

Ancient wasp-mimicking fly from South Korea named after PSY's 'Gangnam Style'

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The long-proboscid fly *Buccinatoromyia gangnami* from the Lower Cretaceous of South Korea. Credit: Alexander Khramov, Gi-Soo Nam.

Russian and South Korean paleontologists discovered a new species of extinct pollinating flies, which lived during the first half of the Cretaceous period, about 110 million years ago, when the angiosperm radiation occurred. As evident from their long proboscis, these insects

were nectar feeders and probably fed on the first flowers or cones of entomophilous gymnosperms. Like many modern flower-visiting flies, newly described fossils mimicked stinging wasps to scare off predators, while actually they posed no danger.

New species was named *Buccinatormyia gangnami*, after a famous hit by a South Korean singer PSY. It was described based on six impression fossils found near Jinju city in South Korea. On average, members of this [species](#) were twice larger than the common house fly, with a proboscis length up to 5 mm. Their darkish abdomen were embellished with four pairs of light spots, very similar to yellowjacket patterns which are typically displayed by hoverflies and other extant flower-loving Diptera active during the day.

The chief model for the modern yellowjacket mimics are social wasps united into the Vespidae family. In our time these wasps are very common as everyone knows who has ever seen them stuck in his or her jam. However, judging by the [fossil record](#), vespid wasps were rare and represented by exclusively solitary taxa in the Early Cretaceous. So probably *Buccinatormyia gangnami* mimicked something else, or, alternatively, vespid [wasps](#) radiated earlier than currently thought.

Buccinatormyia gangnami belongs to Zhangsolvidae, a dipteran family which prospered during the Early Cretaceous, but then went extinct due to unknown causes. "There were several lineages of long-proboscid flies during the Mesozoic, and all they were initially associated with gymnosperms. Some managed to survive into our time, while others disappeared, probably due to their inability to adapt themselves to angiosperm-dominated worlds. Why zhangsolvids were destined to lose, we cannot explain yet," said Alexander Khramov, the study's leading author and a senior researcher at the Borissiak Paleontological Institute (Moscow).



The fossil fly *Buccinatormyia gangnami* and the related living wasp mimic fly *Stratiomys*. Credit: Alexander Khramov, Gi-Soo Nam.

More information: Alexander V. Khramov et al, First long-proboscid flies (Diptera: Zhangsolvidae) from the Lower Cretaceous of South Korea, *Alcheringa: An Australasian Journal of Palaeontology* (2019).

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