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ARTÍCULOS

THE DITCHED ENCLOSURE OF CAMINO DE LAS YESERAS (MADRID): A SEDIMENTOLOGICAL APPROACH TO THE STUDY OF SOME SINGULAR STRUCTURES

EL YACIMIENTO DE «CAMINO DE LAS YESERAS». UNA APROXIMACIÓN SEDIMENTOLÓGICA AL ESTUDIO DE ALGUNAS ESTRUCTURAS SINGULARES: LOS FOSOS

Carlos Arteaga & Corina Liesau & Rosario García & Estefanía Pérez & Roberto Menduiña & Jorge Vega & Concepción Blasco[1]

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Abstract
This article contains a progress report on the sedimentological studies on ditched enclosures 4 and 6 from the Chalcolithic site of 'Camino de Las Yeseras' (Madrid, Spain). Due to the natural features on which the site stands, and using different analyses (particle size, texture, x-ray diffraction, and other physico-chemical studies), we were able to differentiate natural fillings from those anthropogenic in origin and, at the same time, establish the evolution of these structures' infilling. In this contribution we want to emphasize that the use of sedimentological techniques is essential when interpreting the use and clogging dynamics within the boundaries of ditched enclosures.

Keywords
Sedimentology; ditched enclosures; Chalcolithic; Camino de las Yeseras; Iberian Peninsula.

Resumen
Este artículo contiene un avance de los estudios sedimentológicos realizados a los fosos 4 y 6 del yacimiento Calcolítico de «Camino de las Yeseras» (Madrid, España). Debido a las condiciones naturales en las que se asienta el yacimiento, y empleando distintos tipos de análisis (tamaño de las partículas, texturas, Difracción de Rayos-X y otros análisis de carácter fisico-químico), hemos podido diferenciar rellenos

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naturales de los de origen antrópico, a la vez, que hemos establecido los procesos de colmatación de estas infraestructuras. En esta aportación queremos enfatizar que el empleo de las técnicas sedimentológicas es una herramienta imprescindible para interpretar la dinámica de uso y de colmatación en los recintos de fosos.

Palabras clave
Sedimentología; recintos de fosos; Calcolítico, Camino de las Yeseras; Península Ibérica.

I. INTRODUCTION

Camino de Las Yeseras (San Fernando de Henares, Madrid) is a large, third millennium BC site covering more than 22 ha, strategically located on a terrace at the confluence of the Henares and Jarama rivers. More than 8500 structures were documented after the area was mechanically cleared by four rescue campaigns. Only 1400 of these structures, covering a c. 3-ha surface area, were excavated by the *Gestión del Patrimonio S.L.* and *Argea, S.L.* archaeological companies (Blasco *et al.*, 2005; Vega *et al.,* 2009; Vega *et al*., 2010).

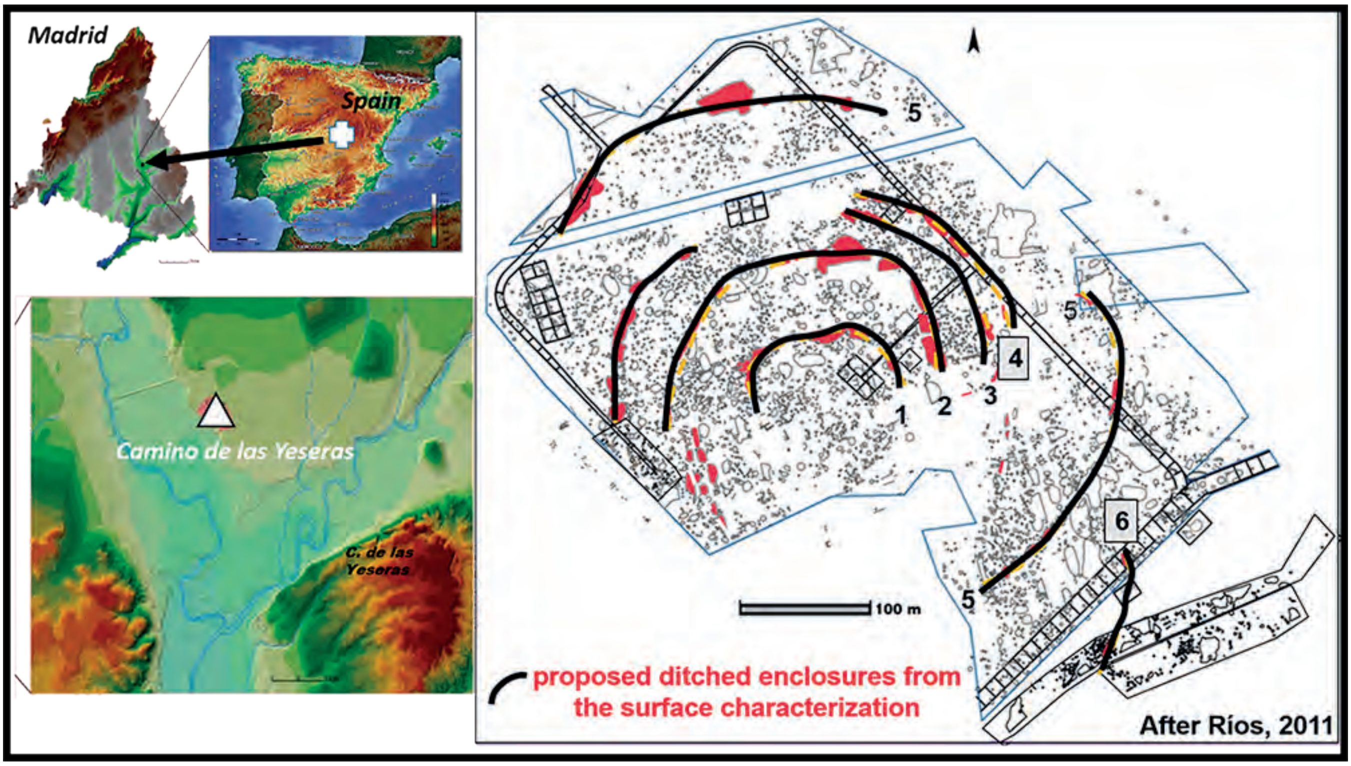

FIGURE 1. LOCATION OF THE STUDY AREA AND TRENCHES OF «CAMINO DE LAS YESERAS» SITE.

