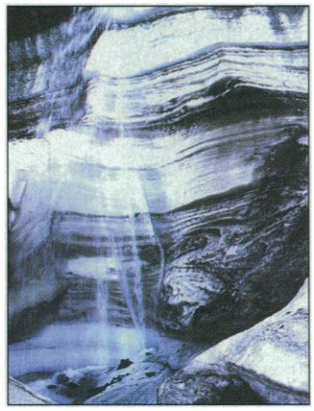
Cool DNA

Scientists say they have, for the first time, extracted DNA from ancient ice core samples in northern Greenland. The success may usher in a hunt for microbes trapped in ice around the world.

A team led by evolutionary biologist Peter Arctander of Copenhagen University used the polymerase chain reaction (PCR) to amplify fragments of a well-characterized ribosomal gene in ice cores dated to 2000 and 4000 years ago. After sequencing the recovered fragments, they compared them to known sequences in a database and found that the ice cores held the remains of a surprising diversity of lifeforms: at least 57 distinct organisms, including fungi, algae, protists, and a class of conifer, they report in the 6 July issue of the *Proceedings of the National Academy of Sciences*.

"No one expected such a variety of fungi to be present," says Andrea Gargas of the University of Wisconsin, Madison, a specialist on fungal DNA. "You always think of the [arctic] environment as a bit more sterile because it's so remote and because of the lack of nutrients." And there's more to come, says Arctander: So far they've only toted up the eukaryotic organisms—those with nuclei. The number of bacterial species, he says, should be far greater.

The study of ancient life in ice cores mostly has been limited to the identification of plant pollen and spores, but PCR has opened up a wealth of new possibilities, says Arctander. Members of his team have further probes planned, including a look at the DNA of plant material in 6000-year-old Greenland ice, to see what was available at the time when people are thought to have first migrated there from Canada.



Greenland ice strata.

CREDIT: (TOP) ANDERS HANSEN AND ESKE WILLERSTEV

Animal Rights In Academe

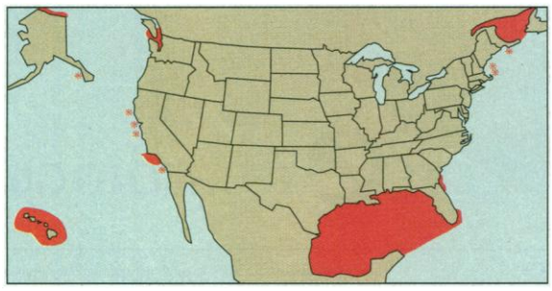
Animal rights activists are applauding two Ivy League coups: Peter Singer, the father of the animal rights movement, joined the Princeton faculty this month as professor of bioethics at the University Center for Human Values. And Harvard Law School will feature a new course next spring, "Animal Law," to be taught by veteran animal rights attorney Steven Wise.

Harvard signed up Wise, former head of the Animal Legal Defense Fund in California, as an adjunct professor after student ALDF members collected more than 200 signatures on a petition supporting the class. Wise says his course, which he has taught for 10 years at the University of Vermont, will explore "whether nonhuman animals should have legal rights, and if so, which species and what rights." Wise argues for rights to "bodily integrity and bodily liberty" for chimps and bonobos in a forthcoming book, *Rattling the Cage: Toward Legal Rights for Animals*.

Singer, author of the 1975 book *Animal Liberation*, has said that in some cases animals' lives should take precedence over humans'. Rutgers University law professor Gary Francione, who teaches a course on animal rights, says he is pleased by the appointment: "It legitimizes the subject to some degree." Others are not so thrilled. But, says University of Pennsylvania neuroscientist and veterinarian Adrian Morrison, himself a target of animal activists, "the more the bizarreness of [Singer's] views is known the better."

Run Noisy, Run Deep

There's a lot of sound running around the ocean—especially because sound travels five times faster, and much farther, underwater than through air. What is the rise in undersea noise doing to sea animals, many of which rely on sound for avoiding danger and finding food and mates? The Natural Resources Defense Council, which put together this map of sound hot spots around the U.S., says that sonar disruptions from shipping, military exercises, pingers, and even research will cause an "environmental shipwreck" absent new measures, such as adoption of "quiet ship" technologies. The report, "Sounding the Depths," is at www.nrdc.org.



Crème de la Crème

A Chinese sperm bank that hopes to get its deposits from the scientific and professional elite provides the latest battleground between traditional Communist Party values and free market entrepreneurship.

The Notables' Sperm Bank was set up by Chengdu's Municipal Family Planning Technical Guidance Agency, which has operated a successful sperm bank (they boast a pregnancy rate of 60% from their product) since 1986, says director Huang Ping.

Now infertile couples are getting choosier, says Huang: They want babies who are smart as well as healthy. So the agency resolved to set up a separate bank for elite sperm.

Donors are divided into three categories: intellectuals with at least a master's degree; top businessmen; and successful artists, entertainers, and athletes. So far most are in the first category, with many still pursuing their master's degrees, says Huang. She declined to disclose numbers or prices, although she acknowledges couples will pay a premium for upper-crust genes.

Some Chinese scientists find the new sperm bank unsettling. Yang Huanming, director of the Human Genome Center at the Chinese Academy of Sciences in Beijing, says he thinks it is "totally futile." If the goal is to improve the quality of the population, he says, the government should instead improve education and maternal health. An official of the State Family Planning Commission in Beijing says the bank "is not a worthy operation but simply oriented to make commercial gains."