

Fossil News: WOW!

We have been in the news lately for a 130-year-old fossil discovery. I will be putting together a small display at the museum to complement what is already there, but now must be refined! Let me explain: For 130 years—since the first fossilized tree stump was found in Gilboa, paleobiologists have theorized that the “Gilboa Fossil” was a fern tree.

The stumps found in Gilboa were all found upright in their original form with many roots still attached, but with no crowns attached. The tree that has been recently discovered in Conesville—about 10 miles from where most of the original Gilboa fossils were found—is a complete tree, toppled over and horizontally fossilized *with the crown attached*. A similar crown had been named a different tree, but it's now evident that the two parts form a single tree called a Wattieza. The tree crown is more like a palm than a fern. It reproduces by spores and is completely extinct.

I will add the small fossils of crown that I have to the exhibit at the Gilboa Museum with pictures and drawings from the new findings in Conesville.

Kristen Wyckoff

OLDEST TREES HAD FRONDS, NOT LEAVES

April 18, 2007

CHICAGO, Illinois (Reuters)—The branches of Earth's oldest tree probably waved in the breeze like a modern palm, scientists said on Wednesday, based on two intact tree fossils that help explain the evolution of forests and their influence on climate.

The 385-million-year-old fossils, which scientists believe are evidence on Earth's earliest forest trees, put to rest speculation about fossilized tree stumps discovered more than a century ago in Gilboa, New York.

Scientists believe these early forests absorbed carbon dioxide, cooling the Earth's surface.

The forests were flourishing at an important juncture in the history of life on Earth, coming shortly before the appearance of the first vertebrates—four-legged amphibians—that could live on dry land.

“We've solved this long-standing puzzle,” said Linda VanAller Hernick, a paleontologist at the New York State Museum, who wrote about her discovery in the journal *Nature*.

The stumps in Gilboa were unearthed in 1870 when workers were blasting a quarry. Until now, scientists had never seen the tops of those trees.

Hernick and museum colleague Frank Mannolini discovered an intact crown and part of a tree trunk in 2004 and a year later found a 28-foot trunk portion of the same species.

Pieced together, they represent Wattieza, a tree that looked like modern-day palm with a crown of fronds that grew up to 30 feet high and reproduced through spores.

“Previously, paleobotanists thought that a tree called *Archaeopteris* was the oldest tree. Now we know there were tree-like plants in abundance much earlier,” Hernick said in a telephone interview.

The fern-like trees are about 23 million years older than *Archaeopteris*, which Hernick said resembled a modern tree, with conventional branches.

Instead of leaves, the Wattieza had frond-like branches with branchlets that resembled a bottlebrush, said William Stein, a paleobiologist at Binghamton University in Binghamton, New York, and co-author of the study.

The tree branches fell to the forest floor, providing a potential food source and shelter for living creatures, the researchers said.

“This is a spectacular find which has allowed us to recreate these early forest ecosystems,” said British

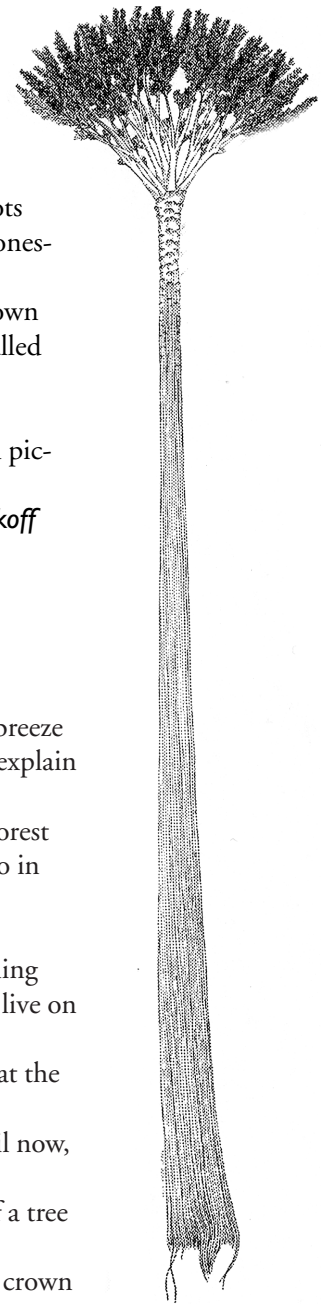
researcher Christopher Berry of Cardiff University, who worked on the study.

Berry said the branches would have decayed, providing a new food chain for the bugs living below.

“The rise of the forests removed a lot of carbon dioxide from the atmosphere. This caused temperatures to drop and the planet became very similar to its present day condition,” he said in a statement.

For Hernick, who was inspired to become a paleontologist after viewing the Gilboa stumps as a child, the discovery offers a fair bit of personal satisfaction.

“It's kind of nice to bring this story to a close,” she said.



Reconstruction of a complete Wattieza tree, drawing courtesy of *Nature* Volume 446, 19 April 2007