

THE THIRD SEASON OF EXCAVATIONS AT ALCARIA LONGA

JAMES L. BOONE



1. INTRODUCTION

This article presents the preliminary results of the third season of excavations at Alcaria Longa, carried out in May through August of 1990. Alcaria Longa is a rural village site dating to the later Caliphal and Taifal periods (late 10th through the 11th centuries AD) located 24 km west of Mértola in the Lower Alentejo of Portugal. An introduction to the site and the research aims of the Alcaria Longa Project, along with the results of the first two seasons of excavations in 1988-89, are presented in the previous volume of this journal (Boone 1992).

The 1990 excavations at Alcaria Longa focused on two areas: 1) the Trench 1 Area, where a single house compound had been partially excavated in the previous season (Boone 1992); and 2) the top of the South Hill, where remains of a possible fortification or watchtower had been uncovered in the 1988 season. A total of 384 m² were excavated in the Trench 1 Area in 1990, bringing the total area excavated there to 532 m². A total of 168 m² were excavated on the South Hill, including 8 m² excavated in 1988.

2. TRENCH 1 AREA STRUCTURES

Three household compounds, each consisting of two roofed structures built perpendicularly around an open patio, were nearly completely excavated in the Trench 1 Area of the site (refer to Figures 1 and 2; Structures 1 and 2 were partially described

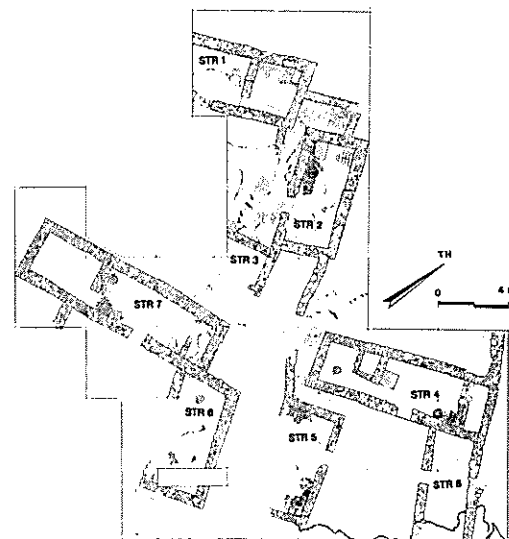


Figure 1 - Architectural drawing of the three household compounds uncovered in the the Trench 1 Area, showing the location of the various structures («STR» numbers) discussed in the text.

in Boone 1992). The excavations revealed that the household structures had been for the most part built directly on the bedrock surface of the hillside. Stone used in construction was quarried directly off the horizontal beds of graywacke and related marine sedimentary rock on the hill, sometimes within only a few meters of the construction site. The graywacke on the hill is naturally bedded into sheets and can be relatively easily broken off into regular sized blocks for building. Figure 4b is a photograph of an area just north of the entrance to Compound 2 where stone has been quarried in blocks from a rock bed about 40 cm in thickness. The area below the quarried shale was later filled with refuse, and was the largest midden deposit excavated on the site (Midden 1). No evidence of occupation earlier than approximately the late 10th or early 11th century AD has been found in the settlement area. The site was apparently a new settlement effort on a previously unoccupied site.

Compound 1 — Structure 1 was only partially excavated due to the presence of a large olive tree growing inside the extreme west end of the buried structure. However, by exposing the wall-tops of the structure in the unexcavated portion, we were able to ascertain that the entire structure was 11.2 m long and 2.8 m wide (all structural measurements refer to interior dimensions).

The structure was divided into three rooms by interior walls with doorways. The large middle room is 5.8 m long and 2.8 m wide, and had a doorway leading to the patio area outside. A second room at the east end of the structure was smaller (2.5 m long by 2.8 m wide) and had no direct exterior access. The door between this room and the larger room had an upended slate flagstone for a threshold. This room had two tile-and-clay-lined hearths situated next to each other along the north wall.

Two finger rings and a perforated silver Ara-

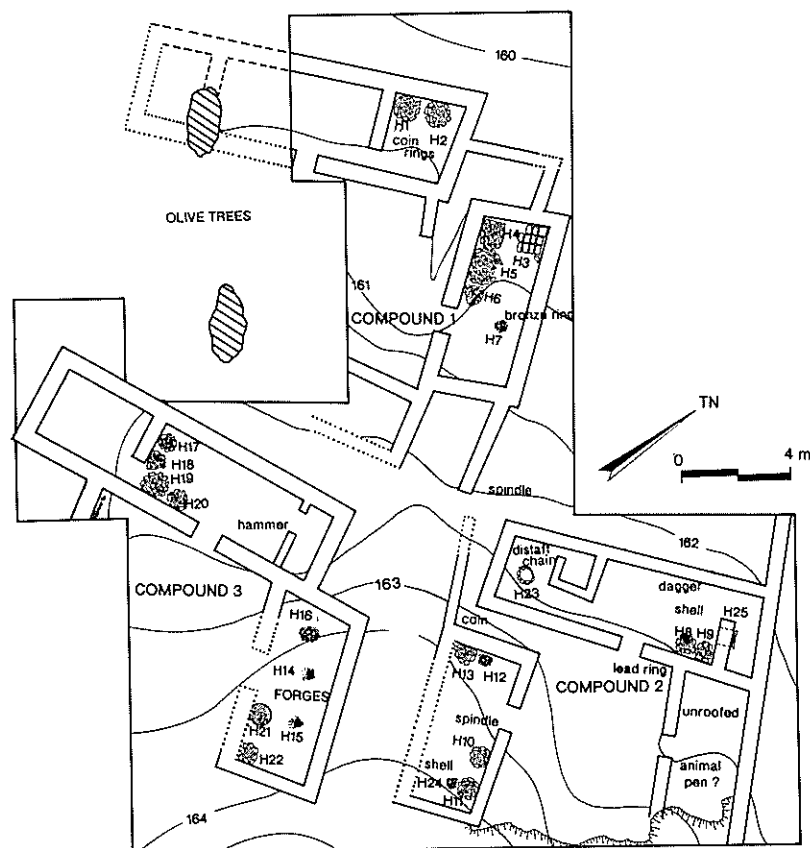


Figure 2 — Schematic diagram of the three household compounds uncovered in the Trench 1 Area, showing location of hearths (H1, H2, etc.) and various finds mentioned in the text.

