Islamizing Berber Lifestyles

Elizabeth Fentress*

The article focuses on the "Islamization" of Berber lifestyles, rather than the effects of the conquest on the Romanized inhabitants of towns in the Africa Proconsularis, the medieval Ifriqiya. The examination follows aspects of material culture as a whole, particularly in the Western Maghreb, where urbanism was far less dense. The evidence comes largely from later texts, although new archaeological work, particularly at Rirha and Volubilis, has begun to flesh out the picture. How did Islamization actually affect the Berbers of the West? While we have little evidence for Algeria, where the excavated Islamic sites are no earlier than the tenth century, the excavations at Rirha and Volubilis – Islamic Walila – provide excellent new data as to the gradual shift in settlement types, diet, and pottery, as well as for the use of coinage. For the tenth century, Sétif and now Igīlīz add evidence for the *fait accompli* of the fully Islamized towns and villages of the Maghreb. Like Romanization, Islamization came about by emulation, particularly among the élites, and by a slow change to the general *habitus*, with far different starting points for the Arabic and Berber communities.

Keywords: Ancient history, classical studies, classical archaeology, archaeology, Trans-Saharan archaeology, Arabization, Islamization

Introduction: Transitions in the Maghreb

While the religious Islamization of North Africa has received a certain amount of attention, little has been written about the social consequences of this practice, and there is still little agreement as to its timing.¹ Religious conversion is judged, in general, to have been rapid but superficial, with frequent references to apostasy. The evidence used is wholly from the relatively few texts, which do not change, although their interpretation does. So far, however, no-one has used material culture to examine the process, the changes that the Arab invasions brought about, and the rhythms of change, although there are certainly elements of this in Corisande Fenwick's book on *Early Islamic North Africa*.² This paper examines the question from the point of view of the still-emerging discipline of medieval archaeology in the Maghreb, looking for any correlation with Islamization.

- * Correspondence details: Visiting Professor, UCL, elizabeth.fentresfigs@gmail.com
 - This article is part of the themed section *Africa 500-1000*. *New Perspectives for historical and archaeological research*, guest editors: Roland Steinacher, Paolo Tedesco and Philipp Margreiter. To read all related articles, please access: dx.doi.org/10.1553/medievalworlds_no16_2022. For a map of the region under discussion, see the introduction at dx.doi.org/10.1553/medievalworlds_no16_2022s3.
- 1 Much has been written on the subject in the last 40 years, some of it very dogmatic. For balanced views, see El Fasi, *L'islamisation de l'Afrique du Nord*; Brett, Islamisation of Morocco; Amara, l'islamisation du maghreb central; Aillet, Islamisation et arabisation. Bulliet, *Conversion to Islam in the Medieval Period* provides useful quantitative information, although it is clear that his sources are much rarer in the Maghreb than they are elsewhere.
- 2 Fenwick, Early Islamic North Africa.

Although it is easy to demonstrate that all Roman Africans did not die or go away with the Arab invasions (as a Tunisian archaeologist once told me, asserting that there were no Berbers in Tunisia) and easy, as well, to show, as Corisande Fenwick has done, that many urban centres remained occupied, it is impossible to argue that little or nothing had changed over the period that separates the Vandal rule from the Aghlabid period.³ What I want to do in this paper is to discuss the material correlates of the changes we can observe: not just where people lived, but how they lived.

Several years ago Andrew Wilson and I argued that in around 425 CE, only a few years before the Vandal conquest, the southern frontier of North Africa was swamped by a new wave of Berber invaders, coming from somewhere in the Sahara and driven by a combination of ecological factors, opportunity, and perhaps a charismatic leader.4 Our evidence for this was archaeological and linguistic (combined with two key letters from St. Augustine), and we equated this invasion with the subsequent dispersal of the tribes characterized by Ibn Khaldun as Zenatic. I do not want to return to this argument, but it helps to situate the Berber kingdoms of the late fifth century in a regional context, and, indeed, to separate the Romano-Berbers of Africa Proconsularis and eastern Numidia, the areas stably occupied by the Byzantines, from those areas occupied by relative newcomers, still in movement and in close touch with one another. Archaeological evidence, particularly that of the drum tombs of Saharan type, supports this view. Their ability to form relatively stable kingdoms is clear from the Djedar, whose construction speaks to the control of a massive amount of manpower, and whose numbers suggest a dynasty of several generations. Camps argued that the Berber kingdoms of this period were regional in scope, rather than the tiny, shifting principalities suggested by Courtois.5 That the area these kingdoms - or this kingdom - occupied coincides with that of the Zenatic-speaking tribes at the time of Ibn Khaldun closely relates those tribes to this new wave. Although they seem to have used Latin as the language of government on the coast, and to have referred to their state as a "Provincia" on inscriptions, the heartland of the state lay south and west of the Roman province, near Tiaret, where the Djedar are found. We can see this state as formed by an alliance of tribal groups under a single dynasty, a structure that will recur with great regularity in the Maghreb. The dispersal of these tribes through the Western Maghreb is clear from the two tribes that were protagonists in the early seventh century: the Awraba, the tribe of Koceila, based in southern Numidia, and the Jawara, the tribe of the Kahena, from the Aurès. Both tribal groups are also found in Morocco between the seventh and the ninth centuries; they may be sister branches, or simple displacements of the whole tribe, but they demonstrate the wide spread of these tribal entities, who spoke a group of dialects known as "Zenatic" which linguists agree was only distantly related to those of the Kabylie.7 What we are dealing with here, then, is a set of

³ Fenwick, From Africa to Ifrīqiya; Fenwick, Early Islamic North Africa, 53-80.

⁴ Fentress and Wilson, Saharan Berber diaspora.

⁵ Camps, Rex gentium; Courtois, Les Vandales et l'Afrique, 335. On the Djedar, see more recently Laporte, Les Djédars.

⁶ On the Awraba, cf. Siraj, *L'image de la Tingitane*, 510-519; Modéran, Koceila; Bennison, Walila-Volubilis dans la tradition textuelle arabe, 66-67.

On the Zenatic languages, see most recently Ehret, Berber peoples in the Sahara and North Africa; Kossman, Berber subclassification.

people who were only weakly Romanized, if at all. Although some may have been Christian, their treatment at the hands of the Arabs, who regularly enslaved Berber women, suggest that they were considered more pagan then otherwise.⁸

My title, then, relates to the Islamizing of these Berbers, rather than the Romanized inhabitants of Africa Proconsularis, the medieval Ifriqiya. I want to examine this not in terms of their religion, but in terms of their material culture as a whole. The story for Ifriqiya is better known, based on the relatively stable occupation of the old city centres, with movement and new settlement only in the cases of the capital at Kairouan, at Tunis, and in the various palaces – whose excavation, as Abdallah Fili has pointed out, has taken priority over every other form of settlement. In the West, where urbanism was far less dense, the evidence comes largely from later texts, although new archaeological work, particularly at Rirha, Igīlīz and Volubilis, has begun to flesh out the picture.

There seems to be little doubt that, once the revolt of the Kahena had collapsed, the Berbers of the West joined the Arab cause with enthusiasm, producing troops of mounted warriors whose unity seems to have been one of their most striking characteristics. The ninthcentury author Ibn 'Abd al-Hakam recounts that after the Arab general Hasan's victory over the Kahena, significantly to the west of the Aurès and probably in the Hodna basin, the surrender of the Berbers was accepted on condition that they supplied him with 12,000 horsemen, divided into two bands and entrusted to the two sons of the Kahena.10 Brett argues that the legend of the Kahena's prophecy functions ex post facto to sanctify this outcome: her sons, stand-ins for the Berber Tariq ibn Ziyād, client of Musa ibn Nusayr, and the conquest of Spain, came to symbolize this fusion of Berber and Arab interests. 11 Tariq's own troops in 710 consisted of seventeen thousand Arabs and, again, twelve thousand Berber horse. That the Berbers joined in for opportunistic reasons rather than for religious ones there is little doubt, but this was a fusion that would last as long as the plunder and new lands kept coming, and left in its wake a vast population that was, at least nominally, Islamized. The principal urban hub of this period in the West seems to have been Tlemcen, the Roman Pomaria, from which, at the same time as the conquest of Spain, the combined Arab and Berber troops moved to control the Sūs, an area well outside the Roman Empire, even in its heyday.

