nearly complete, articulated skeleton of a new genus and species from the Wasatchian Fossil Laney Member deposits of Lake Gosiute. The third, and focus of this presentation, is a specimen preserved as a mostly carbonized skin imprint from the Wasatchian-Bridgerian Gosiute, and Fossil Lake, during the Eocene. Although the formation is famous for the Green River Formation was primarily deposited in three lakes, Lake Uinta, Lake Gosiute, and the re-investigation of Homo erectus in the Nihewan Basin, but as of yet there have been no paleoenvironmental reconstructions of the Nihewan Basin, specimens have been identified to the most specific taxonomic level possible. Despite a large amount of unidentified specimens (20.21%) and unidentified long bone fragments (29.32%), the analysis of identifiable specimens thus far indicates a high frequency of Equidae in addition to Elephasidae, Rhinocerotidae, and Bovidae. The high proportion of Equidae may suggest a generally open environment during the time of deposition while H. erectus was moving into this new geographic area. However, further identification of the faunal specimens is required for a more specific paleoenvironmental reconstruction.

Symposium: Phylogenetic and Comparative Paleobiology: New Quantitative Approaches to the Study of Vertebrate Morphology (Friday, October 12, 16:15 pm)

BONY ATTACHMENTS OF FLIGHT FEATHERS IN NEORNITHINE BIRDS: ANATOMY, HISTOLOGY AND FUNCTIONAL VARIATION HIERONYMUS, Tobin L., NEOMED, Rostotton, OH, United States; SIMONS, Erin L., Midwestern University, Glendale, AZ, United States

Attachments of the major forelimb feathers (remiges) of paravians are sometimes associated with bony features on the ulna, metacarpals, and phalanges, variously referred to as quill knobs or remigial papillae. These bony features provide a link between the fossilized skeleton and the morphology of the soft-tissue wing, but their anatomical and functional relationships are currently poorly understood. We examined the fine-scale anatomy and ecological context of remigial papillae in a broad sample of extant neornithine birds. Soft tissue relationships of remex-related bony features were determined in a range of neornithian taxa by a standard battery of anatomical techniques, including dissection, micro-f, and plastic-embedded hard tissue histological sectioning. Preliminary results from this part of the analysis include a new description of the anatomy, histology, and osteohistology of remigial ligament attachments to the ulna, the minor metacarpal, and the phalanges of the thumb digit. The histological results indicate grossly visible bony contacts for feather attachment, some of which have previously been overlooked. Phylogenetic and functional relationships of these bony features were examined by redundancy analysis (RDA), a form of constrained ordination that allows functional and behavioral information to be explicitly included in the definition of a morphospace. For this analysis, principal coordinate (PCO) scores of categorical variables describing bony features for 87 extant neornithine birds were included in a multiple multivariate regression, with log body mass and the significant PCO scores of a phylogenetic distance matrix as covariates. Variation due to phylogeny was partitioned out, and the resulting regression against body mass formed the basis of an RDA ordination space. This preliminary RDA suggests that whereas the prominence of a smaller second digit of ventral remigial papillae on the ulna may be weakly related to body size, variation in the other bony features related to feather attachment is largely independent of mass. Wing shape may be a more important determinant of feather bony features,