# Ants 2016

# Ant interactions with their biotic environments

Poster session: 5th and 6th May 2016

A meeting at the *Bavarian Natural History Collections*, supported by the *Botanische Staatssammlung München* and the *Zoologische Staatssammlung München*, and funded by the DFG

Venue: Botanische Staatsanstalten, Menzinger Str. 67
Public Transport Stop "Botanischer Garten"

# Summary

**Epiphytic myrmecophyte distribution along an altitudinal gradient in Papua New Guinea and their role in ant mosaics**

M. Leponce[1*], J. Jacquemin[1] & P. Klimes[2,3]

[1]Biodiversity Monitoring & Assessment, Royal Belgian Institute of Natural Sciences, Brussels, Belgium (Maurice.Leponce@naturalsciences.be); [2] Biology Centre of ASCR, Czech Republic; [3]Faculty of Science, University of South Bohemia in Ceske Budejovice, Czech Republic.
*Email: maurice.leponce@naturalsciences.be

In Papua New Guinea, ants of the genera *Philidris, Anonychomyrma, Monomorium* are found in epiphytic myrmecophytes of the genera *Myrmecodia* and *Hydnophytum*. Several myrmecophytes are found in the same tree and accomodate a high ant population. This omnipresence in some tree canopies allows these ants to be potential actors of ant mosaics. Ant mosaics refer to mutual exclusion of numerically dominant ants from tree tops and are a common feature of tree plantations and lowland tropical forests. Our aim was to verify if ants associated with myrmecophytes were found co-occurring with typical dominant ants (e.g. *Oecophylla smaragdina* and *Crematogaster polita*) and if the interaction between dominant canopy ants was affected by elevation. We mapped the distribution of numerically dominant ant colonies, often spreading on several neighbour trees, in ¼ ha plots distributed between 200 and 2700 m asl along Mt Wilhelm, Papua New Guinea. Ants were captured at tuna/honey baits spread along tree trunks from the ground to the top of canopy trees. Epiphytic myrmecophyte were collected by climbing or by using a balloon. In lowland forests (200-700 m) *Crematogaster polita* large carton nests were omnipresent and often formed supercolonies. Other major players were *Oecophylla smaragdina* nesting in leaves and *Anonychomyrma* cf *scrutator* nesting in live plant tissues. Ants associated with myrmecophytes were never found co-occurring with these dominant ants. At mid-elevation (1200-1700 m) dominant ants were *Anonychomyrma* spp. and two species found in myrmecophytes (*Monomorium* sp. nov. aff. *edentatum* and *Philidris* cf. *cordata*). At 2200 m ants found in the canopy (e.g. *Ancyridris*, *Pheidole*) were probably living in suspended soil. No ants were observed in the canopy above 2700m. With increasing elevation it seems that there is a progressive filtering of the most abundant arboreal ant species. Typical territorial ants, living in carton or leaf nests are eliminated first. At mid-elevation, epiphytic myrmecophytes allow maintaining high ant populations in trees. At high elevation only species nesting in suspended organic matter remain.