But what did this mean in terms of ordinary life: how did Islamization actually affect the Berbers of the West? While we have little evidence for Algeria, where the excavated Islamic sites are no earlier than the tenth century, the excavations at Rirha and Volubilis – Islamic Walila – provide excellent new data as to the gradual shift in settlement types, diet, and pottery, as well as for the use of coinage. For the tenth century, Sétif and now Igīlīz add evidence for the *fait accompli* of the fully Islamized towns of the Maghreb.

⁸ Brett, Islamisation of Morocco, 48.

⁹ On the transformation of the cities of Ifriqiya, see most recently Fenwick, Fate of the Classical Cities of North Africa.

¹⁰ Ibn 'Abd al-Hakam, Conquête de l'Afrique du Nord et de l'Espagne, ed. Gateau, 78-79.

¹¹ Brett, Islamisation of Morocco.

Housing

I will start with Volubilis, where we believe that the Roman town was destroyed by an earth-quake no later than AD 425. ¹² Up to three metres of building collapse cover the Roman walls, and though in some cases these were used as foundations, there is no evidence for any continuity between the two occupations. The evidence for the earliest reoccupation of the site comes from the well-known epitaphs of a group of people from Altava, dated by the provincial year to the end of the sixth century. ¹³ Now, this use of the provincial date – that of Mauretania Caesariensis, not that of Tingitana, is significant perhaps *not* because of the nostalgia it betrays for Roman imperial rule but because of its evidence for the adoption of the provincial year as the official year of the Moorish state. This is just what we find in Altava, where the Castrum was dedicated, by a *procurator* and a *praefectus*, to Masuna, king of the Moors and the Romans, in AD 508. Camps and others have plausibly argued that this state occupied most of the Mauretania Caesariensis, stretching down into the Saharan Atlas. ¹⁴ I would tend to see Walila as a western centre of this kingdom, settled by the Awraba tribe as part of the wave of new Berber settlements in the northwest.

The new settlers occupied the western area of the city, where the hill slopes down towards the Oued Khomane, and constructed a north-south wall to enclose it within the abbreviated set of Roman ramparts (Fig. 1).

¹² Fentress, Walila au moyen-age, 57-59. The full publication of the excavations is found in Fentress and Limane (eds.), *Volubilis après Rome* from 2018.

¹³ Akkeraz, Volubilis, with previous bibliography.

¹⁴ Camps, Rex gentium and Camps, De Masuna à Koceila, with previous bibliography.

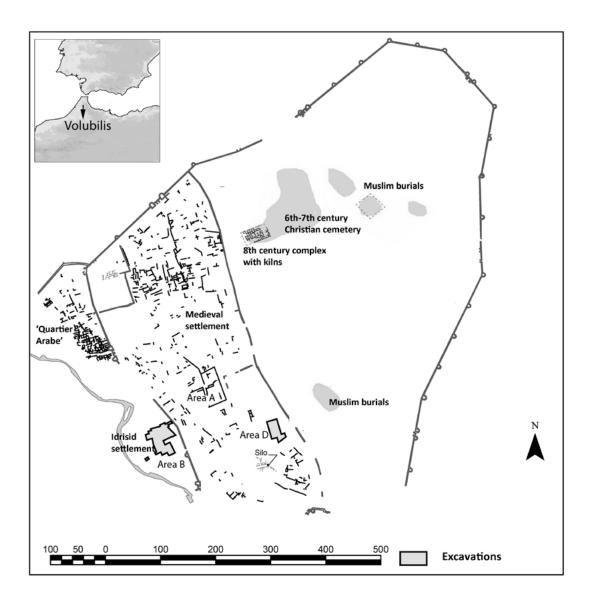


Fig. 1. The site of Volubilis, plan of the features of the medieval town.

The settlement covers 18 ha: significant, in terms of the early medieval Mediterranean, although its layout was not, apparently, particularly urban. Our excavations revealed simple, one-roomed houses, well built in a sort of pseudo- *opus africanum*, with a shed or outbuilding on the exterior, and several metres separating the individual buildings. The construction technique, with orthostats at intervals, recalls that of the Roman city. The remains of one of the houses bears a striking resemblance to Bourdieu's *maison élémentaire*, which he views as the essential type of housing in the Kabylie (Fig. 2).¹⁵

¹⁵ Bourdieu, La maison Kabyle; Fentress, Walila au moyen-age, 78-79.

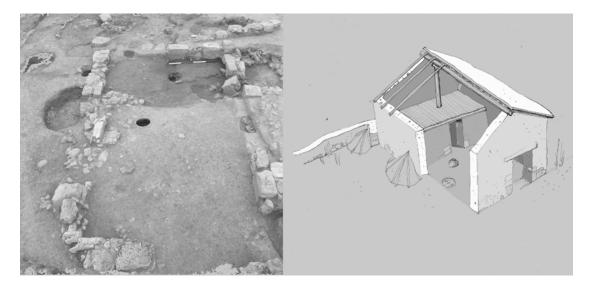


Fig. 2. A house within the Berber town, as excavated and as reconstructed (Fernanda Palmieri)

The rectangular structure is divided in two, the larger part with a smooth floor, a hearth, and a silo; the smaller part slightly lower, with a much rougher floor and a substantial posthole in the middle, which presumably supported a loft. This corresponds closely to the ideal type of the Kabylie house proposed by Bourdieu. In the new round of excavations in the centre of the settlement of Walila we have found a similar structure of the same date, a building divided in two (Fig. 3).



Fig. 3. A house at the centre of the Berber town at Volubilis, as excavated. The storage room in the foreground would have been covered by a loft.

At the west end was a large room with a hearth and postholes suggesting a loom in front of the south-facing door. To the east was a small room with a loft, indicated by a large posthole, and a door on one side (Fig. 2). Outside this storage or stabling space was an area with a large silo for grain storage. The stratigraphy of the destruction layers of this house showed the remains of a fire that had consumed the loft, dropping onto the floor below it the large jars that were presumably used to preserve foodstuffs.

We first see this division of domestic structures between living and storage areas in the Sahara, notably the Fezzan, where recent excavations have revealed substantial settlements.¹⁶ At Fewet, excavated by Lucia Mori, and at Aghram Nadharif, excavated by Mario Liverani, the houses built against the external walls of the settlements show just this division of space, with the storage towards the rear of the building (Figs. 4 and 5).

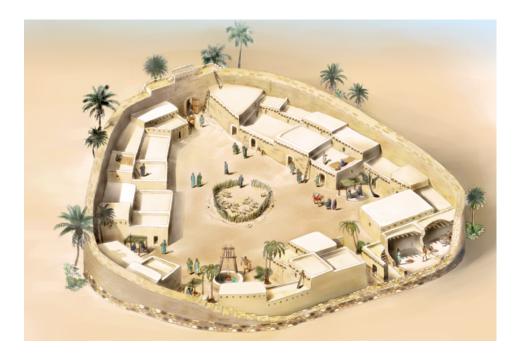


Fig. 4. The Fezzan village of Fewet, Libya, plan; Mori (ed.) Life and Death of a Rural Village in Garamantian Times.

¹⁶ Liverani (ed.), Aghram Nadharif; Mori (ed.), Life and Death of a Rural Village.

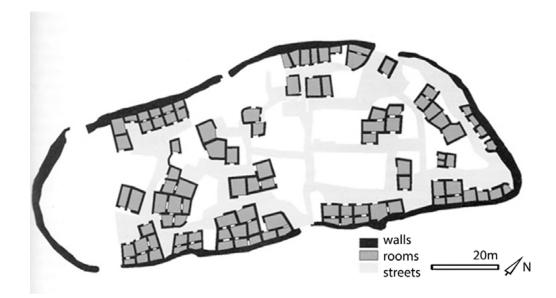


Fig. 5. The village of Aghram Nadharif in the Fezzan, plan; Liverani (ed.) Aghram Nadharif. The Barkat Oasis.

