

REASSESSMENT OF THE AETOSAUR '*DESMATOSUCHUS*' *CHAMAENSIS* WITH A REANALYSIS OF THE PHYLOGENY OF THE AETOSAURIA (ARCHOSAURIA: PSEUDOSUCHIA)

William G. Parker*

Division of Resource Management, Petrified Forest National Park, P.O. Box 2217, Petrified Forest,
AZ 86028 USA

SYNOPSIS Study of aetosaurian archosaur material demonstrates that the dermal armour of *Desmatosuchus chamaensis* shares almost no characters with that of *Desmatosuchus haplocerus*. Instead, the ornamentation and overall morphology of the lateral and paramedian armour of '*D.*' *chamaensis* most closely resembles that of tythoracisinae aetosaurs such as *Paratypothorax*. Autapomorphies of '*D.*' *chamaensis*, for example the extension of the dorsal eminences of the paramedian plates into elongate, recurved spikes, warrant generic distinction for this taxon. This placement is also supported by a new phylogenetic hypothesis for the Aetosauria in which '*D.*' *chamaensis* is a sister taxon of *Paratypothorax* and distinct from *Desmatosuchus*. Therefore, a new genus, *Heliocanthus* is erected for '*D.*' *chamaensis*. Past phylogenetic hypotheses of the Aetosauria have been plagued by poorly supported topologies, coding errors and poor character construction. A new hypothesis places emphasis on characters of the lateral dermal armour, a character set previously under-utilised. Detailed examination of aetosaur material suggests that the aetosaurs can be divided into three groups based on the morphology of the lateral armour. Whereas it appears that the characters relating to the ornamentation of the paramedian armour are homoplastic, those relating to the overall morphology of the lateral armour may possess a stronger phylogenetic signal.

KEYWORDS *Heliocanthus*, Aetosauria, Chinle Formation, phylogeny, vertebrate palaeontology, Late Triassic, New Mexico

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*Corresponding author. E-mail: William.Parker@nps.gov