

News and Views

Two new hominin cranial fragments from the Mousterian levels at La Quina (Charente, France)

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Introduction

Excavations in the first half of the 20th century of the Mousterian levels at the well known site of La Quina (Charente, France) yielded an important series of human remains (Martin, 1923; Henri-Martin, 1966; Verna, 2006). These remains include one adult skeleton, a juvenile cranium, and 27 bone fragments and teeth (Verna, 2006) attributed to late Neandertals from Marine Isotope Stage (MIS) 4–3. From 1985 to 1994, new excavations led by A. Debenath and A.J. Jelinek further investigated these Mousterian deposits and discovered new human remains (Debenath and Jelinek, 1998), including two skull fragments that we describe here.

After the reassessment of the whole series (Verna, 2006), these two new fragments were numbered La Quina 28 and 34 (LQ28, LQ34). They come from deposits located at the base of the sequence (Fig. 1), which yielded Quina type Mousterian and a fauna consisting mainly of reindeer, horse, and bison (Debenath and Jelinek, 1998). LQ28, a frontal fragment, was discovered in 1988 in a 20 cm thick archaeologically rich layer of gray-brown sandy clay (level L). LQ34, a parieto-occipital fragment, was unearthed in 1993 in layer N. This 20 cm thick layer consists of greenish-gray sandy clay containing many faunal remains broken into large pieces and

splinters, as well as many reindeer antlers. LQ34 was found near the base of this layer, with its endocranial surface upwards, in contact with a bison horn core and a large reindeer antler (Fig. 2). These lower levels are attributed to the MIS 4 on the basis of the fauna (Chase et al., 1994; Debenath and Jelinek, 1998).

The aim of this paper is to describe these two new hominin skull fragments and to compare their morphological affinities to samples of Neandertals and modern humans. The specimen LQ34 is of special interest as it retains a large part of the occipital bone, which contains important information about Neandertal affinities.

Materials and methods

Because of the very small size of LQ28 (see below), only LQ34 can be the subject of a comparative analysis. Our comparative samples are Neandertals and early modern humans from Europe and Southwestern Asia (see Table 1). The Neandertal sample is divided into “late” (MIS 5d-3) and “early” (MIS 7–5e) subsamples. The two samples of early modern humans are the MIS 5 specimens discovered in a Middle Paleolithic context in the sites of Qafzeh and Skhul (MPMH), and a sample of MIS 3 European individuals associated with Upper Paleolithic industries (UPMH).

Our variables include five linear measurements: lambda-inion chord and arc (LIC, LIA; M31–1, M28–1; Martin, 1928), lambda-inion subtense (LIS), and length and height of the suprainiac fossa (SIFL, SIFH; maximum extension in the horizontal and vertical planes). In addition, three indices reflect the curvature and posterior projection of the occipital plane, as well as the proportional shape of the suprainiac fossa: (LIC x 100/LIA), (LIS x 100/LIC), and (SIFH x 100/SIFL).

In order to compare LQ34 to our reference samples we carried out univariate analyses using the adjusted z-score (Azs; Maureille et al., 2001),¹ in which 95% of the variation of the reference population is included between –1 and +1. An Azs of lower than –1 or higher than +1 is, therefore, outside 95% of the variation of the reference population.

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E-mail address: christine_verna@eva.mpg.de (C. Verna).¹ $Azs_{LQ34} = (X_{LQ34} - m) / t_{(0.05, n)} \cdot sd$, where m and sd are the mean and standard deviation of the reference population and t the value of the Student's t distribution.

