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 foreign 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.

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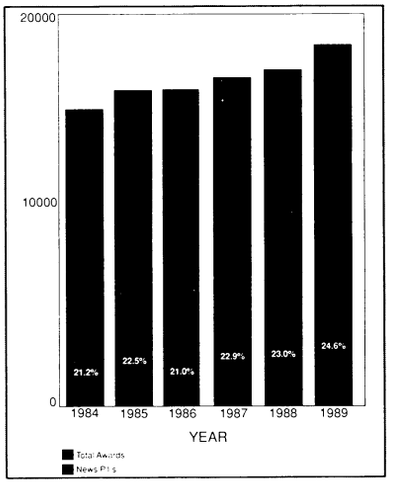
Tomb treasure. *This thumb-sized gold and turquoise warrior, from the tomb of a Moche warrior priest, is said to be one of the finest pieces of jewelry found in pre-Columbian America. It was discovered by Peruvian archeologist Walter Alva.*

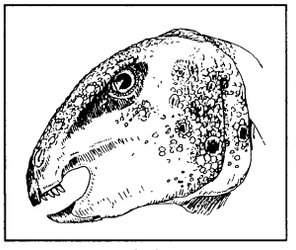
New Investigator Awards at NSF. *Conventional wisdom has it that when money is tight, young scientists with no research track record will have the toughest time winning grants. Some people are complaining that's what's happening at the National Science Foundation, but the numbers say different. Despite 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.*



The Rise of the Ninja Chipmunk

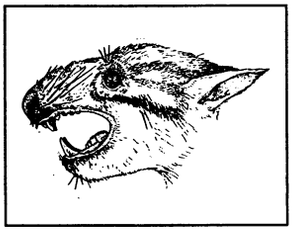
Renowned University of Colorado paleontologist Robert Bakker has unearthed support for that favorite 1960's dictum "smaller is better." Some 65 million years ago, when the giant killer asteroid (as many believe) wiped out the macro-dinosaurs all of us have come to love, the only things left to inherit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



Drawings by Robert Bakker

Drinker



Zofiabaatar

■ **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.