# RANDOM SAMPLES

edited by CONSTANCE HOLDEN

## Athenian Plague Probe

A mass grave containing at least 130 ancient Athenian corpses—discovered last year during the construction of an Athens subway line—may cast light on the cause of the mysterious Plague of Athens in about 430 B.C.

Patrick E. Olson, an epidemiologist at the Naval Medical Center in San Diego, recently began seeking permission to study samples from the Athenian remains to test a hypothesis that he and three collaborators made last spring—that the ancient wartime plague, which has puzzled scholars for centuries, was caused by the deadly Ebola virus (*Science*, 14 June, p. 1591). The group based its theory in part on contemporaneous descriptions of symptoms. But testing human remains from the period for Ebola DNA seemed impossible. "The area around Athens has been civilized for 3000 years, and we presumed that ... anything dated to the plague period would have been destroyed and rebuilt many times over," says Olson.

The newly discovered burial ground, containing the remains of 130 to 150 bodies, lies in the city's Kerameikos cemetery, which was used mainly in the 5th century. Funerary offerings, chiefly vases, allowed scholars to date the burial to 430 to 429 B.C.—smack in the middle of the plague. "The discovery, if indeed corresponding to a mass burial of the Athenian plague, is very significant," says Demetrius U. Schilardi, an Athens- and Rome-based archaeologist who is cooperating with Olson.

Scientists don't have much experience isolating DNA from such old specimens. But Olson says the Ebola virus replicates so widely in human tissues that it shouldn't be hard to detect. Pathologists will be able to obtain genetic material if the longer bones still contain marrow. Organs would be better yet, because they can also be examined under a microscope.

If he obtains approval from authorities overseeing the archaeological excavations, Olson hopes to find a pathologist in Greece to assess how many bodies are testable. Then, tiny samples from a small selection of bodies could either be tested in Greece or flown to U.S. labs.

A. SICREE

**Sucking up meteorites?** Miners' magnets may collect fossil meteorites along with scrap metal.

## Mining for Meteorites

This is the season when meteorite specialists scour the featureless white surface of Antarctica for meteorites. But geologists at Pennsylvania State University are launching a meteorite search closer to home—in mines.

Andrew Sicree, a doctoral student and curator of Penn State's Earth and Mineral Sciences Museum, believes that deposits of coal, limestone, and trona (a rock used in glassmaking) might be sources of meteorites that landed on Earth millions of years ago, when these sedimentary rocks were forming. Most iron meteorites that land on the surface rust away within a few hundred years. But Sicree says they stand a chance of surviving if embedded in these rocks, because fluids in the sediments react with the iron to form a protective rind of pyrite or iron oxide. Sicree's reasoning is sound, says Guy Consolmagno, an astronomer from the Vatican Observatory who hunts meteorites in Antarctica: "It's worth checking to see if they're there."

Many mines suspend powerful magnets above their conveyor belts to remove "tramp metal" from the rock before it damages the crushers. Most of that metal is humanmade, ranging from pickaxes to lunch boxes, but Sicree thinks the magnets may be collecting iron meteorites too. So, he says, "we can search this rock on the cheap." At least 20 mines have agreed to sort through the metal for "unknown or rocklike particles" and send any unusual specimens to Penn State for analysis.

The campaign has yet to yield its first meteorite, but Sicree believes it has a good chance of success. Assuming meteorites were falling at the same rate as today back when coal beds were forming, he calculates that an operation digging out 36 million tons of coal per year—as one large mine in Wyoming does—could unearth as much as 10 kilograms of meteorites.

## IQ Researcher Suspended for Views on Pedophilia

Bad boy Christopher Brand, psychology professor at Edinburgh University, has done it again: He's gotten himself suspended and charged with "gross misconduct" as a result of comments suggesting that pedophilia isn't as terrible as it's made out to be.

Brand caused a stir last spring when, on the eve of the publication of *The G Factor*, his book on IQ research, he told members of the press that he believes black-white differences in intelligence quotient (IQ) are partly genetic. The resulting uproar prompted the publisher, John Wiley & Sons, to withdraw the book (*Science*, 3 May, p. 644).

