



The story of the Cameros Basin dinosaurs (Lower Cretaceous, Spain) written in their tracks

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The Cameros Basin is a Lower Cretaceous area of about 8000 km² in extension. The maximum thickness of its deepest depositional centres is at least 9000 m. The Cameros region, located in the Iberian Range, represents the Tithonian (Upper Jurassic) to the Aptian (Lower Cretaceous) and reflects a regional event that took place during the second Mesozoic rifting phase of the Iberian Plate. This period was dominated by fluvio-lacustrine (Tera, Urbión, and Oliván Groups) or lacustrine environments (Oncala and Enciso Groups).

The particular environmental and palaeogeographic conditions of the Cameros region favoured the preservation of tracks over bones, therefore its Mesozoic fauna – which was dominated by dinosaurs - is best represented by the area's 300 tracksites. These contain dinosaur, pterosaur, crocodile, turtle, and bird-like tracks. However, dinosaur prints clearly dominate, making up some the 98% of the Cameros ichnocoenosis.

Theropod dinosaurs tracks are the most abundant, in fact they make up about 85% of the total dinosaur track record. The theropods are represented by at least five non-avian track morphotypes and two avian-like footprint types. These track assemblages change over time; whereas *Therangospodus-Filichnites* tracks dominate during the Tithonian-Barremian, those of *Megalosauripus* are most abundant in the Lower Aptian. The avian-like footprints are represented by a number of tiny, doubtful tridactyl tracks and by the ichnogenus *Archaornithipus*. Ornithopod prints represent about 12% of the Cameros record and are clearly dominated by *Iguanodon*-like tracks (*Iguanodontipus*) and a number of hypsilophodontid footprints belonging to the ichnogenus *Dine-*

ichnus. The iguanodontid tracks change in size from small-medium in the Tithonian-Berriasian to relatively large (with some quadruped trackways) during the Aptian. Finally, sauropod tracks (*Brontopodus* and *Parabrontopodus*) represent about 2% of the Cameros ichnocenosis. The sauropod ichnorecord of the Tithonian-Berriasian interval reveals the dominion of non-Titanosauriform sauropods. During the Aptian the record suggests that the Titanosauriformes became more abundant.

The almost absolute dominion of theropods in the Cameros Basin ichnocenosis suggests that these dinosaurs were significantly more active than others, a likely reflection of the searching-hunting behaviour typical of such predatory groups.