

Unexpected amber find rewrites botanical history

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(PhysOrg.com) -- An unexpected discovery made by Macquarie University PhD student Sargent Bray about the origin and nature of chemical compounds contained in ancient amber has changed our understanding of when modern flowering plants first began to evolve.

Bray made the discovery while working on his Masters degree at Southern Illinois University at Carbondale in the United States. However, he recently completed a paper on the new findings which was published this week in the prestigious international journal *Science*.

Bray found that ambers contained in coal deposits which predated the occurrence of flowering plants by hundreds of millions of years contained chemicals most similar to what is seen in ambers produced by modern flowering plants.

Bray said the find was startling because coal deposits from the Carboniferous period are dated some 300 to 350 million years ago.

“The chemistry was totally unexpected because flowering plants are not established in the [fossil record](#) until the Cretaceous period - around 125 million years ago,” he said.

Bray said the find does not mean that flowering plants existed earlier than was previously thought. Rather, the amber’s [chemical signature](#) provides us with a clue as to the early evolution of flowering plants, he said.

“These ambers do not suggest that flowering plants existed during the Carboniferous period, but they do suggest that aspects of [flowering plant](#) biology began to develop much earlier than the 125 million years ago that we previously thought,” he said.

“The nature of the chemical compounds in ambers is the basis for an amber classification system and, since certain plants make certain types of amber, amber chemistry can be used to determine which broad group of plants produced a particular amber specimen.”

As the fossilised resin of ancient trees, amber has long been popular as a source for ornamental objects, beads and jewelry. But it is amber’s exceptional preservative and chemical powers that most interest scientists since it sometimes contains the remains of plants, insects and even small vertebrates which get trapped within the [amber](#) when it is in a fluid state.

Provided by Macquarie University

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