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Human deciduous dental crowns from the Epigravettian layers at Riparo Dalmeri (Trento). A preliminary descriptive note

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ABSTRACT – Four isolated human deciduous dental crowns have been found in the late Epigravettian layers at Riparo Dalmeri, Trento. Some of their morphological characteristics are here presented.

Key words: late Epigravettian, Dalmeri rockshelter, Human remains
Parole chiave: Epigravettiano recente, Riparo Dalmeri, Resti umani

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1. INTRODUCTION

Four isolated human deciduous dental crowns have been found in the late Epigravettian layers at Riparo Dalmeri, Trento (DALMERI & LANZINGER, 1989; BASSETTI *et al.*, 1995) during the 1995 archaeological field season (BASSETTI *et al.*, 1999). The specimens, all from the upper right arch, represent one central (RD 48M 14) and three lateral incisors (RD 47/H/i 14a, 44M/i 22, 42M/h 26c).

On the whole, the crowns are rather worn and show advanced root resorption (similar to the "MFH formation stage R_i." as assessed by MOORREES *et al.*, 1963). Based on general crown and root morphology and because of the archaeological context, it is likely that all the teeth were lost spontaneously *intra vitam* (at the age of about 6 years [the central incisor] and 7 years [the lateral ones], respectively; see HILLSON, 1996).

Comparative crown size estimates of the specimens with some prehistoric, historical, and extant deciduous dental series are shown in Tab.1-2 for the upper central and the lateral incisors, respectively.

2. DESCRIPTION OF THE SPECIMENS

Spec. RD 48M 14 (upper right i^1). Advanced occlusal wear (stage 7; MOLNAR, 1971). No hypoplastic enamel macro-defects. Crown size: mesiodistal (M-D) diameter = 6.7 mm; buccolingual (B-L) = 5.2 mm. Minimal residual radicular stump (maximum distance between the CEJ cement-enamel junction and the stump apex = 2.5 mm).

Spec. RD 47/H/i 14a (upper right i^2). Worn crown (stage 6-7; MOLNAR, 1971). No hypoplastic ena-

mel macro-defects. Crown size: M-D = 5.5 mm; B-L = 5.0 mm. Size of the residual radicular stump slightly exceeding the values recorded for the remaining teeth (maximum distance CEJ-stump apex = 4.0 mm), but still well compatible with spontaneous tooth loss. The occlusal-buccal aspect of the crown shows a subcircular hole (Fig. 1a; see below for further details and discussion).

Spec. RD 44M/i 22 (upper right i^2). Advanced dental wear (stage 7; MOLNAR, 1971) deeply affecting the cutting edge. No hypoplastic enamel macro-defects. Crown size: M-D = 5.2 mm (underestimated); B-L = 5.1 mm. Modest residual root (maximum distance CEJ-stump apex = 3.1 mm).

Spec. RD 42M/h 26c (upper right i^2). Worn crown (stage 6-7; MOLNAR, 1971), with a major horizontal component. No hypoplastic enamel macro-defects. Crown size: M-D = 5.9 mm; B-L = 4.9 mm. Modest residual root (maximum distance CEJ-stump apex = 3.0 mm).

2.1. *Characteristics of microwear*

Scanning electron microscope observation of the markedly worn occlusal surfaces of all teeth shows frequent and thin bucco-lingually oriented striae, usually related to tearing actions (PUECH, 1983). Buccal surfaces show thin subvertical striae, as commonly observed on anterior teeth. The buccal aspect of specimen RD 42M/h 26c (upper right i^2).also shows some deep obliquely (disto-occlusally) oriented scratches. The orientation of these scratches, whose morphology corresponds to those commonly related to contact with the cutting edge of a lithic instrument ("stuff and cut" activity), suggests movement made by right hand (FERNANDEZ-JALVO & BERMUDEZ DE CASTRO, 1988).