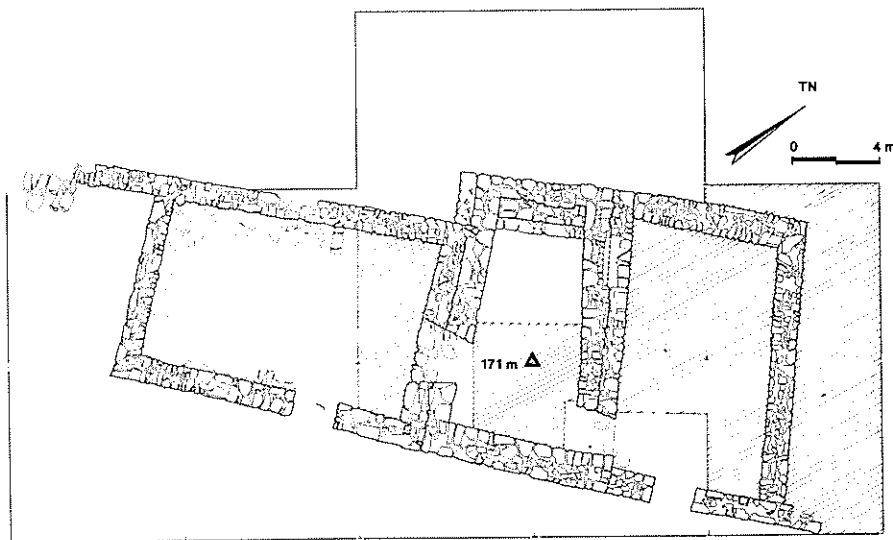


Figure 3 — Plan of the structure excavated on the summit of the South Hill (Trench 3 Area). Hatched areas were only excavated to wall-top level.

bic coin (described and illustrated in Boone 1992) were recovered directly on the floor of the northwest corner of this room, within the burned area. The third room of this long structure was revealed only by wall trenches; it measures approximately 1.8 m long and 2.8 m wide.



Figure 4a (top) – A view of the Compound 2 looking east, showing part of the bent-axis entryway, paved with schist flagstones, into the compound. 4b (bottom): View of north-west corner of Structure 4, looking south, showing where beds of the graywacke bedrock right next to the structure were quarried for building stone. One of the larger midden accumulations at the site was deposited in the interstices of this quarried rock area. The structures were built directly on the bedrock surface of the hill. Much of the soil accumulation today observable on the hill appears to be post-occupational.

Structure 2 is a smaller, single room structure (5.9 m by 2.4 m). It had a single door on the west side leading to the patio area, the threshold of which was built of two millstones. Five distinct fire containment features are located inside. Hearth 3 is lined with fired bricks. Hearth 4 is another tile-and-clay lined hearth, similar to the two excavated in Structure 1. Next to it are two circular hearths (H5 and H6) side by side, lined with hand-sized quartz stones set in a roughly circular pattern. These hearths are outlined with broken tiles. Hearth 7 is a small quartz-stone lined hearth set into the bedrock floor of the structure. The only artifact recovered with any of these features was a small bronze ring found in the ashes of H7. At this point it is unclear what kind of activity was associated with these hearths, but it is reasonable to suggest that this building was the site of some light manufacturing activity, while the other longer structure was used for a living area.

The floors of both structures were surfaced with a combination of packed clay, occasional flagstones, and the natural bedrock surface. The two larger structures are connected by a small rectangular structure (2.8 by 1.5 m), which also was apparently roofed, and had a flagstone floor. It may have been a storage room, but an alternate explanation is that it is an entrance room to the compound similar the one uncovered in Compound 2.

Structure 3, located along the south side of the patio area, was apparently a small roofed structure (indicated by a high density of fallen roof tile found inside its walls). This structure may, too, have opened into the patio. The 1990 excavations failed to clarify the structure's relationship with other houses, due to the fact that it was very poorly preserved and its close proximity to a living olive tree.

Compound 2 — Compound 2 is organized similarly to Compound 1, with a few internal va-

riations. Structure 4 is the long east-west structure, measuring 9.5 m by 2.4 m. Its large middle room, 4.7 m by 2.4 m, contains two tile-and-clay-lined hearths and a box-shaped fireplace built into the wall on the east end. A decorated bronze and iron dagger hilt (Figure 12b) was recovered from the floor at the door opening into the small east room. The structure has a door on the south wall leading to the patio area. The east room (.9 m by 2.7 m) may have served some function connected with the fireplace (see discussion under fire containment features below).

The small west room (1.6 m by 2.3 m) contained a single stonelined fire pit in the center of the room (Figure 6b). Several small fragments of a fine silver chain (Figure 12a) were recovered in the ashes of the pit. A fragmentary top-piece for a distaff (Port. *torre de roca*), used in spinning thread, carved from a caprid long bone was found on the floor next to the hearth. Several partially reconstructable vessels were found in the north half of the room, including a buff Type V jar and some small cooking pot fragments. A small closet-like room (.9 m by 1.2 m) is connected to the west room by way of a narrow raised doorway.

Structure 5 consists of a single room 5.6 m long and 2.6 m wide. A door on the east wall opened into the patio. Three distinct hearths are located in the south end of the room: 2 tile-and-clay-lined hearths and a rock lined hearth. The hearth area is surrounded by several large slate flagstones that seem to separate this area spatially from the rest of the room. A bronze spindle (Figure 9b) was recovered on the flagstone surface, and a complete marine scallop shell was recovered on the floor along the south wall. On the north wall of the structure are two more hearths: a tile-and-clay-lined and a rock-lined hearth (Figure 5a).

The compound was entered from the outside on the west side through a narrow, paved, bent-

-axis entry leading to the open patio area. Another bronze spindle was recovered just outside this entry-way in the midden deposit (Midden I) that appears to be associated with this compound. The perforated lead coin (Figure 11; discussed further below) was recovered on the floor of the entry-way itself.



Figure 5a (top) – Hearths 12 (tile-and-clay-lined) and 13 (rock-lined) located next to each other along the north wall of Structure 5. 5b (bottom): Hearths 4 (tile-and-clay-lined), 5 and 6 (lined with quartz stones) located in the northwest corner of Structure 2. Hole in Hearth 4, just to the right of the scale stick, was dug by a treasure hunter in between seasons.

The patio area was approximately 5.2 m by 7.2 m and was paved with dressed slate flagstones. The south perimeter of the patio is delimited by a steep natural rock ledge. On the east side of the patio a small portal leads to what may have been an animal pen (5.6 m by 2.2 m); this structure contained virtually no fallen roof tile, and



Figure 6A (top) – Hearth 21, a circular clay-and-tile-lined hearth along the west wall of Structure 6. 6B (bottom): Hearth 23, a firepit lined with stones and river cobbles, located in the center of the west room of Structure 4.

was probably never roofed. Very little artifactual material was recovered in either the patio or the animal pen.