Taking into account the site's large size, its structural complexity and strategic location, and good communication by means of natural paths, controlling two valleys with fertile land for agriculture and stockbreeding, as well as other nearby important resources such as flint or salt, it is quite likely that Camino de las Yeseras represented some form of central place during the Chalcolithic (Liesau *et al*., 2008).

According to the dates, the site was in use between 3100 cal. BC and 1740 cal. BC (Ríos, 2011; 2013). It was also occupied by a smaller Middle Bronze Age settlement in its southern area. Some late Roman structures have also been documented in the central and northern areas, and a medieval cemetery was found in the western edge of the terrace. Fortunately, the different occupations do not overlap stratigraphically so there is no mixing of the different contexts within the structures.

The documented Chalcolithic structures reveal the most part of five concentric enclosures surrounding a big and deep central area covering a c. 600-m^2 surface area with more than 2m of fill. Another enclosure, in a different direction, is partially documented, but it has not been possible to establish its link to the other enclosures (Figure 1). Thousands of pits used for domestic, funerary and ritual activities represent the other, most frequent kind of negative structures present (Blasco *et al.,* 2007; Liesau *et al*. 2008, Blasco *et al.*, 2011). Additionally, several hut-structures with sunken floors for domestic activities were excavated. Other features were huts structures with sunken floors where found at the edges of the floor the excavation of small artificial caves, and one hypogeum in each of them were done for burials. These structures were interpreted as representing *funerary areas* and used as tombs

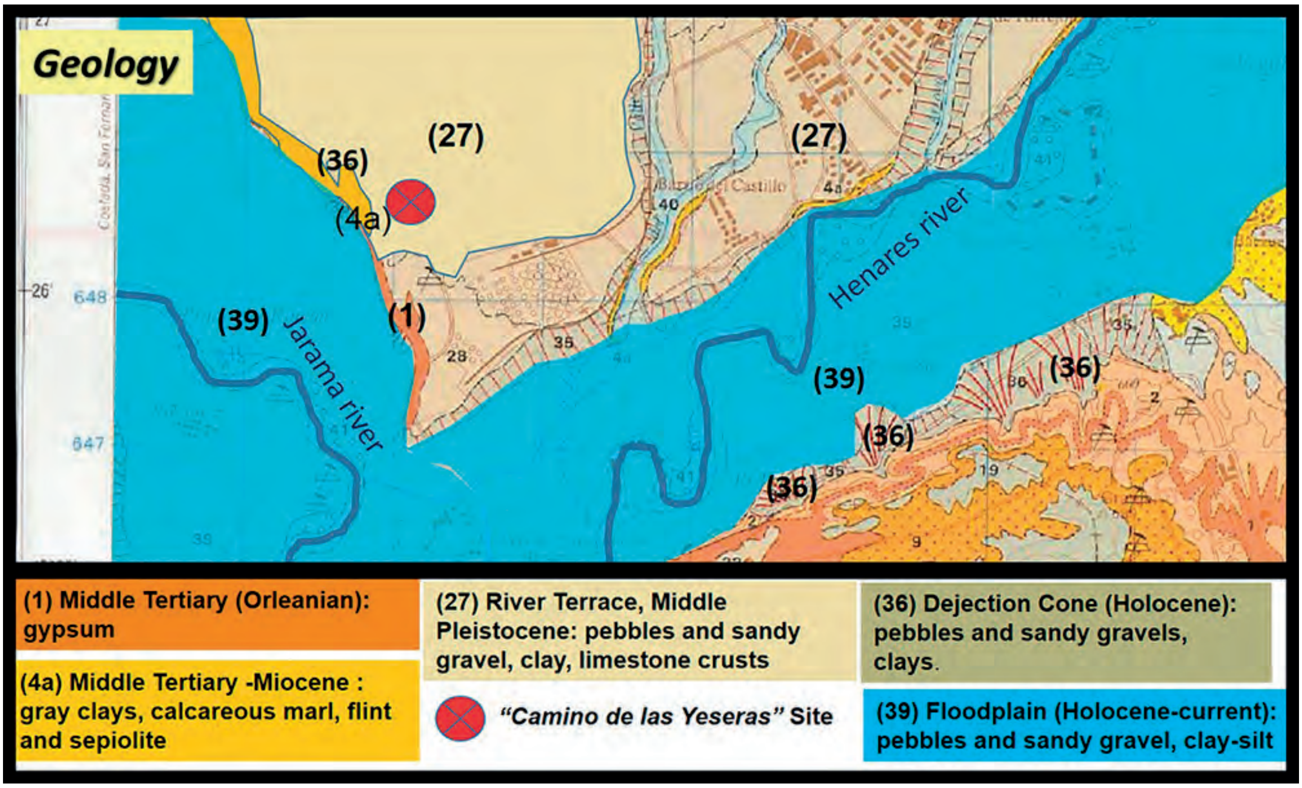

FIGURE 2. GEOLOGICAL MAP OF THE SITE. (Elaborated from the cartography of the IGME-Spanish Geological and Mining Institute).

for individual or collective Bell Beaker inhumations (Vega *et al.,* 2010; Blasco *et al.,* 2011). Other Chalcolithic burials, older than or contemporaneous to the Bell Beaker phenomenon, such as those described above, are also located peripherally in relation to the concentric enclosures in the southeastern area of the site (Liesau *et al*., 2008; Ríos *et al*., 2014).

Several stretches belonging to enclosures 3, 4, 5 and also to 6 were excavated (Vega, *et al*., 2009; Ríos, 2011; Ríos *et al*., 2014). This paper presents the preliminary results from the sedimentological analysis of one strech from enclosure 4 and another from enclosure 6.

