

LifeWatch-WoRMS MolluscaBase Editor Workshop Report

Date: 3–7 February 2020

Venue: Flanders Marine Institute (VLIZ), Wandelaarkaai 7, 8400 Oostende, Belgium

This workshop report contains the summary of conclusions resulting from the discussions.

Action points (AP) can be found throughout the report (in red) and are listed at the end.

Attendees: Philippe Bouchet, Rüdiger Bieler, Serge Gofas (minutes Friday), David Guy Herbert (minutes Monday-Thursday), Thomas Neubauer, Eike Neubert, Barna Páll-Gergely, Philippe Poppe, Ira Richling, Gary Rosenberg, Ben Rowson, Simon Schneider, Jan Johan ter Poorten, James Turner, Maxim Vinarski, Chris Vos, Ulrich Wieneke, Leen Vandepitte (DMT), Bart Vanhoorne (DMT), Wim Decock (DMT), Stefanie Dekeyzer (DMT)

Apologies: Ruud Bank, Frans Sliker



General points for MB editors

When entering new names, editors should always endeavor to enter the original name as well and add the reference to the original description. In addition, make sure that the accepted name is linked back to the original name, i.e. complete the original name field under the accepted name.

Editors should endeavor to enter the type locality when adding new names. This should be done under the original name, firstly via the distribution tab at the appropriate level (e.g. EEZ, MOEW, Country or TDWG 4). The verbatim type locality can also be included in a 'type locality' note. Do not use countries for marine species – try to find an appropriate marine region.

For new names, the benefit of doubt should be to consider them valid until there is a published reference indicating synonymy. If after 50 years there is still doubt, then the name can be considered a dark taxon (see below).

When to use incertae sedis

If in a published revision of Family Z, there is a statement that species A does not belong in this family (when the original genus is in that family), but it is instead referable to Family Y, then it should be included under Family Y, with Family Y incertae sedis as the genus name (with status temporary name), with author name not in brackets and with a link back to the original combination. See for example Assimineidae incertae sedis *caledonicus* Crosse, 1874. There should always be a link to the published source of this information. The status of the species is given as accepted unless there is a published synonymy. Editors should not create such entries unless there is a published source (paper or database).

Dark taxa (uncertain names – see Horton *et al.*, 2017)

Nomen dubium – impossible to determine identity – if such a status is appropriate editors should provide a source reference for the information.

Taxon inquirendum – the name is available, but its status is unclear and there is no published data. More research is needed. Ideally this status should be accompanied by a note explaining the problem with the relevant sources included.

Unassessed – to be used when an editor feels he/she cannot decide on the status of a name because it has not been investigated. Usually derived from migration of databases. [Note: the status "unassessed" still has to be created by the WoRMS Data Management Team (DMT) – [AP DMT](#)].

Editing rules for names with subgenus

Data concerning the type locality, type specimens and original description should be attached to the original name as published (the basionym) (with mandatory changes to odd characters where required). If the original name includes a subgenus then it should be entered under the trinomen. Whether it is also added as a genus-species binomen (original combination) as well is up to the editor. Obviously, it will need to be if the original combination remains the accepted name.

Incorrect grammatical agreement of specific epithet

Enter the original name with wrong gender ending (with mandatory changes to odd characters where required), also enter name with corrected gender ending. Link the former to the latter. All relevant data should be entered under the corrected version and this is deemed the original name. See Horton

et al. (2017). Whether subsequent incorrect gender endings are entered is at the discretion of the editor.

Other points to note

Unchecked taxa – many taxa listed as accepted have not been checked by an editor – editors asked to search for these and to mark them as checked if they consider that the entry is correct.

Subspecies (including nominotypical subspecies) are not alternative representations of the species. If an accepted subspecies is entered then a nominotypical subspecies must also be entered.

Synonyms of subspecies – any synonyms entered under subspecies should also pop up as synonyms of the species (binomen) – Action: Bart to look into resolving this [\[AP DMT\]](#).

