



WALILA: FROM THE AWRABA TO THE MERINIDS

UCL-INSAP Volubilis Project 2018-2019



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with the assistance of

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Introduction

The *INSAP-UCL Project at Walīla*, directed by Elizabeth Fentress, Corisande Fenwick (UCL) and Hassan Limane (INSAP), was established in 2018 to understand how an early Islamic town worked and how its population lived, and to train young Moroccan and British researchers in cutting-edge archaeological techniques. Walīla, Roman Volubilis, offers an ideal place to explore these questions. A UNESCO site more widely celebrated for its Roman heritage, thanks to decades of work by Roman archaeologists, it played a significant and often overlooked role in the early medieval period as a Berber centre, the probable locale of an Umayyad or Abbasid garrison, and the first capital of Idrīs I and the first *surafā* dynasty in Morocco. As such, it provides an exceptional opportunity to investigate how a town was transformed from a Berber agglomeration to the base of a new Arab-Islamic state and how local groups engaged with new immigrants from the East and Al-Andalus. The excavations of 2000-2005 have now been published, and the new series is intended to build on their results.¹

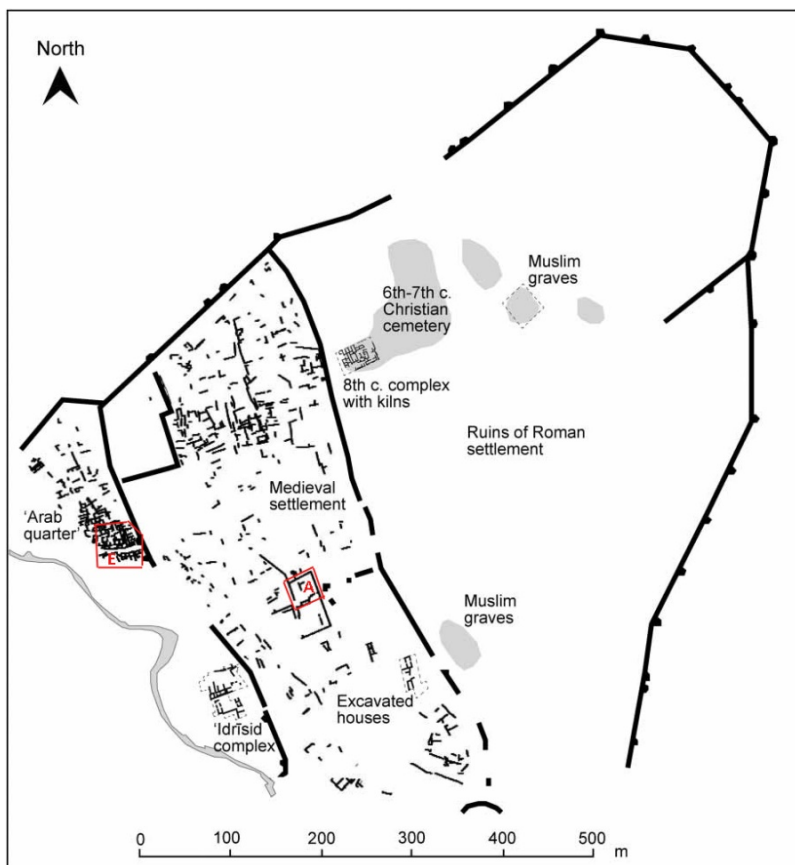


Figure 1: Medieval Volubilis, showing the excavation areas (EF/CF).

Long before the Muslim armies reached Morocco, the city was reduced to the western third of the Roman town, protected by a new rampart running north-south. This reduced city remained at eighteen hectares a large and important agricultural settlement in the seventh and eighth centuries occupied by the Berber Awrāba tribe. At some point after the Arab conquest of Morocco, a new walled quarter– the so-called ‘Arab quarter’ – seems to have been established outside the gateway near the wadi, perhaps to house a garrison. In 778-80 Walīla became the headquarters of the Idrīsīd state and the earlier INSAP-UCL excavations identified the probable location of Idrīs’ administrative complex in a

second quarter built outside the walls to the south of the original extra-mural settlement. The court was removed to Fās under Idrīs II, but the town continued for some time to be an important Idrīsīd centre, although by the tenth century Al-Warrāq says that it was abandoned. The town disappears from most of the historical sources thereafter, but there is now increasing

¹ E. Fentress and H. Limane, eds., 2018: *Volubilis après Rome. Les Fouilles UCL-INSAP 2000-2005*. Leiden.

archaeological evidence of a sizeable fourteenth-century occupation in the Merinid period, perhaps related to the new importance of Idris I and II for legitimising the right of this dynasty to rule.

