

Abstracts

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The implementation of taxonomic harmonisation for Candoninae (Ostracoda, Cypridoidea). A heuristic solution for *Fabaeformiscandona tricicatricosa* (Diebel & Pietrzeniuk).

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The concept of Taxonomic Harmonisation (TH) incorporates the search for similarities between taxa mentioned in different data sets and/or taxonomic classification systems, in order to propose a more coherent and homogenous taxonomic system necessary for practical use in basic and applied scientific activities. The implementation of TH is needed in order to realise a better understanding and usage of the taxonomy of Candoninae (Cypridoidea) ostracods. Within this species rich group there are a multitude of parallel taxonomic systems applied for Recent and/or fossil species groups. Horne *et al.* (2011) proposed a programme for the implementation of TH using Candoninae species as an example. Danielopol *et al.* (2011) emphasised this problem and noted that a priority is to improve the taxonomic diagnosis of Candoninae taxa starting with a better understanding of the basic disparity traits and continuing the search for stable morphologic traits usable for comparative diagnoses. This poster considers the use of *Fabaeformiscandona tricicatricosa* as a model for the practical implementation of TH.

The first requirement is an operational definition of what a *species* is within the context of the projected TH of the Candoninae. We consider that *F. tricicatricosa* is an *ecological species*, represented by a cluster of populations, with a given temporal persistence and with definite ecological preferences, namely for cold-water habitats. It has to be examined in close relationship with other *Fabaeformiscandona* species such as *F. caudata* (Kaufmann), *F. levanderi* (Hirschmann) and *F. siliquosa* (Brady). Another premise is the “harmonic” utilisation of multiple-methods of research with different degrees of descriptive precision. We show the advantages of a combination between traditional optical microscopy with SEM and with geometric morphometric data treated with multivariate statistics applied to the targeted taxa. As a third premise, we propose a protocol for the implementation of the TH of *F. tricicatricosa*. Finally, we offer a differential diagnosis for *F. tricicatricosa* and its morphological and/or potentially phylogenetic related species *F. caudata*, *F. levanderi* and *C. neglecta*.

An essential trait differentiating *Candona neglecta* from *Fabaeformiscandona* is the shape of the valve of the juvenile-stage A-3 which is more rectangular in *C. neglecta* compared with the pointed shape of the valves of *F. tricicatricosa* and *F. caudata*. There is a cluster of stable morphological traits which allows identification of *F. tricicatricosa* when compared to related *Fabaeformiscandona* species, namely the H/L ratio of the valve, the widely curved dorso-posterior outline and the straight section of the upper part of the posterior outline-section of the female right valve (fRV). The inner side of the posterior part the fRV displays specific shapes of a calcified ledge. Most of these traits are visible on published illustrations of *F. tricicatricosa* from various locations of the Holarctic, at sites in Europe, Siberia and the northern part of Canada.

The variability of *F. tricatricosa* valves was studied using Recent and fossil specimens from several sites in Central Europe: in Austria (Mondsee), in Germany (Seeshaupt, Starnberger See, Zauschwitz), in Poland (lake Rospuda). We note slight shape differences due to environmental factors and/or to geographic distribution. The intra- and inter-site variability of valve shapes were evaluated using multivariate statistic algorithms on geometric morphometric data. With this experience at hand we attempt to solve taxonomic misidentifications of *F. tricatricosa*, namely the confusion with *F. caudata* and/or *Candona* of the *neglectoida* species-group. Procedures of TH indicate the unviability of two Candoninae taxa, namely *Eucandona* (Daday, 1900) and *Lozecandona* (Krstić, 2006), which are either based on an incorrect nominate species or on inconclusive diagnostic traits. Therefore, for the present TH-project we follow the taxonomic system of Meisch (2000), used also by Fuhrmann (2012).

In conclusion, Taxonomic Harmonisation (TH) is an onerous procedure. It requires time and energy for competent ostracodologists to develop better diagnosis for species that have potential applications for (palaeo)environmental reconstructions and/or to revise many taxonomically uncertain taxa. We are confident that this activity, if careful done, will be widely used.

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