Taxa below subgenus (e.g. section) are to be treated as a subgenus, but no basionym can be given. This should be given in a note, e.g. *Gibbula* (*Gibbula*) section *Conotrochus* Pilsbry, 1889 is entered as *Gibbula* (*Conotrochus*) with a note giving the original version.

Day 2: Tuesday February 4th 2020

Distribution data

Entry of type locality data is mandatory. It should be entered via ‘add distribution’ with the type locality box ticked so that it shows on the map in blue. Precise or verbatim type locality can also be given as a note.

For additional distribution data:

- terrestrial – use nation, TDWG 4 or 3 as appropriate, via ‘add map distribution’
- marine – use EEZ, Regions or MEOW as appropriate, via ‘add map distribution’

Avoid MEOWs which cross international boundaries as these are problematic when compiling national lists.

Action: VILZ team to enquire about appropriate geounits for Australia [\[AP DMT\]](#).

Action: Eike and Ira to write to Leen suggesting that the type loc. data in a note be mirrored in the distribution if possible [\[AP Eike Neubert and Ira Richling\]](#).

Fossils

Action: Introductory page needs to be made more explicit about what constitutes a fossil (>10,000 years old) [\[AP all\]](#).

Recently extinct taxa should be listed as extant with a note to indicate recent extinction.

Verification of nomenclatural availability of electronic publications

Many problems evident. Action: Philippe B to investigate further [\[AP Philippe Bouchet\]](#).

Bibliographic references with problematic dates.

Currently not consistent in terms of format. Suggested format is to give actual publication date after the author(s) name(s) and then to give details after the suffix, i.e. after the pages. For example:

Craven, A.E. (1881). On a collection of land- and freshwater shells from the Transvaal and Orange Free State in South Africa, with descriptions of nine new species. *Proceedings of the Zoological Society of London 1880: 614–618*. Volume date 1880, publication date 1881.

Avoid Craven, A.E. (1864 [1863]).

Deletion of old database sources

If you find a published, non-database source for a database citation then add the published non-database source and delete the database source. A database source remains a valid source until we have something better i.e. a published reference.

New combinations in MB

Do we allow ourselves to create new combinations in MB?

Yes, but we need to give a reason for doing so with a cited reference e.g. new combination herein for consistency with (cite published ref). This can be given as a note.

Complex habitats

The issue of adding another environment category for inland hypersaline habitats is to be left to the Steering Committee – follow-up action required [\[AP DMT\]](#).

When do we use subfamilies?

Use of subfamilies is appropriate when the available knowledge is sufficient.

Under subfamilies, accepted genera are listed first followed by those that are considered synonyms.

Taxa not assigned to a subfamily should be listed directly under the family, not under Family [unassigned] or [unassigned] Family.

NB – there seem to be many cases in MB where this is not the case e.g. [unassigned] Trochidae.

Action: We need to add something to introductory section of MB to indicate that the MB classification is to be regarded as a pragmatic version of the current state of knowledge [\[AP all\]](#).

Genus group names

All historical genus-group names added to MB should be checked against the Rocroi index – if the names are not in the index this should be communicated to PB so that he can add them. He will catch all new genus-group names.

Action: PB to send a list of problematic genus group names to MB editors [\[AP Philippe Bouchet\]](#).

Freshwater molluscs of North America

Action: Gary and Rüdiger to investigate finding someone to act as a MB thematic editor specifically with this goal in mind. Need to establish whether there are any other similar initiatives currently underway [[AP Gary Rosenberg and Rüdiger Bieler](#)].

Mediterranean marine molluscs

No action currently needed.

Replacement of homonyms

Do we want to aggregate homonyms and publish batches of replacement names?

No, not at present. The necessity for replacement needs to be evaluated individually, ideally in the context of revisionary studies.

Author names

Out of respect to authors, we should endeavor to use the correct form for author names including diacritical marks. Alt Codes for many such characters can be found at <https://usefulshortcuts.com/alt-codes/accents-alt-codes.php>

Initials for author names

We should endeavor to include initials when there are multiple authors with the same surname. This is a great help in compiling bio-bibliographies, lists of eponyms and lists of taxa described by individual authors.

