



World Ostracoda Database Editor Workshop

Flanders Marine Institute (VLIZ) – Oostende, Belgium
17-20 May 2016

REPORT

Participants:

Ascidacea Editors:

Martin Angel, Simone Nunes Brandão, Tõnu Meidla, Hisayo Okahashi, Vincent Perrier, David Siveter, Moriaki Yasuhara

WoRMS Data Management Team (DMT):

Wim Decock, Stefanie Dekeyzer, Leen Vandepitte, Bart Vanhoorne, Sofie Vranken

The Workshop 'World Ostracoda Database', took place from the 17th to the 20th of May 2016 in the Flanders Marine Institute (VLIZ), at the Wandelaarkaai 7, 8400 Oostende, Belgium. The organizers were the WoRMS Data Management Team and Simone Nunes Brandão. The participants were, among the ostracod workers, Martin Angel, Simone Nunes Brandão, Tõnu Meidla, Hisayo Okahashi, Vincent Perrier, David Siveter, Moriaki Yasuhara; and among the WoRMS Data Management Team: Wim Decock, Stefanie Dekeyzer, Leen Vandepitte, Bart Vanhoorne, Sofie Vranken.

Welcome and Introductions

On the first workshop session (Tuesday morning), Simone welcomed the participants and presented a summary of the World Ostracoda Database (WOD), showing the information contained in it. For example, the total of taxa (species, genera, families, etc.), taxa without environmental flags, number of extant taxa (+9,700 marine species, +300 brackish and non-marine species), references (+20,000 sources). It was mentioned that the ostracod data from the FADA database (+2,000 species compiled by Koen Martens) will soon be imported to WoRMS/WOD, but we still need to agree on which classification to use. It was noted that an important gap in WOD are the non-marine fossils and that it is important to recruit new editors for these and other groups and for geological periods (specially with the Mesozoic and Palaeozoic eras). Tõnu Meidla and Hisayo Okahashi, who were present on the workshop, became editors (for Palaeozoic taxa and Podocopida, respectively). Additionally, Cristianini Bergue (UNISINOS, Brazil, taxon to be defined), Francesc Mezquita (Univ. Valencia, Spain, Entocytheridae) and Inna Drapun (Russian Academy of Sciences) accepted to join the

WoRMS/WOD editors team short before the WOD workshop. It was also suggested that improving the number of ostracod editors is an important step towards keeping the ostracod data in Aphia updated.

The goals of the workshop were presented to the participants:

- Unite Ostracoda WoRMS editors towards WoRMS's goals
- Set clear, specific goals for each editor in the future, in order to keep WoRMS complete for new Ostracoda taxa being described, new classifications, new combinations & upload the few taxa already been described but still missing
- Decide on which higher level taxonomy to use for Ostracoda
- Assign Incertae sedis taxa to higher levels
- Get training in the use of the online interface and the available tools
- Decide on how to document the authorship of taxa
- Re-write the introduction page of WOD
- Integration of "fossil Myodocope Database" into WOD
- Integration of additional Halocyprida data into WOD
- Integration of hundreds of good quality SEM and optic microscope photos

Finally, Simone provided general information on data papers, data publishing and data journals, as an alternative for publishing (1) the datasets (mentioned above) and (2) the new high level classification of Ostracoda. This last classification was one of the main goals for the workshop, and the reason why Tõnu Meidla and David Siveter were also invited to the workshop.

Subsequently, Leen presented an introduction to VLIZ, WoRMS and LifeWatch, and provided practical information on the venue and Ostend for the participants. Finally, each participant shortly presented him/herself.

High level Classification

After the introduction, we decided to change the schedule and to begin the work on the high level classification for Ostracoda in WoRMS/WOD. David Siveter started the discussion by stating that, to his knowledge, after the Treatise on invertebrate palaeontology. Part Q: Arthropoda 3, Crustacea, Ostracoda, published more than 50 years ago (Moore, 1961), only one publication (Whatley, R.C., Boomer, I.D. & Siveter, D.J. (1993) Arthropoda (Crustacea: Ostracoda). In: M. J. Benton (Ed), The fossil record 2. Chapman & Hall, London, pp. 343–356) proposed a high level classification for all ostracod taxa, including all three geological eras, i.e., Palaeozoic, Mesozoic and Cenozoic (including Recent). David stressed the necessity to be pragmatic concerning the new classification, and that we should be able to "swallow" placements, with which one does not agree. Otherwise, our task to produce a new scheme would certainly fail. David suggested (and, later, all participants agreed) that we use Whatley et al. (1993) as the basis, on which we could build the high level classification.

Tõnu Meidla continued the discussion with focus on the Palaeozoic Ostracoda. He explained us that in the 'Russian Treatise' (Sokolov, 1990) many new, high level taxa were published. He compared four different previously published classifications: Sokolov, 1990, Schallreuter, 1999, Whatley et al., 1993, Meidla, 1996. Tõnu suggested that we should opt for a simple scheme, since we know little about early ostracod evolution, and therefore most high level taxa would be the result of guessing. In other words, there is little data to support branches in the evolutionary tree and to support a strongly subdivided classification.

