FUNERARY PRACTICES FROM COLUMNATA NECROPOLIS. PRESENTATION OF THE LAST THREE BURIALS EXCAVATED

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Abstract

We describe in this paper 3 burial practices from the last hunter-gatherers lower Holocene populations of Columnata locality (Tiaret-Algeria). Despite their poor bone condition and some obvious grave disturbances, these individual burials are seen as primary depositions. They were placed in clogged tombs in a dorsal position, with no particular orientation of the body and without any deliberate bone's modification as noticed with iberomaurusian burials. Bovine horns can be considered as voluntary funerary goods as reported for iberomaurusian or capsian burial unlike the semewhat non-deliberate lithic and faunal remains discovered into the graves. In this respect, grave H1 deposit is a singular case. Another special feature of this site is the stone arrangement in the inner space of H1 and H2. Such an early stonework could be reported according to the graves dates to the 10th and 8th millenia BC. Two of the tombs were built with stones to mark their position which is quite advanced for that time.

Keywords: Western Algeria, Iberomaurusian, Columnatian, Neolithic, burials, funerary practices, Funerary goods, Necropolis.

PRÁCTICAS FUNERARIAS EN LA NECRÓPOLIS DE COLUMNATA. PRESENTACIÓN DE LOS TRES ÚLTIMOS ENTERRAMIENTOS EXCAVADOS

Resumen

En este trabajo describimos 3 prácticas de enterramiento de las últimas poblaciones de cazadores-recolectores y pastores del Holoceno inferior en la localidad de Columnata (Tiaret-Argelia). A pesar de su mal estado de conservación ósea, y algunas obvias perturbaciones graves, estos entierros individuales se consideran como deposiciones primarias. Fueron colocados en tumbas selladas en posición dorsal, sin orientación particular del cuerpo y sin ninguna modificación ósea deliberada como se observa en los entierros iberomaurusienses. Los cuernos de bóvidos pueden considerarse como ajuares funerarios voluntarios como ha sido descrito en enterramientos iberoamericanos y capsienses a diferencia de los restos líticos y faunísticos cuya colocación en la tumba sería no deliberada. Otra característica especial de este sitio es la disposición de las medias en el espacio interior de H1 y H2. este tipo de estructura se ha documentado en tumbas datadas en los milenios 10 y 8. Dos de las tumbas fueron construidas con piedras para marcar su posición, una práctica bastante avanzada para esa época.

Palabras clave: Argelia occidental, iberomaurisiense, columnatiense, Neolítico, entierros, prácticas funerarias, ajuares funerarios, necrópolis.

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1. INTRODUCTION

Unlike traditional studies, the availability of new methodological tools in the field of funerary archaeology provides more information about the former death practices (Thomas, 1975; Parker-Pearson, 1999; Duday and Masset, 1987; Duday, 2005; Crubézy *et al.*, 1990, 2000; Dutour, 1989; Buikstra, 2001; Andrews and Bello, 2006). By integrating in-depth taphonomic analyses, the opportunities for tracing the initial funerary acts remain better controlled. Since that an essential set of information on the funeral last hunter-gatherers Paleolithic practices is beginning to emerge, some characteristics specific to the North African cultures have been highlighted, particularly the Iberomaurusian and Capsian ones (Mariotti *et al.,* 2009; Barton *et al.*, 2008; Belcastro *et al.*, 2010; Humphrey *et al.*, 2012; Ben-Ncer, 2004). These studies were performed thanks to the significant number of burials discovered in numerous necropolises (Roche, 1953; Férembach, 1962[1]; Chamla, 1970; Marchand 1936; Arambourg, 1934; Balout, 1954) such as Afalou, Taforalt, or the necropolis of Columnata which will be discussed in this contribution.

