Universität Bremen

# Ecological Seminar

Wednesday, 6th Dec 2023, 16:15 h, UFT 1790


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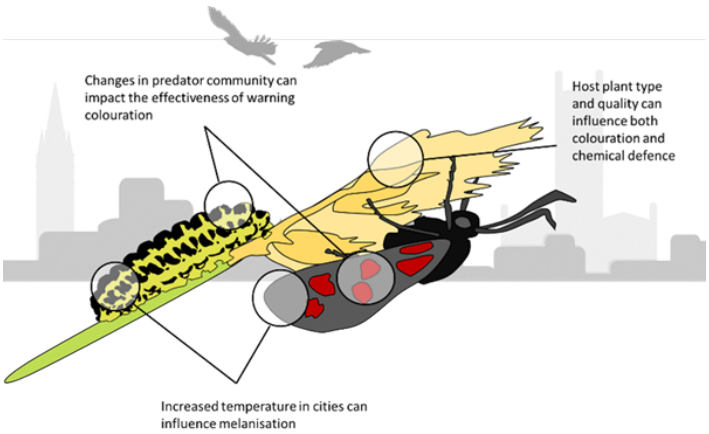
### "Signalling in the city – the effects of urbanisation on insect anti-predator strategies"


As urban areas continue to grow, the promotion of urban biodiversity has become a priority for many governments. However, these efforts are hampered by our lack of knowledge on how urbanisation influences predator-prey interactions, as these are critical for species survival and persistence. Urban environments represent a stark challenge for many animal species, altering not only abiotic factors such as noise, light, and chemical composition, but creating very different communities and species assemblages than rural habitats. These changes are all likely to impact the effectiveness of anti-predator signalling, including aposematism (the use of conspicuous signals to advertise unprofitability to predators). Predator-prey interactions are one of the most important species interactions, and crucial for maintaining stable species communities – but they are often overlooked in efforts to promote urban biodiversity and ecosystem function. To date our understanding of how such changes impact predator recognition and avoidance of aposematic warning signals has been hampered by a lack of studies comparing urban and rural areas. Using a combination of field experiments, historic collections and large-scale monitoring data we have been trying to determine both the bottom up and top down effects of urbanisation on the production and effectiveness of warning colouration. We find that while urbanisation can impact colouration in aposematic lepidopteran species, these changes may not impact antipredator function. However, urbanisation may act as a filter – disproportionally impacting brightly coloured lepidopteran species – although the exact mechanism underlying these patterns remains to be explored. Finally, using newly emerging techniques in both metabarcoding and AI image analysis we hope to examine this question from a predator, as well as a prey, perspective to truly understand how urbanisation impacts predator-prey interactions.

Short CV:

- I did a Bachelors in Zoology and a Masters in Evolutionary Genetics and Genomics at Manchester University.

- My PhD was in behavioural ecology and sexual selection at the University of St. Andrews. I worked on the causes and consequences of reproductive interference between species of seed bug.

- From 2014 to 2018 I was a Postdoctoral Researcher working on variation in chemical protection in the wood tiger moth at the University of Jyväskylä.

- Between 2017 and 2018 I was an Endeavour Research Fellow at the University of Macquarie working on colour variation and population genetics in the Hibiscus Harlequin Bug (Tectocoris diophthalmus).

- Since 2019 I have been an Assistant Professor at the University of Amsterdam.