

# A child of Africa

April 2010 saw Professor Lee Berger of the University of the Witwatersrand announce a find to eclipse the likes of Tutankhamen's sarcophagus – an important new fossil that may shed further light on our origins.

In early August 2008, Berger discovered a new series of caves – somewhat to his surprise, as he had spent some 19 years working in the area. The find seemed a promising one, with large mammal fossils immediately apparent. Lime miners had punched a hole in the middle of the site, but it seemed otherwise undisturbed.

When Berger returned to the cave in mid-August, accompanied by a post-doctoral fellow, Berger's son Matthew and the family dog, he theorised that miners had not damaged the site because 'probably they'd started sampling here and someone had walked up the hill and said "Oh wait, easy stuff up the hill, let's leave it". I finished that statement and Matt said "Dad, I found a fossil"'.

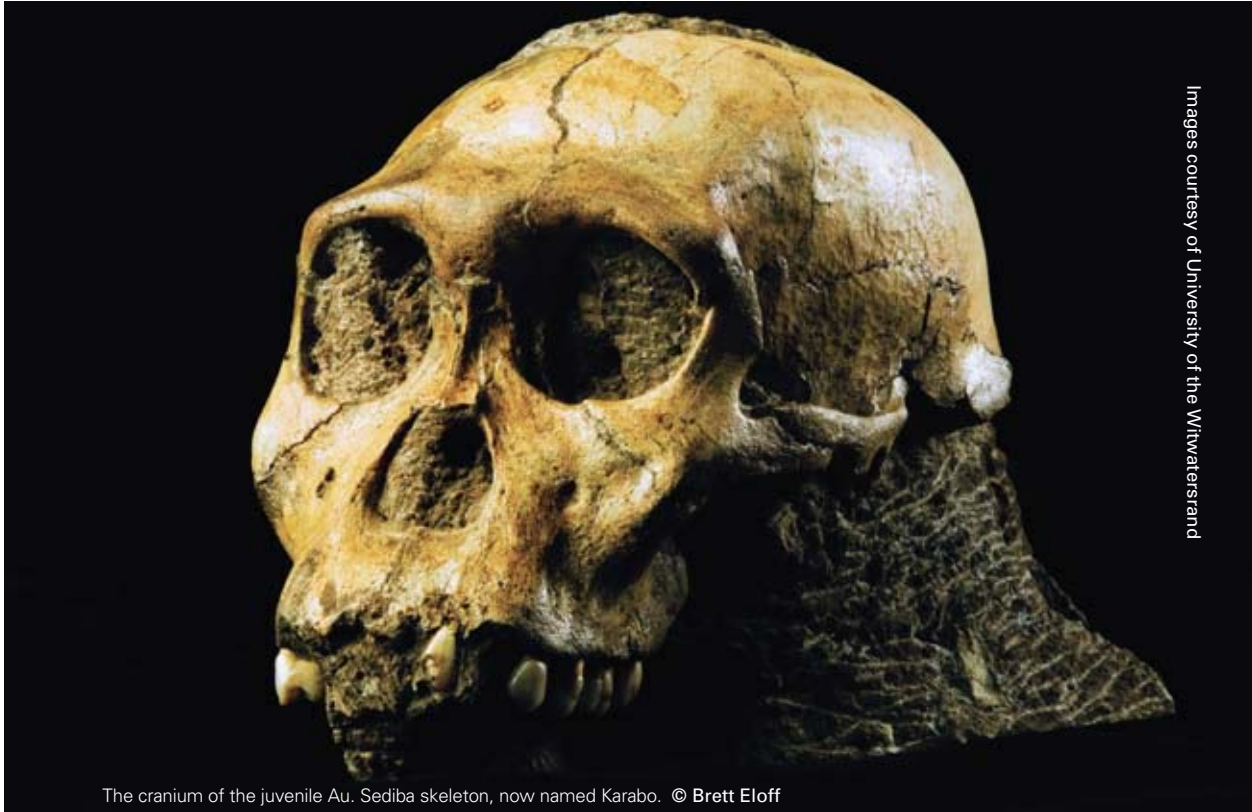
As Berger approached, he found his son holding a small block, apparently thrown some distance from the cave by the miners. 'Five metres from him I could see exactly what it was' he says. 'It was a hominid clavicle sticking out of the rock... There are only a few animals in Africa that have clavicles: bats, moles and primates... I knew it was a hominid clavicle because a hominid clavicle has an s-shape to it, and primates have more of a straight or an l-shape to the clavicles... I did my PhD on them; I'm one of the world's experts on hominid clavicles'.

