

Knossos and Heraklion in the Byzantine-Islamic transition (late 7th – mid-10th century)

An archaeological perspective into shifting patterns of settlement ruralisation and urbanisation on medieval Crete

Matteo G. Randazzo

University of Edinburgh and holder of the 2020-21 Macmillan-Rodewald Studentship
at the British School at Athens
matteorandazzo90@gmail.com

Introduction

In January 2019, the colloquium entitled ‘The Medieval Countryside: An Archaeological Perspective’ was held in San Diego, gathering among some of the most prominent scholars working on the Medieval rural landscape across the Aegean and Anatolia.¹ Recent projects of field-surveys and landscape archaeology focusing on these regions, in fact, have played a fundamental role in improving the understanding of rural settlement patterns and forms of habitation and land use during the Middle Ages.² Discussion, moreover, has touched upon some academic flaws and obstacles to interdisciplinary approaches, especially emphasising the persisting marginal impact of these survey projects, and their rich datasets of material evidence, in existing historiographical narratives and sociocultural reconstructions of the Medieval countryside in these regions.³

Emerging from that colloquium, and having Crete and the settlements of Knossos and Heraklion as main case-studies, the aim of this paper is threefold. First, in the wake of a notable lack of archaeological research into Crete during the Byzantine-Islamic transition (see below), it aims at expanding on the current knowledge and understanding of Knossos and Heraklion between the late 7th and mid-10th century. To do so, I have reassessed the corpus of structural remains and material culture already available in secondary literature, complementing it with new architectural analyses of these monuments, and archive-based restudy of related ceramic evidence. The record of evidence thus collected has been contextualised within the wider archaeological framework of the Medieval Mediterranean world, to which Crete belonged. Secondly, by weaving together their historical developments, this paper aims at drawing a new diachronic narrative of shifting settlement patterns and modes of habitation between these two sites. In particular, it will be argued that the progressive socioeconomic decline and ruralisation of Knossos after the 7th century were directly proportioned to the concomitant growth and urbanisation of Heraklion, which eventually –and irreversibly – became the new capital of Crete in the period of the Islamic Emirate (820s-961). These two sites, however, remained indissolubly linked to each other, with Knossos becoming part of the productive hinterland of the new Islamic capital. Finally, I will conclude by placing these two case-studies within

¹ 2019 Annual Meeting of the Archaeological Institute of America. The colloquium was organised, on behalf of the Medieval and Post-Medieval Archaeology Interest Group, by Prof. E. Athanassopoulos, whom I deeply thank, with Prof. J. Bintliff, for inviting me to partake in the present volume of JGA. This paper emerges from my PhD in Archaeology (2016-2020) at the University of Edinburgh, titled ‘Sicily and Crete between Byzantium and the *Dar al-Islam* (late 7th – mid-10th century)’. Essentially, it presents a snapshot of a case-study into Cretan settlement patterns of the Byzantine-Islamic transition, drawing from Chapter 4 (‘Material Culture’) and Chapter 5 (‘Settlement Patterns’). I wish to express my gratitude to Z. Aletras and M. Riso for reading and commenting on earlier drafts of this paper. I take full responsibility for any mistake that may remain.

² Besides the other papers contained in the thematic section of this volume, see for example: Bintliff 2008; Athanassopoulos 2010; Turner, Crow 2010; Crow, Turner, Vionis, 2011; and De Cupere *et al.* 2017.

³ For a notable exception, see Haldon *et al.* 2014.

their geographical and historical contexts, outlining obstacles and perspectives for a future agenda of landscape archaeology targeting the agricultural hinterland of Heraklion and the surrounding network of rural settlements. The overall goal is to advance the present scholarly engagement and interdisciplinary approaches towards the Cretan countryside, especially with regard to the crucial but less studied period of transition between Byzantine and Islamic rule.

Geographical context, historical background, and archaeological research: a framework

Before proceeding further, it is necessary to offer a quick introductory framework of the geographical context, historical backgrounds, and recent archaeological research conducted at both case-studies of this paper. Heraklion and Knossos are located in central-northern Crete; the former is a coastal site, the latter lies inland to the south-east from Heraklion, about six kilometers from the modern coastline. Topographically, these two sites occupy a central position in the natural system of coastal plains and agricultural basins of the Heraklion Plain and Western Pediados, which are characterised by water-rich soils and highly fertile hilly terrains. Herein, a network of archaeological sites can be found, spanning from prehistory to the Middle Ages, some of the most remarkable of which are (clockwise): Episkopi Pediados, Archanes, Vathipetro, Temenos, Phoinikia, Dafnes, and Tylisos (Figure 1).

Historically, the area under scrutiny was the cradle of the Minoan Palatial civilisation, when Knossos was the largest and wealthiest settlement on Crete, and one of the major urban centres of the Bronze Age Mediterranean world. Recent field surveys conducted within the framework of the Knossos Urban Landscape Project (KULP), suggest that at its zenith, during the Neopalatial period (Late Minoan I, ca. 1600 BC), the settlement of Knossos extended over as much as 130 ha,

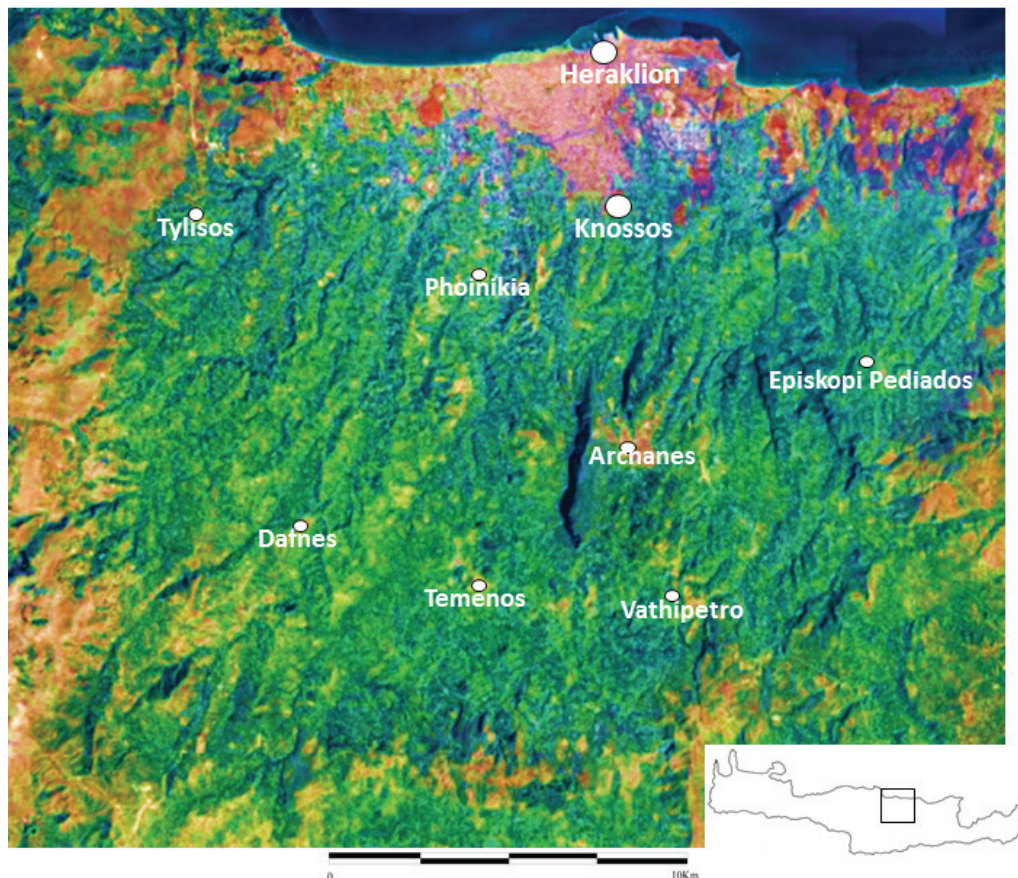


Figure 1. Map of the Heraklion Plain and Western Pediados with the principal archaeological sites mentioned in the text (map by the author).

with an estimated population of 25.000-28.000.⁴ Regarding Heraklion, there is enough evidence to conclude that throughout the Minoan period a harbor-town named Poros existed to the east of the modern city, functioning as the sea-port of Knossos.⁵ Needless to say, the richness of the Minoan civilisation has attracted a great deal of uninterrupted archaeological research since the pioneering work led by Evans at Knossos, resulting in an exceptionally extensive and comprehensive body of secondary literature.⁶ Following a period of settlement contraction experienced during the Iron Age, Knossos recorded a new urban zenith during the Late Classical or Early Hellenistic period, when, reaching a size of ca. 120 ha, it was one of the most important poleis on Crete.⁷ At this stage, the harbor town of Poros moved westward, in correspondence to the modern site of Heraklion, marking the beginning of the history of this settlement in the location that we know today.⁸