In terms of its geological and geomorphic setting, the Camino de las Yeseras site is located on top of the Jarama river's fluvial terrace, with a Middle Pleistocene chronology (Figure 2). This terrace rests on top of a variety of mid-Tertiary materials (clay, Miocene and Orleanian limestones), working as a watershed eroded by the two rivers. Next to the site, the presence of a paleo-riverbed finishing in a small alluvial fan could be observed.

II. OBJECTIVES AND METHODOLOGY

Goals and methodology come together with a clear intention: to determine if the filling of the concentric enclosures under study here (4 and 6) is natural or anthropogenic in origin, and, additionally, to establish the sequencing of the infills.

Establishing particle sizes and the mineralogical study of the sediment that fills up the streches have been very useful. The efficiency of the combined use of sedimentological techniques as well as physico-chemical soil analyses has been proved by our study. This is because the surface that holds the site is a natural one: a fluvial terrace. In addition, this terrace shows a more or less organized accumulation of its vertical and sub-horizontal sedimentation, resulting from the seasonal fluctuations of Jarama river. Therefore, once those fill-in structures have been fully recognised from a sedimentological perspective, any alterations or discontinuities will alert us to the presence of a non-natural filling.

Methodology:

The application of sedimentology to archeological/geo-archaeological and prehistoric research has for many years been widespread, and due to length constraints no references are included here. In addition, sedimentologyical analysis has proved very efficient in the reconstruction of palaeolandscapes and palaeoenvironments, mainly those fluvial, marine and eolic environments next to sites. However, its application for the analysis of enclosures and grave fillings or other structures of anthropogenic origin is less common. Therefore, in order to apply them to our particular case, it was necessary to carry out intensive sampling in addition to possessing extensive geological knowledge of the site, which must meet the appropriate natural conditions.

In our case, the fact that this site is set on a Pleistocene fluvial terrace, formed long before the Chalcolithic settlement, is a positive factor, as was previously noted.

A total of 30 samples have been studied, of which a third are from the enclosures, the results of which are published alongside this report.

In summary, the samples obtained have undergone the following analyses: Particle size and texture, physico-chemical, and x-ray diffraction.

✻ Particle size and texture analyses

These analyses were carried out following classic sedimentology criteria set out by Trask (1933), Cailleux and Tricart (1959), Inman (1952), and Folk and Ward (1957). When the presence of silt and clay was noted, Boyoucos' criteria were applied (Boyoucos, 1936; Day, 1965). Once the samples were sifted and treated, different statistical indices were obtained in order to study the sands in terms of their particle size. The Trask Index (So), sand texture (percentage sand/silt/clay), particle size, and other sedimentological statistical indices have been important in order to determine the nature and classification of the sediment.

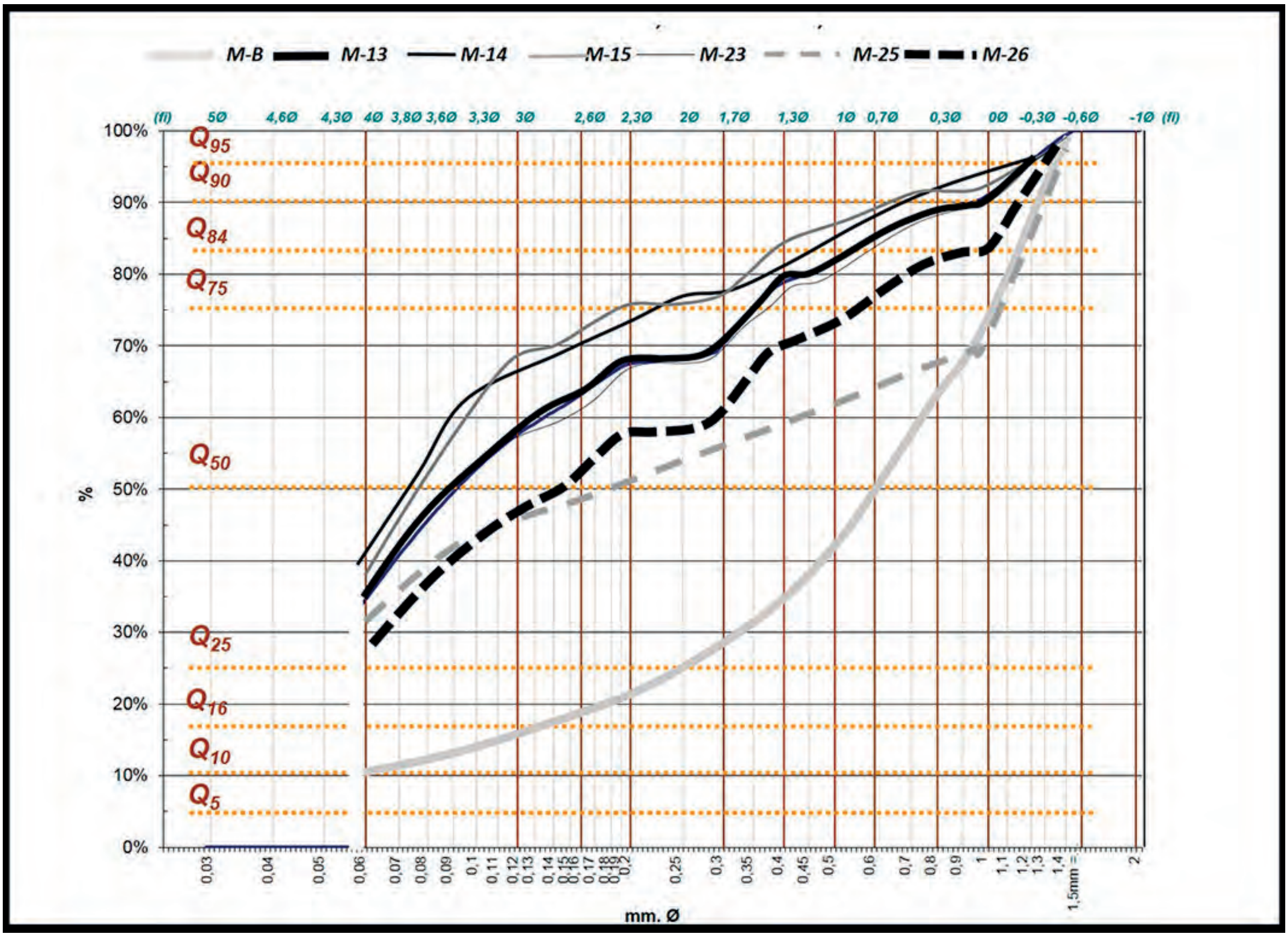

FIGURE 3. CUMULATIVE GRAIN SIZE CURVES.