In the Kabylie house the space was used for animals, but we have no evidence for that at Volubilis, where storage seems to have been the primary use of these spaces. The use of pisé walling on a stone socle, too, seems to have been a constant in this architecture. If we can take this small sample as representative of Berber housing in the seventh and eighth centuries, we should note that it does *not* resemble the more complex houses that we find in surveys such as that of Kasserine in western Tunisia, where farms all had multiple rooms, and sometimes courtyards.¹⁷ What we seem to be seeing here is, indeed, a very elementary form of housing, more similar to the housing deep in the Sahara in the Fezzan and the Draa Valley than to that of Roman North Africa.¹⁸

It is a standard observation that when Arabs encountered an existing town they tended to settle outside its walls, keeping themselves separate from the potentially pagan occupants of the town itself. This was the case at Ayla and Aqaba in the eastern Mediterranean, ¹⁹ and that example was followed at Pomaria/Tlemcen, where the new Friday Mosque bridged the gap between the two communities. ²⁰ It was certainly the case at Walila, where the earliest, probably Arab, settlement occurred outside the northwest gate of the city. Here our current

¹⁷ Hitchner, Kasserine Archaeological Survey 1982-1986; The Kasserine Archaeological Survey 1987.

¹⁸ See now Fenwick *et al.*, A medieval boom, for the survey of the Draa valley for sites like LAR002, which dates to the 4th-8th c. CE and whose simple structures built against the enceinte are strikingly similar to those of the southern Fezzan. However, other North African Iron Age sites from the same survey show a clustered arrangement: Bokbot *et al.*, Horses and habitations, sites Tin 001 and Tin 015.

¹⁹ Whitcomb, Misr of Ayla.

²⁰ On this, see Fentress, Walila au moyen-age, 94; Fenwick, *Early Islamic North Africa*, 49. The same process is visible in the Eastern Maghreb, where we find Arab settlement outside the walls of the city of Zama Regia – modern Jāma: Touihri, Transition urbaine.

excavations have revealed substantial structures associated with pottery of the early eighth century. There is also a possible mosque, which would be one of the first found in North Africa. They seem to have been burned at some point in the middle of the eighth century. Then, after some decades of abandonment, this settlement was followed, in the late eighth century, by a new settlement some 200 m to the south, founded by the fleeing 'Alid, Idrīs I. Although by the time of Idris the Berbers of the town were certainly converts to Islam – they are referred to as "Mutaizalites" – and this did not represent a threat of pagan contamination, it is clear that Idrīs, like the earlier Arab settlement outside the northwest gate, preferred to keep his distance. The two extra-mural settlements are our source for the earliest substantial set of data about early Arab settlement in the Maghreb. Conveniently, we can contrast the settlement of Idrīs with the earlier and contemporary Berber settlement within the remains of the Roman town.

The complex of buildings we interpret as the headquarters of Idris I, just outside the walls on the valley floor, looks very different from the houses inside the walls. It consists of three large courtyard structures, enclosing a $hamm\bar{a}m$ that, in stripped-down form, contains the classic elements of an Islamic bath building (Fig. 6).²³

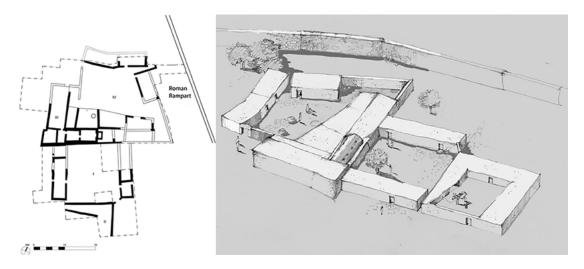


Fig. 6. The Idrissid headquarters at Volubilis, plan and reconstruction (Fernanda Palmieri)

The dating of this building to the brief period when Walila served as Idrīs' base is confirmed by both numismatics and radiocarbon dating.²⁴ While building techniques are not very different, except for the greater use of river pebbles, the plans of the structures, particularly their long, narrow rooms surrounding paved courtyards, have nothing to do with the houses within the town walls. The courtyard south of the baths is a vast open space, paved with river pebbles, without silos or other features. Against its walls on the east and west side are suites of rooms. In one of these, which we interpret as a reception space, opening onto the street, we find a low bench whose walls and floor are covered with ochre-tinted plaster (Fig. 7).

²¹ Fentress, Fenwick and Limane, Berbers and Arabs.

²² Fentress, Fenwick and Limane, Berbers and Arabs.

²³ Fentress and Limane, Volubilis après Rome, 82-102.

²⁴ Fuller, Chronométrie, 212-213.

76 ELIZABETH FENTRESS

This is the only trace of wall plaster found at the site, and clearly emphasizes the significant quality of the space, which we might interpret as a divan, spread with rugs and cushions, on which the host might receive guests and clients. Because of this, we interpret the structure as the *dar al-imara*.



Fig. 7. The reception space at the Idrissid headquarters. In the foreground, a low platform is visible to the right of the room.

Further south the space appears more domestic, and it is not by chance that the bulk of the food remains were found here. The northern courtyard contains at least seven large silos, subsequently used as middens: this appears to have been a collective space, aimed at storage to satisfy the needs of the household – their volume suggests the possibility of storage for enough grain to supply a household of around twenty people. At the centre of the complex is found a *hammām*, with an abbreviated circuit consisting of a cold room lined with benches and a pool at one end, a vestibule decorated with Roman spolia, a warm room and a hot room. To the north, on the site of the original extra-mural settlement, recent excavations have revealed a quarter given over to artisan activities, like smelting, which replaced the earlier extramural settlement, abandoned in the 740s or 750s.²⁵

The site of Walila thus provides us with a unique opportunity to compare a Berber settlement that already existed – and indeed was Islamized – in the late eighth century, with that of a newly-arrived Arab aristocrat. Idrīs, in a fashion that would become a topos in subsequent history, was able to unite the Berber tribes – perhaps the remnants of the earlier Moorish kingdom – under his aegis and conquer all of northern Morocco, extending his reach into the Atlas Mountains, where silver mines allowed him to coin money and pay his troops. The interplay between the two sites shows emulation – but also some significant differences, in food ways and pottery.

²⁵ Fentress, Fenwick and Limane, Berbers and Arabs,

We will start, however, with the diffusion of the style of building we find in Idrīs' head-quarters: the large courtyard building with narrow rooms built against the walls. We also find this style in Tunisia, at the site of Belalis Maior, where Majoubi excavated a large structure with a similar plan, while Corisande Fenwick has observed further buildings on an aerial photograph.²⁶ In Iran, David Whitehouse excavated very similar houses at Siraf.²⁷ Although we lack data, except for Walila itself, for subsequent centuries it is clear that by the tenth century it was the dominant housing type in the Maghreb (Fig. 8).²⁸

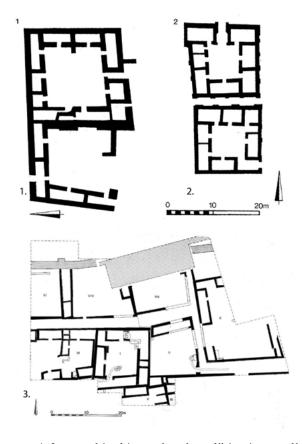


Fig. 8. 1. Henchir Faouar (after Mahjoubi, Recherches d'histoire et d'archéologie à Henchir El-Faouar); 2. Sīrāf (after Whitehouse, Excavations at Sīrāf); 3. Sétif (after Fentress (ed.), Fouilles de Sétif)

The change was not immediate, however. Although we lack evidence for later housing within the city walls, the site of Idris' headquarters was subsequently occupied with a group of houses with simpler plans, although they seem to have had individual courtyards, and a greater degree of separation from their neighbours than we found within the Berber town.

²⁶ Fenwick, Early Islamic North Africa, 59-60.

²⁷ Whitehouse, Excavations at Sīrāf; Mahjoubi, Recherches d'histoire et d'archéologie à Henchir El-Faouar; Fenwick, Early Islamic North Africa, 48.

²⁸ Fentress, House of the Prophet; Fentress, Reconsidering Islamic houses in the Maghreb.

