three longitudinal cusp rows. This can be explained by the fact that the lingual row of upper premaxilar cusps is not involved in attrition in Pauchtoldinaidae. The stronger the attrition, the more the direction of the masticatory movements influences the cusp morphology.

Poster Session II, (Monday)
POSTCRANIAL OSTEOLOGY OF MINMI SP., A BASAL ANKYLOSAUROMORPH (DINOSAURIA: ORNITHISCHIA) FROM THE EARLY CRETACEOUS (ALBIAN) ALLARU MUDSTONE OF QUEENSLAND, AUSTRALIA

LEAHY, Lucy, School of Biological Sciences, The University of Queensland, Brisbane, Australia; MOLNAR, Ralph, Museum of Northern Arizona, Flagstaff, AZ, USA; SALISBURY, Steven, School of Biological Sciences, The University of Queensland and Section of Vertebrate Paleontology, Carnegie Museum of Natural History, Pittsburgh, Australia

Minmi is the only known genus of ankylosaur sauropomorph from Australia. Seven specimens are known from the Early Cretaceous of Queensland. However, only two of these specimens have been described in any detail: the holotype Minmi paraveretebra from Roma and a nearly complete skeleton preliminarily referred to as Minmi sp. from Marathon Station near Rich mond. The Marathon specimen represents one of the world’s most complete Early Cretaceous ankylosaur sauropomorphs and is the best-preserved dinosaur fossil of any age from East Gondwana. The majority of ankylosaurs have been found in Late Cretaceous sediments of Laurasian continents and thus the evolution of this group during that time and in part of this time of the world is well understood. Conversely, very little is known about ankylosaurs in the early stages of their evolutionary history (Jurassic–Early Cretaceous) and in the Gondwanan landmasses, due in part to the rarity and fragmentary nature of most known specimens. Minmi sp., with its Early Cretaceous age and unique state of preservation, is an ideal taxon with which to examine the early evolution of this distinct dinosaurian fauna. Previous work on the cranial osteology of Minmi reveals that the taxon is positioned basal to the traditional Ankylosauria (Ankylosauridae + Nodosauridae), but higher than Thyreophora. Phylogenetic analysis incorporating cranial data strongly supported the creation of the stem-based Ankylosauroidea, which includes all eurypods closer to Ankylosaurus than Stegosaurus. The description of the postcranium of Minmi sp. has resulted in the reassessment of some previous characters and the formation of new ones relating to the phylogenetic relationships of Ankylosauroidea. Preliminary results reaffirm Minmi’s basal position within Ankylosauroidea. Minmi shows that basal ankylosaur sauropomorphs were similar to Scelidosaurus, in that they were proportionally smaller and less robust, with a less well-developed dorsal skeleton than ankylosaurs.

Poster Session III, (Tuesday)
THE AXIAL SKELETON OF GRACILISUCHUS STIPANICICOMM.: ITS PHYLGENETIC INFORMATION WITHIN THE CONTEXT OF CRUROTARSI

LECUONA, Agustina, Museo Paleontologico Egidio Feruglio (MEF), Trelew, Argentina

Gracilisuchus stipanicicomm is a small suchian archosaur from the Middle Triassic Cha

MINMI FORMATION from Argentina. Its description is added to a cladistic analysis within the context of Archosauriformes to test its phylogenetic position. Probable plesiomorphic features are the absence of a developed postzygapophysial process in the vertebrae*; cervical vertebrae with a circular depression on the mid-dorsal region of the neural arch; the presence of a ventral keel in the axis, shared with basal archosauriforms and early evolution of this distinct archosauromorph fauna. Previous work on the cranial osteology of Minmi reveals that the taxon is positioned basal to the traditional Ankylosauria (Ankylosauridae + Nodosauridae), but higher than Thyreophora. Phylogenetic analysis incorporating cranial data strongly supported the creation of the stem-based Ankylosauroidea, which includes all eurypods closer to Ankylosaurus than Stegosaurus. The description of the postcranium of Minmi sp. has resulted in the reassessment of some previous characters and the formation of new ones relating to the phylogenetic relationships of Ankylosauroidea. Preliminary results reaffirm Minmi’s basal position within Ankylosauroidea. Minmi shows that basal ankylosaur sauropomorphs were similar to Scelidosaurus, in that they were proportionally smaller and less robust, with a less well-developed dorsal skeleton than ankylosaurs.