Moving on to a historical period closer to the chronological scope of this paper, recent archaeological research at Knossos has been very productive also concerning the Roman Imperial age (ca. 1st-3rd century AD), which started when this site became the first *colonia* of the island in 31-27 BC.⁹ Although preserving a significant size, during these centuries the urban scale of Knossos decreased in size, contracting to ca. 70 ha around the late 3rd century AD. Moreover, the settlement began to gradually move northwards from the Minoan Palace, to the locality of the Venizeleio Hospital and the Medical Faculty, to the south of the modern outskirts of Heraklion. For this latter site, archaeological evidence from urban excavations near the Archaeological Museum, unearthing residential buildings with splendid mosaic floors, profuse ceramics, and 36 coins spanning 283-457 AD, testify that this settlement nearer Heraklion prospered during the later Roman Imperial age and throughout the 4th-5th century.¹⁰

While Hood and Smyth once believed that the whole site of Knossos had been abandoned by the 4th century, there is now conclusive archaeological evidence to demonstrate that the settlement endured throughout Late Antiquity and the early Byzantine period (ca. 4th-7th century), a time of general socioeconomic prosperity for the whole island.¹¹ During these centuries Knossos received a new monumental and institutional role, with the construction and restoration of religious and secular buildings, urban infrastructures, residential villas, necropolis, elite-burials, and, in the 5th century, of extensive graveyards and at least two Christian basilicas at the sites of the modern Medical Faculty and Sanatorium (Figure 2).¹² Concerning its urban fabric, however, throughout these centuries the settlement further reduced in size to about 40 ha, and continued to move northwards, nucleating around the two Christian basilicas mentioned above, in what we have come to call the 'northern neighborhood'.

The central centuries of the early Middle Ages (8th-10th century) still represent a *terra incognita* for historical and archeological research on Crete, although, it should be noted, the 8th century has attracted increasingly scholarly attention over the last few decades.¹³ Until recently, the site of Knossos, as many others on Crete, was assumed to have been utterly abandoned by the 8th century. This new archaeological attention on the 8th century, however, has produced a less pessimistic

⁴ Whitelaw 2018 and 2019. Whitelaw, Bredaki, Vasilakis, 2019, especially Cutler, Whitelaw 2019.

⁵ Wilson, Day, Dimopoulou 2004; Cutler, Whitelaw 2019.

⁶ This is not the place, and I am not an expert, to venture into bibliographical surveys on this topic. For some recent scholarly and most interesting insights into Minoan Crete and Palatial Knossos see footnote no. 4.

⁷ Trainor 2019.

⁸ Karetsou 2008.

⁹ Fortunately, bibliography is extensive. See: Paton 1994, 1998, 2004; Sweetman, Grigoropoulos 2010; Rousaki, Brokalakis, *et al.* 2019; Trainor 2019.

¹⁰ Markoulaki 2008a; Penna 2008; Poulou 2008; Andrianakis 2013.

¹¹ Hood, Smyth 1981, 26. Cf. Tsigonaki 2007; Poulou 2011; Tsougarakis 2011; Zanini 2013; and Yangaki 2016.

¹² Hayes 2001; Sweetman 2003, 2004a, 2004b, 2005; Sweetman, Grigoropoulos 2010; Trainor 2019. Let us remember that the first appearance of a Bishop of Knossos dates as far back as the second half of the 2nd century.

¹³ According to the narrow chronological scope of this paper, I will not be able to offer a comprehensive literature review of the archaeological work conducted on post-7th century Crete, for which investigations at Gortyn, Eleutherna, Pseira, and Priniatikos Pyrgos have been fundamental. See respectively: Di Vita 2010 and Baldini *et al.* 2013; Tsigonaki 2007, Poulou 2011; Klontza-Jaklovaa 2015. See also Tsigonaki, Sarris 2016, Tsigonaki 2019, and footnote no. 11.

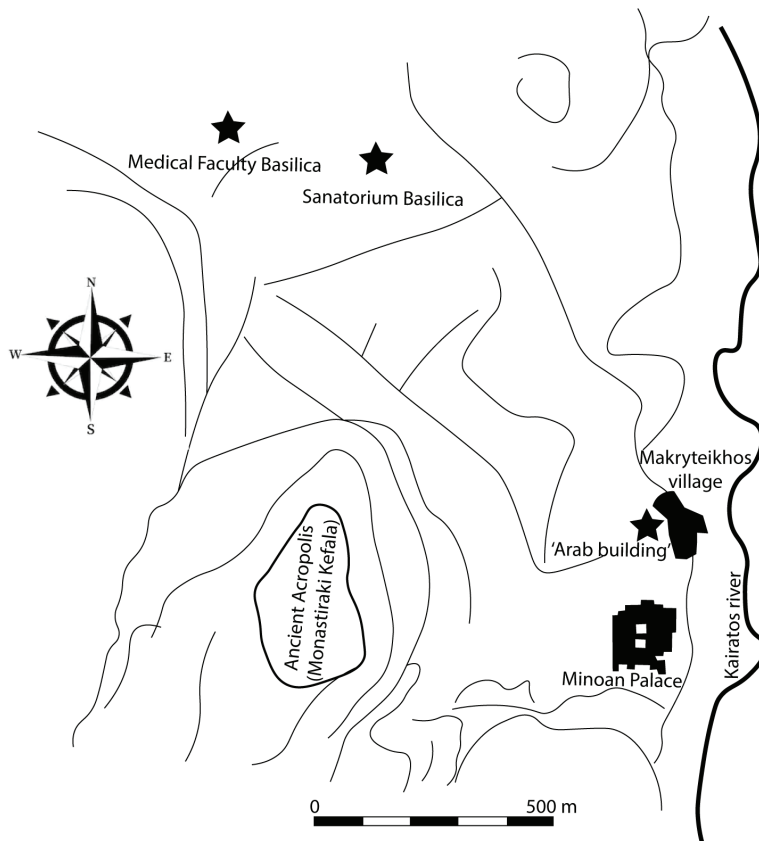


Figure 2. Plan of Knossos with the principal sites mentioned in the text (plan by the author).

picture of economic deterioration and sociocultural regression for both the island, and with specific regard to the site of Knossos. Nonetheless, as we shall see, the current knowledge of the forms of habitation at this site remains rather patchy for this period. Regarding the period of the Islamic Emirate, archaeological research into the 9th-10th century is still in its infancy on Crete, an issue that has been extensively discussed in a recent article of mine.¹⁴ Focusing specifically on these problematic centuries, this paper aims at complementing and expanding on the present picture, producing additional archaeological evidence to argue that the undeniable – although less drastic – downsizing and ruralisation of post-7th century Knossos corresponded to the steady urban growth of Heraklion, marking the beginning of the most fortunate period in the urban history of this city.

Byzantine Knossos and Heraklion in the late-7th – early 9th century

According to current archaeological and historical understanding, on Crete the period between the late 7th and early 9th century can be divided into two segments. The first, dating between the late 7th and mid-8th century, is increasingly seen as an age of relative stability, for which present archaeological research is at a good stage of development. The other period, covering the second half of the 8th to the early 9th century, is more problematic, and patchily known archaeologically, especially with regard to Knossos, for which material evidence is scant and mostly contradictory. But let us proceed in order.

Although downsized to ca. 40 ha and incomparable with the urban standards of its recent past, as late as the late 7th – early 8th century Knossos was still one of the most important centres on Crete, and probably the hegemonic unit within the micro-regional network of surrounding settlements. For

¹⁴ Randazzo 2019. By contrast, historiographical research into the Islamic Emirate of Crete is well established, for which the seminal work of Christides 1984 still represents a cornerstone. More recently see the Graeco-Arabica volumes XI and XII, respectively Chatzaki 2011 and Christides 2018.

this period, the specific forms of habitation at this site are still uncertain, yet it is clear that a large segment of the settlement moved to the 'northern neighborhood', nucleating around the Christian basilicas discovered at the Sanatorium (KSB henceforth) and Medical Faculty (KMF henceforth).¹⁵ This latter building might have ceased to have its religious role by the late 7th century, but the record of (domestic) pottery from this site published by Hayes extends up to the mid-8th century. Featuring productions such as Tunisian RSW 109, Cypriot RSW 9, Constantinopolitan GWW I, and Aegean globular amphorae, these ceramics not only bear testament to the continuous occupation of this site, but also to the endurance of well-established economic partnerships and sociocultural links with core territories of the Byzantine Empire.¹⁶ Sigillographic evidence is also revealing. In particular, the lead seal of Andrew of Crete, archbishop of Gortyn (d. 740), has been recovered in the ruins of the old core of the Minoan and Greco-Roman city.¹⁷ On the one hand, this evidence might suggest that the central heart of the site had not been completely deserted by the mid-8th century (although this findspot could reflect its site of disposal). On the other hand, this specimen indicates persuasively the relevance and interconnection of its Knossian recipient(s) within the episcopal network of the region. In line with these material sources, which are few but consistent, it is anachronistic to preserve the placing the urban collapse of Knossos in the 7th century. Certainly, if compared with its glorious past, it is difficult to regard this site in urban terms. However, when compared with the urban standards of contemporaneous examples from within and outside Crete, then Knossos emerges as a significant instance of a 'Dark Age city'.¹⁸ Up to the mid-8th century, in fact, this settlement and its community maintained a dominant institutional role, vibrant economic activities, and, possibly, an urban appearance and size respectable for that time.

