awardees return to previous levels anytime soon. "It's a very complicated problem, and it takes time to learn how to do it right," he says. "I don't do anything right the first time, but I keep learning." –JEFFREY MERVIS

PALEONTOLOGY

Earliest Animals Growing Younger?

For paleontologists, finding the most ancient example of an animal in the fossil record is usually a triumph. But sorting out a recent claim about the earliest traces of multicellular animals is turning out to be an ordeal instead. Citing ancient fossil worm tracks from central India, researchers last fall pushed the age of the first animals back from 600 million years old to a startling 1.1 billion years. But claims and counterclaims later tugged the apparent age of animals back and forth between truly ancient and more conventionally old. In the latest set of twists, reported last month at a workshop in Lucknow, India, new radiometric dates nudged the pendulum back toward a relatively young age—about 620 million years—for the fossil tracks. At the same time, workshop participants firmly rejected the fossil evidence originally used to suggest a younger age.

Stones of contention. Small structures in these rocks may be mere artifacts, or small fossils that disprove a claim of very ancient animals.

The traces in question are squiggly furrows from the Vindhyan basin, which paleontologist Adolph Seilacher of Yale University and his colleagues attributed to half-centimeter-thick worms (*Science*, 2 October 1998, p. 19). Seilacher's group came up with the stunning 1.1 billion year age from published radiometric dates on mineral grains from sedimentary rocks containing the burrows. But geochronologists quickly pointed out that the mineral grains could have been eroded from much older rock before being deposited as sediment.

So sedimentologist Dhiraj Mohan Banerjee of the University of Delhi and geochronologist Wolfgang Frank of the University of Vienna have used a different dating technique, based on the decay of potassium to argon, on volcanic ash that fell from the sky shortly before the putative worm-track sediments formed. "All these samples gave consistent ages close to 620 million years," says Frank. Although there are complications in dating these rocks, "I am absolutely confident we can reject the very old age of 1.1 billion years."

Even so, the new dates are not the final word. Frank and Banerjee analyzed chunks of rock rather than single mineral grains, a procedure that geochronologist Paul Renne of the Berkeley Geochronology Center in California calls "a little bit scary." Renne explains that whole rock may contain older or younger mineral grains, which could skew the result, and weathering may have allowed some of the rock's argon to escape, making it seem younger than it is. Seilacher also sounds a note of caution. "All of us have to think about the validity of our data," he says, "whether they be radiometric dates or fossils."

Although geochronologists may be moving toward a younger age, paleontologists at the workshop rejected the original challenge to the tracks' antiquity, published last fall by paleontologist Rafat Jamal Azmi of the Wadia Institute of Himalayan Geology in Dehra Dun, India. Azmi claimed to have used weak acid to extract "small shelly fossils" characteristic of the early Cambrian period—about 545 million years ago—from limestone laid down after the worm burrows. However, after firsthand inspection, three British paleontologists rejected the fossils as artifacts created by chemical alteration of the rock (*Science*, 6 November 1998, p. 1020).

At the workshop, none of the specialists on hand could be convinced that Azmi's fossils were actually formed by living creatures. "Azmi has lost the battle," says paleobiologist Vibhuti Rai of the University of Lucknow, one of the organizers of the workshop. What's more, says Banerjee, 15 workshop participants who subsequently accompanied Azmi to his collection sites were shocked to find that the "limestone" that was the purported source of his fossils is actually a porcellanite, a siliceous volcanic rock that would not dissolve in even strong acid. That raised the question of where the "fossils" came from.

Azmi concedes he erred in identifying the rock, but says he now thinks that his maceration and acid extraction methods somehow extracted fossils from small layers of shale within the porcellanite. Indeed, one paleontologist, Rai, says that this week he was able to extract some fossil-like structures from the rock, although he says they are artifacts, not true fossils.

Such news has made some Indian paleontologists uneasy, as they remember the professional embarrassment suffered in the late 1980s when Vishwa Jit Gupta, then at the Panjab University in India, was accused of passing off fossils from around the world as being from the Himalayas (*Science*, 21 April 1989, p. 277). Rai and other Indian paleontologists are standing by Azmi, saying that the problem may be only contamination of samples or a misinterpretation of data on Azmi's part. –RICHARD A. KERR

With reporting from Pallava Bagla in India.

U.S. WEAPONS LABS

Security Fears Prompt Computer Shutdown

Thousands of researchers at three Department of Energy (DOE) laboratories got an unexpected break from their computers last week thanks to the continuing controversy over the alleged Chinese theft of U.S. nuclear secrets. DOE officials abruptly suspended classified computing operations at the Los Alamos, Sandia, and Livermore national laboratories in New Mexico and California on 2 April and herded more than 20,000 employees—including many not involved in secret projects—to briefings on improving safeguards. Although some researchers say the time out was a necessary distraction, others worry that it could lead to new rules that will make the labs' computers harder to use but not necessarily more secure.

The unprecedented "stand-down" cut off access to all computers containing classified information and idled two of the world's fastest supercomputers while lab officials prepared new security plans. The action marked DOE's most dramatic response so far to critics in Congress, who say that lax practices have led to the theft of classified information (*Science*, 26 March, p. 1986).

The surprise training came a few days after DOE delivered a report to Congress outlining cybersecurity lapses at several labs, including the transmission of classified files over unsecured e-mail networks. In releasing that report, done annually, Energy Secretary Bill Richardson said DOE would be working to close gaps in its com-

CREDIT: PALLAVA BAGLA