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Isolated theropod teeth from the Middle Jurassic of Niger and the early dental evolution of Spinosauridae

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Four isolated theropod teeth from the ?Bathonian "Argiles de l'Irhazer" in Niger are described. The teeth were found in association with the holotype of the basal sauropod Spinophorosaurus nigerensis. These specimens have been assigned to two different taxa by independent analyses, such as direct comparison with teeth previously described in the literature, discriminant and morphometric analyses from metric characters, and cladistic and cluster analyses from discrete characters. The results suggest that three teeth share affinities with those of Megalosauridae and Allosauridae, belonging most likely to the former. The fourth tooth might be from a member of the stem group Spinosauridae. If so, this would be the oldest representative of this clade. This tooth shows a combination of characters that are unusual in typical spinosaurid teeth (crown moderately compressed labiolingually and curved distally with minute denticles on the carina and a deeply veined enamel surface texture without apicobasal ridges). This could shed light on the morphological transition from the plesiomorphic ziphodont dental pattern to that of Spinosauridae. This tooth would also allow a better understanding of the origin of the spinosaurids, supporting a Gondwanan origin for the group.

Key words: Theropoda, Megalosauridae, Spinosauridae, dental morphology, multivariate analyses, Jurassic, Africa.

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