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Julio M. Román Punzón, Manuel Moreno Alcaide, Pablo Ruiz Montes, Julio Ramos Noguera, Antonio Peralta Gómez*

Life and afterlife of a Roman villa in western Granada, Spain: Salar from the 4th to the 7th centuries

1. Introduction

The mechanical earthworks caused by the construction of a wastewater treatment plant in the municipality of Salar (Granada, Spain) in November 2004, brought to light various material remains dating from Roman times. After several years of archaeological interventions, and fundamentally, since the archaeological direction was taken over by a scientific team from the University of Granada in 2016, the Roman villa of Salar has been placed among one of the most important agricultural facilities of Roman *Hispania*, thanks to its exceptional architecture and the good conservation of its decorative elements as well.

To date, only a large part of the aristocratic residence has been excavated. This constitutes a minimal section of what must have been an enormous rural exploitation, in view of the wealth and luxury shown by the excavated sections of the *pars urbana* corresponding to the Late Empire.

Five years after the start of scientific research at this site, we believe that it is a good time to update our historical knowledge of this unique Roman villa. Thus, the objectives of this work can be summarised as follows:

- Contextualise the construction and historical development of the Roman villa of Salar from the 4th century, in the economic, social and cultural dynamics of Roman *Baetica*.
- Analyse the phases of construction project and the different spatial areas, so that we can characterise its architecture and establish comparisons with other similar rural residences.

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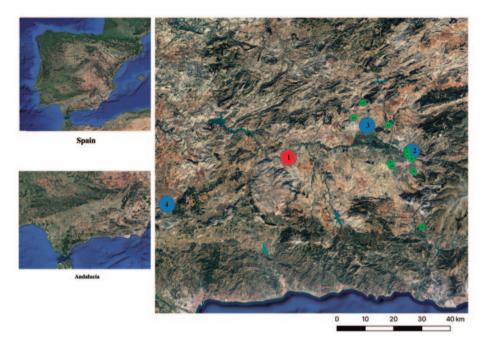


Fig. 1. Maps. 1. Salar. 2. Iliberri (Granada). 3. Ilurco (Pinos Puente). 4. Antikaria (Antequera). 5. Mondragones (Granada). 6. Fuentenueva (Granada). 7. Estación de Autobuses (Granada). 8. Los Vergeles (Granada). 9. Híjar (Las Gabias, Granada). 10. Gabia (Las Gabias, Granada). 11. El Laurel (La Zubia, Granada). 12. Lecrín (Lecrín, Granada). 13. Cubillas (Albolote, Granada). 14. El Tesorillo (Moclín, Granada). 15. Daragoleja (Pinos Puente, Granada).

- Demonstrate the different remodelling and structural adaptations that the villa underwent in response to the appearance of new social needs based on ideological and religious changes.

The Roman villa of Salar is located in the town of the same name, in the West of Granada, more specifically in the southern part of the region of Loja (Granada). Within Salar town, the villa is located in an area of great agricultural wealth and strategic importance due to the unique location of rural settlement next to the Salar stream, a tributary of the river Genil just 800 metres away, which was the main historical communication route in the Vega of Granada that connects *lliberri* with *Antikaria*, and from there, towards the coast of Málaga and the middle valley of the Guadalquivir (fig. 1).

There is evidence of occupation in the region since the Neolithic, and at the site from the 7th century BC. Rural settlement, including *villae rusticae*, developed between the 1st and 2nd centuries AD, being very important in the Late Imperial period (Jiménez 2002, p. 73). These were mainly oriented towards agriculture and arboriculture (in which the exploitation of olive trees and the production

of oil must have been the main activity), complemented in the interior valleys by livestock farming.

The Salar villa must have been one of these *villae rusticae* that dotted the fertile Genil Valley, located next to its tributary, the Salar stream. Excavated evidence indicates that a rural complex existed probably from the middle of the 1st century AD. The foundations were razed some 40 cm below the base level of the later walls, except at the corners where they were preserved to serve as foundations for the new 4th century AD villa.

2. New patterns of rural settlement: a new phenomenon during the Late Imperial period

The small amount of data provided by archaeology for the 1st and 2nd centuries AD contrasts with the information on the occupation of the *territorium* of the Roman cities of the Vega de Granada during the Later Empire, and those located in the Antequera Depression. A phase of remodelling and monumentalisation of the *partes urbanae* of numerous known *villae* has been documented on top of previous buildings during the 4th century AD.

In this sense, the *villae* of *Iliberri* (Granada) are well known, both suburban: Mondragones (Granada) (Rodríguez *et al.* 2014, pp. 459-496), the villa of Los Vergeles in Primavera street (Granada) (Pérez, Toro 1989, pp. 228-232), Fuentenueva (Granada) and Estación de Autobuses (Granada); and those in its *ager*: the villa of El Laurel (La Zubia, Granada), the villa of Lecrín (Lecrín, Granada), the villa of Híjar (Las Gabias, Granada) (Ruíz, Padial 2001, pp. 463-467) and the Roman villa of Gabia (Las Gabias, Granada) (Rodríguez *et al.* 1999, pp. 64-71). Regarding the *Municipium Ilurconensis* (Cerro de los Infantes, Pinos Puente, Granada), we highlight the villa of Cubillas (Albolote, Granada) and El Tesorillo (Moclín, Granada); thus, the villa of Daragoleja (Pinos Puente, Granada) would fall within the orbit of *Calecula* (fig. 1). On the other hand, the recent intense activity of public constructions in the Antequera Depression has made it possible to document more than a dozen rural enclaves of different sizes, among which the villa of La Estación (Antequera, Málaga) stands out (Romero *et al.* 2006, pp. 239-258).

Such a wealth of information contrasts with the knowledge available for the Vega de Loja, where archaeological interventions have been relatively scarce. The data provided for this knowledge come from the surveys that show a high level of occupation of the territory around the Cerro de la Mora (Moraleda de Zafayona, Granada) (Román 2006).

This is the context of the construction and monumentalisation of the Roman villa of Salar which, for the moment, has not been assigned to any specific *civi*-

tas. The appearance of pottery dating from the 4th to 6th centuries AD is continuous in all the areas excavated to date. However, these materials always appear in the context of the collapse of the rooms, once they have been abandoned or, in the case of the most recent ones, in certain spaces reoccupied later. This is largely due to the excellent preservation of the pavements, which has prevented us from analysing their foundation levels, except in the Sector 3 test pit. This problem with chronologies has led us to complement the dating of this building phase, mainly with stylistic parameters related to the mosaic pavements of the villa, which place us in the 4th century AD, and more probably in the second half of this century (Marín 2016, pp. 438-439; Román *et al.* 2020, pp. 437-445). The research on the pottery will allow us to clarify and specify these dates.

In this sense, the construction of the villa during the 4th century AD entailed a profound transformation of the landscape of the Canuto site. The articulation of the different rooms of the villa on terraces, on at least three different levels, made it necessary to carry out important work to lower and cut the terrain, which had a decisive effect on the buildings described above.

The architecture and decorative elements of the *pars urbana*, constructed according to the orders of its *dominus*, help us to understand the social realities of this rural enclave in the 4th century AD and the magnitude of the changes which took place (fig. 2).