Regarding the site of Heraklion during the same period, both textual sources, such as the *Anonymi Ravennatis Cosmographia* (7th century), and archaeological finds from urban excavations (see below) reveal that a Byzantine settlement existed at this location long before Muslim conquerors upgraded it to the capital of the Emirate. The precise extent, significance, and *forma urbis* of this settlement, however, are still unclear, although it is generally accepted that, at this chronological stage, it still functioned as the *emporium* of Knossos.¹⁹ Considering structural remains, Early Christian architectural features of the 6th-7th century have been found in various excavations across the city, such as at Almirou Street and in proximity to the Archaeological Museum; likewise, fortifications unearthed at the Bendenaki plot have been recently dated to the late 7th – early 8th century, in line with the revised chronologies proposed for the main works of fortifications across the island.²⁰ Ceramics and small finds documented during these urban excavations complete the record of contemporaneous material evidence available for this site. A *solidus* of Leo III and Constantine V currently constitutes the firmest chronological evidence dating to the mid-8th century, while the dating of belt buckles, sherds of GWW I, Aegean globular amphorae, and examples of regional oil lamps and painted tableware (*ceramica sovradipinta*) could well extend into the late 8th century.²¹ While this evidence indicates that during this period the settlement of Heraklion experienced a steady process of economic growth, at present it is impossible to establish a precise point in time when this site replaced Knossos at the summit of the local urban hierarchy of settlements. A revaluation of the material evidence from Knossos dating to the second half of the 8th – early 9th century could be decisive with this regard, finding further support in textual sources and a recent hypothesis formulated by Cosentino.²²

¹⁵ Sweetman 2004b; Sweetman, Grigoropoulos 2010; Trainor 2019.

¹⁶ Hayes 2001.

¹⁷ Dunn 2004.

¹⁸ Curta 2016.

¹⁹ Trombley 2001; Andrianakis 2013; Cosentino 2019.

²⁰ Markoulaki 2008b; Andrianakis 2013; Sythiakaki, Kanaki, Bilmezi 2015; Tsigonaki 2019.

²¹ Penna 2008; Poulou 2008, 2011; Andrianakis 2013.

²² Cosentino 2019.

Thus far, the only – although extraordinary – piece of material evidence from Knossos dating to the late 8th – early 9th century was a lead seal published in 2004 by Dunn, belonging to a high rank imperial civil officer, *Ionnis Vestitor and Protonotarios of the Imperial Treasury*.²³ This seal was found on the eastern slope of the ancient acropolis of Knossos (Monastiraki Kefala), a few hundred meters to the west of the Minoan palace. As noted, before this evidence was found, this central area of the site was believed to be either deserted, or reduced to mere forms of squatter occupation. However, as Dunn observed, this lead seal might imply that Knossos had maintained, at this later stage, an important relevance in the economic and administrative hierarchy of the island. Furthermore, in view of its findspot, it could be that the central nucleus of the site had not been completely abandoned, as previously assumed. That Knossos had maintained a privileged position in the settlement hierarchy of Crete finds further support in the mention, contained in both *Notitiae Episcopatum* 3 and 7, that its bishop attended the Ecumenical Council of Nicaea in 787. Some scholars have previously assumed that this mention was a mere honorific title. However, coupled with the concrete evidence of this second lead seal, the presence of a bishop and/or other high rank officers at this site appears plausible indeed. On the other hand, however, extant material sources from the central core of the old Greco-Roman site are extremely scarce and, when existing, once again from the ‘northern neighborhood’, a picture of squatter occupation, de-monumentalisation, and ongoing ruralisation does still emerge.

In this regard, a well-stratified ceramic assemblage from Level 3c, a context found in the 1950s during the excavation of the southern tower at the KSB, is quite illuminating.²⁴ Level 3c was found overlapping the rubble layers of destruction of the basilica, which contained coins and ceramic sherds dating to the 7th century. Above, it was sealed by a sandy stratum that, lacking ceramic evidence, was interpreted as a flood layer, which was further covered by a third stratum, containing later medieval glazed pottery (ca. 13th century onwards). In accordance with this stratigraphic sequence, Level 3c was dated to the 8th century already in the early 1960s, when Frend and Johnston published the results of the KSB excavations.²⁵ However, due to the limited scientific knowledge available at that time, the ceramics from Level 3c were not accurately identified. My restudy allows us to clarify the chronology of this context, which should be dated between the mid-8th – early 9th century in light of the present knowledge of Byzantine pottery (Figure 3).

A total number of eight diagnostic sherds comes from Level 3c (Figure 3A-H), of which one cooking-pot and two globular amphorae offer the most solid chronological evidence. According to both fabric and shape, the cooking-pot 3A can be attributed to Aegean-Constantinopolitan workshops, finding a precise morphological parallel with the sample no.13 from Deposit 35 of Sarachane, dating to the late 8th – early 9th century.²⁶ On Crete, similar examples have been recorded at various sites, including Gortyn, Pseira, and Eleutherna, to mention some prominent examples.²⁷ The amphora rims 3C and 3D have similar shapes and fabrics, which are compatible with the Types 36 and 44 from Deposits 35-36 of Sarachane (especially nos. 30, 34, and 43), dating to the late 8th – first half 9th century.²⁸ On Crete, analogous examples have been documented at Gortyn, Priniatikos Pyrgos, and Pseira.²⁹ The body-wall sherd 3E, bearing an incised pattern of combed lines, should belong to an equivalent example of globular amphora, finding exact parallels with specimens found in late 8th-century layers at Priniatikos Pyrgos.³⁰ I was not able to find an exact morphological match for 3F, which is the last amphora-sherd from Level 3c.³¹ Its shape recalls no. 38 from Deposit 35 of

²³ Dunn 2004.

²⁴ The need for a restudy of this assemblage was already pointed out in Vroom 2003: 55–56.

²⁵ Frend, Johnston 1962.

²⁶ Hayes 1992: 175, fig. 56. The fabric, grey in colour, with gritty texture, and rich in silvery mica, accords with this attribution, corresponding to Hayes' Ware 3.

²⁷ Martin 1997: 356; Xanthopoulou 2004: 1022; Fabrini, Perna 2009: 132, fig. 17; Poulou 2011; Yankagi 2016.

²⁸ Hayes 1992: 177, fig. 57. Both fabrics are orange in colour, with high frequency of small-size white and black inclusions, and sporadic mica.

²⁹ Portale 2014: fig.7; Klontza-Jaklova 2014: figs. 8-9; and Tzavella 2019.

³⁰ Klontza-Jaklova 2015: 149, fig.8

³¹ The fabric is grey in colour and rich in silvery mica, with medium frequency of small dark-red inclusions.