More specifically, the Trask index is a statistical variable obtained from the particle accumulation curves designed by Tricart and Cailleux (Trask, 1933). It is mainly based on the following formula (Figure 3):

$$So = \sqrt{Q75/Q25}$$

Q, are the extracted quintiles from the resulting curve (Figure 3).

We think that this statistical index, despite its antiquity and simplicity, is still useful. Our laboratory can confirm the effectiveness of the index after having used it for 15 years' worth of studies and on 1000 sand samples from different modern environments that have allowed us to compared them with older sediments

In most cases, it is important to take into account that this variable usually ranges between So=1,1 and 3 when natural modelling agents (rivers, dunes, beaches, etc.) are present. On the other hand, slopes and colluvium material often produce higher Trask values (> 4).

Going back to our study, six samples were selected from enclosures 4 and 6, and the rest were found within different fluvial terrace formations (see table I). These latter samples were used to discriminate between the anthropogenic and natural origin of the infills.

However, it should be stressed that the analysis of the structures and the disposition of the sediments in situ helped us to make a first diagnosis on the origin of the accumulations (anthropogenic or natural), which, combined with the lab analysis, have provided us with the final results.

These analyses were conducted at the Physical Geography Lab of the Geography Department at the *Universidad Autónoma de Madrid*

✻ X-Ray diffraction

Mineralogical composition was studied by X-ray diffraction (XRD) using the random powder method for the bulk sample and the oriented slides method for the <2 µm fraction. The X-ray diffractometer is a SIEMENS D-5000 with a Cu anode, operated at 30 mA and 40 kV using divergence and reception slits of 2mm and 0.6mm, respectively. The XRD profiles were measured in 0.04 2θ goniometer steps for 3 seconds.

Mainly the presence of the following elements was noted: quartz, feldspar, mica, calcite, dolomite, hematite, phyllosilicates.

In this case, the analyses were conducted at the '*Laboratorio de Difracción de Rayos X de Policristal*' of the '*Centro de Computación*' at the *Universidad Autónoma de Madrid*.

✻ Sediment Physico-chemical composition

pH and conductivity were analyzed for every sample following the criteria set out by Dewis and Freitas (1970). The goal of these analyses was to determine the natural conditions of the fluvial terrace so these could be compared against the anthropogenic fill-up materials. Two Hanna instruments were used to determine pH and conductivity: Hanna 9024 and Hanna 9033, respectively.

The organic matter (hereinafter OM) was obtained by the ignition loss method (Davies, 1974), where the sample was subjected to a 430°C temperature. This allows for the total OM on the ground to be determined, including very condensed forms comprised of mostly elemental carbon, humus, and organic residue. These analyses were also conducted at the Physical Geography Lab (*Universidad Autónoma de Madrid*).

III. RESULTS AND DISCUSSION

III.1. IDENTIFICATION AND EXAMINATION OF THE SEDIMENTARY NATURAL PARAMETERS

The Pleistocene fluvial terrace in which the Camino de Las Yeseras Chalcolithic settlement lies has an approximate 5–10m capacity. The ditched enclosures do not, at any point, reach as far down as the terrace. As for the sedimentary structure, it alternates from the lower to the upper level, with increasing granulometry alternating between horizontal and subhorizontal layers, and finishing at the top with gravels and pebbles. This last level is covered by a very superficial and subactual floor (0.5m approximately)-(Figure 4).