2.1. Rooms for self-representation and display

The *peristylum* is the main distribution space: a quadrangular porticoed courtyard, of approximately 8 metres on each side, with four columns on each of its sides.

For the time being, the most unknown part of the courtyard is its interior area, the viridarium, which remains under the soil that separates the oldest interventions from those carried out since 2017. The appearance of smaller column shafts than those used in the ambulacra, reused as construction material during Late Antiquity in different parts of the courtyard, has led us to hypothesise the existence of a fountain-like structure in the central area, arranged with some kind of pond. This was something very typical of this type of space (Dessales 2014, pp. 29-30) and of Late Roman Hispanic architecture (Stephenson 2009, pp. 337-360). The use of water in the peristyle is demonstrated by the construction of a perimeter channel made of hydraulic mortar that collected the water coming from the ambulacra roof (fig. 2). This channel takes the form of an exedra, like a small semi-circular fountain, on the southwest side of the viridarium (on the central axis of the space), establishing a marked axiality. This scheme is probably repeated on the northern and southern sides, being monumentalised on the eastern side by a structure that advances over the viridarium (diaeta). So far, a single drain with two outlets has been documented in the aforementioned exedra; one to-

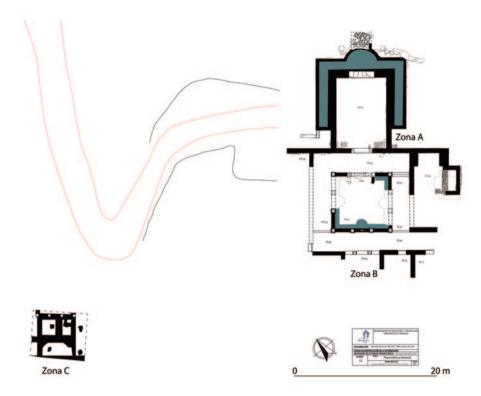


Fig. 2. Plan of the Roman villa of Salar, updated 2021.

wards the *ambulacrum* pavement (possibly for occasional cleaning), and other towards a channel running westwards under the hunting mosaic.

Next to the peristyle is an apsidal space that opens directly onto the north-western ambulacrum in the central part, on the same axis as the entrance to the *triclinium*. This space is flanked by two columns (the most monumental known to date) formed by column drums without bases with a diameter of 0.58 m and approximately 3 m apart. The columns at the end of the peristyle are smaller and of a different architectural order, since they have a base supported on a plinth with the structure of a torus, scotia and moulding plane, preserved to a height of 0.47 m. The interesting thing about this space, which is at the same elevated level as the northeast aisle, is that it was built over the *signinum* canal mentioned above, and must have had the shape of an apse (according to the fragment of mosaic preserved that shows a 45° break in the decoration of its border), coinciding with the orientation of a small pillar that is embedded in the profile and that marks this change in the inclination of the *opus testaceum* wall (fig. 2). Hidalgo identifies this space with a *diaeta*, establishing a similarity with the Casa de Los Mármoles in Mérida (Hidalgo 2017, pp. 192, 201).

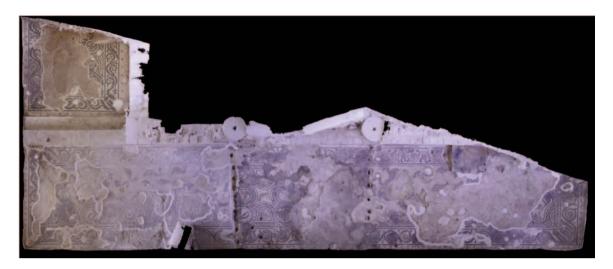


Fig. 3. Ambulacrum with marine thiasos mosaic.

For our part, we see great similarities between this space and the one documented in the *Maison du Triomphe de Neptune in Acholla* (Tunisia), which is located in the same central point of the peristyle and has the same symmetry and axiality with its main room for self-representation, paved with marine-themed mosaic (Gozlan 1992). The closest geographical example with a similar plan is the Roman villa of Carranque, where an apsidal space advances over the peristyle (Fernández-Galiano *et al.* 1994, pp. 317-326; García-Entero *et al.* 2011-2012, pp. 155-172). Another example of a room that goes inside the *peristyle* can be found in the *Villa del Casale* (Piazza Armerina), where an apsidal hall (known as the Sacello dei Lari) dedicated to the cult of the domestic divinities was built and located, in this case, on an axis with the entrance hall (Cantamessa 2012).

Of the four *ambulacra*, only the one located to the northeast is completely known, while those documented to the Southeast and Southwest are partially known. The Northeast aisle is the one leading to the *triclinium* and it is elevated by two steps compared to the side aisles, with a length of 13.35 m and a width of 2.50m. It is paved with a figurative mosaic pavement representing a marine *thiasos* (Fernández *et al.* 2019, pp. 179-192) (fig. 3). It also preserves part of the mural painting in its north and east corners. The great monumentality of this corridor was enhanced by the columns describe above, which formed a monumental entrance that framed the access to the *triclinium*. In fact, only the *triclinium* and the apsidal space open to the *viridarium* of the peristyle could be accessed from this corridor.

The Southeast ambulacrum is 2.50 m wide but narrows at the ends to 2.40 m, due to the greater width of the plinths on which the columns were erected. We

know both the eastern end (1.90 m - Zone A) and the southern end (0.80 m - Zone B), where a small percentage of the geometric mosaic was found in the 2017 campaign. This hall was separated from the southwest ambulacrum by a threshold approximately 2.40 m long by 0.20 m wide. In the 2020 campaign we were able to partially excavate the opposite *ambulacrum*, also paved with a mosaic of vegetal motifs, which had undergone major transformations in the following centuries.

Finally, the Southwest *ambulacrum* is a corridor 15 m long (excavated so far) by 2.50 m wide. It is paved with a figurative mosaic with hunting scenes (Fernández et al. 2019, pp. 179-192), something deeply symbolic since it shows the power and self-representation of the elites (fig. 4). Architecturally, it is characterised by the fact that it goes beyond the limits established by the central courtyard, extending towards the south, its length being greater than that in the northeast. Normally this type of corridor adapts to the length of the courtyard, but we have parallel examples where their length is increased to give access to new rooms, as in the villa of Cadima (Los Gallardos, Almería) (Hidalgo 2017, p. 198) and in the aforementioned cases of the Maison du Triomphe de Neptune in Acholla (Tunisia) (Gozlan 1992), the villa of Carrangue (Fernández-Galiano et al. 1994, pp. 317-326; García-Entero et al. 2011-2012, pp. 155-172), and in the villa of Casale (Piazza Armerina), which also has the Great Hunt mosaic. The continuity of this corridor would be related to new spaces (yet to be excavated), which could in turn be linked to a thermal complex. From this corridor there would be no access to the interior of the courtyard, from which it is separated by a low



Fig. 4. Ambulacrum with mosaic of hunting scenes.



Fig. 5. Inscription with tria nomina at the base of the column shaft.

parapet, but there would be access to three spaces that have been documented to the southwest and a final one at its northern end, of which only its threshold is known.

