

LifeWatch Data Grant 2015

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

Amphipoda: Lysianassoidea

Final Report

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1. Data grant background

A data grant was applied for through LifeWatch, to undertake taxonomic editorship and the addition of taxonomic data (basonym, missing authorships, original description, type locality, type species, environment, depth distribution, keys and guides) for the **Amphipoda, Lysianassoidea**. The Lysianassoidea is a large superfamily containing **22 families, 173 accepted genera** and **1042 accepted species** currently in the WAD list.

This editing, while focussing on the **World Amphipoda Database (WAD)** aims to provide information that will also be reflected in **WoRMS** and fill gaps in **WoRDSS**, thus providing improvements to all projects. A peer-reviewed publication providing a global overview of Deep-Sea Amphipoda is planned and information collated during this data grant will feed directly into that project.

The LifeWatch grant work will be carried out jointly by Tammy Horton and Michael Thurston, both current editors of the World Amphipoda Database (WAD). Tammy Horton works with the WoRMS dataset (as WAD coordinator and WoRDSS thematic editor), and has a specific interest in the Lysianassoidea in a research capacity. Dr Horton is responsible for coordinating the WAD and the Amphipoda editorial team and, as a result, her specific taxon of responsibility, the Lysianassoidea, has received less attention and is in need of some focussed work. Michael Thurston has significant research experience of the Lysianassoidea following a long career studying these amphipods amounting to 50 years in active research which has continued since his retirement in 1997. Both Horton and Thurston publish together regularly on the Lysianassoidea and have the necessary knowledge and experience and an excellent reference library with which to undertake the work detailed below.

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

At the time of application within the Lysianassoidea there were:

- 754 accepted species without an original description linked (out of 1025)
- 753 original names (without brackets in the authority)
- 833 (out of 1,447) species (names) with original name field completed.
- 29 taxa (unaccepted) without authority

These were to be dealt with as a priority. The project also aimed to provide the known depth ranges of all lysianassoid species in WoRDSS (currently **419** species but this number would likely increase as a result of this project). It was agreed that new taxa missing from the database would be added, although this is likely to be a low number and will likely be limited to new species from 2015 and 2016.

The following editing tasks would be dealt with:

- Document the original name
- Document missing authorships
- Document the original description (preferably with pdf)
- Document the type locality
- Document the type species
- Document the environment
- Document depth range for deep-sea taxa
- Confirm deep-sea context
- Add identification resources

3. Results of the project:

- **115** taxon names were added to the Lysianassoidea (54 accepted names (21 of which were described in 2014-16), 47 unaccepted, with the remainder being temporary names etc.).
- **353** changes were made to existing taxon names in the database.
- The **29** taxa (unaccepted) without authority were checked and the authority added.
- Of the 754 accepted species without an original description linked (out of 1025), 494 remain.
- Of the 833 (out of 1,447) species (names) with original name field completed, 298 remain.

4. (Brief) description of the work/methodology

Two of the most problematic and speciose families within the superfamily Lysianassoidea were targeted as a priority for the focussed work. These were the Orchomenid group of species (currently encompassing taxa within both Lysianassidae and Uristidae) and the Uristidae, for which a recent comprehensive revision had recently been completed (Lowry & Kilgallen, 2014). These two families alone now contain **31** genera and **500** taxa (names). Both of these families contain a large number of older names that require referral to literature from the 18th & 19th Century to trace original descriptions. The orchomenid group has undergone numerous recombinations, with the creation of subgenera and consequent lumping and splitting, resulting in many cases of numerous accepted versions of the same taxon appearing in the database. Some of the recent revisions were difficult to represent in the Aphia database. The orchomenid group was tackled first since we knew it was likely to be the most problematic.

For each name entry in the database the original description and most recent revision were checked. The entry was updated if necessary. The original name was added (if not already in the database) and the original description was linked to it for each of the 500 taxa. This was not possible for ~30 taxa owing to problems with access to older literature or ongoing issues in confirming the validity of a taxon.

All editing was carried out using the online interface.

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

Some problems were encountered in representing particular recent revisions in the database (e.g. a species was removed from a genus (*Uristes*) to an unknown family within the superfamily Lysianassoidea).

Such cases were resolved following discussion with the DMT.

Entry of type material information and depth range information into the Aphia database (specimen and distribution modules) proved too time consuming using the online interface and has therefore been collated in an excel spreadsheet. This extra information is almost complete for the Orchomenids and 50% complete for the Uristidae. The finalised spreadsheet will be sent to the DMT for upload when it is finished. We estimate that this will take a 3 more months as the data will be collated on an ad hoc basis as part of another project (not funded by LifeWatch).

6. Other: remarks, suggestions, other information, bibliography, ...

The editing of the Lysianassoidea is not complete. Much work remains and this will continue on an ad hoc basis as time allows.

Using the online editing process has enabled the grant holder (Tammy Horton) to clarify where ambiguities/problems exist which can then feed into making improvements to the online editing guidance document.