habitat with dominant C_4 grasslands and survived through warm and dry climatic conditions of the Late Miocene, but were unable to sustain the cool and dry climate of the Plio-Pleistocene when grasslands were more abundant. Conversely, elephantids were successful in drier conditions of the Plio-Pleistocene, with almost equal values of carbon and oxygen during the Pliocene and the Pleistocene, respectively. These animals utilized the exclusive C_4 diet in open grasslands as successful grazers, indicated also by their tooth morphology. The outcomes of exertion shows that the gradual enrichment in mean values of carbon and oxygen recorded for the Late Miocene towards the Plio-Pleistocene indicate reduction in mean annual precipitation with increased aridity and progressive increase in C_4 vegetation with more open woodlands/grassland ecosystem. The climate changed from warm and humid to cold and dry conditions in the Siwaliks, where increased seasonality was too rapid for proboscideans to evolve in the region and exposed them to migration or extinction.

Funding Sources University of the Punjab, Lahore; University of Sialkot, Sialkot, Pakistan

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Technical Session 11: Synapsida (Friday, November 4, 2022, 8:00 AM)

STRATIGRAPHIC AND GEOGRAPHIC OCCURRENCES OF PERMO-TRIASSIC TETRAPODS IN THE BOGDA MOUNTAINS, NW CHINA: IMPLICATIONS OF A NEW CYCLOSTRATIGRAPHIC FRAMEWORK AND BAYESIAN AGE MODEL

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The Junggar and Turpan basins of Xinjiang, northwest China, host a well-preserved terrestrial Permo-Triassic boundary sequence exposed on the flanks of the Bogda Mountains. During the Permo-Triassic, this region was located in mid-latitude northeast Pangaea (~45°N), making it an important comparison to the higher latitude record preserved in the South African Karoo Basin (~60°S). Broad similarities exist between the tetrapod records of both areas, such as the reported co-occurrence of *Dicynodon*-grade dicynodontoids and *Lystrosaurus* in the upper Permian and the high abundance of *Lystrosaurus* in the Lower Triassic. In the Bogda sections, the Permo-Triassic boundary falls within the upper Guodikeng Formation (= upper Wutonggou low order cycle), but several horizons have been proposed based on biostratigraphy, chemostratigraphy, and paleomagnetic data. A new Bayesian age model calibrated by multiple radiometric dates and tied to detailed litho- and cyclostratigraphic data offers new insight into the location of the Permo-Triassic boundary in Xinjiang and the opportunity to reconsider tetrapod occurrences in a highly resolved chronostratigraphic framework. We investigated the positions of new and historic tetrapod specimens relative to the revised Permo-Triassic boundary, including uncertainties about the locations of key historic specimens. The stratigraphic range of *Dicynodon*-grade dicynodontoids in Xinjiang is poorly constrained: most specimens, including the holotype of *Jimusaria sinkianensis*, cannot be precisely placed relative to the Permo-Triassic boundary. A new specimen of *Turfanodon* sp. for which we have reliable data occurs in the upper Permian. Despite their previous treatment as Permian in age, most Bogda chroniosuchians were collected in strata above the Permo-Triassic boundary and the therocephalian *Dalongkoua fuae* also may be Triassic. Some prior placements of the Permo-Triassic boundary in Xinjiang imply an upper Permian lowest occurrence for *Lystrosaurus*, but all *Lystrosaurus* specimens that we can precisely locate fall above the Permo-Triassic boundary. The high abundance of *Lystrosaurus* in the Early Triassic of Xinjiang likely parallels an Early Triassic age for the interval of greatest *Lystrosaurus* abundance in the Karoo Basin, but additional research is needed to determine whether there was a single, globally synchronous time of highest *Lystrosaurus* abundance.

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Regular Poster Session 4 (Saturday, November 5, 2022, 4:30 - 6:30 PM)

A RECONSTRUCTION OF LATE TRIASSIC ASSEMBLAGES AND THEIR RESPONSE TO THE ADAMANIAN-REVUELTIAN FAUNAL TURNOVER

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Exposures of the Late Triassic Chinle Formation in western North America are well-known for the preservation of prehistoric vertebrate material. One of the most diverse of these vertebrate assemblages lies within Petrified Forest National Park in Arizona, and contains a variety of lobe-finned and ray-finned fishes, freshwater sharks, metoposaurs, phytosaurs, aetosaurs, crocodylomorphs, raisuchians, early theropods, and other tetrapods. At Petrified Forest the Chinle Formation is separated into the Lower Petrified Forest Member (Adamanian) and the Upper Petrified Forest Member