

## Schulz and the Earliest Discoveries of Dinosaurs and Marine Reptiles in Spain

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The German mining engineer Wilhelm Philip Daniel Schulz (1805-1877), known in Spain as Guillermo Schulz, was one of the most outstanding representatives of the geology and mining industry of Spain during the nineteenth century (Rábano & Truyols, 2005). He undertook important studies in geology and for the mining industry in Galicia, Asturias, Castilla y León, Madrid and other parts of Spain. Between 1853 and 1857, Schulz was the director of the Escuela Especial de Minas (Special School of Mines) of Madrid and president of the Comisión del Mapa Geológico de España (Commission of the Geological Map of Spain), which was the precursor of the current Instituto Geológico y Minero de España (Geological and Mining Institute of Spain). Schulz was also the author of the first discoveries of dinosaurs and marine reptiles in Spain. In his work *Descripción Geológica de la Provincia de Oviedo* (1858: 109), Schulz described a probable dinosaur tooth from the Jurassic of Ruedes (Gijón, Asturias) as belonging to a squalid shark. This tooth (now lost)



Wilhelm (Guillermo) Schulz  
(1805-1877).

was later referred to *Megalosaurus* by Egozcue (1873) and subsequent Spanish authors. Schulz's description, mainly the occurrence of crenulated edges, suggests that the tooth was that of a large theropod (crown height about 10 cm). According to Schulz, the tooth, dark brown in colour, was found in the light-coloured marls of the Liassic. However, it more likely comes from altered grey marls of the Kimmeridgian Lastres Formation (García-Ramos *et al.*, 2004). Although the exact year of the discovery is unknown, the Ruedes tooth is presumably the earliest discovery of a dinosaur body fossil in the Iberian Peninsula. Moreover, Schulz (1858: 108) described the discovery of plesiosaur remains from the Lower Jurassic near Villaviciosa (Asturias), as part "of a skeleton and paddles of a plesiosaur, whose largest vertebrae reach a diameter of 6 cm". It probably comes from the Pliensbachian marls and limestone rhythmites (Jamesoni zone) of the Rodiles

Formation to the north of El Puntal. No figure was provided and we have no definitive proof regarding the affinities of this specimen (Bardet et al., 2008). Unfortunately now lost, it represents the earliest marine reptile fossil found in Spain.

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