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New insights on the Aterian Hominid / Carnivore Interactions in the Pleistocene of the Atlantic coast of Temara (Morocco)

Emilie Campmas, Patrick Michel, Fethi Amani, Emmanuelle Stoetzel, Zenobia Jacobs, Nouha Janati-Idrissi, Larbi Boudad, Arnaud Lenoble, Roland Nespoulet, Mohammed Abdeljalil El Hajraoui

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New insights on the Aterian

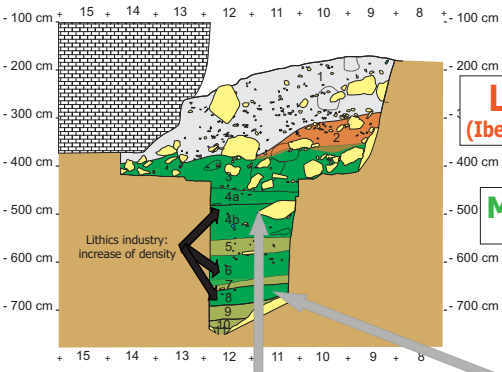
Hominid / Carnivore Interactions in the Pleistocene of the Atlantic coast of Temara (Morocco)

E. Campmas*, P. Michel, F. Amani, E. Stoetzel, Z. Jacobs, N. Janati-Idrissi, L. Boudad, A. Lenoble, R. Nespoulet, M.A. El Hajraoui

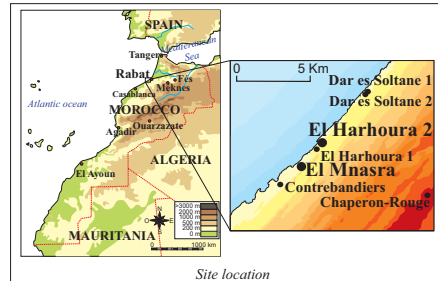
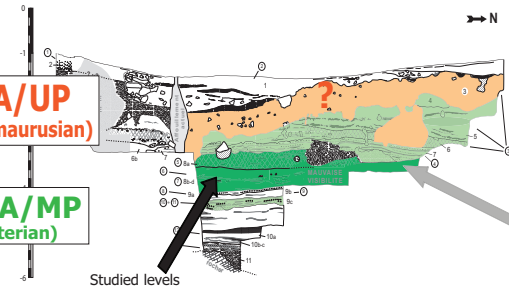
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EL HARHOURA 2

(entrance cave)



EL MNARSA



EL HARHOURA 2 (Levels 2, 3 and 4A)

LITHIC << FAUNA

LEVEL 2: Small amount of lithic industry: Bladelet cores, Bladelets

LEVEL 3: Small proportions with cortex, Small size of Levallois cores (mobility choice?), Exhaustion of the knapping surface, Few tools, No evidence of pedunculates

LEVEL 4A: same as level 3

LEVELS 3 and 4A: No evidence of *Nassarius* sp. Few interventions: (few cut-marks, few bruned bones, presence of "retouchoir")

Gazelles dominates (all of the anatomical parts are presents; mortality curve: "U" + Suidae + Alcephinae + Bovinae + Equidae + Rhinocerotidae... Carnivores: Small Canidae + large Canidae + few other taxa.

Interventions: (digested bones, tooth-marks, coprolithes...); Hyene: (few remains, few evidence of juvenils...)

LEVEL 4A: presence of a fire place

"Retouchoir" from level 4A

Very short stops

Occupations, not nursery (maybe located at the bottom of the cave?)

EL HARHOURA 2 (Level 8)

Small excavation area = small sample

LITHIC << FAUNA

LEVEL 8: - Few data, - higher rate of transformed tools, - No evidence of pedunculates

LEVEL 8: Higher proportion of marine mollusks (*Patella*, *Mytilus*...)

LEVEL 8: Presence of *Nassarius* sp.

LEVEL 8: (slightly higher rate of cut-marks and bruned bones, presence of "retouchoir"...)

LEVEL 8: - Few data, - Higher proportions of large Bovinae

Interventions: (Digested bones, tooth-marks...)

"Retouchoir" from level 8

More intensive Occupation?

More activities?

Exploitation of coastal resources

Selection of larger taxa (like Bovinae)?

Admixture of Human and Carnivore occupations?

Intervention of Carnivore on bone discarded by Men?

EL MNARSA (Levels 5, 6 and 7)

LITHIC << FAUNA

LEVEL 5: - Cores (Levallois...), - Tools (scrapers, Levallois points...), - Pedunculates, - Pebble tools

LEVEL 6: Numerous *Nassarius* sp.

LEVEL 6: Numerous fire place

LEVEL 6: Use of pigment

LEVEL 7: High amount of marine mollusks (*Patella*, *Mytilus*...)

LEVEL 7: Interventions: (Cut-marks, bruned bones, bone tool industry...)

LEVEL 7: Bone tool industry of El Mnarsa

LEVEL 7: Few interventions: (Digested bones, tooth marks...)

