RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Oldest Dino Embryo Unearthed

Portuguese scientists say they have discovered the world's oldest dinosaur embryo. Found in 140-million-year-old sediments, the Jurassic-era embryo appears to be twice as old as any yet discovered and is the first dino embryo to be found in Europe.

The find was announced in Portugal last week by Philippe Taquet, director of the paleontology laboratory of the National Museum of Natural History in Paris. "Jurassic Park is now in Lourinha," he says, referring to the seaside town 60 kilometers north of Lisbon where the eggs were found. The area has been known for decades for its wealth of Jurassic fossils.

Taquet says the embryo was in a cache of eggs found over the past 3 years by two amateur paleontologists, Oratio and Isabel Mateus, who have a small dinosaur museum in Lourinha. Last year, Taquet visited the site and confirmed that one of the crushed eggs, which was about 18 centimeters long, contained an embryo. He identified a variety of tiny bones from it, including a 1-millimeter-long vertebra. Taquet says he suspects it is a theropod, a three-toed, meat-eating dino, as theropod fossils have been found in the vicinity. He has collected for analysis chunks of material containing about 100 eggs. Some will be scanned to look for embryos. (Apparently, many dino eggs were unfertilized.) A report of the find is to be published in the French journal *Contes Rendus de l'Académie de Science*.

Paleontologists are excited about the discovery. "If the embryo is identifiable," says Mark Norell of the American Museum of Natural History in New York City, "that is really significant, because it allows us to tie specific dinos to specific types of eggs." There are currently only a few dozen known dinosaur embryos, representing five different species. Virtually all are from the Cretaceous era 70 million years ago.

Academy Joins Debate Over DNA Patents

Riled by the government's expansive policy toward patenting human DNA, academic biologists are calling on Bruce Lehman, director of the U.S. Patent and Trademark Office (PTO), to be more restrictive. The latest appeal comes from the National Academy of Sciences. In a 19 June letter, Bruce Alberts, the academy's president, writes that he is worried about the PTO's stated willingness to grant patents on mere fragments of human genes—particularly those known as expressed sequence tags (ESTs), which can be used to identify full-length genes. ESTs are relatively easy to capture, but reveal little about the biology they control. Alberts fears that patenting ESTs—a few have been patented so far and thousands are pending—could create a tangled maze of property rights and impede research. "It would be sad indeed if patent policies diminished the pace of discovery or wealth of practical applications," he wrote. He asked Lehman to consider granting DNA patents only when "real world" applications are described, or detailed information about the gene is supplied.

This is the second such high-level appeal Lehman has received. In March, Harold Varmus, director of the National Institutes of Health, fired off a similar missive after a PTO official gave a speech favoring patents on ESTs as diagnostic or research probes (*Science*, 11 April, p. 187). Varmus argued that such a policy might block patents on more important discoveries, such as complete genes, and thus stifle investment in gene-based therapies.

Lehman has told Varmus that PTO treats EST patent applications like any other applications, and expects to grant patents only for well-defined uses such as chromosome mapping, tissue typing, or gene tagging. He hasn't answered Alberts yet. But, says one PTO official, "this debate is not going to die."

Tropical Biologist Wins Kyoto Prize

Calling him the "world's foremost pioneer in the field of tropical biology," the Inamori Foundation has announced it will award this year's Kyoto Prize in basic science, worth 50 million yen ($430,000), to University of Pennsylvania biologist Daniel Hunt Janzen.

Janzen, 58, is best known for his conservation efforts in Costa Rica, where he spends much of each year. But the prize also honors almost 4 decades of work, including his study of the symbiotic relationship between ants and acacia trees, his hypothesis that predation spurs biodiversity (predators tend to prey on more populous species, giving weaker ones more opportunities to flourish), and his study of insect-plant pollination.

Janzen says he'll put the prize money into the Guanacaste conservation area in Costa Rica. "We ... find it ... encouraging that the mix of conservation biology, biodiversity development, and just plain natural history that we do is regarded with such enthusiasm by an international prize committee," he says.

Jellyfish Light Up Mice

Scientists in Japan have implanted into mice a gene responsible for making jellyfish luminesce. The procedure, they say, offers a valuable tool for marking genes and tracking various types of cellular activity in organisms.

Osaka University spermatologist Masaru Okabe and colleagues at Osaka's Research Institute for Microbial Diseases added a form of a gene for green fluorescent protein (GFP) from the jellyfish *Aequorea victoria* into mice, producing animals that are green through and through when exposed to blue light. "It's very beautiful," Okabe says. The gene had previously been transferred into fruit flies and zebrafish, but not mammals.

In other bioluminescent techniques, such as the use of luciferase from fireflies, a substance has to be added to "turn on" the affected cells. But that can produce undesired side effects, says Ken-ichi Yamamura, a professor of developmental genetics at Kumamoto University's School of Medicine. "With the GFP, it glows on its own" (*Science*, 27 June, p. 1989). A report on the achievement appeared in the 5 May issue of *FEBS Letters*, published by the Federation of European Biochemical Societies.

MASARU OKABE

Mice aglow. Littermates in regular light *(top)*; transgenic ones shimmer in blue light *(bottom)*.

Scientists see a role for green mice in a wide range of research. GFP-marked cancer cells could be injected into normal mice (or unmarked cancer cells into green mice), and their fate tracked. Or GFP-marked bone marrow could help scientists watch how transplanted marrow interacts with the host's immune system.