

US admits spraying sailors with sarin during Cold War tests

Washington Hundreds of US sailors were sprayed with deadly biological and chemical agents, including the nerve agent sarin, in secret Cold War tests, the US government admitted last week.

Papers released by the Pentagon on 23 May show that the sailors were exposed to the weapons between 1964 and 1969 in six experiments to test the navy's vulnerability to chemical and biological attacks. The papers were made available after enquiries by veterans who had been involved in the trials.

The overall plan for the experiments called for the sailors to be given protective clothing, but officials say it is unclear whether they were all wearing the clothing, or whether they all gave their consent to taking part.

British scientists involved in similar trials, in which one airman died after being exposed to sarin, face possible prosecution (see *Nature* 416, 468; 2002).

▶ <http://deploymentlink.osd.mil>

Kyoto Protocol closer to fruition as Japan signs up

Tokyo The Kyoto Protocol, the international agreement on limiting greenhouse-gas emissions, has almost secured enough signatures to be enacted.

For the treaty to come into force, it must be ratified by at least 55 countries, which together contributed at least 55% of global carbon-dioxide emissions in 1990. Last week Japan's lower house of parliament passed the protocol, making the country the agreement's 55th signatory.

But even with 55 signatures, the protocol falls short of the emissions criterion. With the United States refusing to ratify the agreement, and Canada and Australia still debating it, reaching the 55% target requires a signature from Russia, which accounted for 17.4% of 1990 emissions. Experts believe that Russia will sign up, but suggest that it may delay formal ratification until later this year in an attempt to secure better terms.

Japan's politicians are now discussing a bill on new regulations that would enable it to meet its commitment to reduce emissions to 6% below those of 1990.

Hawking fights for ban on 'fraudulent' book

Washington Astrophysicist Stephen Hawking has asked the US Federal Trade Commission to recall a book of his lectures.

The Theory of Everything, published by New Millennium Press of Beverly Hills, California, is the transcript of a Cambridge



Stephen Hawking: wants book withdrawn.

lecture series that Hawking gave in 1989. Hawking agreed to publication of a transcript when the lectures were recorded by Dove Books On Tape, but his lawyers say this was intended only to cover a transcript included with the audio cassettes — not publication of a separate book by New Millennium

Press, set up by the former head of Dove. The move constitutes "a fraud on the public", according to the complaint, because the lectures mirror the Cambridge University academic's 1988 bestseller *A Brief History of Time*. Trade-commission complaints are an unusual way to try to stop publication, but Hawking's representatives say the 60-year-old author, who suffers from motor neurone disease, is too weak to appear in a US court.

Oceanographers escape from stricken submarine

San Diego A fire on a US Navy research submarine, the *USS Dolphin*, forced crew and scientists to abandon ship in high seas shortly before midnight on 21 May amid fears that the vessel could sink.

The fire and flooding occurred about 160 kilometres southwest of San Diego, California, while the diesel-powered vessel was at the surface charging its batteries.

All 43 crew and scientists on board were saved by an accompanying research vessel, and suffered only minor injuries. They were evacuated by boat to an oceanographic ship that was in the area. A US Coast Guard helicopter rescued two crew members who fell into the water.

The *USS Dolphin* carries an array of oceanographic research equipment and has been used to perform deep-water studies and near-bottom surveys. The submarine was towed on 23 May into San Diego, where navy officials are investigating the incident.



Sub in trouble: the *USS Dolphin* was towed into port after fire and floods forced an evacuation.

Scientists speak out on sustainability

San Diego Natural and social scientists from more than 40 countries met at the National Autonomous University of Mexico in Mexico City last week in an attempt to shape the scientific agenda for August's World Summit on Sustainable Development in Johannesburg. The event was run by several organizations, including the Initiative on Science and Technology for Sustainability, a multidisciplinary network.

The meeting, attended by 350 researchers, completed a two-year effort to decide on a series of projects to recommend for debate in August. These include improvements to water and ecosystem management in Africa, prediction of extreme weather events, and aquaculture projects for Southeast Asia.

A full report is to be posted this week on the Forum on Science and Technology for Sustainability, hosted by Harvard University.

▶ <http://sustainabilityscience.org>

Rearrange letters to spell a new word in the story of life

London There's a new word in life's vocabulary. The letters of DNA can be rearranged to spell out a 22nd amino acid, researchers have discovered.

The scientists who cracked life's genetic code in the 1950s said it contains a mere 20 'words' — the amino acids from which life's myriad proteins are built. A 21st amino acid was discovered in bacteria in 1986. Now researchers at Ohio State University in Columbus have found another, pyrrolysine, in a microbe called *Methanosarcina*.

The microbe lives in the guts of cattle, where it breaks down organic molecules for energy, producing methane as a by-product. Pyrrolysine is in one of the organism's methane-producing proteins (G. Srinivasan *et al. Science* 296, 1459–1462; 2002 and B. Hao *et al. Science* 296, 1462–1466; 2002).

"We thought the 21st was an aberration, but here we see another one," says Michael Chan, a biochemist on the Ohio State University team. "Perhaps 23 and 24 are just around the corner."