An Early Upper Palaeolithic decorated bone tubular rod from Pod Hradem Cave, Czech Republic

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Personal ornaments are a notable feature of the Early Upper Palaeolithic in Europe and an important expression of modern human identity. The tubular bone rod from Pod Hradem Cave in the Czech Republic is the first example of its kind from Central Europe. Laboratory examination reveals the techniques used in its manufacture and underlines the skill of its maker. AMS dates and Bayesian modelling suggest a cultural association with the Early Aurignacian period. It illustrates the cultural links across large areas of Europe at this time, although it is unique in its specific combination of size, raw material and decorative features.

Keywords: Czech Republic, Pod Hradem, Middle–Upper Palaeolithic transition, personal ornament, bone technology, craft specialisation, portable art

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Methods

The bone rod from Pod Hradem was cleaned using an ultrasonic cleaner Powersonic UCC1. It was then fixed on the slide table and analysed using scanning electron microscopy/energy dispersive spectroscopy (SEM/EDS); Jeol JSM-6490LV equipped with energy dispersive analyser EDAX (Oxford Instruments). The limit of detection for the EDS analysis was 1% with the diameter of excited area 1μm (accelerating voltage = 15kV; standard for P: GaP and standard for Ca: Wollastonite). The rod was also examined using a motorised Leica Z6 APOA, equipped with a DFC420 digital camera linked to a LAS Montage and Leica Map DCM 3D computer software. LAS Montage acquires a series of image planes at known pacing covering the in-focus region of a specimen. From this stack, extended focus images and a depth map were derived and analysed by Leica Map DCM 3D. Identification of shaping techniques and use-wear is based on data from experimental reproduction of bone artefacts (Legrand & Sidéra 2007), including tubular rods (d'Errico & Laroulandie 2000; Laroulandie & d'Errico 2004), sequential marks produced with different tools and motions (d'Errico 1991), and traces of manipulation, transport, and suspension of bone objects (Bromage 1984; d'Errico 1993).

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