Ideally, we should have a thesaurus of taxon author names (not sources) – Action: Gary volunteered to investigate this [[AP Gary Rosenberg](#)].

Unaccept reasons

Gary produced a list of commonly used ‘unaccept reasons’ that have been used to date. We worked through this list to decide which to keep and which to delete. This resulted in a substantial reduction due to elimination of slight variations in terminology but with the same meaning. The list of retained reasons is to go to the steering committee for further discussion regarding use of a drop-down list, but also retaining a free-text option where specific detail is required, e.g. for junior homonyms – follow-up action required [[AP DMT](#)].

Change of status

When the status of a name is changed, beware of sources of synonymy, which might become compromised as a result – i.e. they might apply to a synonymy that is no longer accepted. ‘Source of synonymy’ may need to be changed to ‘additional source’, with a note indicating the synonymy proposed therein.

We may need a list of taxa which are labelled as accepted, but for which there is a source labelled ‘source of synonymy’ – follow-up action required [[AP DMT + all](#)].

Images on MB

Extensive discussion took place regarding the provision of images in MB.

Ideally the images concerned should be hosted by the home institution, not by Aphia. Then accessed from MB via stable links.

Images should be tagged with the AphiaID for the species concerned within the home institution's image management system.

This requires that institutions have on-line databases for their collections. For smaller institutions, images can be uploaded and hosted on Aphia, but permission to do so must be sought in advance.

Presentations were given by representatives from:

- **Mollusca Types in Britain and Ireland** (Ben Rowson & Jim Turner)

Summary of the discussion:

The scope and our current/future plans for the project were outlined and we demonstrated the website and underlying FileMaker database. This resolved several queries that had arisen during Serge's introduction.

Most agree that linked (URL) images are the future, not local upload. Bart emphasized we should start with a simple link to the URLs for our image thumbnails. Philippe noted that our database is set up with this in mind, which is very satisfactory.

We will send them the basic data as XLS. And our first preferred images for each species will appear as thumbnails on the MB (& WoRMS) "Images" tab. These which will take users to our gbmolluscatypes.ac.uk page. Each of our specimens is thus linked, via MB, to GBIF, OBIS, and anything else that WoRMS links through. We felt that this achieves most of what we want (the situation is the same for MNHN Types).

When we have obtained an AphiaID for each of our records there is not much more for us to do. Where we have not yet found an AphiaID, it is often because either the taxon is not yet in MB or because there are two records in MB, one for the original binomial combination and one for the basionym (including subgenus, etc.) as written in the publication. MB Editors always favor the latter, as do we, so just have to match such records.

MB do want to acquire any names they don't have, so we will send them a list. However, we are not at this stage becoming MB Editors given the complexity of the context across taxa, continents etc. (but nor is this ruled out).

We discussed sending further data to MB with Gary, Bart etc. to be used on the MB "Specimens" or "Notes" tab. We can do so (e.g. we will send them a list of references and names not in MB), but do not have to. Following Bart's advice, we will try to set up the thumbnail links first. We can then revisit this later in the 2019-2022 project. We can send data once now, once in 2022, and periodically thereafter.

Sending data does not mean become dynamically tied for other details. Indeed there are advantages for us being able to cite MB, and vice versa, as sources which would not be possible if they became equivalent.

Philippe also asked us about the duration of the project (we said at least 5 y) and the likely size (we said under 5000 species names). We discussed the Linn Soc where we realize we need a workaround for their viewer, which Serge and others found user-unfriendly.

He also asked for clarification on the NHM's data. We explained that our NHM partners are working on non-NHMUK specimens in this project, and demonstrated the link to the Project dataset of Mollusca types on the NHM Data Portal. We said we could in principle host NHM's data, but that this is also available via the Portal; discussions between WoRMS/MB and NHMUK are likely to take place on another level, especially if involving new digitisation. Bart noted that WoRMS/MB can do a lot already with the NHM portal since it uses the GBIF IPT.

Actions agreed:

We think we can resolve all these this year (2020), some potentially very soon. This will be helpful since it comes before we add substantial tranches of new data.