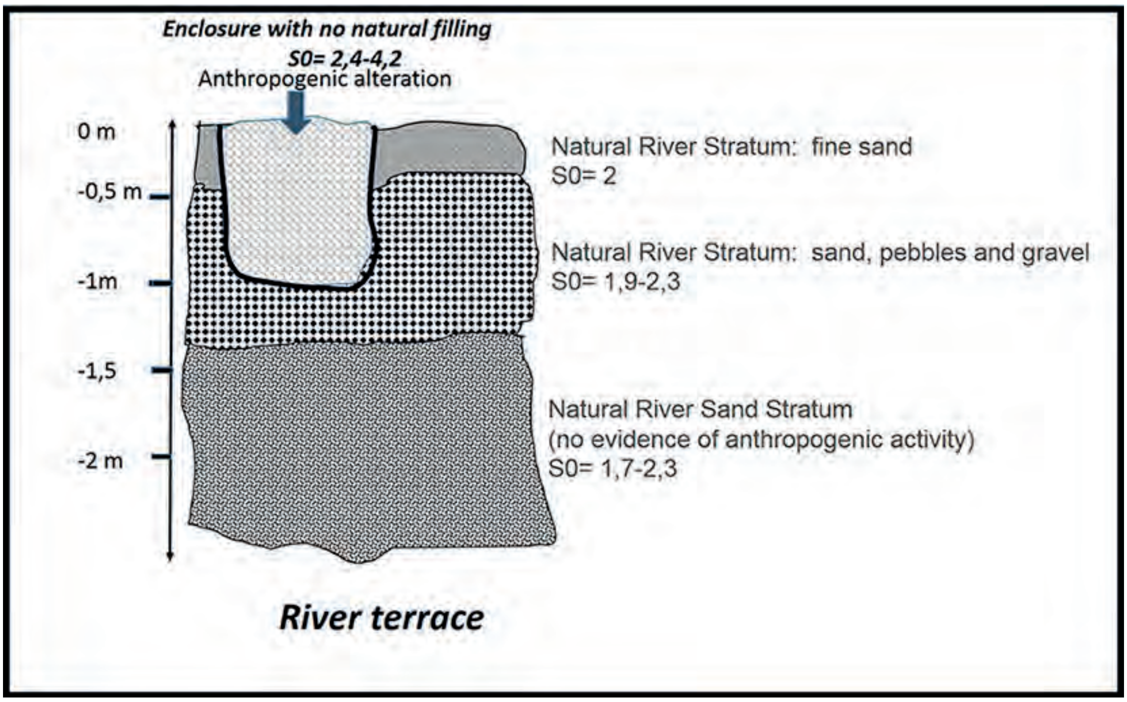

FIGURE 4. ALTERATION OF A FLUVIAL TERRACE AND ITS GRANULOMETRIC STRUCTURE.

Four fluvial terrace samples have been studied. Their synthesis and means are shown in table I under the 'B' header.

ENCL	Sample	Quartz %	Feldspars %	Calcite %	Dolomite %	Hematite %	Phyllosilicates %	ph	Cond. µSiemens/cm	O.M. %	Sand %	Silt/Clay	Trask Index
4	M-13	56	17	20	0	0	7	6,22	134	2	72	28	2,4
4	M-14	17	47	17	0	4	15	6,11	137	4	70	30	1,97
4	M-15	20	17	10	0	4	49	6,23	143	4	70	30	1,81
6	M-23	17	40	20	3	3	41	6,78	144	7	71	29	2,48
6	M-25	20	38	21	0	3	18	6,1	111	10	74	26	4,2
6	M-26	17	8	44	id	0	29	6,1	131	10	78	22	3,05
NAT.	B	25-75%	40-10%	8	0	0	7	6-6,3	110-140	5 aprox	70/90	30/10	1,7/2,3

TABLE I. RESULTS OF SEDIMENTOLOGICAL ANALYZES.

In light of the sedimentology and mineralogy analyses, the following have been considered 'natural parameters' to distinguish them from those of anthropogenic in origin:

a) The average grain size of the deposit ranges between 0.4mm and 0.62mm in the fluvial terrace's low' and medium areas. This would be sand of a medium-large type. In the highest levels, particle size is between 0.07mm and 0.09mm. Trask index values range between So= 1.7 and 2.3. Figure 3 shows that the curve for the natural sample (B) is different to the samples belonging to the filled enclosures.
b) As for the physico-chemical parameters of the substrate that form the fluvial terrace, we have to point out that the mean pH is slightly acidic, around 6.2. We also found low levels of conductivity (134 microSiemens) and organic matter (0–5%). All of these are normal parameters for a sand deposit of fluvial origin. However, this acidity may explain the strong alterations undergone by many of the bones at the site.
c) In terms of the mineralogical composition, quartz is the predominant element (65–80%), followed by feldspar (10%), calcite (8%), and phillosilicates (7%). All this confirms the acidity as well as the conductivity described before.

The 4 and 6 enclosures will be now analysed taking these 'natural' limits into account.

III.2. ENCLOSURE 4

Enclosure 4 from Camino de las Yeseras is the best documented as it could be detected by surface characterization up to 60m, and 42m of it have been excavated. Morphologically it is irregular, but generally U-shaped, 1.35–3m in width and with depths ranging between 0.45m and 1.40m. Two entrances have been documented, a smaller one and another with an almost 5-m broad access area to the centre of the site (Vega *et al.*, 2009; Ríos *et al.*, 2014). On the northern side of this access, a foundational deposit with faunal remains reveals the importance of this area: a complete dog skeleton accompanied by the hindquarters of a piglet were carefully placed in a pit excavated at the base of the ditch, as well as several articulated hindquarters of a cow, a horse and the wing bones of a black stork, which were recovered in the lower levels of the southern side of the access area (Liesau *et al.,* 2013-2014).

Four samples from this enclosure have been studied: M-13, M-14, M-14a and M-15 (Figure 5).

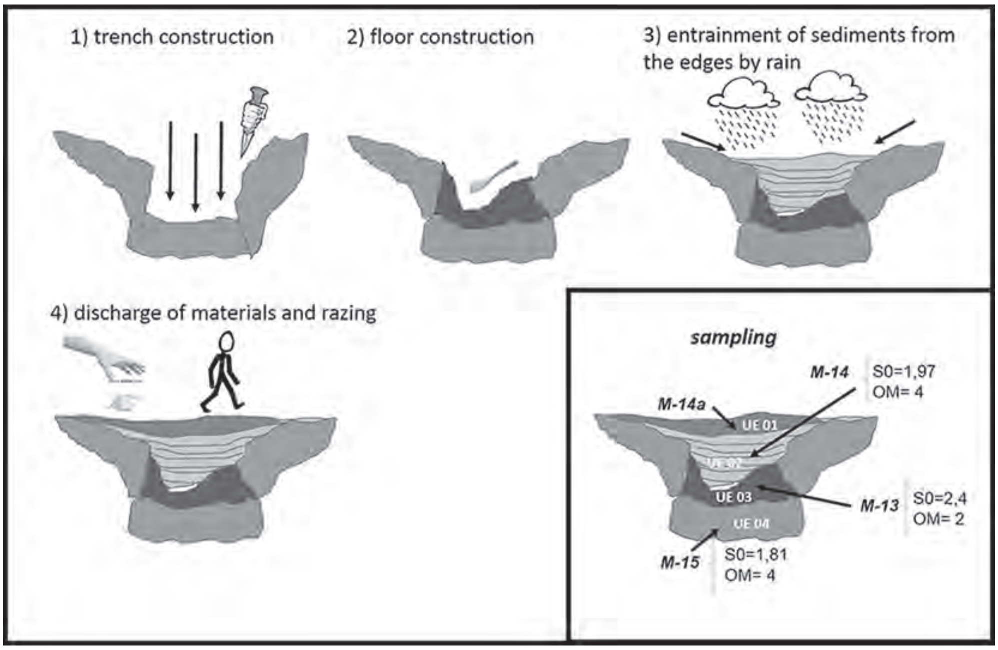

FIGURE 5. SAMPLING AND EVOLUTION OF THE FILLING IN THE ENCLOSURE 4.