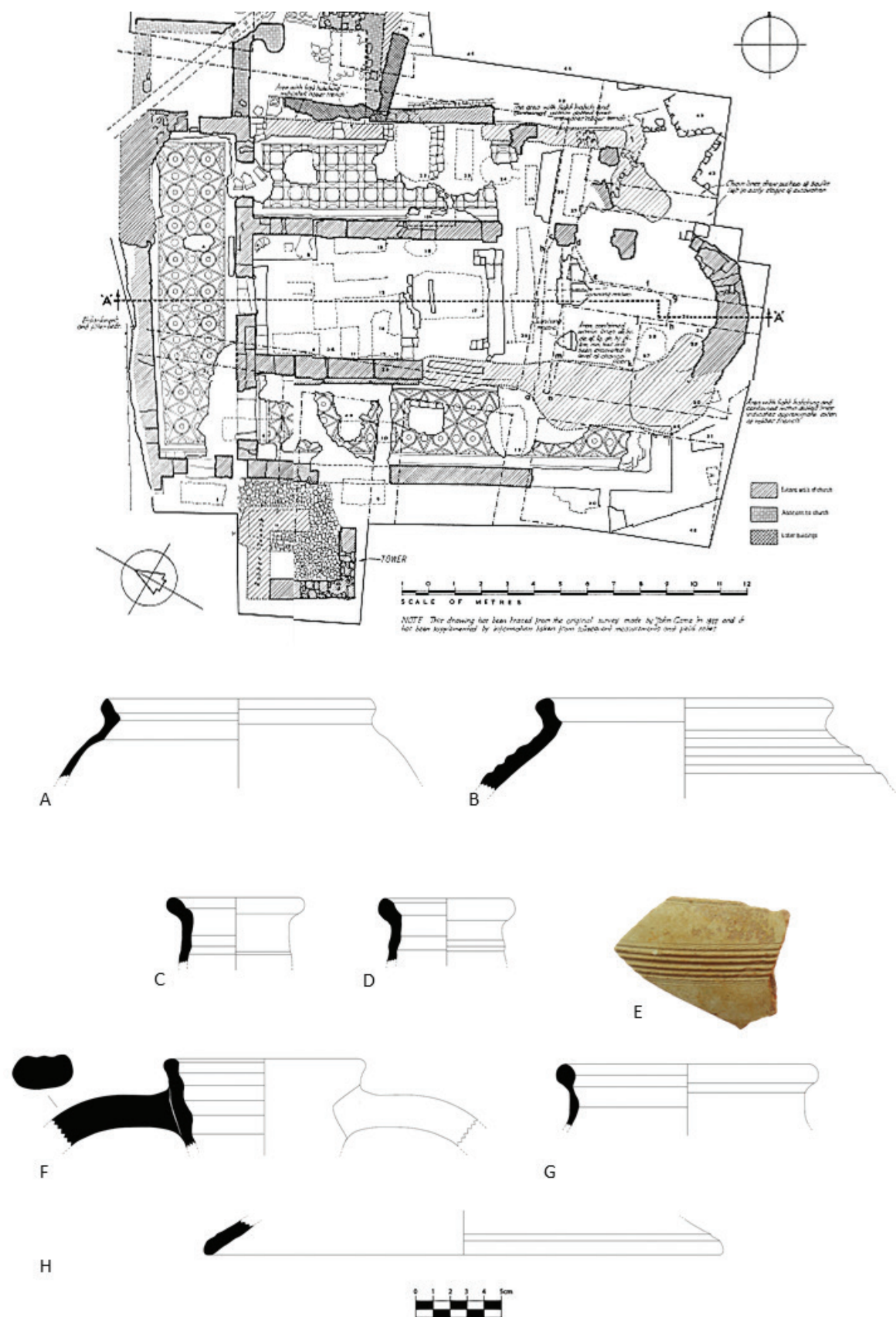


Figure 3. Plan of the Knossos Sanatorium Basilica (after Frend, Johnston 1962: fig. 1) and drawings of the ceramics from Level 3c (by the author with permission of the British School at Athens).

Sarachane, even though general parallels can be drawn with Aegean types of globular amphorae otherwise defined as 'late survivals' of LRA 1.³² Of the remaining three specimens, 3B is a cooking-pot, while 3G and 3H are plain domestic wares. Regarding these two latter items, 3G is the rim of a wide-mouthed jar, while 3H is the rim of a lid. The shape of this lid is too generic, and any attempt to classify it typologically would be misleading. The profile of the jar is more distinctive, but the scarce knowledge in secondary literature of contemporaneous local productions of utilitarian plain wares does not currently allow for precise comparisons to be drawn. Macroscopically, with a difference in texture, which is finer in the lid and coarser in the jar, both specimens have similar fabrics, which are red in colour, with traces of mica, and with a high frequency of dark and white inclusions, some of which are seashells or microfossils. The cooking-pot 3B yields a similar fabric, which is grittier in texture. The shape of this pot finds very close parallels with 8th-9th century examples of the Corinth/Mitello Type, which are widely attested in mainland Greece, including at Sparta, Argos, Athens, and Corinth, and in Byzantine Southern Italy.³³ Although sharing common morphological and technological features, these pots were produced locally at these sites, in a process that Arthur has sketchily summarised in the expression 'Byzantine tradition, but local productions'.³⁴ The fabric of 3B undermines the attribution of this item to Corinthian and Aegean *strictu sensu* productions; the former does not present microfossils, while the latter are discernible for fabrics that are richer in mica. Instead, the general macroscopic analogies between the fabrics of 3B, 3G, 3H, and Knossian ceramic productions of the Iron Age would indicate a possible local origin of these items, which only future petrographic analysis can confirm or dismiss.³⁵

On the one hand, this modest but significant assemblage of ceramics from Level 3c indicates that human occupation at the 'northern neighborhood' of Knossos endured up to this later chronological stage. Likewise, it opens a window onto possible local ceramic productions, testifying at the same time that pottery imported from core territories of the Byzantine Empire continued to reach this site and its community. On the other hand, however, Level 3c yields an eloquent picture of squatter occupation at the Christian basilica, which by the late 8th century had utterly lost its monumentality. Therefore, the second half of the 8th century can be taken as the chronological turning-point in the irreversible process of ruralisation of the urban fabric of Knossos. This being noted, does this chronological standpoint couple with a concomitant process of urban growth at Heraklion? In the light of the archaeological limits outlined above, conclusive answers to this question cannot be adduced. However, when textual sources are considered, the mid-8th century does in fact emerge as the watershed in the increasing process of secular and religious institutionalisation of this settlement. In particular, reinterpreting a reference contained in the life of St. Stephen the Younger, (mid-8th century), Cosentino has argued that Heraklion might have become the seat of secular power of the island as early as the mid-8th century, when the residence of the archon of Crete was relocated from Gortyn to Heraklion.³⁶ According to this scholar, this 'case of redefinition of Cretan urbanism' was part of a broader state-sponsored process, aimed at enhancing the relationships between the northern coast of Crete and Constantinople. Indisputable archaeological proof for supporting this argument does not currently exist. However, the additional textual evidence contained in the *Notitia Episcopatum* 3 and 7 that Heraklion (Herakleioupolis) was upgraded to an episcopal See in the second half of the 8th century seems to hint at this direction, bearing testament to a process of empowering involving also the ecclesiastical institutions of this city.³⁷

³² Hayes 1992: 177, fig. 57; Portale, Romeo 2001: Tab LXXII, e-f.

³³ Leo Imperiale 2004: fig. 4; Arthur 2010.

³⁴ Arthur 2010.

³⁵ Cf. Kotsonas 2019 and Boileau, Whitley 2010. Such petrographic analyses are planned to be conducted as part of my Macmillan-Rodewald Studentship at the BSA.

³⁶ The life contains the mention of a *praetōrion* sited in Heraklion (ἐν τῷ λεγομένῳ πραιτωρίῳ τοῦ Ηρακλείου), and not in Gortyn. In former scholarship, such information has been interpreted in reference to a residence built by emperor Heraclius in Gortyn. Current archaeological research, has indeed identified a phase of restructuring of the residence of the Cretan governor during the reign of Heraclius; however, it has also shown that when the life of St. Stephan the Younger was written, this Gortynian complex had definitely ceased to function: Cosentino 2019.

³⁷ Cf. Andrinakis 2013: 253-54.

As shall be seen next, the process of urbanisation of Heraklion gained momentum rapidly in the mid-9th – mid-10th century when, with the name *al-Handaq*, it became the capital and principal city of the Islamic Emirate of Crete. Conversely, by this time the settlement of Knossos had eclipsed into a rural site, located in the outskirts of the new capital of the island.

Islamic Heraklion and Knossos in the mid-9th – mid-10th century

As mentioned above, on Crete there has been a notable lack of archaeological research into the Islamic Emirate, which has long been perceived in prejudiced terms, and still remains one of the lesser known periods in the history of the island. In this paper it is not my intention to offer an in-depth discussion of the potential for integrating this island into global agendas of Islamic archaeology. With this regard, reference can be made to an article that I published in 2019, containing an inclusive overview of available ceramics and portable items dating to the Islamic period, which have been found in undisturbed layers of occupation at Heraklion and Knossos.³⁸ This record of ceramics encompasses glazed and unglazed jugs, drinking pitchers, bowls, bottles, oil lamps, cooking pots, and amphorae (Figure 4), which accord perfectly with the broader spectrum of pottery produced and circulating in concomitant territories of the *Dar al-Islam*, from al-Andalus, through the Maghreb, Egypt, Syria-Palestine, to Iraq and Iran. Setting this corpus of objects aside, in what follows I will focus on structural remains, especially related to domestic architecture, which have surfaced across Heraklion and in Knossos, discussing their analogies with contemporaneous urban and rural architectures of the Islamic world, a task that has never been performed before.

In Heraklion, domestic buildings dating to the Islamic period have surfaced since the earliest urban excavations of the 1960s at the Kastela plot and in the Streets Kornoneou, Almirou, and Byron-Thalita, for which Starida published a survey and detailed descriptions in 2016.³⁹ All these examples of domestic architecture consist of relatively small rectangular rooms, well-built, with strong foundations that often reach the natural bedrock, and provided with small windows. Large blocks are used in their masonry, with tiles, pebbles, and rock-chips used as fillers between blocks. Spolia appear quite frequently, such as column shafts used as doorways or to support postholes. Inner walls were covered in white and coloured plaster, while floors were made of carefully arranged stone slabs, laid down on a preparatory layer of beaten earth. At Kastela, and Byron and Kornoneou Streets, groups of rooms connected to each other via narrow doors have been found, organised around central paved atria, in a layout that clearly defines courtyard houses (Figure 5). Water-wells were documented in these open-air central yards, which were crossed by a system of pipes, for both drawing and draining water.

As far as these available examples of domestic architecture are considered, they perfectly match the iconic ‘Islamic courtyard houses’, whose standard module, in the words of Fentress, offers a ‘consistent pattern in domestic architecture of the 9th-10th century, which can be found from Spain to the Persian Gulf’.⁴⁰ In particular, close comparisons can be drawn between the buildings from Heraklion and contemporaneous examples of courtyard houses known from archaeological investigations across al-Andalus, the Maghreb, and the Middle East, such as House V4 from Pechina and no.6 from Cordoba (al-Andalus), dating to the 9th and 10th century respectively; the houses from Siraf (Iraq), of the 10th century; and the Building I from Setif (Algeria), dating to the mid-11th century.⁴¹ According to these parallels, the rectangular rooms of each house could have had multi-purpose functions, from cooking and dining to sleeping and carrying out household activities, although some rooms should be imaged as reserved to the male and female components of the family. The central yard, called *ga’a*, was perhaps the most important space of the house, in the

³⁸ Randazzo 2019.

