Editorial. Citizen scientists as effective collaborators in different disciplines of environmental sciences

Citizen scientists – reliable data providers

The achievements in entomological science largely depend on gathering and synthesizing the heterogenous biodiversity data as well as species and taxa concepts into newly developed models and paradigms. Citizen scientists have proved that collaborative work is enormously effective when it is conducted within working groups of highly motivated persons (professionals and amateurs) on certain key questions, including climate change, models of species distribution changes over time, biodiversity composition changes, taxonomic and taxa delineation questions, species origin and distribution, biological and ecological interactions and many other interesting and actual questions that require urgent answers and prompt action. So we, entomologists, during many virtual conferences have been involved in free flowing discussions on our role, our contribution and our participation to "save the planet."

Citizen scientists in virtual working groups

During the last couple of years we learned to organize many productive and varied interactions on the internet that abruptly replaced in-person collaborations. We gained many international virtual friends and colleagues. During pandemic times we also learned to divide well-delineated tasks and keep our discussions structured, so they were perfectly suited to fuel creative breakthroughs. Even the gradual reverse transition to normality allows our members to keep virtual collaborations vivid and to link them over space and time.

Novel research and communication tactics for citizen scientists

"Natural catastrophes and climate change" became everyday words after the flood in mid-July. VVE, as a non-profit environmental organization, via our journal *Phegea* and other publications devised an environmental communication strategy. It presents environment-concern articles and upcoming monographs about effects of climate change, insect species composition change risks and insect biodiversity issues in general. Furthermore, our members suggested several promising avenues for future entomological research and scientific communication, that can be grouped into three work packages:

Through each of these objects the VVE will seek to work with other entomological societies/associations to complement the existing on-going efforts in entomology and climate change science. Climate change poses new challenges for our members that require them to act and to respond appropriately. Due to ongoing and widely promoted nature-friendly initiatives in the past several communities of insects, including butterflies, became sustainable but this sustainability will depend on building further research on climate-related impacts. As we all witness, insect and insect-plant ecosystems are driven by ecological processes and climatic conditions that increasingly are becoming extreme and difficult to anticipate. The heatwaves of last year's summer and heavy rains with unforseen flooding this summer are associated with very negative impact on insect biodiversity.

In the present issue of *Phegea* we are pleased to present to our readers the study by a member of our society, a citizen scientist, the working group leader Jurgen Couckuyt, on the topic of one insect species' response to the ever changing environmental conditions.