Poster Session IV, (Wednesday)
AVIAN EGGSHELL FRAGMENTS FROM A FRESHWATER FACIES OF THE SALINE WILKINS PEAK MEMBER OF THE EOCENE GREEN RIVER FORMATION

LEGGITT, V. Leroy, Department of Earth and Biological Sciences, Loma Linda University, Loma Linda, CA, USA

Abundant avian eggshell fragments occur in a nearshore freshwater facies of the saline Wilkins Peak Member of the Green River Formation near the northwestern edge of Eocene Lake Gosiute. The eggshell fragments are associated with Proshyornis (Aves: Anseriformes) bones and occur in multiple stratigraphic intervals between the layered tuff (a well known Wilkins Peak marker bed) and the base of the Laben Member of the Green River Formation. The eggshell fragments are associated with osteoderms of the ankylosaurid Graciliceratops and with other evidence that dinosaurs were tachymetabolic, endothermic homeotherms. The UTD model is insufficient to predict body temperatures and thermometabolic strategies for individual species and clades, either living or extinct. However, its results for non-avian dinosaurs are broadly consistent with other evidence that dinosaurs were tachymetabolic, endothermic homeotherms.

Technical Session I, Sunday 8:00
THE UNIVERSAL TEMPERATURE DEPENDENCE MODEL FAILS TO PREDICT BODY TEMPERATURES ACCURATELY FOR EXTANT AMMIOIDES AND EXTINCT DINOSAURS

LEE, Andrew, Ohio University, Athens, OH, USA; IRMIS, Randall, Utah Museum of Natural History and University of Utah, Salt Lake City, UT, USA; WEDEL, Mathew, Western University of Health Science, Pomona, CA, USA; WERING, Sarah, Univ. of California Museum of Paleontology and Univ. of California, Berkeley, Berkeley, CA, USA; PADIAN, Kevin, Univ. of California Museum of Paleontology and Univ. of California, Berkeley, Berkeley, CA, USA

The Universal Temperature Dependence (UTD) model, which relates growth rate to body temperature, purported to solve the question of non-avian dinosaur thermophysiology by demonstrating a pattern of increasing body temperature with size across several species. These data suggested that dinosaurs were ecologically poikilotherms and that only the largest ones could use their mass to attain homeothermy. We first tested this hypothesis for modern avian animals, using data from 302 species of lepidosaurs, turtles, crocodylians, birds, and mammals. We found that across this broad range of amniotes, the scaling trends of the actual data do not consistently match those predicted by the UTD model: there are significant prediction errors for 44% of extant non-avian reptiles and birds, and 67% of extant mammals. We also found that resting body temperature is independent of size in non-avian reptiles, birds, and mammals, regardless of their thermoregulatory strategies. Then, using recently revised estimates of non-avian dinosaur growth rates based on skeletalchronologic data, we found that predicted body temperature was also size-independent for these taxa. This refutes the claim based on the UTD model that dinosaurs could attain homeothermy and even growing to large size. In contrast, the independence of size and body temperature in dinosaurs is consistent with published data on oxygen isotope fractionation and bone histology, together implying relatively tachymetabolic and endothermic homeothermy. The UTD model is insufficient to predict body temperatures and thermometabolic strategies for individual species and clades, either living or extinct. However, its results for non-avian dinosaurs are broadly consistent with other evidence that dinosaurs were tachymetabolic, endothermic homeotherms.

October 2010—PROGRAM AND ABSTRACTS 121A