

Contribution of physical Anthropology in the Study of Graves from Apamea-on-the-Euphrates (Turkey)

Arnaud Lefèbvre, Catherine Abadie-Reynal, Jean-Sylvain Caillou

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CONTRIBUTION OF PHYSICAL ANTHROPOLOGY IN THE STUDY OF THE GRAVES FROM APAMEA-ON-THE-EUPHRATES (TURKEY)

ARNAUD LEFEBVRE,¹ CATHERINE ABADIE-REYNAL,² JEAN-SYLVAIN CAILLOU³

ABSTRACT

Between 1997 and 1999 excavations led by a French team were undertaken before the construction of the Euphrates middle valley dam project in Turkey. Several graves of the necropolis of Apamea-on-the-Euphrates were excavated. These were in use from the Hellenistic period to the 7th-8th century, first as graves then as shelters for herdsmen and their flocks or as storage; most of them were partially or totally looted. In spite of these patterns of use numerous human bones fragments and archaeological artefacts such as ceramic or glass vessel fragments were collected. Work led by archaeologists and physical anthropologists highlighted different phases of occupation and created a better understanding of the funerary practices from each chronological period.

Apamea-on-the-Euphrates was founded on the left bank of the river at the beginning of the 3rd century BC, just in front of Seleucia-Zeugma (Fig. 1). The Hellenistic city of Apamea was abandoned around the end of the 2nd century BC, but the plain went on being occupied till the Islamic period. The different occupations of the necropolis testify to this long history. The rescue excavations, initiated when the construction of a dam was set to flood the site, were led from 1996 to 1999 by a Franco-Turkish team (Abadie-Reynal, *Ergeç* 1998, Abadie-Reynal *et al.* 1999, Abadie-Reynal *et al.* 2000). Twenty-nine tombs, with varied architectural features, have been discovered and excavated (Fig. 1). Amongst them, we have chosen to discuss two of the most representative of the methodology that has been adopted for the study of the necropolis.

GENERAL METHODOLOGY

Because the study spread over several years each specialist had to work independently.

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Once this work was achieved, results were discussed and compared, to reconstruct the history of each tomb, from its foundation till its definitive abandonment as a funerary place. The extent of reuse and refitting of each tomb, sometimes even as simple storage room or shelter for shepherds and their herds, made the interpretation difficult.

The study of artefacts and particularly of ceramics was complicated by their fragmentation. However, since a typo-chronology of regional pottery had been established, thanks to the stratigraphic excavations in Zeugma, we had a considerable database on which to draw. We tried to work from the few stratigraphic layers identified by the archaeologists. To complete those data, we also 'followed' the dispersion of certain fragments by studying their spatial distribution.

The human remains study has been confronted with significant fragmentation of the bones, as well as an absence of skeletons, resulting from the various phases of use. So, we decided to use an established method of calculating the minimum number of individuals (MNI) (Baron 1968, Chaix and Méniel 1996). First each bone fragment was identified; then, its right or left side, state of preservation, aspect and maturity level was registered, in order to obtain a total MNI. As soon as this work was completed, we searched for as many matching elements as possible within and between the different layers, to observe the distribution of bones for each individual.⁴ We also tried to highlight places dedicated to a specific population, such as children.

The age at death of the children was determined thanks to the tooth maturity (Schour and Massler 1944, Moorrees *et al.* 1963, Ubelaker 1978) and the bone maturity (Birkner 1980). The bone maturity was also used to determine the age of death for the immature and young adults (Owings-Webb and Suchey 1985). The bad state of preservation and the absence of reference samples prevented us from carrying out a primary or secondary sexual diagnosis and refining the age at death.

RESULTS

The information given by the pottery and bones in tomb 1 may allow us to determine its overall coherence and to propose hypotheses about the way the tomb was managed. On the contrary, for tomb 4 differences between the various categories of data can be seen and original scenarios can derive from those observations.

Tomb 1

Tomb 1 is composed of a large central vestibule, flanked with two alcoves (Fig. 2), in accordance with the known organization of hypogea in the area (Ergeç 2003, Vivancos 2005). Each one contains three funeral benches. A Syriac inscription suggests that the

4 All the bones fragments were collected in stratigraphic layers, but unfortunately none of them were located on a drawing, preventing us from refining the bones' distribution.

hypogeum was founded in AD 192. A second inscription, which is difficult to read, attests that the tomb was reused, either in the second half of the 4th or in the 8th- 9th century AD (Caillou 1999, Desreumaux 1999).

Ceramics were only found in the vestibule S1, where the archaeologists distinguished four layers (Table 1). Layers 3 and 4, the most ancient ones, are very poor: they just included some small fragments of Byzantine pottery. Layer 2 is richer and contained numerous complete or fragmentary lamps, which can be dated between the 5th and the 7th century AD (Fig. 3A), as well as Byzantine pottery (Fig. 3B) and a late lamp, that was in use between the 6th and the 9th century AD (Fig. 3C). In layer 1, which seems more heterogeneous, we discovered fragmentary pottery, dated from the Hellenistic period to the 8th century AD. Finally, we found joining fragments coming from layers 1 and 2, and an area of circulation outside the tomb.

The human remains (165 bone fragments) were collected, mainly in the stratigraphic layers 1 and 2. Layers 3 and 4 did not appear to contain human bone. Only 11 fragments have been discovered in alcove 1 and one fragment in niche 1 (Fig. 4). The study allowed us to determine a MNI of 4 individuals (19. 4% of attributed fragments), two children (about 6 months and one year old), one young adult (20-25 years old) and one probably old adult (Table 2). All of them were present in the vestibule. From a stratigraphic point of view, the existence in vestibule 1 of two layers (3 and 4), almost without bones, might be explained by one or several cleanings. In this hypothesis, the last phase of funerary use would be represented by layer 2 which contains most of the bones and was constituted by dispersion and fragmentation of the primary burials. Bones that have been found in the alcove 1 might be the only *in situ* evidence of this last phase. Finally, layer 1, which contains more damaged bones, would correspond to the last phase of occupation, when the tomb became a shelter for shepherds.