Now the talkative professor has gotten himself into hot water by leaping to the defense of Carlton Gajdusek, the Nobel Prize–winning neuroscientist who last month went on trial for alleged pedophilic activities with one of the many "sons" he has brought back with him from the South Pacific. When the Gadjusek trial started, Brand wrote in his personal online newsletter "I find it totally disgraceful that a 73-year-old man of such distinction should be hounded by the courts and the press." He added: "Academic studies and my own experience [as a choir boy occasionally importuned by older men] suggest that nonviolent paedophilia with a consenting partner over age 12 does no harm so long as the paedophiles and their partners are of above-average IQ and educational level." The Scottish press picked up Brand's comments this month, under headlines such as "Race Row Lecturer in Child Sex Storm."

The Edinburgh dean of social sciences, Neil MacCormack, asked for a formal investigation on 8 November. Brand's teaching and administrative duties were suspended, and his computer networking privileges cut off. He is being charged with "conduct [that] is bringing the university into disrepute," according to a university statement which concludes: "The university can ... have no truck with the condoning of paedophile acts which transgress laws" protecting minors. University spokesperson Anne McKelvie says that if the investigation fails to clear Brand, a tenured professor, there will be a full "tribunal" that could culminate in his being sacked.

## Rumblings Over "Giscardoscope"

Controversy has been bubbling up over a plan for a volcano theme park in the hills of the French province of Auvergne. "Vulcania" would entail an expenditure of $80 million on a museum with 14,000 square meters of floor space, situated in the heart of a nature park near Clermont-Ferrand that is the site of a chain of extinct volcanoes.

Initially proposed in 1992 as a small volcano museum, the idea quickly grew to royal proportions under the encouragement of France's former President Valéry Giscard d'Estaing. Present plans include Disney World–style attractions with animated models of volcanoes and three-dimensional movies viewed with goggles.

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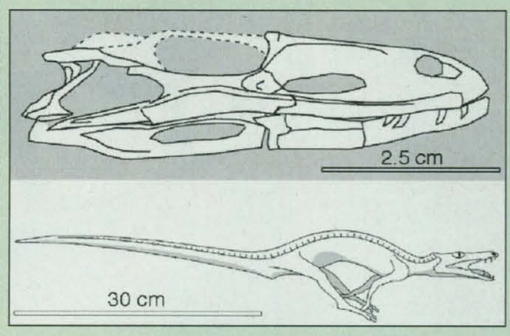
## Connecticut's Ancient Crocodilian Creature

A fossilized skull found in a Connecticut park appears to belong to a crocodilelike reptile that lived 212 million years ago, about the time that tiny dinosaurs began roaming the Earth. The skull, unveiled at a 9 November press conference in Connecticut, is the first reptile of this type to be found in North America.

Paul Olsen, a paleontologist at the Lamont-Doherty Earth Observatory in Palisades, New York, found the skull in March 1995 at Dinosaur State Park in Rocky Hill, Connecticut. It appears to have belonged to a creature about 50 centimeters long, as estimated by comparisons with similar species. A four-legged predator with a large head and long snout, it probably competed with early dinosaurs for prey including other lizardlike creatures.




PAUL E. OLSEN/LAMONT-DOHERTY EARTH OBSERVATORY OF COLUMBIA UNIVERSITY

**Dino competitor.** From skull *(top)*, scientists have a good idea of what the body looked like *(bottom)*.

The specimen "is impressive evidence for direct land connections between eastern North America and western Europe in the Late Triassic," says paleontologist Mike Benton of the University of Bristol in England. Only one other fossil like it has ever been found, in Scotland in 1894. That creature lived 10 million to 15 million years before the Connecticut reptile, which suggests that this type of animal enjoyed a long run on Earth. The find doesn't alter paleontologists' view of life in the early Triassic, but it casts some doubt on the belief that although the U.S. East Coast has lots of dinosaur footprints, it is a poor source of fossilized bones. "It just takes more patience and energy to find fossils on the East Coast," says paleontologist Hans-Dieter Sues of the Royal Ontario Museum in Canada, "but they are there."