a) The most superficial level, UE01, was very anthropogenized with sherds of pottery and other artefacts. It was not necessary to carry out a sedimentological analysis because the level was highly altered.
b) The underlying layer UE02 is the main deposit for almost 50cm (M-14), with a loamy sand texture (70% sand, 30% clay and silt) and a 0.07mm particle size meaning a very thin sand array. The Trask index related to the natural deposits of the fluvial terrace (So < 2) stands out.
c) UE03 represents the anthropic soil and it has traces of mud mixed with organic materials that were used to build a wall (M-13). The matrix has a loamy sand texture (72% sand and 0.09 mm particle size). The Trask index is So 2.4, which places it between a natural and an anthropogenic origin.
d) Finally, the geological layer or natural level of the fluvial terrace, on which the infrastructure (M-15) is based. Again there is a loamy sand texture (70% sand, very thin with a 0.08mm particle size). The Trask index corresponds entirely to a natural accumulation belonging to the fluvial terrace (So=1.81).

The conductivity, pH and organic matter are very similar in all the enclosure's deposits, with low values of around 135 micro Siemens,predominating acidity (pH:

6.1–6.2) and a low, but normal percentage of organic matter (2–4%). 'Hematite' was found in UE03 and UE04, its presence perhaps linked to waterlogging episodes. Having said this, we do not rule out the possibility that it may originate from the ochre which was occasionally used in other areas of the site, especially for ritual deposits (Liesau *et al*., 2008; 2013).

It should be noted that the walls and the internal filling, except the one in the most superficial level of the enclosure, present sedimentary characteristics very similar to those of the fluvial terrace. Therefore, the textures are loamy sand (70–72% sand, 27–28% lime and 1–3% clay). The mean particle size of the sand is around 0.07–0.09 mm, that is to say, very fine. However, the enclosure floor has an anthropogenic origin (Figure 5).

We must point out that the scarcity of OM (2–4%) indicates that there were no significant waterlogging episodes. Nonetheless, considering the data we have, we can say that the filling in enclosure 4 is mainly natural in origin, with the exception of the deepest layer (UE03) and the superficial level (UE01). The evidence for this is described below:

1. The analysis of the macro structures that conform the filling of the strech show a sedimentary horizontal/sub-horizontal deposition, and represent the prolongation of the edges and sediments of the adjoining wall, presenting a light concavity in the shape of a slightly pronounced channel.
2. In terms of the physico-chemical analyses, samples present similar conductivity, pH, although slightly different OM content. Therefore we have confirmed that the inputs are from the enclosure wall itself (Pleistocene fluvial sediments), maybe as a result of its dismantling and subsequent deposition at different stages as a consequence of the 'sheet flood erosion'. The Trask index shows that the sediment of the filling and the one at the bottom where the 'anthropogenic soil' is supported clearly belong to a fluvial deposit (1.97 and 1.81, respectively). That is to say, the Chalcolithic filling maintains the sedimentary characteristics of the fluvial Pleistocene terrace, and thus is the result of its dismantling. However, the 'rammed earth' has a Trask index of 2.4, slightly above the 'natural' values, showing a probable anthropogenic contamination.
3. Finally, on the surface, the filling culminates with sediment of anthropogenic and archaeological materials: many pottery sherds, two pedunculated flint arrowheads, some faunal remains and many bone artefacts, some charcoal, and several mud fragments. Additionally, we also noted that this final accumulation is richer in feldspar.

Enclosure 4 has definitely been built on the river terrace, on which some kind of infrastructure with a mud plastering or covering was added to avoid erosion and a animal structured deposition (Ue 03). Afterwards, it filled up naturally as a result of small floodings (rain) and with the progressive dismantling of the ditch's edges. Finally, the upper levesl were covered by human action with a decametric layer composed of different materials: faunal remains, bone artefacts pottery sherds and lithics (Liesau et al., 2013-14).

III.3. ENCLOSURE 6

Enclosure 6 was documented in the southern part of the site with the excavation of two stretches, both far away from each other (c. 50m); the large area between these two stretches was neither excavated nor mechanically cleaned (Figure 7) (Vega *et al.,* 2009: 256). In the northern strech, several sediment samples close to a pre-Beaker collective burial were taken. This collective burial in a pit is very interesting, not only because of the sequence of the inhumations, but because this pit is older than the excavation of the ditch (Liesau *et al.,* 2008; Blasco *et al.,* 2009; Gómez *et al.*, 2011). When the excavation and direction of the ditch were planned, the trajectory of the ditch changed in this area and became a more curved line with respect to the previous tomb, as shown in Figure 6.

