

Sifting through S. Africa's archaeological riches

September 28 2010, By Robyn Dixon

When Morris Sutton picks a chipped, ordinary-looking rock from the soil, he's the first to touch the stone tool since an ancestor of man used it nearly 2 million years ago.

In his dim, cool cavern at the bottom of a 30-foot ladder, he feels the wonder of it, breathing in the loamy smell, peering through a window deep into time.

Sutton, 47, an archaeologist, was a Memphis, Tenn., factory manager who grew tired of the flat horizon of commerce and manufacturing and of laying off fellow employees.

So he quit to pursue his hobby: hunting for fossils and Stone Age tools. He went back to college to study archaeology and later moved to South Africa, where he is a postdoctoral researcher with the Institute for Human Evolution at Witwatersrand University.

South Africa is a mecca for archaeologists from around the world; its fossils cover an unbroken sweep of prehistoric time, from the first smudge of life through the dinosaur era to early hominids and beyond. Some of the world's most significant fossils were discovered here: the Taung child, Little Foot and, in April, a young male hominid, believed to be a new species, *Australopithecus sediba*, whose remains appear to be nearly 2 million years old.

"You can look at the latest forms of life and the first evidence of life and

all the way through the [dinosaurs](#), all the way through the first emergence of hominids and our ancestors, right through to today. There's nowhere else in the world where you can find that," says Andrea Leenen, head of the Paleontological Scientific Trust, a South Africa not-for-profit organization that sponsors paleontological research.

At Witwatersrand University, the [fossil](#) treasures include several eggs of a small [dinosaur species](#), preserved just as they were hatching. Thousands more items sit on shelves and in boxes, not yet chipped out of their rock casings. It will take decades to process them.

Fossil hunters are famous for their egos, jostling for media attention and research funds and holding sniffy debates about whose find is the oldest or the closest ancestor of man.

The soft-spoken Sutton doesn't fit the stereotype of an Indiana Jones-style wunderkind, desperate to unearth the oldest human ancestor. He calibrates his assertions cautiously as he clammers over a rough, dry landscape pocked with caves.

He's excavating at Swartkrans in the Sterkfontein Valley, pulling out specimens more than a million years old. He's the kind of man who gets excited about an almost imperceptible layering of different-colored soils -- deposits from different millennia, windows into different times.

Yet he could dig here for years without finding that once-in-a-lifetime breakthrough -- a missing link, a new species, evidence of early cooking. The hole might yield nothing new.

"Well," he pauses hesitantly. "You don't have to discover anything new. You can look at things from a different angle, bring a new perspective."

It's now possible, for example, to analyze the microscopic residue of

meat or plants left on [stone tools](#) nearly 2 million years old and learn what the tools were used for.

More than a third of the world's hominid fossils were found in one small area at Sterkfontein. The stone tools here are from the era when humankind's predecessors and related primates were evolving, a million years ago and more. *Homo ergaster* is one such predecessor, whereas *Australopethicus robustus* was a chunky, large-jawed branch on the same family tree that died out.

"This is a very important phase in humankind's evolution. It's like our adolescence," Sutton says.

In past decades, scientists at Swartkrans turned up evidence of some of the earliest controlled use of fire, as much as 1.5 million years ago. They found evidence that *robustus* coexisted with early humans. Scientists can only guess why they died out while the others continued to evolve.

Sutton gestures with quiet pride at an excavated area not much bigger than a double bed: That's five years' digging there. He and his South African assistant, Andrew Phaswana, 35, scrape away the soil layer by layer, unearthing as many riddles as answers.

Phaswana sits in the sunshine, using tweezers to sort through a chunky pile that looks like breakfast cereal. It's run-of-the-mill stuff: thousands of bones and teeth of tiny mouse-like rodents and chips of stone that went flying as the ancients fashioned their tools. He classifies them and bags them up.

Like Sutton, Phaswana once had an unsatisfying job, as a gas station attendant. He loves the thrill of finding huge, flat *robustus* molars, probably used for grinding fibrous vegetation such as roots.

"I like this job because I learn more every day. I learn where I come from and how the old people were behaving and how they were eating and how they used fire," Phaswana said. In the study of mankind's ancestors and related species, blind alleys, contested theories and revisions are the norm. So Sutton is cautious about jumping to conclusions.

The fossils of burned bones found at Swartkrans don't prove that man's ancestors cooked their meat. Sutton would want clearer evidence, like bones that had been butchered as well as burned.

He's also on the lookout for proof that robustus used stone tools. The earliest stone tools predate the earliest Homo species by several hundred thousand years.

"It could be that we haven't found the earliest Homo yet. Or it could be that robustus were using tools," he says.

Swartkrans contains at least three Stone Age-era deposits. Sutton needs funding to excavate the two older areas, which have both yielded hominid fossils.

"As an archaeologist, there's a huge attraction that you are picking up something like a stone tool that maybe some [hominid](#) dropped a million years ago."

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Citation: Sifting through S. Africa's archaeological riches (2010, September 28) retrieved 2 May 2024 from <https://phys.org/news/2010-09-sifting-africa-archaeological-riches.html>

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