

Oldest remains of insects from bed bug genus found in Oregon

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A cave in southern Oregon that is the site of some the oldest preserved evidence of human activity in North America was also once home to not-too-distant cousins of the common bed bug.

In research to be published next week in the Entomological Society of America's *Journal of Medical Entomology*, a pair of archaeologists describe remains found in caves near Paisley, Oregon, that represent the oldest specimens of insects from the genus *Cimex* ever found, ranging between 5,100 and 11,000 years old.

The remains were identified as relatives of the bed bug, *Cimex lectularius*, but they were "not the bed bug we all know and love from hotel rooms," says Martin E. Adams of Paleoinsect Research and co-author on the study with Dennis L. Jenkins of the Museum of Natural and Cultural History at the University of Oregon. The species in the Paisley Five Mile Point Caves (*Cimex pilosellus*, *Cimex latipennis*, and *Cimex antennatus*) are all parasites of bats.

Previously, the oldest remains of "cimicids" ever found were just 3,500 years old, found in Egypt in 1999, meaning the remains found at the Paisley Caves are the oldest *Cimex* specimens by a wide margin, and they raise some interesting questions for researchers about how cimicids have interacted (or not) with humans in the past.

Cimex lectularius and *Cimex hemipterus* are the two bed bug species that are known to parasitize humans, widely believed to have adapted to that

role thousands of years ago when humans shared caves with bats in Europe, Asia, and Africa. The species found in the Oregon caves, however, never made that jump, and Adams says it's unclear why not.

"Were the cimicid populations too small to establish themselves outside the caves, or were the host populations too small?" Adams says. "Given that Paisley Caves was only a seasonal occupation area for human hunter-gatherers, did the humans move around too much, or were the bugs not able to withstand the environment outside the caves for very long? Or, were there other constraints involved? I'm working on these last few archaeological questions right now."

The identification of the three *Cimex* species may also offer some clues to climactic trends during the eras they were dated to, Adams says. *Cimex antennatus*, for instance, tends to favor the warmer climates of California and Nevada. "The presence of warm-tolerant cimicids in the caves, such as *Cimex antennatus*, may suggest that climatic conditions at Paisley Caves 5,100 years ago were similar to what *Cimex antennatus* enjoys today in its current range."

More information: "An Early Holocene Record of Cimex (Hemiptera: Cimicidae) from Western North America," by Martin E. Adams and Dennis L. Jenkins, will be published online on April 4 in the *Journal of Medical Entomology*, [DOI: 10.1093/jme/tjx057](https://doi.org/10.1093/jme/tjx057)

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