

# Review of: "Cambrian Chordates and Early Fin Evolution"

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**Potential competing interests:** No potential competing interests to declare.

I think this paper provides a nice follow up to a specimen already studied. A lot of times specimens are described and then it seems like like else is said about them until they appear in more data rich papers about diversity changes or morphology. This is nice that it details some additional preparation that was done and changes to the interpretations on the specimen.

Comments for specific sections

Materials & Methods

1. I think it would be more clear if it was stated where this specimen is being housed.

Results

1. I don't know if referencing teleosts is the best. Since teleosts are not known until much later, i think that could be confusing to others. The author is not trying to associate this specimen with teleosts, but that might be confusing to others not familiar with these organisms. Perhaps make it clear you are drawing a morphological analogy rather than a taxonomic of evolutionary link.
2. Please provide some measurements of the features of interest.
3. I think the readers could benefit from a systematic paleontology section for this specimen.

Figures

1. I think it might help the audience to have an box on figure 1 showing where figure 2 is coming from. I believe it is coming from the thin arrow section, but that could be more clear.
2. Figure 1 should benefit from an overlay sketch of the anatomy. It is hard to tell what is the head, dorsal fin, trunk, etc. based on the specimen along.
3. I am bit unsure of what figure 4 is showing. What features are you trying to highlight here?

Discussion

1. I would prefer to see a bit more taxonomic descriptions to agree with the erecting of a new family. Perhaps explain more about the current options for families within Class Vetulicolida and explain why none of them are acceptable for this specimen. As is, I feel like there is not enough to justify a new family as opposed to an amended family description of one already in existence.

2. It could also help to show more of the phylogenetic hypothesis of this, you cite Garcia-Bellido and Paterson specimen but I think it could help the audience to read what that specimen is and why it might be coded (in a phylogenetic study) as the same. I feel the arguments given are a bit subjective but I accept that they can be made more objective and come to the same conclusions.