³⁹ Starida 2016.

⁴⁰ Fentress 1988: 62. See also Fentress 2013 and Petruccioli 2008.

⁴¹ For al-Andalus and the Maghreb: Gutierrez 2013: 253, fig.7, nos.1-2; and Fentress 2013. For Siraf: Fentress 1988: 61, fig.8, no.2.

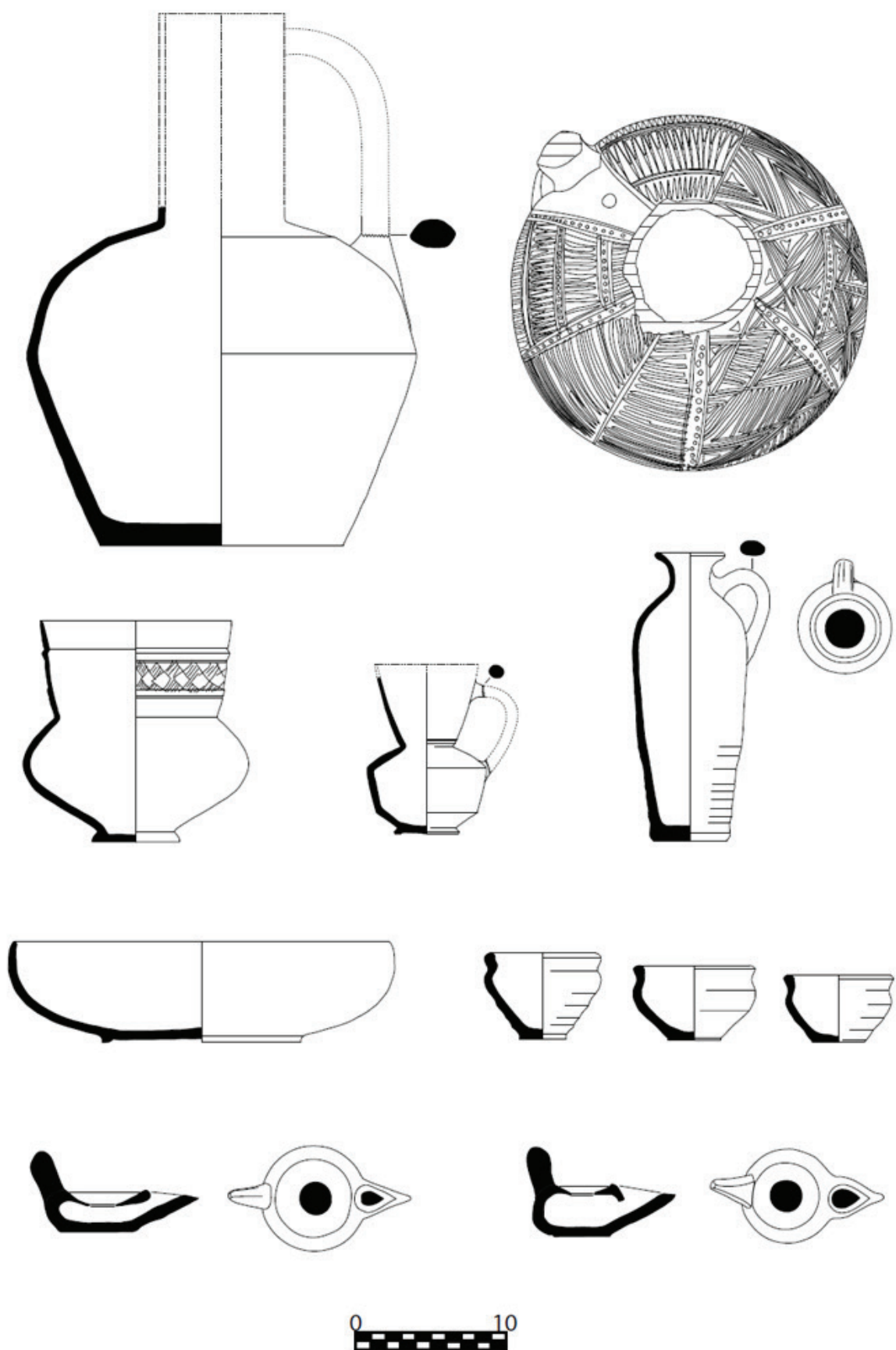


Figure 4. A selection of representative Islamic pottery from urban excavations in Heraklion (drawings by the author with permission of the Ephorate of Antiquities of Heraklion and the Historical Museum of Crete).

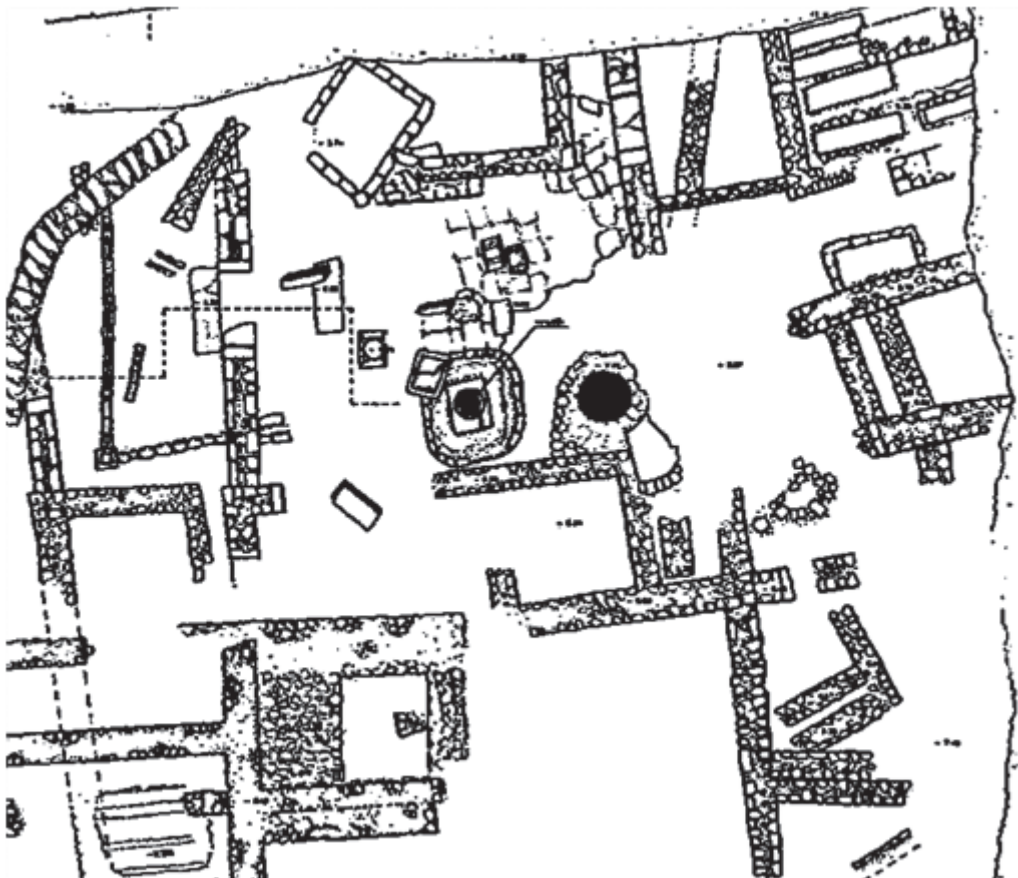


Figure 5. An example of an Islamic courtyard house from Heraklion, from Byron-Thalita Streets (photo and plan after Starida 2016: 67-68).

privacy of which, enclosed and shielded by the four wings of the house, most everyday activities were conducted, and daily life spent. Only the systematic archaeological study of the multiple assemblages of ceramic evidence, glass, stone ware, and bone and metal objects that are reported to come from these buildings of Heraklion will be able to shed further light on the functions and possible social organisation of the urban dwellers inhabiting the capital of the Cretan Emirate.

