

Review of: "Why is vertebral pneumaticity in sauropod dinosaurs so variable?"

Leonardo Cotts¹

¹ Universidade Federal do Rio de Janeiro

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This manuscript provides interesting information about pneumatization in archosaurs, especially sauropods. The variation in pneumatization of vertebrae of sauropods caused by variations during vascularization is a very plausible interpretation and I am particularly in agreement with it. I feel that the article lacked further explanation of the possibility of ossification of vascular foramina and its numerical variation on each side of the vertebrae. Some extant Crocodyliformes (e.g., *Caiman latirostris*) and mammals (e.g., anteaters) show variations in the number of foramina in the axial and appendicular skeleton throughout development, with the ossification and reduction of some in older specimens. It was not clear to me whether the authors went into these issues, but it would be interesting to explore them further.

Some suggestions in specific places in the text:

1. Figures - I suggest placing arrows in most of the figures, since in some the red marking can be confused with the material. In addition, when the image is in black and white the markings are strongly difficult to be visualized. I noticed that lines have been added to some images, but I suggest replacing them with thinner arrows.
2. I suggest that the following excerpt from the figure 1 caption "*Note that, while the general outline of the pneumatic features is the same on both sides, there are numerous differences in detail: the fossae and their contained foramina are different shapes, the fossa on the right contains an accessory lamina, the "M" is better defined on the left, etc.*" be removed and the commented information be inserted into the text. The commented details can be punctuated throughout the text, without the need to be incorporated in the legend.
3. This sentence is confusing: "*For example, in a juvenile specimen of the crocodylian Tomistoma, only about half of the first 13 caudal vertebrae have vascular foramina on each side, and they are not the same vertebrae on each side.*" I understand that the authors report that there is a variation in the presence of vascular foramina in the vertebrae, but the conclusion of the sentence does not say that. Suggestion: "*For example, in a juvenile specimen of the crocodylian Tomistoma, only about half of the first 13 caudal vertebrae have vascular foramina on each side, and they do not occur on the same side in these vertebrae.*"
4. In this sentence: "*In the cervical column, the arteries that supply the spinal cord branch from the paired vertebral arteries, which lie alongside the vertebral centra, and this may explain the "centrum first" pattern of pneumatization in*

the cervical vertebrae of non-avian theropods (Benson et al. 2012)." I suggest removing the comma after "vertebral arteries" and "which", like this: "*In the cervical column, the arteries that supply the spinal cord branch from the paired vertebral arteries lie alongside the vertebral centra, and this may explain the "centrum first" pattern of pneumatization in the cervical vertebrae of non-avian theropods (Benson et al. 2012).*"