

RANDOM SAMPLES

Edited by Constance Holden



A Rhino First

Stone Age art? Nope, it's a 3D ultrasound preview of the first rhinoceros to be created by artificial insemination (AI). Due next August, it's the offspring of a white rhino couple at the Budapest Zoo that received a bit of help from AI expert Thomas Hildebrandt of the

Institute for Zoo and Wildlife Research in Berlin and colleagues. Hildebrandt says attempts to breed rhinos in captivity have been largely unsuccessful: Sharing close quarters is apparently a turnoff for the beasts, whose normal mating activities involve a fair dose of aggression. An estimated 11,000 white rhinos remain in the wild. The team hopes to repeat the success with captive northern white rhinos, a handful of which still roam in the war-torn Democratic Republic of the Congo.

Men on the Move

The long history of human migrations is difficult to discern, but these movements leave traces in our genes. Now a new study shows a sex difference in mobility, with

Image not available for online use.

men having covered more ground.

Researchers had found that across the world's populations, mitochondrial DNA (mtDNA)—which is passed along by mothers—is more homogeneous than the DNA of the male-only Y chromosome. This fact suggested that women have spread their genes farther than men have, an argument supported by the fact that in many cultures, brides move to their new husband's home.

But some geneticists have argued that the sequences chosen might not be comparable. To help settle the debate, evolutionary geneticist Michael Hammer and colleagues at the University of Arizona, Tucson, analyzed regions of mtDNA and the Y chromosome thought to mutate at the same rate. Using data from 389 men around the world, they found about the same amount of variation in both types of DNA, indicating the same degree of mix-

ing for both sexes, as reported in a paper published online in *Nature Genetics* on 19 September. But Hammer argues in another recent paper that for much of our history, fewer men than women became parents. So to achieve the mixing seen in the Y chromosome, the reproducing males must have traveled farther than their female counterparts. Although that makes sense given the historic male lead in wars and exploration, "this is the first genetic evidence" for it, says Hammer.

Evolutionary geneticist Henry Harpending of the University of Utah in Salt Lake City agrees that the genetic regions Hammer analyzed are more appropriate to the question than those used in previous studies. "They did an excellent job," he says.

High-Power MRI

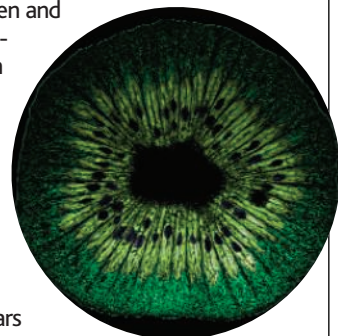
The largest magnet ever constructed for imaging purposes is now in operation at the University of Illinois, Chicago's Center for Magnetic Resonance Research. Researchers hope the 9.4-tesla system, three times as

powerful as those currently in use, will probe deeper into the working human brain than ever before.

Magnetic resonance images (MRIs) are produced by powerful magnetic fields and radio waves that detect proton densities in living tissue. Brain activity can also be tracked through changes in blood oxygen levels, but these provide only a delayed and indirect measure of neural activity.

The new system can detect signals from a variety of elements including sodium, phosphorus, carbon, nitrogen, and oxygen and

will provide researchers with a direct window into cellular metabolism, says center director Keith Thulborn. He says sodium imaging appears particularly promising at



High-power image of kiwi.

separating living from dead brain tissue in patients with tumors or stroke damage. The system can also track cognitive processes by detecting metabolic changes. "We can image the actual formation of thought rather than what follows 5 seconds later," says Thulborn.

Although he calls the project "very exciting," Gary H. Glover, director of the Lucas Center for Magnetic Resonance Spectroscopy and Imaging at Stanford University, cautions that users face a host of technical challenges, including finding ways to image the whole body.



Smithsonian Takes to the Water

A splashy Ocean Hall (artist's rendering, left) will be part of the Smithsonian Institution's new \$60 million Ocean Science Initiative. Construction is to begin at the National Museum of Natural History this fall, with a grand opening scheduled for 2008. The National Oceanic and Atmospheric Administration is contributing \$16 million to the project, which will feature a living coral reef and an "immersion theater" to take visitors down to the briny depths. The initiative will coordinate the hall with a new Center for Ocean Science and a fancy new Ocean Web Portal (see www.mnh.si.edu/ocean).