Caldera, February the 8th, 2016

Dear Colleagues:

Thank you very much for the time and effort spent in correcting our manuscript; this is much appreciated. I am here returning the revised manuscript; we have followed most of the suggestions of the referees, including the incorporation of two missing figures for two species, and we have changed the descriptions of the already recorded species to diagnosis. Our responses to the referees’ comments are given in detail below (responses in **bold**).

I have uploaded a revised version of the manuscript through the website. Please let me know if there are any other queries regarding this submission.

Best regards,



Juan Francisco.

**REVIEWER: Michael Schroedl**

**Basic reporting**

No comments; authors are trying to include museum numbers

**Experimental design**

Report on „Heterobranch sea slugs...“ by Araya & Valdés

This is a faunal study adding valuable information to the generally poor knowledge of marine invertebrates in northern Chile. Several sea slug species are externally illustrated and a new species of Berthella is described externally and internally. The anatomical description seems sound and the intertidal habitat of this new species is interesting. It would be good to include sequences to support or reject morphology-based conclusions on the novelty of B. schroedli; perhaps this could be done in a revised version.

My main problems are:
- The specimen illustrated as D. punctuolata (Fig. 1D) looks like a perfect P/D. variolata to me. I found many of them along the central and northern Chilean coast. Compare Schrödl 2003: fig 21A for colour variation of specimens from a single population…

**Response: I have examined again that particular specimen and it indeed represents *D. variolata*; several other specimens found during this study seem to agree with this identification. I have changed the id of that species in the manuscript, including new references.**

- The “P. marmorata” should be checked for small caryophyllidia in between larger tubercles, please; if present, the specimen shown / species should be treated as synonym of D. variolata (also see below)
**Response: The only specimen that we found lacked any caryophylllidia in the dorsum; only small tubercles of different sizes, which was quite different from the specimens of *Diaulula variolata* that we examined. We think that there are two species involved.**

- The “Ercolania evelinae” in Fig. 1F does not look like those described by Marcus (1959) or Schrödl (1996), which have a single marginal row of just up to 12 cerata. Also, rhinophores appear to be somehow bifid or enrolled (?) while Ercolania evelinae has digitiform rhinophores. As a rough guess, that specimen looks more similar to Aplysiopsis brattstroemi (see Schrödl 1996).
**Response: Unfortunately, as we did not collect that particular specimen we can only use its image. After reviewing Marcus (1959) and Schrodl (1996) we agree with you and concur that this species may correspond to *Aplysiopsis brattstroemi*. As we cannot confirm this identification (the specimen was not collected) I have changed the identification in the manuscript to *Aplysiopsis cf. brattstroemi*.**

All these issues could be clarified easily by light microscopy / SEM (tubercles) or by dissecting specimens and comparing anatomy with some relevant literature, such as Marcus (1959) and Schrödl (2003). A revised version should really address these major points and consider consequences, e.g. regarding synonymy lists, distributional ranges and information presented in Table 1.
**Response: We have added further information on each species diagnosis and also corrected the information presented in table 1. We have also checked carefully the chresonymies of each species.**

Further comments and suggestions:

P 3, l 49: please use T. delicata rather than T. nobilis; also in legend of Fig. 1

**Response: Done.**
p. 5: Check spelling of Eolidea patagonica d’Orbigny, 1836
**Response: Done.**
add museum numbers throughout
**Response: Done.**
p 6, l line 142: not the northernmost record from Chile; check Schrödl’s (2003) record from Arica.
**Response: I changed the text accordingly.**
P 7, l 172-173: actually it’s not a dorsal row but there are 2-3 submarginal dorsal rows
**Response: I changed the text accordingly.**
P 9, l 220-222: also occurring off northern Argentina; some records from northern Chile and Peru regarded as dubious by Schrödl (2003)
**Response: I changed the distribution accordingly.**
P 9, l 243: The southern specimens identified as D. variolata by Aldea et al. were doubted / disregarded to belong to that species by Uribe et al 2013 and Schrödl & Hooker 2014; Check the latter study for current reliable geographic ranges
**Response: I have corrected the distribution on this particular species.**
P 10, l 248: all exemplars assigned to this species that were living or preserved adequately (rather fresh material in ethanol rather than formalin) clearly had at least some smaller caryophyllidia, i.e. larger tubercles look similar to those of Peltodoris but there are many slender caryophyllidia in between, as mentioned by Marcus (1959) and Schrödl (2003); I am sure that Bergh’s species should be better called Diaulula variolata, as emphasized by Schrödl & Hooker (2014), but eventually this decision is up to the authors.
**Response: We have examined carefully the ethanol-preserved specimens and we have pondered regarding the synonymies involved in the identification of *Diaulula variolata* and *Peltodoris marmorata*. We think there are two species involved; one with obvious caryophyllidia and small tubercles and one with only tubercles (of several sizes).**
P 11, l 300: eyes are at or under the base of rhinophores?
**Response: They are located behind the base of the rhinophores; I have changed the text.**
P 13, l 341: should read Munich
**Response: Done.**
P 13, l 366: do they also differ regarding subtidal versus intertidal habitat?
**Response: Indeed, I have added that words in the text.**
Check text / legends for “schroedeli”

