More Cave Art Found in France

Engravings of fantasy animals with deformed heads and gaping mouths, a bison with a horse's head, the voluptuous profile of a woman: These are the surprises that greeted French cave art experts following last September's discovery of the latest *grotte*, in France's lush Dordogne Valley. Based on stylistic similarities to other French cave art, experts estimate that the drawings are 22,000 to 28,000 years old—not quite as ancient as the record holder, 32,000-year-old Grotte Chauvet, but still among the oldest cave art known.

French authorities managed to keep news of the Cussac Cave a secret until this month, so that they could first secure the site and put it under government protection. The first details are stunning. More than 150 incised drawings have been found so far, along with four burial sites filled with bones from seven humans, says prehistorian Norbert Aujoulat of the National Center for Prehistory in Périgueux, who heads the research team. The engravings, which include birds, mammoths, and a rhinoceros, are cut unusually deep into the relatively soft cave walls, giving them a stylistic vividness rarely seen in other caves. Some resemble images in other French caves dated to the Gravettian period, notes Jean Clottes, France's preeminent cave art expert. However, he says, the fantasy animals give the cave "a special originality. ... We can almost talk about a 'Cussac style.' "

Engravings are impossible to date directly. But results of radiocarbon dating of the skeletons, expected early next month, may tell the story. Researchers have found no pottery or other artifacts with the bones, which argues for great antiquity. On the other hand, human remains are rarely found in decorated caves, and one skeleton is quite well preserved, suggesting that it might be more recent. If the remains are as old as the engravings, Clottes says, "that would be great."

Gravettian Venus?

Bison with horse head.

Sperm-Free Fertilization

In a bizarre reproductive biology advance, researchers have fertilized mouse eggs with cells from another mouse—in place of sperm. The work is the first to show that embryos can develop from the union of an intact egg and a nonreproductive cell. But don't discount the importance of sperm just yet—it's not clear whether any of the early-stage embryos could develop further.

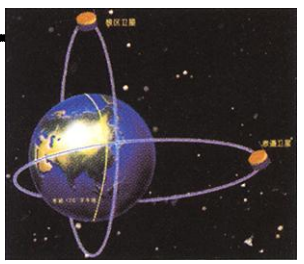
Just before normal fertilization, each of an egg's chromosomes consists of two identical copies, each called a chromatid. After the sperm enters the egg, the egg ejects one of the copies, while the other combines with the sperm's half-complement of genetic material to form a complete genome. In past experiments, however, scientists have shown that immature sperm that contain a full set of genetic material can spark normal development, meaning the egg must be able to expel two extra sets of chromosomes.

Fertility researchers Orly Lacham-Kaplan and Rob Daniels of Monash University in Melbourne, Australia, wondered if they could use other cells that also have two copies of each chromosome to fertilize an egg. The answer appears to be yes, Kaplan told a meeting of the European Society of Human Reproduction and Embryology in Lausanne, Switzerland, earlier this month. But success was slim. Just 13 of the 725 mouse eggs that they injected with nuclei from other cells eventually formed blastocysts—hollow balls of cells that normally implant themselves in the uterus.

Producing a handful of blastocysts is a long way from producing live offspring, cautions cloning pioneer Ian Wilmut of the Roslin Institute outside Edinburgh, Scotland. If the Australian team had tried implanting the embryos, he says, past experience suggests that they would have been lucky to have any survive. "There could still be chromosome damage and breakage," he says, that would interrupt development at a later stage.

Inner Life on the Big Screen

X-ray dog chases x-ray biker in a scene from a new giant-screen IMAX movie, *The Human Body*. The British-U.S. production, 3 years in the making, combines medical imaging, advanced cinematic techniques, and computer wizardry for a 40-minute inside look at "the everyday biological processes that keep us ticking." The film premieres in London and Baltimore in October.



East of ESA

China's budding space program is embarking on its first cooperative international project: the European Space Agency (ESA) and the Chinese National Space Administration this month signed an agreement to collaborate on a Chinese mission to study Earth's magnetic environment.

China's Double Star mission comprises two small satellites, one in an equatorial orbit and the other circling the poles (above), which will complement ESA's four-satellite Cluster mission, launched last summer. ESA has agreed to hand over 10 spare Cluster instruments worth $6.8 million in exchange for sharing the data. The satellites will be launched in late 2002 and early 2003.

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