

Interactive comment on “Neogene Caribbean elasmobranchs: Diversity, paleoecology and paleoenvironmental significance of the Cocinetas Basin assemblage (Guajira Peninsula, Colombia)” by Jorge Domingo Carrillo-Briceño et al.

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Received and published: 16 August 2018

General comments

Dear Dr. Ehret,

We are much glad and thankful for your considerations to our manuscript. We accepted many suggestions of your submitted complement (Manuscript comments) to improve and adequate our scientific research for publication in the Biogeosciences journal.

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Considerations and points raised are answered below:

Specific comments

Comment: With regards to the identifications of the specimens, I mostly agree. I question the *Alopias exigua* identification, as it has only been recorded from Europe and there are taxa that have previously been reported from the Americas during this time period.

Answer: Our assignation is referred as *Alopias* cf. †*A. exigua*, to keep an open nomenclature in base of the doubts with our specimens. We compared our samples from Colombia with fossil and recent specimens of *Alopias* housed in the collection of the University of Montpellier under the supervision and suggestion of Dr. Cappetta. The specimens of †*A. exigua* are very similar to those of Colombia and the geographic record of the taxon during early Miocene is not a barrier: lately other taxa previously describe only from Europe and North America (e.g., †*Isogomphodon acuarius*, †*Sphyrna arambourgi*, †*Carcharhinus gibbesii*), now are known from Tropical America in sediments of the early Miocene.

Comment: There are a few places where references to what is known of the habits of *C. leucas* and *N. brevirostris* would strengthen the authors' assertions..

Answer: Thanks, we have added few references regarding migration of these sharks into brackish/freshwater.

Changes: References added in P. 13 L. 8–9; P. 14 L. 8, L. 28.

Manuscript comments (Line of referee comment): author's response / author's changes in manuscript (page and lines in the Revised Manuscript file are indicated)

Page 1

L. 9–10: Thanks, we wanted to refer to previous studies which suggest the paleoenvironments for the fossiliferous formations of Cocinetas Basin. Sentence was reformu-

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lated, still in P. 1 between lines 9–11.

Page 2

L. 29–31: Sentence rewritten (L. 30–33).

Page 3

L. 25: Sample quantity added (L. 29).

L.27: Yes, bulk samples were used for few layers. The enameloid in these teeth was either worn/fragmented or was available in limited quantity (small teeth, e. g. *Sphyrna*) to reach the quantity of 1 mg for analysis. A single tooth was used per sample, but including some amount of dentine. The quantity of sample was added (L. 31).

L.28–29: Kind of data was added and sentence reformulated (L. 31–32).

L. 30: It was not distilled water or from the ‘UltraPure’ brand. We refer to the also called purified/deionized water (resistivity of 18,2 MOhm). Renamed to ‘deionized water’ (P. 3 L. 34; P. 4 L. 2).

Page 4

L. 19: ‘Used’ since we refer to the adopted seawater isotopic values for our paleotemperature calculation. ‘Was used’ added on L. 21.

Page 6

L. 8: Parenthesis fixed (L. 11).

Page 7

L. 11: Thanks, we wanted to refer to ‘carcharhiniforms’. Sentence rewritten (L. 13).

Page 8

L. 20: We wanted to refer to taxa, information added (L. 26).

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L. 25: Thanks, sentence was poorly written and it was revised. Now between lines 31–32.

L.27–29: Sentence rewritten (P. 9 L. 1–2).

L. 31–33: Paragraph rewritten (P. 9 L. 7–15).

Page 9

L. 9–10: Sentence rewritten (L. 20–25).

Page 10

L. 4: We agree with the reviewer due the biostratigraphic distribution of these species is still polemic. The †*C. chubutensis* and †*C. megalodon* from Colombia have been differentiated mainly by the crown shape and presence/absence of a pair of lateral cusplets. In the †*C. chubutensis* specimens a pair of lateral cusplets that are not separated from the main cusp can be noticed. The shape morphology of the lower teeth of †*C. chubutensis* is narrower than those of the inferior teeth of †*C. megalodon*. The specimens assigned here as †*C. megalodon* have wider crown in lower teeth, are larger and do not have lateral cusplets. New sentence was added (L. 23–27).

L. 24: We agree with the reviewer and we have rewritten the sentence. An amended diagnosis for this taxon does not match the objective of our work, but potential and more detailed revision of the worldwide fossil record of †*G. mayumbensis*, could be and interesting topic for futures contributions. Sentence now between P. 11 L. 6–10.

L. 25: The authors are not asserting that collections from the eastern coast of the US do not have good locality data. We just refer that there is not a detailed and systematic revision about the †*G. mayumbensis* specimens from eastern coast of the US. This information has not been published yet.

L. 27: As we refered above, a detailed information with clear stratigraphic information about †*G. mayumbensis* in the region has not been published yet. The information

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given by the reviewer DJE Ehret about the presence of †*G. mayumbensis* at least in the earlier portions of None Valley the section is very important and help to understand about the biocron of this extinct species. Sentence rewritten and now between L. 10–17.

Page 11

L. 3–6: Sentence was indeed confusing. We wanted to mention to the piscivorous group of carcharhiniforms and lamniforms. Sentence rewritten (P. 11 L. 33, P. 12 L. 1–2).

L. 8–10: Sentence was combined with the sentence above (P. 12 L. 6–8).

L. 17–21: Sentence about †*C. megalodon* was deleted.

Page 12

L. 11: Sentence rewritten (P. 13 L. 16).

L. 21–22: We wanted to refer to lamniforms, sentence rewritten (P. 13 L. 29–31).

L. 31: Sentence rewritten (P. 14 L. 7–8).

Page 13

L. 1: Sentence rewritten (P. 14 L. 12–13).

L. 6: Sentence rewritten (P. 14 L. 17–20).

L. 24: Reference added (P. 15 L. 5–6).

L. 27–28: Sentence rewritten (P. 15 L. 10–11).

Page 14

L. 3–4: Same case of our bad sentence in Page 1, L. 9–10. The sentence was rewritten (P. 15 L. 26–27).

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Page 22

About the size of Figure 1: The original file includes the Figure 1 in high resolution.

Page 23

In the Figure 2 **(a)**, due the scale of its representation, we prefer use “stages” in a generalized reference (e.g., middle and late). In **(b)**, due the scale of the column and detail of this, we used the name of the “stages”.

About the localities of the Patsúa Valley: This unit have been mapped and located as it is referred in our Figure 1, but lack of detailed stratigraphic columns and correlations with the other unit known from the area. More details in Moreno et al. (2015).

Page 24

Figure 3: Switched the teeth images ‘l-m’ with ‘n-o’.

Page 32

Figure 11: Removed common names (bull shark, lemon shark) from the figure.

We hope to have answered all considerations and to have attended the requirements to publish in the Biogeosciences Journal.

Best regards,

Zoneibe Luz.

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Please also note the supplement to this comment:

<https://www.biogeosciences-discuss.net/bg-2018-271/bg-2018-271-AC3-supplement.pdf>

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Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2018-271>, 2018.

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