

RANDOM SAMPLES

edited by CONSTANCE HOLDEN

Renaissance for Italian AIDS Program

After a freeze lasting more than a year, the Italian government has resumed its AIDS research program, with a twist: To address past charges of cronyism in the review process, officials will strip the names from grant applications. Money is expected to start flowing again next month.

Responding to charges that Italy's National Program for AIDS Research was riddled with favoritism and skewed too heavily toward

basic research, Health Minister Rosy Bindi last year put the kibosh on it and later announced an overhaul (*Science*, 11 April, p. 191). In its latest incarnation, the program will divvy funding into four pots: pathogenesis (\$6 million), therapy (\$4 million), opportunistic infections (\$2.5 million), and epidemiology (\$1.5 million). Basic research, which amounted to about half the funds under the old program, is being trimmed a modest 10%.

While scientists seem mostly content with the new program's priorities, many call its review procedure impractical. Besides keeping applications anonymous, the program will withhold from reviewers progress reports written by groups applying for continuing funding. However, says Alberto Mantovani, head of the immunology and cell biology department at the Mario Negri Institute in Milan, reviewers need access to the progress report—"a crucial element in the refereeing pro-

cess." The new policy, he says, is "nonsense."

Still, the program's new life is a relief to many researchers. While some have alternate funding sources to draw from, Guido Poli, an AIDS researcher in Milan, says he and others who work exclusively on HIV have been "paralyzed" by the freeze. As scientists now resume their work, Mantovani and Poli are pressing the program to drop its anonymity policy and to lengthen its funding cycle from 1 to 3 years.



Wild as it gets. View of the Heard and McDonald island group.

Antarctic Heritage

A group of sub-Antarctic Australian islands, some of them described as the wildest places on Earth, were added to the global pool of World Heritage sites at a meeting in Naples, Italy, on 4 December.

The designation obligates the government to protect the sites from uses that threaten their heritage value. These islands were selected largely because of their remarkable geology. The Heard and McDonald Island Group, in the Indian Ocean some 4100 km southwest of Perth, sit atop the Kerguelen plateau, the world's largest submarine plateau. Their geology provides clues to processes operating during the rifting that tore India from the supercontinent of Gondwana some 120 million years ago, says Pat Quilty, chief scientist at the Australian National Antarctic Research Expeditions. As the conti-

nents separated, the plateau sank to a few hundred kilometers below sea level, and the islands arose from volcanic activity.

The other newly designated site is Macquarie Island, a 37-km-long sliver that lies 1500 kilometers southeast of Tasmania. The island, home to a scientific base and a nature preserve, was formed from the Pacific Ocean floor sliding under the Indian Ocean floor. It therefore contains the world's best example of exposed oceanic crust,

says Quilty.

The McDonald and Heard islands also offer near-pristine biological treasures. With its formidable cliffs, McDonald Island, which has never been inhabited by people, is a sanctuary to penguins, seals, and birds. And Heard Island is the only place in the world where all six species of Antarctic seal are found.

Vitamin C: Bacterial Antidote?

Like police using tear gas to quell a riot, immune system cells that throw corrosive chemicals on invading bacteria may use a kind of chemical gas mask to protect themselves—and healthy tissue—

from their own weapon. Scientists have found that vitamin C may serve as just such a shield to save a key type of immune cell from self-annihilation, according to a report in the 9 December *Proceedings of the National Academy of Sciences*.

Immune cells called neutrophils destroy bacteria with a two-stage attack: First, they produce oxidants that puncture a bacterium's cell walls, then the neutrophils engulf the disabled bug. Recent work by Mark Levine's group at the National Institutes of Health has hinted that neutrophils may avoid poisoning themselves by absorbing extra ascorbic acid, or vitamin C, which can neutralize oxidants.

To test this theory, a team led by Levine and Yuhui Wang collected neutrophils from people with bacterial infections and incubated the cells for up to an hour in two sets of dishes stocked with vitamin C and nutrients. One set was infected with bacteria; the other was clean. Within 20 minutes, the neutrophils from the infected dishes had accumulated up to 30 times more vitamin C than those in bacteria-free dishes. The researchers also found that neutrophils from people with the rare chronic granulomatous disease, which makes them especially vulnerable to bacterial infections, did not accumulate vitamin C when con-

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New UNEP Director

Germany's Klaus Töpfer was tapped earlier this month as the new executive director of the United Nations Environment Program (UNEP), the U.N.'s global advocate for environment that holds conferences and promotes international legislation. Töpfer, an economist who will start work in February, is being welcomed as a positive change from Canada's Elizabeth Dowdeswell, who has been accused of weak management. Töpfer served as Germany's environment minister from 1987 to 1994 and then as minister for regional planning and urban development.

Like other U.N. bodies, UNEP has been placed on a strict diet, with an annual budget of \$100 million—about 30% less than it needs, says UNEP spokesperson Jim Sniffen in New York. Because the budget is largely based on voluntary contributions from U.N. member states, Sniffen says, "it may help to have a high-profile person with political experience" to get UNEP back in the black. Environmentalists seem pleased with the appointment. Andreas Bernstorff of Greenpeace's Hamburg office says Töpfer, a past chair of the U.N.'s Committee on Sustainable Development, "is one of the [few] ministers in the world with a vast experience in environmental policy, international relations, and international environmental law."

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fronted with bacteria.

Vitamin C stockpiling "could be a very clever way that the neutrophils protect themselves," says biologist John Curnutte of Genentech Inc. in San Francisco. But he and Levine caution that neutrophils may behave differently in the body than in the lab. The key question, adds cell biologist Sam Silverstein of Columbia University in New York City, is whether dosing up on vitamin C makes a person's neutrophils better bacteria killers. If so, Levine says, vitamin C could be an approach to tackling antibiotic-resistant bacteria.