The new project (2018-2022) takes a holistic approach to Islamic Walila by combining the excavation of different zones in the medieval town with scientific analysis of the largely unstudied medieval finds in the site archive. It combines multiple techniques – excavation, GIS, archaeobotany, zooarchaeology and bioarchaeological analysis – to reconstruct the urban development of a North African town in the Islamic period and to understand the diet, nutrition, health, lifestyle, origins and mobility of its medieval inhabitants. Equally, it seeks to train Moroccan and British students collectively in the latest archaeological techniques and to foster and encourage a new generation of Islamic archaeologists in the two countries. This report offers a synthetic treatment of the first two excavation campaigns, which took place in April 2018 and 2019.

Site A: the settlement within the walls

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fig. 2 Site A, drone photograph (CF)

Excavation at Site A is aimed at a large, walled enclosure visible above ground and mapped in 2018. One of four such enclosures, we felt it would give information about a phase in which substantial parcels were granted to individuals. The choice of site was also based on the need to understand the stratigraphy in the middle of the Berber town, for the 2000-2005 excavations within the town walls had investigated a fairly peripheral area to the south. We began in 2018 with the northwest quadrant, where the most obvious buildings were located: House C was also investigated. The 2019 excavations more than doubled the size of the 2018 trench, with an extension to join the two areas excavated the previous year, and another to extend the site to the east wall of the enclosure (fig. 2). The whole excavation now covers roughly 400 square metres. Work also continued on the buildings in the earlier excavation area, giving a clearer picture of their history.

Rooms A and B (fig. 3)



Fig. 3: house A-B, from the northwest (EF).

The excavation of the house comprising these rooms, begun in 2018, was completed by the removal of the destruction layer over the floor of room B. Like house III on site D, excavated in 2004 and published in *Volubilis après Rome*, this building compares closely with Bourdieu's *maison élémentaire*, with a large, multi-purpose , B, used by the family and a smaller room, A, covered by a loft, supported, in this case, by a post and a subsidiary wall.

However, unlike the Kabylie examples, the smaller room was used for storage rather than for stabling, as it is characterized by holes for jars. The loft was also used for storage, as is attested by the large jars that fell over its wreckage after the fire that destroyed the building. This burned particularly severely in the loft over room A, which collapsed, leaving charred remains of planking and several large, smashed, jars.

In room B the floor was very smooth, with plaster traces towards the east which petered out on the western side, probably due to erosion. It was marked by a substantial hearth near the door to room A, and by two shallow postholes cut .80m from the north wall, 1,75m apart. Between these two postholes and slightly closer to the wall was a group of stones, embedded in the floor but showing no particular pattern. Given the position of these three features directly in front of the wide door on the south side of the room, and thus in the position that would have received the greatest amount of sunlight, we interpret them, tentatively, as being supports for an upright loom. The postholes themselves were, at c. 20 cm., too shallow to have provided much support, so we hypothesize a timber element which would have propped the loom up, wedged by the stone feature, and possible other links to the north wall of the room. The destruction layers in this room were less obvious than in room A , although a certain amount of ash was present on the east side. The walls, constructed in large blocks with a superstructure of *pisé de terre*, were robbed towards the west end, and in some cases had fallen outwards.

Although the pottery from the building generally comprised fairly standard coarsewares, largely storage jars, the find of not one but two incense burners from the deposit of the collapse of the loft is intriguing, suggesting a rather more complex occupation than was initially assumed (fig. 4) . In the various destruction layers and in the space to the north, we also find numerous broken clay moulds that may have served for coining (fig. 5).

