An unusually large metaposaurid from the Salitral Formation of the Chinle Group (Upper Triassic: Carnian?) on lands belonging to the Pueblo of Jemez

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Lands belonging to the Pueblo of Jemez in north-central New Mexico include sedimentary strata that range in age from Mississippian to Pleistocene, and include excellent exposures of Upper Triassic strata. The Salitral Formation of the lower Chinle Group (Upper Triassic: Carnian) are present in the southeastern corner of the Jemez Reservation in an area that is complexly faulted. Samples for paleomagnetic analyses have been taken from the area in order to clarify the stratigraphic relationships and are currently in progress. Material pertaining to a metaposaurid amphibian was recovered from a grayish-purple calcrete nodule horizon in the lower Salitral Formation, approximately 7-8 m above the underlying Shinarump (=Agua Zarca) Formation. The fossil-bearing horizon is comprised primarily of a poorly consolidated conglomeratic lens dominated by calcareous nodules from 1-10 cm diameter. This unit also contains moderately abundant fragments of metoposaur and phytosaur material. Metoposaurid material includes cranial and shoulder girdle elements as well as teeth. Phytosaur material includes teeth and osteoderms with a characteristically high dorsal ridge. The metoposaurid specimens are fragmentary, but are significant for their extraordinary size. A partial interclavicle is conservatively reconstructed as well over 450 cm in width. The largest specimen reported from Texas is 430 cm, and a specimen previously reported as the largest from New Mexico is 400 cm in width. Published sizes of metoposaurid interclavicles from the Chinle Formation of New Mexico and the Dockum Formation of West Texas average 307 cm and 313 cm respectively. Thus, the Jemez metoposaur is one of the largest ever reported, approximately 47-48% larger than those published averages, and approximately 5% larger than the largest one yet reported. Although measurements of the thickness of dermal elements of the pectoral girdle are not commonly available, the Jemez metoposaur also appears remarkable in this regard, measuring over 2.5 cm from deep to superficial surfaces.

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