Compound 3 — Compound 3 is organized spatially in the same general way as the previous two compounds. It consists of Structure 7, the long eastwest structure 11 m long and 2.6 m wide. The middle room is 5.7 m by 2.6 m and has the only door to the patio. A small storage room (.9 m by 2.4 m) is located on the east end of the structure. The iron hammer (Figure 9a; possibly associated with blacksmithing) was recovered on the floor just outside the narrow entrance to the storage room. Four tile-and-and-clay hearths are located on the west end of the middle room. A great deal of ash was associated with the hearths, and the largest sample of animal bones recovered in excavation came from this area. Although complete faunal analysis is still pending (see Table 2 and discussion below), the bones included caprid long bones with cut marks and a few bones of smallish game birds such as quail or partridge, which are still commonly hunted in the area.

The door leading to the west room appears to have been blocked up with loose dry stone masonry in the later occupation of the house. This would explain the position-ing of a hearth in the middle room (H19) right in what appears to be the doorway. The west room (3.5 by 2.5 m) contained a great deal of broken pottery and may have been used as a trash dump after the room was blocked off. The west room contained no recognizable permanent features such as hearths.

Structure 6 (6.2 m by 2.6 m) is a north-south single-room structure associated with Compound 3. Much of the west wall of this structure, including what must have been the only door, was missing due to wall slumping down the steep incline to the west of the structure. Structure 6 contains five fire-containment features. H16 is a small stone-lined hearth in the center of

the north end of the room. H14 and H15 are both small pits dug into natural crevasses in the bedrock in the center of the room. Both features are filled with consolidated, porous masses of oxidized iron slag or coke, ash, and charcoal which we interpret as the remains of blacksmith forges. H21 (Figure 6a) is a circular tile-and-clay-lined hearth located along the destroyed west wall of the structure. H22 is another very poorly preserved tile-and-clay-lined hearth in the southwest corner. The roof-fall layer in this structure contained a great deal of pottery, including the large nearly complete jar in Figure 8a. Our tentative interpretation is that the structure was abandoned and used as a dump by other still occupied households as the roof fell in.

3. FIRE CONTAINMENT FEATURES

Twenty-five distinct fire-containment features were uncovered in the excavation of the three

household compounds. All were found inside one or another of the six roofed structures; no exterior hearths or ovens were uncovered. The 25 fire-containment features can be divided into five general categories based on form and material; these are described below.

Tile-and-clay-lined Hearths

The most common form of fire containment feature was the tile-and-clay-lined hearth (Figure 5a). Each of the six roofed structures uncovered contained at least two of these hearths: Structure 7 contained four in the same room. Fourteen such hearths were recovered in all (H1, H2, H4, H8, H9, H10, H11, H13, H17, H18, H19, H20, H21, H22). The hearths were built level with the clay or bedrock floor and were invariably located against an interior wall. The rock wall surface above the hearth usually showed signs of fire-reddening. The hearths themselves consisted of a roughly circular or rounded rectangular area lined with broken roof tile. In H9 and H19 large flat sherds of Type I Basins were also incorporated into the lining. The tile area was covered by a flat layer of burned clay 3 to 7 cm in thickness. The burned clay appears to have been a functional part of the hearth. Occasionally sherds of Type I cooking pots or casuelas were found imbedded in the surface of the clay. Many of the hearths had deposits of ash and charcoal fragments lying on the clay surfaces. These alkaline ash deposits were virtually the only areas of the site where animal bones were preserved. H21 is distinctive in that it is perfectly circular, and the flat clay surface seems thicker and more carefully prepared than in other cases (Figure 6a). About half the feature was



Figure 7b – The small east room of Structure 4, showing the back of the wall fireplace, with large, flat stone forming the moveable back of the fireplace. A small baulk consisting of the compact, gravelly room fill thought to be melted pisé, was left next to the covering stone, just to the left of the scale stick.

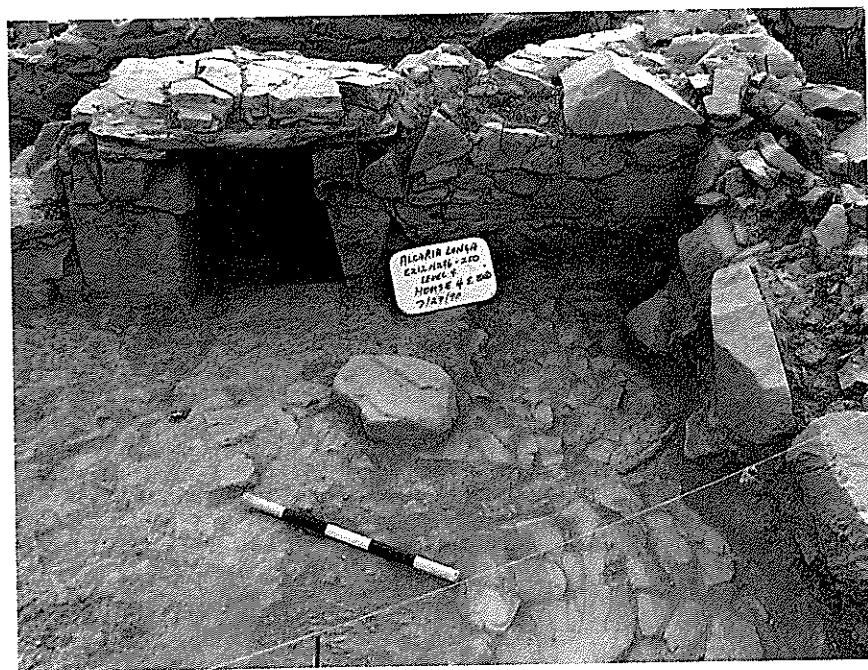


Figure 7a – View of the southeast corner of Structure 4, showing the wall fireplace (H25) and two clay-and-tile-lined hearths (H8 and H9). Note flat stones lying in floor next to H8 and inside the fireplace, probably used to support cooking vessels.

destroyed due to a postdepositional wall slump. Like the other tile-lined hearths, the clay layer is packed on top of a bed of broken roof tile.

Rock-lined Hearths

Six hearths lined with hand-to cobble-sized rocks were excavated (H5, H6, H7, H12, H16, H24). H7 and H16 were small, roughly circular arrangements of irregular sized rocks set into the bedrock floor away from the wall towards the interior of the room. Ashes and charcoal fragments were found among the rocks. H12 and H24 were similar in form, but were built directly adjacent to tile-and-clay-lined hearths, one (H12) next to a wall, the other (H24) in the room interior. H12, H16, and H24 were built of shale bedrock fragments; H5, H6, and H7 were built of massive vein quartz

fragments (discussed below). No packed or burned clay was found associated with this kind of hearth. Rock-lined hearths were found *only* in the smaller north-south oriented structures. The longer, east-west oriented structures contained *only* the tile-and-clay-lined hearths (with the exception of the stone-lined pit, H23, which was unique to the site).