Of these rooms, the most outstanding is located on an axis with the peristyle and the *triclinium*, marking a profound symmetry and theatricality of the spaces. The room had a tripartite connection with the Southwest ambulacrum; the entrances (of which the central opening is the largest) were separated by columns that were preserved above the corridor (fig. 2). The thresholds do not show any indentations for the use of doors, so they were directly connected. In addition, at the base of the monolithic shaft of the south column there is an inscription (probably a tria nomina) consisting of the letters LVP, which could refer to the owner of the villa, to a quarry mark, or to specify its exact position (fig. 5). Regarding the inscription LVP, at the base of one of the columns at the entrance to the possible vestibulum and which we interpret as the initials of the tria nomina of the owner, we wonder whether the V, which corresponds to the nomen, could be related to the gens Valeria, which, as we well know, was an important family of Iliberritan origin (from Granada, and so much so that some of its members reached the highest magistracies and social scales in Rome (ordo senatorial)). Their fortune derived mainly from their extensive and numerous possessions in

Baetica, and of course, in the fertile plain of Granada, which even led them to create an important credit institution, known as *Kalendarium Vegetianum*, which financed an important part of the Baetican oil that supplied the Roman *annona* in the 1st and 2nd centuries AD (Orfila, Sánchez 2011).

The floor is paved with a mosaic whose central space remains unexcavated, but which reveals the existence of a large octagon formed by cords containing animal motifs and objects, such as kraters. Although it is still too early to determine the function of this space, we believe that it is a large, monumental access to the complex, like a large vestibule, as in the Roman villa of La Olmeda. This way, those entering the villa would see at the same time the tripartite entrance, behind which is the peristyle, and, at the back behind the *diaeta*, the raised and monumentalised *triclinium* with a larger columned entrance, as indicator of Romanization (Meyer 1999, pp. 108-121). In this place of self-representation, the *dominus* would receive his friends and clients in a space presided over by a waterfall as a kind of *nymphaeum*.

In this sense, the most prominent spaces in domestic architecture, whether urban or rural, are the rooms of self-representation and *convivium*, where the *dominus* can display his power to clients and friends and hold banquets (Dunbabin 1996, pp. 66-80; Stephenson 2016, pp. 54-71). The main hall of the villa of Salar is the *triclinium* (Dunbabin 1991, pp. 121-148), which is located at the northeast end presiding over the peristyle, rising above it by a step and with a monumentalised entrance through its columns. It has a rectangular floor plan measuring approximately 10m by 6.90m, with a polychrome *opus tessellatum* floor with geometric motifs and a plinth with marble slabs and parietal *opus sectile*. Parallels can be found in the nearby villas in the plains of Granada and Antequera (Villa Romana de Gabia and Villa Romana de la Estación, respectively).

The *triclinium* is bordered by a U-shaped *nymphaeum* pond on three sides. It is covered with *signinum* and topped by an apse at the head of it, from where it received water through a small artificial waterfall covered by fragments of speleothems, i.e., a mineral deposit formed by the precipitation of calcium carbonate deposits in caves (fig. 6). Based on the terracotta vaulting tubes (*tubi fit-tili*) documented during the excavation, we believe that this space would have been covered by a vault that further develops the concept of a *grotta* or sacred grotto. Therefore, the *nymphaeum* of the villa of Salar could be classified as a niched fountain (Gagniers *et al.* 1969) with a sloping cascade, following the known types of nymphaeum ad edicola in the classification of Neuerburg (1965, pp. 61-64) and Letzner (1990, type XVI). This typology can be found in other places in Hispania, such as the Casa dos Repuxos in Conimbriga (Correia 2005).

The *triclinium* must have had large windows from which diner's guests could watch all the ways in which the water flowed. One of these can be seen at the head of it, where two *opera testacea* pillars have been preserved, creating a large open space from which to contemplate the falling water. Thus, the marked



Fig. 6. Speleothems in the *nymphaeum* cascade.

axiality and symmetry accentuate the character of *otium* (typical of these establishments) with the visual and sound effects produced by the water that surrounded it (Moreno *et al.* 2020, pp. 187-188).

2.2. Other rooms and decorative style of the 4th century villa

The rest of the rooms pose greater problems in terms of defining their function, as they have only been partially excavated. We consider as reserved spaces or *cubicula* those located in the *ambulacrum* of the hunting scene (fig. 2). The first of these, almost completely excavated in 2017, is in front of the southeast corridor of the peristyle and is accessed through a monolithic limestone threshold. The room is approximately 3.60 m wide, but its depth is unknown, as it lies below the excavation profile. It is paved with a polychrome mosaic of geometric motifs. On its southeast side, a new room was excavated in the 2018 campaign, but we do not know its total dimensions yet. It was accessed from the southern extension of the peristyle, through a threshold just like the one described above. Both spaces have a mosaic floor with geometric motifs (Román *et al.* 2020, pp. 437-445). In addition, their elevations would have been decorated with mural painting, at least the skirting boards. Although the remains of pictorial decoration have been very poorly preserved in this area, we



Fig. 7. Terracotta vaulting tubes keystone (tubi fittili).

had the opportunity to recover, between 2018 and 2019, a large panel of mural painting measuring about 80x50 cm (currently in the process of consolidation and restoration), imitating mottled marble limited by a frame – which finds its closest parallel in the Cordovan villa of El Ruedo (Almedinilla, Córdoba), in room LVIII, wall 90 east (Hidalgo 1990, fig. 2) – and which allows us to extrapolate what the parietal decoration of these rooms would have been like. Not only have remains with marble motifs been excavated, but also geometric and floral motifs of great technical quality.

Apart from the rooms described above, we know of two other spaces in the villa that are distributed around the peristyle. The one located to the north of the *ambulacrum* of the marine *thiasos* was partially excavated in 2020, revealing its mosaic pavement. The small size of the excavation area does not allow us to hypothesise about its possible function.

On the opposite side, there is a room that has been excavated by our team since 2016. It is articulated around a central quadrangular space, to which two rectangular spaces open on the northeast and southeast sides. We do not know its extension towards the west, as this is the current limit of the excavation, although we think that this is the place from where the room would have been accessed, since no type of opening has been documented in the area already investigated. A reading of this space allows us to understand the programme of its

builders, who took great care to ensure the harmony and symmetry of this room and its relationship with the structural ensemble of the villa. The original mosaic floor of this room has only been partially preserved due to its prolonged occupation until at least the 6th century AD. The particular roof system, based on terracotta vaulting tubes (fig. 7), was made with a technique that was well known in North Africa and of which we have evidence in other villas in the Vega de Granada (Moreno *et al.* 2019a, 2019b).

The descriptions made up to this point about the building work of the villa of Salar lead us to come up with some interesting hypotheses about the influences on its construction. On the one hand, the decorative motifs of the mosaics are closely connected with the so-called "Guadalquivir School", indicating a greater influence of the villa towards the Guadalquivir valley. On the other hand, both the choice of the theme of the mythological and hunting mosaics, as well as the use of the tubi fittili technique, demonstrate important connections with North Africa. In this sense, several researchers have already proposed the possible arrival of North African artists and craftsmen to the Iberian Peninsula (Dunbabin 1978, pp. 219-220), based on the evident connections and influences observed in the mosaics of both regions (Dunbabin 1978: p. 268; Blázquez 1991; Blázquez et al. 1991; Álvarez 1997). All this, together with the decorative and sculptural programme, of which the Capitoline Venus made of marble from the Pentelic guarries stands out (Loza et al. 2021) (fig. 8), only highlights the wealth and social pre-eminence of the dominus of the villa during the 4th century AD.