Conclusions

The data collected in this tomb allowed us to reconstitute a part of its history. The lack of bones and artefacts in the layers 3 and 4, which could be dated to the 2nd and 3rd century AD, according to the first inscription, points to a cleaning phase, in order to reuse the tomb. The reuse, indicated within layer 2, which can be dated mostly to the 5th and 6th centuries AD, would possibly place the second inscription in the second half of the 4th century AD. In this context, the bones found in the alcove 1, might be the only *in situ* evidence for this phase. Finally, the disturbance of the bones and artefacts found in layers 1 and 2 shows the last phase of use, by shepherds.

Tomb 4 is a hypogeum, with a square plan, and a central vestibule, flanked with three *loculi* (Fig. 5). This kind of plan is well-attested in the area (Ergeç 2003, Vivancos 2005: type 6).

The study of ceramics and glass clearly shows two chronological phases; the tomb was used during the Hellenistic and the Byzantine periods (Table 3).

The Hellenistic occupation (probably middle and second half of the 2nd century BC) is attested in the central vestibule and in the 3 *loculi* (Fig. 6A). Pottery from *loculus* 3 is particularly well preserved (Fig. 6A). The Byzantine period is represented by fragments of glass artefacts, vases and lamps (4th -6th century AD.) in the central vestibule and *loculi* 1 and 2 (Fig. 6B).

The human remains (437 fragments) have been mainly discovered in *loculus* 3 (305 fragments). A few of them come from the vestibule (38 fragments) and *loculi* 1 and 2 (respectively 61 and 33 fragments) (Fig. 7).

The study of those remains has suggested a MNI of 6 (52,. 4% of attributed fragments). In *loculus* 1, we counted at least two adults and one adolescent (Individuals (Ind.). 3, 4 and 5) and another adult might also be present (Ind. 6). In *loculus* 3, we could identify the remains of a young adult (20 – 30 years old) and an approximately 10 year-old child (Ind. 1 and 2). In *loculus* 2 and the vestibule, only some bones of Individuals 2 and 3 could be recognized from the other fragments (Fig. 8 and Table 4). The study of the spatial distribution of bones is not anomalous, so, from a physical anthropological point of view, there is little evidence for funerary reuse, a fact that is contradicted by the pottery recovered.

Conclusions

The reconstruction of the history of this tomb showed contradictions and also parallels between the evidence supplied by the ceramics and glass on the one hand, and the study of physical anthropology on the other. The archaeological artefacts recovered suggested there was reuse of the tomb, whereas the human bones did not. In fact, at least four phases can be highlighted in the tomb. The first occupation cannot be identified by the human remains study, but is proved by the pottery and could be placed in the middle and in the second half of the 2^{nd} century BC. We can then suggest a 'second' phase of cleaning and partial collection of bones, especially in the *loculus* 1. Then, the latest funerary phase (mainly $4^{th} - 5^{th}$ century AD) was identified. This could have taken place before the occupation indicated by layer 2 in Tomb 1, since, in Tomb 4, type III lamps (Touma 2005) predominate, instead of type VII. The bones that have been discovered in *loculus* 1 probably belong to this phase, whereas the ones that have been found in *loculi* 2 and 3 might have been found *in situ* and can therefore be dated to the Hellenistic period. Finally, as in tomb 1, the significant disturbance of the bones and artefacts shows the final phase of use, by shepherds.

GENERAL CONCLUSIONS

This study of two graves from Apamea-on-the-Euphrates clearly shows the importance of all artefacts present within an archaeological context, independent of their state of preservation. In both tombs, ceramics and glass could be complete or fragmented, but bones were always extremely fragmented. Even though the results are limited, the determination of the Minimal Number of Individuals and of the age at death gives important indications regarding the way these tombs were used. The comparison of these results with ones obtained by other specialists within the project allowed us to refine our observations and to highlight the different phases of use for each tomb, which sometimes ran from the Hellenistic to the Byzantine period.

Beyond the 'history' of the different tombs, these results allow us to suggest new directions for research about funerary practices in this region, these are:

- Changes in funerary practices from the Hellenistic period, when only adult individuals seem to be deposed in the tombs, to the Byzantine period, when adults and children were present.
- Specific treatment of children.
- Determination of different aspects of rituals and their evolution; for instance, the way food offerings were done, the presence or absence of funeral meals inside the tombs, or the number of lamps used for the burial of one individual during the Byzantine period.

Besides the evolution of funerary practices, some new elements for a typo-chronology of the tombs could be observed. Tomb 4 for example, shows that tombs with *loculi* were in use in the Hellenistic period, a fact that was not apparent from the many tombs excavated in Zeugma, as far as we know (*contra* Vivancos 2005). Finally, the number of Byzantine inhumations highlights the significance of occupation of the plain during this period, a fact that the excavations of Apamea did not suggest. This study indicates that dispersed farms or *villae* were probably the normal form of occupation.

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Table 1: Tomb 1: summary table of artefacts

Location	Inventory number	State of pre- servation	Material and function	Preliminary typology	Proposed date
S1, layer 3	1	fragment of shoulder and body	terracotta, painted am- phora	painted am-	
S1, layer 2	11	fragment of mouth and neck	terracotta, amphora	Piéri 2005: type 2	6 th -9 th century AD
S1, layer 2	12	fragment of shoulder and body (Fig. 3B)	terracotta, amphora	Piéri 2005 : type 2	6 th -9 th century AD
S1, layer 2	6	fragment of rim (Fig. 3B)	terracotta, lid	Bartl 1996: 344, fig. 2. 7-10	5 th -7 th century AD
S1, layer 2	1	fragment of mouth and handle	terracotta, painted am- phora	Piéri 2005: type 2	6 th -9 th century AD
S1, layer 2	7	fragment of foot and body	terracotta, jug (?)	Abadie-Reynal et al. 2007, mid-Roman combed jug	3 rd -4 th century AD (?)
S1, layer 2	8	fragment of mouth and neck	terracotta, jug (?)		1 st -3 rd century AD
S1, Layer 2	2	fragment of mouth and neck	terracotta jar		?
S1, layer 2	10	fragment of body with irregular wheel ridging	terracotta, jug (?)		
S1, layer 2	13	fragment of rim and body	terracotta, jar		7 th -8 th century AD (?)
S1, layer 2	3	fragment of rim and body	terracotta, Martz 2007: cooking ware type 3		3 rd century AD
S1, layer 2	4	fragment of neck, handle and body	terracotta, Martz 2007: type 5,7 or 8		5 th -7 th century AD (?)
S1, layer 2	5	fragment of body and handle	terracotta, closed vessel, cooking ware	?	?