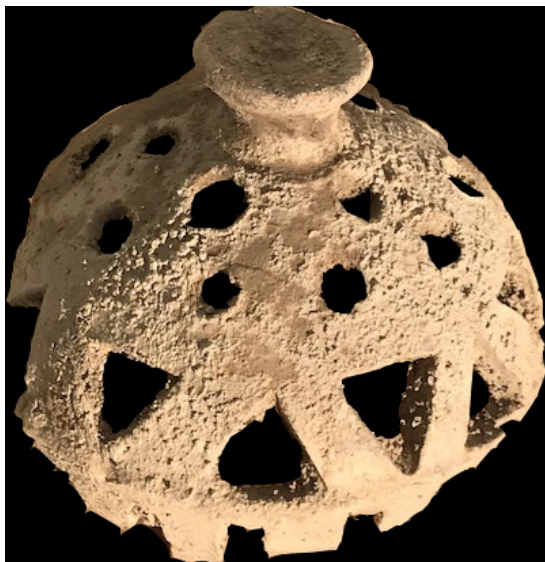


Fig. 4. The incense burner from Room A (EF)

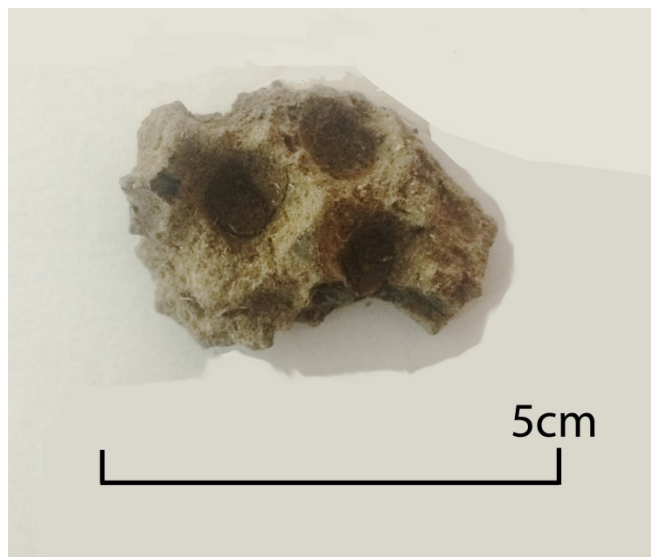


Fig. 5. A coin mould from room D (CF).

Room D



Fig.6. The silo 6106, covered by a later hearth (EF).

masonry, without large elements of *spolia*. Of the north wall we only have the robber trench of what was presumably an orthostat, and a foundation in yellow clay *pisé de terre*. We may assume that, as is the case with the east wall, this was covered by a line of large blocks which were removed during the construction of the later enclosure wall; indeed, two fragments of green-glazed ceramics date the robbing to the

After its destruction by fire, House A-B was not rebuilt, as the prone position of one of the large stones from its north wall shows. To the north of it lay a space previously occupied by a very large silo, **6016** (fig. 6), cut into a hard surface, **6045**. After the fire the silo was filled in by very large blocks of building stone, as well as by smaller stones and earth, including, towards the top, burned material from the fire. The site thus roughly levelled, walls were constructed around the space, which now formed room D. These are built in techniques so dissimilar as to make it uncertain they are contemporary, although the east and west walls both abutt the north wall of room A. The east wall was constructed of large, spoliated blocks cut into the hillside to the east. The west wall, on the other hand, was made of very roughly-coursed rubble

fourteenth century. To the south, the old door leading to room A was blocked with earth and stones. All of these walls presumably had superstructures of *pisé*. Into the room was spread a thick deposit of reddened earth, covering the fills of the silo and sloping down to the south, **6089**. This was relatively free of pottery, and seems to have derived from the burned *pisé* superstructure of house A-B.



Within the room, a hearth was found against the east wall, built onto one of the huge stones filling the old silo. The room, however, does not seem to have been destined for domestic occupation. Over the southern third of the room a cobbled surface paved with river pebbles, **6123**, was cut into the floor **6089**, sloping down into a drain built into the west wall of the room (fig. 7). This drain was substantial, .25 m. wide, and leading out to a rough channel built into a further cobbled surface on the exterior of the building. The fact that the cobbles abutted one of the fallen stones from the wall of

Fig. 7. The cobbled surface **6123 and drain (EF).**

room B shows that that building was not reconstructed. What this pebble surface was used for is uncertain; clearly water was involved in some way, but whether it was intended for washing, as a large, sloping slab just outside the surface suggests, or whether it was a space used for stabling that was occasionally cleaned, remains unclear. Certainly the drain continued to be used for a time: this is suggested by its repaving with large body-sherds, perhaps contemporary with a jar cut into an upper floor with its mouth toward the drain and set into a later floor.