Vincent talked about new publications on arthropod phylogenetics and evolution, which show that the Cambrian Bradoriida and Phosphatocopina are not closely related to ostracods, not even to crustaceans, and should therefore not be included in WOD.

Simone showed the classifications commonly used for Recent Ostracoda and suggested using the end -oidea for superfamilies, because of the recommendation 29A of the ICZN (1985:55 "the suffix -OIDEA (should) be added to the stem for the name of a superfamily "). It was noted that classifications commonly used for fossil ostracod taxa most commonly use the ending -acea for superfamilies. Simone showed diverse classification schemes: (1) Podocopina (Horne et al., 2002), (2) Recent Freshwater Podocopa (Martens & Savatnalinton, 2011; with a few modifications proposed by Hiruta et al., 2016); Mydocopa (Kornicker & Sohn, 1976, 2000; Kornicker, Iliffe & Harrison-Nelson, 2008). Simone suggested (and it was latter agreed) that subfamilies, tribes, and lower levels should only be used if there is agreement in the literature (e.g., Recent freshwater Ostracoda).

Martin talked on the diverse aspects of Halocyprida, including taxonomy, classification, biogeography, ecology, bioluminescence, morphology, etc., and also about the datasets he shared with WoRMS/WOD.

The next step was to split in the groups below and produce the high level classification down to family level:

Palaeocopa, and Palaeozoic Podocopa and Platycopa: **David + Tõnu**

Post-Palaeozoic Podocopa: **Moriaki + Simone**

Post-Palaeozoic Platycopa: **Simone**

Palaeozoic Mydocopa: **Vincent + David**

Post-Palaeozoic Mydocopa: **Martin + Simone**

We continued the work during the morning of the second workshop day (Wednesday, 18th). In the afternoon, Tõnu presented us David's and Tõnu's classification, which included all major ostracods groups, but focused on the Palaeozoic taxa. We discussed how we could join the classifications from the different groups (see above). The classifications were sent around for comments and suggestions, which were then accommodated in the final version.

While working on Aphia with Tõnu, Simone noticed that some ostracod families, which were previously in the WoRMS/WOD were not in the classification produced during the workshop. Most of

these families occurred exclusively in the Palaeozoic. Wim sent us a table with the missing families, which due to lack of bibliography, could not be assigned to higher level taxa during the workshop. Tõnu agreed to check the Palaeozoic families at home, where he has his extensive library, and Simone agreed to check the other ones (all with Recent representatives). Finally, we agreed on the necessity to submit the new classification as a paper for publication in a scientific journal. For this, we accorded on a deadline by March 2017.

Training in the use of the online interface and the available tools

Stefanie offered us three training sessions on the online interface, thereby we learned how to add, edit, delete taxa; add authorship and year; search for taxa using the available filters; download search results; add, edit, search for sources (bibliographies); how to add images to the photo gallery and tag it with the taxon; how to produce a checklist; match a taxon list to the information on Aphia (=WOD / WoRMS); search and add distribution; use the de-duplication tool, among other tasks.

Assign Incertae sedis taxa to higher levels

The strategy to assign the 'incertae sedis taxa' to higher levels was discussed by the participants. David Siveter offered a compilation of assignments of Palaeozoic genera made by himself and colleagues. During the workshop, we had one session of hands-on working and were able to assemble approximately 100 genera to families. This work will be continued by the editors and will be finished by November 2016.

In the last workshop day, (Friday 20th), we worked on the remaining goals:

Re-write the introduction page of WOD

Simone and Vincent re-wrote the 'Intro' page of WOD, updating info, correcting outdated info, and adding more aspects of ostracod research to the text. David Siveter and Martin Angel kindly checked the English.

Integration of "fossil Myodocope Database" into WOD

Integration of additional Halocyprida data into WOD

Vincent Perrier handed his "fossil Myodocope Database" to the DMT for upload, and Martin Angel handed several sheets with morphometrical, ecological, biogeographical data on several halocypridid taxa.

Integration of hundreds of good quality SEM and optic photos

Simone handed +200 ostracod photos to the DMT, together with a sheet with detailed information (taxonomy, collection, locality, copyright...). Vincent Perrier added tens of photos directly to the WOD interface. Moriaki Yasuhara is preparing images from more than one hundred species to be sent to the DMT.

Decide on how to document the authorship of taxa

We decided to document the authorship of taxa in the simple format, i.e., only author(s), year of the original description.

Showcase WOD

We plan to submit a poster about the classification of Ostracoda to the International Symposium on Ostracoda, which will occur in 2017 in California, and to write an article about WOD and WOD workshop to the '*Brasilicythere*', the newsletter of Brazilian ostracodologists (Simone), and to the newsletter of The Micropalaeontological Society (Vincent), and also to the 'Deep-Sea Life: an informal publication for the deep-sea biology community' (Simone).