



The most recent Neandertal remains in Italy

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Italy preserves several archaeological sites with deposits dated to the Middle-to-Upper Paleolithic transition, and for this reason, it plays an important role in understanding the biocultural processes that characterized the disappearance of the Neandertal and the success of the newcomers modern humans. However, any conclusive statements is hampered by the paucity of well-preserved human remains dated to the transitional period. Indeed, as far as Italy is concerned, between 50-40 thousands years ago (kyr), only five human teeth have been discovered: one Neandertal and two modern human teeth respectively from the final Mousterian and the Uluzzian deposits of Grotta del Cavallo (Lecce); two modern human teeth from Riparo Bombrini (Ventimiglia) and Grotta di Fumane (Verona), respectively. In this study we present two new human deciduous teeth retrieved from the deposits of Riparo Broion (Longare, Vicenza) and Roccia San Sebastiano (Mondragone, Caserta). Specifically, the tooth from Riparo Broion, hereafter called Broion 1, was retrieved from layer 11 top, square AA3a. Radiocarbon dating is in progress, but layer 11, attributed to a final Mousterian, is below the Uluzzian layer 1g, recently dated ~40 kyr BP [1]. The tooth from Roccia San Sebastiano [2], hereafter called San Sebastiano 1, comes from layer 34, sector E14-E15. Radiocarbon dating of the entire stratigraphy is in progress, but preliminary evidence based on the archaeological sequence and lithic assemblages, suggests that layer 34 includes a final Mousterian lithic production. High-resolution microCT images of the teeth were obtained by Xalt micro-CT scanner, and three-dimensional digital models were reconstructed using semiautomatic segmentation. Both teeth were morphologically described and morphometrically analysed using crown diameter measurements. Moreover, for San Sebastiano 1 we investigated the crown and cervical outlines and lateral enamel thickness. The results were compared with a sample of Neandertal, Upper Paleolithic modern human (UPMH) and recent modern human (RMH) teeth collected from the scientific literature. In terms of morphology, Broion 1 is a upper left deciduous canine with a strong buccal bulging of the crown and a concave lingual side with a cervical eminence. As far as San Sebastiano 1 is concerned, the tooth is a lower left second deciduous molar characterized by an enlargement of the bucco-distal side of the crown, and an anterior fovea bordered distally by a mid-trigonid crest. Overall, morphological description and morphometric analysis align both teeth to Neandertal. Archaeological information and paleoanthropological analysis point out that the Neandertal teeth Broion 1 and San Sebastiano 1 represent, along with the deciduous tooth Cavallo D (from the final Mousterian deposit of Grotta del Cavallo) [3], the most recent Neandertal remains in Italy currently known.

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