The door of the building was found on its west side, opening out through a sort of porch onto a courtyard, E, on that side. Apart from the cobbled area, this was covered with an irregular, compact surface of brown earth. To the west, a series of five stake-holes suggest some kind of light structure. We assume that this courtyard, whose limits are obscured by the later Merinid enclosure, was used for penning animals, and have taken samples for phosphate analysis. To the north of the building were found two silos, one, moderately-sized, was .70m deep, while the other, with a slightly greater diameter, was 1.50m deep. Both were backfilled with midden debris containing multiple bones.



Fig.8. Room D from the northeast (EF)

In a second phase a new floor, **6054**, was laid down, rather more level than that of the first phase but hardly flat. At its southern end was a construction made up by a level of rough stones, which covered the cobbles, and were then covered by a

reddish surface, **6076**, slightly higher than **6054**. Against the south wall of the room were placed four large slabs, **[6075]** which we initially took to be a threshold, but, as they were built against a blocked door, were probably some kind of work surface, used in conjunction with the redder floor. A new large, sloping stone, deriving from a Roman marble basin, was set so as to lie diagonally, again suggesting the possibility that it was used for washing. No clear hearths are associated with this phase.

The question remains as to whether room D was an annexe to a larger building, in the same way that its space was once an annexe to building A-B. Lines of stones with a very similar orientation are found on the slope to the east of it, and may well represent the new domestic structure, although this will only become clear after next year's excavation. Pottery seems to date room D and its fills to the early ninth century. The sequence of these houses is thus very similar to those observed on site D in the 2000-2005 excavations, in which larger buildings are associated with annexes in which a variety of subsidiary activities took place, in this case grain storage and perhaps washing facilities. The date of the abandonment, too, resembles that of site D.

The Merinid enclosure

Although initially assumed to be of early date, it was immediately clear that the enclosure wall, surrounding the site was later than all but one of the structures present. Fairly abundant pottery, in fact, dates it to the Merinid period. The enclosure appears to have been almost empty: The two courtyard surfaces excavated, **6097** in area F, and **6148** in the extension to the east, were singularly lacking in features, with the exception of the reddening of a brazier or the occasional stakehole. There was a certain quantity of glazed pottery, more plentiful in the south than in the eastern extension. There the surface sloped down sharply, piling up against the earlier walls in the area. Both surfaces abutted the walls of the enclosure, and covered several



large pits which seem to have been intended to recover earth for their superstructures. Although we had initially believed that all four walls were built in the same technique, excavation and cleaning reveals that only the north and east walls were built of a double facing of very large squared blocks, spoliated from Roman and later walls, with an emblecton of earth and smaller stones. The west wall, visible on fig. 9, is built of a single row of stones, sometimes faced

Fig. 9. Courtyard surface **6097 from the northeast. House C is in the background (EF).**



Fig. 10. House C, from the northeast (EF).

on the inner edge with small blocks. The south wall is puzzling, as it appears to follow a sinuous line meeting up with the northeast corner of house C. The door of the house, on the other hand, faces south, and it hardly seems to relate to the northern enclosure, which thus remains, for the moment, free of any buildings (see fig. 2). House C is, itself, a carefully-built structure, with a thick plaster floor covering around half of its area, and paving slabs at its western end.

The lack of activity and material in the courtyard, and the lack of any structures, leaves it somewhat mysterious: it may have been always intended for penning animals – and again we are testing for phosphates – but the size of the walls is wildly disproportionate for this activity. The four similar enclosures nearby suggest a deliberate, quasi-urban layout, but the lack of building inside them leads us to believe that they were occupied for only a very short time, if at all. The pottery found on the floor of room C derives from the kiln observed by Abdullah Fili in Moulay Idris in 1999, so we may assume that that site was already occupied at the time of the Merinid reoccupation of Walili.

The abandonment and destruction of the site was signalled by a thick, stony destruction layer that ran along the whole length of the west wall, mixing with the stones found in a pit dug against the wall during its construction. The site then filled with a dark, humic layer, cut at some point for the insertion of two graves, one in space E and the other in the northeast extension. This latter was then cut away in some fashion, perhaps simply by erosion, although there was no trace of bones in the surrounding layer. We are unable to date these events. No further activity was visible on the site.