**Response: I have checked all the text involving the reference to the new species.**

**Validity of the findings**

see above

**Comments for the author**

All the best, Michael

### REVIEWER 2

#### Basic reporting

In general, the manuscript needs a deep revision of the language and the style. There are many and important mistakes. The table also needs revision and should be cited in the introduction and not only in the distribution of Berthella. The table is missing one species, dots, brackets, coordinates…
Figures are good. But letters A and B in Figure 4 are very small in comparison with the figure, scale, etc. Also, there is something like a gland close to the prostate that is not labeled and no explained in the text. What is it? Figure 4A and 4B should be in the text. 4B is missing in the text and 4A (in the text) does not correspond with the figure.

**Response: I have added the missing species in the Table and have formatted it accordingly. I have enlarged the font in figure 4 and added additional information regarding the reproductive anatomy depicted in that figure. I have also cited this figure properly in the manuscript.**

#### Experimental design

They are ok but, in the notes from the author, he says that they are sequencing the new Berthella. If they pretend to include that information, they should have mentioned it before. That would change the manuscript.

**Response: We sequenced the new species and added the corresponding information in the text.**

#### Validity of the findings

In general, the information presented in the manuscript is very poor. Remarks of the species are very short and uninteresting. Descriptions seem not to be originals.

**Response: We have decided to change from descriptions to diagnosis in all the already described species, as they have been extensively reviewed in former works.**

#### Comments for the author

In general, the manuscript needs a deep revision of the language and the style. There are many and important mistakes. The table also needs revision and should be cited in the introduction and not only in the distribution of Berthella. The table is also missing Ercolania evelinae, dots, brackets, coordinates…
Figures are good. But letters A and B in Figure 4 are very small in comparison with the figure, scale, etc. Also, there is something like a gland close to the prostate that is not labeled and no explained in the text. What is it? Figure 4A and 4B should be in the text. 4B is missing and 4A does not correspond with the figure.
In general, the information presented in the manuscript is very poor. Remarks of the species are very short and uninteresting.
**Response: We have checked carefully the text and the tables. We have also labeled the gland close to the prostate and changed the Descriptions to Diagnosis. We have considered also more information on the remarks of some species.**
Other comments:
- What is “Chile and Programa de Doctorado en Sistemática y Biodiversidad” doing in the address of the first author?

**Response: The correct affiliation for the first author reads “*Departamento* *de* *Geología*, *Universidad de Atacama, Copayapu 385, Copiapó, Region of Atacama, Chile and Programa de Doctorado en Sistemática y Biodiversidad, Universidad de Concepción, Concepción, Chile*”; these are two affiliations which I have decided to list under a single superscript.**

- The authors talk about “the coasts” throughout the text. It should read “the coast” since it is only one.

**Response: Done.**

- “mollusks” or “molluscs”?. Inconsistent.

**Response: I have corrected them to a single spelling.**

- “contribute additional information”? I does´t make sense.

**Response: I have deleted these words in the text.**

Please, carefully review the English throughout the text.

**Response: The manuscript has now been checked by a native.**

Systematics:
Phidiana:
- Which specimen refers MPCCL XXXX to? Not clear.

**Response: I have examined and corrected all the museum codes of deposition.**

- Commas after authors (throughout the text).

**Response: I have checked all the synonymies again.**

- The description of Phidiana lottini is too general. Please, give more details. For example, the cerata are white only in their tips, etc.

**Response: I have added additional information on all the species reviewed.**

- The Remarks of Phidiana lottini are not good. There are other species of that genus with those features. It needs a better discussion.

