

LifeWatch Data Grant 2015

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

Rissoidea

Final Report

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1. Data grant background

In 2014 I started editing the family Rissoinidae Stimpson, 1965 in WoRMS, filling known, and unknown gaps and bringing the 603 names at all ranks then listed in WoRMS to a new total of 1130, and, after the end of the project, further up to a new total of 1,326 on 2 May 2016. That is: +196 since the end of the project, now more than doubling the number of names of any category (valid, invalid, nomina inquirenda, etc.), while 877 nominal taxa were added or changed.

The following year, partly based on the above results, I started editing the related family, Rissoidae Gray, 1847, in MolluscaBase.

It should be understood that the editing of the Rissoidae was done simultaneously with Rüdiger Bieler, Philippe Bouchet, Serge Gofas, Rafael La Perna, Bruce Marshall, Thomas Neubauer, Gary Rosenberg, and André Sartori. On some issues, there was contact with Philippe Bouchet, Serge Gofas, and/or Gary Rosenberg.

STARTING POINT

The situation on 20 August 2015 (Initiation of the Rissoidae Project):

Overall number of taxa: 1979

There are currently 500 nominal species of "Rissoa" listed in WoRMS, as well as over 400 in "Alvania", 200 in "Onoba" and another 700 in such genera as *Crisilla*, *Manzonia*, *Setia*, and 32 other, smaller genera for a total of 1979 names at all ranks in the family Rissoidae.

The number of recorded valid/invalid species in some major genera is:

Alvania 252/128

Onoba 132/30

Rissoa 41/445

Setia 36/26

Manzonia 35/32

Crisilla 29/7

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

Preliminary assumptions and goals:

In total this may represent over 80% of the valid species but probably less than 40% of all names that ought to be indexed, excluding extinct taxa, which will, however, be included for the sake of signalling homonymy.

Projected is addition of over 500 original combinations (basionyms), and over 250 valid species to WoRMS, as well as original type figures and the addition of original publications.

Additional information:

The actual start of the project was on 1 November 2015. Meanwhile, after 20 August 2015, the overall number of taxa in Rissoidae had increased with 2, for a new total of 1981.

3. Results of the project:

The results on 8 May 2016 are as follows:

Overall number of taxa: 2439 (up from 1981, or +458). As a result of my investigations, 533 nominal taxa were added or changed.

285 Accepted (i.e. valid) taxa were added by any editor, of which 258 by me; and 236 "Unaccepted" (i.e. invalid), of which 193 by me.

The projected targets, therefore, were met.

The number of recorded valid/invalid species in some major genera now is:

Alvania 323/141 [+81/+13]

Onoba 133/30 [+1/+0]

Rissoa 118/529 [+77/+84]

Setia 40/24[+4/-2]

Manzonia 35/33 [0/+1]

Crisilla 28/3 [-1/-4]

A further increase in taxa is in the category "taxa inquirenda". These have been newly recorded, but need deeper taxonomical investigation before being definitely assigned to either a valid or invalid status.

Alvania 16 [+15]

Onoba 1 [+1]

Rissoa 52 [+48]

Setia 1 [+1]

Manzonina 1 [+1]

Crisilla 0

PRELIMINARY CONCLUSIONS

The number of 533 is close to the projected number of 500. However, in contrast to what was expected (mainly on the basis of the related Rissoinidae, and the size of the family Rissoidae), a majority of new additions constitutes of Neogene taxa. The Rissoidae, compared to the Rissoinidae contains fewer Palaeogene and Mesozoic nominal species, whereas the number of extant species is much higher. Of the latter category, it appeared that also the rate of taxa already entered into MolluscaBase/WoRMS was much higher than in Rissoinidae. It seems probable that there are two reasons for the observed difference:

1. Speciation within the Rissoidae has reached high levels particularly in the eastern Atlantic and Mediterranean Sea.

A second major centre of speciation is formed by the temperate waters of Australia and New Zealand.

2. Both the Macaronesian and Lusitanian-Mediterranean regions, and the temperate Australian-New Zealand faunas have been well-researched in the recent literature. Thanks to earlier and ongoing contributions by other editors, in particular Serge Gofas (Atlantic/Mediterranean) and Bruce Marshall (Australia/New Zealand), rather few gaps were left to fill.

I could add relatively more unrecorded taxa from the East Pacific region, South Africa, and a some other areas, but these seem to be much poorer in rissoids. Relatively few taxa could be added from the Caribbean fauna. The tropical western Atlantic is not very poor in rissoids (pers. obs. MF), but it appears that a relatively high number of taxa have not been described yet.

Rissoa appeared to be much of a "catch all" genus, with comparatively (compared, e.g. to other rissoid genera such as *Alvania*, or *Manzonina*) many basionyms, and fewer species retained in, or later assigned to this genus.

I have added ca. 20 new literature references (including many containing new taxa in other groups, that have not yet been included in WoRMS) and corrected a few more.

4. (Brief) description of the work/methodology

Potential nominal taxa were collected by searching literature references in papers known to contain Rissoidae and families likely to include nominal taxa similar too, or previously thought to belong to the Rissoidae. About half the data were collected online (mainly archive.org, biodiversitylibrary.org, and gallica.fr) the other half by checking a multitude of printed publications. Further data were obtained by browsing the internet, in particular by combining rissoid genus names and geographical and/or palaeontographical names.

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

No major problems were encountered, except that references sometimes remained "invisible" if an arbitrary part of the author's name was given: in contrast to what one would expect, more data (normally limiting the output by elimination) sometimes provided more instead of fewer results. Because of this, some references were added while it (later) appeared that they were already present.

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

NEXT STEPS

The work will be continued in the same way as with the Rissoinidae. The addition of original type-figures, nearing completion in Rissoinidae, remains a priority in Rissoidae.

Distribution records are still far from completed. Additions and corrections in all fields are part of ongoing "post Grant" research.