Site E: the Extramural Settlement

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Fig. 11: Drone image of site E (CF/DB)

Our second focus is the zone immediately outside the Romain enceinte and located just outside the West Gate (Fig. 11) and on the flat ground in front of the Oued Khoumane. Here, earlier, unpublished French excavations in the 1950s had revealed a multitude of altars and funerary cupolae (2nd and 3rd century) re-used in the walls of dense medieval housing, an irrigation canal and a building with 12 columns and five doors that may have been a mosque. Large amounts of Islamic coins were found including over 500 bronze coins, a gold dinar and two substantial coin hoards: the first contained 236 silver dirhams minted in the Middle East, Ifrīqiya and Al-Andalus dating between 698 and 743, and the second which is unpublished apparently contained silver dirhams minted by the Umayyads in Spain.² Our aim is to clarify the occupation history, and, in particular, evidence for Arab settlement in the first half of the eighth century and the presence of a possible garrison and mint. In 2018, we focused on cleaning up the French excavations and

² Daniel Eustache, "Monnaies musulmanes trouvées À Volubilis,"; Georges Séraphin Colin, 'Monnaies de la période idrissite trouvées à Volubilis', *Hespéris*, XXII (1936): 113- 125.

establishing a working chronology for this vast zone through limited sondages and sections. In 2019, we expanded excavations across this quarter to build up a detailed understanding of the settlement in this zone.

The earliest occupation uncovered so far is a substantial second-third century Roman cemetery with built mausolea and cupolae tombs lying outside the western gate of the Antonine town walls. At some point in the sixth or seventh century, presumably contemporary with the re-occupation of the site after the earthquake of the early fifth century, the area immediately outside the western gate was used by the Berber settlement as a midden, excavated below Building 1: it contained large amounts of animal bones, including pig bones, imported Tunisian lamps and Spanish amphorae of seventh-eighth century forms which suggest that Volubilis was far better integrated into Mediterranean trading networks than previously thought.

Islamic Phase I

In the late seventh or early eighth century, the area was given over to scattered houses built in *opus africanum*, re-employing architraves, columns, tombstones and other stones (Fig. 6). The buildings of this phase are characterised by fine plaster and clay floors, large amounts of Islamic coins, new forms of ceramics and a much wider variety of crop types than Area A which supports our interpretation of this new urban zone with its different housing types as a settlement of Arabs outside the town walls. Several houses or rooms of larger houses of this phase have been identified and partly excavated so far: they will be described from north to south.

Building 7

Building 7, on the northern edge of Area E, was built abutting the city wall's foundations, indicating they must have dug out part of the centuries' accumulations. So far identified are its N wall, constructed with concrete and rubble, and an associated beaten-earth floor with a hearth. The wall was covered with a reddish brown plaster, of which a sample was taken.

Building 6



Fig. 12. Building 6 from the southeast (EF)

To this building's west is Building 6, a rectangular room of which all four walls (three in *opus africanum*, one apparently robbed) could be identified. Associated with these walls is a beaten-earth floor covered by a thin layer of white plaster, which laps up against the walls. In it a reused decorated medieval column capital was placed upside down within the floor very close to a large square limestone block. The floor also contained a central hearth, while a drain was cut into it in the SW corner.

Building 5



Fig. 13. Building 5, with later walls. Drone photograph (CF)

On the north side of the main road that starts at the Roman gate, further W from Building 1, is an enigmatic monumental building, described by the French in the 1950s as a building with 12 column bases and five entrances. The column bases have since been displaced, but our excavations uncovered a building at least 15m long with a series of partially preserved fine plaster floors and pavements visible in the sections. The five entrances described might refer to spaces between the well-cut orthostats in its south wall. Almost certainly a public building, it may well be the mosque of the settlement.

To the north of this room is a large, open area with, at its center, a substantial well. It is not impossible that this is a courtyard, with the main building opening on to it from the south, and building 6 opening on to it from the east: this would associate Building 6 with the possible mosque.