Domestic architecture apart, by the mid-8th-10th century, the urban fabric and built environment of Islamic cities featured a series of other distinctive architectures, which were especially related to the public sphere, and which define the 'Muslim urban space' as such.⁴² In truth, regarding Heraklion, current archaeological knowledge lacks evidence of iconic Islamic buildings and architectures such as *suqs*-marketplaces and mosques, which are among the most defining structural features of the 'Islamic city'. Textual sources, however, yield a different scenario. The accounts written by contemporaneous authors such as Kaminates, Leo Deacon, and Theodosius Deacon, in fact, indicate the existence in Heraklion of *suqs*, mosques, a 'royal palace/citadel' (*dar al-imara*), a well-organised port, with a roadstead, and a monumental circuit wall.⁴³ Notwithstanding the rhetorical and literary nature of these texts, these features find precise parallels in the urban fabric of other prominent cities of the Islamic world, allowing us to place *al-Hanqad* and its forms of habitation at the same levels of urban development as other cities of the *Dar al-Islam*.⁴⁴

The spatial extent and volume of the urban population of *al-Handaq* are currently unknown, and only educated, yet considerable guesswork can be conceived. By plotting the sites from urban excavations that yielded evidence of Islamic occupation, it is possible to reach an approximate figure of 15-20 hectares for the urban core. As seen, these excavations revealed that this central core was densely occupied, mostly by sophisticated domestic architecture, with complex systems of water-management and rich evidence of material culture, but also by workshops and, possibly, 'cash and carry' shops.⁴⁵ Calculating the population that occupied the walled city-centre is challenging, with parameters of persons-density per hectare varying considerably by historical periods, but general estimations ranging between 200 and 400 persons/hectare would result in an average of at least 5000 inhabitants.⁴⁶ This figure does not include the extramural population living in the suburbs of the city, which according to the evidence of Islamic coins consistently found as far afield as the Airport, Mastabas and Ag. Ionnis neighbourhoods, and the Bendevis Kamara bridge, almost certainly extended for about 3 km to the east and south of the walled city-centre, over an area of more than 300 hectares. Thus, applying a coefficient as low as 100 persons per hectare, which is usually conferred to rural realities, the total population inhabiting these extra-urban areas would amount to at least 30,000 people, which with the 5,000 calculated above result in a figure that seems plausible or even under-representative for the population of the Islamic capital of Crete at its zenith.⁴⁷

Leaving the urban constructions and population of the capital behind, by the first half of the 10th century the site of Knossos had completely disappeared as an urban centre, losing any previous semblance of civil and religious prestige, even if only honorific. In the early 1970s, in fact, the so-called 'Arab building' was found in the Makryteikhos village, near the Kairatos river, circa 350m

⁴² Secondary literature is fortunately ample. For pioneering works, see Kennedy 1985 and Fentress 1988. More recently, Gutierrez 2013; Fentress 2013; Walmsley 2007 and 2015; Goodson 2017, and papers in Jayyusi *et al.* 2008.

⁴³ Frendo, Fotiou 2000: 115-123. Talbot, Sullivan 2005: 64-75. Criscuolo 1979.

⁴⁴ In addition to the bibliography provided in footnote no. 42, see essays in Jayyusi *et al.* 2008, especially Neglia 2008, Raymond 2008, Kennedy 2008, Denoix 2008, and Petruccioli 2008.

⁴⁵ This latter consideration is supported by the abundance of numismatic evidence found during these urban excavations, which in secondary literature accounts for nearly 500 coins, mostly of Cretan Emirs. Kiln wasters suggest instead the evidence of ceramic ateliers. For both see Starida 2016, cf. Penna 2008 and Miles 1970.

⁴⁶ Cf. Whitelaw 2019.

⁴⁷ The estimated population for the main contemporaneous 'Middle Eastern' cities of the Islamic world is significantly ampler, ranging between 100.000 and 300.000 for centres such as Barsa, Nishapur, Shiraz, Samarkand, etc. As a starting point: Kennedy 2008, 2011. In the Maghreb, a population ranging between 14.000 and 300.000 is esteemed for Kairouan: Fenwick 2020: 60.

northwest of the Minoan Palace (Figure 6 above).⁴⁸ Elliptical in shape, it measured approximately 2m x 3m; the floor was 58 cm lower than the outside ground level and, as in the examples from Heraklion, it consisted of slabs of stone set into the beaten earth. The perimeter walls, standing to a maximum height of approximately 1m, preserved between two and four courses of mostly unworked rounded river boulders, irregularly shaped blocks of limestone, and *spolia* from nearby Roman edifices. Traces of plaster were found during the excavation, suggesting that the interior might have been plastered. A small circular pit dug into the ground level on the west side could have been a hearth, or a posthole. Already in the 1970s this structure was dated to the first half of the 10th century according to numismatic evidence documented on its floor, comprising nine coins minted by Cretan Emirs, the latest of which dating within the early 940s. Alongside these coins, two circular grindstones and a small assemblage of a minimum of eight samples of domestic pottery were found on the floor of this building, which I restudied and published in 2019.⁴⁹

The revaluation of this structure in the light of current knowledge of contemporaneous Islamic rural forms of habitation allows us to identify this building as a *bayt*, a rectangular or elliptic monocellular dwelling found in rural contexts across the Islamic world, especially in the Iberian Peninsula and North Africa, such as the late 8th-10th century examples from El Tolmo de Minateda, Volubilis, and Utica.⁵⁰ *Buyut* (pl.) were workplaces with multiple functions, ranging from permanent dwellings of a single family unit, to temporary or seasonal shelters for the labour force employed in agricultural and farming activities in the surroundings of urban centres. The portable items coming from this building suit well the rural character of this context, encompassing grindstones, amphorae, cooking pots, and unelaborate tableware, which form an assemblage of household ceramics that is remarkably similar to the one reconstructed from El Tolmo de Minateda (Figure 6 below).⁵¹ According to the analysis of its ceramic assemblage and structural remains, it is reasonable to believe that this building provided shelter for the labour force involved in daily and seasonal farming activities conducted in the agricultural hinterland of the Islamic capital, from and to which farmers could easily have commuted and transported their produce within one hour of walking distance.

In the broader context of early Islamic rural settlement patterns, *buyut* were usually isolated in the landscape, separated from neighbouring dwellings by ample empty spaces. The current lack of archaeological information pertaining to Knossos in the Islamic period prevents us from reconstructing long-term patterns of occupation at this site. The general absence of distinctive Islamic pottery from the KULP surveys and in the numerous contexts that I examined at the Knossos Statigraphical Museum, would confirm that this was a substantially isolated building, but additional research is needed in order to validate this further. Specifically, unsolved questions remain as to whether settlement was permanent or sporadic, scattered or nucleated, and whether this *bayt* was a completely isolated building, or one of many in the agricultural wheat-belt surrounding the capital of the Emirate. Only further research can be able to answer these questions and, after summing-up the main argument of this paper, a final section of the following concluding remarks addresses some of the obstacles and possible strategies to achieve this goal.

Concluding remarks

Since their formation, and within fluctuating patterns of settlement occupation spanning millennia, the historical narratives and site developments of Knossos and Heraklion have been intrinsically entwined to each other. Undoubtedly, until the 7th century AD, Byzantine Knossos was the first-rank site in the local hierarchy of settlements, and among the most prominent

⁴⁸ For the details of the excavation: Warren, Miles 1972.

⁴⁹ Randazzo 2019.

⁵⁰ For the Iberian Peninsula: Gutierrez-Lloret 2013: 250-52. On North Africa: Fentress 2013: 237-240.

⁵¹ Gutierrez 2013: 250, fig. 4.3.

