Society for Integrative and Comparative Biology
2019 Annual Meeting

Meeting Abstract

P2-244 Saturday, Jan. 5 15:30 - 17:30 **3D Geometric Morphometric Analysis of Xenarthran Masticatory Morphology** *GANNON, JL*; DAVIS, JS; High Point University; High Point University* jkrisfal@highpoint.edu

Members of the superorder Xenarthra (sloths, anteaters, and armadillos) have an evolutionary history of insectivory and an associated reduction in dentition, including decreased tooth count, simplified occlusal topography, and loss of enamel. As folivores, sloths specialize on a dietary niche not shared by their closest living relatives. Most mammalian herbivores have highly complex cheek teeth for mechanically processing plant materials, thus, the reduced dentition found among xenarthrans (sloths; Pilosa: Folivora) appears incompatible with their diet. However, in other morphological characteristics, the sloth masticatory apparatus exhibits similarities to non-xenarthran mammalian herbivores. The aim of this study is to characterize the masticatory apparatus of sloths in order to identify the morphological characteristics that correlate with and are likely to mechanically facilitate their folivorous diet. Digital scans of xenarthran skulls and jaw bones, representing 17 different species, were examined via 3D geometric mephometric analysis and the masticatory morphology of sloths was contrasted with that of their relatives.