Fig. 14. Building 1, room 1, from the east (CF)

Building 1

At a higher level than Building 7 but apparently of the same phase are rooms 1, 2, 3, and 4 of Building 1, which was built along the road exiting the city gate to its N, its walls probably abutting the N gate tower. Excavations below Room 3 revealed a collapse layer that includes mortar, stones, and tiles, most likely the remains of a Roman tomb. Covering this collapse and otherwise filling the entire room is the midden layer, on top of which the room's walls were

constructed. Interestingly, level with the surface of the midden layer were two circular orange clay hearth-like features. Covering the whole room, abutting all three walls, and likely to be connected to the doorway in the room's north wall was a compact gritty surface with large amounts of faunal remains and sherds. In the north corner of the room, one circular clay hearth was located near a square area paved with burnt stone slabs, probably also a hearth.



Building 2

Two walls of this structure date to the first Islamic phase, when the building was paved with a beaten-earth floor. It faced onto the road leading to the gate, where its position, like that of the unexcavated Building 3, suggests that the southern half of the double gate had fallen out of use at this time.

Fig. 15. Building 2, from the east, showing an early floor cut by a much later silo. (CF)

Building 4

In the southwest corner of the site, south of the road, is an enigmatic building marked, in the first phase, by a long wall running along the road. The building has been excavated in the past without preserving any of the stratigraphy, and on the lowest surface reached were dumped a number of column bases, probably those referred to in earlier reports. There is nothing to indicate an interpretation for this building, which remains quite enigmatic.

Destruction layer



A substantial destruction layer dating to the mid- or late-8th century closed this phase in Building 7. This layer contained an intaglio for a seal-ring inscribed *bismillah* (In the Name of God), very similar to a silver seal-ring discovered in 1933 (perhaps in a grave) to the west of the 'maison au chien', that is inscribed 'Allah is enough for me. He is the best guarantee'. These seal-rings are characteristic of early 8th cemeteries in al-Andalus, but these are the earliest discovered in Morocco to date. No other buildings appear to show evidence of similar destruction at this stage, although a thick layer of what is apparently abandonment accumulated in Building 5.

Fig. 13, Glass-paste ring mount (EF)

In the next phase, dated securely to the late 8th-9th century (the Idrisid phase), the quarter expanded significantly: new multi-room dwellings were built in a drystone masonry, some with paved exteriors with wells, while existing houses seem to be subdivided or extended. Evidence of artisanal activities dating to the

late ninth century has been found in various buildings including, within the confines of Building 5, where a furnace for iron smelting was found; if it had once been a mosque it no longer was. Near Building 7, a tank for fulling or processing agricultural goods was built.

South of Building 6 and E of Building 5, a well was built into a construction cut that intersected the south wall of Building 6. The well was constructed in well-cut limestone and sandstone blocks: excavation reached 1.2 metres, but it was not bottomed.

Destruction

This phase also ended abruptly and thick burning and collapse layers rich in coins and locally produced ceramics (cookwares, jars, tablewares) were found across the site. The coins include several silver dirhams and many bronze *fulus* minted under Muhammad ibn Idris (828-836).³ The coins not only attest to the wealth and prosperity of the inhabitants in the extra-mural quarter, but demonstrate that this area was reoccupied in the Idrisid period perhaps as part of a significant expansion of the town.⁴ However, the mid-ninth century date of the burn layer in the extra-mural zone, Zone A and the Maison au Compas suggest that we may be seeing a site-wide destruction in this period.

Islamic 3

The fourth phase, which has been pretty thoroughly destroyed by previous excavations, consists of a few walls, generally rather scrappy rebuildings of previous structures. These walls cluster near to the city gates, and seem to form a single ensemble, perhaps even a small farm that was built there at some not-yet identifiable period. A midden deposit from this structure covered the period 2 vat over Building 7.

Building 4, closest to the oued, was covered by a deep layer of alluvium, which indicates flooding at some phase after its abandonment. We do not yet have clear dates for this phase, but it might be associated with the Merinid occupation of the site that we have seen on sites A and D.