78 ELIZABETH FENTRESS

We suggest that the settlers who occupied the site were refugees from the revolt in Cordoba of the early ninth century, whose presence at the site was noted by al-Bakri later on. If we compare the housing at Saqunda, recently excavated, with that of the second phase of occupation of site B, it is clear that in neither case are the houses of the canonical "Arab" type.²⁹ Nor, indeed, are those in the original extra-mural settlement at Volubilis. However, by the tenth century, the courtyard format has become generalized: it is striking to find it high in the Atlas, at Igīlīz, the birthplace of Ibn Tumart, whose excavation, by Jean-Pierre van Staëvel and Abdallah Fili, has revealed what we must assume to be a fully Berber community whose inhabitants had by this point adopted the new style (Fig. 9).³⁰ In the Sahel, Essouk-Tadmakkat and Tagdaoust, new market towns of the ninth century, also adopt this form of building.³¹

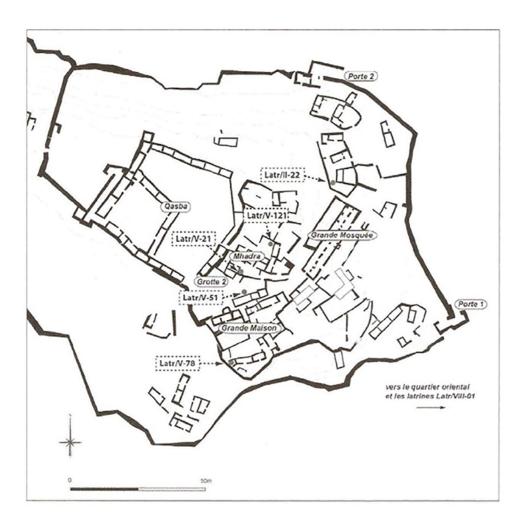


Fig. 9. The site of Iglīlīz in the high Atlas; Van Staëvel et al., La montagne d'Igīlīz et le pays des Arghen.

²⁹ Casal García, Características generales del urbanismo cordobés, 109-134; Casal García, *et al.*, Estudio de los vertederos domésticos, 143-182.

³⁰ Van Staëvel, Ettahiri and Fili, La montagne d'Igīlīz et le pays des Arghen.

³¹ Nixon, Early Islamic trans-Saharan market towns.

It is not only the courtyard, but also the shape of the rooms that have changed. They are now long and thin, never more than 2 m wide, opening onto the courtyard only. It becomes standard to have a raised surface, or banquette, at one or both ends of the room. The first of these is that found in Building I on site B, above, which we interpret as the *dar al-imara*. The style was subsequently copied in one of the later houses on site D, within the walls, and again the banquette was coated with red plaster.³² At Sétif, in Algeria, the room type was standardized by the early eleventh century, with plastered banquettes in the main rooms (Fig. 10).³³

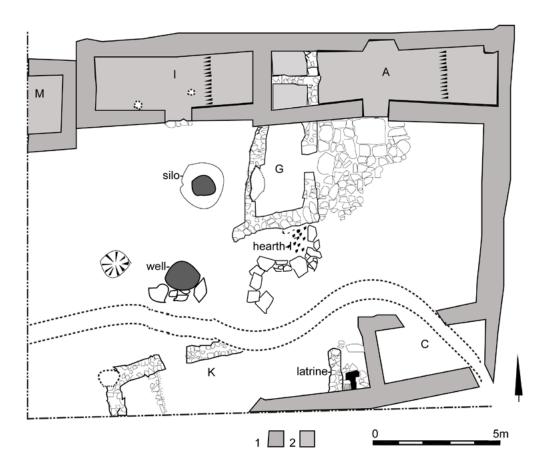


Fig. 10. An eleventh-century house from Sétif, showing a latrine and other service rooms; Fentress (ed.), Fouilles de Sétif.

By the thirteenth century, the banquette, at least, is sufficiently normal that it was found at Essouk/Tadmekkat.³⁴ Here, again, it was carefully coated with red plaster. We can perhaps see in the banquette a more humble form of the alcoves we find on grander, palatial sites. In a more functional vein, the latrine seems to have been a later introduction – latrines are found by the eleventh century at Igīlīz and Setif, but there is as yet no evidence for them at Walila.

³² Fentress and Limane (eds.), Volubilis après Rome, 80.

³³ Fentress, Fouilles de Sétif 1977-1984, 152.

³⁴ Nixon (ed.), Essouk-Tadmekka.

The diffusion of "Arab"-style houses can be seen as a largely urban phenomenon — at least until we have good examples of rural architecture: Igīlīz, a village high in the Atlas, is for the moment the only exception, although it appears to have been an élite settlement. Indeed, it is impossible to separate the threads of "being urban" from those of "being Islamic".

Grain Storage

Another cultural form which seems to have been introduced at this moment is that of the silo, whose first occurrence in the Maghreb (that I know of) is in the Idrissid complex at Walila, where large silos are found in the courtyard of the building devoted to workshops and storage (Figs. 11 and 12). although small versions quickly spread to the Berber settlement, where smaller domestic silos are found in the period we associate with Idrīs.

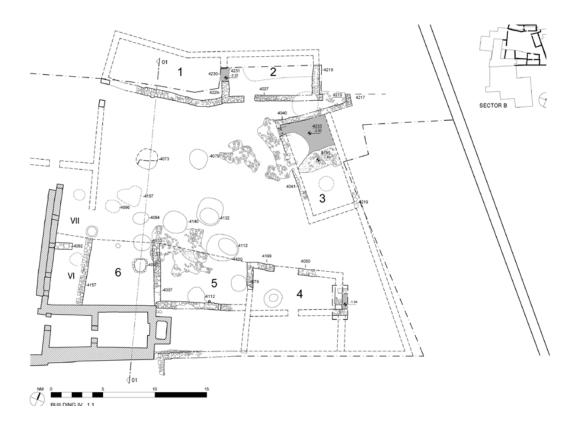


Fig. 11. Silos in the Idrissid headquarters at Volubilis (Fernanda Palmieri)



Fig. 12. One of the silos from the same building

The advantage of a silo over a built, Roman-style granary is that it entirely protects grain from the periodic attacks of locusts and grasshoppers that plague the Maghreb even today. Indeed, the French minister Jobert, writing of his childhood next to Volubilis, recalls such a plague, remarking that the villagers of Ferdassa fared better than the French colons because their grain was stored underground, and was thus protected.³⁵ The dangers that required this protection might also extend to tax collectors and other human and animal predators. Silos work because moisture only penetrates so far into the grain stored inside them: as the damp grains germinate, they consume all of the oxygen in the sealed space, preventing the rest of the grain from oxidizing. Thus the grain can remain within them for as much as ten years before rotting - if, of course, they remains sealed. Various groups of silos are known from the Maghreb – excavations at Sétif showed half a dozen large silos of the tenth century, isolated from other constructions but perhaps protected by a wall.³⁶ At Rirha, reoccupied in the ninth century after an abandonment of several centuries, the excavation recorded innumerable silos, concentrated in the area of a Roman house, and rarely overlapping.³⁷ Later texts record that there were more than 40,000 silos at Ceuta, between houses and warehouses.³⁸ They seem to have become the predominant form of grain storage in the north of Morocco, where the collective granaries of the Atlas mountains are absent. The word used for them, al-matamura, comes from the Arab verb "to bury" or "to hide", and it seems likely that they were introduced in this period. However, the question of how and where they came

³⁵ Fentress, Walila au moyen-age, 91-93; Jobert, La Rivière aux grenades, 144.

³⁶ Fentress, Fouilles de Sétif 1977-1984, 110-114.

³⁷ Callegarin *et al* (eds.) *Rirha*, fig. 6. They were identified as "fosses dépotoirs", but this was clearly a secondary use after their abandonment.