2.2. *Characteristics of the hole*

The occlusal-buccal aspect of the crown of specimen RD 47/H/i 14a (upper right i^2) shows a subcircular hole communicating with the pulpar cavity. Since a thread introduced in this hole could come out from the opening of the resorpted root allowing suspension of the tooth, hypotheses on the intentionality of the perforation could be proposed. However SEM observation could not show any evidence of intentional perforation (such as circular striae). Moreover, the edge of the hole is covered by thin bucco-lingually oriented striae, related to "in vita" tearing actions (TEAFORD, 1988). Formation of the hole could be related to marked occlusal wear, resulting in opening of the pulpar cavity. Taphonomic actions, resulting in destruction of a thin dentine vault of the pulpar cavity could also be invoked.

The detailed micro- and macro- analytical and comparative study of the deciduous dental sample from Riparo Dalmeri and the assessment of this peculiar findings within a late Pleistocene seasonal mountain site are currently in progress.

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	M-D	B-L	References
RD 48M 14	6.7	5.2	
late Upper Paleolithic Europe	7.0 (3)	5.3 (3)	FRAYER (1978)
Arene Candide (Epigravettian)	7.2 (2)	5.5 (2)	FORMICOLA (1986)
Mesolithic Europe	7.2 ± 0.46 (n = 7)	5.3 ± 0.34 (n = 7)	FRAYER (1978)
ancient Romans	6.5 ± 0.53 (n = 32)	5.0 ± 0.32 (n = 32)	MACCHIARELLI & SPERDUTI (1994)
extant Euroamericans	6.5 ± 0.21 (n = 133)	5.2 ± 0.35 (n = 133)	BLACK (1978)

Tab. 1 - Deciduous upper central incisor (i^1) from Riparo Dalmeri (RD 48M 14): comparative crown size estimates (mesiodistal and buccolingual diameters, in mm).

	M-D	B-L	References
RD 47/H/i 14a	5.5	5.0	
RD 44M/i 22	>5.2	5.1	
RD 42M/h 26c	5.9	4.9	
Riparo Dalmeri (n = 3)	x = >5.5	x = 5.0	
late Upper Paleolithic Europe	5.6 (n = 3)	5.1 (n = 3)	FRAYER (1978)
Arene Candide (Epigravettian)	5.0 (n = 1)	4.4 (n = 1)	FORMICOLA (1986)
Mesolithic Europe	5.7 ± 0.42 (n = 8)	5.1 ± 0.61 (n = 8)	FRAYER (1978)
ancient Romans	5.0 ± 0.45 (n = 33)	4.6 ± 0.32 (n = 35)	MACCHIARELLI & SPERDUTI (1994)
extant Euroamericans	5.3 ± 0.28 (n = 133)	4.7 ± 0.28 (n = 133)	BLACK (1978)

Tab. 2 - Deciduous upper lateral incisors (i^2) from Riparo Dalmeri (RD 47/H/l 14a, RD 44M/i 22, RD 42M/h 26c): comparative crown size estimates (mesiodistal and buccolingual diameters, in mm).