Pre-transfer of data:

- VLIZ/MolluscaBase to provide to ACNMW [**AP DMT**]:
 - List of ALL fields relevant to the specimen record module.
 - List of ALL fields relevant to the references record module
- ACNMW to provide [**AP ACNMW**]:
 - List of taxa not in MolluscaBase BUT in GBMolluscatypes

Data transfer

- ACNMW to provide [**AP ACNMW**]:
 - Current published Type Specimen data in Spreadsheet form:
 - Data mapped to MolluscaBase Fields (specimen record module) including AphiaID
 - Image data – priority for thumbnail stated
 - URLs included
 - GBMolluscaTypes type specimen record
 - Thumbnails (400px)
 - Large images (1024px)
 - References data - mapped to MolluscaBase Fields

Post data transfer

- ACNMW to provide updated datasets periodically to add/update type specimens [**AP ACNMW**].

- **Conchology Inc.** (Philippe Poppe)

Summary of the discussion:

Pick up the collaboration started in 2017 to populate the WoRMS database with images of Conchology, Inc. [**AP Philippe Poppe**].

- Populate the popular families like Cypraeidae, Conidae, Strombidae, etc.. with images from Conchology, Inc. (based on email Leen Vandepitte Feb. 28, 2017).
- Conchology, Inc. will look up the Aphia ID for each species in the Encyclopaedia to match the species with WoRMS, this to enable automatic linking between the 2 websites.
- Make a dedicated landing page on the website www.conchology.be
- Create an API that WoRMS can query to get:
 - Thumbnail URL
 - Encyclopaedia landing page URL
 - Title for display on the WoRMS page

Consensus was that it would be relatively simple for these initiatives to include AphiaIDs in their systems and this would then make it a relatively simple task for the VLIZ IT team to create stable links to these in MB, as is currently done for MNHN images.

Action: Ben & Jim and Philippe Poppe to provide Leen with a summary of their respective visions for taking this forward [[AP ACNMW and Philippe Poppe](#)]. **OK**

Some additional low-hanging fruit that can also be considered in this regard include Field Museum, ANSP, TePapa, national server for Swiss museums, GeoCAsE (Berlin fossils).

Editors are encouraged to upload images from their publications, if they feel they have the time.

It seems at this stage we do not need an MB editor specifically responsible for images of types.

MyAphia – an important tool

Accessed via the personal log in/out tab.

Many useful things available here.

- Search for similar sources – use this to locate and eliminate duplicate literature sources.
- Journal importer for rapid bulk importing of data (only certain journals).
- Checklist publication tool (e.g. to download pdf of checklist of species within Families/Subfamilies/Genera etc.).
- Distribution search for regional lists.
- Rapid distribution entry for data from the same source (e.g. books and checklists).
- Adding geounits via Marineregions.org.

Environment flags

If marine taxa are not marked as marine in MB, they will not show up in WoRMS. This is a historical hangover from the time when environment flags were not an essential requirement. Hence, some marine taxa accessible via MB (because they are molluscs) do not appear in WoRMS (because they are not flagged as marine). About 800 genera lack an environment flag, many of these are marine.

Bart wrote the following:

‘There is no need to put too much priority to this. This is a known issue throughout WoRMS, and we will automatically inherit the flags from the species. We just need a little bit of time to do it properly and not to make mistakes.’

In relation to this, for accepted species names with a large set of synonyms – the IT team will establish whether they can extend the environment flags to synonyms based on those of the accepted name – follow-up action required [[AP DMT](#)].

NB: For all new entries, editors should fill in **all** the environment flags if they can. Thus a fully marine species will be – Marine=yes, Brackish=no, Freshwater=no, Terrestrial=no, and a fully terrestrial one will be – Marine=no, Brackish=no, Freshwater=no, Terrestrial=yes. **Flags should only be left as unknown when there is uncertainty.**

Taxa with a marine larval stage must have the marine flag checked.

Collaboration with other projects, initiatives, institutions

Indo-Pacific Mollusca

Consensus seemed to be that relevant geographic and trait data should be incorporated into MB, together with the associated sources. The Indo-Pacific Mollusca database will ultimately go off-line and become a context within MB.