Location	Inventory number	State of pre- servation	Material and function	Preliminary typology	Proposed date
S1, layer 2	9	fragment of rim, neck and body	terracotta, dartz 2007: type 2		3 rd century AD
S1, layer 2	Ce 0080	intact (Fig. 3A)	terracotta, lamp	Touma 2005: type VII, 2	5 th -7 th century AD
S1, layer 2	Ce 0090	nearly com- plete	terracotta, lamp	Touma 2005: type VII, 2	5th-7th century AD
S1, layer 2	Ce 0082	intact	terracotta, lamp	Touma 2005:; type VII, but decoration as type IV	5th-6th century AD
S1, layer 2	Ce 0083	three joining fragments (Fig. 3C)	terracotta, lamp	Touma 2005: type VIII	6 th -9 th century AD
S1, layer 2	Ce 0093	nearly com- plete	terracotta , lamp	Touma 2005: between type IV and VII	5th-6th century AD
S1, layer 2	Ce 0081	intact	terracotta, lamp	Touma 2005: type VII	5th-7th century AD
S1, layer 2	Ce 0086	intact	terracotta, lamp	Touma 2005: type VII	5th-7th century AD
S1, layer 2	Ce 0092	nearly complete,part of nozzle missing	terracotta, lamp	Touma, 2005: type III, but decoration of rays as on type VII	5th-6th century AD (?)
S1, layer 2	Ce 0084	intact	terracotta, lamp	Touma 2005: type VII, 2	5 th -7 th century AD
S1, layer 2	Ce 0167	intact	terracotta, lamp	Touma 2005: type III	4 th -6 th century AD
S1, layer 2	Ce 0085	intact	terracotta, lamp	Touma 2005: type IV	4 th -6 th century AD
S1, layer 2	Ce 0088	parts of discus, wall and han- dle missing	terracotta, Touma 2005: type VII, 2		5th-7th century AD
S1, layer 2	Ce 0091	tip of nozzle missing	terracotta, lamp Touma 2005: between type IV and VII		5th-6th century AD
S1, layer 2	Ce 0089	mended, part of discus and wall missing (Fig. 3A)	terracotta, lamp	Touma 2005: type VI	6th-7th century AD

Location	Inventory number	State of pre- servation	Material and function	Preliminary typology	Proposed date
S1, layer 2	Ce 0116(1)	fragment of wall and discus	terracotta, lamp		
S1, layer 2	Ce 0116(2)	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0116(3)	fragment of discus	terracotta, lamp		
S1, layer 2	Ce 0116(4)	fragment of solid handle	terracotta, lamp		
S1, layer 2	Ce 0116(5)	fragment of discus	terracotta, lamp		
S1, layer 2	Ce 0116(6)	fragment of solid handle	terracotta, lamp		
S1, layer 2	Ce 0116(7)	fragment of wall and discus	terracotta, lamp		
S1, layer 2	Ce 0116(8)	fragment of discus	terracotta, lamp		
S1, layer 2	Ce 0116(9)	fragment of solid handle	terracotta, lamp		
S1, layer 2	Ce 0116 (10)	fragment of discus	terracotta, lamp		
S1, layer 2	Ce 0116(11)	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0116(12)	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0103	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0097	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0105	fragment of nozzle and wall	terracotta, lamp		
S1, layer 2	Ce 0099	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0094	mended, part of discus and wall missing	terracotta, lamp		
S1, layer 2	Ce 0115	fragment of base and wall	terracotta, lamp		

Location	Inventory number	State of pre- servation	Material and function	Preliminary typology	Proposed date
S1, layer 2	Ce 0095	fragment of nozzle and wall	terracotta, lamp		
S1, layer 2	Ce 0098	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0104	fragment of wall	terracotta, lamp		
S1, layer 2	Ce 0109	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0112	fragment of discus	terracotta, lamp		
S1, layer 2	Ce 0114	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0102	fragment of wall	terracotta, lamp		
S1, layer 2	Ce 0096	fragment of nozzle and wall	terracotta, lamp		
S1, layer 2	Ce 0107	fragment of wall	terracotta, lamp		
S1, layer 2	Ce 0110	fragment of nozzle and wall	terracotta, lamp		
S1, layer 2	Ce 0113	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0106	fragment of base	terracotta, lamp		
S1, layer 2	Ce 0108	fragment of nozzle and discus	terracotta,		
S1, layer 2	Ce 0100	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0111	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0101	fragment of base, wall, discus and solid handle	terracotta,		
S1, layer 2	Ce 0119	fragment of base, discus, wall and solid handle	terracotta, lamp		

