

edited by CONSTANCE HOLDEN

French Genome Pioneer Joins Industry

Complaining that he is no longer getting enough money to do his work, gene mapping pioneer Daniel Cohen, director of the Centre d'Etude du Polymorphisme Humain (CEPH) in Paris, is leaving to become head of genome research at the French biotechnology company Genset.

The departure of the hard-driving Cohen marks the end of a long and successful era for CEPH, which he founded in 1983 with Nobel laureate Jean Dausset. CEPH, in collaboration with Généthon, completed the first rough physical map of the entire

human genome. But now, Cohen told *Science*, "the budget we are getting from the government is not enough to keep us competitive." Besides, Cohen sees private industry as the wave of the future in genome research. "Seventy to eighty percent of all the data is in the private sector now," he says.

The move comes as no surprise to other genome researchers: Cohen's attempts to develop collaborations between CEPH and private industry have been controversial and



Daniel Cohen

unsuccessful (*Science*, 18 March 1994, p. 1552). "I don't blame Daniel for leaving CEPH," says one former CEPH researcher who asked not to be identified. "He just couldn't get the money anymore to do serious genome research." (CEPH declined *Science's* request for budget information.)

Cohen should be more content at Genset, which claims to be the largest producer of synthetic DNA in the world. Its high-speed gene sequencing laboratory is already actively studying regulatory genes involved in genetic diseases.

Physician Sues Dana-Farber

Repercussions from the December 1994 overdose death of a patient in an experimental chemotherapy trial at Boston's Dana-Farber Cancer Institute continue to haunt the hospital (*Science*, 21 July 1995, p. 295; 22 September 1995, p. 1675). Now the physician who directed the trial is suing the hospital, claiming she is being made a scapegoat.

Dana-Farber physician Lois Ayash filed suit on 1 February, asserting that during the hospital's investigation of the dosage mix-up which killed *Boston Globe* health columnist Betsy Lehman and injured another patient, she was unfairly singled out for suspension of her clinical duties while several male doctors also involved in the trial were not reprimanded. Ayash "did have primary research responsibility, but she did not have primary clinical responsibility" for the trial, says Joan Lukey, Ayash's attorney. "She was chosen as the scapegoat for what occurred, and she happened to be the woman member of the team."

According to lawsuit documents quoted in the *Globe* (which is also named in the suit), Ayash alleges the paper distorted facts in its initial reporting of the incident), Ayash alleges that David Livingstone, former Dana-Farber physician-in-chief and a current director of the institute, suspended her "in hopes of protecting his own position and reputation and the positions and reputations of his male colleagues at Dana-Farber." As a result, her suit states, Ayash has been shunned by colleagues and "apparently rendered suspect and perhaps unemployable in her area of specialty."

Dana-Farber officials would not provide any further comment. And all documents related to the suit were impounded by court order last week after attorneys for Livingstone and Dana-Farber argued that their release would reveal confidential material.

Biggest Black Hole

Astronomers have found evidence of the biggest black hole yet to be found in a mature galaxy—adding support to the theory that galaxies routinely have black holes at their centers.

In theory, the holes—masses so dense no light escapes them—are at the centers of two kinds of galaxies. In the flashiest young ones, called quasars, the hole actively sucks in the surrounding gas and stars and shines outrageously. In older, more decorous galaxies, the black hole cleans out its immediate neighborhood, and the remaining gas and stars circle the darkened center.

A team of astronomers led by John Kormendy of the University of Hawaii used the Hubble Space Telescope to measure the speed of stars—which, because they are moved only by gravity, are a better measure than gas—that are circling the center of galaxy NGC 3115. Those stars are orbiting at an unprecedented 1000 kilometers a second. The amount of mass necessary to keep them from flying out of orbit, says Kormendy, is equivalent to more than two billion suns. But the stars' light implies a mass only one-fiftieth as large, which means most of the mass is dark.



Heavy. Dark core for galaxy NGC 3115.

STSC

The scientists, whose research will be published next month in *Astrophysical Journal Letters*, have no doubt about their finding. The "detection of the dark object," says Kormendy, "is now bomb-proof." Roger Blandford at Caltech agrees: "It's a beautiful piece of observational work," he says. "It's

a very strong case."

This is the latest in a string of detections that have bolstered the theory that quasars live bright and die young and that modern galaxies are their afterlives. Clocking stars, says Kormendy's colleague, Douglas Richstone at the University of Michigan, "allows a systematic assault on the demographics of long-dead quasars."

Money Doesn't Buy Quake Prediction Faith

Probably no other nation sinks as much money—more than \$100 million a year—into earthquake prediction research as Japan does. Around the clock, government technicians monitor a dense network of instruments spread through the Tokai area west of Tokyo that track seismic activity, crustal tilt, rock strain, and ground-water levels. They hope to spot odd changes that might warn citizens of the impending occurrence of a supposedly overdue magnitude 8 quake. The government also funds scores of studies of such things as animal behavior and electromagnetic waves in hopes of finding reliable precursors.

The Japanese public, for the most part, is hardly reassured. According to a recent survey by the Prime Minister's Office, a scant 4% of the population believes prediction is always possible, while 44.5% believe prediction is totally impossible. Only 12.8% think very large quakes may be amenable to prediction; 17.8% think a quake in the Tokai region would be predictable, presumably because of all those instruments.

Scientists themselves are even more skeptical. "At this moment, the majority of seismologists in Japan believe earthquake forecasting is either impossible or very difficult," says Masayuki Kikuchi, a professor of physics at Yokohama City University who uses seismograms to analyze the rupture mechanism of earthquakes. University of Tokyo seismologist Robert Geller says the poll actually indicates the public still has too much faith. "If you lump the 'predictors' and 'don't know' answers [23%] together, only four in 10 people in Japan know quakes are unpredictable," he says.

Nonetheless, says Yuichi Inoue, deputy director of the Science and Technology Agency's Earthquake Research Promotion Office, the government feels compelled to continue its activities in hopes of a future breakthrough.