Fig. 8. Venus sculpture, after its restoration (2022).

3. New ideas, new religion? The 5th century remodelling

In the early years of the 4th century AD, the Council of Elvira was held within the present-day province of Granada (Sotomayor 1994; 2000; Sotomayor, Fernández 2005). It was a meeting that evidenced the existence of a Christian community of considerable influence on the Iberian Peninsula, which allowed it to convene and organise an assembly of this calibre. It was attended by representatives of 37 Christian congregations from the five peninsular provinces, which required suitable buildings and facilities for the celebration of the event, as well as to conveniently host so many illustrious visitors (Román 2014, p. 500). In other words, it is an event that demonstrates the early Christianisation of Granada at the end of the 3rd and beginning of the 4th century.

Although it is true that, from a material point of view, the evidence of the Christianisation of Late Granada (*Eliberri*) is still very scarce, the meeting described and the confirmation of the existence of ecclesiastical figures of considerable importance and influence in the written sources (the case of the prelate Gregory of Elvira, in the 4th century) (Molina 2000, pp. 13-274), give good proof of the high degree of Christianisation in the region.

In this context, the Vega de Granada has not been very prodigal in terms of finds, and these, moreover, are highly disputed regarding their supposed Christianity. We can highlight two pieces of evidence regarding the Christianisation of the western plain, where our villa is located. The first of these is the epitaph of Nocidius (CIL II2/5, 698), discovered in Valderrubio, which refers to the presbyter Nocidius, whose death took place between 589 and 594 (Román 2004, pp. 69-70). The second of these is much more interesting in terms of its content: the inscription from Los Villares (CIL II2/5, 715) (Cortijo de la Artichuela, Fuente Camacho, Loja). Currently preserved in the Iglesia Mayor de la Encarnación in Loja and dated to an undetermined time in the 7th century (Pastor, Mendoza 1987, pp. 302-304), it records the consecration of the basilica of Saints Peter and Paul, in which "rest the relics of the following saints: Saint Mary, Saint Julian, Saint Stephen, Saint Acisclusclus, Saint Lawrence, Saint Martin, Saint Eulalia, Saint Vincent of the Three Saints".

As we can see, there is not much evidence of Christianisation in the Vega of Granada. Nor is there much evidence at the villa of Salar, but it is possible that a change in the religious mentality of the owners (in the sense of their Christianisation) can be seen in the 5th century remodelling of two of the mosaics: the mythological mosaic of the eastern corridor and the hunting mosaic of the northern corridor of the peristyle.

With respect to the first, the mythological scenes of the marine *thiasos* underwent some alterations that have been dated, according to stylistic criteria, to the



Fig. 9. Marine mosaic repairs, with fish and dolphin motifs (first half of the 5th century).

5th century AD (Marín 2016, p. 290). These are a series of 23 marine animals (including dolphins and various fish species) depicted on a neutral background, which constitute real "patches" in the composition of the original mosaic (fig. 9). It seems evident that the workers and mosaicists who carried out these alterations could have reconstructed the mythological scenes which, deteriorated by the passage of time and the use of these spaces, would have required the aforementioned repairs. However, they intentionally decided to maintain the marine atmosphere of the previous mosaic, but not to reproduce the mythological scenes, which suggests a change in the mentality of the owners.

To support this hypothesis, we will look at certain scenes that appear in the other case mentioned, that of the figural mosaic with hunting scenes in the western corridor of the peristyle. We will focus on two representations of leopards. In the first of them we can see a design of a large leopard, catching a horse by the rump. The horse's legs are overcome by the powerful attack of the beast, making the rider fall backwards. From the abundant blood that gushes from his wound, which spills out between the leopard's claws, we can reconstruct the original design of the horseman being grabbed by his neck or head by the jaws of the enormous feline. During the 5th century alterations, this detail of the bloody scene was replaced by a simple vegetal representation of undetermined interpretation (fig. 10).

The reasons that led to this decision seems to have been a conscious and intentional decision not to depict the scene in the same way. The second representation shows a leopard attacking an ungulate (fig. 11). The beast, ready to leap and grab its prey, is shown in a rampant attitude. It is framed in a landscape made up of various small plant representations, which we can relate to trees, given the similarity between these and the large trees that separate the original scenes of the hunting mosaic. From the larger size of the tesserae and the fact that it overlies the other scene, obliterating the horse's head, we can clearly see that this is a remodelling of the original mosaic.

It is possible that this was a deliberate remodelling motivated by a change in the religious confession of the owners of the villa. In this respect, it is rather curious the way in which, with no apparent explanation, the tops of the small trees that frame the leopard, like the landscape in which the scene takes place, are topped by small crosses. These also appear on two occasions as an isolated motif among these plant elements. Although this decorative motif is not absent

Fig. 10. Mosaic repair with vegetal stylization.

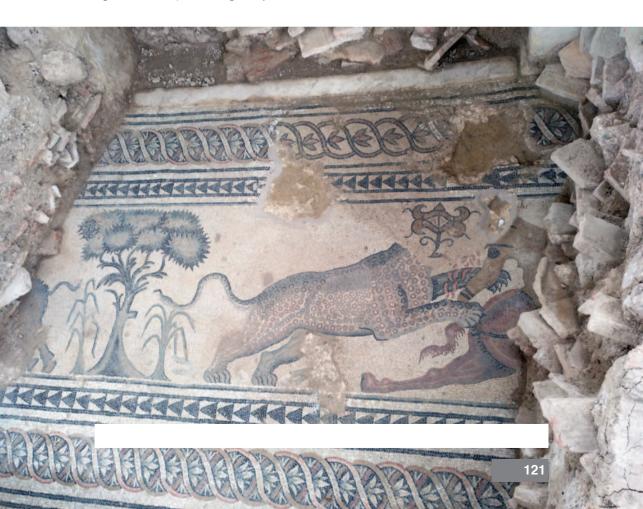




Fig. 11. Mosaic repair with leopard and tree miniaturizations.

from the plastic art of the Roman period, it is absent from the Roman villa at Salar, appearing for the first time in these 5th-century AD alterations.

Thus, we suggest that the profusion of cross-shaped elements adorning the new scene could be a way, perhaps still somewhat cryptic, of showing the new religiosity of the *dominus* and his family at an advanced point in the 5th century. In the same way we could also interpret the non-reproduction of the scene of the beheading of the horseman, which would not only be too bloody for Christian tastes but could also remind them of the *damnatio ad bestias*, i.e., the condemnation to death of the first Christians devoured by these beasts in Roman spectacles.

These alterations to the mosaics are the only construction evidence that we have been able to date with a certain degree of precision in the villa of Salar, which does not seem to have undergone any significant modifications between its monumentalised reconstruction in the first half of the 4th century AD and most of the 5th century AD, probably until the middle of the same century.