Location	Inventory number	State of pre- servation	Material and function	Preliminary typology	Proposed date
S1, layer 2	Ce 0120	fragment of base and wall	terracotta, lamp		
S1, layer 2	Ce 0118	fragment of base, wall, discus and nozzle	terracotta,		
S1, layer 2	Ce 0122	fragment of base, wall and solid handle	terracotta, lamp	Touma 2005: type VIII	6 th -9 th century AD
S1, layer 2	Ce 0121	fragment of nozzle	terracotta, lamp		
S1, layer 2	37	fragment	glass, dropper		end of the 3 rd -4 th century AD
S1, layer 2	38	fragment	glass, dropper		end of the 3 rd -4 th century AD
S1, layer 2	39	fragment of wall	glass, bottle		3 rd century AD (?)
S1, layer 2	40	fragment of base	glass, bowl		4 th century AD (?)
S1, layer 2	41	fragment of wall and neck	glass, bottle		3 rd century AD (?)
S1, layer 2	Me 711	fragment of a discus	bronze, mirror		
S1, layer 2	D 0129	Perl – bead?	agate, triangu- lar bead	Dubin 1987: 338, n° 315	
S1, layer 1	1	fragment of neck, shoulder and handle	terracotta, painted am- phora	Piéri 2005: type 2	6 th -9 th century AD
S1, layer 1	5	fragment of rim and body	terracotta, jar		
S1, layer 1	2	fragment of base and wall	terracotta, jug		1st-3rd century AD
S1, layer 1	4	fragment of base and wall	terracotta, cup		2 nd century BC-2 nd century AD
S1, layer 1	3	fragment of rim and handle	terracotta, Martz 2007: type 2		3 rd century AD
S1, layer 1	6	fragment of rim and neck	terracotta, cooking ware	Martz 2007: type 2	3 rd century AD

Location	Inventory number State of pre- number servation Material and function		Preliminary typology	Proposed date	
S1, layer 1	4bis	fragment of rim and wall	terracotta, cooking ware	Martz 2007: type 5	5 th century AD
S1, layer 1	8	part of wall missing	terracotta, lamp		
S1, layer 1	Ce 0117	complete	terracotta, lamp	Touma 2005: type III	4 th -6 th century AD
S1, layer 1	Ce 0144	complete	terracotta, lamp	Touma 2005: type VII, 2	5th-7th century AD
S1, layer 1	Ce 0126	fragment of discus	terracotta,	Touma 2005: type VII, 2	5 th -7 th century AD
S1, layer 1	Ce 0125	fragment of base	terracotta, lamp		
S1, layer 1	Ce 0124	fragment of discus and nozzle	terracotta, lamp		
S1, layer 1	Ce 0148(1)	fragment of discus and solid handle	terracotta,		
S1, layer 1	Ce 0123(6)	fragment of discus	terracotta, lamp		
S1, layer 1	Ce 0123(7)	fragment of wall	terracotta, lamp		
S1, layer 1	Ce 0123(8)	fragment of discus	terracotta, lamp		
S1, layer 1	Ce 0123(9)	fragment of nozzle	terracotta, lamp		
S1, layer 1	Ce 0123(10)	fragment of discus	terracotta, lamp		
S1, layer 1	Ce 0123(11)	fragment of wall	terracotta, lamp		
S1, layer 1	Ce 0123(12)	fragment of wall	terracotta, lamp		
S1, layer 1	Ce 0123(13)	fragment of base	terracotta, lamp		
S1, layer 1	Ce 0123(14)	fragment of discus and solid handle	terracotta, lamp		
S1, layer 1	Ce 0123(15)	fragment of wall	terracotta, lamp		

Location	Inventory number	State of pre- servation	Material and function	Preliminary typology	Proposed date
S1, layer 1	Ce 0123(16)	fragment of solid handle	terracotta, lamp		
S1, layer 1	Ce 0123(17)	fragment of solid handle	terracotta, lamp		
S1, layer 1	Ce 0123(1)	fragment of wall	terracotta, lamp		
S1, layer 1	Ce 0123(2)	fragment of solid handle	terracotta, lamp		
S1, layer 1	Ce 0123(3)	fragment of base	terracotta, lamp		
S1, layer 1	Ce 0123(4)	fragment of base	terracotta, lamp		
S1, layer 1	Ce 0123(5)	fragment of wall	terracotta, lamp		

Table 2: Tomb 1: summary table of identified bones for each individual

Location	Type of bone	Identification	Side	Individual n°	Observation	age
S1, layer 2	clavicle	diaphysis fragment	left	n° 1	immature	
S1, layer 2	clavicle	diaphysis fragment	right	n° 1	immature	
S1, layer 2	hand	1st row phalange	unspecified	n° 1	immature	
S1, layer 2	humerus	proximal fragment	unspecified	n° 1	immature	
S1, layer 2	humerus	body fragment	unspecified	n° 1	immature	
S1, layer 2	radius	1/3 proximal	right	n° 1	immature	
S1, layer 2	rib	1st rib	left	n° 1	immature	Infant (6
S1, layer 2	rib	fragment	unspecified	n° 1	immature	month / 1 year)
S1, layer 2	rib	fragment	unspecified	n° 1	immature	
S1, layer 2	rib	fragment	unspecified	n° 1	immature	
S1, layer 2	tarsal	1st metatarsal fragment (head)	unspecified	n° 1	immature	
S1, layer 2	tibia	2/3 proximal	right	n° 1	immature	
S1, layer 2	tibia	body fragment	left	n° 1	immature	
S1, layer 2	clavicle	1/3 sternal	right	n° 2	immature	
S1, layer 2	clavicle	1/3 acromial	right	n° 2		
S1, layer 2	mandible	without ramus, left tooth (from incisor to premolar and 3rd molar) and right tooth (from incisor to canine)		n° 2		Young adult (< 25 years)
S1, layer 2	mandible	fragment of angle	left	n° 2		
S1, layer 2	tooth	mandibular 3rd molar (left)	left	n° 2		
S1, layer 2	vertebrae	lumbar body		n° 2	immature	
S1, layer 2	mandible	body fragment	left	n° 3	1st premo- lar and 1st molar	Adult (mature?)

