

# RANDOM SAMPLES

edited by ROBERT F. SERVICE

## Chinese Scientists Urge Political Tolerance

An unprecedented number of senior Chinese scientists took the bold step last week of petitioning the government to erase the label of "counterrevolutionary" pinned on participants in the 1989 demonstrations in Tiananmen Square and to show more tolerance for political dissent—a request that has already produced reprisals against some of the signers.

In the petition, sent to President Jiang Zemin and parliamentary chair Qiao Shi, the 45 sign-

ers—half of them scientists—call on Chinese authorities to "never again look upon persons of independent thought and independent views as hostile elements" and to free those still in jail after the government crackdown. The petitioners lamented the United Nations Educational, Scientific, and Cultural Organization's (UNESCO's) silence on the situation in a year when that group, and its parent body, have called for more political tolerance. "We

hope that this can, in some way, spur Western scientists to pressure UNESCO to be more serious," says the petition's drafter, historian of science Xu Liangying. Other signers include nuclear physicist Wang Ganchang, 88, an academican of the Chinese Academy of Sciences, and several other CAS academicians.

The *Washington Post* reported over the weekend that at least one signer and two other dissidents had been detained; Xu told *Science* that three police had been posted outside his Beijing apartment.

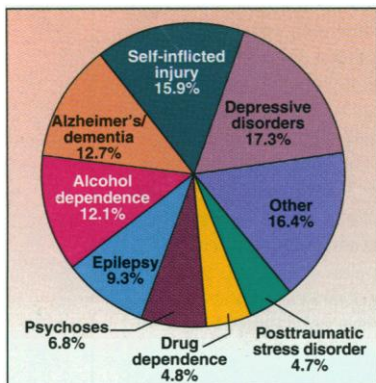
## The Coolest Atoms

In search of a very cold, very dense, and very mysterious state of matter known as Bose-Einstein condensation (BEC), atomic physicists have been struggling for years to trap dense collections of ultracold atoms in magnetic fields or laser beams. But such traps tend to be good atom chillers or good packers, but not both, and BEC has remained elusive.

Now researchers at the University of Colorado and the National Institute of Standards and Technology (NIST) have added a new twist to a conventional trap to chill a high density of rubidium atoms—some 600 billion per cubic centimeter of volume—to a record 35 billionths of a degree above absolute zero. That's 20 times colder than temperatures reached by other groups. Although reaching BEC requires a density at least four times greater, "it's progress," says physicist Tom Greytak of the Massachusetts Institute of Technology.

The BEC goal was originally set by Indian physicist Satyendra Nath Bose and Albert Einstein, who theorized that atoms in an ultracool and dense collection would "condense" or overlap and act as if in a single quantum state. Scientists have tried to create that state by trapping atoms in a magnetic field that comes to a point at the bottom, among other techniques, explains NIST physicist and team leader Eric Cornell. The pointed traps cool atoms down by letting the hotter atoms evaporate. But they have a tendency to leak colder atoms as well.

As reported at a meeting of the American Physical Society last week in Toronto, the researchers plugged this leak by creating a trap with a pointed bottom and then using supplemental magnetic fields to swing the point of the trap around, which keeps the atoms from shimmying their way out of the restraints. The physicists are already making progress with refinements that they think may bring BEC within their reach.



**Global cost.** Various disorders account for different percentages of total life years lost to mental afflictions.

## Poor Face Mental Health Woes

War, disease, and poverty are exacting an increasing psychological strain on people from de-

veloping countries, concludes a report released last week by Harvard Medical School. According to the study, *World Mental Health: Problems and Priorities in Low-Income Countries*, mental health problems such as anxiety, depression, and self-inflicted injuries account for more than 15% of the global burden of disease. When behavior-related illnesses, such as AIDS, are added, that number jumps to 34%. But raising money and public consciousness to fight this plight is likely to face "an extremely long road," says Robert Edgerton, a psychiatrist at the University of California, Los Angeles, because "the victims of mental disorders are very easy to dismiss."

## Popper Library To Go Public

Austria beat a looming auction deadline last week, buying the prized library of the late Karl Popper for 11 million shillings (\$1.1 million). Popper (1902–1994), called "the greatest philosopher of science there has ever been" by the late Nobel laureate Peter Medawar, corresponded regularly with science greats such as Albert Einstein and amassed a collection of 6000 volumes of letters and books. This scientific treasure-trove will be housed at the University of Klagenfurt and opened to the public.



Karl Popper

## An Emerging Internet Virus

The re-emergence of the Ebola virus in Zaire is causing an outbreak of interest in the deadly pathogen on the Internet.

One new site on the World Wide Web, called the "Ebola Page,"\* is operated by layperson David Ornstein. Jack Woodall, director of the New York State Health Department's arbovirus lab in Albany, calls the site "excellent" for its comprehensive list of Internet resources on the virus and cool-headed summaries of recent news and rumors. The latest speculation: a report from *The Telegraph* in London that the outbreak's first victim, or "patient zero," contracted the virus by eating smoked monkey.

From Ornstein's page, a browser can connect to Ebola pages published by the Centers for Disease Control and Prevention (CDC)\*\* and the World Health

Organization\*\*\*. In addition to background information on the virus, CDC provides a transcript of an interview with former agency boss and Ebola co-discoverer Frederick Murphy. Murphy, a virologist now at the University of California, Davis, cautions that tight budgets are hampering international efforts to detect and fight other emerging viruses, such as hantavirus and dengue. He also predicts that heavy rains in California combined with resistance to insecticides could lead to the "re-emergence" of the mosquito-borne Western equine encephalitis and St. Louis encephalitis in the United States this summer.

\*<http://ichiban.objarts.com/ebola/ebola.html>

\*\*<http://www.cdc.gov/ncidod/ebola.htm>

\*\*\*<http://www.who.ch>