

## Minor Review Required

The revised manuscript was examined by all three original reviewers as well as myself. One reviewer was fully satisfied with the revision. Two of the reviewers provided annotated versions with suggestions for minor corrections. I also made suggestions for improvement in the attached pdf (best viewed in Acrobat).

Please revise your manuscript, addressing the comments made by myself and the two reviewers. Since these are mainly changes to the text, this should be minor address.

### [Download recommender's annotations](#)

We are delighted to get that close to acceptance. Our edits following Recommender's annotations are **highlighted in yellow** in the text and in the paragraph below.

Some of Recommender's comments call for specific responses. In particular, a "landslide cirque" is a geomorphic feature, corresponding to a wide circus-like depression generated by a landslide (see line 71). The sentence regarding bone beds and sedimentary cycles as edited into "Bone beds, deposited in successive sedimentary cycles" (line 100). We have shortened the end of the Geological settings section (lines 108-115) and followed most -- if not all -- other suggested edits over the text.

## Reviews

*Reviewed by Jérémy Tissier, 14 May 2023 15:29*

I am very grateful to the authors for taking all my comments and suggestions in consideration. The manuscript is very good, and I was very happy to review it. I think that it is a very useful paper and the work has been done very seriously and is quite exemplary. All data are now available, and very detailed.

We are deeply acknowledging your comments. Our responses will appear **highlighted in blue** here under and in the emended manuscript.

I only have very minor comments, that I have reported on an annotated pdf. I repeat some of them here, that are perhaps a bit more important:

- L. 174-185 is a very long sentence, which could be broken in several parts.

**OK. Done.**

- L. 716: the organization of the whole comparison section is slightly confusing, and would be perhaps easier to read if it was reorganized by including all anatomical parts together, instead of separating this section by skull/mandible/teeth/postcranial. But I leave the choice to decide to the authors, this is very minor.

**Partly agreed. We have chosen to add an introductory sentence.**

- L.738-741: the mandible of *D. shanwangense* is not compared at all with the material from Tagay, I think this is quite missing. Perhaps they are actually identical.

Good remark. Our mistake. They are identical, indeed (we have added another feature, i.e., a shallow vascular incisure).

- L. 943-946: The authors say that *D. asphaltense* and *D. lemanense* have a “low number of morpho-anatomical discrepancies” and thus that “they could be considered as intraspecific variants within *D. lemanense*”, but Jame et al. (2019) have provided a differential diagnosis of *D. lemanense*, which highlights a number of morphological differences with *D. aginense* and *D. asphaltense*, among others. However, most of these characters are not included in any character’s matrices, and could potentially be intraspecifically variable characters. I think that this study should at least be mentioned or discussed.

OK. We have added the statement by Jame et al. (2019) and erased the synonymy hypothesis (which was useless and beyond the scope of the current work).

- Fig. 4G has not been corrected I think, and the mesostyle and paracone fold are incorrect. Also, “valley posterieure” should be corrected in postfossette.

OK. Our mistakes. New version uploaded with all features relocated.

- Fig. 7: it seems that fig. 7A, H and I are upside down, with the distal side facing upward, contrary to other parts of the figure.

OK. Fixed. Thanks a lot once again. (in some cases, we have submitted provisional versions of the figures).

Otherwise, this is truly a very detailed and thorough work, and I will be very pleased to read the final version of this manuscript once it accepted.

Thank you very much for this in-depth second round and your kind comments! We have also fixed some errors you had quoted on the annotated manuscript. Only one requires further comment (line 144: Agreed for the char. 91, mistakenly treated as non-additive in the original matrices). The new lengths of MPTs (analyses with 32 and 31 taxa) are 1317 and 1316 steps, respectively. No further change (topology, number of synapomorphies, character distribution at nodes, etc.). Nevertheless, we have checked all the characters one-by-one, and found out that char. 269, also a non-additive multistate character (and treated accordingly), was not mentioned in the list. We added it to the latter list (line 148). Accordingly, the final list of non-additive multistate characters is 72, 94, 102, 140, 187, and 269.

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*Reviewed by Panagiotis Kampouridis, 05 May 2023 12:33*

In this revised version, Sizov et al. improved their already well-written manuscript. They completed the figure captions, added some additional figures, and added a more detailed comparison to other relevant taxa.

Thank you very much for your comments. Our responses will appear highlighted in green here under and in the emended manuscript.

They also corrected most issues raised by the reviewers. I have only few more comments to make:

1. In the added comparison, the genus name *Diaceratherium* is used for species that otherwise are regarded as members of *Brachydiceratherium* in the study. So, this should be amended.

OK. Done throughout the concerned paragraphs. We have also added an introductory statement (“and we will use the generic assignments as supported by the phylogenetic analysis”), in order to help the readers.

2. Because the manuscript is an extensive study and revision of this group I would suggest adding a short part in the comparison where you explain why the material from Tagay belongs to the genus *Brachydiceratherium* and not any other teleoceratine, before comparing it with the other species within the genus *Brachydiceratherium*. This part does not have to be long; it could be only a couple of sentences long.

OK. Done. A complete paragraph has been added at the beginning of the Comparison section.

Some additional minor changes are also noted (in red colour) in the attached .pdf file of the revised manuscript.

OK. Agreed in most cases. We have kept, however, several sentences unchanged when the requested change was only stylistic in nature.

It is an excellent contribution to the study of fossil rhinos and I am truly looking forward to seeing the manuscript in its final form.

Thank you!

Panagiotis Kampouridis

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*Reviewed by Tao Deng, 25 Apr 2023 03:02*

I agree to accept this revised manuscript for publication.

Thank you. We are particularly grateful for this suggestion to the Recommender.