel or pounded vegetable material into a mush for their babies. Either way, says Soffer, the results are telling. “They’re stuffing carbohydrates.”

Owen is pursuing the research further. “If you do look,” she says, “you can find things.” At her urging, colleagues at the University of Tübingen are now analyzing Paleolithic hearths for botanical remains as they unearth them. Already they have turned up more plants, including berries, all clearly preserved after thousands of years. In light of these findings, Owen suggests that it was women, not men, who brought home most of the calories to Upper Paleolithic families. Indeed, she estimates that if Ice Age females collected plants, bird eggs, shellfish, and edible insects, and if they hunted or trapped small game and participated in the hunting of large game—as northern women did in historical times—they most likely contributed 70 percent of the consumed calories.

Moreover, some women may have enjoyed even greater power, judging from the most contentious relics of Ice Age life: the famous Venus figurines. Excavators have recovered more than 100 of the small statuettes, which were crafted between 29,000 and 23,000 years ago from such enduring materials as bone, stone, antler, ivory and fired clay. The figurines share a strange blend of abstraction and realism. They bare prominent breasts, for example, but lack nipples. Their bodies are often minutely detailed down to the swaying lines of their backbones and the tiny rolls of flesh—fat folds—beneath their shoulder blades, but they often lack eyes, mouths, and any facial expression. For years researchers viewed them as a male art form. Early anthropologists, after all, had observed only male hunters carving stone, ivory, and other hard materials. Females were thought to lack the necessary strength. Moreover, reasoned experts, only men would take such loving interest in a woman’s body. Struck by the voluptuousness of the small stone, ivory, and clay bodies, some researchers suggested they were Ice Age erotica, intended to be touched and fondled by their male makers. The idea still lingers. In the 1980s, for example, the well-known...
American paleontologist Dale Guthrie wrote a scholarly article comparing the postures of the figurines with the provocative poses of Playboy centerfolds.

But most experts now dismiss such contentions. Owen’s careful scouring of ethnographic sources, for example, revealed that women in arctic and subarctic societies did indeed work stone and ivory on occasion. And there is little reason to suggest the figurines figured as male erotica. The Black Venus, for example, seems to have belonged to a secret world of ceremony and ritual far removed from everyday sexual life.

The evidence, says Soffer, lies in the raw material from which the Black Venus is made. Clay objects sometimes break or explode when fired, a process called thermal-shock fracturing. Studies conducted by Pamela Vandiver of the Smithsonian Institution have demonstrated that the Black Venus and other human and animal figurines recovered from Dolní Vestonice—as well as nearly 2,000 fired ceramic pellets that litter the site—were made from a local clay that is resistant to thermal-shock fracturing. But many of the figurines, including the celebrated Black Venus, bear the distinctive jagged branching splinters created by thermal shock. Intriguingly, the fired clay pellets do not.

Curious, Vandiver decided to replicate the ancient firing process. Her analysis of the small Dolní Vestonice kilns revealed that they had been fired to temperatures around 1450 degrees Fahrenheit similar to those of an ordinary hearth. So Vandiver set about making figurines of local soil and firing them in a similar earthen kiln, which a local archeological crew had built nearby. To produce thermal shock, she had to place objects larger than half an inch on the hottest part of the fire; moreover, the pieces had to be so wet they barely held their shape.

To Vandiver and Soffer, the experiment which was repeated several times back at the Smithsonian Institution—suggests that thermal shock was no accident. “Stuff can explode naturally in the kiln,” says Soffer, “or you can make it explode. Which was going on at Dolní Vestonice? We toyed with both ideas. Either we’re dealing with the most inept potters, people with two left hands, or they are doing it on purpose. And we reject the idea that they were totally inept, because other materials didn’t explode. So what are the odds that this would happen only with a very particular category of objects?”

These exploding figurines could well have played a role in rituals, an idea supported by the location of the kilns. They are situated far away from the dwellings, as ritual buildings often are. Although the nature of the ceremonies is not clear; Soffer speculates that they might have served as divination rites for discerning what the future held. “Some stuff is going to explode. Some stuff is not going to explode. It’s evocative, like picking petals off a daisy. She loves me, she loves me not.”

Moreover, ritualists at Dolní Vestonice could have read significance into the fracturing patterns of the figurines. Many historical cultures, for example, attempted to read the future by a related method called scapulimancy. In North America, Cree ceremonialists often placed the shoulder blade, or scapula, of a desired animal in the center of a lodge. During the ceremonies, cracks began splintering the bone: a few of these fractures leaked droplets of fat. To Cree hunters, this was a sign that they would find game if they journeyed in the directions indicated by the cracks.

Venus figurines from other sites also seem to have been cloaked in ceremony. “They were not just something made to look pretty,” says Margherita Mussi, an archeologist at the University of Rome-La Sapienza who studies Upper Paleolithic figurines. Mussi notes that several small statuettes from the Grimaldi Cave carvings of southern Italy, one of the largest troves of Ice Age figurines ever found in Western Europe, were carved from rare materials, which the artists obtained with great difficulty, sometimes through trade or distant travel. The statuettes were laboriously whittled and polished, then rubbed with ocher, a pigment that appears to have had ceremonial significance, suggesting that they could have been reserved for special events like rituals.

The nature of these rites is still unclear. But Mussi is convinced that women took part, and some archeologists believe they stood at the center. One of the clearest clues, says Mussi, lies in a recently rediscovered Grimaldi figurine known as Beauty and the Beast. This greenish yellow serpentine sculpture portrays two arched bodies facing away from each other and joined at the head, shoulders, and lower extremities. One body is that of a Venus figurine. The other is a strange creature that com-
bines the triangular head of a reptile, the pinched waist of a wasp, tiny arms, and horns. “It is clearly not a creature of this world,” says Mussi.

The pairing of woman and supernatural beast, adds Mussi, is highly significant. “I believe that these women were related to the capacity of communicating with a different world,” she says. “I think they were believed to be the gateway to a different dimension.” Possessing powers that far surpassed others in their communities, such women may have formed part of a spiritual elite, rather like the shamans of ancient Siberia. As intermediaries between the real and spirit worlds, Siberian shamans were said to be able to cure illnesses and intercede on behalf of others for hunting success. It is possible that Upper Paleolithic women performed similar services for their followers.

Although the full range of their activities is unlikely ever to be known for certain, there is good reason to believe that Ice Age women played a host of powerful roles—from plant collectors and weavers to hunters and spiritual leaders. And the research that suggests those roles is rapidly changing our mental images of the past. For Soffer and others, these are exciting times. “The data do speak for themselves,” she says finally “They answer the questions we have. But if we don’t envision the questions, we’re not going to see the data.”