Situated in the northwestern side of Algeria (fig. 1), the latter served as a necropolis and as an open-air habitat, which yielded large bone and lithic items during the excavations that were successively conducted by P. Cadenat (Cadenat, 1948, 1955, 1957, 1966, 1972) and C. Brahimi (Brahimi, 1969, 1971). Nearby one hundred burials (Cadenat 1955, 1957, 1966, 1972; Balout, 1954; Maître, 1965) of evolved mechtoïd type (Chamla, 1970) were discovered. The majority comes from the so-called transition level (evolved Iberomaurusian and Columnatian), while two of them come from the Neolithic one. As at least four lithic cultures were recognized (Iberomaurusian, Columnatian, Upper Capsian, and Neolithic), it is unknown if we are dealing with a single human group evolved in-situ or if several groups succeeded one another. The best would be to date each Skeleton directly to depict its corresponding chronological culture, but this task is neither obvious nor conclusive due to the poor state of the burial's preservation.

The anthropological study (Chamla, 1970) has demonstrated the brachycephalization of the skulls, and the gracilization of the postcranial Skeleton, which match the evolved Iberomaurusian character, confirmed by new radiometric dating (Perrin *et al.*, 2019; Chaïd *et al.*, 2020). These dates show that the Iberomaurusian occupation lasted from 11230.60 Cal BC To 10340.50 Cal BC (890 years) and that the Columnatian transitional level dates back to 8850 Cal BC (date provided by H3 burial).

This population's health status has been estimated with a lifespan of 21-22 years and a mortality rate of 46 per 1000 (Biraben, 1969), which is close to the

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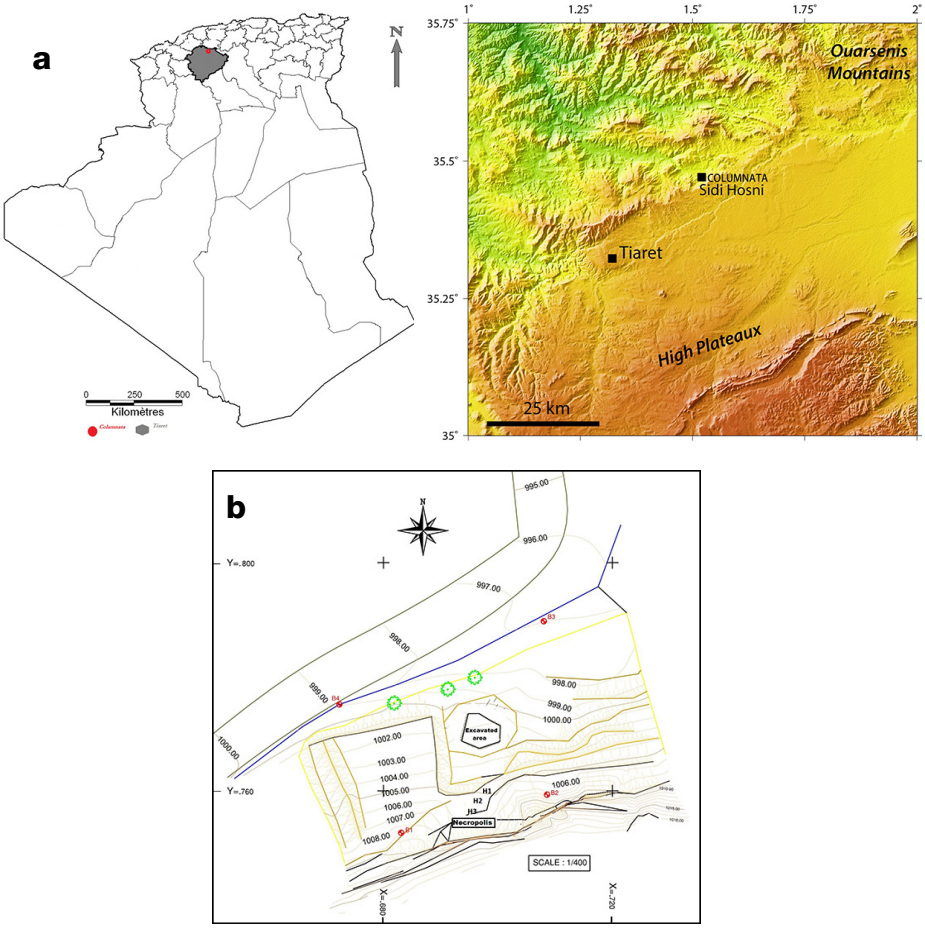

Figure 1. (a) Localization of Columnata locality; (b) Topographical map of the site, excavated area and graves; (c) Site's view.

