

Fermilab team finds top quark going solo

Physicists at Fermilab near Chicago have obtained solitary top quarks from a mass of particles for the first time — an achievement, they say, that further bolsters the standard model of particle physics.

The top quark — the heaviest of the six quarks — was first observed at the lab's Tevatron accelerator just over a decade ago. But until now, it has been seen only in pairings with other quarks, says Terry Wyatt, a physicist working in the facility's DZero collaboration.

Physicists had long sought a lone top quark because it may provide evidence for heavier quarks. After years of looking, the DZero team announced earlier this month that it had found 60 lone top quarks in a sea of a million billion proton-antiproton collisions. "We're talking about 60 needles in a pretty large haystack," Wyatt says.

The team found no evidence of heavier quarks, but Wyatt says it will continue to search for them.

Chinese river dolphin driven to extinction

Human activity in China's Yangtze river is causing the region's dolphins to go extinct — and more species will follow if fishing is not regulated, conservationists warn.

Scientists who searched the river for the freshwater baiji (*Lipotes vexillifer*), or river dolphin, say it should be declared "functionally extinct" there. That means that even if a few individuals still remain, their numbers will not be sufficient for the species to survive. The dolphin does not live anywhere else — making it the first cetacean reported to be driven to extinction by humans (see *Nature* 440, 1096–1097; 2006).

"There's no hope of saving them," says August Pfluger, chief executive of baiji.org, a Zurich-based foundation that spent six weeks surveying the Yangtze without finding a single baiji. Pfluger adds that other species in the river, such as the sturgeon and the giant salamander, are also threatened.



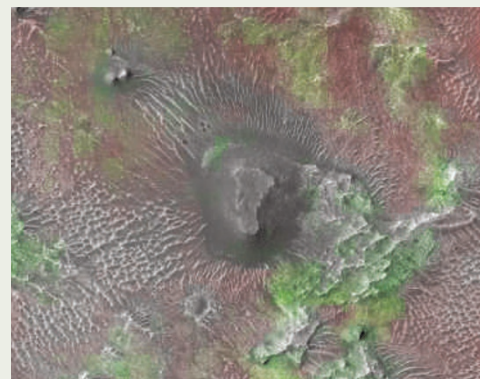
No way back: the freshwater baiji has been described as "functionally extinct".

The red and green planet

This Christmas-coloured image of a martian mesa, courtesy of NASA's Mars Reconnaissance Orbiter, was unveiled at last week's American Geophysical Union meeting in San Francisco. The mineral olivine is shown in red; the green colour represents clay minerals, which might indicate wet environments that could be suitable for life.

The picture, which combines data from two of the spacecraft's instruments, reveals the relationships between these mineral groups. The olivine formed about 3.8 billion years ago; the clay minerals are older still.

"It's important that we've defined that moment in time," says planetary scientist John Mustard of Brown University in Providence, Rhode Island. Now researchers can use that information, he says, to unravel the region's geological history.



NASA/JPL/HUAPL/BROWN UNIV.

Cow-human chimaera for stem cells faces UK ban

The British government is on a collision course with some leading stem-cell scientists, after proposing that research on chimaeric embryos be banned.

Teams at Newcastle University and King's College London want to fuse enucleated cow eggs with human sperm in order to extract and study cloned stem-cell lines. An application for the project is due to be considered in the new year by the Human Fertilisation and Embryology Authority (HFEA), the independent body that licenses such research. But proposals for the reform of assisted-reproduction legislation, announced on 15 December, state that such work should be prohibited.

The proposals, which have still to be debated by parliament, will not stop the HFEA from assessing the application in the short-term. And even if passed into law, the ban could be temporary — parliament would be authorized to consider requests to remove the prohibition and allow as yet unspecified research to take place.

Safety of dietary aids comes under rule of law

The US Congress has passed legislation requiring the makers of dietary supplements and non-prescription drugs to inform the government of any serious adverse events resulting from their use within 15 working days of learning of them.

The Dietary Supplement and Nonprescription Drug Consumer Protection Act, sponsored by Senator Orrin Hatch (Republican, Utah), requires supplement-makers to report adverse events, such as hospitalization or death, to the Food and Drug Administration. The requirement will kick in one year after

President George Bush signs the bill into law, which he is expected to do shortly.

Under a 1994 law governing the \$22-billion supplements industry, companies are still exempt from having to prove the safety and efficacy of their products before putting them on the market. But they must now include on the label an address or telephone number for people to report adverse events.

Polonium official danger rating may get upgrade

The poisoning of former Soviet spy Alexander Litvinenko has prompted the International Atomic Energy Agency to consider whether the safety rating of the substance involved — polonium-210 — should be upgraded.

Litvinenko died in London last month after ingesting an unknown amount of polonium-210, which decays by emitting α particles and is fatal in doses of milligrams or below. Distribution of the substance is strictly controlled in Europe and the United States, but tiny sub-lethal amounts are present in products that can be bought without a government licence, such as antistatic brushes used by photographers.

Officials at the atomic energy agency say they are considering whether the danger rating used to compare polonium-210 with other radionuclides used in industry needs to be revised. The substance currently rates 4 out of 5 on a scale in which the most dangerous radiation sources — such as the cobalt used in cancer treatments — are rated at 1.

Correction

In our News Feature "Mighty mouse" (*Nature* 444, 814–816; 2006) we erroneously stated that 42% of the 50 knockout mouse lines studied showed new phenotypes. The correct figure is 47 lines out of the 50 (94%).