RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Oceanographers Make Their Own Hot Springs

Earth is girdled by 60,000 kilometers of midocean ridges, all of them spewing hot, mineral-laden waters that feed some of the most exotic animals on the planet. But catching a look at a submarine hot spring as it first bursts to life has naturally been problematic. Now oceanographers are finding themselves in the midst of the desired experiment: While drilling on a ridge 240 kilometers off Vancouver Island, they serendipitously punched open two new vents.

Scientists on board the international Ocean Drilling Program's ship *JOIDES Resolution* drilled the holes last month on the Juan de Fuca ridge to retrieve sediments and crustal rock that waters of dormant vents had turned into mineral deposits long ago. But they created a live one. "It was incredible," says co-chief scientist Yves Fouquet of IFREMER, an oceanographic institute in Brest, France. "We couldn't even see the seabed because hot water was rushing out of the hole so fast," creating a 30-meter plume of debris.

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Nomads. Tube worms thrive near short-lived ocean vents.

According to marine biologist Verena Tunnicliffe of the University of Victoria, British Columbia, the 350°C water was carrying so much "white junk"—probably the byproducts of microbial activity—that it seems likely there's abundant life beneath the vents. Scientists have suspected that midocean ridges harbor a wealth of microbes because whole mats of them have swiftly colonized the sea floor after volcanic ridge eruptions open up new vents. Now researchers should be able to catch subsurface bacteria in the act.

Biologists will also be looking for the first arrival of larger creatures, such as giant tube worms, from other vents. How animals that live off the dissolved minerals and bacteria surrounding vents manage to move from one short-lived vent to another is still a mystery. The *Resolution* vents should help unravel their travel habits.

Prize for Gaia's Father

The Nobels were not the only Swedish prizes awarded last week. On 9 October, Princess Désirée, Baroness Silfverschiöld of Sweden, presented the 1996 Volvo Environment Prize—worth 1.5 million krone or about $227,000—to British chemist and inventor James Lovelock for his invention of detectors that can identify and measure extremely small quantities of environmentally hazardous substances.

Lovelock

Lovelock's detection of ozone-depleting chlorofluorocarbons (CFCs) in the atmosphere drew attention to ozone-layer depletion. In addition, his demonstration that polluted air masses move across political boundaries helped spur international efforts to reduce atmospheric pollution.

Sherwood Rowland, who shared last year's Nobel Prize in chemistry for his work demonstrating how CFCs damage the Earth's protective ozone layer, says Lovelock's detectors made possible many of the advances in atmospheric chemistry in the last 20 years. "If your sensitivity of detection is 1 part per billion, you would have never detected CFCs," which are present at a few parts per trillion, he says.

Of course, Lovelock is best known for his formulation of the Gaia theory, which proposes that Earth is a self-regulating system which behaves like a living organism. Although it has been controversial among scientists, Rowland says the idea has helped people understand the interactions between the biosphere and the atmosphere. "It's a useful way of picturing things," he says.

Twitting Science

Defying British chief science adviser Robert May's recent criticism that the tongue-in-cheek tributes can tarnish serious science, editors of the *Annals of Improbable Research* (*AIR*) awarded the infamous Ig Nobel Prizes to a gaggle of new victims on 3 October, including two Norwegian physicians who wrote the cautionary case study "Transmission of Gonorrhea Through an Inflatable Doll."

May complained in press interviews and a letter to the Cambridge, Massachusetts–based *AIR* in September that the publicity surrounding last year's awarding of an Ig Nobel to British food scientists for "the study of the effects of water content on the compaction behavior of breakfast flakes" had sullied a respectable research area. In a seeming rejoinder to May, this year's Ig Nobel in physics went to another Englishman, Robert Matthews of Aston University, for his demonstration that tumbling toast always falls on the buttered side.

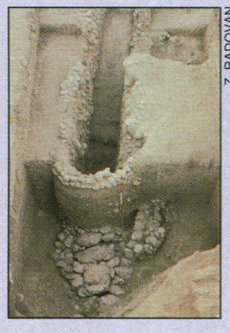
But *AIR* Editor Marc Abrahams said Matthews was tapped for the prize long before May's comments. "I think that underneath, May is concerned about the same things we are," he says. "The Igs are mostly about getting people interested in science. Our first rule is, do no harm."

Ancient Egyptians in Canaan

Archaeologists have reported uncovering a 5000-year-old Egyptian-style tomb in southern Israel. The tomb, the first of its kind found in the region, offers fresh evidence for an Egyptian presence in ancient Palestine around 3000 B.C., during the formative time for Egyptian civilization.

Thomas Levy of the University of California, San Diego, David Alon of the Israel Antiquities Authority, and colleagues excavated the tomb at a site called Halif Terrace in the northern Negev desert. They had previously found abundant evidence of an Egyptian settlement during the Early Bronze I era (3500 to 3000 B.C.), including pottery, bread molds, and administrative seals.

Finding the tomb in addition to all the other artifacts was "pretty amazing," says Levy. The structure held only one body, that of a young woman. The tomb is "a very exceptional find," says archaeologist Joseph Seger of Mississippi State University, director of the Lahav Research Project, which has conducted work in the area since 1976. He says its distinctly Egyptian structure—a long, narrow entry into a larger chamber—is "unique" for Palestine.



Z. RADOVAN

Unburied. Tomb in the northern Negev.

Archaeologists have already identified two other ancient Egyptian outposts in southern Israel, the main one being Tel 'Erani, 40 kilometers to the north. The new site "is a new Egyptian administrative center, certainly," says Levy. "Now I'm convinced that we have evidence of an Egyptian world system whose network extended into Southern Israel." A paper on the excavation is to be published early next year in the *Bulletin of the American Schools of Oriental Research.*