

Briefings

edited by CONSTANCE HOLDEN

Uncle Sam Needs Indiana Jones

The riches of the 2000-year-old Moche tombs in the Sipan region of Peru are so alluring that archeologists have been competing for years with bands of armed looters for the gold, copper, and silver artifacts that make the sites the richest—and sometimes most dangerous—in the Western Hemisphere. The grave robbing has become so destructive of cultural treasures that the U.S. government this month issued an emergency ban on the import of Moche artifacts into the United States—only the third such measure ever approved.

"We are appalled by the desecration of the Sipan region by looters," says Michael H. Lane, deputy director for the Customs Service. The pillage, he points out, has undercut archeologists' efforts to study the Moche, a little understood people who lived along a 220-mile stretch of desert coast inhabited by the Incas 1200 years later.

The United States Information Agency imposed the ban at the request of the Peruvian government, which says the looters are encouraged by the huge demand for Moche artifacts from U.S. and other for-

eign art dealers. Lane says the smuggling operations are comparable in sophistication to those of an international drug ring. The new get-tough strategy, which has included the arrest of a California art dealer who was importing Moche artifacts, "will be absolutely worthless unless other countries participate" in banning the artifacts," says USIA director Bruce Gelb.

Similar emergency import restrictions have been placed by the United States on ancient Andean textiles from Bolivia and on ceramic and stone artifacts from El Salvador's Cara Sucia region. Canada and Guatemala are also asking the United States to ban artifacts coming from their countries.

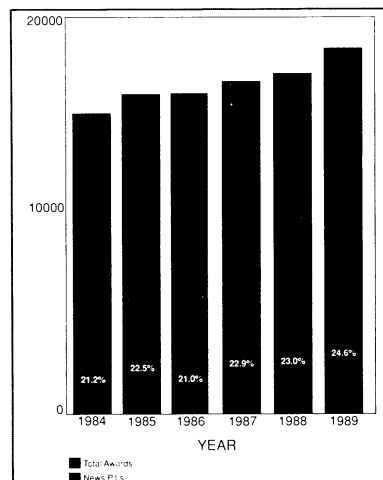
The Rise of the Ninja Chipmunk

Renowned University of Colorado paleontologist Robert Bakker has unearthed support for that favorite 1960's dictum "smaller is better." Some 65 million years ago, when the giant killer asteroid (as many believe) wiped out the macro-dinosaurs all of us have come to love, the only things left to inherit the earth were mini-creatures such as the turtles, frogs, and mammals.

Now, it appears that 65 million years before the final extinction, at the beginning of the Cretaceous period, a remarkably similar pattern occurred. Recent excavations by Bakker and his colleagues at the Breakfast Bench formation in central Wyoming suggest that, some 130 million years ago, an older generation of giant dinosaurs such as brontosaurus and stegosaurus were wiped out by an as

New Investigator Awards at NSF.

Conventional wisdom has it that when money is tight, young scientists with no research track record will have the toughest time winning grants. Some people are complaining that's what's happening at the National Science Foundation, but the numbers say different. Despite hard times, the number of scientists receiving their first funding awards from the agency has steadily grown as a percentage of total awards. NSF director Erich Bloch says the foundation has taken particular pains to give a break to people just starting their research careers.



yet unidentified force, only to be replaced by a wholly new miniature fauna. The Breakfast Bench fossils, which were laid down about that time in a fern swamp, offer a fascinating glimpse of life in the aftermath. Among them:

■ **Drinker** nisti, the only common dinosaur of the period. Two feet long and weighing 20 pounds, it was a plant-eater with big feet adapted for walking on the soggy ground.

■ **Uluops**, a "high-tech" turtle with a skull architecture more advanced than any Jurassic predecessor.

■ **Foxraptor**, a tiny, insect-eating mammal found nowhere

else.

■ **Zofiabaatar**, a ferocious 8-ounce mammal that Bakker nicknames "the Mutant Ninja Chipmunk." Although it belonged to a family of insect- and plant-eaters, this creature developed mouse-like front teeth for killing lizards and other small prey and saw-edged rear teeth for chopping them

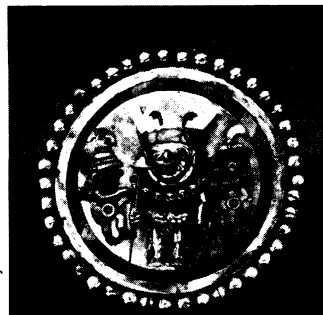
up. "The Mutant Ninja Chipmunk apparently made an evolutionary hard right turn to become the terror of the underbrush," says Bakker.

Laser Cut-Up

Never say that physicists and chemists don't have a sense of humor. They do. It's just a little strange.

Optics & Photonics News marked the first of April by publishing "Observation of the 0-femtosecond pulse" by Wayne Knox of AT&T Bell Laboratories, Robert Knox of the University of Rochester, John Hoose of Milton Roy Inc., and Richard Zare of Stanford. Noting that researchers have been able to make shorter and shorter laser pulses over the past decade—30 femtoseconds (10^{-15} seconds) in 1982, 16 femtoseconds in 1984, 8 femtoseconds in 1985, and 6 femtoseconds in 1987—they announced the natural conclusion: the production of a laser pulse that lasted 0 femtoseconds, or literally no time at all.

