



### AIDS MEETING

## Companies, Donors Pledge to Close Gap in AIDS Treatment

**DURBAN, SOUTH AFRICA**—At the opening session of the XIII International AIDS Conference, an HIV-infected judge who sits on this country's highest court set the tone for this extraordinary meeting. "Amidst the poverty of Africa, I stand here before you because I am able to purchase health," said high court Justice Edwin Cameron, who noted that he spends \$400 a month on anti-HIV treatments. "I am able to purchase vigor and joy. I am here because I can pay for life itself. To me this seems a shocking and monstrous inequity." Cameron, whose talk was interrupted repeatedly by rousing ovations, concluded with this harsh verdict: "No more than Germans in the Nazi era, no more than white South Africans during apartheid, can we at this conference today say that we bear no responsibility for more than 30 million people in resource-poor countries who face death from AIDS unless medical care and treatment is made accessible to them."

"Cameron's talk was truly transforming," said Neal Nathanson, head of the Office of AIDS Research at the U.S. National Institutes of Health. "I think it's going to be a landmark in the history of the AIDS epidemic." By the end of the meeting, which ran from 9 to 14 July, many felt that historians will look back on the gathering itself as a turning point in the way the haves of the world view their responsibilities to the have nots—at least as far as AIDS is concerned. "Something amazing and something profound and something unforgettable has happened here, unless I have a totally biased sample," said the University of Natal's Hoosen "Jerry" Coovadia, a Durban pediatrician who chaired the

conference. Peter Piot, head of UNAIDS, the Joint United Nations Programme on HIV/AIDS, concurred: "Never before has the world's attention been so focused—finally—on the problems of AIDS in Africa."

Although basic science and clinical research typically dominate at this biennial event, by far the most riveting sessions this year revolved around the thicket of issues that prevent poor people in sub-Saharan Africa—where a staggering 24.5 million people are estimated to be infected with HIV—from receiving the 14 anti-HIV treatments now used in wealthy countries. Pharmaceutical companies and donors last week loosed a flood of promises about removing barriers.



**Unifier.** Nelson Mandela closed the meeting with an impassioned speech calling for action.

First Boehringer Ingelheim, the manufacturer of the drug nevirapine, announced that for the next 5 years, it will provide the drug for free to pregnant, HIV-infected women in developing countries, allowing them to take advantage of last year's finding that one dose to mother and baby can dramatically cut HIV transmission (*Science*, 23 June, p. 2160). Merck, the maker of two anti-HIV drugs, and the Bill and Melinda Gates Foundation will split the costs of a \$100 million program

to help Botswana launch a new comprehensive HIV/AIDS prevention and treatment program. The Gates Foundation separately announced a \$15 million gift to the Pediatric AIDS Foundation to bolster a program that already provides nevirapine to pregnant, infected women and another \$25 million to the Contraceptive Research and Development Program to further its work on vaginal microbicides. The World Bank announced that it has devoted \$500 million to a new

HIV/AIDS program that aims to help African countries that have national AIDS strategies. The European Union also revealed that it will launch a major new initiative for HIV/AIDS, malaria, and tuberculosis.

Public sympathy prompted this outpouring, some argued. "This epidemic is becoming real to people," said Helene Gayle, the top HIV/AIDS official at the U.S. Centers for Disease Control and Prevention. "These aren't numbers—they're people. They're faces." And the pharmaceutical industry, which has long insisted that selling drugs more cheaply will reduce funding for research and development of future products, realized that "there was more to be gained by going down another path," said Gayle. "It's not too dissimilar from what happened with tobacco companies. ... If you continue down a path that people think is shameful, it will cost you a lot."

Not surprisingly, Jeffrey Sturchio, a public relations official at Merck, rejected this analysis. The industry has reacted largely because of new leadership at the World Bank and the World Health Organization (WHO), he said. "It had been almost impossible, with certain exceptions, to collaborate with people [at the bank and WHO] on a working level," because they had such different agendas, said Sturchio. But the new leadership recognizes that the organizations have to contribute significant new resources. "The pharmaceutical industry alone cannot solve this problem," said Sturchio. "Everyone has to do more."

Conference attendees welcomed the offers of help, but many stressed that much more will be needed. In a session titled "HIV Non-Intervention: A Costly Option," health economist Jeffrey Sachs blasted the wealthier countries for their "shocking disregard" for the pandemic and for doing so little so late. "When the World Bank comes forward and says \$500 million ... that's all fine and good, but the real question is where has the World Bank been for the last 15 years?" said Sachs to cheers from the packed room. Sachs, who directs Harvard University's Center for International Development, estimated that sub-Saharan Africa alone needs \$10 billion a year in donor support to effectively respond to HIV/AIDS, malaria, tuberculosis, and the continent's other major diseases. "How could the world have stood by for the first 20 years of this pandemic, letting it reach 35 to 40 million people before any real funding started?" he asked.

