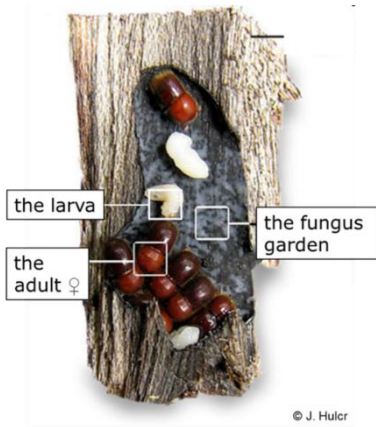




ENZYMATIC PROFILING OF BARK AND AMBROSIA BEETLE FUNGI



Koleopterologie.de

B.Sc. / M.Sc. project

We are currently looking for a **motivated student** for a **B.Sc. or a M.Sc. project** at the Max-Planck Institute for Chemical Ecology in Jena (Germany). In this project, the student will work with symbiotic filamentous fungi of bark and ambrosia beetles under laboratory conditions. The student will explore and describe the possibility of these fungi to decompose the major woody polysaccharides and compare it with other non-insect associated fungi as well as with competitive and wood-degrading fungi.

Both bark and ambrosia beetles, which typically colonize rather nutrient-poor woody substrate (like phloem or xylem of weakened trees), are associated with a broad range of microbes such as filamentous fungi, bacteria, and yeasts. To date, only little is known about the role of these microbes and how they support the survival of their beetle hosts. Especially some of the associated filamentous fungi are believed to be of high nutritional value for the beetles, and thus are ensuring the successful development of beetles in such a challenging environment. In many cases, the beetles themselves are even unable to survive without their fungal partners. However, our current knowledge about the ability of these fungi to decompose the main carbon sources in woody tissue (such as Cellulose, Xylan, Mannan, Lignin, Pektin) is limited as detailed studies are lacking. Therefore, a comparative study on the ability of different symbiotic and non-symbiotic fungi will



be of crucial importance to understand how these beneficial fungi support their beetle hosts.

Within this project, a student will examine, which carbon sources in wood are playing a role for several bark and ambrosia beetle fungi and how deep these fungi are growing into the wood focussing on:

- Cultivation of fungi under sterile conditions and varying C-sources
- Enzymatic assays
- Microscopic analyses of colonized wood
- Comparison of results between different tested fungi

The student will first be employed as a HiWi-student for around 2 months (10 hours/week) in aim to get to know each other and to introduce him/her to this exciting project.

If you are generally interested in microbiology, mycology and ecology, and want to find out more about this project (e.g. details, start date), don't hesitate to get in contact with us.

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