

Reviewer 1 (Anonymous)

Basic reporting

I found the article to need a fair amount of editing, mainly from typographic errors and misspellings. In several places, which I have noted in the edited Word document, the writing is unclear and requires further clarification. In addition I often found the writing style to be very colloquial, which I do not feel is appropriate for a final published version of a manuscript. The authors should work to eliminate this style from their writing. I found the figures to be quite course, the locality map shows no detail and could be replaced by a simple statement that the fossil was found in southeastern Utah. Although the exact locality should be protected, a bit more detail will make the figure relevant for future investigators. Likewise Figure 2 doesn't really offer any clarity or information on the lithology of the site as the details are obscured by shadows and the overly large scale bar in the foreground. The photos of the tooth are a bit blurry making it difficult for the reader to follow the description provided in the manuscript. The associated interpretive line-drawing is generally useless as it lacks detail and labels of key features. The photos of the phytosaur jaws suffer from the same problems and I am puzzled by their inclusion as the teeth, which are what are supposedly being used for comparison, are not visible. According to the manuscript the alveoli are depicted to show that they have a different shape than the tooth root, however, the tooth root is not present on the main specimen to make this determination. If phytosaurian MNA V10668 would be from the sides of the jaws (Hungerbuhler, 2000), and the juvenile jaws used for comparison lack this set of teeth.

Experimental design

Generally the manuscript is well-organized and the authors do try to compare their tooth with a variety of Triassic archosauromorphs. I think the section would benefit by providing a standard Systematic Paleontology section as is generally expected for papers such as this. Shared characters as well as differences could be better presented in tabular form. If this specimen is indeed unique, a list of unique character states present should be provided at the end of the comparative section. In the manuscript the authors claim that MNA V10668 represents a previously unknown clade of diapsid reptile; however, this is not tested using a phylogenetic analysis and I doubt that this single tooth possesses enough character information to resolve its position in an analysis.

Validity of the findings

Overall I think this manuscript suffers from the fact that the specimen is simply character-poor and not really worthy of a scientific treatment. I do not feel that the authors make a convincing argument that the tooth does not belong to a phytosaurian archosauriform, and even if it does not it is not diagnostic to a level above Archosauriformes. Certainly this may provide a datapoint because the fossil record of the Chinle Formation in Utah is poorly understood, but generally this is a pretty

unspectacular specimen and I'm not sure it is worthy of a publication on its own. As I stated above the claim that it represents a new clade of diapsid reptile cannot be made without a phylogenetic analysis. If it truly is unique, the authors should provide a list of unambiguous autapomorphies or at least a listing of a unique combination of characters that differentiates it from other known specimens. Finally I am disappointed at the stratigraphic treatment of the locality. There is no unit called the 'lower member' in the Chinle Formation. The authors need to make a better attempt to determine the stratigraphic position based on published work which is extensive for Utah, or at least discuss why an exact determination is impossible. Under no circumstances should they make up a stratigraphic unit without due diligence and a detailed discussion.

Comments for the author

I'm thrilled that the junior author has encouraged his students to take an active role in the scientific process, but there needs to be a marked improvement in writing style and the quality of the figures. Furthermore I would argue that a publication on material from this new locality is premature. A few more seasons of work need to be done at this site and the material presented as a faunal assemblage from a poorly studied area of the Chinle Formation of Utah in a proper stratigraphic context. Material should not be published on for the sake of publishing and instead should offer novel information that increases our understanding of fossils and the rock record. Sadly this study does not do that either taxonomically or biostratigraphically. Therefore I cannot recommend this manuscript for publication.