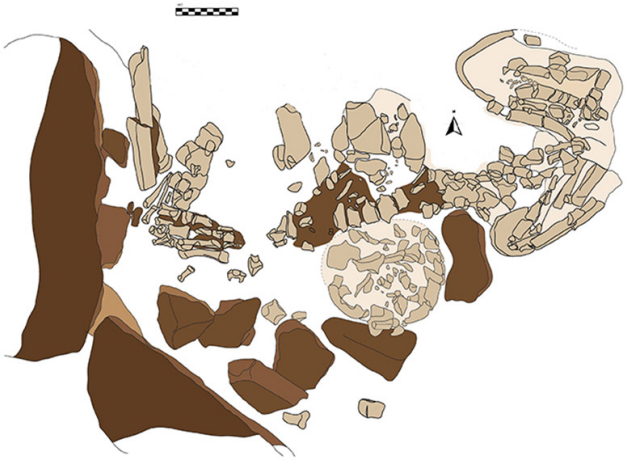

Figure 2a. Draw plan of burial H1.

population of Taforalt (Férembach, 1962)[2]. Tooth wear appears late, such as tooth caries (Chamla, 1970), and dental avulsion affected both jaws. Daily squatting or crouching position has been revealed by bone pathologies (Dastugue, 1970).

Indeed, the funeral practices described by P. Cadenat (1955, 1957, 1972) show a variety of burial positions and orientations, tomb markings, some cases of bone dismemberment, emaciation, sawing, and many other manipulations whose significance remains still unclear.

2. BURIAL DESCRIPTIONS

New excavations started in 2016 (Chaïd-Saoudi *et al.*, 2020) and targeted the first part of the Iberomaurusian level adjacent to the road and some burials located directly below the cliff. Nearly nine incomplete individuals, including five adults (H0, H1, H3a, H4a, H4b) and four children (H2, H3b, H4c, H5), were discovered around the area where P. Cadenat has removed previous burials. All of the skeletons were severely damaged. The bones were glued to the slab, at risk of falling into the dust. Here, we will describe the first three relatively well documented and well-preserved H1, H2, and H3 burials.

2.1. The H1 burial

Discovered in 2016 (drill hole n° 2), H1 is a primary deposit of an incomplete individual adult burial, deposited in clogged space (fig. 2a and b). The adult age is confirmed by the epiphysis of all the bone joints, the presence of the third molars, the

Figure 2b. Skeleton of H1 before feet emerge and a part of the burial stonework of the wester side.

advanced enamel wear, and the increased cementum deposition (Gustafson, 1947). The sex is less well determined. The pelvis was glued to the slab and severely altered. The less S-shaped iliac crest and the width of the ilions observed in situ suggested female sex (Férembach, 1979)[3]. The gonions of the mandible were extroverted. The maximum length of the humerus (34 cm), which is the only entirely complete bone, is greater than the female humerus (Chamla,1970). The diaphyseal index greater than 76.5 (100.DT dia/dap =17.02/21.16=80.43) is too big to be female. It also indicates eurybrachia, whereas Columnata's female humeri are typically platybrachials (Chamla, 1970). The stature estimated around 1.67 m according to the Raxter' method (Raxter, 2008), or 1.74 m according to the more generalist M. Trotter & G. Glesser's method (Trotter and Glesser, 1952)[4] also points towards male sex (M.C. Chamla's estimates for females were: 155.4 cm and 165.9 cm).

2.1.1. *Skeleton's position*

Oriented East-West, the skeleton was in a dorsal position (fig. 2a and 2b). It lies on one of the sandstone slabs that form the escarpment and is in a relatively advanced state of decay. The Z's measures taken at the head, femur, and feet level show a slight sinuosity of the substratum with a raised right side, but it seems that it is not only this particular configuration that disrupts the bone anatomical position and degradation.

