Editorial

Inventories — What are they good for?

Do we have the same interpretation of species? Do we use the same literature? Can we trust any chironomid species identification if it is not documented, either through description, reference literature or reference material? - In my opinion the answers are "no".

We have all experienced that re-identification of a midge sometimes results in a species or species group different from the one the specimen originally was identified as. It could be our own original identification or it could be someone else's. The fact that many Chironomidae species are difficult to identify perhaps makes us experience this more often in our group, I don't know, but it is clearly a problem for static inventories and check-lists.

Moreover, many if not most identifications made in faunistic and ecological studies are unreferenced in publications. Thus, there is no possibility for the reader to know what literature was used, if reference specimens were examined, or even if the material has been deposited in a publicly accessible collection. How can the reader know if the author(s) used the most recent and geographically relevant taxonomic revisions and identification keys? It definitely makes a difference in the interpretation of a species identification (e.g. *Tanytarsus mendax*) if it is clear that the latest clarification of its taxonomy (Spies 1998) is used and not an older revision (Reiss & Fittkau 1971). So apart from giving credit where it belongs, citing the taxonomic literature is scientifically important and should be as mandatory as any other methodological reference.

The increased use of molecular markers in species identification, discovery and delineation (i.e. DNA barcoding) provides an additional set of objective characters for species in Chironomidae. The Barcode of Life Data Systems database (BOLD) currently holds almost 16 000 sequences of more than 1000 named species and offer a tool to unify the taxonomy and interpretation of chironomid species world-wide. Through our work with DNA barcoding of Chironomidae in Trondheim, we have discovered numerous cryptic species and molecular data has helped us understand species boundaries as well as phylogenetic relationships. There is no doubt that this is part of the future for chironomid taxonomy and thus also disciplines that rely on solid taxonomic foundations for identifications and analysis of species distributions and ecology.

To avoid the creation of useless inventories and erroneous check-lists we should all be careful in how we use and document our identification procedures. It doesn't matter if they are based on morphology or molecules. If the results are not made repeatable by proper description of the methods, it is not science. Therefore, cite your methods and references, and deposit your specimens in scientific collections!

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References

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