H5 and H6 are distinct from the four rock-lined hearth discussed above in that they are much larger, are arranged in a roughly circular pattern, and are set into a matrix of packed, burned clay (Figure 5b). Both are situated in the northwest corner of Structure 2 in a group with a tile-and-clay-lined hearth and a brick-lined hearth (discussed below). The rocks used in these two hearths are hand-sized fragments of massive vein quartz. Little ash and no animal bone was found associated with these two hearths. A reasonable interpretation would be that they were used in some kind of manufacturing activity.

Brick-lined Hearth

H3 was a flat hearth lined with 13 or 14 small, flat, fired bricks. The bricks show signs of intense burning, but relatively little ash, charcoal and no animal bones were found in the hearth. There is nothing to indicate containment walls around the hearth; it was built level with the floor and open to the rest of the room. These were the only bricks recovered in excavation, although surface remains in the form of brick fragments, which are probably signs of a similar feature destroyed by plowing, are found about 10 meters to the northeast of Trench 3 in the central part of the site.

Rock-lined Fire Pit

H23 was a small basin-shaped pit located in the center of the west room of Structure 4 (Figure 6b). The pit was about 50 cm in diameter and 35 cm deep, lined with bedrock fragments and a few smooth stream cobbles, and filled with ash

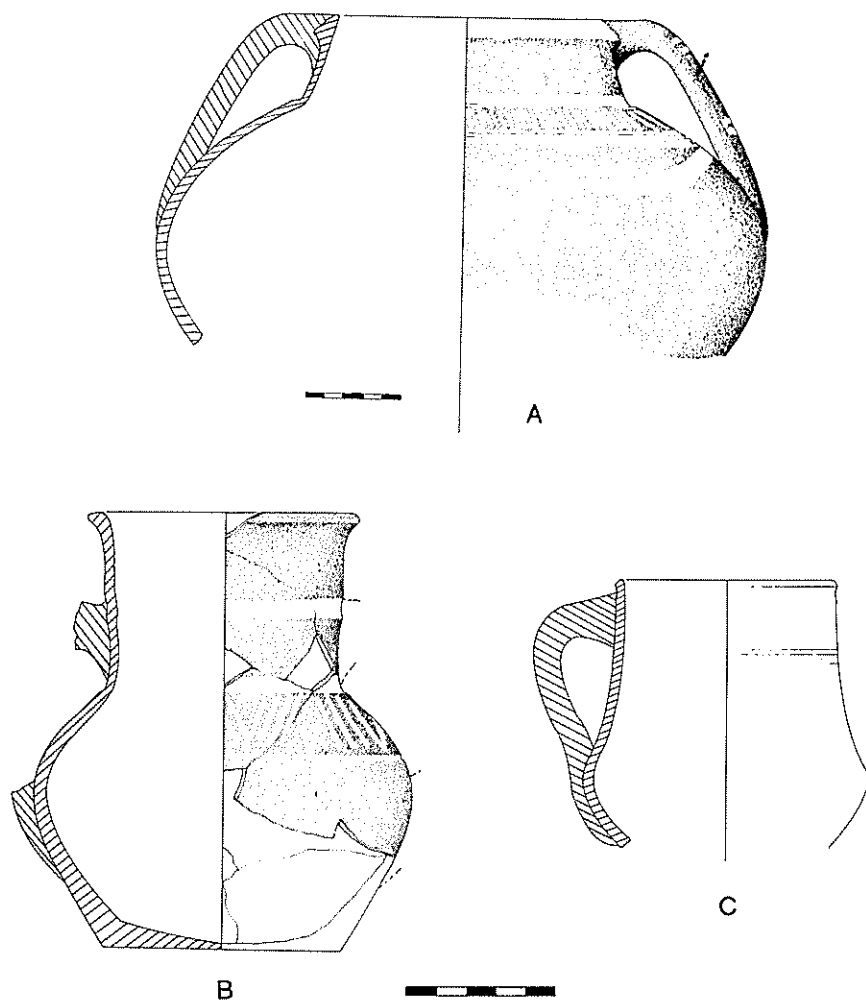


Figure 8 – A) a large Orange Plainware jar with white matte-painted designs, recovered from a midden area above the collapsed roof-fall of Structure 6. B) an Orange Plainware jarrita or «tankard» with white matte-painted designs, recovered from the floor of the the west room of Structure 7. C) a small drinking cup made of very dark, coarse brown plainware, recovered from Midden 1 just north of entry-way into Compound 2.

and charcoal fragments. In sifting the ash for recovery of charred plant remains, several small fragments of a fine silver chain were recovered (Figure 12a). A fragmentary end-piece for a distaff (*torre da roca*; discussed in more detail under "Other Artifacts" below) was found on the floor next to the hearth. This was the only hearth that was built in the form of a pit.

Wall Fireplace

H25, a small rectangular open fireplace was built into the east interior dividing wall of Structure 4 (Figure 7). The back wall of the fireplace consisted of a single rectangular slate flagstone piece that appears to have been designed to be moveable, allowing access to the fire from the small east room of the structure (see Figure 7b). This small east room may have been some kind of heating, drying or smoking room. It is too small for living space, and the packed clay floor was covered with black charcoal or grease stains, although no ash or charcoal was found in recoverable quantities in the room. This room is also distinctive in that it contains little tile roof fall, and was filled instead with a compact yellowish, clayey, gravelly material that strongly resembles melted *taipa* (a type of rammed earth, or *pisé* used traditionally for construction). It seems at least possible that some kind of chimney-like structure was built of *taipa* above this room.

Forges

Two features (H14 and H15) that appear to have been blacksmith forges were found built into the floor of Structure 6. These features consisted of small (about 30 cm in diameter and 10 cm deep), simple pits dug into natural crevasses in the bedrock floor which were filled with solidified masses of rusted, porous mixture of oxidized iron slag or coke, charcoal and ash. This material resembles closely the material left in traditional blacksmiths' open forges.