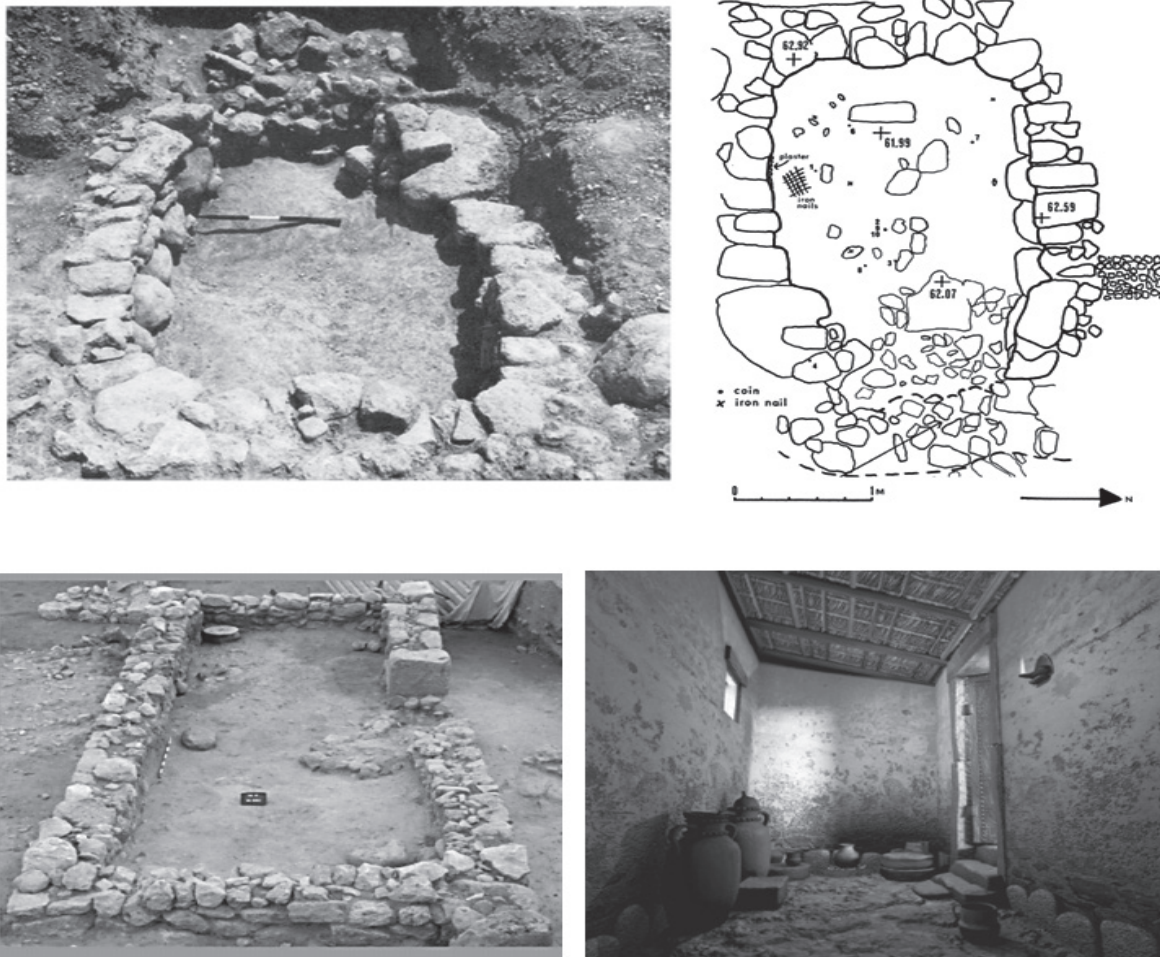


Figure 6. Above photo and plan of the 'Arab building' from Knossos (after Warren, Miles 1972: 289, fig.3 and Pl. 57a). Below an example of a *bayt* from El Tolmo de Minateda, 9th century (after Gutierrez 2013: 250).

urban realities on Crete. By the mid-10th century, however, Knossos had turned into a rural site, while Islamic Heraklion had long become the dominant urban centre of the whole island. In this paper, the intervening temporal leg has been investigated, in the aim of shedding further light on the shifting patterns of human occupation at these two settlements during the period of the Byzantine-Islamic transition. Archaeological research into these centuries, however, is still in its infancy on Crete and, besides general observations and remarks, it has been impossible to reach conclusive reconstructions of settlement patterns and specific forms of habitation at either site, thus the invitation to regard the following concluding remarks as 'work in progress'.

By drawing on available material evidence and textual sources, it is possible to place the turning-point in the shifting patterns of settlement urbanisation and ruralisation of Heraklion and Knossos around the mid-8th century, though a precise chronological watershed cannot yet be firmly established. As late as the mid-8th century, in fact, although significantly downsized and mostly nucleated in the 'northern neighborhood', the settlement of Knossos maintained a central institutional role on the island (see the lead seal of Andrew of Crete), and its community continued to be economically linked to core territories of the Byzantine Empire (see ceramics from the KMF). On the other hand, however, the late 7th–early 8th century marked the beginning of the urban upsurge of Heraklion: the coastal settlement was fortified, and bulk commodities (travelling in Aegean globular amphorae), high quality ceramics (such as regional *sovradipinta* tableware and Constantinopolitan GWW I), and small finds (coins and belt-buckles), began to flow into this

site. The late 8th–early 9th century remains a gray zone for the archaeology of Crete. For this period, details of the development of the urban fabric of Heraklion are not currently available, but textual sources suggest that this site was invested with secular and religious authority, possibly following a state-sponsored policy of centralisation on the northern coast of the island. Maybe, the central core of Knossos (its ancient acropolis) had maintained an institutional role (see the lead seal of the *Protonotarios of the Imperial Treasury*), but the evidence from Level 3c of the KSB indicates eloquently that by this time the ‘northern neighborhood’ underwent a process of demonumentalisation and squatter human occupation, indicating a major step in the ruralisation of the settlement. The shifting patterns of settlement urbanisation and ruralisation at these two sites culminated during the Islamic period. Heraklion was upgraded to capital of the Emirate, receiving a new urban infrastructure, comprising courtyard houses (known archaeologically), as well as *suqs*, mosques, and a royal citadel (known via textual sources), all iconic features of contemporaneous urban fabrics and architectures of the Islamic world. By then, the previous Byzantine urban centre of Knossos had disappeared, giving way to a loose and scattered form of rural habitation, of which the *bayt* discovered near the Makryteikhos village is the most representative unit.

Broader historical reconstructions apart, archaeological knowledge of Crete in the Byzantine-Islamic transition has just begun, thus major obstacles remain to drawing more detailed narratives of settlement patterns and forms of habitation at both the case-studies in this paper. Moreover, this notable lack of archaeological research prevents us from understanding the connections between these two sites and their surrounding countryside, which remain dissociated. This issue can be further outlined and explored by placing Islamic Heraklion in a theoretical and practical framework of urban provisioning, as well as by offering a closer examination of the archaeological evidence available from the surrounding network of satellite rural settlements.

Equal to Minoan Knossos, Islamic Heraklion became the main urban centre of Crete, a situation that endures to the present day. Equal to Minoan Knossos, also the large(r) urban population of Islamic Heraklion needed to be fed, and like Minoan Knossos, the Heraklion Plain and Western Pediados came to be their natural catchment area and sources of food supply. The systems of food supply of Minoan Knossos have been extensively studied (for instance through the distribution of seals and via archive tablets), and a recent paper by Whitelaw offers a cutting-edge perspective on this matter.⁵² The socioeconomic interactions between Islamic Heraklion and its productive hinterland, instead, have remained utterly unexplored and neglected in scholarly debate. The comparisons between Minoan Knossos and Islamic Heraklion, albeit rhetorical, is quite effective. Indeed, intervening millennia apart, and with due adaptations to different historical contexts, these two sites shared much in common on environmental, civic, and social bases. Both sites, in fact, are located at the virtual core of the same topographic basin (the Heraklion Plain and Western Pediados); both had a metropolitan scale that was outstanding for the regional standards of their time; and both, as many pre-industrial societies, depended on the surrounding countryside to sustain their exceptionally large urban population. A hierarchical system of second- and third-rank settlements (ranging from towns to single farms) has been identified within a radius of 5–15 km from Knossos, which, corresponding to 1–3 hours walking distance, is a reasonable parameter for maximising the efficiency of farmers commuting from their cultivable lands to the city.⁵³ Tylissos, Archanes, Vitsila, and Vathypetro are some of the examples best known archaeologically for the Minoan period. This being noted, what does archaeological evidence tell us for the Islamic period with regard to the settlement patterns surrounding the capital of the Emirate? A careful revision of the available material sources, mostly coins, allows us to pinpoint 5 units in the rural hinterland of Heraklion: Knossos, Archanes, Tylissos, Phoinikia, and Dafnes (Table 1).⁵⁴

⁵² Whitelaw 2019.

⁵³ Cf. Whitelaw 2019: 91–92, and Vionis, Papantoniou 2019: 4.

⁵⁴ Miles 1970; Warren, Miles 1972.

Site	Islamic coins ca. 860-900s (classes B-K: Shu'ayb I & Abu Abdallah ibn Shu'ayb)	Islamic coins ca. 910s-961 (classes L-V: esp. Ahmad ibn Umar II, Shu'ayb II & Ali ibn Ahmad)	Sub Tot	Distance from Heraklion
Knossos	13	3	16	6 km
Archanes	3	1	4	12 km
Phoinikia	3		3	7 km
Dafnes	1		1	15 km
Tylissos	1		1	11 km

Table 1. Islamic coins from the network of sites across the Heraklion Plain and Western Pediados.

Of these sites, Knossos is the only one that, in the light of extant structural and material evidence of the Islamic period, could be classified as a second-rank settlement. Moreover, as seen, it is the only one known archaeologically from the Byzantine period preceding the Islamic conquest. Compared with the other sites, however, it should be borne in mind that Knossos has been the stage of more intensive archaeological research, which could explain this 'privileged' status quo. Perhaps, inside this hierarchy of sites, also Archanes was a second-rank settlement. Known archaeologically as an important Minoan settlement subordinated to Knossos, four Islamic coins have been recorded at this site, signifying its relevance within the local network of settlements. Likewise, three Islamic coins come from Phoinikia, suggesting the existence of a settlement at this site too. With the exception of this numismatic evidence, post-classical Phoinikia is not known archaeologically; textual sources, however, shed some light on its existence and relevance in the 10th century, when Nikephoros Phocas selected this site to establish his headquarters and encamp his troops.⁵⁵ Finally, current archaeological knowledge of Tylissos and Dafnes in the post-classical era is lacking. If one was to judge from the evidence of one single coin of the Islamic period recorded at each site, then both settlements should be considered as third- (or fourth-)rank units. Isolated finds of one coin, however, are not conclusive evidence for supporting or define the existence of a settlement, and further archaeological research is therefore required to turn these interpretative considerations into solid arguments. Furthermore, as said, with the exception of Knossos, none of these settlements is known archaeologically from the Byzantine period preceding the Islamic conquest. They either appear for the first time at this later chronological stage (such as Dafnes), or reappear after a long time after Minoan or Classical and Roman times (Archanes and Tylissos). At first sight, these data could indicate demographic revival of this part of the Cretan countryside during the Islamic period – or at least a significant reshuffling of the rural settlement patterns. However, even assuming that *all* extant archaeological evidence are indicative of settlements, in many cases it remains unknown whether they were newly established during the Islamic period, or whether they already existed and, at that point, simply continued or even underwent economic expansion.

