

Bone microstructure of the sphenodont rhynchocephalian *Priosphenodon avelasi* and its paleobiological implications

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Sphenodontians are a group of vertebrates with a vast taxonomic diversity and worldwide distribution of their fossils. Although they have been the subject of many studies on their phylogeny and morphology, those focused on their paleobiology are still scarce. We present here the osteohistology of eleven postcranial elements corresponding to a single specimen of *Priosphenodon avelasi*, an eilenodontine sphenodontian from Cenomanian–Turonian rocks of Río Negro (Argentina). The bone samples described here share a parallel-fibered type of matrix. The degree of vascularization varies in all the samples, but none of them present a significant density of primary vascular canals. Lines of arrested growth were observed in all appendicular elements, being better preserved in the humerus, radius and fibula. Extrinsic fibers were observed only in reduced regions of the cortex of the ulna and in one of the phalanges. The primary bone tissue suggests that the specimen had a relatively low growth rate with alternation between slow and accelerated stages. The latter could explain why this taxon reached the largest sizes of all known sphenodontians.

Key words: Rhynchocephalia, Sphenodontia, osteohistology, paleobiology, gigantism, Cretaceous, Argentina.

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