

'Crocodile Buchanan' makes world-class discovery in Australia

By Janelle Brown

When Lucas Buchanan (BS, geology, '03) headed to Australia last year to study vertebrate paleontology at Monash University in Melbourne, he hardly expected to make a discovery that would be trumpeted in headlines around the world.

But a few months ago, Buchanan (right) did exactly that. The first-year graduate student, who also happens to be the son of Boise State business professor Mark Buchanan, is credited with discovering a new species of prehistoric crocodile that lived 40 million years ago. The find is particularly important, scientists say, because it bridges a critical gap in evolutionary history and provides new insights about how modern crocodiles developed.

The newly discovered species was part of a unique group of Australian crocodiles known as *Mekosuchinae*, explained Buchanan in a recent telephone interview from Australia. The ancient reptile was similar to its modern relatives, but its teeth were sharper and laterally compressed to rip apart food more easily. It was a meat-eater that lived in freshwater lakes or tributaries, and it would have resembled a modern-day large freshwater or small saltwater crocodile.

The new find belongs to the oldest and most primitive known genus of *Mekosuchinae* crocodiles — a sort of “first kid on the block,” Buchanan says. “We’re at a really exciting point at understanding how closely related this unique group of Australian crocodiles is to lines that lead to modern crocodiles,” he adds.

So how exactly did a newcomer make a world-class discovery? Buchanan modestly claims it was a result of “good timing,” but there’s a bit more to the story than that.

In February 2004, Buchanan was looking for a research project to pursue at Monash University. His professors decided to have him analyze fossilized bones that had been brought to the university six months earlier and placed in storage. Buchanan got to work on the

material, which came from an open-pit oil shale mine in Queensland where prehistoric crocodile

remains had previously been found. At first, Buchanan had no idea he was analyzing bones from an entirely new species. But as his painstaking work on two skulls and a lower jawbone continued, he slowly began to harbor the suspicion he was looking at something entirely new.

“I had to tell myself not to get ahead of the process, to take things step by step,” he says. When his analysis eliminated a closely related species, Buchanan felt his elation build.

“We hit the point where everything was new, where we could say, OK, this is not a case of just a bunch of freakish individuals,” Buchanan says. “It was very cool.”

Buchanan says he’s been surprised and at times a bit overwhelmed by the amount of publicity his discovery has generated. As soon as the news was released by Monash University in late February, Buchanan’s phone started ringing as reporters across the continent called for interviews.

From there, the story was picked up by news organizations in the Middle East, Europe, Asia and the United States. Most of the media played it straight, but a few had some fun with the story’s appeal to adventurers. One online site even featured a picture of Buchanan next to the headline “Crocodile Dundee.” Buchanan was also featured on the Web site for Al-Jazeera, the Qatar-based news agency. “It was a little bizarre seeing words translated into Arabic,” he says.

Buchanan is continuing his research at Monash University and is now pursuing a Ph.D. in vertebrate paleontology. He says his enthusiasm for the project remains high, as the meticulous work of analyzing the fossilized bones continues.

“It’s very exciting when a new species is discovered,” he says. “It makes us realize that the world is so much bigger than we might imagine.”



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