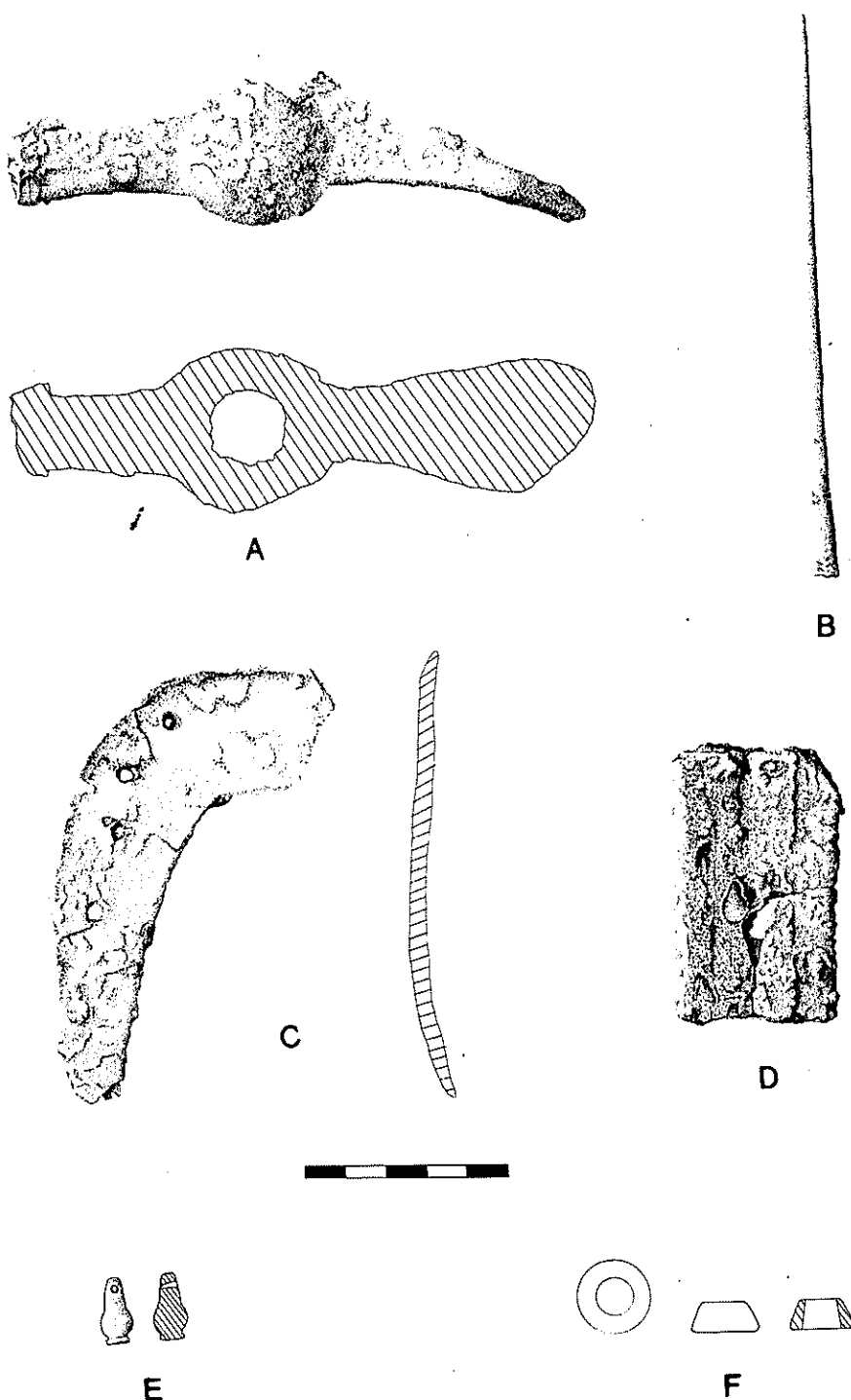


Figure 9 – a) Iron hammer-head found on the floor of the middle room of Structure 7, in Compound 3, thought to be associated with blacksmith activities. b) Bronze spindle found on floor of Structure 5 in Compound 2. c) Horseshoe recovered from floor deposits of the west room of the structure excavated on the summit of the South Hill. d) Fragment of a metal strap handle found in Midden 1, just north of Compound 2. e) Stone bead recovered from the patio of Compound 2. f) Cast lead ring recovered from the patio of Compound 2.

4. CONCLUSIONS REGARDING THE HOUSE COMPOUNDS

The three building compounds appear to constitute three separate, identically organized house compounds. Each consists of a long, roughly east-west oriented structure that is divided into three sections and a shorter, one-room structure oriented north-south. The two houses are arranged perpendicularly to each other around a delimit-

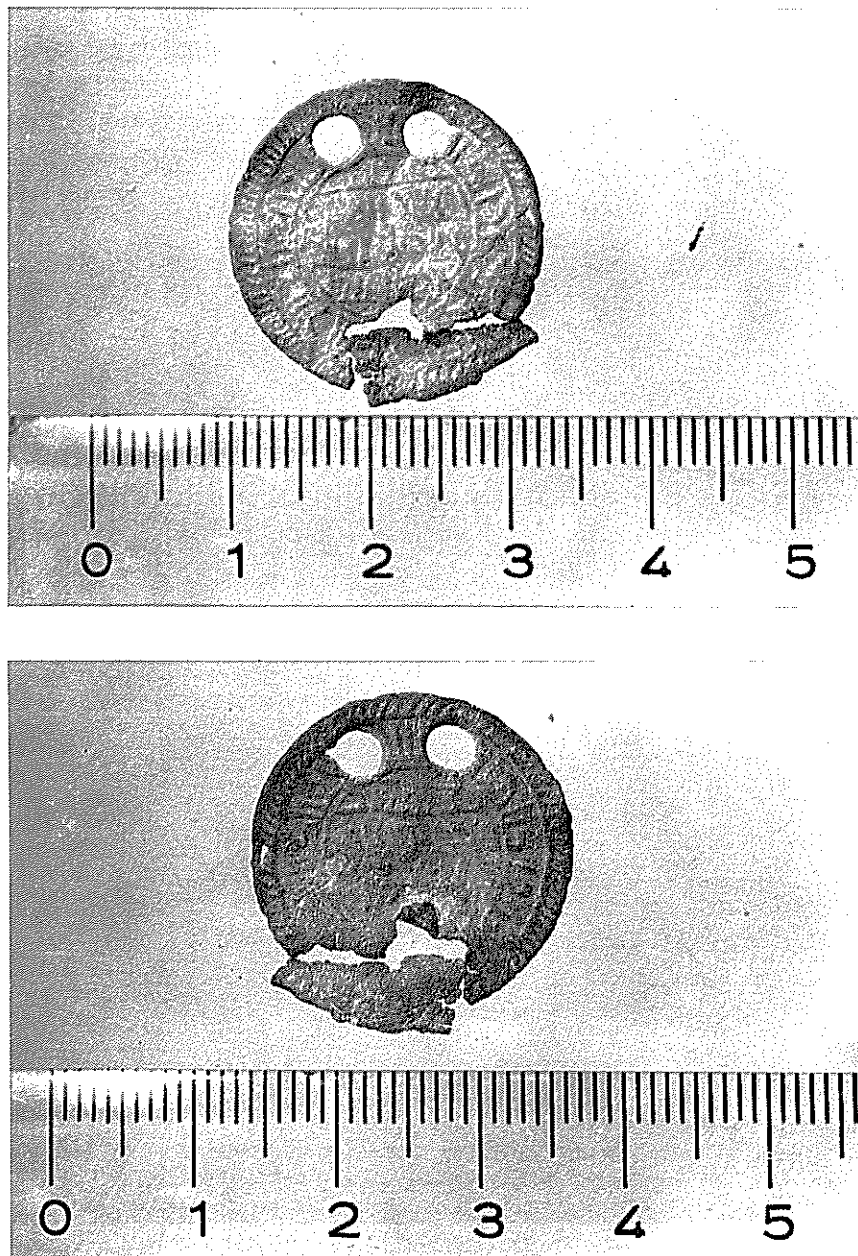


Figure 10 A (top) – Lead perforated coin Found on Floor of entry way into Compound 2 (obverse).
10B (bottom): lead perforated coin found on the floor of the entryway into Compound 2 (reverse).