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But environmental opposition is growing to the project, which has been dubbed the "Giscardoscope" by critics. On 27 October, a group of ecologists organized a protest march that drew about 1000 people to the planned Vulcania site, according to Bernard Devoucoux, who represents Auvergne on the regional council of France's Green Party. "We are not opposed to the center, but we don't want it in the park because we fear urban-type development," he says. Ecologists say the plan would disrupt the landscape, involving as it would a vast infrastructure, including hotels and new roads to deal with the expected 500,000 visitors a year. Also, there are concerns that the construction could pollute the aquifer of the region, says Devoucoux.

Volcanologist Jean-Louis Cheminée, a member of Vulcania's scientific council, believes that the ecologists are exaggerating the threats and defends the museum as being scientifically important for both specialists and the public at large. But others, such as volcanologist Jean-Claude Tanguy of the Institut de Physique du Globe de Paris at St. Maure, sympathize with the ecologists. He says "It's not important for this museum to be inside the nature park; it might as well be built near it," as critics propose.

## Slow Gene Linked to Breast Cancer

Some women smokers with a variation of a gene that helps the body fight toxicants may be predisposed to breast cancer, according to a report in the 13 November *Journal of the American Medical Association*. The study, the authors say, is the first to look at genetic variability as a factor in a smoker's susceptibility to breast cancer.

The gene in this case codes for N-acetyltransferase 2, an enzyme that helps break down and detoxify aromatic amines, common carcinogens in tobacco smoke and cooked meat. There are several versions of the gene, some of which code for less efficient versions of the enzyme. About 55% of whites have one of the less efficient versions, called slow acetylators.

A team from the State University of New York, Buffalo, and the National Cancer Institute (NCI) looked at a group of white women to see whether having the gene coding for the fast version of the enzyme helped protect them against breast cancer. They looked at more than 600 women—about half with breast cancer—and found no correlation between the form of the gene and breast cancer in premenopausal women. But when the researchers looked at the postmenopausal women, they found that smokers with a slow-acetylator gene were more likely to have breast cancer than smokers with the rapid version. The effect was more pronounced among the 38 heavy smokers (more than a pack a day for 20 years): 17 (69%) of the 24 with the slow gene had cancer. Of the 14 with the fast gene, three (21%) had cancer.

The findings dovetail with other studies linking variations in certain genes with differences in organisms' ability to resist carcinogens, says Lance Liotta, chief of NCI's laboratory of pathology (Liotta was not involved in the study). His lab has found that the *p53* tumor-suppressor gene helps people resist lung cancers from certain environmental poisons.

Such findings could prove useful to physicians. But women who get screened and find out they have the fast version shouldn't assume they won't get cancer from smoking, warns NCI molecular epidemiologist Peter Shields, one of the study's authors. "There's never a justification to smoke," he says.

## Good News for Beer Drinkers

In the 1970s, several research groups identified substances in charred meats and fish as carcinogens. Now a Japanese research group has learned that the beer people often reach for when they're eating barbecue may have an inhibitory effect on at least one of those cancer-causing substances.

A team at Okayama University led by Hikoya Hayatsu, a professor of pharmaceutical sciences, reported at the annual meeting of the Japanese Cancer Association in Yokohama last month that small amounts of beer countered the mutagenic effects of Trp-P-2 (tryptophan pyrolysate product number 2) on bacteria in a test-tube culture. Trp-P-2 is one of a class of potent carcinogens known as heterocyclic amines that are produced by burning meat, fish, and tobacco leaves, among other things. When as little as 0.1 ml, about two drops, of beer was combined with the Trp-P-2 and administered to salmonella bacteria, the mutation rate in the bacteria fell to half that seen when Trp-P-2 alone was added to the test tube.

Hayatsu says beer was already known to contain polyphenolic compounds, which inhibit mutagenesis. But he says beer proved to be a far better inhibitor than the compounds alone. "There must be another compound, or compounds, causing the effect we are seeing," he says. His team is now trying to isolate such compounds with an eye to testing them against other carcinogens in cooked meats.

Yoichi Konishi, a professor of pathology at Nara Medical University, says he finds the group's work persuasive, but cautions that it's "just the starting point" for research aimed at finding new ways to suppress cancer. Hayatsu couldn't agree more. During the past month, he's been trying to throw a little cold water on local press reports which leapt on the research as proving beer's life-giving properties. "The content of Trp-P-2 is rather minor compared to other carcinogens that have been discovered in charred meat," Hayatsu says.