At the head's level, we found in disorder and nested some fragments from the glabella, the scapula, the left part of the maxilla, and the left mandible. The left humerus was in extension. It displays two postmortem fractures at least resistance points diaphysis. These were related to a large tree root that slipped under the bone,

fracturing it and then penetrating the thoracic cage, causing considerable damage here (fractures and disturbance of the shoulder blades, ribs, sternum, and clavicles) and finally coming out above the right upper limb. The right hand was placed on the slab with the anterior side facing outwards.

The left radius and ulna, the first to be removed because they threatened to fall out, were in pronation. The left hand had only a few carpal bones. The femurs and tibias were represented by tips and were set vertically, contrasting with the feet bones' near-perfect anatomical preservation. These were well crossed with the left foot placed above the right (fig. 2a). The presence of stones nearby prevented them from dispersing completely.

We conclude that the H1 burial was placed on his back in a dorsal position, the left front limb in extension, the posterior limbs flexed upwards, and the feet well maintained one on top of the other.

As soon as the skeleton began to be removed, a thin and cracking black film caught our attention. It was spread like a carpet under the thoracic region and the head, and it did not reach the lower limbs and the feet. SEM analysis of this component shows that it is a polymer composed practically of Silicone (Silicon and Oxygen) and plastic (Hydrogen and Carbon). Before us, archaeologists had opened this tomb and wrapped the upper part of the body in this polymer. Therefore, could it be the tomb 27 that P. Cadenat discovered, protected (Cadenat, 1972) and left in place (Cadenat, 1957, 1972; Maître, 1965)? In the beginning, our suspicions were based on the similarities of the funerary goods. Nevertheless, the field's configuration has changed since the 1950s, and we did not have the stratigraphic details. Now there is no remaining doubt.

Opening and closing the grave (eve if is has not been excavated) has accelerated it's decay but they have not compromised the data that allowed us to go back to the initial inhumation practice at all. H27 Cadenat's description (Cadenat, 1957: 73) is the same as ours except for the missing skull that was still present. However, there is no evidence to support his hypothesis of lower limb bone dismemberment, as suggested by P. Cadenat (Cadenat, 1957: 74). Even if this practice was common in the Iberomaurusian culture (Mariotti *et al.*, 2009; Aoudia-Chouakri, 2013[5]) in our opinion, the H1 (ex. H27). Legs must have been bent knees up (like H22, Cadenat 1957: 74) and then probably collapsed. We only found scaterred ends which, moreover do not show any marks that suggest dismemberment and dislocated anatomical block deposition.

2.1.2. *Funerary goods*

Several fragments of large bovid ankles were found above the H2 burial. Their position (fig. 2b) shows that the horns were left in several places around the deceased without any discrimination. Anatomical examination of the fragments failed to distinguish between *Bos primigenius* and *Syncerus antiquus* horn cores, mainly when both of them lived at Columnata (Chaïd, 1987). The ox has a somewhat rounded horn in the section since buffalo horns have a triangular and

angular section at the base and then elliptical in the middle and at the apex. The transverse diameters of the most-preserved fragments and their morphology are reminiscent of a large *Bovini*. P. Cadenat reported 5 to 6 horns, but the fragments curvatures' observation did not lead to any Minimal Number of Individuals MNI. The weight of the fragments estimated at 3100 kg is also no longer useful. Note that other horns of large bovid have been discovered elsewhere in tombs H10 and H2 (Cadenat, 1955) but not with the same abundance.

The other items removed from the tomb are:

– A grey flint lamella discovered under the 5th right metacarpal
– A snail's shell (*Helix aspersa*) emerging from the right anterior side
– A lower M3 of *Alcelaphus buselaphus* species (L × W × H= 34 mm × 11mm × 34.5mm).

Several stones have also been removed. The most significant are:

– A well-squared small stone was discovered above the right wrist. This stone seems identical to those described in tomb H33, where 2 of these pieces were aligned above the forearms.
– Two other medium-sized wedge stones. The first holds the lumbar vertebrae while the other more squared was under the last left ribs.

