To: Mr. Stuart Ashman
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Dear Mr. Ashman,

We are contacting the Department of Cultural Affairs in order to voice concerns regarding the scholarly bulletins published by the New Mexico Museum of Natural History & Science (hereafter NMMNHS), specifically two papers (Lucas et al., 2006 and Spielmann et al., 2006) published in a recent NMMNHS Bulletin (no. 37, *The Triassic-Jurassic Terrestrial Transition*) dealing with aetosaurs, extinct reptiles characterized by their distinctive armor plates, or "osteoderms." (The full citations for the relevant literature are listed at the end of this message, and excerpts are appended to a hard copy version sent via US postal service.)

These two papers demonstrate troubling disregard for the research of other workers. The first paper (Lucas et al., 2006), provided a new genus (*Rioarribasuchus*) for an extinct aetosaur previously referred to as *Desmatosuchus chamaensis*, one week before another author (Parker, 2007) did the same in a paper written earlier but which took longer to go through the publication process. The second paper (Spielmann et al., 2006) took credit for re-interpretation of an aetosaur osteoderm (armor plate) made previously in an unpublished master's thesis (Martz, 2002) without providing that author with credit. We acknowledge that these may be accidental oversights (though if so, they are deeply puzzling for reasons that will be elaborated below), but deliberate or accidental, we feel that they are the result of problematic editorial and publishing procedures of the NMMNHS bulletins.

Dr. Spencer Lucas (current Executive Director, former Geo-Science Manager, NMMNHS), Dr. Adrian Hunt (former Executive Director, NMMNHS), and Justin Spielmann (Geo-Science Collection Manager and Registrar, NMMNHS) are authors on both papers, with Dr. Andrew Heckert of Appalachian State University (and also formerly of NMMNHS) being a junior author on the Spielmann et al. (2006) paper. These authors have regularly collaborated on papers in the NMMNHS bulletins, and elsewhere. Given that the former and present executive directors of the NMMNHS are both on the list of authors, we felt an objective evaluation of our concerns would not be possible from the NMMNHS board and required contacting the Department of Cultural Affairs.

We feel the problematic papers discussed below are the result of the unfortunate trend over the past decade for NMMNHS bulletins to be organized and edited by the authors of the constituent papers. In science, the customary process for publishing a scientific paper is to submit it to a journal which sends the manuscript to (hopefully) impartial third parties with knowledge of the subject discussed in the manuscript. This process of peer review allows the papers to be carefully and objectively evaluated for the quality of their writing, clarity of reasoning, solidity of evidence, and adherence to ethical

principles such as (most importantly), giving appropriate credit to observations and ideas made by other scientists. The peer review process, although time consuming, is necessary for maintaining standards of scientific quality, clarity, and ethics. For the authors of the papers to regularly also have editorial control over the bulletins in which they are published represents a serious conflict of interest with maintaining objective standards of peer review. There are certainly journals, and volumes of collected scientific papers, containing contributions by the editors. However, editors should show sufficient integrity to make certain that their contributions are submitted to the peer review process. Even if this fails, few authors publish so frequently in volumes in which they are editors, or in such a high volume.

The output of the NMMNH bulletins is prolific, and a brief review of the bulletins produced by NMMNHS reveals that Dr. Lucas has been an editor on most of the volumes containing papers on which he is sole author or co-author. For example, the three most recent volumes dealing with Late Triassic vertebrate paleontology, *The Triassic-Jurassic Terrestrial Transition* (no. 37), *Triassic of the American West* (no. 40), and *The Global Triassic* (no. 50), all of which have been published within the past year, are edited in part by both Dr. Lucas and Mr. Spielmann, and both are also contributors. For example, Dr. Lucas is author or co-author of 11 papers and 6 field trip guides in bulletin no. 40, with only two papers in the volume not including him as an author, and 16 papers and abstracts in bulletin no. 41. The NMMNH group essentially has their own, self-published journal in which they may mass-produce their own publications without any sort of oversight, including, if they wish to side-step it, peer review. The NMMNHS volumes are typeset in-house by the authors of the constituent papers, and then sent off to a printer who "publishes" them. The authors/editors/typesetters have full control over all printed output, without any sort of enforced overview. As we will discuss below, we feel that this process of expedient self-publication, at least sometimes bypassing the peer review process, has produced unfortunate consequences that the normal peer-review process is designed to avoid.

