RANDOM SAMPLES

edited by FAYE FLAM

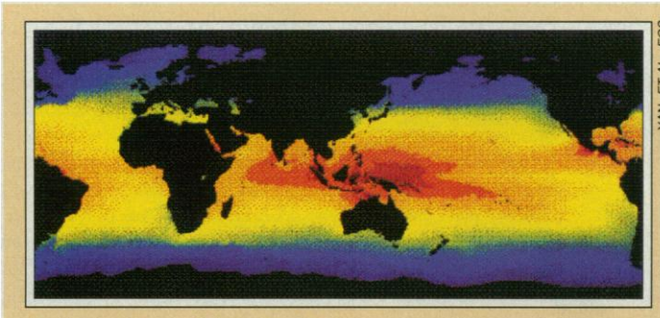
Neuroscientists Revive European Association

Earlier this year European neuroscientists were already writing the obituary for the troubled European Neuroscience Association (ENA), which looked as though it were about to disband (*Science*, 24 April, p. 468). But when the society met in Munich last month, the delegates decided that it still had some life left in it after all.

But if ENA isn't yet on its deathbed, incoming president Constantino Sotelo admits the organization needs first aid if it is ever to become a focus for the fragmented European neuroscience community. The underlying problem: A shortage of cash that leads to prohibitively high registration fees for ENA meetings—more than DM 300 ($198) per person. "The expense...keeps away exactly the people we should be attracting: students and eastern Europeans," says Sotelo, a developmental neurobiologist from the Salpetrière Hospital in Paris.

To get the fees under control, ENA is now looking for long-term sponsors; it has an eye on the European Community as one potential donor. But attendance has also suffered because ENA's October meetings run just a few weeks apart from the popular annual conference of the American Society for Neuroscience, an event attended by many Europeans. Wolf Singer of the Max Planck Institute for Brain Research in Frankfurt, who'll take over as ENA president after Sotelo's 2-year stint, says that ENA will take steps to avoid the meeting clash. ENA may simply not hold a meeting in 1995, and then schedule subsequent gatherings for the spring. The goal: to boost the current attendance of around 1500 to a respectable 4000.

Once attendance is up, ENA's leaders hope that the meetings can serve as pan-European job and grant markets, as well as scientific conferences. Provided ENA can meet its attendance targets, says Singer, it should be able to convince Europe's main biology granting agencies to take part.



YAN, ET AL., EOS

A mighty climate driver. The Pacific warm pool in normal times.

Oceanographers Hope for a Warm Pacific Winter

What's the weather going to be like this winter among the islands of the western tropical Pacific? "That's a scary question," says oceanographer David Carlson. Not that he has an idyllic vacation planned there. No, Carlson is worried about the most complex field study oceanographers and meteorologists have ever attempted. If the weather turns cool in the western Pacific this winter, as it shows some signs of doing, it could rain on his parade.

A chilly winter would shrink the object of all the attention: a pool of warm water the size of the continental United States that straddles the equator in the western tropical Pacific. When it sloshes to the east, as it did last winter, an El Niño is born and climate shifts around the world can bring everything from a failure of Indian monsoon rains to flooding in Texas. Between El Niños, which occur every 5 years or so, the pool sometimes contracts to the west in a mirror-image event called La Niña.

As a huge source of heat energy to the atmosphere, the western Pacific warm pool is "the first and largest unknown in long-term climate change," says Carlson. To improve their understanding of it and thus improve predictions of year-by-year climate changes, researchers from 19 countries have mounted the Coupled Ocean-Atmosphere Response Experiment (COARE), which includes 4 months of observations beginning this November from planes, ships, satellites, and a network of weather stations and buoys.

The potential snag is that the experiment is designed to study a pool of intermediate size. "A shrinkage of the warm pool is scary," says Carlson, the director of COARE, because it could leave the carefully prepared network of observing sites out in the cold.

Vernon Kousky of the Climate Analysis Center in Camp Springs, Maryland, thinks Carlson probably has nothing to worry about. The latest El Niño nearly faded away this past summer, but he doesn't expect further shrinkage for a while. Some computer models, however, are calling for a quick jump from El Niño's warmth to La Niña's chill. "We've taken a calculated guess," says Carlson, "and we've crossed our fingers." Let's hope that works better for COARE than for the average weekend barbecue.

Dodging the Needle in Health Care

An estimated 16,000 U.S. health care workers accidentally stick themselves with HIV-contaminated needles each year. And although only about 2% of these needle-sticks actually lead to infection with HIV, says health care safety expert and neurosurgeon Janine Jagger of the University of Virginia, people who've had an accident must wait a harrowing 6 to 12 months until they can feel safe. "These people go through hell," says Jagger. But changes in the equipment used to deliver intravenous fluids could reduce that human toll, according to a recent study by the New York State Health Department.

About half of all needle-sticks come from the "intermittent disconnect" needles that hook up different parts in intravenous (IV) systems, says Elizabeth Duthie, a nurse at New York Medical Center, one of the 10 hospitals participating in the study. Although these needles don't actually enter the patient, Jagger explains, blood can back up in the system and contaminate the needles.

New, needleless IV systems, which replace the intermittent disconnect needles with blunt connections and reflux valves, can sharply reduce the risk, the New York study showed. The drawback is that needleless IV systems "cost a fortune," Duthie says, more than five times as much as needle-based systems. And, of course, they don't eliminate the one needle that connects the system to the patient.

The safer IV system had the biggest safety impact of all the technologies tried in the study, cutting the risk of needle-sticks by about half. But Jagger says that when you add the benefits of other devices, such as protective coverings for hypodermic needles, better technology could reduce the total risk for health care workers by as much as 90%.