Secondly, in the last excavation campaign (2022) we decided to take a sounding of a new area of the site, located some 50 metres to the northwest of the areas currently excavated. The most interesting thing was the construction of a "monumental" complex during the 6th century. From this we have been able to identify part of a room topped with an apse (semi-circular on the inside and rect-

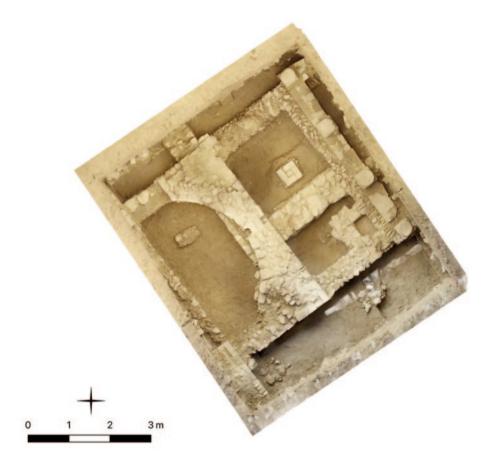


Fig. 12. Archaeological structures documented in 2021.

angular on the outside) and, associated with it a couple of metres to the east, we have documented a possible peristyle courtyard with four columns on the western side (fig. 12). A rammed earth pavement, in an average state of preservation, was excavated between these two constructions. Beyond the functionality of this room – impossible to recognise so far given the lack of elements to determine it (pavement, decorative elements, movable materials) – the most interesting thing is to note that its level of use and burial contained very late material: a fragment of edge of ARSW D Hayes 91C, which takes us to the middle of the 6th century. In other words, we confirm the construction of a building of a certain monumentality that uses previous structures (possibly belonging to the *pars rustica*), at a date as late as the first half/middle of the 5th century (perhaps in relation to the reforms observed in the mosaics of the eastern and western corridors). It must have constituted a new building with a function so far unknown, but which could be related to the fine part of the villa.

4. The end of a model: the occupants of the Roman villa of Salar in the 6th to 7th centuries

The last phase of occupation of the Roman villa of Salar is characterised by a series of small architectural transformations that denote a change in the pars urbana, which ceases to have an aristocratic, single-family residential character and takes on a more rudimentary, humble and multi-family appearance. In this sense, there is a change in the original function of the residential buildings of the villae, "which are no longer used as residences for the leisure of the owner and the ostentation of his wealth and power, but as places where new activities were carried out or as a place of habitation for people who lived in much more rudimentary conditions than their original owners" (Chavarría 2007, p. 125). This conversion is materialised in the frequent appearance of new and more modest structures over the rooms and buildings of the pars urbana. These are frequently made with material from the villa itself or with perishable materials (wood), using poorer construction techniques, and are normally associated with a ceramic package where the use of locally/regionally made vessels, in coarse or poorly refined pastes, is abundant or exclusive. All this has conditioned, until recently, both their chronological dating and their identification (Chavarría 2007, p. 138).

In the specific case of the Roman villa of Salar, several of these phenomena are very clear. At an undetermined moment in the second half of the 5th century, a series of structures begin to appear that allow us to propose the abandonment of the residential area by the owner of the *fundus* (but not its ownership), and its reoccupation by other social groups with interests other than the enjoyment of the luxury and comforts that the Salar residence offered them. It is very likely that it was the peasant families working on the *dominus'* lands who moved into the villa's rooms and proceeded to refurbish and compartmentalise them, as well as changing their function and reusing building materials.

Thus, there are several spatial areas where these modifications are very evident. In the *triclinium* we can identify a quadrangular hearth made of reused solid bricks, which sits directly on top of the once well-kept mosaic, severely altering it (fig. 13). Structures identical to ours are documented in the Roman villa of Fuente Álamo (Puente Genil, Córdoba) (Vargas 2016, p. 216). Associated with this phase, two large benches (also made with reused bricks) were documented on both sides of the entrance to the room, as well as two small pillars (with the same material and construction technique) attached to the jambs of the entrance, narrowing its opening.

In front of the entrance to the *triclinium*, and practically in line with the pillars described above, we have identified two lines of post-holes (six in total) piercing the mosaic of the eastern aisle of the peristyle (fig. 3). They must have constituted a humble construction made of perishable materials that compartmentalised



Fig. 13. Fire point on mosaic of the triclinium, and other structures, made with reused bricks.

the large space of the *ambulacrum*. Perhaps this ephemeral construction should be related to the closure of the opening of the peristyle's exedra, which connected it to the eastern aisle, by means of the demolition (most probably intentional) of one of the enormous columns that flanked the opening of the exedra (specifically, the southernmost one), and which monumentalised the physical and visual connection of this viewpoint overlooking the *viridarium* with the *triclinium*. In addition, there is another quadrangular hearth with the same characteristics as the one mentioned above, but somewhat smaller in size, in the northernmost part of this corridor, which suggests that this area was used as a kitchen. In this way, and on the basis of the appearance of both hearths, we could propose the existence of at least two different family groups, one living in the living room of the Salar dwelling, and the other in the eastern corridor.

On the other hand, in Sector 3 there must have been another family group reoccupying this room. This assertion is supported by the documentation of a level
of use that, together with the discovery of a package of ashes and some coals,
caused a fire that, in turn, led to the collapse of room's structures – mainly its
spectacular vaulted ceiling, made with hundreds of *tubi fittili* (Moreno *et al.*2019a, 2019b) – (fig. 14). The study of the pottery contained in the mentioned
level allows us to date the end of its use during the first half of the 6th century AD.



Fig. 14. Excavation process of the roof system using tubi fittili, collapsed.

Moreover, this would coincide with the use of the abscission structure and the peristyle courtyard documented in Zone C, which confirms that the villa must have been definitively abandoned around the middle of the 6th century AD.

Regarding the level of use of pottery (fig. 15), the group of reducing-oxidising Roman cookware is predominant over the rest of the classes. They all fall into the category of coarse ware, and there is no fine ware present, although there are containers and some amphorae. The cooking pots are vessel-like: a small-medium sized, a globular body, an umbilicated bottom – as can be seen from certain examples in the group and a simple, hollowed-out rim. Some of them have certain decorative resources such as occasional undulations on the rim or some parallel incised lines on the shoulder. Very similar vessels dating the 6th century AD have been found in some sites in Madrid, such as Rivas-Vaciamadrid (Vigil-Escalera 2007, p. 380) or Gózquez (Vigil-Escalera 2003). It is worth noting their similarity to the handleless turned rim pots from l'Horteta de Alcasser, chronologically located between the mid-6th century and well into the 7th century AD (Alapont, Ballester 2007, p. 202 and fig. 10, 1027-10). Similar, although somewhat different from the previous ones, it is a smaller globular or pyriform-shaped vessel with a short, straight marked neck and an exvased rim with a lid seat, in which we have found certain similarities with Orza 1 from the late Seville pottery, dated between the mid-4th and mid-5th century AD (Amores et al. 2007, p. 162).