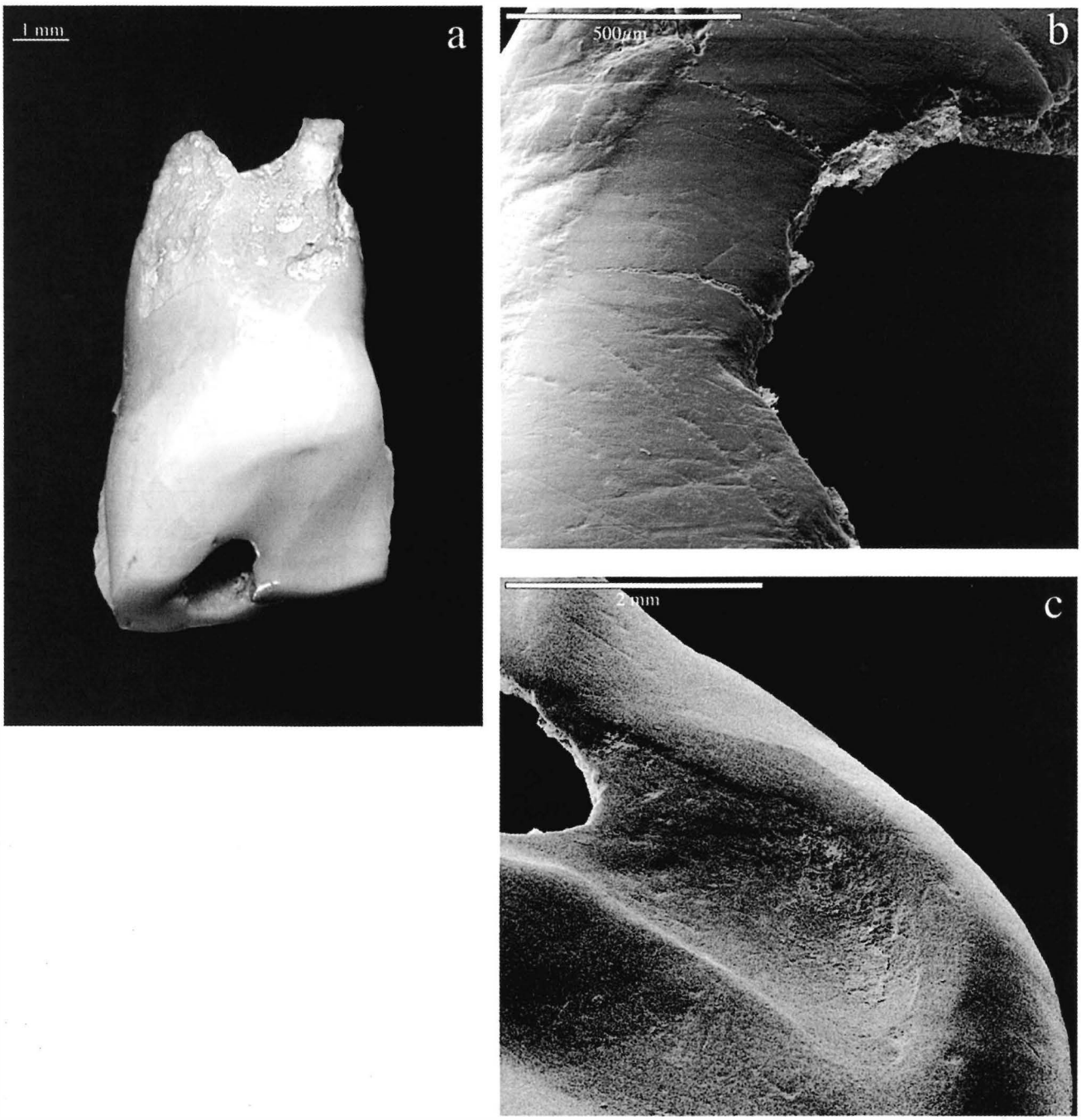

Fig.1 - Riparo Dalmeri, specimen RD 47/H/i 14a (upper right i^2).
a: lingual view of the tooth showing marked wear of the occlusal surface of the crown. Wear resulted in opening the pulpar cavity and producing a sub-circular hole on the occlusal-lingual aspect of the crown.
b: Close-up (scanning electron microscope image) of the subcircular hole (buccal side) showing irregular breakage of the sharpened dentinal edge. Dentinal worn surface shows bucco-lingually oriented scratches, perpendicular to the hole edge. Enamel is visible on the left side oh the image.
c: Scanning electron microscope image of the occlusal-lingual aspect of the crown showing a wide groove on the dentine worn surface. This groove is perpendicular to the lingual hole edge and can be related to marked bucco-lingual tearing actions.