Testing to Begin on Malaria Vaccine

The Food and Drug Administration (FDA) has given the green light for testing a controversial new malaria vaccine developed by Manuel Patarroyo of Colombia. Researchers at the Walter Reed Army Institute of Research have already begun screening volunteers for the study, says group leader W. Ripley Ballou. This Phase 1 trial for safety and antibody response will begin this week.

Patarroyo, who has already given the vaccine to thousands of volunteers in South America, claims that it has protected a majority of them from the disease, but many U.S. and European researchers remain skeptical. The Walter Reed test

will be the first trial to take place under fully controlled laboratory conditions that meet U.S. FDA requirements.

Ballou had expected to begin the study last spring (*Science*, 28 February, p. 1063), but he says it took longer than expected to file for FDA approval. The reason: The polymerized antigen "was not quite as straightforward" as scientists at Walter Reed had assumed after reading Patarroyo's publications, and they had to conduct additional research to characterize the structure of the polymer. The size and complexity of the polymer, says Ballou, may contribute to the vaccine's effectiveness in eliciting an immune response.

Iniki Joins Andrew in Botanical Infamy

On 11 September, less than 3 weeks after Hurricane Andrew devastated the Fairchild Tropical Garden in South Florida (*Science*, 4 September, p. 1339), Hurricane Iniki blew its ill wind across the Hawaiian island of Kauai, destroying plants and research facilities at the National Tropical Botanical Garden (NTBG). "Since the garden was almost directly in line with the eye of the hurricane, damage was intense," says Peter Raven, director of the Missouri Botanical Garden.

Raven estimates that Iniki blew down about 40% of the botanical collection, which includes endangered tropical flowers, shrubs, legumes, tubers, and the koaoha, an indigenous acacia prized for its hardwood. And while NTBG field collector Steve Perlman's living seed collection of more than 150 rare native Hawaiian plants—one of the world's largest—remained safe, research facilities, including two historical buildings and the roof of the plant propagation facility, were "literally blown away," says Hugh Bollinger, a trustee for the Center for Plant Conservation (CPC), headquartered at the Missouri Botanical Garden. To water the plants that remained, staffers had to fetch water by hand from a local stream because the irrigation system also was destroyed.

Only about half the plants can be regrown, says CPC director Don Falk, noting that native Hawaiian plants cope better with extreme weather than many exotic species. But although hurricanes spell disaster for small, managed collections of biodiversity such as gardens, they have a silver lining in larger ecosystems. Hurricanes are to the tropics what fires are to forests, he says: "part of the long-term disturbance regime" that wreaks havoc in the short term but ultimately makes for a healthier ecosystem.

The Many Lives of Cold Fusion

Though cold fusion has been officially buried several times under an avalanche of negative results, a few scientists are seeing signs of life. The latest glimmering came last week when, in a widely anticipated lecture at the Massachusetts Institute of Technology, Michael McKubre of SRI International in Menlo Park, California, finally detailed some intriguing results of his group's 3 years of experiments, funded by the utilities' Electric Power Research Institute.

McKubre, an experienced electrochemist with a reputation for being among the world's best in the difficult process of calorimetry—the measurement of heat—reported that his group could consistently and predictably produce excess heat in electrochemical cells by running a current through palladium rods immersed in a bath containing heavy water. This technique is almost identical to the original 1989 experiments that sparked the cold fusion controversy. While McKubre's observations, typically just a few watts of excess heat, are modest compared to others, they still appear to exceed the energy that could come from known chemical reactions.

But perhaps the most important part of the MIT talk is that McKubre, for the first time, laid out specific conditions required to see the modest excess heat. First, the palladium rods must be "loaded" with heavy water-derived deuterium atoms, says McKubre. Second, that loading must be maintained for extended periods of time, on the order of 300 hours. To maintain the loading, the palladium rods apparently need to be coated with a thin film of either silicon or aluminum. Finally, McKubre says that the amount of current run through the cell is critical since excess heat was observed only when it rose to 200 milliamps or above.

Despite his group's attention to detail, McKubre's work is unlikely to lead to cold fusion's official resurrection. A few physicists at the talk took issue with his calorimetry. And, since his group did not see neutrons or other typical byproducts of nuclear processes, McKubre is as mystified as everyone else about where the excess heat comes from. "The effect is either real or some obscure artifact," he cautiously says. Despite that public doubt, his group is moving ahead after an 8-month hiatus caused by a fatal accident. Two weeks ago, McKubre's team started up new experiments designed to further explore the effects of silicon and aluminum within their cells.

SOUTHERN ILLINOIS UNIVERSITY

The Shoulder Bone's Connected to the Arm Bone...

Sixty years after it was unearthed on Maboko Island in Kenya, a 15 million-year-old ape upper arm bone has met its match. A Southern Illinois University anthropologist says the fossil shoulder bone that she dug up last summer at the same site connects perfectly to the arm bone. "There are two zigzag edges," says finder Brenda Benefit. Together, she says, the bones suggest that their owner was a common ancestor to humans and modern apes.

Judging by the structure of the arm and shoulder, Benefit thinks the creature, known as *Kenyapithecus*, had a monkey-like shoulder structure. She adds that the anatomy of the shoulder looks like it would have worked best for locomotion on the ground, not for swinging through the trees. "It was long thought that a shift to the ground was part of becoming human," she says.

Other researchers are excited about the finding but skeptical of Benefit's still-unpublished conclusions. Physical anthropologist Michael Rose of the New Jersey Medical School judges the find to be "of considerable importance. It's a really diagnostic part of the body." Even so, he's not sure this particular specimen gives enough information to reveal whether the animal walked on the ground or swung through the trees.

He's also not convinced that *Kenyapithecus* is a true ape-human ancestor. Other possible common links between man and apes have come and gone in scientific favor, he says. "The more we learn, the more complicated the situation gets."