2.1.3. *Funerary structure*

Perhaps the most unexpected element in this context is the care provided for the architecture of H1's tomb. It is a relatively flat stone structure arranged in several superimposed rows, three of which remain on the best-preserved side (fig. 2b). They cannot be confused with the surrounding sandstone slabs or the slab on which the body rests. These stones are 30 to 50 cm long and 5 to 10 cm high and are mostly rectangular. Those occupying the corners are somewhat triangular. There is a concern about the prehistoric people who delimited this funeral space and distinguished it from other nearby burials.

2.2. The H2 burial

H2 is a near-complete immature burial whose dental age is, according to Ubelaker (Ubelaker, 1999, 2018), estimated to be four years maximum. The deposit is individual (fig. 3a and 3b). The non-epiphyseal bone joints are in their anatomical place. So this space was probably sealed with a primary deposition. Postmortem fractures of the long bones and rib cage appear to have originated from the presence of stones or compression of sediment (Thillaud, 1996). There is also evidence that the low bone density of children under five years of age makes them more sensitive to taphonomical agents (Dutour, 1989; Bello *et al.*, 2002; Bello and Andrews, 2006). These bones were too fragile and powdery that little could be saved.

Figure 3a. Drawn plan of burial H2.

Figure 3b. Skeleton of H2 and surroundings gravestones.

The body was placed in a dorsal position (fig. 3a and 3b) on a very thin black sediment like ashes. The anterior part was raised to the skull level so that the skeleton inclination rises to 30°. It is severely fractured with a more significant impact at the sagittal point. The face was towards the ground. The jawbones and the cervical vertebrae were under the skull, and the left ribs further apart due to

the head's position. The right radius and ulna were in pronation, the left ones in supination. The femurs were spread apart, and the tibias joined in the distal area to allow crossing the feet. This crossed position, also observed in the tomb H1, seems to be a voluntary funerary gesture. Note that the two tombs were close to each other. We will see later that both were arranged.

2.2.1. *Funerary goods*

The funerary elements consist of:

- A distal fragment of a goat metacarpus was found near the right humerus. This bone was used to date the burial indirectly and yielded 8580.50 Cal BC. This date corresponds to the Columnatian level from which most of the skeletons were unearthed.
- A single gastropod (*Rumina decollata*) shell was found in the inner space of the Skeleton on the right ribs.
- Red sandstone fragments.
- Five manufactured polished bones (awls and cutting edges) unearthed about 50 cm away but in the same thin black sediment.

2.2.2. *Funerary structure*

The funerary architecture seems again here quite elaborate. The sepulchral space consists of at least three concentric stone circles (fig. 3b) generally of medium size but not precisely calibrated. The skeleton occupies the middle of the stone circles and the middle of the enclosure of a bazina-type monument whose base stones are at the burial level. A rectangular stele was oriented to the north-east. It resembles those found elsewhere by P. Cadenat (1957). If this monument is contemporary with the burial of the child H2, then it is one of the oldest erected by prehistoric people.

2.3. The H3 burial

H3 is a single burial discovered in 2019. It belongs to an immature subject aged between 11 and 12 years according to ubelaker dental chart (Ubelaker, 1999). The body was confined against the cliff in a reduced space (width 45 cm) (fig. 4a y 4b) and in a position that suggested a strong contraction. The sawing of the front of the slab showed that the tomb had already been opened. These remains probably belong to H35 found rolled up "en boule" according to the expression of P. Cadenat (1957) and left in situ (Cadenat, 1957; Maître, 1965). We have seen a skull facing east, which was almost placed on the first lumbar vertebrae as if the front part of the body had been bent forward (fig. 4a and 4b). The mandible was underneath in a vertical position, the symphysis part oriented towards the ground. This skull

Figure 4a. Drawn plan of burial H3.

Figure 4b. The bones of H3 after the first phase of investigation.

supported fragments of the fauna and flint industry. A square stone like those found in other tombs (H1, Cadenat) wedged the frontal. The humerus and right radius were anatomically connected and extended. The left humerus was lying almost horizontally on the lumbar vertebrae. Its distal joint, pointing to the right, reveals the grave's prominent disturbances just as the tibia and femur's further east position.

