

## **Reply to Comment on “*Aysheaia prolata* from the Utah Wheeler Formation (Drumian, Cambrian) is a frontal appendage of the radiodontan *Stanleycaris*” with the formal description of *Stanleycaris***

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As part of a comprehensive examination of all radiodontans from Cambrian localities in the USA, Pates et al. (2017a, b) and Pates and Daley (2017) revised the taxonomic affinities of several described specimens. This included the reinterpretation of two putative lobopodians, one from the Wheeler Formation (Utah, USA) and one from the Valdemiedes Formation (Spain), as frontal appendages of the radiodontan genera *Stanleycaris* and *Caryosyntrips* respectively. In their comment, Gámez Vintaned and Zhuravlev (2018) disagree with these conclusions and raise three topics for discussion: (i) anatomical features they suggest support a lobopodian affinity for “*Mureropodia*”; (ii) the identity of *Caryosyntrips* as a radiodontan, and the assignment of certain specimens to this genus; and (iii) the nomenclatural status of *Stanleycaris hirpex* as an invalid taxon. For (i), we dispute that the anatomical features put forward by Gámez Vintaned and Zhuravlev (2018) are biological and conclude that a lobopodian affinity for *Mureropodia* is untenable. In response to (ii), we provide further evidence supporting a radiodontan affinity for *Caryosyntrips*, and those specimens ascribed to this genus. Finally, we concur with (iii) *Stanleycaris* as an invalid taxon according to the International Code on Zoological Nomenclature (ICZN), and have rectified the situation by providing a valid systematic description.

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