Malacolog

Primary goals should be 1) to import bibliographic sources into MB (and eliminate duplicates) and 2) to add all non-problematic names (+ associated sources) that are not currently in MB.

Action: Gary to provide a summary of actions to be taken for both Indo-Pacific Mollusca and Malacolog [[AP Gary Rosenberg](#)].

Marine Bivalve of the British Isles

Need to pursue adding links in MB to relevant pages of this on-line bivalve data portal – follow-up action required [[AP DMT](#)].

Worldwide Mollusc Species database

No response.

Gastropods.com

Happy to collaborate.

MUSSELP

Evidently not willing to collaborate.

Traits

Present: Philippe Bouchet, Serge Gofas, David Guy Herbert, Rüdiger Bieler, Gary Rosenberg, Maxim Vinarski, Stefanie Dekeyzer, Bart Vanhoorne

The agenda on the last day of the MolluscaBase workshop was a hands-on session to document traits for Mollusca. However, on starting this, it was immediately realized that, before entering data on a large scale, some thinking is still needed regarding which data to be entered and with which values.

(1) traits currently prepared for entering in Aphia are:

- Body size* (qualitative = if micro-, meio-, macro- or megafauna).
- Body size* (quantitative; must specify a unit, may express if maximum etc., and which part of the body is measured. Gary Rosenberg's Malacolog database has "maximum recorded size" expressed in mm for every species contained, easily imported).
- Fossil range (available time units up to Holocene, no entry possible for Recent).
- Feeding type* (many options available, need some cleaning because the pull-down menu currently mixes processes for obtaining food e.g. predator, grazer, filter-feeder and kind of food e.g. carnivore, herbivore, suspension-feeder).
- Larval and juvenile development. "Brooding" which is a trait at the same hierarchical level as "Larval and juvenile development" should instead be a category of this.
- Mobility* (mobile, sessile or sedentary).
- Supporting structure and enclosure (with options Structure solid/non solid, and Composition). This trait cannot be qualified by life stage here it should (e.g. Nudibranchia have a shell as larva and not as adult, most echinoderms have an endoskeleton as adult and only Ophiuroidea and Echinoidea have one as larvae).

* denotes that this trait can be qualified with life history stage (Adult, Larva, etc...).

Looking at the "Traits" portal (www.marinespecies.org/traits), we noted Reproductive type (if sexual, asexual, gonochoristic, hermaphrodite, etc..) and Life Span as traits present in the "Terminology" tab of the Traits portal and not currently addressed in Aphia, for which significant knowledge exists for Mollusca and could be documented. These attributes need not be qualified for life stage.

AP all: assess which significant traits should be documented for Mollusca.

(2) A discussion was held regarding whether the trait value(s) associated with a higher taxon should be the dominant one(s), or sum up all the values existing in terminal taxa, however unusual. The first option is incomplete, but the second one may be extremely misleading for the user. We believe that the list of trait values that appears under a higher taxon should adequately describe that higher taxon. An example was given with Body size (Qualitative): most bivalves are 2-200 mm, very few are 0.2-2 mm and another very few are over 200 mm adult size. ¿Should we reflect all three values, or reflect only the prevalent one under "Bivalvia" and reflect the exceptional ones only under the appropriate genera e.g. *Draculamyia* for 0.2-2 and *Tridacna* for >200? Another approach should be to qualify those traits by "obligate", "prevalent" and "occasional" then we list all three values 0.2-2 mm (occasional), 2-200 mm (prevalent), >200 mm (occasional) and provide a very accurate statement.

This point will become increasingly relevant when we take a "bottom up" approach i.e. all the higher taxa cumulate any trait value associated with a subordinate taxon. Then a threshold can be set for "occasional" e.g. 10% of the species for which the trait is documented.

