



Hall of fame. Lee Berger showed off casts of *Au. sediba*'s bones in the hallway at the meeting.

A New Ancestor for *Homo*?

Finding one partial skeleton of an ancient member of the human family is the rarest of rare discoveries in human evolution. So paleoanthropologists in the audience murmured in surprise when South African researchers announced at a talk that they had found bones and teeth from at least four individuals of a new species of early human, *Australopithecus sediba*. The discoverers say this species shows some surprisingly modern traits and may even be an ancestor of our own genus. “We really have found something very, very odd and very unexpected,” says discovery team leader Lee Berger of the University of the Witwatersrand, Johannesburg, in South Africa. But other paleoanthropologists are waiting for more detailed analyses of the unpublished fossils before they agree on its identity or place in the human family tree.

The four hominin individuals died when they fell into a “death trap” in a cave at Malapa, South Africa, 1.977 million years ago, according to new dates reported by Darryl de Ruiter of Texas A&M University in College Station in his talk. In addition to the articulated partial skeletons of a youth and an older female unveiled last year (*Science*, 9 April 2010, p. 154), the team members also reported the discovery

of an 18-month-old infant and at least one other adult. This means they are getting a good look at *Au. sediba*'s development from infancy to old age.

In five separate talks, Berger and members of his team sketched a quick portrait of *Au. sediba*, who lived at the mysterious time right after the emergence of our genus, *Homo*, between 2 million and 3 million years ago. Researchers have long wondered which of several species of *Australopithecus* gave rise to *Homo*, with Lucy's species, *Au. afarensis*, as the leading candidate.



New face. The skull of *Au. sediba* shows some surprisingly modern features.

The trove of well-preserved bones includes clavicles, shoulder blades, and ribs as well as a largely complete skull, hand, foot, and two pelvises. The team calls the hominin an australopithecine because it had a small brain and “overall body plan” like that of an australopithecine, team member de Ruiter said in his talk.

But the fossils also show some surprisingly modern traits usually found only in members of our genus, Berger said. The two pelvises, in particular, are capacious and elongated, resembling those of *Homo*. In his talk, Berger ticked off a list of other modern traits, including smaller teeth, short hands, and an elongated thumb. In a separate talk

at the annual meeting of the Paleoanthropology Society, Kristian Carlson of Indiana University in Bloomington described the endocast—the impression left inside the skull by the brain—and suggested that the forebrain might be reorganized in a modern way. If so, *Au. sediba*'s brain and pelvis both would have begun to evolve into more modern shapes before the brain expanded, countering the view that a big brain drove the evolutionary remodeling of the pelvis and brain.

Members of our genus were already living when these hominins fell into the pit at Malapa, so these particular individuals aren't our ancestors. But de Ruiter said they might be late members of a species that previously gave rise to *Homo*, or a close relative.

Other researchers, who examined casts of the fossils at the meeting, agreed that on first glance they represent an unusual mix of primitive and more modern traits. But most thought it important to compare *Au. sediba* directly with other ancient hominins in more detail. “The pelvis does look more modern,” says paleoanthropologist Christopher Ruff of Johns Hopkins University in Baltimore, Maryland. “But that doesn't mean it looks exactly like a modern human's or that it gave rise to early *Homo*.”

Even if *Au. sediba* is an evolutionary dead end, says William Kimbel of Arizona State University, Tempe, “it does still shed light on the evolution of early *Homo*, because we know nothing about the time period a half-million to three-quarter million years before *Au. sediba*.”

Ancient Footprints Tell Tales of Travel

About 120,000 years ago, some three dozen men, women, and children stepped across wet volcanic ash on the ancient shores of Lake Natron in Tanzania. By scrutinizing their well-preserved trail, researchers have gotten their first snapshot of what a traveling group of archaic humans looked like, down to the size of the group and the ratio of men to women with children, according to paleoanthropologist Brian Richmond of George Washington University in Washington, D.C. “What's really exciting is we're getting a glimpse of actual behavior preserved in the