**Response: I have modified the remarks on each species.**

Tyrinna:
- commas in references after authors.

**Response: I have checked all the synonymies again.**

- If the dorsum is smooth, it is clear that it does not have tubercles.
**Response: I have deleted the superfluous text.**

- I don´t understand what the authors mean by “(After Uribe et al. 2013)” and the same in the remaining descriptions. Besides, in Uribe et al. (2013), this species is not mentioned, so the distribution is not correct.

**Response: It referred to an amended description of *T. nobilis* by Uribe et al. 2013. I have changed those references for each species.**

- Remarks very poor.

**Response: I have added additional information.**

Baptodoris:
- Again, what do you mean by (“After Fisher & Cervera, 2005a”?)

**Response: I have cited the appropriate references in the text.**

- Remarks: very poor.
**Response: I have added additional information on each remark.**

Diaulula:
- The description of the specimen does not really match the picture. Small caryophyllidia? They seem very big to me. And what about the brown coloration? Where is the yellow?

**Response: Sorry, this was a mistake in the description. I have amended the text.**

- Again…why “After, Schrödl, 2003”?
**Response: It referred to the pertinent reference.**

- Distribution: and the Falkland Islands, too.
**Response: I have checked the synonymy and thus the distribution for this species.**

- Remarks: very poor.
**Response: I have given additional details in the text.**

Peltodoris, Ercolania, Onchidella:
- Same general comments as the species before.
**Response: I have given additional details in the text.**

- Fig. 1E should not be in bold.
**Response: I have changed the text.**

- Schrodl or Schrödl?

**Response: Done.**

- Picture of Onchidella marginata?

**Response: I have added a photograph for that species.**

- Reference for the distribution of Onchidella marginata?

**Response: I have added the reference for the distribution.**

Berthella schroedli sp. nov.
- 18x7 mm???

**Response: It referred to the maximum length and width; I have now explained it in the text.**

- The information in “Type material” needs to be explained. What these refers to?? MZUC XXXX. Paratypes 1-3 LACM XXX-XXX, paratypes 4-6 MPCCL XXX-XXX???

**Response: I have added the correct deposition numbers for the type material.**

- The diagnosis is not very complete.
**Response: I have added more specific characteristics to the diagnosis.**

- In line 21, the Fig 4A does not make any sense.

**Response: I have cited the correct image in that line.**

- The SEM picture of the jaws (Fig.3D) should be before the ones of the radula. It should be referred as Fig.3A. SEMs for the radula should be 3B, C and D. Change in the plate.
**Response: I have moved the jaws description to the end of that particular section, to be sequential with the images.**

- The radular formula 50 x 45.0.45 is for all the specimens? How many specimens have the author dissected? This should be mentioned in the text.
**Response: The radula of two specimens was dissected; we have added the radular formula of the additional specimen.**

- Reproductive system: In the text, Fig.4B needs to be mentioned. What is that “gland” close to the prostate? Please, explain it.
**Response: This unidentified structure is referred provisionally as prostatic gland in the text. We have also labeled in fig. 5A.**

References: Many references are missing in the reference section (Broderip & Sowerby, 1832; Sowerby, 1832, 1833; d’Orbigny, 1835-1847; Hupé in Gay, 1854; Araya, 2015a? b? among many others), and also in the text. The format of the reference

**Response: I have added the missing references and have formatted them according to the journal guidelines.**

### REVIEWER 3

#### Basic reporting

The manuscript is well written but English needs a review in few sections.

#### Experimental design

The research presented is original. I have no concerns about this section.

#### Validity of the findings

The most relevant topic of the manuscript is the description of a new species, which, based in the data presented seems to be really undescribed. Other species were already recorded in the region or nearby areas, and are not very relevant.

#### Comments for the author

I have included comments in the attached pdf file. These include corrections and questions. Why the manuscript does not include photographs of all species recorded?

**Response: Thanks for your comments; we have make all the requested changes and have acknowledged all the corrections. We have also added the photographs of the two species lacking them.**

The Remarks section of most species is very poor and there are mistakes in some species synonymic lists. But overall, the manuscript is well written and the data relevant.

**note** The reviewer has attached an annotated manuscript to this review.

**Response: We have added additional information on the remarks of each of the described species and have also made all the changes and corrections made in the annotated manuscript.**