(3) The top-down inheritance. Traits entered at higher level e.g. Bivalvia are inherited down to species level unless some more specific trait is entered at an intermediate level. It was noted that the value "unknown" (different from blank) at an intermediate taxonomic level bars the inheritance to lower taxa. Consequences of all this are to be carefully assessed, e.g. trait "Supporting structure" with the value "calcareous" is appropriate for the taxon "Bivalvia", even if it is inherited top-down to every species, but trait "Fossil range" with the value "Cambrian to Recent" is correct for "Bivalvia" as a whole, but does not make sense for a species flagged as "Recent only". Conclusion: some traits should not be entered for "Bivalvia" until all subordinate taxa are appropriately documented for the more restricted fossil range (otherwise we should wait for a bottom-up approach).

AP DMT: assess the bottom-up approach or top-down inheritance for the traits.

Final remark: All are reminded to read/reread the Horton et al. (2017) paper in order to check queries regarding conformity with WoRMS/MB protocol [AP all].

<https://doi.org/10.5852/ejt.2017.389>

Action points

- **AP DMT:** create the status "unassessed".
- **AP DMT:** make sure that any synonyms entered under subspecies also pop up as synonyms of the species (binomen).
- **AP DMT:** enquire about appropriate geounits for Australia.
- **AP Eike Neubert and Ira Richling:** write to the DMT suggesting that the type locality data in a note be mirrored in the distribution if possible.
- **AP all:** make introductory page more explicit about what constitutes a fossil (>10,000 years old).
- **AP Philippe Bouchet:** investigate further the verification of nomenclatural availability of electronic publications.
- **AP DMT:** follow up on adding another environment category for inland hypersaline habitats with the WoRMS Steering Committee.
- **AP all:** add something to introductory section of MB to indicate that the MB classification is to be regarded as a pragmatic version of the current state of knowledge.
- **AP Philippe Bouchet:** send a list of problematic genus group names to MB editors.
- **AP Gary Rosenberg and Rüdiger Bieler:** investigate finding someone to act as a MB thematic editor specifically for the freshwater molluscs of North America. Need to establish whether there are any other similar initiatives currently underway.
- **AP Gary Rosenberg:** investigate to have a thesaurus of taxon author names (not sources).
- **AP DMT:** follow up on the shortened list of unaccept reasons with the WoRMS Steering Committee.
- **AP DMT + all:** follow up on taxa which are labelled as accepted, but for which there is a source labelled 'source of synonymy' (DMT to provide a list to MB editors).
- **AP ACNMW and Philippe Poppe:** provide Leen with a summary of their respective visions for taking this forward. **OK**

- **AP DMT:** provide to ACNMW the list of ALL fields relevant to the specimen record module.
- **AP DMT:** provide to ACNMW the list of ALL fields relevant to the references record module.
- **AP ACNMW:** provide to DMT the list of taxa not in MolluscaBase BUT in GBMolluscatypes.
- **AP ACNMW:** provide current published Type Specimen data in Spreadsheet form (Data mapped to MolluscaBase Fields (specimen record module) including AphiaID; Image data – priority for thumbnail stated; URLs included: GBMolluscaTypes type specimen record, Thumbnails (400px), Large images (1024px)).
- **AP ACNMW:** provide references data - mapped to MolluscaBase Fields.
- **AP ACNMW:** provide updated datasets periodically to add/update type specimens.
- **AP Philippe Poppe:** Pick up the collaboration started in 2017 to populate the WoRMS database with images of Conchology, Inc (populate the popular families like Cypraeidae, Conidae, Strombidae, etc.. with images from Conchology, Inc.; look up the Aphia ID for each species in the Encyclopedia to match the species with WoRMS; make a dedicated landing page on the website www.conchology.be; create an API).
- **AP DMT:** follow up on extending the environment flags to synonyms based on those of the accepted name (especially important for accepted species names with a large set of synonyms).
- **AP Gary Rosenberg:** provide a summary of actions to be taken for both Indo-Pacific Mollusca and Malacolog.
- **AP DMT:** pursue adding links in MB to relevant pages of the Marine Bivalve of the British Isles data portal.
- **AP all:** assess which significant traits should be documented for Mollusca.
- **AP DMT:** assess the bottom-up approach or top-down inheritance for the traits.
- **AP all:** read/reread the Horton et al. (2017) paper in order to check queries regarding conformity with WoRMS/MB protocol.