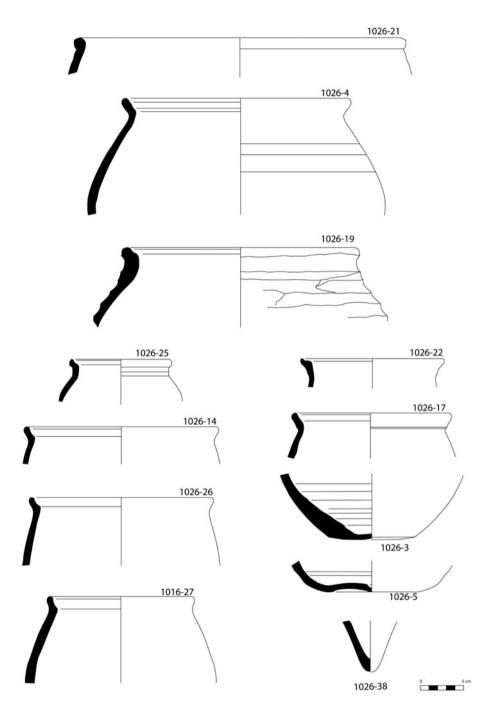


Fig. 15. Pottery (selection) recovered from the vaulted room.

We can conclude that we are talking about an almost complete assemblage – although we have verified a possible import of Mediterranean cuisine (1026-21) –, composed of local/regional productions from a domestic sphere, which we can date, with all due caution, to around the middle of the 6th century AD (Moreno *et al.* 2019b).

Another element that demonstrates the intense use of this room in the last stage of the life of the villa is the almost complete destruction of the mosaic pavement that decorated it, which today is shown as a relic of the original. It does not even preserve the levels of preparation of the pavement, not only because of the intense use, but also because the ceiling of the burnt room fell in. Likewise, in a central part of the room and covered by the same collapse, a huge post hole, that must have served as a point of support for a vaulted roof, was identified, perhaps already in a poor state of preservation at that late date.

Therefore, the presence of hearths, as well as an abundance of domestic pottery, without the presence of vessels with "fine" finishes or decorations, leads us to relate these architectural transformations to environments of a humble nature with a residential function. However, we also have other manifestations that point to the installation of structures of a productive nature over the former residential sectors.

This is the case of the northern corridor of the peristyle, where, in this phase, what appears to be a metal smelting workshop was set up, given a stratum with an enormous accumulation of ashes and coals, the product of the cleaning of the kilns, among which a good number of metallic fragments of copper and iron have also been documented, as well as several lead "cakes". This circumstance contrasts with the virtual absence of metals excavated from the rest of the villa during the last few years of excavations, which could be explained by the fact that these materials had been scavenged and plundered for smelting and later reused in the production of new tools, perhaps for agricultural purposes. This would be the case of the recovery, in this same stratum, of an iron adze.

On the other hand, right in the south-western corner of the peristyle, there was a space for a rubbish dump (EU 1101) with a large accumulation of building material remains, and at the base of which, almost in contact with the mosaic pavement, we discovered the sculpture of the Capitoline Venus. However, it was found in a prone position, completely horizontal, on two bricks and a tegula with the same arrangement. The fact that it is preserved fractured from the knees downwards, as well as the identification of other parts of it scattered in the same dump stratum (the right arm, as well as the hand and some fingers) leads us to think that it was indeed discarded material, but somehow deposited with a certain "respect" in the dump.

Despite this, the upside-down arrangement itself could inform us of a purpose related to the desacralisation of the pagan divine representation, at a time when the inhabitants of the half-ruined villa had to adhere to the Christian con-

fession. It is interesting to relate this voluntary action to the appearance, in another fill with similar characteristics, of the nymphs destroyed and thrown into the interior of the nymphaeum pool (the date of which we do not know, as it was documented in the excavations carried out between 2011 and 2013 by the previous archaeological management, which did not offer any data in this regard). This is a phenomenon found in many public and private buildings (*villae*, baths, etc.) throughout the Mediterranean that has been well studied by various researchers (Sfameni 2019, pp. 427-434), and interpreted as acts of intentional destruction of pagan artistic representations derived, in some cases, from the new Christian religion.

A final interesting phenomenon can be seen in this last phase of occupation of the Roman villa in Salar. At some undetermined time (which must be dated to after the use of the northern corridor as a metallurgical workshop, i.e., after the middle of the 5th century), this area collapsed and was then completely buried by a powerful sedimentation layer, of almost a metre high, produced by alluvial silt. On these levels (UEs 1160 and 1177), two combustion structures were installed successively: firstly, a small pseudo-circular hearth (HG1179) made with fragments of tegulae, and later, and on top of this, a circular domestic oven (HG1161) paved with fragments of coarse pottery and with adobe walls. Associated with these structures, and next to them, it was possible to identify a dump space with a large quantity of archaeological material (ceramics, seeds, fauna) (FS 1159=1249), which came from the cleaning of the different kilns and firings of these structures. The analysis of the associated ceramic productions (which will be the subject of a future specific publication), has allowed us, based on the existence, among other pottery types, of fragments in clear calcareous paste with rectilinear and polylinear incised comb decoration, to date the use of the pit and the combustion structures to between the second half of the 6th and first half of the 7th century (Ramón 2008, pp. 574-575).

This circumstance allows us to hypothesise that, once the fire documented in the southern and eastern part of the *pars urbana* (*triclinium*, eastern corridor, and vaulted hall) occurred in the mid-6th century, and which led to the definitive abandonment of the villa, there was a phenomenon of alluvial silting and gradual burial of its structures. However, the area must not have been abandoned for good, as evidenced by the installation of these combustion structures documented on the same silt that covered it, since they demonstrate the frequentation of this agricultural area at least during the second half of the 6th century and at an undetermined time in the 7th century.

On the other hand, it should be mentioned that the analysis of the seeds from the dump pit 1159=1249 offers us a very interesting panorama for the historical interpretation of this last occupational phase of the Roman villa of Salar. The preliminary results of the archaeobotanical study show that as late as the beginning of the 7th century, there was a wide variety of crops, which demonstrates the

practice of a well-formed agriculture combining cereals (mainly barley, but also wheat, millet and oats), legumes (lentils and broad beans) and nut and fruit trees (almonds, grapes, olives and figs). This type of diversified agricultural production seems to exceed the needs of a livelihood strategy of a 7th century peasant community and could indicate the existence of a surplus production dedicated to sale and trade. Although the *dominus* and his family no longer live in the old aristocratic residence, they still maintain ownership of the *fundus*, and therefore the products cultivated respond to their interests and needs. In other words, the diversification in food production observed in the final phase of the Roman villa of Salar is more related to what is considered a growth and economic development strategy rather than a strategy linked to simple subsistence.

5. Conclusions

The great monumentalisation carried out in the first half of the 4th century AD in the roman villa of Salar, supposes a deep transformation of the site, with largescale decorative program and spaces for public self-representation and display including use of impressive axial spaces, rich figurative mosaics, and water features.

Later, in the first half of the 5th century, a remodelling and change in the character of the mosaics, possibly associated with Christianisation of its owners, is documented.

During the second half of the 5th century, we evidence the abandonment of the villa as an elite residence, and its reuse as housing for multiple families until its final burial, possibly caused by a great fire, in the first half of the 6th century.