³⁸ Rosenberger, Les villes et l'arabisation, 46.

from remains open, as they are unknown east of Ifriqiya, and thus can hardly be attributed to Arabs. Indeed, in both Sicily (at Milocca) and in Spain (in the hinterland of Reccopolis) they are found in the sixth century.³⁹ Evidence from the tenth-eleventh-century sites at Sétif and Utica suggest that there may have been a communal place in settlements where larger silos were created, under some form of protection. We have textual evidence for this from a much later document from Milocca in Sicily, where a thirteenth-century text refers to a place in a village where the community was accustomed to "facere fossa et victualia reponere" (dig pits and put food in them).⁴⁰

Grain Cultivation

Paleobotanical work has given us some idea of what was stored in the silos and consumed on the site. There are more cereal grains at site B overall, but if we combine the two wheat species, it is clear that they formed a significantly higher percentage with respect to barley at the Idrissid site than within the town.41 This Berber preference for barley was already noted by both Procopius and Victor of Vita - the former accusing them of eating it raw, or in cakes cooked in the ashes, 42 and the latter being disgusted by their use of it to feed the captives in the Hodna region.⁴³ Even today, in the form of bsisa – roast, ground, spiced and mixed with water and olive oil – barley is a common breakfast cereal and plays an important role in Jewish ceremonial in Jerba, on the opening day of the month of Nissan.44 Its use is related to risk management, in that the green barley becomes edible after roasting, enabling it to be eaten in the spring before the other grains come in. It is also convenient for use on caravans, in that, like date paste, it contains a concentrated amount of calories and requires little preparation. In fact, the use of bsisa might explain Procopius' taunt that the Berbers ate grain without boiling or baking it into bread. In the Islamic period at Walila, however, palaeobotanical evidence shows a progressive move away from barley. This shift is accompanied by a move towards hardier wheats like durum wheat, for which the first evidence north of the Fezzan is again found at Walila.⁴⁵ Known as *irden el-arbi* in the Atlas mountains, it is still perceived as an Arab introduction. A similar change is visible at a number of other sites, including Sétif, Althiburos, Jarma and Rirha (Fig.13). The progression from barley toward wheats is visible at all of these sites, although at Rirha it was apparently much slower.

At the same time as barley diminishes, olives begin to disappear: there were none in Islamic Sétif, while at Walila far more olives are found in the Berber settlement than in the headquarters of Idris I. Grapes, however, are constant at all Islamic sites.

³⁹ On sixth-century silos in Sicily, cf. Arcifa, *Facere fossa et victualia reponere*; on those in the territories of Reccopolis, and Toledo, Jiménez, Rural hinterland of the Visigothic capitals, 105.

⁴⁰ Arcifa, Facere fossa et victualia reponere.

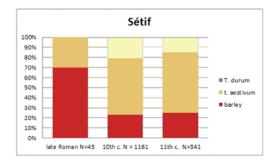
⁴¹ Fuller and Pelling, Plant economy, 361-363.

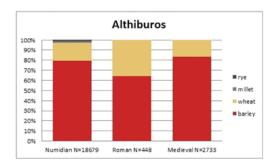
⁴² Procopius, Vandal War, IV. VI.1 3, ed. and tr. Dewing, 2.345.

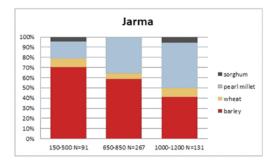
⁴³ Victor of Vita. 2.26-37, ed. Lancel, 123.

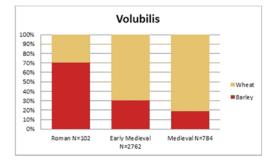
⁴⁴ Valensi and Udevitch, Juifs en terre d'Islam, 80. See, for bsisa, Fentress, Berbers, barley and bsisa.

⁴⁵ It is, however, apparently found in Morocco in the early Neolithic: Morales *et al.*, Introduction of south-western Asian domesticated plants, 7 (this is based on a single rachis fragment). There is no Iron Age or Roman-period evidence for it from North Africa north of the Fezzan.









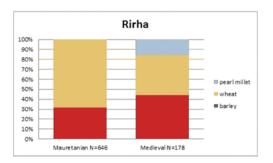


Fig. 13. Grain consumption at 5 inland sites: data from King, Les os d'animaux (Sétif); López-Reyes and Cantero, Agriculture et alimentation (Althiburos); Pelling, The archaeobotanical remains (Jarma); Fuller and Pelling, Plant economy – archaeobotanical studies (Volubilis); Muller et al. Environnement naturel et son exploitation (Rirha).

Meat Consumption

The situation with meat is more complicated: Fig 14 gives a breakdown by site and period of a selection of North African sites. In the early Iron Age at Althiburos, an important Numidian settlement, and in the Roman period at the Saharan oasis of Aghram Nadharif and in the Berber town at Volubilis, beef forms an important component of the diet, although in late Roman Carthage, Rirha and Sétif, pork, perhaps more typically Roman, is more important – we might see these three sites as more typical of Roman Africa in general. By the eighth century, however, pork virtually disappears, and there was a marked shift away from beef, although it was still consumed in greater quantities within the Berber community at site D than at the Idrissid site B, where ovicaprines contributed the vast majority of the meat consumed. It seems likely that this represents a specific dietary choice on the part of the inhabitants of site B, who were presumably buying in their meat, which seems to have been butchered on

the site. Rirha and the small Islamic village at Utica in Tunisia show some continuity in beef consumption, although we have no idea whether these sites were predominantly Berber or Arab in the Middle Ages.⁴⁶

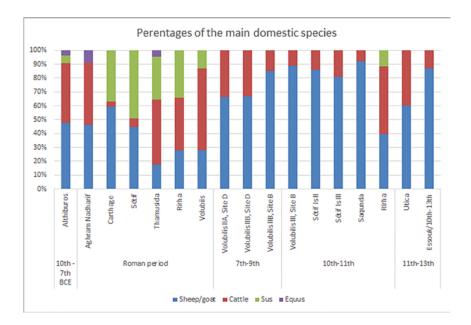


Fig. 14. Changes in meat consumption. Data from Portillo, Valenzuela and Albert, Domestic patterns in the Numidian site of Althiburos (Althiburos); Liverani. Aghram Nadharif. The Barkat Oasis (Aghram Nadharif); von den Driesch and Baumgartner, Die spätantiken Tierreste (Carthage); King, Les os d'animaux (Sétif); De Grossi Mazzorin and De Venuto, Ricerche archeozoologiche a Thamusida (Thamusida) King, The faunal remains (Volubilis); Casal García et al., Estudio de los vertederos domésticos del arrabal de Saqunda (Saqunda); Oueslati, Caractérisation de l'exploitation des ressources animales (Rirha); Oueslati, The faunal remains (Utica); Nixon, Essouk-Tadmekka (Essouk).

Cloth, Markets and Money

If we turn to clothing, the one clear difference is the introduction of cotton, several seeds of which were found in the large silos of site B.⁴⁷ This was apparently imported in bolls from the southern oases, as it could not be cultivated north of the Atlas, but it was apparently carded, spun and woven on the site – an idea that is confirmed by Ibn Hawkal's remark that cotton fabric from the Idrissid town of al-Basra was exported into Ifriqiya.⁴⁸ There is no trace of it at

⁴⁶ On meat consumption in North and Sub-Saharan Africa, see now the important article of Fothergill *et al.*, Movement and management, which examines many more sites: the move towards sheep and goat is fairly constant, however. For the Mediterranean background, see now McKinnon, Consistency and change.

⁴⁷ Fuller and Pelling, Plant economy, 364-365.

⁴⁸ Siraj, L'Image de la Tingitane, 565, citing Ibn Hawkal, Sûrat al-Ard, 1, ed Kramers, 80.

site D, although technical change in fabric production is suggested by the remarkable find of a thimble, one of the earliest in the Western Mediterranean.⁴⁹ Thimbles apparently emerged from China, and their use was clearly spread through the channel of the Arab conquest – they are a common find at Qasr el Hayr, for example.

Cotton also shows an almost immediate integration into the trade networks reaching south towards the desert. This influx of goods and, presumably, merchants, seems to coincide with the arrival of new rulers, thus texts speak of the Rustumid foundation of Tihart, to which came merchants from the whole of the Arab world. Indeed, links between Tihart and Walila clearly began earlier than Idris, for there are a significant number of coins from Tihart in the numismatic record, while a certain Rashid minted coins at both Walila and Tlemcen. Coins as a whole are *far* more common within the area of the Idrissid headquarters, where the were recovered, compared to only 46 at site D. If we look only at the Idrissid coinage, the relationship becomes 20 to three (Fig. 15). In general the vast majority of the Islamic coins were the tiny bronze *fulus*, which served above all for soldier's pay, as Corisande Fenwick has pointed out. Their very limited circulation within the Berber town certainly suggests that ordinary transactions were not monetary, a situation typical of the villages of the Kabylie in the beginning of the last century. There, monetary transactions did not take place within the village, and periodic markets took place well away from its confines.