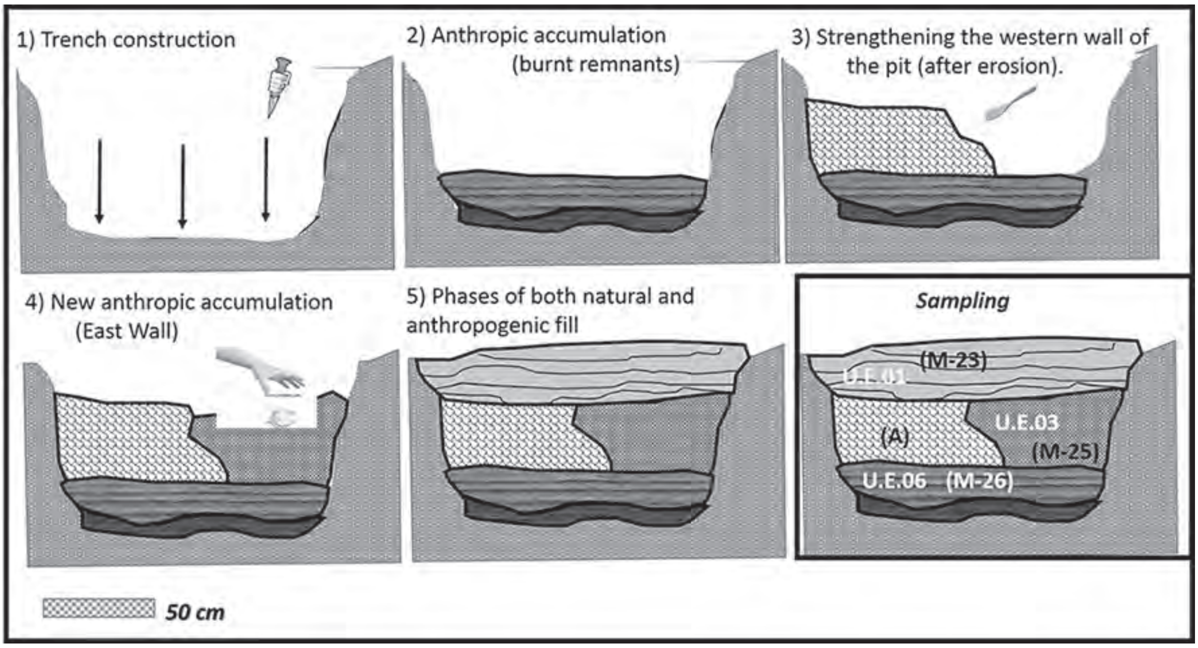

FIGURE 6. SAMPLING AND EVOLUTION OF THE FILLING IN THE ENCLOSURE 6.

The section excavated on this enclosure shows some differences to the Enclosure 4. It is over 25m long and 2m wide, and it's close to one m deep (0.86m).

Three samples linked to the 3 filling phases were analysed (Figure 6): M-23, M-25 and M-26.

Their characteristics and positions can be described as follows:

→ Sample M-26 was obtained from the bottom of the enclosure (UE06), which is supported by the geological layer. It is mainly composed of thin sand (0.15mm mean particle size) with a loamy sand texture (78% sand). Its thickness reaches 15–20 cm and is rich in calcite (44%) and OM (10%).

- Above UE06 we find layer UE03 (M-25), with sediments that form a package inclined towards the bottom of the enclosure from the eastern wall. This dip is apparently anomalous. Its sediment's texture is loamy sand: 74% sands with a fine mean particle size (0.18mm). Its richness in feldspar (38%) and OM (10%) is worth noting; 'Hematite' was also found (3%). It has a high Trask index (4.2) so its deposit can *a prior* be considered unnatural.
- Filling level (A): It is parallel to the previous one and it is also found over UE06. It is 30cm thick and covers only the western edge over approximately 20cm. It was not necessary to sieve the sample for reasons to be explained later.
- Sample M-23 belongs to the most superficial layer (UE01). It has a thickness of 10–35 cm and a loamy sand texture, but with very fine sand (0.09mm). The amount of OM is moderate (7%) and some pebbles were found in between the sand array. The trask index is between a possible natural or anthropogenic origin (2.4). However, the array is barren in human remains. Also, the presence of some 'Hematite' was also noted (3%) although its origin is uncertain at this time.

The results of the analyses are conclusive; the filling of this structure is clearly anthropogenic for several reasons:

a) Trask rates for all of the fillings are very elevated (above 2.3, the threshold for a natural origin); even UE03 has a So value of 4.2.
b) There is an excess of OM from different origins in the natural soil (7–10%). This can be linked to human presence (e.g. garbage, waste rituals, decaying plant material, etc.).
c) **Level (A)**, 30cm thick, is clearly anthropogenic: It does not have a stratigraphic disposition (with no longitudinal or lateral continuity), and is different to the rest of the fillings, as it has a very high concentration of carbonates and also an abnormal compaction when compared to the rest. We interpret it as a coating or a reinforcement of the western wall, as it presents an erosive retreat with small collapses. It is possible that the enclosure started disintegrating as a result of water channel-hopping and the human inhabitants of the settlement solved it by creating a protective embankment. The reasons for this are still under study and, at present, we can only but put forward a hypothesis - in light of all the evidence, this protection had an objective: to avoid further damage to the burial and the ditch's deviation was obliged to enclose the previous tomb by a curved trajectory (Figure 7).
d) At the bottom of the sediments, corresponding to M-26, there are burnt remains of different nature, which even affect the fluvial terrace's geological level.
e) It is only in M-23 that there are horizontal accumulations, probably due to natural reasons.