Adjuncts in Academe

Part-time faculty depress salaries, discourage talented people from entering academia, and reduce the quality of education for undergraduates, according to a group of 10 learned societies that want to reverse the growing use of adjunct professors.

Excessive reliance on part-timers "degrades the [academic] environment," says the joint statement, issued this month after a September conference. It recommends that universities use fewer part-timers and treat the ones they do employ better.

According to the latest statistics available, part-time faculty in U.S. postsecondary insti-

tutions rose from 22% of the total in 1970 to 40% in 1993. And "the situation's gotten worse since then," says Ernst Benjamin, director of research at the Association of American University Professors (AAUP). Although part-timers make for added flexibility and big cost savings, the group warns that too many part-timers lead to fewer job opportunities and lower salaries for new full-time, tenure-track faculty, "thereby diminishing the quality of recruits."

The way part-timers are treated hurts everyone, the statement says. "Disparate personnel policies [have] created a multitier faculty ... a shrinking Brahmin class [and] a growing caste of 'untouchable' workers" whose careers are going nowhere. The problem is worse in the humanities than the sciences, but it's everywhere, says Annalisa Crannell, assistant professor of math at Franklin and Marshall College in Lancaster, Pennsylvania. In math, many senior faculty eschew teaching calculus to non-math majors, leaving the job to adjuncts, she says.

The societies, whose initiative was spearheaded by the American Historical Association (AHA), recommend that schools narrow the divide between permanent faculty and part-timers by giving the latter

better compensation and a shot at tenure. They also ask governing bodies to enact financial incentives to put the brakes on hiring of part-timers. But, says the AHA's Sandria Freitag, full-timers have to do their share too: "Unless faculty are willing to teach throughout the curriculum, it's going to be really hard to do anything about this." The statement is available at the AHA Web site: chmn.gmu.edu/aha.

Just Who Needs This Education?

Chinese science officials joined hands last week with a U.S. nonprofit on a plan to translate and distribute a new U.S. textbook on environmental education and to acquaint government officials with the topic. It's part of an effort by Chinese officials to fulfill part of an international agreement, struck during the 1992 Earth Summit in Rio de Janeiro, Brazil, to spread the gospel of sustainable development.

But last week's climate change conference in Kyoto, Japan—a follow-up to Rio—shows what a tough job that may be. Less than 24 hours before Deng Nan, vice minister of China's State Science and Technology Commission (SSTC), inked a pact with the New York-based Global Communications for Conserva-

tion, China had joined with other developing countries to water down key provisions of a treaty to reduce greenhouse gas emissions. The Chinese negotiators had argued that any curbs on emissions might hinder economic growth and depress living standards, a stance that flew in the face of U.S. efforts to achieve "meaningful participation" by the developing world.

Worlds away, it seems, the educational project—called the Chinese Environmental Global Alliance—will disseminate 20,000 copies of a new textbook series called Environmental Action to schools in several major cities. Dean Paschall, a science educator at Colorado State University in Fort Collins who helped write the series, says it asks students to think of ways to make their schools more environmentally friendly through such steps as reducing energy consumption or improving waste disposal. "It's an inquiry-based approach," he says, "and that's not something [the Chinese] have done much of."

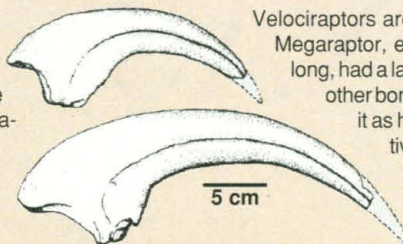
Gan Shijun, director-general for education at the SSTC, says he hopes the partnership will "build environmental awareness among students as well as government and business leaders." Judging from Kyoto, that task won't be easy.

Largest Dino Claw Unearthed

In case Steven Spielberg is casting about for villains for another *Jurassic Park* movie, here's one suggestion: the Megaraptor. An Argentinian paleontologist has announced the discovery of the largest raptor ever found, which he claims represents a "new lineage of dinosaurs."

Raptors were predatory two-legged dinosaurs whose hallmark feature was their large, sharp claws presumably used for attacking and rending prey. Now, Fernando Novas of the Argentine Museum of Natural Sciences in Buenos Aires says he has unearthed the largest raptor claw ever, measuring 34 centimeters—54% longer than that of its nearest competitor, *Utahraptor*, found in the Moab Desert in 1991.

Novas found Megaraptor's 90-million-year-old remains in Northwest Patagonia, a rich fossil hunting ground in southern Chile and Argentina, in January 1996. Unlike *Utahraptor*, Megaraptor does not belong to the Velociraptor family of *Jurassic Park* fame.



Velociraptors are Dromaeosaurids, but although Megaraptor, estimated to have been 8 meters long, had a large, scimitar-shaped second digit, other bones from the forearm and feet mark it as having evolved from a "more primitive" branch of dinos than Dromaeosaurids, Novas says.

The tip-off is the shape of the new raptor's foot. Velociraptors had "short, stocky feet" thought to have evolved to "withstand the stresses of using the 'sickle' claw," notes paleontologist Tom Holtz of the University of Maryland, College Park. But the foot bone Novas has found suggests that Megaraptor had long, thin feet that nonetheless were capable of wielding the largest dino claw yet found. Figuring out how the Megaraptor pulled this off means that the mechanics of raptor locomotion may require "rethinking," says Holtz.

Earlier this month, Novas presented a cast of the giant talon to the Houston Museum of Natural Sciences. His description of the beast will appear next year in the *Journal of Vertebrate Paleontology*.

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