Editorial

IN a previous editorial in *Pacific Conservation Biology*, (PCB 2012, 18(2), p.68), I referred to recent papers in the insect conservation literature that made use of decades-old data sets to establish long-term changes in the species richness and abundance of insect groups in grasslands in eastern Germany. This is a signficant example of the lasting value of descriptive data sets. In this issue's guest editorial, Sebastian Schuch, one of the authors of the recent papers, describes how he came to find the original studies and their value in documenting long-term change in insect communities.

Mike Calver

Archives and conservation biology

A SMALL old man stood right in front of me. He eyeballed me through his bulky glasses and gave me a sign to follow him. We walked through the catacombs of the *Naturhistorische Sammlungen Dresden* (Collections of Natural History). In a few minutes Rainer Emmrich would hand me out one of the last three copies of Hans Schiemenz's professorial dissertation. It was 2008 and this was the final step to the foundation of my PhD thesis. This copy included the original auchenorrhynchan species abundance lists of 60 German dry grassland sites from the 1960s. These valuable data allowed me to evaluate directly long-term development for auchenorrhynchan (a sub-order of the true bugs, Hemiptera) communities over a time span of about 50 years. It was a very rare chance and also great luck that the *Naturhistorische Sammlungen* had stored these valuable data until today. The blotchy xerocopies from the times of the German Democratic Republic smelled dusty, but were in good condition. Months later we realized that the abundance data for orthoperan communities were lost. For this part of Schiemenz' work only species lists had outlived the decades in an old publication.

Another chapter of our studies was based on the original species abundance lists of Marchand, who investigated grassland insect communities in the 1950s. A retired colleague of my supervisor sent the only existing handwritten exemplar from Kiel to us. These data were saved from being destroyed literally at the last minute. A short time later the department library was closed and a lot of grey literature was "sorted out". Again, we were really lucky.

Schiemenz's and Marchand's studies are very valuable for many reasons. As mentioned, the complete species abundance lists had been preserved. Additionally the locations of the research sites were documented as well as the sampling method, and the research had been done at least 40 years ago. Before I finally held these data sets in hand several months of frustrating literature research had passed with hardly any usable results for a PhD thesis. We realized that available data for long-term comparisons are very scarce, but for insect communities there is almost nothing. Historical insect studies often exhibit limited data quality. In most cases, original species abundance lists are lost and information about the location of the study is insufficient or even missing. Moreover, methodological and taxonomic problems add to this. Finally, my colleague Herbert Nickel set us on the track of the urgently needed data. He knew about the collections in Dresden.

These circumstances illustrate how tricky it is today to get reliable data from the 1960s or earlier. Maybe this is why so many ecologists prefer to use statistical tools on existing data sets instead of unearthing long forgotten treasures in catacombs. Another possible explanation: real world data are not the ant's pants. Statistics and simulations seem to be easier to handle and more lucrative regarding the publication results.

However, long-term comparisons are essential for ecological research. They are needed to connect theoretical predictions to reality. For example, in conservation biology they can be used to test the sustainability of protection measures. They also can indicate potential effects of human or environmental influences on ecosystems. Consequences of human impact for oceanic ecosystems are a convincing example of this.

Nevertheless, until today only few efforts are made to store species abundance data for future generations. Maybe the actual discussion about the biodiversity crisis will help to change this. Another positive development is that journals have begun offering raw data to other scientists in online appendices. This is enormously helpful as long as they are for free use. But even if you have to pay for the data it is much easier to get than before.

Our research ended in 2011 and I am happy until today that Schiemenz and Marchand worked so conscientiously. They did not know that one day someone would come and use their data for long-term comparisons, but they provided all the information they had. I think such little additional effort can be done by every researcher. At least, in entomology, this is a real improvement.

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