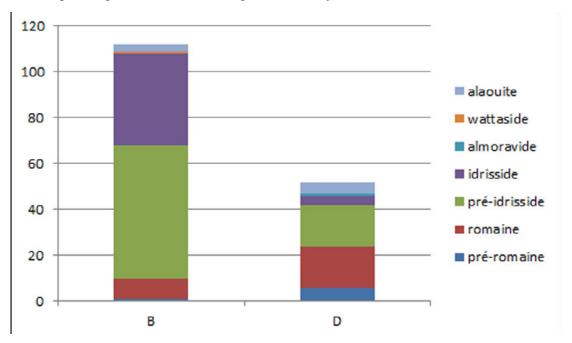


Fig. 15. Coin use at the Idrissid headquarters at Volubilis compared to that within the town; El Harrif, Les monnaies.

⁴⁹ Fentress and Limane (eds.), *Volubilis après Rome*, 339 and fig. 4; 55, 14. This is the earliest find of cotton in Northwest Africa, although it is present in Egypt and the Sudan from the early Roman period: Bouchaud *et al.*, Cottoning on to cotton.

⁵⁰ Cadenat, Recherches à Tihert-Tagdempt.

⁵¹ El Harrif, Les monnaies, 321.

⁵² Fentress, Fenwick and Limane, Berbers and Arabs.

⁵³ Hanoteau and Letourneux, La Kabylie et les coutumes kabyles, 345.

A closer relationship to the market at the Idrissid headquarters is also visible if we look at the pottery. While there is no difference between the proportion of wheel-made to hand-made pottery at the two sites, the Idrissid headquarters present a far greater number of forms for storage, while within the town, the range is generally limited to the small cooking pots called ollas. ⁵⁴ Finally, pottery with engraved decoration is almost entirely limited to the Idrissid site: as this type of pottery appears to have been made elsewhere, it suggests contact with more distant markets.

A final aspect of Islamization is not material. What language did people speak in the Western Maghreb? Since Arabization is not the same as Islamization, as Brett and others have pointed out, it was (and is) entirely possible to become a Muslim without speaking Arabic. Ibn Tumart, the Mahdi of the Almohads, both preached and wrote in Berber, while there are references to the creation of a Quran in Berber by the imam of the heretical Barghawata. Markers of the passage towards generalized use of Arabic are few, however. The recent discovery of a glass-paste ring mount inscribed "bismilah" outside the northwest gate of Walila in an early eighth-century context seems to confirm Arab occupation there, rather than suggesting the use of Arabic by local Berbers. Thiside the town we find the graffito shown in Fig. 16, which seems to represent the Tifinagh letter G or GH. A study of early Islamic graffiti in the West remains to be done: in Iberia, however, graffiti from Tolmo di Minateda show that that settlement was already Arabized by the ninth century.



Fig. 16. Ceramic bottle from the town of Volubilis with the Tifinagh letter \check{g} (EF)

⁵⁴ Amorós Ruiz and Fili, La céramique, 284.

⁵⁵ Brett and Fentress, The Berbers, 120.

⁵⁶ Talbi, Hérésie, acculturation et nationalisme; Iskander, Devout heretics.

⁵⁷ For the ring, see Fentress, Fenwick and Limane, Berbers and Arabs.

⁵⁸ Gutiérrez Lloret, Histoire et archéologie de la transition en al-Andalus, 232.

Conclusions

This brief spin around the range of material culture at Volubilis and elsewhere, and its change over time, obviously leaves out a lot - we have no idea how people dressed, apart from what can be gleaned from Procopius, who claims that Berbers wore the same hooded woollen garment year in and year out, presumably some form of burnus.⁵⁹ And, of course, it does not touch in any way on questions of belief. Like Romanization, Islamization came about by emulation, particularly among the élites, by a slow change to the general habitus, with far different starting points for the Arabic and Berber communities, and for the Berber communities in the West and the East. I have emphasized changes particularly in housing and diet, because I believe that these are the most conservative characteristics of a society, and the slowest to change. The gesture of the mixing of bsisa, rubbed against a bowl, will have been the same two thousand years ago as it is today. Can we measure "Islamization" by looking at houses and food? Is the 12th-century village at Utica, whose inhabitants seems to have lived by mining the ruins, less "Islamized" because it has three times more barley than wheat, and an anomalous dependence on beef? Do these same traits at Rirha, too, signify a more conservative Berber population? Or simply a more rural one? As usual, we need more data, from far more sites.60

⁵⁹ Procopius, Vandal War, II. VI., ed. and tr. Dewing, 2.322; cf. El Briga, Burnous EB.

⁶⁰ In particular, Algeria remains an almost blank page.

References

Aillet, Cyrille, Islamisation et arabisation dans le monde musulman médiéval: une introduction au cas de l'Occident musulman (viie-xiie siècle), in: Dominique Valérian (ed.), Islamisation et arabisation de l'Occident musulman médiéval (viie-xiie siècle) (Paris, 2015) 7-34.

- Akkeraz, Aomar, Volubilis et les royaumes berbères indépendants, *Bulletin d'Archéologie Marocaine* 17 (1998) 279-282.
- Amara, Allaoua, L'islamisation du maghreb central (viie-xie siècle), in: Dominique Valérian (ed.), Islamisation et arabisation de l'Occident musulman médiéval (viie-xiie siècle) (Paris, 2015) 103-131.
- Amorós Ruiz, Victoria and Abdallah Fili, La céramique, in: Elizabeth Fentress and Hassan Limane (eds.), *Volubilis après Rome. Les fouilles UCL/INSAP, 2000-2005*, Arts and Archaeology of the Islamic World 11 (Leiden, 2018) 217-292.
- Arcifa, Lucia, *Facere fossa et victualia reponere*: la conservazione del grano nella Sicilia medievale, *Mélanges de l'École Française de Rome Moyen Age* 120/1 (2008) 239-254.
- Bennison, Amira K., Walila-Volubilis dans la tradition textuelle arabe, in: Elizabeth Fentress and Hassan Limane (eds.), *Volubilis après Rome. Les fouilles UCL/INSAP, 2000-2005*, Arts and Archaeology of the Islamic World 11 (Leiden, 2018) 63-73.
- Bokbot, Youssef, Corisande Fenwick, David J. Mattingly, Nichole Sheldrick and Martin Sterry, Horses and habitations: Iron Age rock art from fortified hilltop settlements in the Wadi Draa, Morocco, Journal of African Archaeology 19/2 (2021) 159-186, https://doi.org/10.1163/21915784-bja10008.
- Bouchaud, Charlène, Alan Clapham, Claire Newton, Gaëlle Tallet and Ursula Thanheiser, Cottoning on to cotton (Gossypium Spp.) in Arabia and Africa during antiquity, in: Anna Maria Mercuri, A. Catherine D'Andrea, Rita Fornaciari and Alexa Höhn (eds.) *Plants and People in the African Past: Progress in African Archaeobotany* (New York, 2020) 380-426,
- Bourdieu, Pierre, La maison Kabyle ou le monde renversé, in: Jean Pouillon and Pierre Maranda (eds.), Échanges et communications: mélanges offerts à Claude Lévi-Strauss à l'occasion de son 60ème anniversaire (Paris, 1970) 739-358.
- Brett, Michael, The Islamisation of Morocco from the Arabs to the Almoravids, *Journal of the Society for Moroccan Studies* 2 (1992) 57-71.
- Brett, Michael and Elizabeth Fentress, The Berbers (Oxford, 1996).
- Bulliet, Richard W., *Conversion to Islam in the Medieval Period. An Essay in Quantitative History* (Cambridge, MA, 1979).
- Cadenat, Pierre, Recherches à Tihert-Tagdempt 1958-1959, *Bulletin d'Archéologie Algérienne* 7 (1977) 393-462.
- Callegarin, Laurent, Mohamed Kbiri Alaoui, Abdelfattah Ichkhakh and Jean-Claude Roux (eds.), Rirha: Site Antique et Médiéval du Maroc IV. Période Médiévale Islamique (IXe–XVe s.) (Madrid, 2016).
- Camps, Gabriel, *Rex gentium Maurorum et Romanorum*. Recherches sur les royaumes de Maurétanie des VIe et VIIe siècles, *Antiquités africaines* 20 (1984) 183-218.
- Camps, Gabriel, De Masuna à Koceila. Les destinées de la Maurétanie au VIe et VIIe siècles, *Bulletin archéologique du Comité des Travaux Historiques et Scientifiques* 19 B (1985) 307-325.

