# Briefings

*edited by* CONSTANCE HOLDEN

## NAS Forms Environment Panel

With environmental research one of the hottest tickets in U.S. science, the National Academy of Sciences (NAS) has just appointed a 17-member Committee on Environmental Research to do what many biologists think is long overdue: provide a broad-gauge assessment of the nation's environmental research as well as ideas for enhancing it.

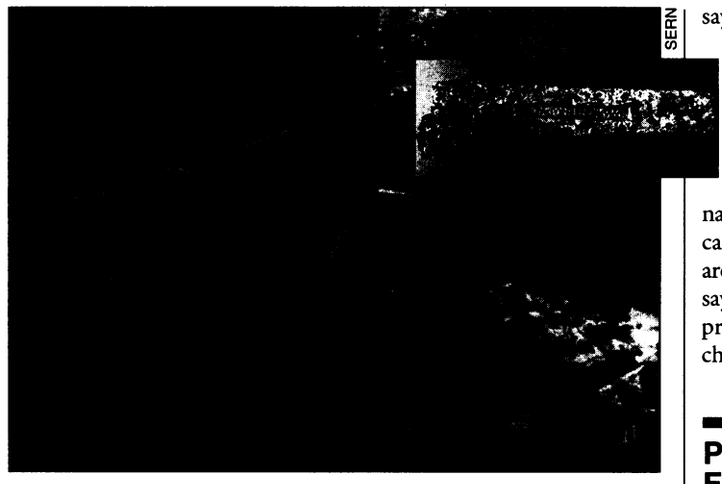
The committee will be headed by biologist Dale Corson, president emeritus of Cornell University, who is famed for leading the presidential committee that looked into the Three Mile Island accident a decade ago. It will pay special attention to a proposal for a National Institutes for the Environment (NIE) modeled on NIH.

The NAS action is the latest development from an unusual grassroots campaign, launched 2 years ago by ecologists Stephen Hubbell of Princeton and Henry Howe of the University of Illinois at Chicago. The two scientists established a Committee for the NIE based in Washington, D.C., and their idea has attracted considerable support in Congress. Last October Congress appropriated $400,000 to the Environmental Protection Agency so it could fund a study. The NAS has now raised an additional $200,000 from other federal agencies. A report is due in 15 months.

## Resurrected Lead

In Italy, they say, history is everywhere—even in the state-of-the-art Gran Sasso physics laboratory, a mile deep in the Apennines. There, physicists using supersensitive detectors to search for solar neutrinos, dark matter, and other exotica will be getting a little help from the ancient Romans.

That aid comes in the form of 2000-year-old lead being salvaged from a Roman freighter lying under 30 meters of water off Sardinia. The vessel, which sank between 50 and 70 B.C., carried more than 1000 33-kilogram ingots, which were probably destined for use in water pipes and other Roman civil engineering extravaganzas. The beauty of it today is that, after centuries of radioactive decay, the ingots are almost entirely free of lead 210, a radioactive isotope that is an inevitable contaminant in newly refined lead.




**Physicists booty.** *Lead ingot from Roman freighter.*

The last thing you want if you're a particle physicist questing after subtle events is background radioactivity. So, to shield the instruments at Gran Sasso from emanations from the surrounding rock, the scientists were resigned to buying costly, specially prepared low-radioactivity lead or copper. But 2 years ago, Ettore Fiorini, a physicist at the University of Milan who is working at Gran Sasso, learned about the shipwreck. He and his colleagues at the Italian Institute of Nuclear Physics approached the archeological authorities in Sardinia with a proposition: The physicists would pay for salvage if the archeologists would let them keep part of the cargo. Deal done. By next month, the physicists expect to collect about 150 ingots as their booty. They will then melt down part of each ingot—the agreement stipulates that they spare the upper portions, which bear historically important inscriptions.

At $250,000 for the salvage operation, the physicists may not have gotten a bargain after all, says Fiorini. But money's not everything. "Since we could help the archeologists salvage the ship, I felt—not as a physicist, but as an Italian—that we had to do it."

## Sugar Sours Future for Gum Arabic

If you often worry about a North African coup threatening your supermarket's supply of designer ice cream, you may one day find yourself thanking Agriculture Department chemist Gregory L. Cote. Gum arabic is the secret emulsifier in a wide range of products, from skin cream to ice cream. It's so good at the job that U.S. firms annually import about 25 million pounds of the sticky liquid that is derived from acacia trees, mainly from the Sudan.

But gum arabic's days as a ubiquitous emulsifier may be numbered. Cote, who works at the National Center for Agricultural Utilization Research in Peoria, Illinois, has isolated an enzyme that converts sugar into alternan, a polymer that may provide a more stable and consistent source of supply than gum arabic.

But several hurdles remain before a new emulsifier hits the market. In a recent edition of *Agricultural Research*, Cote says he needs to enhance alternan's emulsifying ability, perhaps by combining it with other emulsifiers. He also plans to clone the gene for alternansucrase, the enzyme that converts sugar to alternan, to boost production. The cane and beet sugar industries are nibbling at the polymer, Cote says, but "we need to be able to produce alternan a lot more cheaply" before they bite.

## Pauling Institute Foundering

Nobel Prize–winning chemist Linus Pauling has struggled for 25 years to get some respect from the medical establishment for his research on vitamin C. Now, his lack of success in that arena is catching up with him. The Linus Pauling Institute in Palo Alto, California, which he founded in 1973, is in such grim financial straits that some of its 35 employees have given up their salaries, and several have withdrawn their own retirement benefits to donate to the institute. Several hundred thousand dollars in the red, it will fold if fund-raising doesn't pick up within the year.

The crisis was precipitated by the end of a 10-year, $5-million grant from the institute's biggest funder, the Japan Shipbuilding Industry Foundation (which supports health-related research), and a decline in private donations that make up most of the rest of the institute's $3.4-million budget. Institute vice president G. Richard Hicks blames the drop on the recession and on reluctance by conservative donors to support the institute's work on AIDS.

The institute has had to rely on private sources because of its inability to obtain federal funding, something Pauling bitterly attributes to the medical establishment's conviction that anything involving megavitamin therapy is "quackery." Pauling told *Science* he is discouraged that the financial crunch should come just as vitamin C may be achieving a glimmer of legiti-