Location	Type of bone	Identification	Side	Individual n°	Observation	age
S1, layer 1	rib	fragment	unspecified	n° 4	immature	
S1, layer 1	rib	fragment	unspecified	n° 4	immature	
S1, Alc 1, C1	rib	fragment	left	n° 4	immature	
S1, layer 1	tarsal	4th metatarsal	right	n° 4	immature	childhood (> 1 year)
S1, layer 1	vertebrae	lumbar body		n° 4	immature	(× 1 year)
S1, layer 1	vertebrae	cervical body		n° 4	immature	
S1, layer 1	vertebrae	cervical pedicle	right	n° 4	immature	

Table 3: Tomb 4: summary table of artefacts

Location	Inventory number	State of preservation	Material and function	Preliminary typology	Proposed date
S1	9	fragment of wall	terracotta, unguentarium	Jones 1950: fig. 187, Anderson-Stojanović 1992: 83-84, type G	second half of the 2nd-1st century BC
S1	11	fragment of shoulder, wall and foot	terracotta, unguentarium	Jones 1950: fig. 187, Anderson-Stojanović 1992: 83-84, type G	second half of the 2nd-1st century BC
S1	14	complete profile	terracotta, plate (?)	Gerber 1996: 319, n° 16-20	Byzantine period
S1	15	fragment of shoulder and wall	terracotta, amphora	Piéri 2005:, type 1	end of the 5th-7th century AD
S1	10	complete (Fig. 6A)	terracotta, plate	Mlynarczyk 2002: 129, fig. 3, n° 49	3rd-first half of the 2nd century BC
S1	4	fragment of rim and wall	terracotta, plate	Mlynarczyk 2002: 129, fig. 3, n° 49	3rd-first half of the 2nd century BC
S1	13+T4, C2, 1	fragment of rim	terracotta, plate	Gerber 1996: 319, n° 16-20	Byzantine period
S1	6	fragment of shoulder	terracotta, unguentarium		
S1	5	complete	terracotta, lantern		Byzantine period (?)
S1	1.4	fragment of rim and handle	terracotta, cooking ware		1st -2nd century AD (?)
S1	12	fragment of rim, neck, wall and handle	terracotta, brittle ware	Martz 2007: type 5	5th century AD
S1	87	complete	terracotta, lamp	Touma 2005: type III/	4th-6th century AD
S1	88	complete	terracotta, lamp	Touma 2005: type III	4th-6th century AD
S1	8	fragment of dis- cus, handle, wall and nozzle	terracotta,	Touma 2005: type III	4th-6th century AD

Location	Inventory number	State of preservation	Material and function	Preliminary typology	Proposed date
S1	3	fragment of base	terracotta, lamp		
S1	1	fragment of nozzle	terracotta, lamp		
S1	2	fragment of wall and base	terracotta, lamp		
S1	42	fragment	glass		
S1	43	fragment of rim of flask	glass		Byzantine period
S1	44	fragment of base of flask	glass		Byzantine period, end of the 6th century AD
loc 1	9	fragment of shoulder, wall and foot	terracotta, unguentarium	Jones 1950: fig. 187, Anderson-Stojanović 1992: 83-84, type G	second half of the 2nd-1st century BC
loc 1	8	fragment of foot	terracotta un- guentarium	Jones 1950: fig. 187, Anderson-Stojanović 1992: 83-84, type G	second half of the 2nd-1st century BC
loc 1	1	fragment of base	terracotta, lantern		Byzantine period (?)
loc 1	2	fragment (Fig. 6B)	terracotta, lantern (?)		Byzantine period (?)
loc 1	11	fragment of rim	terracotta, brittle ware	Martz 2007: type 5	5th century AD
loc 1	38	fragment of wall	terracotta, lamp		
loc 1	39	fragment of discus	terracotta, lamp		
loc 1	40	fragment of solid handle	terracotta, lamp		
loc 1	41	complete (Fig. 6B)	terracotta, lamp	Touma 2005: type III	4th-6th century AD
loc 1	42	a small part of discus missing	terracotta, lamp	Touma 2005: type III	4th-6th century AD
loc 1	43	tip of nozzle missing	terracotta, lamp	Touma 2005: type III	4th-6th century AD

Location	Inventory number	State of preservation	Material and function	Preliminary typology	Proposed date
loc 1	7	complete	terracotta, lamp	Touma 2005: type III	4 th -6 th century AD
loc 1	13	fragment of base and wall	terracotta, lamp		
loc 1	10	fragment of base, wall and solid handle	terracotta, lamp		
loc 1	5	fragment of dis- cus and nozzle	terracotta, lamp		
loc 1	14	fragment of discus and solid handle	terracotta,		
loc 1	3	fragment of discus	terracotta, lamp		
loc 1	6	fragment of discus	terracotta, lamp		
loc 1	12	fragment of nozzle	terracotta, lamp		
loc 1	4	fragment of base and wall	terracotta, lamp		
loc 1	46	fragment of a base	glass		
loc 2	1+ S1, 13	complete	terracotta, plate	Gerber 1996: 319, n° 16-20	Byzantine period
loc 2	3	fragment of rim and wall	terracotta, plate	Mlynarczyk 2002: 129, fig. 3, n° 49	3 rd -first half of the 2nd century BC
loc 2	2	fragment of foot and wall	terracotta, plate	Mlynarczyk 2002: 129, fig. 3, n° 49	3 rd -first half of the 2nd century BC
loc 2	94	fragment of base	terracotta, lamp		
loc 2	4	fragment of nozzle	terracotta, lamp		
loc 2	65	fragment of neck of a dropper	glass	Isings 1957: form 102 or 126	3 rd -6 th century AD

Location	Inventory number	State of preservation	Material and function	Preliminary typology	Proposed date
loc 3	1	complete	terracotta, un- guentarium	Jones 1950: fig. 187, Anderson-Stojanović 1992: 83-84, type G	second half of the 2 nd -1 st century BC
loc 3	2	complete (Fig. 6A)	terracotta, un- guentarium	Jones 1950: fig. 187, Anderson-Stojanović 1992: 83-84, type G	second half of the 2 nd -1 st century BC
loc 3	3	complete	terracotta, plate	Mlynarczyk 2002:129, fig. 3, n° 49	3 rd -first half of the 2nd century BC
loc 3	4	complete	terracotta, un- guentarium	Jones 1950: fig. 187; Anderson-Stojanović 1992: 83-84, type G	second half of the 2 nd -1 st century BC
loc 3	5	fragment of wall and foot	terracotta, un- guentarium	Jones 1950: fig. 187; Anderson-Stojanović 1992: 83-84, type G	second half of the 2 nd -1 st century BC
loc 3	6	fragment of rim	terracotta, un- guentarium		
loc 3	7	fragment of rim and wall (Fig. 6A)	terracotta, plate		Hellenistic period
loc 3	8	fragment of rim and wall	terracotta, plate	Mlynarczyk 2002: 129, fig. 3, n° 49	3 rd -first half of the 2 nd century BC