ted unroofed patio or courtyard. The long east-west oriented houses are the most variable in size, ranging from 20.9 to 27.9 m². The shorter one-roomed north-south oriented structures are both smaller and more uniform in area, ranging from 14.6 to 15.6 m². If, as I argue below, the longer east-west structures were used for sleeping rooms, their higher variability in size might reflect variability in family size, whereas the smaller, north-south structures were used for a limited, uniform set of activities such as cooking or manufacturing, carried out by a limited and specific number of family members, regardless of family size.

The long houses contain only tile-and-clay-lined hearths, which have animal bones associated with cooking activities. The tile-and-clay-lined hearths tended to have large flat stones, often fragments of millstones associated with them, which may have been used to support cooking pots. There is usually more than one hearth in any room in which they occur; in Structure 7, there are four such hearths placed next to each other in one corner. It seems likely that they were not all in use at once, but rather were used in sequence. As noted above, when the 4 hearths in Structure 7 were in use, the west room of the structure was probably blocked off. Hence, at that time, only one room (not counting the tiny "storage room" on the east side) in that particular structure was in use.

In contrast to the long east-west oriented structures, the smaller, one-roomed north-south oriented houses contained both tile-and-clay and rock-lined hearths. The rock-lined hearths have little or no animal bone and much less ash associated with them than the tile-and-clay-lined hearths.

There is evidence for occupational specialization among at least two of the three excavated compounds. Compound 3 (Structures 6 and 7) contained two fire-pits containing coke and slag indicative of use by a blacksmith. An iron ham-

mer, perhaps used in shaping hot metal, was recovered from the floor of the associated Structure 7. Compound 2 (comprising Structures 4, 5 and the unroofed Structure 8, which may have been an animal pen) contained all of the spinning and weaving artifacts: 2 bronze spindles and the distaff end-piece (*torre de roca*). No such artifacts were found in the other two compounds. Compound 2 also was the only compound in which marine shells were recovered (there were 2 found, one each in Structures 4 and 5), although the social or technological significance of these items is unknown. Compound 1 (Structures 1 and 2) contained no artifacts distinctive of manufacturing *per se*, although Structure 2 has the rather complex hearth arrangement that may reflect some kind of manufacturing activity associated with the specialized application of heat.

In summary, the excavated compounds appear to represent households in which activities are divided between two separate structures and an associated courtyard. Each household compound is strongly delimited by walls, and appears to represent a separate social unit in the sense that there are no special architectural features (other than proximity) that would encourage integration or interaction between compounds. These compounds strongly resemble those built by some Berber groups in northern Morocco, and in a more general sense, may represent a variation on the typical Islamic house, which consists of two to three rectangular rooms arranged around an interior courtyard. They do not particularly resemble the typical rural house of the *monte* today in the Lower Alentejo.

5. TRENCH 2 (SOUTH HILL) STRUCTURE

The excavation of Trench 2 during the 1988 field season had partly revealed a structure with drystone masonry walls nearly a meter thick at

the summit of the south hill overlooking the valley of the Ribeira de Carreiras. During the third season, part of the effort was directed towards further excavating this structure. These excavations revealed a structure with a complex building and occupational history.

The structure consists three relatively large rooms connected by wide doors, with two wide entry doors along the south wall (Figure 3). The westernmost room is 7.33



Figure 11A (top) – Fragment of yellow-green glass bottle, recovered from a small midden-like deposit in the floor of the patio of Compound 1 (described in Boone 1992). Figure 11B (bottom): Bronze ring recovered from Hearth 7 in Structure 2.

long by 3.89 meters wide. The exterior entrance along the south wall is 1.08 m wide. A second door leads into the middle room. This door is funnel-shaped (as is the opposite door to the middle room) ranging from 1.56 m wide to 1.11 m wide as it enters the middle room. The two doors in and out of the middle room are constricted in the same direction. One might speculate that this facilitated the one way movement of people or livestock. Wall stubs visible just inside the interior of the western part of the room indicate an earlier building phase.

The floor of the west room was covered with charcoal fragments. A carbon date taken on a portion of this material gave a date of AD 1473 +/- 70 years. The horseshoe



Figure 12a (top) – Pieces of a silver chain recovered from the ashes of Hearth 23 in the east room of Structure 4, Compound 3. 12B (bottom) – Bronze and iron dagger-hilt recovered from the floor of the middle room of Structure 5, Compound 2.

illustrated in Figure 9c was recovered from this deposit.

The middle room is slightly trapezoidal: it is 4.72 m long, with a width ranging from 2.05 m on the north end to about 2.78 m on the south end. There is some evidence that this was the original structure and that the two side rooms were added, or at least altered, later. The walls of this part of the structure are quite thick. It should be noted that rubble covering this part of the structure was originally piled quite high, well over a meter thick at its highest point. Hence, it is reasonable to suggest that the walls of this part of the structure were originally quite high. Since the structure is already placed at the highest point of the site, it is possible the structure originally served as a lookout tower, or *atalaia*.

The easternmost room is 5.67 m long and 3.38 m wide. Only a small corner of the room was excavated to bedrock. A few small fragments of green-glazed basin, or *alguidar*, characteristic of a 15th or 16th century occupation, were found on the floor, corroborating the 15th century radiocarbon date taken from the west room.

Artifactual evidence recovered from the various excavated levels of this structure indicate a long history of use and re-use, unlike the household remains in the Trench 1 Area. Outside the east side of the structure itself was found a single *terra sigillata* sherd (described in Boone 1992), dating to the 1 century AD. No other Roman period remains were found, however. Sherds of the Islamic period consistent with the village occupation are common throughout the structure, but tended to be very fragmentary. Larger sherds of jars and basins that were stylistically quite distinct from those recovered in the village area were common as well. Some of these vessels are consistent with a much later time period, probably the 15th or 16th century. A five *real* copper Portuguese coin dated 1736 was

recovered in the wall fall just north of the building. Earlier excavations (in 1987-88; described in Boone 1992) yielded modern decolorized glass and pottery characteristic of the 18th and 19th centuries from the surface of the wall fall layer.

