

Robert Tropek: Tropical Insects: Diversity and interactions with other organisms

Reviewer evaluation of habilitation thesis

Reviewing habilitation thesis certainly is a honour. It, however, also is a tricky task to review anything that has already been published. Not that published papers would deserve no criticism. But minor points are lost and fundamental ones might embarrass the authors or expose idiocy of the reviewer. The thesis is organized into four chapters. The first one is overview of the thesis, the remaining three consist of published papers organized according to their topics. The overview is concise, logically organized, easy to follow and, above all, interesting. Chapter two offers short excursions to butterfly taxonomy, faunistics and their fancy descendant – phylogeny and phylogeography. It includes description of two butterfly species, a work exploring the surprisingly diverse fauna of Alucitidae on Mt. Cameroon with description of several (nine!) new species, and circum(sub-)tropical phylogeography and phylogeny of *Leptotes* blue butterflies. Chapter three is ecological and includes papers dealing with effects of elephants, seasonality and habitat structure on Lepidoptera of Mt. Cameroon. It also presents a macroecological study investigating moth diversity and abundance along productivity gradient, and a large collaborative study investigating spatial distribution of herbivorous and predaceous arthropods in forest canopies. The last chapter consists of studies focusing on various aspects of pollination in mountains of Cameroon.

In his early university years, Robert was difficult to overlook. During field courses and social events he regularly sang a few punk songs, then often rested his forehead on nearest table and remained in the position for as long as the circumstances allowed. At the time, he was eager arachnologist chasing the eight legged creatures in quarries of southern Bohemia. A few years later, and I am browsing through his habilitation thesis spanning from taxonomy of Afrotropical moths and butterflies, via pollination systems and elephants on a Mt. Cameroon to large collaborative study herbivorous and predatory arthropods along latitudinal gradient. Robert had the enthusiasm, curiosity, will and ability to pursue his scientific interests already as undergraduate student. It is clear, that this “equipment” remained in place while Robert widened his interest well beyond spiders and Bohemia. The thesis clearly show that Robert built an extensive network of collaborators, adopted and mastered numerous scientific methods, is able to ask interesting and relevant ecological questions and is also fully capable to lead research operations to answer them. He also communicates results of his research in high quality international scientific journals. Personally I value the fact that Robert is not only able to navigate through the highly competitive, crowded waters of contemporary ecological research, but also pays attention to currently less navigated waters of classical entomology. I can fully recommend his thesis for defence.

A few questions that popped up in my mind when reading the thesis:

A lot of research reported in the thesis has been done on Mt. Cameroon. I was surprised by the low altitude of treeline there. At the 2200 m a.s.l. it is not much higher than that in e.g. Vysoké Tatry Mts., while on another tropical mountain, Mt. Wilhelm in PNG, the tree line is well above 3500 m a.s.l. What are the reasons for such low upper limit of tree growth on Mt. Cameroon?

Comparing insect diversity among different areas is difficult task. Seasonality is especially confusing factor, as many insects are highly seasonal even in the “aseasonal” tropics. Robert did his best to investigate seasonality on Mt. Cameroon. Seasonality was, though for good reasons, rather neglected in the paper investigating moth diversity patterns along productivity gradient. Drier environments usually exhibit higher seasonality, insect seasons in deserts are short and often irregular as they closely follow precipitation. Would the pattern reported in the paper hold if sampling spanned across longer time?

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