It was an astounding discovery. '[Hominid fossils] are probably the rarest sought-after objects on earth' he explains. 'There are probably only two to three thousand fragments that have ever been found.... and that's with

85-90 years of constant looking in Africa. Let's say there are 6-700 numbered fossil hominids of early human ancestors from Sterkfontein, which is the richest single deposit on Earth of these things – and it's been worked effectively continuously since 1935 when it was first opened up'.

Even more extraordinary, he says, was the further discovery of a hominid canine and mandible protruding from the other side of the rock. 'When you talk about partial skeletons where you have a piece of cranium or any part of the head that you can associate with any part of the body, you are literally talking about 7 or 8 specimens that have ever been found in Africa'.

Having contacted the South African Heritage Agency and begun the process of applying for the necessary permit, Berger took the block to Wits, where a preparator started work on it. It soon became apparent that they were dealing with an articulated skeleton. With permit secured, Berger returned to scour the site, accompanied, he says, by 'everyone with a PhD or masters in archaeology or paleoanthropology or any interested area' ... We got back out there early in the morning and two and a half hours later we hadn't found a single thing that could be positively identified as a hominid. We were devastated, because it was a tiny site, we should have been able to just click that block back into either one of the walls, or at least find some associated material. Everyone broke for tea, and I



Images courtesy of University of the Witwatersrand

The cranium of the juvenile Au. Sediba skeleton, now named Karabo. © Brett Eloff

walked over to the edge of the pit... and the light got up just enough to shine on the back of the pit. And there, sticking out, was a proximal humerus...As I approached it I realised sitting next to it was a scapular, in position, the shoulder blade with the proximal humerus. And I'm thinking "We've found the child!"

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What ultimately came to light was not the child, but a second skeleton; an adult female, providing the researchers with two of 'arguably the most complete skeletons of early human ancestors ever discovered'. Although Berger objects to the term "missing link" – 'because evolution doesn't work like a chain of events, one thing leading to another thing; its much more of a bush or a branching exercise' – the skeletons are believed to be a new species, approximately 1.9 million years old, and filling a critical gap in human evolution. 'They seem to fall between the earliest australopithecines like Lucy and Little Foot, Mrs Ples and the Taung child, and later things which are clearly our direct ancestors, like homo erectus' says Berger. 'I don't think anyone will ever again argue that we haven't found

anything in the human lineage that's not transitional. This thing has long legs like we do; a pelvis for striding that's unique to homo erectus and homo sapiens; it's got arms the length of an orangutan and hands that are short, powerfully built; its got a face that's very advanced, with a nose. And the anterior teeth are like ours, the posterior teeth are like something more ancient and primitive; it's got an advanced shaped brain with vertical sidewalls – it's tiny! I mean, it's ... the size of one of these very early australopithecines. And yet it's shaped like something

much lighter. And what's so fascinating about it is that it's different from what we had been putting into that position – things like homo habilis, which have large brains but more primitive faces'.

It appears that adult and child may have fallen victim to a kind of 'death trap'; evidence suggests that the fossils were preserved in an underground lake, filling them with a mixture of water, lime and sediment, while other fossils found show signs of a fall. 'It's a miraculous preservation situation that we've not seen repeated anywhere else' Berger says. Sixty scientists – from both South Africa and abroad – have been brought in to work on what is being uncovered, the extent of which has required the creation of new inventories of research. 'We've found a richness of record that will stun people when it comes out... we're getting a look at the environment that's completely unprecedented. The plants, the other animals, and the insects are equally well preserved'.

After years of presenting 'little bits and pieces, scraps' to a frequently incredulous audience, announcing a find so self-explanatory in its completeness delights Berger. 'It's there, it's manifest, it is what it is, and they're so complete that there's really no argument'. He is very much aware that

this is the find of a lifetime. 'If human beings are still writing about themselves a million years from now, if they're still interested in looking at their origins - these fossils form a part of that record. I've never before worked on anything where you know you're sitting with something that has just become an iconic part of the human record. It's very humbling that you know [that what you are working with] has just joined Tutankhamen's sarcophagus or the Mona Lisa as part of something that humans identify themselves with'.

Bones of Au. Sediba © Brett Elloff

