



**LEFT:** Brandon University biology Prof. David Greenwood holds the palm leaf fossil he found while searching through other fossil plant collections at the Royal Tyrrell Museum of Palaeontology in Drumheller, Alta. **RIGHT:** Originally collected in 1995 by scientists from the Royal Tyrrell Museum, the small palm leaf fossil is estimated to be 65 million years old. (Submitted photos)

# BU prof using fossil to look at climate changes

BY ERIN DEBOOY

Some fossils from Alberta that a Brandon University professor happened to stumble upon are giving new insight into past climate changes.

While visiting the Royal Tyrrell Museum of Palaeontology in Drumheller, biology Prof. David Greenwood found some small palm leaf fossils in the collection.

"I thought I'd have a look through their collections while I was there, see if I could find anything interesting — which is what, in fact, happened," Greenwood said. "I thought, 'Wow, I need to work on these.'"

The fossils, which Greenwood said are an

entirely new species of fossil palm, were originally collected by scientists from the Royal Tyrrell Museum in 1995 near Edmonton.

"I was pretty excited at the time ... It wasn't something I was looking for, but having found it I saw its importance and I went forward with it," Greenwood said.

The fossilized palm leaf may be little, but its importance lies in its ability to give researchers insight into what the climate was like in the area 65 million years ago, Greenwood said.

"My main work is to reconstruct climates in the past, and that was certainly part of the research that we did," he said. "This little palm ... gives us some clues as to

the evolutionary history of palms in North America."

Very few palms can tolerate colder conditions, Greenwood said. The new fossils demonstrate that in the past, palms grew much farther north than had been ever recorded east of the Rocky Mountains.

The palm fossils are also from a key period, the earliest Paleocene.

"In terms of the history of life, that's just after the extinction of the dinosaurs. That's important in itself because it means this little palm was growing at a time when North America was recovering from the big event that wiped out the dinosaurs," Greenwood said.

Based on research

surrounding this fossil, Greenwood is able to paint a vivid picture of what the climate might have been like.

This ancient Canadian palm grew in a temperate broadleaf deciduous forest, in a warm and wet, but not tropical climate in Alberta.

In many ways, the forest would seem familiar to people, with pines, evergreens and ferns mixed with more exotic elements, such as swamp cypress trees and palms.

"The climate would have looked very different than what we have in Alberta right now ... it would look more like San Francisco — not super hot in summer, not super cold in winter, you could have a snow fall and a

frost but it wouldn't have frozen," Greenwood said.

"A mild place, quite different than almost anywhere in Canada."

The fossils are still with Greenwood in Brandon, he said. However, he will be packaging them up shortly and sending them back to the Royal Tyrrell Museum soon.

Details of the new palm species — named *sabalites geneseensis* after the Genesee fossil site in Alberta where the fossil was found — were recently published in the

Review of Palaeobotany and Palynology.

Greenwood, working with his graduate student, Christopher West from the University of Saskatchewan, discussed the climatic implications of palm trees occurring so far north in Canada's geological past.

"A lot of what we do is curiosity driven," Greenwood said. "It's time travel without the risk."

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