With a little more work, the team reported, they were able to produce pulses with negative duration and negative energy. "We are investigating possible violations of thermodynamics," they deadpanned in the article.



Tomb treasure. This thumb-sized gold and turquoise warrior, from the tomb of a Moche warrior priest, is said to be one of the finest pieces of jewelry found in pre-Columbian America. It was discovered by Peruvian archeologist Walter Alva.

"Somebody's pulses must be getting longer."

Wayne Knox came up with the idea for the paper and recruited the other authors for their name value: he refers to his project as a Knox-Knox-Hoose-Zare joke.

HUGO Gets \$1 Million from Hughes

The Howard Hughes Medical Institute has awarded a \$1-million grant to the Human Genome Organisation (HUGO). The 4-year grant will help pay for programs and operations at HUGO's Americas office in Bethesda, Maryland, as well as related international activities including council meetings, workshops, and a scientist exchange program.

The new donation comes on top of HUGO's first big grant, from the Wellcome Trust in London, which in February gave \$350,000, the first installment of a 3-year donation.

HUGO's president Walter Bodmer, director of research at London's Imperial Cancer Research Fund, says "I'm absolutely delighted" with the Hughes grant, which "reflects HHMP's support for the Human Genome Project as a whole." Hughes donated \$100,000 in services in 1989.

Other Hughes news: Irving S. Shapiro, former chief at Du Pont, has been elected to succeed George W. Thorn as chairman of the trustees.

Welch Award

Two pioneers in physical chemistry have won this year's prestigious Welch Award in Chemistry. The international award, which carries with it \$225,000, will be given to William von Eggers Doering, emeritus professor at Harvard, and John D. Roberts, emeritus professor at the California Institute of Technology, at a ceremony in Houston to be held on 22 October.

Roberts is cited for "initiat-

The PHS's Animal Offensive

In the category "Scientists Fight Back," two offices are currently being set up to promote science education and to coordinate policies and develop information on the use of animals in research.

Frederic Goodwin, head of the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA), is the main figure behind the new initiatives.

One is the Office of Animal Research in the Public Health Service. Headed by Louis Sibal of the National Institutes of Health, it will pursue a variety of recommendations proposed by a committee set up last year to advise Health and Human Services Secretary Louis Sullivan on animal issues. It will be responsible for coordinating ADAMHA and NIH policy and providing information on animal research to address public, congressional, and scientific concerns. It will also have a hotline for researchers targeted by animal activists.

Broader in scope will be the Office of Science Education in ADAMHA, which will be promoting science education in schools and with the general public. That will include a grants program to enable investigators to spend part time

in public science education activities. The office will also take over a contract that has been already let to a private firm to develop materials for college and precollege science education.

Goodwin says his agency has committed up to \$2 million to the education office for fiscal 1990, and he expects the figure to go up to \$25 million by fiscal 1992. He hopes for contributions from NIH that will be "comparably larger."



Fred Goodwin.
ADAMHA chief says academic values are under siege.

In a separate development, ADAMHA is now notifying its grantee institutions that grants can't be returned to the government in response to political pressure. If that happens, all PHS grants to that institution will be reviewed. That's to prevent what happened at Cornell University 2 years ago (see *Science*, 6 January 1989, p. 17) when a grant approved by the National Institute on

Drug Abuse was returned following pressure from animal activists.

Goodwin sees all these initiatives as part of a broad response to deeper issues that animal activism has highlighted: the lack of interest in science by the young and the erosion of intellectual values both within and outside academia. "The history of science might turn out to thank the animal rights movement for waking us up" to these problems, he says.

Budding Biologist Says No to Frog Lab



Jennifer Routh.
Antidissectionist?

A sample of the kind of thinking Fred Goodwin wants to straighten out has been suppoed by a prospective biochemistry major who doesn't want to dissect preserved frogs in biology class.

Jennifer Routh of Riverhead, Long Island, a vegetarian sophomore at the State University of New York at Stony Brook, is suing the university, claiming that the requirement violates her First Amendment rights.

A SUNY spokesman says students are advised at the beginning of the term that the introduc-

tory course, required for biology and biochemistry majors, involves the dissection of simple organisms including earthworms, starfish, and sea urchins. But Routh drew the line at frogs. She also rejected the option of observing while a partner did the dissecting.

There have been a number of cases in which high school students have sued over animal dissection requirements. But Routh's lawyer, Gary Francione of Rutgers University College of Law, says this is the first case involving a university.

Francione is already involved in other animal-related actions involving SUNY Stony Brook. Last spring, he represented activist groups in a suit that resulted in the release of 700 research applications by the university's animal care and use committee (see *Science*, 4 August 1989, p. 472). The university is still appealing that case. A spokesman says the university will be filing a response to Routh's suit in a couple of weeks.

ing and developing many of the important techniques of modern physical organic chemistry," including the use of isotopic labeling in studies of organic reaction mechanisms. Doer-

ing developed new methods of synthesis in organic chemistry, and participated in the first total synthesis of quinine in the 1940s, which "is credited with ushering in the era of natural

product synthesis."

The Welch Foundation, founded by businessman Robert A. Welch, funds chemistry research in Texas colleges and universities.