6. CERAMICS

5196 ceramic sherds have been recovered to date. Table 1 presents frequency counts of sherds by ware and form. The four main ware categories are discussed in detail below.

Orange Plainwares (termed Type VI Plainwares in previous reports) make up 75.2% of the sherds recovered in the Trench 1 Area. The principal vessel forms in this ware are large water and storage jars and tankards. Paste is characteristically bright orange and relatively coarse grained (maximal grain size about 1.0 to 1.5 mm). The ceramics in this group were manufactured from clays that appear to derive from low-grade metamorphic rock such as low-grade schists. Nonplastic inclusions (clastics) usually made up around 20% of the fabric. Most of the clastics were low-grade metamorphic rock fragments consisting of more than 95% metamorphosed quartz (i.e. quartz exhibiting strained extinction under a rotating polarized light) grains and 2-3% untwinned feldspar grains (orthoclase). Other minerals present in less than 10 grains per slide included plagioclase, muscovite, biotite, chert, magnetite, hematite, chlorite. The rock fragments are generally angular, and probably result from the milling of clay that already contained considerable rocky parent material, or the addition of milled rock as temper. Some examples also contained straight quartz of sedimentary origin (i.e., from shales, sandstones, or recent sand from sedimentary rock).

Buff Plainwares (Type V) make up 4.4% of the wares. Buff/cream/light rose colored plain

wares also contained coarse-grained metamorphic rock fragments. The rock fragments (predominantly strained quartz and orthoclase feldspar) are similar to those found in the orange wares although the buff plainwares contain less clastics (<10% or less versus 20%) and had a slightly lower range of grain size. Three sherds contained coarse grained metamorphic rock in the form of mylonite. Mylonite was found only in these three Type V wares, and may represent a distinct clay source. Vessel forms are mainly small jars and *jarritas* (tankards). Petrographically and chemically (Boone, *et al.*, n. d. a and b) these wares seem closely related to the *melados*.

Coarse-grained Red-Brown Common Wares (Type I and II) make up 17.2% of the wares. These wares are quite distinct petrographically in that the fabric consists of around 35% relatively large grain rock fragments (modal maximum grain size 1.6 to 1.8 mm) consisting of 92% to 98% angular strained quartz, 1% to 4% hornblende grains, and 1% to 5% plagioclase feldspar. Many examples also contain magnetite, hematite, or other opaque mineral grains. The mineral composition points to clays deriving from diorite or metamorphosed volcanic rock of similar nature. Such clays are found only in a limited area in the vicinity of Beja, Beringel and Ferreira do Alentejo, about fifty kilometers to the north of aite. A traditional pottery industry still exists in Beringel. Two of the petrographic slides studied were of sherds from a modern *bilha* (water jug) manufactured there and proved to be quite similar to the excavated Type I wares. Hence, this category is the only one for which we are relatively certain of the clay source, and presumably, the manufacture location. In the Islamic period, the predominant vessel forms manufactured from this ware were large basins (*alguidares*), casuelas, cooking pots, and a few large jars.

Melados make up 3.2% of the sherds. Vessel forms are almost exclusively food serving forms, including small bowls, large carinated plates (*ataifor*), and narrow-necked bottles (*redoma*). Thin sections most commonly showed angular to sub-angular composite polycrystalline quartz grains showing evidence of metamorphism (i. e. strained extinction under a rotating polarized light). Four cases also contained sub-angular to angular grains of twinned or untwinned feldspar. Three cases contained grains of muscovite and two had traces of biotite. Three cases contained only monocrystalline quartz with no evidence of metamorphism (i. e., straight extinction under polarized light). Chemical analysis (fully described in Boone, *et al.*, n. d.) showed that the melados contained between 5% and 10% elemental calcium, pointing to a substantial calcareous component to the melado clays. Generally, the melados have a lower percentage of clastics and a smaller maximal grain size than the Orange Plainwares wares.

7. CONCLUSIONS

All ceramics recovered from the occupation areas of Alcaria Longa are wheel-thrown and apparently mass-produced, and are consistent with a specialized pottery industry of the kind capable of producing thousands of vessels per year, and distributing them through markets over a relatively broad region. There is no evidence of a

household-level pottery industry typical, for example, of Berber communities in northern Morocco.

The clays used to manufacture the ceramics recovered from Alcaria Longa seem to derive from 3 broad classes of parent material. The most common ware type seems to derive from metamorphosed shales, graywackes, and turbidites (i. e. slates and low-grade schists) that occur within 30 to 40 km of the site. The second most abundant ware type was manufactured from clays deriving from diorites and metavulcanites that occur in the vicinity of Beja some 50 km distant. The least abundant ware types, the *melados* and some of the buff plainwares, appear to derive from calcareous clays, and are consistent with wares manufactured in the Guadalquivir Valley (vicinity of Seville), at least 160 km distant, although the location of manufacture has yet to be verified.

Most of the rock in the immediate vicinity of Alcaria Longa is comprised of un-metamorphosed or very lightly metamorphosed turbidites (graywackes, siltites, pelrites) derived from deep marine sediments of the Carboniferous period (termed the Mértola Formation; Carta Geológica de Portugal, Folha 8). Orange Plainware contained almost exclusively coarse grain metamorphic rock fragments, pointing to a slate/schist parent rock source. Such metamorphic formations are found in belts beginning a few kilometers north of Mértola, in the vicinity of Corte de Gafo and Corte Pinto, and continue to the north nearly to Beja. They include the Phyllite-Quartzitic Formation, the Gafo Formation and the Pulo do Lobo Formation and consist of red and black schists, phyllites mixed with lower grade turbidites. These formations derive from the same deep marine sediments as the Mértola Formation; the difference is that they are somewhat older (Devonian) and were subjected to a higher degree of heat and pressure, resulting in higher grade metamorphism. These schists produce generally better clays than the rocks of the Mértola Formation, although the clays are still not plentiful, and not of the quality that would normally stimulate a specialized pottery industry.

Samples of clays derived from both the Mértola Formation and the Gafo Formation were collected in June 1991 and experimentally fired briquettes made from the clays. One briquette made from clay taken from a deposit just east of Corte de Gafo de Alto (deriving from the Gafo Formation) was included in the neutron activation analysis Boone, *et al.*, n. d. c.). It matched very closely with two of the Orange Plainware sherds that were analyzed, indicating that at least one of the clay sources used to produce Orange Plainwares was in that general area. Hence, at this point it seems doubtful that Orange Plainwares were manufactured at Alcaria Longa itself. Instead, they were probably produced by specialized workshops within at least 30-40 km of the settlement and traded in. It should be pointed out, however, that small pockets of red clays resembling those of the area around Corte de Gafo can be found in the vicinity of Alcaria Longa; whether these were utilized as clay sources is at present unknown.

