# Researchers discovered fungus gnat paradise in Peruvian Amazonia

10 March 2017

*Maneta aligera* is one of the new fungus gnats discovered in the Peruvian Amazonia. Credit: Olavi Kurina, University of Tartu, Estonia

Finnish and Estonian researchers have discovered and identified 16 new fungus gnat species in the Amazonia. The diverse gnat species maintain exceptionally rich parasitoid wasp species, which shows the importance of interdependence between rain forest species.

Researchers from the Biodiversity Unit of the University of Turku, Finland, and from the University of Tartu, Estonia, found 16 new fungus gnat species of the genus Manota in the Allpahuayo-Mishana National Reserve in the Peruvian Amazonia. Fungus gnats are small insects whose larvae live inside mushrooms.

- In addition to the new species unknown to science, we found several known fungus gnats of the genus *Manota* in the region. Together they form the world's most species rich local variety of fungus gnats of the genus *Manota*. We have studied fungus gnats in different parts of the world, which is why we are able to compare the species richness between study areas located in different continents, say fungus gnat experts Heikki Hippa from the University of Turku and Olavi Kurina from the University of Tartu.

Researchers from the University of Turku have previously reported that, as far as is known, the highest number of parasitoid wasp species in the world can be found in the Allpahuayo-Mishana region. A few years ago, a research group discovered, with the help of field and molecular investigations, a uniquely species rich parasitoid wasp assemblage of the subfamily Orthocentrinae, the species of which were all unknown to science.

- The Orthocentrinae parasitoid wasps have specialised in parasitising fungus gnats only. The results of two successive research projects indicate that a high number of host species is ideal for maintaining a rich number of parasitoid species. The interdependent relationships between species are very specialised in rain forests. With this new study, Allpahuayo-Mishana strengthened its status as one of the most species rich rain forest regions in the world, says Director of the Biodiversity Unit at the University of Turku Ilari E. Sääksjärvi.

Researchers of the Biodiversity Unit of the University of Turku have studied the diversity of insect species in the Allpahuayo-Mishana National Reserve since 1998. The region is particularly captivating due to its extremely high number of species.

Previous researches have reported, for example, the world's highest number of tree, bat and parasitoid wasp species in the Allpahuayo-Mishana region. Allpahuayo-Mishana is also known for its unique environmental heterogeneity. There are many different types of rain forest in a small region, and they all maintain unique species.

- The Allpahuayo-Mishana region could easily be compared to archipelago. Rare forest types form isolated areas in the region, and typical lowland rain forest grows around them. In satellite pictures, the region resembles archipelago, says Sääksjärvi.

**More information:** HEIKKI HIPPA et al, The genus Manota Williston (Diptera: Mycetophilidae) in Peruvian Amazonia, with description of sixteen new species and notes on local species richness, *Zootaxa* (2017). DOI: 10.11646/zootaxa.4236.1.1

Provided by University of Turku