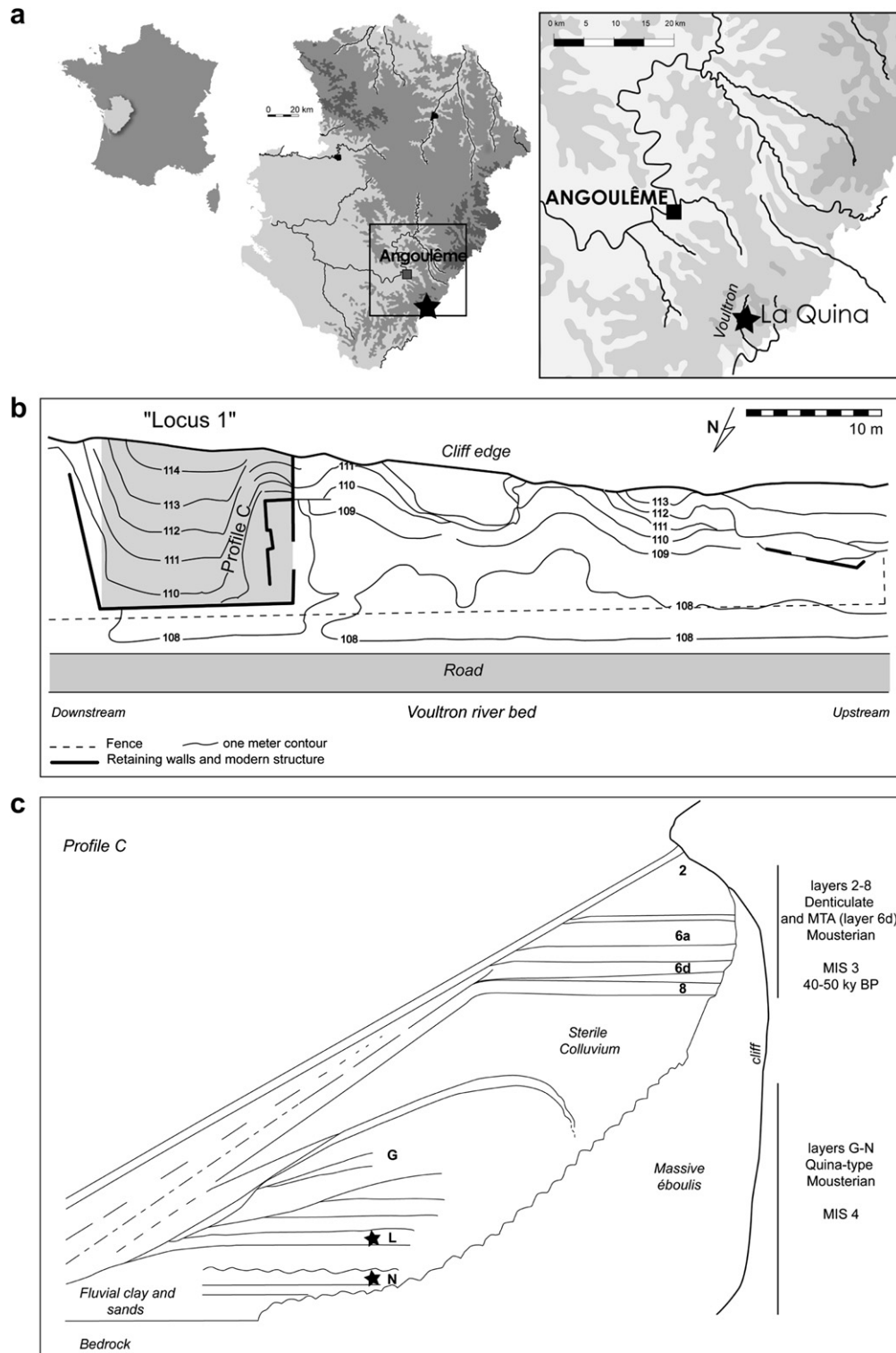


Fig. 1. La Quina: a) location, b) map of the site (after Chase et al., 1994. The dark grey area ("locus 1") locates the mousterian deposits excavated between 1985 and 1994 where the two new cranial fragments were found), and c) schematic profile (after Jelinek et al., 1989. Schematic profile at the locus 1 [Profile C]. The black stars indicate the two levels where LQ28 and LQ34 were found. Chronology of layers 2–8 given by radiocarbon and thermoluminescence dating [Mercier, 1992; Bierwith, 1996; Debénath and Jelinek, 1998]).

Results

Parieto-occipital fragment La Quina 34

LQ34 is a fragmented rear skull portion (124×100 mm) retaining a large part of the occipital and a small part of the parietals in the

vicinity of lambda (Fig. 3). LQ34 includes most of the occipital plane and a small portion of the nuchal plane. Laterally, the fragment does not reach asterion. The posterior end of the sagittal suture and a small portion of the left and right lambdoidal suture is preserved. The sutures are fused endocranially, but partially open ectocranially. An ossicle is present at lambda (Fig. 3e).

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