Evidence indicates, however, that rooftiles almost certainly were manufactured on the site. A large overfired, melted mass of tile wasters was found on the surface of the site, and our petrographic comparisons of tiles manufactured in modern Alcaria Longa within the last 80 years and tiles recovered from the site also point to local manufacture.

8. OTHER ARTIFACTS

Dagger hilt

Part of a bronze and iron dagger hilt was recovered from the floor of the east end of Structure 4 (Figure 12b). The piece consists of a fragmentary iron rod covered with thick hammered bronze sheet. The bronze covering has engraved floral designs on it.

Spindles

A bronze spindle was recovered from the floor of Structure 5 (Compound 2; Figure 9b). A similar spindle was found in the midden right outside the entry-way of Compound 2 (Boone 1992).

Perforated base-metal coin

A perforated coin was recovered on the floor of the corner of the entrance-way into Compound 2 (Figure 10). The Arabic inscriptions on the coin are unfortunately illegible, but stylistically, the coin resembles silver dirhams of the Caliphal period. A small fragment of the coin was analyzed with X-ray Fluorescence at Los Alamos Laboratories, Los Alamos, New Mexico and was found to be predominantly lead (because we lacked a suitable standard to use in the analysis, we were unable to arrive at exact elemental concentrations).

A similarly perforated coin was recovered in Structure 2 during the second season of excavations (described in Boone 1992). It was an Arabic silver coin, also illegible due to the perforations, but which certainly pre-dated the Almohad period. It is worth noting that the only coin recovered in the excavation of Vascos (Izquierdo Benito 1979: 364), a Hispano-Muslim settlement located near Toledo, was similarly perforated. The Vascos coin was a copper dirham dating from between 1067 and 1094).

Lead ring

A small, conical, cast lead ring was recovered in the patio area of Compound 2. It may have

Table 1
Ceramic tallies by ware and form recovered from Trench 1 Area structures

FABRIC	Large Jars	Jarritas	Small Bowls	Potes & Casuelas	Other Jars	Basins	FABRIC	
							Total	%
Red-Br Plain		13		784	18	79	894	17,2
Buff Plain			4			222	226	4,4
Orange Plain	2607	1247	54	1			3909	75,2
Melado		1	92			74	167	3,2
Form Total	2607	1261	150	785	314	79	5196	
Form %	50,2	24,3	2,9	15,1	6,0	0,2		

been used as a spacer or grommet in some kind of compound tool (Figure 9f).

Bronze ring

A bronze harness or belt ring was recovered from Hearth 7 in Structure 2 (Figure 11b)

Spinning component

The top-piece for a distaff was recovered next to Hearth 25 in the west end of Structure 5. A distaff, sometimes called a «rock» (as it is in Portuguese: roca), is a staff about 1 meter long used to hold loosely wrapped wool or flax skeins that are to be spun into thread. The top-piece (Port. torre de roca) is carved out of caprid long-bone and is often highly decorated. Similar pieces have been recovered in excavations at the Alcacova de Mértola (Torres 1984). The piece recovered at Alcaria Longa was very poorly preserved due to acidic soil conditions.

Stone bead

A small perforated stone bead made of a pinkish opaque stone was recovered in the patio area of Compound 2 (Figure 9e). A nearly identical bead made of white stone was recovered in excavation of the Alcaçova of Mértola (Torres, *et al.*, 1989).

Table 2
Faunal Remains: Number of Identified Species (NISP)

Species	NISP
Lg Mammal Undetermined	121
Small Mammal Undetermined	22
Mammal Size Undetermined	177
Caprids (Sheep/Goat)	31
Oryctolagos sp. (rabbit)	1
Lepus sp. (hare)	1
Rodent	1
Galliformes prob.	
<i>Coturnix</i> or <i>Alectoris</i> (quail or partridge)	15

9. FAUNAL REMAINS

As noted above, preserved faunal remains were limited to hearth areas where alkaline ash deposits served as a buffer against the highly acidic lithosols. Bones that were recovered from hearths were almost without exception highly fragmentary and difficult to identify. Identifications were carried out by Katherine Fuller, of the University of New Mexico. Species identification, skeletal part, and evidence for human alteration (burning, cut marks) or rodent or carnivore gnawing were recorded for each fragment. The summarized Number of Identified Species (NISP: i.e., the number of elements that can be assigned to each species category) is presented in Table 4.

REFERENCES

- BOONE, James L. — 1992 «The First Two Seasons of Excavations at Alcaria Longa: A Caliph-Taifal Period Settlement in the Lower Alentejo of Portugal». *Arqueologia Medieval* vol. 1, nº.1, pp. 51-6A
- BOONE, James L., J. Emlen Myers, and Michael Glasecock — n. d. a. Compositional Analysis of Melado and Clear-Glazed Redwares from Three Islamic Period Sites in the Lower Alentejo of Portugal. ms.
- BOONE, James L., J. Emlen Myers, and Michael Glasecock — n. d. b. Compositional Analysis of Orange and Buff Plainwares Recovered from Alcaria Longa. ms.
- BOONE, James L. and Elizabeth Garret — n.d.c. Clay Sources for Islamic Period Ceramics Recovered at Alcaria Longa and the Alcacova de Mértola: the Petrographic Evidence. ms.
- IZQUIERDO BENITO, R. — 1979 Excavaciones en la Ciudad Hispano-Musulmana de Vascos. (Navalmoralejo-Toledo) Campanas 1975-78. *Noticiario Arqueológico Hispanico* 7:248-392.
- RETUERCE VELASCO, M. — 1986 Ceramica islamica de la «Cidade das Rosas», Serpa, (Portugal). Segundo Coloquio Ceramica Medieval del Mediterraneo Occidental, Toledo, 1981. Pp. 85-92.

TORRES, Cláudio — 1984 Uma Velha Cultura Serrenha. In Mantas Tradicionais do Baixo Alentejo. Pp. 45-62, Caderno Nº. 1. Beja: Campo Arqueologico de Mértola.

TORRES, Cláudio et al. — 1987 Ceramica Islamica Portuguesa: Catálogo. Campo Arqueologico de Mértola.

TORRES, Cláudio et al. — 1988 Mértola Almoravide et Almohade: Catalogue. Organisation de Campo Arqueologico de Mértola et de la Municipalite de Mértola.

TORRES, Cláudio et al. — 1989 Mértola, Vila Museu. Campo Arqueologico de Mértola.