INFECTIONIOUS DISEASES

Massive Outbreak Draws Fresh Attention to Little-Known Virus

PARIS—A French island in the Indian Ocean is reeling from an explosive outbreak of a little-known viral disease. On 17 February, the French National Institute for Public Health Surveillance said that an estimated 110,000 residents of Réunion, population 770,000, had been infected with the chikungunya virus—almost 22,000 of them between 6 and 12 February alone. Chikungunya, which is spread by mosquitoes, is rarely fatal—of 52 patients who died, all but one were suffering from other diseases as well—but it can cause high fevers, rashes, and excruciating joint and muscle pains.

“It’s a massive outbreak, it’s absolutely alarming,” says Stephen Higgs of the University of Texas Medical Branch in Galveston, one of a few dozen researchers around the world who study chikungunya, a member of the alphavirus genus that also includes rarities such as eastern equine encephalitis and western equine encephalitis. The epidemic has triggered a wave of activity in French labs to address scientific gaps; it could also breathe new life into a vaccine candidate developed by the U.S. Army that has been languishing for almost a decade.

Chikungunya—often shortened to “chik” by scientists—is a Swahili word that means “that which bends up,” a reference to some victims’ inability to walk upright. The disease is known to occur in large parts of Southeast and South Asia, as well as in Africa. Preliminary sequencing of virus isolates from Réunion at the Pasteur Institute in Lyon suggests that the virus was imported from East Africa, says Pasteur virologist Nathalie Par- digon. Other Indian Ocean islands—including Mauritius, the Seychelles, and the Comoros—have also seen cases, although far fewer.

It’s unclear why the outbreak is so ferocious. One factor, says virologist Charles Calisher of Colorado State University in Fort Collins, may be that the virus is hitting Réunion for the first time, so almost no one has resistance. The mosquito species implicated as the main culprit in Réunion—Aedes albopictus, also known as the Asian tiger mosquito—was not believed to be a very efficient chikungunya vector, says Pasteur entomologist Paul Reiter, because it bites many different species. But perhaps it has acquired a particular taste for humans in Réunion, he adds.

Although doctors can treat the symptoms with painkillers and anti-inflammatories, there are no specific drugs against chikungunya. Nor is there a vaccine. The most promising candidate thus far has been an attenuated virus, developed in the 1980s by researchers at the U.S. Army Medical Research Institute for Infectious Diseases in Fort Detrick, Maryland. Although a clinical trial in 73 volunteers, published by Robert Edelman of the University of Maryland and colleagues in 2000, showed that the vaccine triggered neutralizing antibodies, development fell flat because of a lack of money, says David Vaughan, who heads the infectious disease program at the Army’s Medical Research and Materiel Command. The Réunion outbreak is “an opportunity to reactivate the research effort and to bring the vaccine to licensure,” Vaughan wrote in an e-mail.

A spokesperson for French health minister Xavier Bertrand confirms that the French government is conversations with the U.S. health and defense departments. But much more work is needed on the vaccine, he cautions—for instance, to investigate side effects, such as joint pains, which developed in some vaccinees in the clinical trial.

To address the questions, the French government announced a broad research program last week, to be carried out by multiple institutes, and including basic virology, antiviral drugs and other treatments, vaccines, and mosquito ecology and control. On Monday, it also installed a panel to coordinate the battle, chaired by Antoine Flahault, head of the public health department at the Tenon Hospital in Paris.

—MARTIN ENSEINK

Harvard President Steps Down

Lawrence Summers, the economist who in 5 years as president of Harvard University became a lightning rod for controversy, resigned 21 February amid a faculty rebellion spurred by the resignation of Arts and Sciences Dean William Kirby. The faculty at Harvard’s largest school was preparing a second no-confidence vote; the first came last March after Sum- mers’s comments about women in science and his handling of other issues (Science, 28 January 2005, p. 492). Summers won respect for his support for research, including plans for a new science hub to be built in nearby Allston.

“My greatest hope is that the University will build on the important elements of renewal that we have begun over the last several years,” Sum- mers said in a statement.

Summers, who will step down 30 June, plans to remain on the faculty as a professor. Derek Bok, who led the university from 1971 to 1991, will be interim president.

—JENNIFER COUZIN

NOAA to Navy: Sssshhh

The U.S. Navy should turn down the volume of its proposed sonar training range, says the National Oceanic and Atmospheric Administration (NOAA), which publicly released its comments on the Navy’s plans last week. The Navy wants to build a sonar training facility off the North Carolina coast, and last October it concluded that the sonar would not harm marine mammals. NOAA disagreed, citing the risk of driving beaked whales and other marine mammals onto beaches. Also, NOAA said, the endangered North Atlantic right whale has been sighted nearby. The Navy is now reviewing NOAA’s concerns and more than 300 substantive public comments; the final report is expected in the fall.

—KATHERINE UNGER

Scripps Lands on Jupiter

Capping a two-and-a-half-year battle over siting, officials in Palm Beach County, Florida, voted last week to approve plans by the Scripps Research Institute to build an East Coast campus in Jupiter, Florida. A suit by environmentalists had prevented the San Diego, California–based research powerhouse from building on its original choice, a site near wetlands. So Scripps officials turned to the Abacoa campus of Florida Atlantic University, where more than 160 Scripps researchers are temporarily housed.

—ROBERT F. SERVICE