First we wish to discuss the background of the Lucas et al. (2006) paper, entitled "*Rioarribasuchus*, a new name for an aetosaur from the Upper Triassic of North-Central New Mexico."

Desmatosuchus is a large aetosaur known from across the southwestern United States, well-known for the massive, spike-like osteoderms growing on the neck. Until recently, the genus *Desmatosuchus* was considered to include only a single species, *D. haploceros*. However, two additional species, *D. chamaensis* and *D. smalli*, were named in 2003 and 2005 respectively. *Desmatosuchus chamaensis*, the species of concern here, was named by Zielger et al. (2003) for material collected from the Snyder Quarry in Rio Arriba County, New Mexico [as explained by Parker (2007), Zeigler *et al*.'s paper is dated 2002 but was not published until Spring 2003, so this is the date used in the citation]. As late as 2005, the New Mexico workers were still describing the Snyder Quarry material as *Desmatosuchus* in several short papers (Heckert et al., 2003, 2005; Lucas et. al, 2005).

However, William Parker was also working on the Snyder Quarry material, and came to very different conclusions. Parker's (2003a) master's thesis considered the Snyder Quarry material to represent a new genus distinct from *Desmatosuchus*, although he did not provide a name (new genus and species names presented in unpublished theses and dissertations are generally not considered valid). Dr. Heckert was notified of the release of Parker's thesis, and a copy was ordered for NMMNHS. Parker's opinion that the Snyder Quarry material was a new genus was reiterated in an abstract published in the Journal of Vertebrate Paleontology (Parker, 2003b), to which Dr. Lucas and his colleagues subscribe.

Parker's opinion was again reiterated in a paper by Parker and Irmis (2005) which was reviewed by Dr. Lucas. In his review, Dr. Lucas opined that Parker was mistaken in separating the Snyder Quarry material from *Desmatosuchus*, describing Parker as "a taxonomic splitter" (a term for someone who inappropriately separates specimens into different genera or species when they should be grouped together). It is clear therefore that Dr. Lucas was aware in 2005 of Parker's opinion that the Snyder Quarry was distinct from *Desmatosuchus*, and disagreed with this opinion. Parker also made no secret to the NMMNHS group that he was planning to publish a new genus name for this material. Parker submitted an extensive redescription of the Snyder Quarry material to the Journal of Systematic Paleontology, which was accepted late in 2005, and published in January of 2007. In this paper, Parker (2007) presented a new genus name for the Snyder Quarry material, *Heliocanthus*.

However, in NMMNHS bulletin no. 37, published in December of 2006, *two weeks* before Parker's (2007) paper, the New Mexico group exhibited a startling change of opinion (Lucas et al. 2006). In a small, two-page paper published in NMMNH bulletin no. 37 and not submitted for peer review, they claimed that the Snyder Quarry material represented a new genus after all, which they named *Rioarribasuchus*. Under Article 23 of the International Code of Zoological Nomenclature (ICZN), the oldest name for a genus or species is the one which is considered valid, and is the one which must be used in publications. The New Mexico group has made certain that their names are attached to the new genus whenever it is discussed in scientific literature.

Parker communicated with Dr. Lucas to express his consternation over Lucas et al.'s (2006) unexpected and timely change of opinion supplanting of his new name, *Heliocanthus*, with their own, *Rioarribasuchus*. In an unrecorded phone call, Dr. Lucas informed him that he had independently come to the conclusion that the Snyder Quarry material was a new genus. This claim is somewhat confusing. As already discussed, in 2005 Dr. Lucas was co-authoring papers (Heckert et al., 2003, 2005; Lucas et al., 2005) stating that the Snyder Quarry material belonged in *Desmatosuchus*, and had also specifically rejected Parker and Irmis' (2005) claim that it did not. It would seem to follow therefore that his change of opinion took place *after* his review of the Parker and Irmis (2005) paper, which *notified* him that the Snyder Quarry material was a new genus. How then can his later coming around to the same opinion be considered "independent?"