Table 4: Tomb 4: summary table of identified bones for each individual

Location	Type of	Identifica-	Side	Individual	Observation	Age
	bone	tion		no		_
loc 3	Hand	internediate phalange	unspecified	1		Young adult (20 - 30 years)
loc 3	Hand	2nd proximal phalange	right	1		
loc 3	Hand	3rd proximal phalange	right	1		
loc 3	Hand	metacarpal fragment	right	1		
loc 3	Hand	metacarpal fragment	right	1		
loc 3	Hand	metacarpal fragment	unspecified	1		
loc 3	Hand	2nd metacarpal	right	1		
loc 3	Hand	3rd metacarpal	right	1		
loc 3	Hand	5th metacarpal	left	1		
loc 3	Hand	internediate phalange	unspecified	1		
loc 3	Hand	proximal phalange	unspecified	1		
loc 3	Hand	proximal phalange	left	1		
loc 3	Hand	proximal phalange	left	1		
loc 3	rib	12th	left	1		
loc 3	rib	12th	right	1		
loc 3	rib	fragment	right	1		
loc 3	rib	fragment	right	1		
loc 3	rib	fragment	right	1		
loc 3	rib	fragment	left	1		
loc 3	rib	fragment	left	1		1
loc 3	rib	fragment	left	1		
loc 3	rib	fragment	left	1		

Location	Type of bone	Identifica- tion	Side	Individual no	Observation	Age
loc 3	rib	fragment	unspecified	1		
loc 3	rib	fragment	unspecified	1		
loc 3	rib	fragment	unspecified	1		
loc 3	rib	fragment	unspecified	1		
loc 3	rib	fragment	unspecified	1		
loc 3	c o x a l bone	ilium fragment	unspecified	1		
loc 3	c o x a l bone	crest of ilium fragment	right	1	20-30 y.	
loc 3	c o x a l bone	ischium fragment	right	1		
loc 3	c o x a l bone	ischium fragment	left	1		
loc 3	c o x a l bone	pubis fragment	unspecified	1		
loc 3	tooth	maxillary canine	right	1		
loc 3	tooth	maxillary first premolar	right	1		
loc 3	femur	diaphysis fragment	unspecified	1		
loc 3	femur	diaphysis fragment	left	1		
loc 3	femur	diaphysis fragment	left	1		
loc 3	femur	diaphysis fragment	unspecified	1		
loc 3	femur	diaphysis fragment	unspecified	1		
loc 3	femur	diaphysis fragment	unspecified	1		
loc 3	femur	diaphysis fragment	unspecified	1		
loc 3	femur	diaphysis fragment	unspecified	1		
loc 3	fibula	1/2 proximal	right	1		
loc 3	fibula	1/3 distal	right	1		
loc 3	fibula	fragment distal epiphysis	right	1		

Location	Type of bone	Identifica- tion	Side	Individual no	Observation	Age
loc 3	humerus	1/2 distal	right	1		
loc 3	humerus	1/3 distal	left	1	> 19 y.	
loc 3	humerus	diaphysis fragment	left	1		
loc 3	humerus	head fragment	left	1	> 19 y.	
loc 3	radius	proximal epi- physis	unspecified	1		
loc 3	radius	diaphysis fragment	unspecified	1		
loc 3	sacrum	fragment		1		
loc 1	foot	1st proximal phalange	left	1		
loc 3	foot	1st proximal phalange	right	1		
loc 3	foot	calcaneus	left	1		
loc 3	foot	2nd metatarsal fragment	right	1		
loc 3	foot	3rd metatarsal fragment	right	1		
loc 3	foot	3rd metatarsal fragment	left	1		
loc 3	foot	3rd metatarsal fragment	left	1		
loc 3	foot	4th metatarsal fragment	right	1		
loc 3	foot	5th metatarsal fragment	right	1		
loc 3	foot	metatarsal fragment	unspecified	1		
loc 1	foot	1st metatarsal fragment	left	1		
loc 3	foot	1st metatarsal fragment	right	1		

Location	Type of bone	Identifica-	Side	Individual no	Observation	Age
loc 3	foot	talus	right	1		
loc 3	tibia	distal epiphysis	right	1	> 19 y.	
loc 3	tibia	diaphysis fragment	unspecified	1		
loc 3	tibia	diaphysis fragment	unspecified	1		
loc 3	tibia	diaphysis fragment	unspecified	1		
loc 3	tibia	diaphysis fragment	unspecified	1		
loc 3	vertebrae	coccyx		1		
loc 3	hand	1st proximal phalange	left	2		Child/Ado- lescent (10
loc 2	hand	proximal phalange	unspecified	2	immature	years ±30m.)
loc 3	hand	capitate bone	unspecified	2		
loc 3	hand	metacarpal fragment	unspecified	2	immature	
loc 3	hand	proximal phalange fragment	unspecified	2	immature	
loc 3	hand	proximal phalange fragment	unspecified	2	immature	
loc 3	hand	1st metacarpal	left	2		
loc 3	hand	2nd metacarpal	left	2		
loc 3	hand	3rd metacarpal	left	2		
loc 3	hand	metacarpal fragment	unspecified	2		
loc 3	hand	intermediate phalange	unspecified	2		
loc 3	hand	intermediate phalange	unspecified	2		
loc 3	hand	intermediate phalange	unspecified	2	immature	
loc 3	hand	intermediate phalange	unspecified	2	immature	
loc 1	hand	proximal phalange	right	2	immature	

