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De izquierda a derecha y de arriba abajo: *Tachynymphes penalveri*, insecto neuróptero; *Hispanamia newbreyi*, pez amiiforme; coprolito; el Tormo de la Ciudad Encantada; el Museo Paleontológico de Castilla-La Mancha; *Austropotamobius llopisi*, crustáceo decápodo; *Gracilibatrachus avallei*, rana; la Catedral de Cuenca; *Weichselia reticulata*, helecho; *Onychiopsis psilotoides*, helecho; *Celtesdens ibericus*, anfibio albanerpetontido. Fotografías realizadas por el equipo de Las Hoyas; Fotografía del MUPA: fotografía oficial de Castilla-La Mancha.

Contraportada:

La Cata Botánicos durante la campaña de 2021 en el yacimiento de Las Hoyas, Cuenca. Fotografía realizada por Fernando Blanco.

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## A FIRST APPROACH ON THE PALAEOENVIRONMENTAL ANALYSIS OF THE PEDREIRA DA ENGENHARIA FORMATION (MIDDLE DEVONIAN) USING MICROFOSSIL ASSEMBLAGES

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At the southwest domains of the Iberian Massif there is a Variscan suture zone between two tectonostratigraphic terranes: the Iberian Terrane, which include the Ossa-Morena Zone (OMZ); and the South Portuguese Terrane. On the OMZ (located at north), some small-scale limestone outcrops, no bigger than a square kilometer, appear. One of these limestone outcrops was classified as the Pedreira da Engenharia Formation, containing a 30-meter sequence of dark-grey decimetric calciturbidites, interbedded with centimetric black shales. In previous studies conducted by the authors, an Eifelian (Middle Devonian) age was assessed for this formation. In the present study, a first attempt is made to infer palaeoenvironmental conditions for this formation using microfossil assemblages obtained for biostratigraphic studies. The samples were dissolved using formic acid (~7%), therefore, all fossils of a calcitic nature were dissolved during the process, except for those which suffered silicification. Since no macrofossils were visible on the surface or in thin sections, and the rock itself could not be disaggregated, all of the available material was extracted from the dissolution residue. The microfossil assemblage was moderately rich in conodonts (around 25 per kilogram), although the majority of fossils were silicified dacryoconarids, outnumbering the conodonts on a proportion of around 10 to 1. The identified conodont genera (*Polygnathus* and *Tortodus*), as well as coniform elements (also present in the samples) are more commonly found in deep depositional environments. The higher proportion of dacryoconarids is also indicative of a deep-water environment, since these animals were planktonic and, therefore, would sink to the bottom in large amounts at distal locations. The data seems to indicate a distal depositional environment, in a deep-water setting, were only the edges of turbiditic currents would reach, given the lack of abundant shallow-water fossils, and where dacryoconarid necrocenoses would sink to the bottom.

**Keywords:** Conodonts, Dacryoconarids, Eifelian, Ossa-Morena Zone.

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