



ABSTRACT BOOK



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PALEONEUROANATOMY OF THE CENOMANIAN CROCODYLOMORPH, *PORTUGALOSUCHUS*

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Thanks to CT technology, advances in paleoneuroanatomy have grown remarkably since the beginning of the 21st century. In this context, we present the first neuroanatomical study of *Portugalosuchus azenhae* from the Cenomanian of Portugal. This eusuchian crocodylomorph was originally described as a putative Crocodylia and one of the oldest representatives of this clade. Based on new data obtained from micro-CT images, and in order to test this hypothesis, this study aims to improve the original description of this taxon and update the scarce neuroanatomical knowledge of eusuchians and crocodylians from this time interval. The resulting 3D model allowed a detailed description of its very well-preserved neurocranium that helped to correct and complete some of the original observations. These new anatomical data were included in one of the most recent morphology-based phylogenies. The position of *Portugalosuchus* differs slightly from the original publication since it is now located as a thoracosaurid within Gavialoidea, but still as a crocodylian. It was also possible to reconstruct the cavities of the olfactory region, nasopharyngeal ducts, brain, nerves, carotid arteries, blood vessels, paratympanic sinus system, and inner ear which allowed an estimation of its neurosensorial capabilities. By comparison with other crocodylomorphs, these analyses showed that *Portugalosuchus* displayed olfactive acuity, sight, hearing, and cognitive skills within the range of that observed in other basal eusuchians and

crocodylians. Despite all this, in order to better constrain these results, additional phylogenetic analyses, including this new morphological character coding, together with DNA data should be performed.