The ICZN's appendix on ethics makes its recommendations on the publication of new names clear:

> "A zoologist should not publish a new name *if he or she has reason to believe that another person has already recognized the same taxon and intends to establish a name for it* (or that the taxon is to be named in a posthumous work). A zoologist in such a position *should communicate with the other person* (or their representatives) and only feel free to establish a new name if that person has failed to do so in a reasonable period (not less than a year)." [italics ours]

It may be that Lucas et al.'s (2006) sudden change of published opinion, and taking credit for the naming of the Snyder Quarry material, was an innocent oversight, but it is difficult to see how this is possible. Dr. Lucas and his colleagues may have completely and inexplicably forgotten about Parker's (2003a, b) thesis and published abstract, and the Parker and Irmis (2005) paper, all offering the opinion that the Snyder Quarry material represented a new genus, but this seems unlikely given that they cited the Parker and Irmis (2005) paper in passing (Lucas et al., 2006, p. 581). Parker also made no secret about his intent to publish a new name to the New Mexico group, or what the name would be, so they can also not plausibly claim that they were unaware of Parker's intentions.

Unfortunately, it seems to us that the oversight by Lucas et al. (2006) was probably not coincidental, innocent, nor ethical, and that Dr. Lucas and his colleagues rushed the manuscript into press in order to have their own name for the Snyder Quarry material, *Rioarribasuchus*, published before Parker's name, *Heliocanthus*.
We feel that in scooping Parker on his carefully crafted, peer reviewed publication, the New Mexico group, having the ability to publish their own short manuscripts as quickly as they like without any manner of oversight (including that of scientific peer review), have abused their editorial power. Even if the oversight was somehow accidental, the peer review process could have prevented it. Many workers on aetosaurs and Triassic paleontology in general were aware of Parker's work, and could have notified Lucas et al. that Parker already had an article in press if they had received the article for review.

Next we wish to consider the Spielmann et al. (2006) paper, published in the same volume, and entitled "Revision of *Redondasuchus* (Archosauria: Aetosauria) from the Upper Triassic Redonda Formation, New Mexico, with description of a new species."

Hunt and Lucas (1991) named the new genus and species *Redondasuchus reseri* for isolated osteoderms from east-central New Mexico. According to Hunt and Lucas (1991), one of the characteristic features of this new species, distinguishing it from other aetosaurs, is that the lateral (outside) end of the osteoderm is "flexed" (bent) downwards. This interpretation of the osteoderms of *Redondasuchus* was repeated by Heckert et al. (1996) and Heckert and Lucas (2000).

In 2002, one of us (Jeffrey Martz) produced a master's thesis which provided a reinterpretation of the osteoderms of *Redondasuchus*. In Chapter 3 of his thesis, Martz (2002) claimed that Hunt and Lucas (1991), and subsequent papers by the New Mexico group, had interpreted the osteoderms of *Redondasuchus* backwards, and that the "flexing" ("arching" in Martz's terminology) was actually closer to the medial (inside) end of the osteoderm.

Spielmann et al.'s (2006) paper in NMMNHS bulletin no. 37, which like the Lucas et al. (2006) paper was not submitted for peer review, provided a new review of the genus *Redondasuchus*. The first page of their paper (p. 583) contains the following passage:

> The interpretation of the orientation of flexure in the diagnosis of the genus *Redondasuchus* presented here (Fig. 1) differs from that of previous studies (Hunt and Lucas, 1991; Heckert et al., 1996). These studies suggested that, for the mid-dorsal paramedian scutes, the point of flexure was "two-thirds of the lateral distance from the medial to lateral edge of the scute" (Heckert et al., 1996, p. 620). However, we believe that this is incorrect and that the point of flexure instead lies one-third of the lateral distance from the medial to lateral edge of the scute (Fig. 1).

This is Martz's (2002) reinterpretation of the osteoderms of *Redondasuchus*, but curiously does not include a citation of Martz (2002). However, it does contain a figure (Spielmann et al., 2006, Fig. 1) virtually identical to one presented by Martz (2002, Fig. 3.1) showing the corrected reorientation, again without citing the latter author.

It is impossible that Spielmann et al. (2006) were simply unaware of Martz's (2002) thesis, for two reasons. First, Martz provided three of the four authors of the Spielmann et al. (2006) paper (Dr. Lucas, Dr. Hunt, and Dr. Heckert) with copies of his thesis in 2002. He provided these copies in good faith, hoping that it would be a useful reference on *Typothorax* and *Redondasuchus*, and trusting that he would be cited for any observations or interpretations taken from the thesis. Second, the Spielmann et al. (2006) paper cites Martz (2002) extensively later in the paper, though only on matters with which they disagree. As in Lucas et al. (2006), the New Mexico group seems to have taken credit for a corrected re-interpretation by another author of material they had previously described erroneously.