- Casal García, Maria Teresa, Características generales del urbanismo cordobés de la primera etapa emiral: el arrabal de Šaqunda, *Anejos de anales de arqueología cordobesa* 1 (2008) 109-134.
- Casal García, Maria Teresa, Rafael M. Martínez and María Del Mar Araque, Estudio de los vertederos domésticos del arrabal de *Saqunda*: Ganadería, alimentación y usos derivados (750-818 D.C.) (Córdoba), *Anejos de Anales de Arqueología Cordobesa* 2 (2010) 143-182.
- Courtois, Christian, Les Vandales et l'Afrique (Paris, 1955).
- De Grossi Mazzorin, Jacopo and Giovanni De Venuto, Ricerche archeozoologiche a Thamusida: allevamento, alimentazione e ambiente di un insediamento mauro e di una città romana, in: Antonio Tagliacozzo, Ivana Fiore, Stefano Marconi and Umberto Tecchiati (eds.), *Atti del V Convegno Nazionale di Archeozoologia* (Rovereto, 2006) 389-394.
- Ehret, Christopher, Berber peoples in the Sahara and North Africa. Linguistic historical proposals, in: David J. Mattingly, Maria Carmela Gatto, Martin Sterry and Nick Ray (eds.), *Burials, Migration and Identity in the Ancient Sahara and Beyond* (Cambridge, 2019) 464-494.
- El Briga, C., Burnous, Encyclopédie berbère 11 (1992) 1668-1669.
- El Fasi, Mohamed, L'islamisation de l'Afrique du Nord, in: El Fasi Mohamed (ed.), Histoire générale de l'Afrique 3, L'Afrique du VIIe au XIe Siècle (Paris, 1990) 84-92.
- El Harrif, Fatima-Zohra, Les monnaies, in: Elizabeth Fentress and Hassan Limane (eds.), *Volubilis après Rome. Les fouilles UCL/INSAP, 2000-2005*, Arts and Archaeology of the Islamic World 11 (Leiden, 2018) 308-338.
- Eustache, Daniel, Al-Basra, capital idrisside et son port, Hesperis (1956) 133-195.
- Fentress, Elizabeth, The House of the Prophet: Islamic housing in North Africa, *Archeologia Medievale* XIV (1988) 47-69.
- Fentress, Elizabeth, Reconsidering Islamic Houses in the Maghreb, in: Sonja Gutiérez and Ignasi Grau (eds.), *De la estructura doméstica al espacio social. Lecturas arqueológicas del uso social del espacio* (Alicante, 2013) 237-244.
- Fentress, Elizabeth, Walila au moyen-age: les données de la fouille, in: Elizabeth Fentress and Hassan Limane (eds.), *Volubilis après Rome. Les fouilles UCL/INSAP, 2000-2005*, Arts and Archaeology of the Islamic World 11 (Leiden, 2018) 74-108.
- Fentress, Elizabeth, Berbers, barley and bsisa, *Antiquités Africaines* 57 (2021) 163-168, https://doi.org/10.4000/antafr.4610.
- Fentress, Elizabeth (ed.), *Fouilles de Sétif 1977–1984*, Bulletin d'Archéologie Algérienne Supplement 5 (Algiers, 1991).
- Fentress, Elizabeth and Andrew Wilson, The Saharan Berber diaspora and the southern frontiers of Vandal and Byzantine North Africa, in: Jonathan Conant and Susan T. Stevens (eds), *North Africa under Byzantium and Early Islam, ca. 500 ca. 800*, Dumbarton Oaks Byzantine Symposia and Colloquia 7 (Washington, DC, 2016) 41-63.
- Fentress, Elizabeth and Hassan Limane (eds.), *Volubilis après Rome. Les fouilles UCL/INSAP,* 2000-2005, Arts and Archaeology of the Islamic World 11 (Leiden, 2018)
- Fentress, Elizabeth, Corisande Fenwick and Hassan Limane, Berbers and Arabs in early medieval Volubilis, *Hespéris-Tamuda* 56/2 (2021) 209-235.
- Fenwick, Corisande, From Africa to Ifrīqiya: Settlement and society in early medieval North Africa (650–800), *Al-Masāq* 25 (2013) 9-33.

Fenwick, Corisande, The Fate of the Classical Cities of North Africa in the Middle Ages, in: Ralf Bockmann, Anna Leone and Philipp von Rummel (eds.), Africa – Ifriqiya: Cultures of Transition in North Africa between Late Antiquity and the Early Middle Ages. Papers of a conference held in Rome, Museo Nazionale Romano – Terme di Diocleziano, 28 February - 2 March 2013, Palilia 34 (Rome, 2019) 137-155.

- Fenwick, Corisande, Early Islamic North Africa: A New Perspective, Debates in Archaeology (London, 2020).
- Fenwick, Corisande, Martin Sterry, David J. Mattingly, Louise Rayne and Youssef Bokbot, A medieval boom in the north-west Sahara. Evolving oasis landscapes in the Wadi Draa, Morocco, *Journal of Islamic Archaeology* 8/2 (2021) 139-165.
- Fothergill, B. Tyr, Veerle Linseele and Silvia Valenzuela Lamas, Movement and management of animals in the north and west of Africa from 1000 BC to AD 1000, in: Chloe Duckworth. Aurélie Cuenod and David J. Mattingly (eds.), *Mobile Technologies in the Ancient Sahara and Beyond* (Cambridge 2020) 143-182.
- Fuller, Dorian Q., Chronométrie: datations 14C et approche bayésienne d'une séquence calendaire, in: Elizabeth Fentress and Hassan Limane (eds.), *Volubilis après Rome. Les fouilles UCL/INSAP, 2000-2005*, Arts and Archaeology of the Islamic World 11 (Leiden, 2018) 209-213.
- Fuller, Dorian Q. and Ruth Pelling, Plant economy archaeobotanical studies, in: Elizabeth Fentress and Hassan Limane (eds.), *Volubilis après Rome. Les fouilles UCL/INSAP, 2000-2005*, Arts and Archaeology of the Islamic World 11 (Leiden, 2018) 349-368.
- Gutiérrez Lloret, Sonia, Histoire et archéologie de la transition en al-Andalus les indices matériels de l'islamisation à Tudmīr, in: Dominique Valérian (ed.), *Islamisation et arabisation de l'Occident musulman médiéval (viie-xiie siècle)* (Paris, 2015) 195-249.
- Hanoteau, Adolphe and Aristide Letourneux, *La Kabylie et les coutumes kabyles* (Paris, 1893). Hitchner, R. Bruce, The Kasserine archaeological survey 1982-1986, *Antiquités Africaines* 24 (1988) 7-41.
- Hitchner, R. Bruce, The Kasserine archaeological survey 1987, *Antiquités Africaines* 26 (1990) 231-260.
- Ibn 'Ad al-Ḥakam, Conquête de l'Afrique du Nord et de l'Espagne (Futûh' Ifrîqiya wa' l-Andalus), ed. Albert Gateau, Bibliothèque arabe-française (second edition), (Algiers, 1948).
- Ibn Hawkal, Muḥammad ibn ʿAlī al-Naṣībī Abū al-Qāsim, *Kitab-Sûrat al-Ard*, ed. J. H. Kramers, *Opus geographicum, Abu al-Kasim Ibn Haukal al-Nasibi* (second edition), (Leiden, 2014).
- Iskander, John, Devout heretics: The Barghawata in Maghribi historiography, *The Journal of North African Studies* 12 (2007) 37-53.
- Jiménez, Javier Martínez, The rural hinterland of the Visigothic capitals of Toledo and Reccopolis, between the years 400-800 CE., in: Alain Delattre, Marie Legendre and Petra Sijpesteijn (eds.), Authority and Control in the Countryside. From Antiquity to Islam in the Mediterranean and Near East (Sixth-Tenth Century) (Leiden, 2018) 97-127.
- Jobert, Michel, La Rivière aux grenades (Paris, 1984).
- King, Anthony, Les os d'animaux, in: Elizabeth Fentress (ed.), *Fouilles de Sétif 1977-1984*, Bulletin d'Archéologie Algérienne supplément 5 (Algiers, 1991) 247-259.
- King, Anthony, The faunal remains, in: Elizabeth Fentress and Hassan Limane (eds.), *Volubilis après Rome. Les fouilles UCL/INSAP, 2000-2005*, Arts and Archaeology of the Islamic World 11 (Leiden, 2018) 349-366.

