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Modern Day Leaf-Muncher



Beetle Bites Reveal Ancient Alliance

By Michael Milstein, Discovery.com News

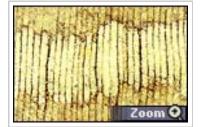
July 13, 2000 — Telltale beetle bites on fossil ginger leaves dating to the Late Cretaceous reveal that as flowering plants multiplied beneath the feet of the dinosaurs, beetles that fed on the plants did too, beginning a

long-standing insect-plant relationship that continues even today, a team of scientists says.

The finding suggests that insects began feeding on flowering plants almost as soon as flowering plants first evolved on Earth and that today's astonishing number of beetle species — there are 38,000 known species of so-called leaf-beetles — may be due to the similarly astonishing number of flowering plant species, now numbering about 300,000. The scientists report these findings in this week's issue of the journal Science.

"As angiosperms (flowering plants) were evolving rapidly, beetles were, too," said Peter Wilf of the University of Michigan and lead author of the paper.

In 1998, Wilf spotted leaf-beetle bites on ginger leaves from the early Eocene in Wyoming. The Eocene epoch stretched from 54 to 38



Fossilized Beetle Bites

million years ago. This discovery led his colleague Conrad Labandeira of the Smithsonian Institution's National Museum of Natural History to even older bite marks, this time on 66-million-year-old fossil ginger leaves from the Late Cretaceous in North Dakota.

Labandeira's find provided the first evidence of a relationship between insects and plants in the Late Cretaceous, the waning days of the dinosaurs and the dawn of flowering plants.

"Before this, the only evidence we had of this kind of a relationship was about 20 million years later, although we had suspected that it must have been going on for millions of years before that," said Harvard University Associate Professor Brian

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Farrell, who also studies ancient plant and insect connections but was not part of Wilf's team. "This is sort of the smoking gun that proves it was going on."

Understanding how relationships between plants and insects got started may help researchers better understand how and why those relationships continue today and how they influence modern agriculture, Farrell said.

"You can't really understand a community until you understand the different ages involved and how it developed over time," he said.

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