Is it possible that Spielmann et al. (2006) omitted giving credit to Martz's (2002) reinterpretation of the *Redondasuchus* osteoderm entirely by accident? Perhaps the paragraph cited above originally contained a sentence reading something along the lines of "In this, we are agreeing with Martz's (2002) previous, identical reinterpretation of the osteoderms of *Redondasuchus*," and this sentence was omitted by an accidental deletion or computer glitch. However, as with the *Rioarribasuchus* paper, peer review of the manuscript by an independent aetosaur worker should have brought their attention to such an important omission. Moreover, in their criticism's of Martz's (2002) thesis,

Spielmann et al. (2006) at one point cite part of Fig. 3.1 in that thesis, *the same figure in which Martz also showed the corrected re-interpretation of the* Redondasuchus *osteoderms imitated by Spielmann et al. (2006, Fig. 1).* This rather selective citation of Martz (2002) seems adequate grounds to suspect that Spielmann et al. (2006) taking sole credit for the corrected reinterpretation of the osteoderms of *Redondasuchus* was not accidental.

A few weeks ago, Martz set a letter to Mr. Spielmann at the New Mexico Museum of Natural History and Science, and also to his personal e-mail account (an e-mail sent to his NMMNH account was bounced back), expressing his concerns and asking for clarification. No response has yet been received to this message.

It is our strong suspicion that Lucas et al. (2006) and Spielmann et al. (2006) deliberately abused their editorial powers to take credit for observations and insights made originally by Parker (2003) and Martz (2002). We invite the DCA to review the excerpts provided in the mailed package and form their own conclusions. However, although we acknowledge the possibility that our suspicions may be mistaken, and that these oversights may have been accidental, we still feel that the peculiar editorial process of the NMMNHS bulletins allowing the authors to mass produce essentially self-published and non-peer reviewed papers made them possible.

For this to stand without any response or action from the NMMNH group is not acceptable. We have two requests. First, we ask that a statement be produced by Dr. Lucas and his colleagues explaining how these oversights could have occurred unintentionally. If it is impossible to produce such a statement without stretching plausibility to the breaking point, we ask for a public apology from the senior authors of these papers.

Secondly, we suggest that all editorial control of the volumes be removed from the authors of constituent papers. Editors outside the influence of the New Mexico Museum of Natural History and Science who have complete control over the review and publication of manuscripts might solve these problems. However, simply *including* outsiders among the list of editors is clearly not sufficient, as the *Triassic-Jurassic Transition* Bulletin included several editors from outside NMMNHS (Jerry Harris, Martin Lockley, Andrew Milner, and James Kirkland) that we know and consider to be trustworthy and reliable individuals.

The following URL is to a blog by Dr. Darren Naish, from the University of Portsmouth, entitled “The armodilodile files: a story of science ethics.” This blog, which has been widely read and discussed within the vertebrate paleontology community during the past month, also discusses the case of the Lucas et al. (2006) and Spielmann et al. (2006) papers, and provides some additional commentary and background on the case. Many posts in the “comments” section below the blog provide further commentary by

other contributors, although we cannot vouch for the accuracy of all these latter claims and anecdotes.

http://scienceblogs.com/tetrapodzoology/2007/04/post_2.php#more

We hope you will give the matter due attention.

With respect,

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REFERENCES DISCUSSED IN TEXT

Heckert et al, 1996

Heckert, A.B., Hunt, A.P., and Lucas, S.G. 1996. Redescription of *Redondasuchus reseri*, a Late Triassic aetosaur (Reptilia: Archosauria) from New Mexico (U.S.A.), and the biochronology and phylogeny of aetosaurs. Geobios, vol. 29, pp. 619-632.

Heckert and Lucas, 2000

Heckert, A.B., and Lucas, S.G. 2000. Taxonomy, phylogeny, biostratigraphy, biochronology, paleobiogeography, and evolution of the Late Triassic Aetosauria (Archosauria: Crurotarsi); pp. 1539-1587 in Zentralblatt für Geologie und Paläontologie Teil I1998 Heft 11-2.

Martz, 2002

Martz, J.W. 2002. The morphology and ontogeny of *Typothorax coccinarum* (Archosauria, Stagonolepididae) from the Upper Triassic of the American southwest. M.S. thesis, Geosciences, Texas Tech University, Lubbock, 279 pp.