SAISONALITY: Presence of neonatals and juvenils: Occupations during spring

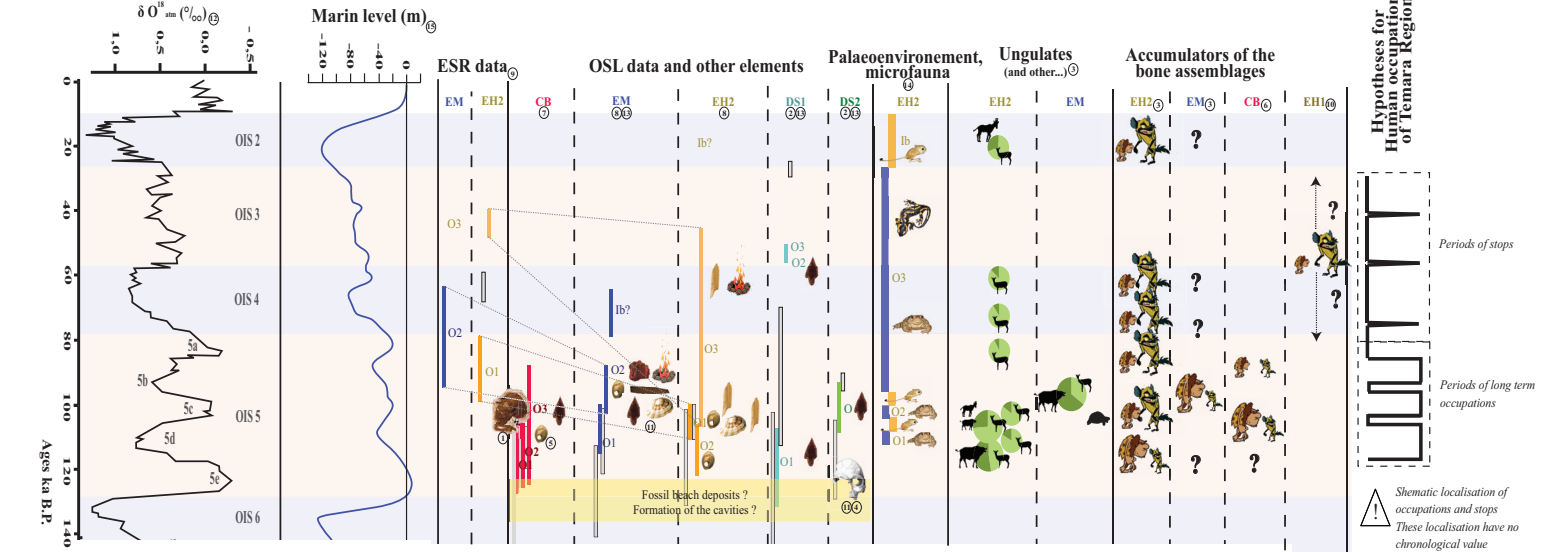
LEVEL 7: - Gazelle, large Ungulates (for example Bovinae) + Turtles... - Butchery - Consumption - bone tools (on ribs of Bovinae + shaft fragments).

Interventions of burrowings: (Remains of *Mellivora capensis*, many burrows...) = disturbance

Hypotheses: - Admixture of Human and Carnivore occupations - Intervention of Carnivore on bone discarded by Men - Taphonomic disturbances brought the mixing of bone accumulations

Settlement site

Intense occupation, Various activities



Sites: CB Contrebandiers, DS1 Dar es Soltane 1, EM El Mnarsa, DS2 Dar es Soltane 2, EH2 El Harhoura 2, EH1 El Harhoura 1

MSA occupations: Steriles levels, Iberomaurusian (LSA/UP)

Aterian skull of Contrebandiers, **Aterian skull of Dar es Soltane 2**

Microfauna with arid affinity, **Microfauna with humid affinity**

"Large Ungulates", **"Small Ungulates"**

Gazelle, **Bovinae**, **Alcéphinae**, **Turtle**

Nassarius sp., **Pedunculate elements**, **Pigments**, **Fire places**

Bone industry, **"Retouchoirs"**, **More marin mollusk**

Long term occupations, **Short stop**

Hypotheses for Human occupations of Temara Region

Periods of stops, **Periods of long term occupations**

Schematic localisation of occupations and stops (These localisation have no chronological value)

Hypothetical scheme of the occupations of Témara Region (D'après 1: Balter, 2011; 2: Barton et al., 2009; 3: Campmas, PhD in progress; 4: Debnath, 1982; 5: d'Errico et al., 2009; 6: Halet, submit; 7: Jacobs et al., in press; 8: Jacobs et al., submit; 9: Janati-Idrissi et al., submit; 10: Monchot et Aouraghe, 2009; 11: Nespoulet et al., 2008a, 2008b; 12: Petit et al., 1999; 13: Scheweninger et al., 2010; 14: Stoetzel, 2009; Stoetzel et al., 2010; 15: Waelbroeck et al., 2002)