

Parasitoid wasp species discovered in the Amazon can manipulate host's behavior

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Acrotaphus wasp, a species new to science from the Amazon. Credit: Kari Kaunisto

A research group from the Biodiversity Unit of the University of Turku studies the diversity of parasitoid insects around the world. Parasitoid wasps (Hymenoptera) are one of the most species rich animal taxa on Earth, but their tropical diversity is still poorly known. In the latest study, the group discovered 15 new, sizable species that parasitize spiders in the lowland rainforests of the Amazon and the cloud forests of the Andes.

The researchers from the Biodiversity Unit of the University of Turku have studied the [diversity](#) of tropical parasitoid insects for almost 20 years already. During their research, they have discovered large numbers of new [species](#) from different parts of the world. In the newest study, the research group sampled parasitoid wasps of the genus *Acrotaphus*, which parasitize spiders. The diversity of the insects was studied in e.g. the tropical Andes and the lowland rainforest areas of the Amazon. The research was conducted in cooperation with the Brazilian INPA (Instituto Nacional de Pesquisas da Amazônia) research unit.

"*Acrotaphus* wasps are fascinating because they are very sizable parasitoids. The largest species can grow multiple centimeters in length and are also very colorful. Previously, only 11 species of the genus were known, so this new research gives significant new information on the diversity of insects in rain forests," says postdoctoral researcher and lead author of the new study Diego Pádua, who has worked both for the INPA and the Biodiversity Unit of the University of Turku.

The parasitoid *Acrotaphus* wasps parasitize on spiders. A female *Acrotaphus* attacks a [spider](#) in its web and temporarily paralyzes it with a venomous sting. After this, the wasp lays a single egg on the spider, and a larva hatches from the egg. The larva gradually consumes the spider and eventually pupates.

"The *Acrotaphus* wasps we studied are very interesting as they are able

to manipulate the behavior of the host spider in a complex way. During the [time period](#) preceding the host spider's death, it does not spin a normal web for catching prey. Instead, the parasitoid wasp manipulates it into spinning a special web which protects the developing pupa from predators. Host manipulation is a [rare phenomenon](#) in nature, which makes these parasitoid [wasps](#) very exciting in terms of their evolution," says Ilari E. Sääksjärvi, Professor of Biodiversity research from the University of Turku.

The University of Turku and INPA continue to study the diversity of the [parasitoid wasps](#) in collaboration in the west Amazon area and in the Andes. On each research trip, the researchers discover many new species with unknown habits.

The research results were published on 9 January 2020 in the journal *Zootaxa*.

More information: DIEGO G. PÁDUA et al.

Review of the New World genus *Acrotaphus* Townes, 1960 (Hymenoptera: Ichneumonidae: Pimplinae), with descriptions of fifteen new species

, *Zootaxa* (2020). [DOI: 10.11646/zootaxa.4719.1.1](https://doi.org/10.11646/zootaxa.4719.1.1)

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