The Islamic Cemetery

Efthymia Nikita with the assistance of Imane Qouti

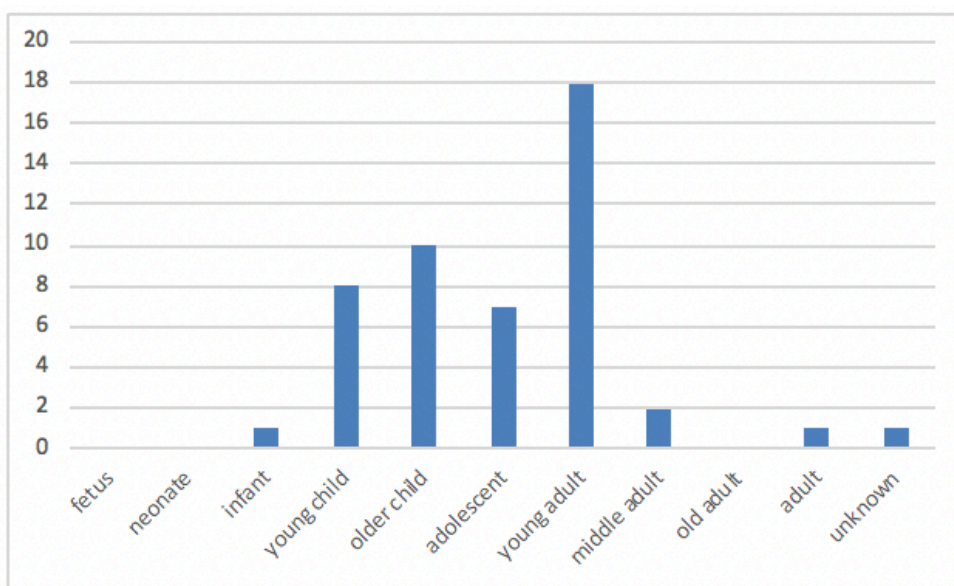


Fig. 14. Age distribution (n=53) (EN)

Our third focus in 2019 was the study of the medieval cemeteries of Volubilis, located in the ruins of the Roman town to the east of the medieval town which have never been published, but are preserved in the reserves on site and in Rabat. No anthropological analysis has ever been conducted on this sample, the largest sample of

³ The coins are being studied by Fatima Zohra El Harriif

⁴ Ongoing excavations by Aomar Akerraz have identified Idrisid occupation to the north of the walls: Akerraz pers.com..

medieval burials in North Africa and it offers an unprecedented opportunity to utilise the latest scientific techniques (aDNA, isotopic, radiocarbon, morphometrics, molecular analysis) and anthropological analysis to answer key questions about demography, origins, lifestyle and diet of the people of medieval Walīla. In 2019, we started to re-assess the materials from earlier excavations in these areas, focusing particularly on those cemeteries found across this zone containing burials laid out in accordance with Muslim funerary rites.

A full study was conducted on 40 tombs in an Islamic cemetery in the South of the Roman town excavated in 2012-2013 by Profs. A. Akerraz and A. El Khayrari, as well as a 14th century grave excavated in 2018 and 3 Muslim burials excavated in 1964 in the Maison au Compas. The preservation of the material is very good. From the Islamic cemetery, 10 females, 10 males, 2 indeterminate adults and 26 juveniles were identified, reflecting a high mortality rate for sub-adults. The pathologies identified on the skeletons are those commonly found in bioarchaeological assemblages. Eleven skeletons showed cribra orbitalia (porosity on the orbital roof) traditionally associated with iron deficiency anaemia but more recently linked with genetic anaemias and other stressors. Eight individuals had linear enamel hypoplasias, horizontal grooves on the enamel surface that indicate some stressful episode (e.g. infectious disease, malnutrition) during an individual's childhood when enamel was formed. Three of individuals exhibited healed fractures and one individual had a depressed healed cranial lesion, likely the result of blunt force trauma. Samples were taken for ancient DNA (aDNA), dental calculus dietary and non-dietary inclusions, and isotope analysis (both dietary and mobility) and will be studied in the UK by Dr Pontus Skoglund (Crick Institute), Dr Anita Radini (York) and Dr Michelle Alexander (York).

Archaeobotanical report

Ruth Pelling

The 2018 and 2019 seasons of excavation at Volubilis have included intensive collected of sediment for flotation samples for the recovery of plant remains, small bones and other finds. All defined deposits (fills, spreads, occupation layers) were sampled, with multiple samples taken from within larger areas (room fills/floors).⁵

Charred plant remains in Area A are characterised by small numbers of cereal grain, fruit seeds or stones/stone fragments (notably grape, *Vitis vinifera*, but including olive, *Olea europaea*), a single bean (*Vicia faba*) and few weed seeds. One desiccated olive stone was recovered (context 6021, from within the incense burner). Charred seeds of wild plant species were few but included those of *Malva* sp (mallow), *Medicago/Trifolium* type (medick/clover), *Silene* sp. (campions/catchfly), *Vicia/Lathyrus* (vetches/vetchlings/tares), *Phalaris* sp (canary grass), and small seeded grasses (*Poaceae*). All are common weeds or arable fields and disturbed ground and grow on the site of Volubilis today.