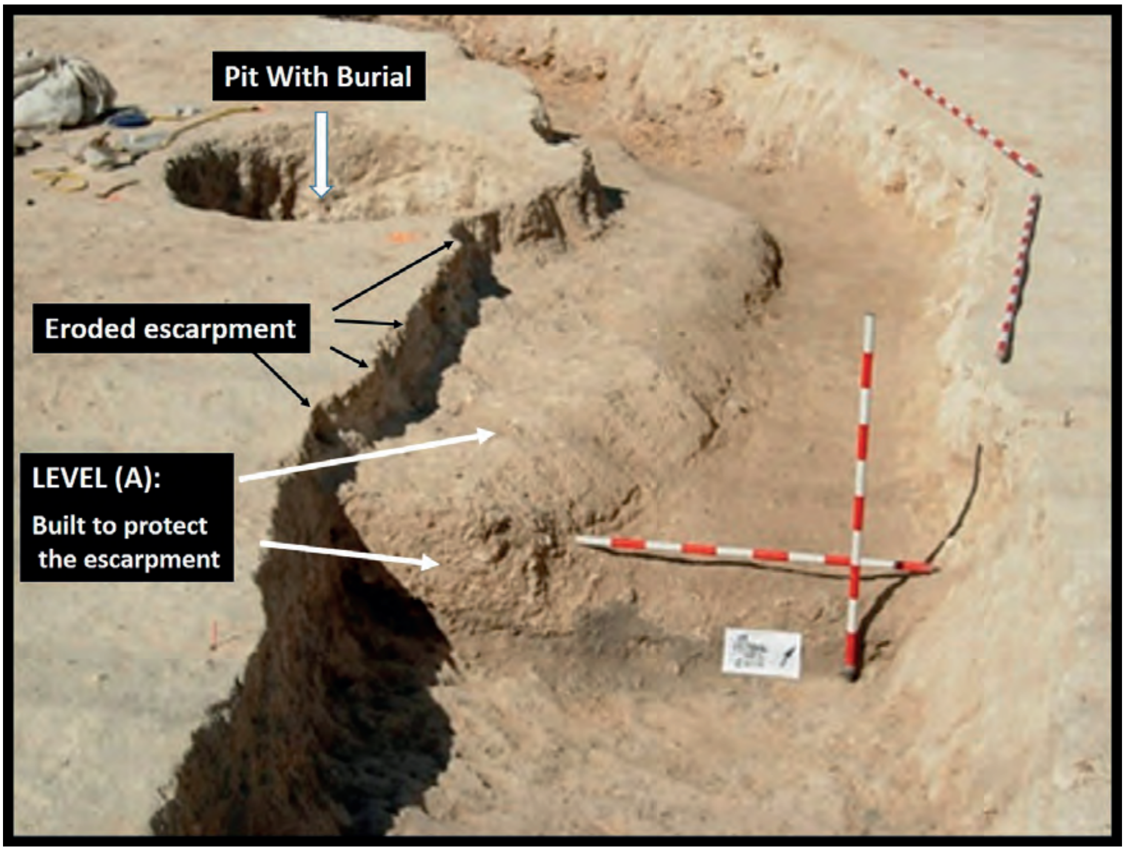

FIGURE 7. IMAGE SHOWING THE PROTECTION OF THE TOMB NEXT TO THE ENCLOSURE 6

From all the above data we can deduce that the enclosures under study were filled during different events and sometimes in a somewhat anarchic way. There are parts of the enclosures that have been filled at specific times with earthworks on the floor, including to preserve the original walls. These events can have a noticeable effect even if they take place in a single day.

The same applies if the fillings are natural. If we consider that the site is in a semi-arid climatic domain, torrential rains are common, and these are able of mobilizing large volumes of fine sediments, which would clog ditches in a very short time interval. Furthermore, the filling in a ditched enclosure that is reused and protected could have very close elements in space, but would otherwise be silted up at different times and spaces, as we were able to demonstrate for one of the main accesses to the site, where different articulated animal remains reveal a foundational action as also other punctual events in the filling of the ditch (Liesau *et al.,* 2014).

As the aim of this paper is to present the characterization of two punctual filling processes and not an exhaustive discussion about other researches on other Iberian enclosures (Díaz del Río, 2003; Márquez, Jiménez, 2010; Valera, 2013, 2014; Delibes et al., 2016), we would also like to briefly question some assumptions that have recently been published by other colleagues (Balsera *et al.,* 2015), especially with regard to the time it takes to fill the ditched enclosures. Taking into account the radiocarbon dates published from this site (Liesau *et al.*, 2008; Ríos, 2011, 2013), it was proposed that it would probably take between 20 to 40 years for ditch 4 to fill up and more than 100 years between the filling of ditch 5 and the eccentric one (ditch 6) using the Bayesian model (Balsera *et al*., 2015: 151–153). As models can help to explain timings of use and abandonment of these singular negative structures, without the knowledge of the nature of the sediments, some of the statements are mere proposals and need to be demonstrated through empirical data. As we have seen, it is not only difficult to determine the longevity of the stretches, but also the fill rates. What seems to be clear is that, on the one hand, the inhabitants of 'Camino de las Yeseras' intentionally protected their ditches through the application of mud plastering for more or less 'long-term' use, and otherwise the walls of some stretches are protected with an inner buttress of a compact earth step. Otherwise, we cannot discard the idea that intentional digging took place, when these enclosures were filled up by torrential rains as also if all the ditches are really comparable in use and function during in these long-time occupations. Whatever these functions were, it seems clear that they were initially planned to be empty spaces, and were kept this way by avoiding erosion through the application of processes using selected clays as enclosure 4 has shown.

IV. CONCLUSION

We can conclude that the analyses carried out on the fillings confirm their different clogging phases, with alternating anthropogenic and natural origins to the layers. However, some differences were found between the two enclosures. In enclosure 4, after its excavation, an anthropic action took place when a mud plastering was made; time passed and, losing its initial function, it ended up covered with the sediments resulting from the action of later stages of waterlogging and floods (maybe evidenced by the presence of 'hematite'). Afterwards, the ditch that was left behind was intentionally filled with different artefacts until it levelled with the soil.

In the enclosure 6, an anthropogenic action is recognized at its bottom. Apparently, as some time went by, and waterlogging and other erosion processes took place, the wall near the tomb suffered a setback that would have forced to protect it with a reinforcement wall on its western flank. Before the ditch, the tomb was well-known and highly respected for centuries as the radiocarbon dates have revealed by the sequence of the burial. Afterwards, the eastern flank was filled, but for a different reason to the other one: it is more of a dumping ground than a reinforcement. Then, what was left of the enclosure would have been filled more naturally, although the soil might have suffered some anthropogenic alteration.

Finally, regarding the methodology and analyses, we must conclude that, in our opinion, the sedimentological studies are essential tools and indicators when interpreting the filling processes of enclosures. However, we must be sure that the base on which the site is located corresponds to a natural geological soil accumulation. Therefore, sedimentological analyses help us to put forward correct interpretations in relation to the not-always-easy interpretation of these negative structures fillings, especially in ditched enclosures, where natural and single events determine the use and silting processes of these enigmatic structures.

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