This description enables us to add some details to Cadenat's description, such as the extended position of the right anterior forelimb and the head and legs' eastward orientation. Several bones are missing (cervical and dorsal vertebrae left ulna right tibia right fibula carpus and tarsus bones and many phalanges), but P. Cadenat mentions a primary rather than a secondary deposition. We can perhaps argue by the fact that some ribs are not flattened. The muddy sediment (without ashes) has maintained the rib cage's volume and has sealed it almost entirely, which goes against a reburial action hypothesis. On the posterior-distal face of the right femur, some very fine parallel cutmarks were observed. Their position far from the articulation and the presence next to these cutmarks of a non-deliberate shaped hole call for more caution. So, the question of the cause of his death remains open. According to Chamla (1970), out of 54% of infant mortality, only 0.8% died between 12 and 14 years old because they have passed the perinatal age of nutritional deficiencies that caused deaths. Thus, we see that adolescence is not an age to die, especially in these somewhat healthy societies where old children were a substantial investment (Waterman and Thomas, 2011). So, we still investigate his cutmarks and other pathologies that we have discovered more lately.

2.3.1. *Funerary goods*

We will list here the artifacts discovered in the grave and the place they occupy in the tomb to see what can be retained as funerary furniture and what is not:

- Small fragments of ochre pigment were found under the left part of the base of the skull. Note that ochre is very rare in Columnata.
- Six fragments of red sandstone were found under the skull base, under the dorsal vertebrae, and the right ulna's proximal part. This local material is not coloring, but it is frequently found in burials as in H2.
- Charcoal from *Oleaceae* was collected in small fragments under the occipital bone.
- A dark brown flint lamellar nucleus with a preserved central cortical patch found under the two H3 parietals
- Five flint and chalcedony pieces probably one found under the basin, another near the right humerus, and the two last between the ribs.
- Four bone fragments of large bovids were located in this tomb. They have been collected under the right forelimb and the right posterior limb.
- Five bone fragments 2 of them are reminiscent of bone tools. One of these bones was collected outside the inner burial space, the others under the skull.
- A right condyle of a goat metapod under the tibia.
- An apical part of a deteriorated *Gazella* ankle (33mm) under the skull.
- A broken cervical vertebra of a young mammal found under the pelvis.
- A mandible fragment of *Alcelaphus buselaphus* with a broken P2 (a piece of the crown remains diastema) and the alveolus of P3.
- An upper M1/2 of immature large antelope (*Alcelaphus* or *Damaliscus*) (L: 21.5mm; W: 23.5mm; H: 44mm) removed from the ilium.

– The third phalanx of *Alcelaphus buselaphus* (L: 47mm; W: 42mm; H: 34mm) and a cattle fragment.
– A young turtle shells (entoplastron with gular scales and pleural plate) evoking the *Mauremys leprosa* turtle.

2.3.2. *Funerary structure*

The body of H3 was placed between two sandstone slabs on the cliff. One of them served as a natural roof and the other as body support, but the top slab may have been moved forward later due to the area's instability. The reduced space was closed off at the sides by stones. This feature is reminiscent of the niche described in other necropolises.

3. DISCUSSION

As described above, the three burials (H1, H2, and H3) were primary depositions and were entered individually in a sealed space. Two were in dorsal position; the third was strongly contracted. These data fit well with what has been reported about the Columnata (Cadenat, 1957, 1972) and Taforalt (Humphrey *et al.*, 2012), necropolises where various skeletal positions have been described and where individual burials were discovered more numerous than plural ones. According to M.C. Chamla (1970), at Columnata there were 36 single burials rather than 12 plural and 14 double burials. Individual burial, which would become more common in the Neolithic times, is considered a characteristic of more advanced societies in which the individual has acquired a particular social standing.

Except for disturbances related to the Cadenat's graves opening, there is no clear evidence for reburial or deliberate bone manipulation such as sawing emaciation or dismemberment.

