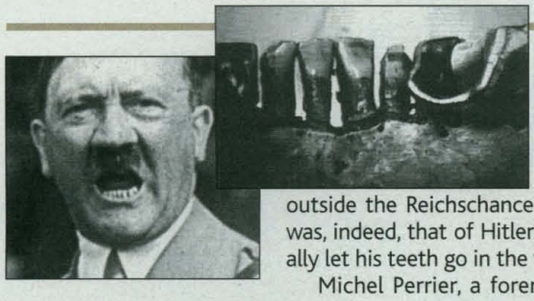
Early Winter Doomed Famous Polar Trek

An unexpected bitter cold snap appears to have doomed British explorer Robert Falcon Scott's turn-of-the-century South Pole expedition, according to scientists who compared recent weather records with conditions reported by the explorers.

The race to be the first to reach the pole began in the antarctic spring of November 1911. Scott's team made it in January, a month after Norwegian explorer Roald Amundsen. The delay proved fatal, as an early winter was to set in. In March, after slogging 2575 km, Scott and two comrades froze to death huddled in a tent, long after two other team members as well as the sled-dragging ponies had perished. The group's records showed that in less than a week temperatures had plummeted from a relatively mild –23° Celsius to a bone-chilling –38°C. "The weather conditions are awful," Scott wrote in his last diary entry on 10 March 1912.

Wondering how unusual that cold spell was, atmospheric scientists Susan Solomon of the National Oceanic and Atmospheric Administration's Aeronomy Laboratory in Boulder, Colorado, and Chuck Stearns of the University of Wisconsin, Madison, tracked monthly temperatures over the last 15 years at four automated weather stations located, by coincidence, along Scott's return route. They found that late February and early March were about 7°C (20°F) warmer than what Scott and his people endured.

Why Scott's party foundered "is a big issue" among historians, who still debate whether it was poor planning, disease, or just bad luck, says antarctic expert Donald Manahan of the University of Southern California in Los Angeles. Scott himself might agree with the researchers: He carried Ernest Shackleton's diary of an earlier expedition and regularly commented in his own journal that Shackleton had much better weather.



Teeth of Evidence

An analysis of newsreel footage of Adolf Hitler's incendiary speechmaking supplies further evidence that the fire-blackened body found outside the Reichschancellery bunker by Soviet soldiers in May 1945 was, indeed, that of Hitler. The images also confirm that Der Führer really let his teeth go in the waning months of the war.

Michel Perrier, a forensic odontologist at the University of Lausanne in Switzerland, compared computer-enhanced close-ups of Hitler from newsreels to autopsy documents, postwar testimony from Hitler's dentist, and head x-rays done in response to Hitler's complaints of chronic head pain after a 1944 assassination attempt. Especially revealing were clips of the dictator's most animated speeches, in which he bared his teeth to reveal signs of his dental woes, including advanced gum disease, tooth decay and erosion, bone resorption, and missing teeth, Perrier reported last month at an international conference on "forensic human identification in the millenium" in London. "This is the first time that the autopsy and x-ray results were closely compared to actual photos of Hitler," he says.

Wistar Defends Polio Trial

In the hopes of refuting the theory that its vaccine work spread AIDS through Africa in the late 1950s, the Wistar Institute of Philadelphia is offering to turn over two 40-year-old samples of polio vaccine source material to independent labs for testing.

Wistar administrator Clayton Buck says the offer is in response to *The River*, a fat new book by Edward Hooper, who argues that the vaccine Wistar researchers were working on in Africa in the late 1950s became contaminated with an HIV-like virus. Scientists grew poliovirus in chimpanzee kidney cells, he theorizes, and inadvertently added a chimpanzee virus to the oral vaccine they gave to African children (*Science*, 12 November, p. 1305). Wistar researchers say they never used chimp cells to make vaccine, and that there's no evidence it was contaminated.

The allegations are not new. *Rolling Stone* magazine published the same theory in 1992 and was sued by former Wistar director Hilary Koprowski, leader of the vaccine research project. Wistar also offered to release samples for testing at that time. The Karolinska Institute in Stockholm tested one sample and found no contamination, and an independent panel found no support for the theory. In 1993, *Rolling Stone* apologized, and the testing plan, says former Wistar deputy director Stanley Plotkin, was "sort of dropped." Now, Plotkin is pushing to have it completed. Says he: "I see the book as an attack on our personal honor."

Member of Ohio State bat colony.

Bat Talk

"In the dark, all cats are gray," wrote Benjamin Franklin. So, he might have added, are bats. Now, however, a pair of bat researchers have taught a neural network computer how to tell their nocturnal subjects apart.

Neural networks are computer programs in which "virtual neurons" mimic the way human neurons learn. Stephen Burnett of Ohio State University, Columbus, and his adviser Mitchell Masters programmed the software to compare 10 variables, such as length and frequency, of echolocation calls by bats in OSU's bat lab. The computer is then instructed to guess whether two bat calls were made by one bat or two different bats. If it guesses correctly, the corresponding neural connections are strengthened, and it learns to tell the calls apart.

Burnett hopes eventually to use the device in the wild to see if bats recognize each other by voice. That might help bats protect territory or follow pals to feeding or roosting sites, says Burnett. He described his project at a meeting of the Acoustical Society of America this month in Columbus, Ohio.

Although most human speech recognition programs use neural networks, says Volker Deecke, a bioacoustician at the University of St. Andrews in Scotland, applying them to animals is a new idea. Deecke, who has used neural nets to show that each killer whale pod has its own "dialect," notes that "training a human takes years, while training a neural network takes only 2 or 3 days."

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