

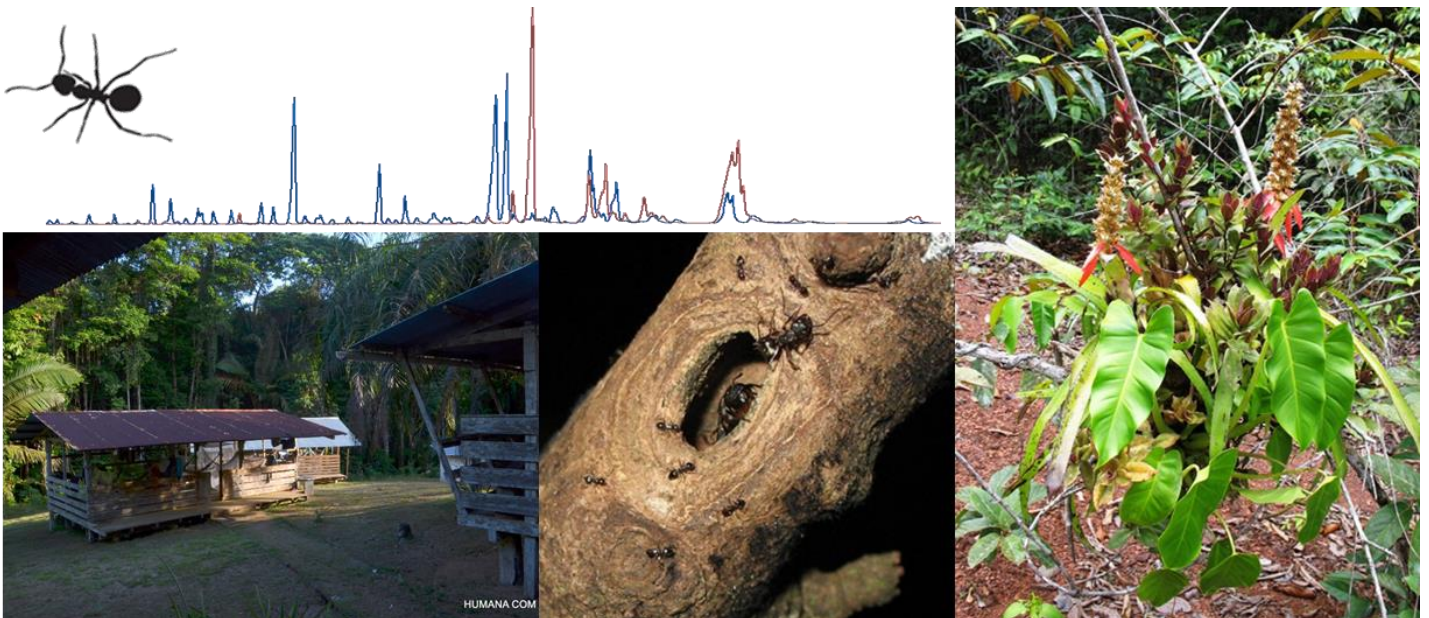
BSc/MSc Project – Tropical ant ecology



Parabioses are mutualistic interactions of two ant species, which share their nests, the so-called ant-gardens.

In tropical South America, the ants *Crematogaster levior* and *Camponotus femoratus* live in parabiosis. The chemical cues which mediate nestmate recognition in social insects (cuticular hydrocarbons or CHCs) are surprisingly diverse in these two species. Moreover, *Cr. levior* produces hereto unknown, polar compounds of unclear function. In a DFG-funded project, we investigate the two species to uncover causes and consequences of this chemical diversification, and their role in speciation. Furthermore, we are interested in the behavioural interactions and the ecology of this mutualism.

We are looking for a highly motivated Bachelor or Master student to participate in our research on chemical recognition and/or the foraging ecology of the parabiotic species.



The pictures show gas chromatograms of CHCs of *Ca. femoratus*, a view of Paracou research station where you will be working, the two species at their common nest entrance, and an ant garden (i.e. the common nest planted by the ants).

Possible Projects

1. How do the diversification of CHCs and the polar substances influence recognition in *Crematogaster levior* and do they influence the interaction with their parabiotic partner?
2. Do the parabiotic partners occupy different ecological niches, and do the niches differ between chemical variants in each species?

The candidate will go to French Guiana with us in September/October 2018 and stay there for 4-8 weeks. The stay there will include field work in the tropical rainforest as well as behavioural studies at the Paracou research station near Kourou. Depending on the project chosen, he/she will acquire extensive experience in chemical analytic methods, next-gen sequencing and related bioinformatics, behavioural biology, biostatistics and further methods in evolutionary ecology.

If you are interested or have further questions, please contact PD Dr. Florian Menzel (menzelf@uni-mainz.de).