

LifeWatch Data Grant 2015

Filling the gaps in the World Register of Marine species (WoRMS)

Amphipoda - Non-marine Gammaroidea
(excluding Baikalian taxa)

Final Report

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1. Data grant background

The non-marine Gammaroidea are a particularly challenging group. This results from their complex and largely unresolved taxonomy, as well as from low numbers of specialist taxonomists. Moreover, over time many species and subspecies have been re-described and synonymised several times. As a result some species have as many as tens of synonyms, some of which are highly subjective. Despite these issues, the World Amphipod Database contains a mostly complete list of the species from the mentioned group. However, there are gaps in the associated data: original descriptions, species distributions, habitat data etc. In fact in very few cases were more details than the name provided. This problem was likely a result of lack of access to older literature and the fact that some of original descriptions were made in languages other than English (e.g. Romanian, Japanese).

The aim of the this LifeWatch Data grant was to update the taxon pages for non-marine Gammaroidea (excluding Baikalian taxa) as well as to supplement the database with missing taxa which was made possible only by the experience of the grant holders with these taxa, and the rich literature collection available to them.

2. Agreed deliverables (as specified in the Data Grant contract)

The following tasks will be dealt with for some **8 families**, and **~400 accepted species** currently in the WAD list within the non-marine Gammaroidea according to priorities requested by VLIZ. In addition to the priority list, focused work will also be undertaken to add documented distribution information to provide data for the project linking the World Amphipoda Database/WoRMS and FADA, (to complete and update the information for the 2000+ species of non-marine amphipods) coordinated by Dr Risto Väinölä and Dr Tammy Horton. Identification resources for non-marine Gammaroid families and genera will also be linked to the appropriate taxon (where available).

- Document the basionym (original name)
- Document missing authorships
- Document the original description (preferably with pdf)
- Document the status reference [basis of current taxonomy]
- Document the type locality
- Document the type species
- Document the environment [freshwater/brackish/marine]
- Document the habitat (hypogean/troglophilic vs. epigean)
- Document distribution (FADA biogeographical region; closer distribution in TWDG terms)
- Back up distributions with published sources.

The contractors were obliged to provide: documentation of the basionym, missing authorships, original description (preferably with PDF), status reference, type locality, type species, environment, habitat, distributions (with sources), and identification resources, for ca. 400 names.

3. Results of the project:

Altogether we have edited taxon information (basionym, missing authorities, environment, fossils range) for 319 taxa in the on-line version and we have provided a table with updates for a further 105 taxa (including ca. 110 taxa added). Missing genera (e.g. *Boeckia*, *Fontogammarus*, *Rivulogammarus*, *Trichogammarus*) were added with respective child taxa. All accepted taxa for which type localities were defined in the literature were provided with this information. The distribution and habitat information were added, if possible, with proper citation for each taxon. Additionally, information on the location of the holotypes were provided for species, where this information led to an existing museum collection. In some cases the distribution records were removed as they were incorrect and not supported by literature. The references for original descriptions as well as additional references (re-descriptions, identification keys) were provided and in many cases supplemented by pdf files.

4. (Brief) description of the work/methodology

We started with the assembly of the available literature. All the redescribed species were traced to the original description. All the required data for genus *Echinogammarus* with some representatives from *Chaetogammarus* were provided to the Data Management Team in Excel spreadsheets for upload to the Aphia Database. Following the training at the Amphipod Editor Workshop in April, all other taxa were edited on-line.

5. Problems encountered and how it was solved (or expected solutions).

We have encountered problems in obtaining some of the original descriptions dating back to the XVIII and XIX centuries, however we have mined all the necessary information from additional resources (references provided). Another problem remains with the incongruence between molecular and morphological taxonomy. There are a number of recent papers that reveal layers of cryptic diversity with freshwater Gammaridae. They clearly state the need for re-evaluation of earlier taxonomic papers. We have dealt with this by adding taxonomic notes on the relevant taxon pages, and will update the database accordingly when these issues are worked out in peer-reviewed literature.

6. Other: remarks, suggestions, other information, bibliography, ...
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With the kick-off received from the LW grant we will now continue editing the non-marine Gammaroidea to keep the database up-to-date.