Location	Type of bone	Identifica-	Side	Individual no	Observation	Age
loc 3	hand	proximal phalange	unspecified	2		
loc 3	hand	proximal phalange	unspecified	2	immature	
loc 3	hand	proximal phalange	unspecified	2	immature	
loc 3	clavicle	1/2 acromial	right	2	immature	
loc 3	clavicle	sternal frag- ment	right	2		
loc 3	rib	1st	left	2	immature	
loc 3	rib	1st	right	2		
loc 3	rib	fragment	right	2		
loc 3	rib	fragment	right	2		
loc 3	rib	fragment	right	2		
loc 3	rib	fragment	right	2		
loc 3	rib	fragment	right	2		
loc 3	rib	fragment	right	2		
loc 3	rib	fragment	right	2		
loc 3	rib	fragment	right	2		
loc 3	rib	fragment	left	2		
loc 3	rib	fragment	left	2		
loc 3	rib	fragment	left	2		
loc 3	rib	fragment	left	2		
loc 3	rib	fragment	left	2		
loc 3	rib	fragment	left	2		
loc 3	rib	fragment	unspecified	2	immature	
loc 3	rib	fragment	unspecified	2	immature	
loc 3	rib	fragment	unspecified	2	immature	
loc 3	rib	fragment	unspecified	2	immature	
loc 3	rib	fragment	unspecified	2	immature	
loc 3	rib	fragment	unspecified	2	immature	
loc 3	rib	fragment	unspecified	2	immature	
loc 3	rib	fragment	unspecified	2	immature	
loc 3	rib	fragment	unspecified	2	immature	

Location	Type of bone	Identifica-	Side	Individual no	Observation	Age
loc 3	rib	fragment	unspecified	2	immature	
loc 3	c o x a l bone	acétabulum	right	2		
loc 3	c o x a l bone	ilium fragment	left	2	immature	
loc 3	c o x a l bone	ilium	right	2		
loc 3	skull	occipital fragment		2	immature	
loc 3	skull	parietal fragment		2		
loc 3	tooth	mandibular deciduous ca- nine	right	2	9 y. (±24 m.)	
Vest 1	tooth	mandibular second molar	right	2	10 y. (± 30 m.)	
loc 3	fibula	1/2 distal	right	2	immature	
loc 3	fibula	1/2 proximal	? left	2	< 16 y.	
loc 3	fibula	1/3 distal	left	2	immature	
loc 3	fibula	diaphysis fragment	unspecified	2	immature	
loc 3	fibula	diaphysis fragment	unspecified	2	immature	
loc 3	fibula	diaphysis fragment	unspecified	2	immature	
loc 3	fibula	diaphysis fragment	unspecified	2	immature	
loc 3	long bone	fragment	unspecified	2	immature	
loc 3	ossifica- tion sec- ondary centre	unspecified	unspecified	2		
loc 3	radius	proximal fragment	unspecified	2	immature	
loc 3	radius	diaphysis fragment	unspecified	2	immature	
loc 3	radius	diaphysis fragment	unspecified	2	immature	
loc 3	radius	diaphysis fragment	unspecified	2	immature	
loc 3	radius	diaphysis fragment	unspecified	2	immature	

Location	Type of bone	Identifica- tion	Side	Individual no	Observation	Age
loc 3	radius	diaphysis fragment	unspecified	2	immature	
loc 3	mesoster- num	sternebrae		2	immature	
loc 3	foot	? 2nd metatarsal	unspecified	2	immature	
loc 3	foot	? 3rd metatarsal	? right	2		
loc 3	foot	? 3rd metatarsal	left	2	immature	
loc 3	foot	calcaneus fragment	unspecified	2	immature	
loc 3	foot	calcaneus fragment	unspecified	2	immature	
loc 3	foot	calcaneus fragment	unspecified	2	immature	
loc 3	foot	talus fragment	right	2	immature	
loc 3	foot	1st metatarsal	left	2	immature	
loc 3	tibia	proximal fragment	right	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	

Location	Type of	Identifica-	Side	Individual	Observation	Age
loc 3	tibia tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	tibia	diaphysis fragment	unspecified	2	immature	
loc 3	ulna	proximal fragment	right	2	immature	
loc 3	vertebrae	? 4th cervical		2	> 6 y.	
loc 3	vertebrae	? 6th cervical		2	> 6 y.	
loc 3	vertebrae	cervical body fragment		2	immature	
loc 3	vertebrae	thoracic neural arch	right	2	immature	
Vest 1	vertebrae	sacral neural arch	left	2	immature	

Location	Type of	Identifica-	Side	Individual	Observation	Age
loc 3	vertebrae	5th lumbar f ragment		2		
loc 3	vertebrae	lumbar body fragment		2		
loc 3	vertebrae	thoracic body fragment		2		
loc 1	hand	metacarpal head f ragment		3		Adult (> 19 years), robust
loc 1	hand	proximal phalange	unspecified	3		
loc 1	femur	diaphysis fragment	? right	3	robust	
loc 1	fibula	diaphysis fragment	unspecified	3	robust	
loc 1	humerus	distal epiphy- sis fragment	? right	3	robust	
loc 1	l o n g bones	fragment	unspecified	3		-
loc 1	foot	metatarsal fragment	unspecified	3		
loc 1	foot	1st metatarsal fragment	? left	3	robust	
loc 1	foot	1st metatarsal fragment	right	3		
loc 1	foot	4th metatarsal fragment	left	3		
loc 1	foot	talus	left	3	robust	
loc 2	tibia	distal fragment	right	3	> 19 y.	
loc 1	tibia	diaphysis fragment	unspecified	3		
loc 1	foot	1st proximal phalange	right	4		Adult or Adolescent?
loc 1	foot	1st metatarsal fragment	left	4		

Location	Type of	Identifica-	Side	Individual	Observation	Age
	bone	tion		no		
loc 1	foot	2nd metatarsal fragment	right	4		
loc 1	foot	2nd metatarsal fragment	left	4		
loc 1	foot	3rd metatarsal fragment	left	4		
loc 1	foot	4th metatarsal fragment	right	4		
loc 1	foot	4th metatarsal fragment	left	4		
loc 1	? Ulna	diaphysis fragment	unspecified	5	immature	Child (probably youngerthan Individual 2)
loc 1	radius	diaphysis fragment	? right	5	immature	
loc 1	foot	1st proximal phalange	right	6		Adult or Adolescent?
loc 1	foot	1st metatarsal	right	6		