Area E samples were also characterised by cereal grain and frequent weed seeds, but had fewer fruit remains than Area A. Also present were fragments of charred matter which is described as 'bread like' but could include other types of organic or inorganic matter such as animal dung or industrial processing waste. The 'bread' like material was present in samples from contexts 5056, 5142 and 5152. Cereal grain was most

⁵ Sample size has generally been 10 litres per sample, with the option to combine multiple samples from single deposits. From Area A, 33 flotation samples have been taken from destruction layers, occupation deposits, pit and silo fills. A total of 36 flotation samples have been taken from Area E, from destruction layers, occupation deposits and pits. In addition, large pieces of charcoal, and fragments of plaster or roofing material with visible botanical impressions, were retained for microscopic analysis. The majority of the plant remains are preserved by charring (burning in antiquity). A small amount of plant material and a fly pupa are preserved by calcium phosphate mineral replacement, most commonly associated with sewage deposits or middens. Preservation of charred remains is variable, but very good in some samples

numerous in collapse layer 5025 and pit fills 5162 and 5125. Barley (*Hordeum vulgare*) was the most common cereal in context 5025, while barley and wheat (*Triticum* sp) occurred in similar numbers in the pit samples. Overall, barley and wheat occur in similar numbers. The wheat included free-threshing bread/durum wheat types (*Triticum aestivum*/durum) and hulled emmer/einkorn (*T. dicoccum*/monococcum). No chaff was noted. Weed seeds were notably more numerous than from samples in Area A and include a wider range of taxa. In addition to the *Malva* sp., *Phalaris* sp, Boraginaceae and small seeded grasses (Poaceae) seen in Area A, seeds of *Chrysanthemum* sp, *Calendula* sp., *Lolium*/*Festuca* sp, *Galium* aparine type, *Rumex* spp, Cyperaceae, *Chenopodium album* and *C. murale*, were identified.⁶ Fruits were less numerous than in Area A, but included olive and grape, as well as fig (*Ficus carica*). Desiccated olive-type stones were present in collapse layer 5025 (sample 501). Pulses were also present of which lentils (*Lens culinaris*) were provisionally identified. Possible cotton (*Gossypium* sp.) was present in pit fill 5164 (two seeds) and 5142 (1 seed).

There are clear differences emerging between the two excavation areas in terms of the botanical remains, which may be related to temporal and associated cultural differences. Area A has produced smaller quantities of charred plant remains, but with a greater emphasis on fruits, particularly grape, than Area E. Charred cereal grain, and especially weed seeds, likely to be an indicator of crop processing activities, were more numerous in Area E with some deposits notably rich in weed seeds and of consistent taxa (contexts 5142, 5147, and pit fills 5162 and 5165). Small numbers of mineralised seeds and a fly pupa in Area E is consistent with sewage and/or midden deposits. There is no evidence for concentrated sewage as might be found in a cesspit, but rather a background presence of sewage as part of general waste deposits. Lumps of charred matter in Area E may be derived from bread type foods, animal dung or other organic matter.

Conclusion

Two seasons of excavations has produced remarkable results, revealing a bustling medieval city of the seventh, eighth and ninth centuries with a variety of housing types, monumental buildings (a possible large mosque??) and an artisanal quarter, as well as a significant 14th century Merinid re-occupation of the site. The new information from Area E seems to confirm our hypothesis that we have two different communities living at the site in the seventh to ninth century, consisting of a Berber population living in the medieval town and a new (Arab?) incoming community moving in and settling outside the walls, a model seen elsewhere in the Islamic world. These communities lived in different types of houses and used and consumed different types of goods (particularly ceramics) and foods; and there seems to be a significant difference in wealth and buying power between those living in the new quarter and those in the old town.

⁶ Weed seeds were particularly common in samples from contexts 5142, 5147, and pit fills 5162 and 5165, and contained very similar taxa with large numbers of seeds of *Malva* sp, and *Chrysanthemum* sp. The weeds noted are generally larger seeded, which are typically removed from cereal grain as a very late stage of processing, over picked over immediately prior to milling, although finer (<1mm) flots were not scanned.