Heckert et al. 2003

Heckert, A.B., Zeigler, K.E., and Lucas, S.G. 2003. Aetosaurs (Archosauria: Stagonolepidae) from the Upper Triassic (Revueltian) Snyder Quarry, New Mexico. In K.E. Zeigler, A.B. Heckert, A.B., and S.G. Lucas (eds.) Paleontology and Geology of the Snyder Quarry. New Mexico Museum of Natural History and Science Bulletin 24, pp. 115-126. Albuquerque, NM.

Parker, 2003a

Parker, W.G. 2003. Description of a new specimen of *Desmatosuchus haploceros* from the Late Triassic of northern Arizona. M.S. thesis, Northern Arizona University, Flagstaff, 315 pp.

Parker, 2003b

Parker, W. 2003. Revised taxonomy of the Late Triassic aetosaur *Desmatosuchus* (Archosauria: Crurotarsi) from the southwestern United States. Journal of Vertebrate Paleontology 23 (3 Suppl.), 85A.

Heckert et al., 2005

Heckert, A.B., Lucas, S.G., Sullivan, R.M., Hunt, A.P., and Spielmann, J.A. 2005. The vertebrate fauna of the Upper Triassic (Revueltian: early-mid Norian) Painted Desert Member (Petrified Forest Formation: Chinle Group) in the Chama Basin, northern New Mexcio. New Mexico Geological Society Guidebook 56, pp. 302-318.

Hunt and Lucas, 1991

Hunt, A.P., and Lucas, S.G. 1991. A new aetosaur from the Redonda Formation (Late Triassic: middle Norian) of east-central New Mexico. Neues Jahrebuch fur Geologie und Paleontologie Monatshefte 12:728-736.

Lucas et al., 2005

Lucas, S.G., Zeigler, K. E., Heckert, A. B. & Hunt, A. P. 2005. Review of Upper Triassic stratigraphy and biostratigraphy in the Chama Basin, northern New Mexico. *New Mexico Geological Society Guidebook* 56, 170-181.

Lucas et al., 2006

Lucas, S.G., Hunt, A.P., and Spielmann, J.A. 2006. *Rioarribasuchus*, a new name for an aetosaur fro the Upper Triassic of North-Central New Mexico. In J.D. Harris, S.G. Lucas, J.A. Spielmann, M.G. Lockley, J.I. Kirkland, and A.R.C. Milner (eds.) The Triassic-Jurassic Terrestrial Transition. New Mexico Museum of Natural History and Science Bulletin 37, pp. 581-582. Albuquerque, NM.

Parker, 2007

Parker, W.G. 2007. Reassessment of the aetosaur "*Desmatosuchus chamaensis*" with a reanalysis of the phylogeny of the Aetosauria (Archosauria: Pseudosuchia). Journal of Systematic Palaeontology, vol. 5, no. 1, pp. 41-68.

Parker and Irmis, 2005

Parker, W.G., and Irmis, R.B. 2005. Advances in Late Triassic vertebrate paleontology based on new material from Petrified Forest National Park, Arizona. In A.B. Heckert and S.G. Lucas (eds.)New Mexico Museum of Natural History and Science Bulletin 29, pp. 45-58. Albuquerque, NM.

Spielmann et al., 2006

Spielmann, J.A., Hunt, A.P., Lucas, S.G., and Heckert, A.B. 2006. Revision of *Redondasuchus* (Archosauria: Aetosauria) from the Upper Triassic Redonda Formation, New Mexico, with description of a new species. In J.D. Harris, S.G. Lucas, J.A. Spielmann, M.G. Lockley, J.I. Kirkland, and A.R.C. Milner (eds.) The Triassic-Jurassic Terrestrial Transition. New Mexico Museum of Natural History and Science Bulletin 37, pp. 583-587. Albuquerque, NM.

Ziegler et al., 2003

Zeigler, K.E., Heckert, A.B., and Lucas, S.G. 2003. A new species of *Desmatosuchus* (Archosauria, Aetosauria) from the Upper Triassic Redonda Formation, New Mexico, with description of a new species. In A. B. Heckert and S. G. Lucas (eds.) Upper Triassic Stratigraphy and Paleontology. New Mexico Museum of Natural History and Science Bulletin 21, pp. 215-219. Albuquerque, NM.