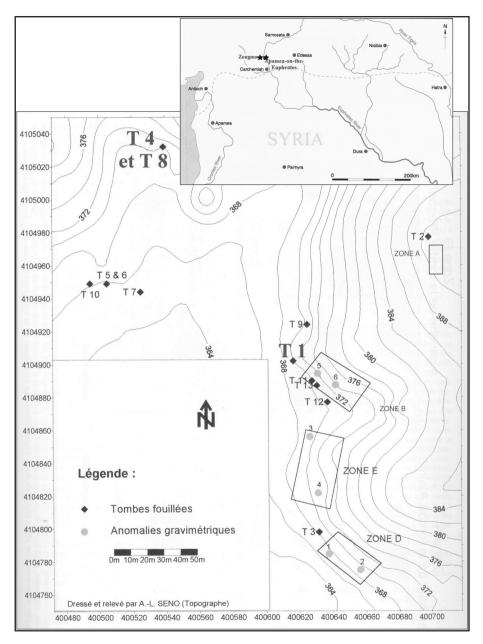


Fig. 1: Map of Southern Anatolia and Syria and topographical map of the necropolis of Apamea-on-the Euphrates.

(1998) (A. -L. Seno)

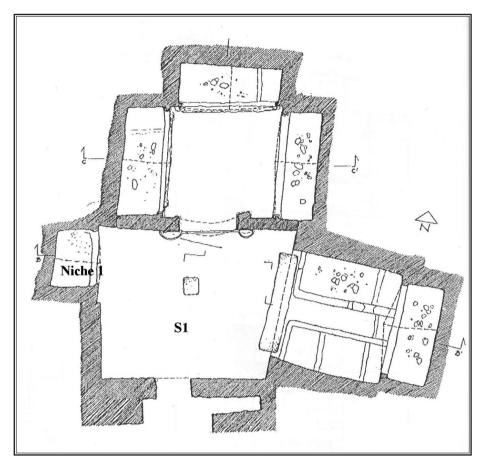


Fig. 2: Plan of the Tomb 1 (F.-Le Bec, E. Albrecht Czobor) (original scale 1:150).

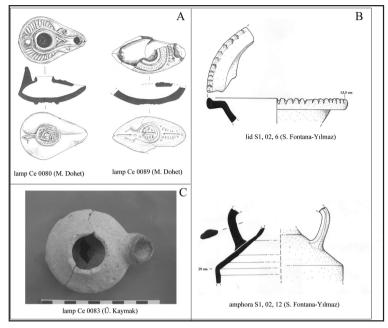


Fig. 3: Ceramics from Tomb 1. A - Lamps (5th - 7th AD) B - Byzantine pottery and C - Late lamp (6th - 9th AD).

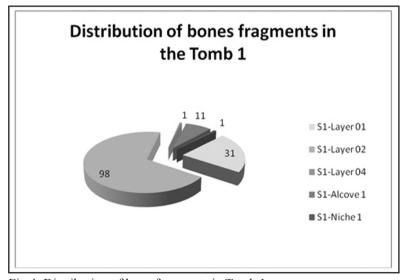


Fig 4: Distribution of bone fragments in Tomb 1.

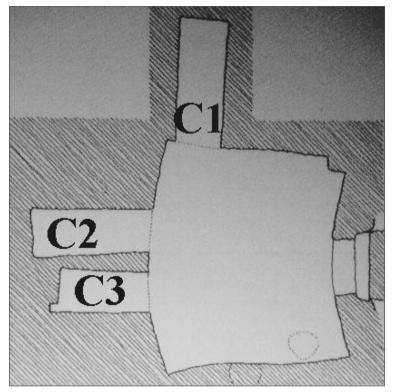


Fig. 5: Plan of the Tomb 4. (F. Le -Bec, E. Albrecht Czobor) (original scale .: 150)

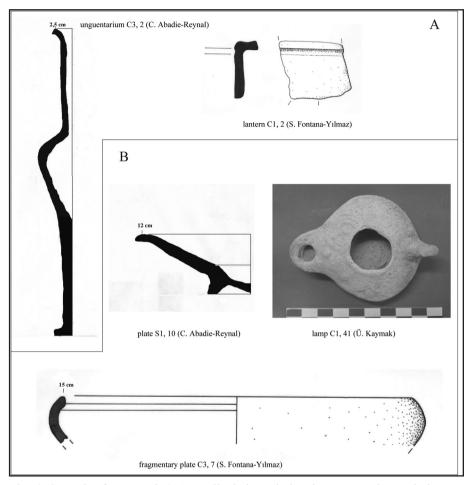


Fig. 6: Ceramics from Tomb 4. A - Hellenistic period and B - Byzantine period.

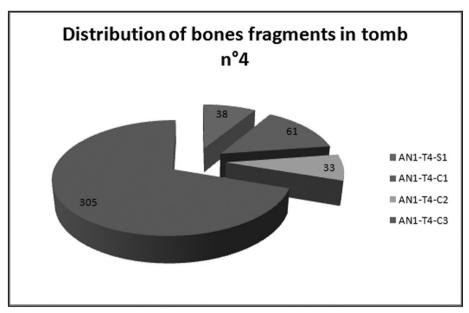


Fig 7: Distribution of bone fragments in Tomb 4.

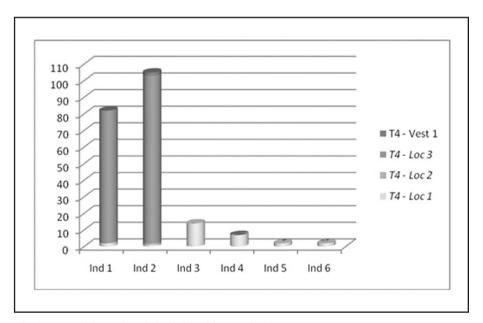


Fig 8: Repartition of each individual in Tomb 4.