- Kossman, Maarten, Berber subclassification, in: Rainer Vossen and Geritt Dimmendaal (eds.), *The Oxford Handbook of African Languages* (Oxford 2020) 281-289.
- Laporte, Jean-Pierre, Les Djédars, monuments funéraires berbères de la région de Frenda et de Tiaret, in: Claude Briand (ed.), *Identités et cultures dans l'Algérie antique* (Rouen, 2005) 321-406.
- Liverani, Mario (ed.), Aghram Nadharif. The Barkat Oasis (Sha'abiya of Ghat, Libyan Sahara) in Garamantian times, The Archaeology of Libyan Sahara 2, Arid Zone Archaeology Monographs 5 (Firenze, 2005).
- López-Reyes, Daniel and Francisco José Cantero Rodríguez, Agriculture et alimentation à partir de l'étude des restes de graines et des fruits, in: Nabil Kallala, Joan Sanmartí Grego and Maria Carme Belarte Franco (eds.), *Althiburos II. L'aire du Capitole et la Nécropole Méridionale: Études* (Tarragona, 2016) 449-490.
- McKinnon, Michael, Consistency and change: zooarchaeological investigation of late antique diets and husbandry, *Antiquité Tardive* 27 (2019) 135-148.
- Mahjoubi, Ammar, *Recherches d'histoire et d'archéologie à Henchir El-Faouar (Tunisie): La Cité des Belalitani Maiores*, Publications de l'Université de Tunis, Faculté des lettres 1ère série: Archéologie, Histoire 12 (Tunis, 1978).
- Modéran, Yves, Koceila (Kusayla, Kasîla), Encyclopédie Berbère 28/29 (2008) 4255-4264.
- Morales Jacob, Guillem Perez Jordà, Leonor Pena-Chocarro, Youssef Bokbot, Juan C. Vera, Rafael M. Martínez Sanchez and Jörg Linstädter, The introduction of south-western Asian domesticated plants in North-Western Africa: An archaeobotanical contribution from Neolithic Morocco, *Quaternary International* 30 (2016) 1-14.
- Mori, Lucia (ed.), Life and Death of a Rural Village in Garamantian times: The Archaeological Investigation in the Oasis of Fewet (Libyan Sahara), Arid Zone Archaeology Monographs 6 (Firenze, 2013).
- Muller, Serge D., Marie-Pierre Ruas, Sarah Ivorra and Tarek Ouerslati, Environnement naturel et son exploitation aux époques antique et médiévale, in: Laurent Callegarin, Mohammed Kbiri Alaoui, Abdelftah Ichkhakh and Jean-Claude Roux (eds.) *Rirha: Site antique et médiéval du Maroc* (Madrid 2016) 35-132.
- Nixon, Sam, The early Islamic trans-Saharan market towns of West Africa, in: Martin Sterry and David J. Mattingly (eds.), *Urbanisation and State Formation in the Ancient Sahara and Beyond* (Cambridge 2020) 621-666.
- Nixon, Sam (ed.), *Essouk-Tadmekka: An Early Islamic Trans-Saharan Market Town*, Journal of African Archaeology Monograph Series 12 (Leiden, 2017).
- Oueslati, Tarek, Caractérisation de l'exploitation des ressources animales de l'époque maurétanienne à l'époque médiévale, in: Laurent Callegarin, Mohamed Kbiri Alaoui, Abdelfattah Ichkhakh and Jean-Claude Roux (eds.), *Rirha: Site Antique et Médiéval du Maroc IV. Période Médiévale Islamique (IXe–XVe s.)* (Madrid, 2016) 110-124.
- Oueslati, Tarek, The faunal remains, in: Imed Ben Jerbania, Elizabeth Fentress and Andrew Wilson (eds.), *Excavations at Utica 2010-2016* (Oxford, forthcoming).
- Palmer, Carol, Le matériel botanique, in: Elizabeth Fentress (ed.) *Fouilles de Sétif 1977-1984*, Bulletin d'Archéologie Algérienne supplément 5 (Algiers, 1991) 260-267.
- Pelling, Ruth, The archaeobotanical remains, in: David Mattingly, (ed.), *The Archaeology of Fazzān*, Society for Libyan Studies Monograph 9 (London 2013) 473-494.
- Portillo, Marta, Silvia Valenzuela and Rosa M. Albert, Domestic patterns in the Numidian site of Althiburos (northern Tunisia): the results from a combined study of animal bones, dung and plant remains. *Quaternary International* 275 (2012) 84-96.

Procopius, *Bella*, ed. and trans. Henry B. Dewing, Loeb Classical Library, 6 vols. (Cambridge, MA, 1916).

- Rosenberger, Bernard, Les villes et l'arabisation. Fonctions des centres urbains du Maghreb al-Aqşã', in: Jordi Aguadé, Patrice Cressier and Ángeles Vicente (eds.), *Peuplement et arabisation: dialectologie et histoire* (Madrid, 1998) 39-52.
- Siraj, Ahmed, L'image de la Tingitane. L'historiographie arabe médiévale et l'Antiquité nord-africaine, Collection de l'École Française de Rome 209 (Rome, 1995).
- Talbi, Mohamed, Hérésie, acculturation et nationalisme des Berbères Bargwata, in: Micheline Galley and David R. Marshall (eds.), *Actes du premier congrès d'études des cultures méditerranéennes d'influence arabo-berbère, Malta, 3-6 Avril 1972* (Algiers, 1973) 217-233.
- Touihri, Chokri, La transition urbaine de Byzance à l'Islam en Ifrīqiya vue depuis l'archéologie. Quelques notes préliminaires, in: Annliese Nef and Fabiola Ardizzone (eds.) Les Dynamiques de l'islamisation en méditerranée centrale et en Sicile : nouvelles propositions et découvertes récentes, CEFR 487 (Rome, 2014) 131-140.
- Valensi, Lucette and Abraham L. Udovitch, Juifs en terre d'Islam. Les communautés de Djerba (Paris, 1984).
- Van Staëvel, Jean-Pierre, Ahmed S. Ettahiri and Abdallah Fili, La montagne d'Igīlīz et le pays des Arghen: Quinze ans d'archéologie rurale dans le sud du Maroc, *Bulletin d'Archéologie Marocaine* 24 (2019) 132-156.
- Victor of Vita, Historia persecutionis Africanae provinciae sub Geiserico et Hunirico regibus Wandalorum, ed. Serge Lancel, Histoire de la persécution vandale en Afrique suivie de La passion des sept martyrs, Registre des provinces et des cités d'Afrique, Collection des universités de France Série latine 368 (Paris, 2002).
- Von den Driesch, Angela and Irmgard Baumgartner, Die spätantiken Tierreste aus der Kobbat Bent el Rey in Karthago, *Archaeozoologia* 90 (1997) 155-172.
- Whitcomb, Donald, The Misr of Ayla: Settlement at al-'Aqaba in the Early Islamic Period, in: *The Byzantine and Early Islamic Near East vol. II. Land Use and Settlement Patterns* (Princeton, 1994) 155-170.
- Whitehouse, David, Excavations at Sīrāf. First Interim Report, Iran 6 (1968) 1-22.