# IN BRIEF



**DATA POINTS:**

## FISH TALES

Using a statistical modeling program that incorporates oceanographic factors and historical production figures, Reg Watson and Daniel Pauly of the Fisheries Center in Vancouver, B.C., suggest that world fisheries are in more trouble than previously thought. Some countries--China in particular--have vastly overstated their catches.

Marine fish caught worldwide in 1999, millions of metric tons: **84.1**

Marine fish produced through aquaculture: **13.1**

Amount caught by China, as reported: **10.1**

Amount caught by China, as indicated by statistical modeling: **5.5**

Average annual change in fish catch since 1988, as suggested by reported figures: **+330,000 metric tons**

Change as suggested by statistical modeling: **-360,000 metric tons**

Percent of all fish caught or raised that is for human consumption: **74**

SCIENCE HISTORY

## In No Uncertain Terms

The Bohr family has finally released the mysterious letters that Niels Bohr wrote but never sent to Werner Heisenberg. They shed some light on the two physicists' mysterious meeting in 1941, which became the basis for Michael Frayn's play Copenhagen. In the letters, released in February, Bohr indicates that Heisenberg was not in fact stalling the Nazi atomic bomb program, as Heisenberg later claimed. "You spoke in a manner that could only give me the firm impression that, under your leadership, everything was being done in Germany to develop atomic weapons," Bohr wrote. The documents are not likely to be the last word, as some historians think Bohr could have misinterpreted Heisenberg's statements.

--Philip Yam

**CATERPILLARS** of the monarch butterfly may not be truly threatened by transgenic crops.

ROD PLANCK Photo Researchers, Inc.

TRANSGENIC CROPS

## Gene Fiends?

As genetically modified crops in North America grow, so does the debate over their use. A January report commissioned by the British conservation group English Nature showed that in Canada neighboring canola crops modified to be resistant to different kinds of herbicides have cross-pollinated and produced seeds that contain multiple resistances. If left behind after a harvest, the seeds could grow amid new crops or in field margins; English Nature argues that the offspring could become noxious weeds uncontrollable by existing chemicals. Keith Downey, research scientist emeritus at Canada's Saskatoon Research Center, disagrees. Canadian researchers expected resistance genes to accumulate, he says, and because there are more herbicides than resistance genes, the plants are just as easy to control as singly modified varieties. "The presence of the additional gene doesn't change it one little bit," Downey contends.

Indeed, genetically modified pollen may be less harmful than

SOURCES: *Nature*, November 29, 2001; State of World Fisheries and Aquaculture 2000, by the Food and Agriculture Organization of the United Nations

**WWW.SCIAM.COM/NEWS**

## BRIEF BITS

- A study of Vietnam War veterans revealed that soldiers with **high IQ scores fended off post-traumatic stress disorder** better than those with lower scores. /013102/2.html
- Newly discovered in China, a fossil of a **chicken-size dinosaur**, dubbed *Sinovenator changii*, suggests that birdlike features arose earlier than previously thought. /021402/1.html
- In Kazakhstan, Soviet cold war aboveground **atomic testing increased the genetic mutation rate** among several generations living near the test site. /020802/2.html
- By splicing spider genes into mammal cells, a Canadian biotech firm has created **synthetic spider silk** that is almost as good as the real thing. /011802/1.html

previously thought. In a September 14 *Proceedings of the National Academy of Sciences* report that was largely ignored, investigators showed that pollen shed by most types of corn engineered to secrete Bt insecticide harms monarch caterpillars only when at least 1,000 grains coat each square centimeter of caterpillar food. In nature, caterpillars encounter that much pollen less than 1 percent of the time.

--Alison McCook

NANOTECH

### Falling in Line

To create nanoscale transistor junctions, engineers can crisscross different types of semiconducting strands, thereby stacking the materials in layers crucial for manipulating electron flow. Three research teams recently managed to create a more complicated "superlattice" structure along a single wire.

One group, led by Charles M. Lieber of Harvard University, allowed vaporized semiconductor material to solidify behind gold molecules, then switched to different vapors midway through to link segments of different compounds, including gallium arsenide and gallium phosphide. The result was a nanowire consisting of alternating semiconductor bands capped by a gold contact. Such nanowires could serve as nanoscale lasers or bar codes that track proteins. Lieber's work appears in the February 7 *Nature*; researchers from the University of California at Berkeley and Lund University in Sweden present similar striped nanowires in the February *Nano Letters*.

--JR Minkel

EPIDEMIOLOGY

### Early to Rise

"You snooze, you lose" may be truer than anyone ever imagined. Based on a survey of more than 1.1 million people, an investigation led by Daniel F. Kripke of the University of California at San Diego found that people who slept at least eight hours a night had a higher risk of dying within six years than those who said they slept less, even as few as five hours. Women who clocked at least 10 hours a night were 41 percent more likely to die, and men 34 percent more, than subjects with the highest survival rates--those who reported nightly sleeps of between 6.5 and 7.4 hours. The results, however, could not indicate whether extended life span was a direct result of less sleep. Moreover, the researchers could not eliminate the influence of naps or every disease that might affect both sleep and mortality.

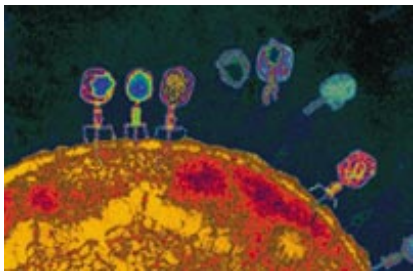
Most Americans get 6.5 hours of sleep nightly, Kripke says, and this study, appearing in the February 15 *Archives of General Psychiatry*, shows that they shouldn't feel guilty about not sleeping more. "What we can say to the average American is, 'You don't have to sleep eight hours. It isn't necessary for health.'" --Alison McCook

EVOLUTION

## Score One for Natural Selection

Evolutionary biologists just got some genetic evidence they have been waiting for: a new study shows how simple genetic changes could have transformed multilimbed crustaceans into the six-limbed terrestrial insects that appeared around 400 million years ago. Experimenting with fruit flies, William McGinnis and two colleagues at the University of California at San Diego found that changing six amino acids in the protein Ubx, which normally helps to govern abdominal development, created embryos with fewer limbs. McGinnis says that a stepwise process of natural selection could have enabled this transition, with subsequent generations of crustacean ancestors carrying an additional amino acid change. These results, published online February 6 by *Nature*, counter arguments leveled by evolution critics who maintain that scientists lack genetic theories to explain how natural selection could induce radical changes in body designs.

--Alison McCook



**LIKE LUNAR LANDERS,** viruses called bacteriophages latch onto the surface of a host.

MPI-TUBINGEN AND OLIVER MECKES
Photo Researchers, Inc.

VIROLOGY

## Breaking and Entering

Scientists have obtained atomic-level details of how a virus can infect and destroy bacterial cells more efficiently than any antibiotic can. Shuji Kanamaru of Purdue University and his colleagues found that the bacteriophage T4 virus takes over a cell using a needlelike structure protruding from its base. Once the virus recognizes a bacterial host, it undergoes a conformational change that pushes the needle into the bacterium. The virus's genetic information is injected through the tube into the host, where it proliferates and eventually bursts the cell. The T4 protrusion is quite stable, and the researchers speculate that it could one day refine atomic-force microscopes by replacing the larger stylus structures those instruments use to image surfaces. The results appeared in the January 31 *Nature*.

--Alison McCook