However, the few cutmarks and the pit observed on the right distal side of H3' femur, and maybe the broken shape cranium of H2 need further exploration to assess if they could be related to human behavior modification or not. P. Cadenat reported these practices for H8 Iberomaurusian, whose mandible was sawn off. However, they seem to be more developed among the Capsian populations (Haverkort and Lubell, 1999). At Columnata, no skeletons have yet been reported to the Capsian. In our opinion, it is first necessary to investigate the bones' lack and modifications on focusing more and more on the geological and taphonomical disturbances or on the non-documented clandestine excavations that severely affected the cliff necropolis (Chaïd *et al.*, 2022).

In the chapter on funerary goods, we first consider the horns of great bovids deposited on H1 (ex. H27). This gesture's repetition in the tombs described by P. Cadenat (H2 and H10), and in our testifies a prehistoric symbolic manifestation of which would be one of the oldest translations. These animals, which are also engraved in the nearby Bou-Bekr cave (Aumassip, 1986), were reproduced in quantity in all the major rock art stations from the Neolithic period onwards until

they were dissociated from humans. In the Sahara, the Neolithic animal necropolis of Mankhor was dedicated to them (Ferhat *et al.*, 1996; Ferhat *et al.*, 1998, Chaïd, 2007[6]). This "cult of the bull" will survive everywhere in the Mediterranean and the Sahara until historical times.

Ochre is a scarce material in Columnata. It was found in the tomb of H3 and was once again mentioned by P. Cadenat in H2 (Cadenat, 1957). On the other hand, non-coloring materials such as red and ochre sandstone can claim ritual significance or the expression of a feeling for aesthetics. Wedging stones could also be included in funerary equipment. These stones can be distinguished by their shape and location in the tomb. The other archaeological material had to be brought back with the sediments at the time of burial. The artifacts are heterogeneous, their location in the tomb is random, and the fragmented bones lack anatomical connection. The bone well-manufactured tools found in H2's tomb's outer space and the lamella found under H1's finger are not easy for us to be interpreted as furniture, but P. Cadenat considered the well-preserved pieces (discovered with H22-H29-H39-H40) as funeral furniture and also used them to date the graves.

The last item is the thin and dark soil discovered under the H2 Skeleton, which we have not analyzed yet. According to P. Cadenat, who found the same in several tombs (H2, H3, H25, H27, H29, and H42), it was mixed with ashes, but the bones did not display any burn marks.

The funeral space and the graves' arrangement are both complex and premature for the tenth and eleventh millennium. Although a few dislocated bone remains, all the burials have been discovered in the same area under the cliff as if it was a sacred zone. Columnata resembles Taforalt in this aspect (Humphrey *et al.*, 2012). Moreover, many other similarities could be listed between these two northwestern necropolises, where the last hunter-gatherers of the Paleolithic had developed a more or less similar social behavior.

The tomb arrangements such as stone stelae, "Bazina" monument (as demonstrated in H2), and the H1 elaborated foundations indicate a deliberate advanced work that affects both above and below graves structure. Of course, all these data need to be assessed by additional fieldwork results, but one can say that the tombs studied here reveal a strong human desire to mark the tombs and manage to preserve them. These actions foreshadowed and anticipated by several millennia the so-called Megalithic revolution and perhaps the mineral environment of stones, rocks, cliffs, and escarpments that the Columnata prehistoric inhabitants saw day and night was for them at least a good source of inspiration and inventiveness.

4. CONCLUSIONS

The study of the three burial practices from the last hunter-gatherers and herders Holocene populations of Columnata (Tiaret-Algeria) confirmed what was already known about these practices and provided a great deal of detail as well. The opening of two tombs by our predecessors required a great deal of effort on

our part to reconstruct the initial gestures of prehistoric people. Indeed, the burials studied were a primary deposition, placed in clogged tombs in various positions without particular orientation and deliberate bone's modification. Bovine horns can be considered voluntary funerary goods, unlike the somewhat non-deliberate lithic and faunal remains discovered in the graves. Two of the tombs were built with stones to mark their position and to preserve the grave, which is quite advanced for that time. These few data should be added to those documented in the last century better to understand the North African funeral behavior and mortuary activities.

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