

**THE FIRST JUVENILE OF *PANTOLAMBDA*  
*BATHMODON* (MAMMALIA, PANTODONTA)  
FROM THE SAN JUAN BASIN, NEW MEXICO,  
USA**

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Mammals survived the Chicxulub impact sixty-six million years ago and diversified into a wide variety of new ecological niches left by non-avian dinosaurs. Pantodonts, an enigmatic group, quickly achieved hefty postextinction body sizes to occupy large herbivore niches.

We describe the first juvenile specimen of the Paleocene pantodont *Pantolambda bathmodon* (NMMNH P-27844) consisting of a partial skeleton including parts of the skull, a deciduous upper premolar series, nearly complete forelimbs, and elements of the carpus and hind limb. P-27844 is from the Torrejonian (~62.3 Ma) Tsosie Member of the Nacimiento Formation.

P-27844 has the first deciduous teeth known for *Pantolambda*. dP2 and dP4 are submolariform with a triangular cross-section and a less developed protocone than adults. dP5 is molariform with a large paracone and metacone connected by wing-like cristae to form the wshaped ectoloph typical of this genus' molars. dP5 also has more pronounced conules than the molars. This molarization style of the ultimate premolar is seen across Pantodonta including in *Alcidedorbignya inopinata*, *Barylambda faberi*, and *Coryphodon* sp. The postcranial morphology of P-27844 is generally concordant with that of adults. This correspondence manifests particularly clearly in the forelimbs. The distal humerus exhibits the base of a posterolaterally directed epicondylar crest which likely anchored the anconeus and the extensor carpi radialis muscles, a deep radial fossa, and an open entepicondylar foramen. The ulna shows a welldeveloped anconeal process, a pronounced biceps and brachialis fossa, and a shallower groove to accommodate the abductor pollicis longus. The radius possesses a

shallow pronator crest that originates near its distal end and extends about two-thirds of the way along the shaft. Interestingly, in contrast to adults, the radial shaft is straight rather than having moderate sigmoidal curvature and has not undergone epiphyseal fusion. Altogether, these osteological features illustrate that, even at its early ontogenetic stage, P-27844 possessed robust forelimb musculature.

Using Developmental Mass Extrapolation from long bone measurements, P-27844's body mass is estimated to be ~17 kg at time of death (~40% of adult body mass).

Paleohistological analyses demonstrate the animal experienced a rapid pace of life for its body size and died ~2.5 months after birth. This specimen gives unprecedented insight into the early life history of *Pantolambda*.

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