In any case, what is clear is the prolonged use of at least some of its structures, which can be dated with some certainty to the mid-6th century and, even more so, the agricultural space, which, most probably with all or most of its constructions already buried, continued to be frequented until the beginning in the 7th century AD (the archaeobotanical evidence during this final phase, indicating continued cultivation of the land including production of cereals, grapes, olives, figs, nuts and legumes). In other words, we are talking about an occupational sequence of almost 700 years that, surely, still hides a huge amount of data to advance in the recognition and characterisation of the rural world of the Roman and Late Antique periods in Eastern Baetica.

Abstract

The Roman villa of Salar is an outstanding example of the degree of opulence and luxury that these residences could reach in late antiquity, with grand architectural forms ornamented with delicate frescoes, sculptural programmes and polychrome mosaic pavements. After five years of uninterrupted archaeological excavations by a research team from the University of Granada, we are now able to offer new data about its construction phases, its origin and development in the economic and social dynamics of late Roman *Baetica* and its postclassical epilogue as a multi-family agricultural and artisan settlement. **Keywords:** Roman *Baetica*, meadow of Granada, Late Roman, rural settlement, *pars urbana*.

La villa romana di Salar è un esempio eccezionale del grado di opulenza e lusso che queste residenze potevano raggiungere nella tarda antichità, con imponenti forme architettoniche ornate da delicati affreschi, apparati scultorei e pavimenti in mosaico policromo. Dopo cinque anni di scavi da parte di un team di ricerca dell'Università di Granada, questo articolo offre nuovi dati riguardo le sue fasi costruttive, le origini e i suoi sviluppi nel contesto delle dinamiche economiche e socio-culturali della Betica tardo romana, e il suo epilogo in età post-classica come insediamento agricolo e artigianale da parte di più famiglie. **Parole chiave:** Betica romana, territorio di Granada, tardo antico, insediamento rurale, pars urbana.

References

- L. ALAPONT, C. BALLESTER 2007, Anforas y cerámica común en un conjunto funerario de Alcasser (Valencia), in Bonifay, Tréglia 2007, pp. 199-209.
- A. ÁLVAREZ MARTÍNEZ 1997, La influencia africana en el mosaico hispanorromano: algunas consideraciones, "Anas", 10, pp. 39-50.
- F. AMORES CARREDANO, E. GARCÍA VARGAS, D. GONZÁLEZ ACUÑA, P. LÓPEZ TORRES 2007, Cerámicas de cocina y comunes tardo-antiguas en Hispalis (Sevilla, España). Primera tipología y sus contextos (La Encarnación, SS. V-VI), in BONIFAY, TRÉGLIA 2007, pp. 147-164.
- J.M. BLÁZQUEZ 1991, Aspectos comunes de los mosaicos de Cerdeña, África y España, "L'Africa Romana", VIII.2, pp. 811.926.
- J.M. BLÁZQUEZ, G. LÓPEZ, M.P. GARCÍA-GELABERT, M.L. NEIRA 1990, Influjos africanos en los mosaicos hispanos, "L'Africa Romana", VII.2, pp. 673-699.
- M. BONIFAY, J.-C. TRÉGLIA (eds) 2007, LRCW 2.

 Late Roman Coarse Wares, Cooking
 Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry,
 Vol. 1. Oxford.
- G. CANTAMESSA (ed) 2012, Villa romana del Casale. Palermo.
- M.A. CAU ONTIVEROS 2007, El estudio de las cerámicas tardorromanas de cocina de ámbito mediterráneo: el ejemplo de las Baleares, in A. MALPICA, J.C. CARVAJAL (eds), Estudios de cerámica tardorromana y altomedieval, Granada, pp. 247-290.
- A. Chavarría Arnau 2007, El final de las villae en Hispania (siglos IV-VII d.C.), Turnhout.
- A. Chavarría Arnau 2021, Arqueología de las primeras iglesias del Mediterráneo (siglos IV-X), Granada.
- V.H. CORREIA 2005, A arquitectura doméstica de Conimbriga e as estructuras sociais da cidade romana, Seminario Património e Investigaçao (16 abril 2005), Conimbriga.

- H. Dessales 2014, Du jardin aux jardinières: l'évolution des péristyles dans l'habitat romain, in P. Van Ossel, A.-M. Guimier-Sorbets (eds), Archéologie des jardins. Analyse des espaces et méthodes d'approche, Dremil-Lafage, pp. 23-34.
- K.M.D. DUNBABIN 1978, The Mosaics of Roman North Africa. Studies in Iconography and Patronage. Oxford.
- K.M.D. DUNBABIN 1991, *Triclinium and stibadium*, in W.J. SLATER (ed), *Dining in a Classical Context*, Ann Arbor, pp. 121-148.
- K.M.D. DUNBABIN 1996, Convivial spaces: Dining and entertainment in the Roman Villa, "Journal of Roman Archaeology", 9, pp. 66-81.
- M.I. FERNÁNDEZ GARCÍA, J.M. ROMÁN PUNZÓN, M. MORENO ALCAIDE, P. RUIZ MONTES, J. RAMOS NOGUERA 2019, Los mosaicos de la villa romana de Salar (Granada): campañas de excavación de 2017 y 2018, in L. NEIRA JIMÉNEZ (ed), Mosaicos romanos en el espacio rural: investigación y puesta en valor, Roma, pp. 179-192.
- D. FERNÁNDEZ-GALIANO, B. PATÓN, C.M. BATALLA 1994, Mosaicos de la villa de Carranque. Un programa iconográfico, in VI Coloquio Internacional sobre Mosaico Antiguo (Palencia-Mérida, 1990), Valladolid, pp. 317-326.
- V. García Entero, Y. Peña Cervantes, C. Fernán-DEZ OCHOA, E. ZARCO MARTÍNEZ 2011-2012, La producción de aceite y vino en el interior peninsular. El ejemplo de la villa de Carranque (Toledo), "Anales de Prehistoria y Arqueología", 27-28, pp. 155-172.
- J. GAGNIERS, P. DEVAMBEZ, L. KAHIL, R. GINOUVES 1969, *Laodicée du Lycos: Le nymphée:* campagnes 1961-1963, Paris-Québec.
- S. Gozlan 1992, La maison du triomphe de Neptune à Acholla (Botria), Tunisie, les mosaïques, Roma.
- R. HIDALGO PRIETO 1990, Esquemas decorativos pictóricos de la villa romana de El Ruedo (Almedinilla, Córdoba), "Anales de Arqueología Cordobesa", 1, pp. 109-124.