Faced with high drug prices and little international support, many countries are con-

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sidering manufacturing or importing their own generic versions of anti-HIV drugs. A report released at the meeting by Médecins Sans Frontières suggests that generics could cut annual costs of a cocktail of anti-HIV drugs to as little as \$200 per person. The ex-



**Help needed.** Hospital workers demand access to HIV drug treatments for poor patients.

perience of Brazil—which, along with India, is already manufacturing anti-HIV generics—shows both the promise and the difficulties of this approach.

Paulo Roberto Teixeira, a dermatologist based in Brasília who heads the country's National AIDS Program, said the Brazilian government manufactures eight anti-HIV drugs that were patented before 1996, the year the country began observing international patent law. (All developing countries have until 2006 to comply with these laws.) Teixeira said Brazil spends \$4500 per patient on state-of-the-art treatment that would cost perhaps three times as much on the commercial market. But 81% of that cost pays for anti-HIV drugs that Brazil does not manufacture because of patent problems. And although Brazil offers free treatment to all of its 530,000 HIV-infected citizens, only 90,000 take these drug cocktails. The government, Teixeira said, could not produce enough drugs to supply everyone in the country, let alone export them.

Even when cheap drugs exist, many countries lack the infrastructure to deliver them reliably. Joy Phumaphi, Botswana's minister of health, explained that the new Merck-Gates program there will help build infrastructure as well as supply free drugs, and that providing one without the other makes little sense. Others worry that people in poorer countries will have a difficult time adhering to the complicated treatment regi-

mens, which can require taking dozens of pills each day on a tight schedule. They fear that drug-resistant viruses will proliferate. David Serwadda of Makerere University in Kampala, Uganda, noted, for example, that HIV treatment "can't be any easier than tuberculosis, and we have 35% failure with TB." Even if "antiretrovirals were \$1 a day, it wouldn't make much difference," he said, adding that right now, he would rather have cheaper drugs to treat the opportunistic infections of AIDS. This could dramatically prolong life.

After a rocky start, when South African President Thabo Mbeki enraged many attendees by implying that poverty, rather than HIV, caused the AIDS epidemic (*Science*, 14 July, p. 222), the meeting moved to common ground. Many felt it was the least divisive in the 15-year history of these mammoth gatherings.

Former South African President Nelson Mandela helped unify the audience when he closed the proceedings with an impassioned speech that brought down the house. Mandela, after entering the conference hall to thunderous applause, with thousands of South Africans singing his name, whistling, and chanting, praised both Mbeki and his country's scientists. He stressed that the poor, "if anybody cared to ask their opinions, wish that the dispute about the primacy of politics or science be put on the back burner and that we proceed to address the needs and concerns of those suffering and dying." He urged South Africa to adopt measures to thwart transmission of the virus from mother to child, and he promoted the use of condoms, aggressive treatment of sexually transmitted diseases, and investments in voluntary HIV counseling and testing services. Mandela concluded: "We want to move away from rhetoric to practical action."

Moving from rhetoric to practical action is the challenge that now faces the thousands of AIDS researchers and activists as they return from Durban to labs and offices. The next international meeting 2 years from now in Barcelona, Spain, will assess just how much progress the world has made in confronting a disease that today threatens to kill nearly 1% of the global population. In the meantime, Justice Cameron's harsh verdict on today's efforts will be ringing in their ears.

—JON COHEN

## ECOLOGY

### Food Fight Drives Evolution

Even in the rainforest, couples squabble over dinner. When it's time to dine on St. Lucia, an island in the West Indies, male purple-throated carib hummingbirds horde the nectar from the short, sweet flowers of a plant called *Heliconia caribaea*. Female caribs are stuck with the less productive blossoms of *H. bihai*. But new research shows that both sexes make the most of this jungle buffet—thanks to evolution.

On page 441 of this issue, evolutionary biologist Ethan Temeles and students at Amherst College in Massachusetts showcase these hummingbirds as a rare example of food supply—in this case, flower shape—spurring the evolution of a sexual dimorphism, or a feature that differs between males and females. On St. Lucia, female caribs sport bills a third longer and twice as curved as their male counterparts—one of the most extreme bill differences between the sexes in any hummingbird species. In the paper, Temeles links these "whoppingly dimorphic bills" to the specific flowers the male and female caribs frequent. "This is the best example we've got of male and female animals evolving to use different food," Temeles says.

Other researchers call the study impressive. "This is delightfully strong evidence that ecology sometimes drives differences between males and females," remarks evolu-



**Symmetry.** This female hummingbird's bill is shaped to fit its favorite flower.