

Ancient, newly identified ‘mammoth weevil’ used huge ‘trunk’ to fight for mates

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Oregon State University research has identified a 100-million-year-old weevil unlike any other known fossilized or living weevil.

George Poinar Jr., [an international expert in using plant and animal life forms](#) preserved in amber to learn about the biology and ecology of the distant past, calls the male specimen a “mammoth weevil” because of its “monstrous trunk” – also known as the weevil’s rostrum or beak.

Poinar said *Rhamphophorus legalovii*, as the long-bodied weevil fossil is known scientifically, probably wielded its trunk as a weapon while in combat with other males over females.

Encased in Burmese amber, the specimen represents a new tribe, genus and species. *Rhamphophorus* derives from a pair of Greek words meaning “curving beak” and “to bear,” and *legalovii* honors Russian weevil specialist Andrei A. Legalov.

“Entomologists will be discussing the systematic placement of this fossil for years since it is so bizarre,” said Poinar, who has a courtesy appointment in the OSU College of Science.

Findings were published in *Cretaceous Research*.

There are nearly 100,000 known species of weevils – small, plant-eating beetles known for their elongated snouts. Well-known North American species are the boll weevil that attacks cotton, the alfalfa weevil and the strawberry root weevil.

Weevils with straight antennae are categorized as primitive weevils, and those whose antennae feature an elbow-like bend are known as true weevils; *Rhamphophorus* is a primitive weevil with an 11-segment antenna and Poinar placed it in the *Nemonychidae* family, whose members are known as “pine flower weevils.”

“The story of the family’s ancient history is told by species in Mesozoic amber deposits, although no extinct or extant species with such elongated rostrums are known,” he said. “The larvae and adults of many nemonychids eat pollen from developing male cones of pines and other conifers.”

The newly identified weevil genus and species belongs to the sub-family *Cimberidinae*, consisting of particularly long-nosed weevils whose physical characteristics are developed like highly specialized tools. Of the 70 known species of *Cimberidinae*, many are sexually dimorphic – males and females look quite different from one another. Thus the female of *Rhamphophorus* probably had a much shorter rostrum.

The new weevil, which likely lived on the ground rather than in trees, is 5.5 millimeters long, almost half of which is head and rostrum. The amber in which it is preserved came from the Noije Bum 2001 Summit Site mine first excavated in Myanmar’s Hukawng Valley in 2001.

“*Rhamphophorus* had extended middle foot segments that might have increased its ability to grasp plant surfaces or better reach its foes during fights for females,” Poinar said. “It would be interesting to know if females also had this feature.”

Injuries suffered by *Rhamphophorus* suggest it may have been doing battle with another male over a female just before it fell into the resin and was preserved.

“*Rhamphophorus* shows many features unknown on living or extinct fossil weevils,” Poinar said. “It shows how an adult beetle can become so specialized that even its family position can be questioned. Certainly lifestyle in conjunction with microhabitat influenced the evolutionary development of this weevil, which gives us an exciting glimpse of morphological diversity in mid-Cretaceous weevils.”