- R. HIDALGO PRIETO (ed) 2017, Las villas romanas de la Bética. Sevilla.
- M. JIMÉNEZ PUERTAS 2002, El poblamiento del territorio de Loja en la Edad Media, Granada.
- W. LETZNER 1990, Römische Brunnen und Nymphaea in der westlichen Reichshälfte, Münster.
- M.L. LOZA AZUAGA, J. BELTRÁN FORTES, J.M. ROMÁN PUNZÓN, P. RUIZ MONTES, M. MORENO ALCAIDE, M.I. FERNÁNDEZ GARCÍA 2021, La villa romana de Salar (Granada). El programa escultórico en contexto arqueológico, "Archivo Español de Arqueología", 94, e20, DOI: https://doi.org/10.3989/aespa.094.021.20.
- P. Marín Díaz 2016, Otium, salubritas, amoenitas: Decoraciones musivas pictóricas romanas en la Vega de Granada, Granada.
- K. Meyer 1999, Axial peristyle houses in the western empire, "Journal of Roman Archaeology", 12, pp. 101-121.
- J.A. MOLINA GÓMEZ 2000, La exégesis como instrumento de creación cultural. El testimonio de las obras de Gregorio de Elvira, "Antigüedad y cristianismo Monografías históricas sobre la Antigüedad tardía", XVII, pp. 13-274.
- M. Moreno Alcaide, J. M. Román Punzón, P. Ruiz Montes, J. Ramos Noguera, M.I. Fernández García 2020, *Arquitectura doméstica monumental en la Villa Romana de Salar* (*Granada*), in R.A. Martínez González, T. Nogales Basarrate, I. Rodá de Llanza (eds), *Las villas romanas bajoimperiales de Hispania*, Palencia, pp. 183-192.
- M. Moreno Alcaide, J.M. Román Punzón, P. Ruiz Montes 2019a, El uso de tubi fittili para cubiertas abovedadas en la Hispania romana. Revisión bibliográfica y estado de la cuestión, "Spal", 28(1), pp. 131-156.
- M. Moreno Alcaide, J.M. Román Punzón, P. Ruiz Montes 2019b, Nuevo ejemplo del uso de tubi fittili en arquitectura hispanorromana: la sala abovedada de la villa romana de Salar (Granada), in J. Coll Co-NESA (ed), Opera Fictiles. Estudios Transversales sobre cerámicas antiguas de la Península Ibérica, Tomo II, Madrid, pp. 503-516.

- N. NEUERBURG 1965, L'architettura delle fontane e dei ninfei nell'Italia antica, Napoli.
- M. Orfila Pons, E. Sánchez, López 2011, Granada, la ciudad de los Valerii Vegeti, "Itálica. Revista de Arqueología Clásica de Andalucía", 1, pp. 105-119.
- M. PASTOR MUÑOZ, A. MENDOZA EGUARAS 1987, Inscripciones latinas de la provincia de Granada, Granada.
- C. PÉREZ TORRES, I. TORO MOYANO 1989, Intervención arqueológica de Urgencia en C/ Primavera, 22 (Los Vergeles, Granada), "Anuario Arqueológico de Andalucía", III, pp. 228-232.
- J. RAMÓN TORRES 2008, La cerámica ebusitana en la Antigüedad Tardía, in D. BERNAL CASASOLA, A. RIBERA I LACOMBA (eds), Cerámicas hispanorromanas. Un estado de la cuestión, Cádiz, pp. 563-584.
- A. Rodríguez Aguilera, J.M. García-Consuegra Flores, J. Rodríguez Aguilera, M.J. Pérez Tovar, P. Marín Díaz 2014, *La villa bajo imperial y tardo antigua de Los Mondragones (Granada)*, "Cuadernos de Prehistoria y Arqueología de la Universidad de Granada", 24, pp. 459-496.
- M.O. Rodríguez Ariza, M.I. Fernández García, J.A. Peña, J.A. Esquivel, E. Busquet, M. Vilas, A. Casas 1999, Prospecciones geofísicas en el yacimiento romano de Gabia La Grande (Granada), "Anuario Arqueológico de Andalucía", 1994, II, pp. 64-71.
- J.M. Román Punzón 2004, El mundo funerario rural en la provincia de Granada durante la Antigüedad tardía, Granada.
- J.M. Román Punzón 2006, Contribución al estudio del poblamiento de época clásica en la Vega oriental de Granada. El yacimiento del Cerro de la Mora (Moraleda de Zafayona, Granada), Tesis Univ. Granada. Online in: https://digibug.ugr.es/ handle/10481/877.
- J.M. Román Punzón 2014, Redescubriendo la Granada Tardoantigua. Eliberri entre los siglos IV al VIII d.C., "Cuadernos de Prehistoria y Arqueología de la Universidad de Granada", 24, pp. 497-533.

- J.M. Román Punzón, M. Moreno Alcaide, P. Ruiz Montes, J. Ramos Noguera, M.I. Fernández García 2020, La decoración musiva y escultórica en la Villa Romana de Salar (Granada). Recientes hallazgos, in R.A. Martínez González, T. Nogales Basarrate, I. Rodá de Llanza (eds), Las villas romanas bajoimperiales de Hispania, Palencia, pp. 437-445.
- M. Romero, I. Mañas, S. Vargas Vázouez 2006, Primeros resultados de las excavaciones realizadas en la Villa de La Estación (Antequera, Málaga), "Archivo Español de Arqueología", 79, pp. 239-258.
- S. Ruiz Torres, J. Padial Pérez 2004, Intervención arqueológica de Urgencia en la villa romana de Híjar (Las Gabias), "Anuario Arqueológico de Andalucía", 2001, III, pp. 463-467.
- C. SFAMENI 2019, Sculture mitologiche nelle residenze tardoantiche tra pagani e cristiani: la documentazione dell'Hispania nel contesto mediterraneo, in Actes del 4th Congrés Internacional d'Arqueologia i Mon Antic / VII Reunió d'Arqueologia Cristiana Hispánica (Tarragona 21-24 novembre de 2018), Tarragona, pp. 427-434.
- M. SOTOMAYOR MURO 1994, Andalucía. Romanidad y Cristianismo en la época tardoantigua, in Actas del II Congreso de Historia de Andalucía (Córdoba, 1991), "Historia Antigua", pp. 537-554.
- M. SOTOMAYOR MURO 2000, Sobre los doce primeros siglos del cristianismo en Granada, in F.J. MARTÍNEZ (ed), Jesucristo y el Emperador Cristiano, Catálogo de la Exposición (Granada, 8 julio-8 diciembre, 2000), Córdoba, pp. 413-426.

- M. SOTOMAYOR MURO, J. FERNÁNDEZ UBIÑA (eds) 2005, El concilio de Elvira y su tiempo, Granada.
- J.W. STEPHENSON 2009, Villas and Aquatic Culture in Late Roman Spain, in C. Kosso, A. Scott (eds), The Nature and Function of Water, Baths, Bathing and Hygiene from Antiquity through the Renaissance, Leiden, pp. 337-360.
- J.W. STEPHENSON 2016, Dining as spectacle in Late Roman houses, "Bulletin of the Institute of Classical Studies", 59.1, pp. 54-71
- S. VARGAS VÁZQUEZ 2016, Pavimentos musivos del yacimiento romano de Fuente Álamo (Puente Genil, Córdoba): los mosaicos de la villa, "ROMVLA", 15, pp. 185-226.
- A. VIGIL-ESCALERA GUIRADO 2003, Cerámicas tardorromanas y altomedievales de Madrid, in L. CABALLERO, P. MATEOS, M. RETUERCE (eds), Cerámicas tardorromanas y altomedievales en la Península Ibérica. Ruptura y continuidad, "Anejos de Archivo Español de Arqueología", XXVIII, pp. 371-387.
- A. VIGIL-ESCALERA GUIRADO 2007, Algunas observaciones sobre las cerámicas "de época visigoda" (ss. V al IX d.C.) de la región de Madrid, in A. MALPICA, J.C. CARVAJAL (eds), Estudios de cerámica tardorromana y altomedieval, Granada, pp. 359-382.