

PREPARATION AND DESCRIPTION OF SEVERAL CRANIAL ELEMENTS OF THE FOSSIL ELEPHANT *GOMPHOTHERIUM PRODUCTUM* (PROBOSCIDEA) FROM THE MIDDLE MIOCENE (LATE BARSTOVIAN) OF THE ESPAÑOLA BASIN OF NORTHERN NEW MEXICO

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Excavations in the Chamita and Tesuque Formations from Española basin in northern New Mexico yield exceptionally preserved fossil elephants (Order Proboscidea; Family Gomphotheriidae). While most mammal genera geologic lifespans are ~2 million years, the New Mexican Miocene *Gomphotherium productum* occurred for 7+ million years (~7-14 Ma) despite shifting paleoenvironmental conditions. Thus, *G. productum* may possess unique ecological adaptations that allowed it to persist or *G. productum* may represent multiple species. To test these hypotheses, *G. productum* fossils were prepared using microscribes and dental picks at the New Mexico Museum of Natural History (NMMNH), and the fossils were described and measured. These fossils represent among the oldest, best-preserved record of middle Miocene (late Barstovian; 13-14 Ma) proboscideans. Ontogenetic stages for several *G. productum* crania and partial mandibles from the Chamita and Tesuque Formations were compared. We examined and measured a juvenile maxilla and mandible (NMMNH P-25280); an abnormally small, adult cranium and mandibles (P-19204) with fragmentary tooth rows; a young adult (P-28972) with associated mandibles and complete tooth row; and a complete adult cranium (P-63875), maxillary tooth row, and right tusk. Our preliminary results include quantitative comparative measurements and qualitative visual comparisons of these specimens to assess whether they represent multiple species or possess unique ecomorphological adaptations such as mandible procumbency.

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