As KULP has recently shown, field surveys hold great potential in answering these questions, advancing and refining present knowledge and understanding of settlement patterns and forms of habitation in this central topographic basin of the island, both on the *longue durée*, and with specific regard to the Byzantine-Islamic transition. Thus, it would be very productive if, in the near future, KULP could evolve into an archaeological landscape project extending on to the Heraklion Plain and Western Pediados (HPLP), in an effort to bring together past and present collaborations between the Greek Archaeological Service and educational institutions working on Crete. Ensuring the integration of data collection with KULP is imperative for this project, hence the adoption of a compatible multi-stage methodology, beginning with preparatory scouting surveys and proceeding with large and systematic sampling of pottery and other surface evidence. Considering that the designed extent of HPLP is 15 times larger than the already extensive surface covered by KULP (150 vs. 10 km²), systematic scouting with *in-situ* recording of surface data would be a fundamental tool to efficiently target the focal areas of future extensive surveys, and to define the specific strategies to employ (in terms of collecting, processing, storing, and analysing the material). The

⁵⁵ Cf. Leo Deacon account in Talbot, Sullivan 2005.

environs of Archanes, Phoinikia, Dafnes, and Tylissos are the perfect candidates for initiating this pilot scouting, which apart from the processing of finds' collections, requires very limited manpower and economic investment, but produces a systematic record of archaeological evidence into the long-term dynamics of settlement patterns. Although relatively close to Heraklion, these rural settlements have maintained a good degree of environmental integrity, being mostly left untouched by modern urbanism and development. Paradoxically, this circumstance, which is most desirable from an archaeological prospective, does not offer the same concrete incentives to pursue this project as KULP did. The unrestrained urban development of Heraklion, in fact, has seriously threatened the archaeological site of Knossos and its environs, justifying therefore the deployment of financial and human resource to document and preserve the cultural heritage surrounding this site. The sites across the Heraklion Plain have not experienced a similar threat. Thus, it is utopic to believe that the HPLP could receive a comparable institutional prominence as an academic tool to protect its cultural heritage and manage future urban development. This project, however, should not be perceived in sole terms of preservation and safeguarding, but as an academic occasion to aggrandise the knowledge and understanding of the Cretan countryside, using methods that are sustainable and interdisciplinary, and can be integrated into current historical narratives and archaeological reconstructions of this area of the island.

References

- Andrianakis, M. 2013. Heraklion in Crete, in J. Albani and E. Chalkia (eds) *Heaven and Earth, cities and countryside in Byzantine Greece: 252-263*. Athens: Benaki Museum.
- Arthur, P. 2010. Riflessioni intorno alla produzione e circolazione della ceramica nel Basso Adriatico, in S. Menchelli et al. (eds) *LRCW III Late Roman Coarse Wares, Cooking-wares and Amphorae in the Mediterranean. Archaeology and Archaeometry: 79-88*. Oxford: Archaeopress.
- Athanassopoulos, E. 2010. Landscape Archaeology and the Medieval Countryside: Settlement and Abandonment in the Nemea Region. *International Journal of Historical Archaeology* 14/2: 255-270.
- Baldini, I., et al. 2013. Gortina, Mitropolis e il suo episcopato nel VII e nell'VIII secolo. Ricerche preliminari. *Annuario della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente* 90: 239-308.
- Boileau, M.C., and J. Whitley 2010. Patterns of Production and Consumption of Coarse to Semi-fine Pottery at Early Iron Age Knossos. *Annual of the British School at Athens* 105: 225-268.
- Bintliff, J. 2008. Recent Developments in the Social and Economic Archaeology of the Mediterranean Region from a Long-Term Perspective. *Tijdschrift voor Mediterrane Archaeologie* 40: 36-47.
- Chatzaki, E. (ed.) 2011. *Graeco-Arabica XI, ad Cretam Dedicata*. Heraklion: Institute for Graeco-Oriental and African Studies.
- Christides, V. 1984. *The Conquest of Crete by the Arabs (ca. 824). A turning Point in the Struggle between Byzantium and Islam*. Athens: Akademia Athenon.
- Christides V. (ed.) 2018. *Graeco-Arabica XII, Part I: The Emirate of Crete from its Establishment (ca. 824/6) until the reconquest of Crete by Nicephorus Phocas (961 AD)*. Athens: Herodotos.
- Cosentino, S. 2019. From Gortyn to Heraklion? A Note on Cretan Urbanism during the 8th Century. *Byzantina Symmeikta* 29: 73-89.
- Criscuolo, U. 1979. *Theodosii Diaconi de Creta capta*. Leipzig: BSB Teubner.
- Crow, J. S. Turner and A. Vionis 2011. Characterizing the Historic Landscapes of Naxos. *Journal of Mediterranean Archaeology* 24/1: 111-137.
- Curta, F. 2016. Postcards from Maurilia, or the historiography of the dark-age cities of Byzantium. *Post Classical Archaeology* 6: 141-162.
- Cutler, J. and T. Whitelaw 2019. Neopalatial and Mycenaean Knossos: urban expansion and collapse, in C. Mitsotaki, L. Tzedaki-Apostolaki, and S. Giannadaki (eds) *On-line Proceedings of the 12th International Congress of Cretan Studies. Heraklion: Society of Cretan Historical Studies*. <https://12iccs.proceedings.gr/el/proceedings/category/39/35/808>
- De Cupere, et al. 2017. Subsistence economy and land use strategies in the Burdur province (SW Anatolia) from prehistory to the Byzantine period. *Quaternary International* 436: 4-17.
- Denoix, S. 2008. Founded Cities of the Arab World from the Seventh to the Eleventh Centuries, in S. Jayyusi, S. et al. (eds) *The City in the Islamic world: 115-142*. Leiden-Boston: Brill.
- Di Vita, A. 2010. *Gortina di Creta. Quindici secoli di vita urbana*. Rome: L'Erma di Bretschneider.

- Dunn, A. 2004. A Byzantine fiscal official's seal from Knossos Excavations and the archaeology of 'Dark-Age' cities, in M. Livadiotti, and I. Simiakaki (eds) *Creta Romana e proto bizantina, Atti del Congresso Internazionale*: 139-146. Padua: Bottega d'Erasmio.
- Fabrini G.M. and R. Perna 2009. Lo scavo dell'Edificio Sud e delle Case bizantine a Gortina di Creta. *LANX* 4: 121-138.
- Fentress, E. 1988. The house of the Prophet: Islamic housing in north Africa. *Archeologia Medievale* 14: 47-59.
- Fentress, E. 2013. Reconsidering Islamic houses in the Maghreb, in S. Gutiérrez Lloret, and I. Grau Mira (eds) *De la estructura doméstica al espacio social. Lecturas arqueológicas del uso social del espacio*: 237-244. Alicante: Publicaciones de la Universidad de Alicante.
- Fenwick, C. 2020. *Early Islamic North Africa. A new perspective*. London: Bloomsbury.
- Frend, W., and D. Johnston 1962. The Byzantine Basilica Church at Knossos. *Annual of the British School at Athens* 57: 184-238.
- Frendo, D., and Fotiou A. 2000. *John Kaminiates, the capture of Thessaloniki*. Perth: Brill.
- Goodson, C. 2017. Topographies of Power in Aghlabid-era Kairouan, in G.D. Anderson, C. Fenwick, and M. Rosser-Owen (eds) *The Aghlabids and their Neighbors. Art and Material Culture in Ninth-Century North Africa*: 88-105. Leiden: Brill.
- Gutiérrez Lloret, S. 2013. Coming back to the grammar of the house: social meaning of Medieval households, in S. Gutiérrez Lloret, and I. Grau Mira (eds) *De la estructura doméstica al espacio social. Lecturas arqueológicas del uso social del espacio*: 245-264. Alicante: Publicaciones de la Universidad de Alicante.
- Haldon, J. et al. 2014. The climate and environment of Byzantine Anatolia: Integrating science, history, and archaeology. *Journal of Interdisciplinary History* 45: 113-161.
- Hayes, J.W. 1992. *Excavations at Saraçhane in Istanbul. Vol. 2: The Pottery*. Princeton: Princeton University Press.
- Hayes, J.W. 2001. Early Christian Pottery from Knossos: the 1978-1981 finds from the Knossos Medical Faculty site. *Annual of the British School at Athens* 96: 431-454.
- Hood, S., and D. Smyth 1981. Archaeological Survey of the Knossos Area. *British School at Athens Supplementary Volume* 14. London: Thames and Hudson.
- Jayyusi, S. et al. (eds) 2008. *The City in the Islamic world*. Leiden, Boston: Brill.
- Karetsou, A. 2008. Το επίνειο των Ελληνιστικών – Ρωμαϊκών χρόνων, in Karetsou A. et al. (eds) *Ηράκλειο. Η άγνωστη ιστορία της αρχαίας πόλης*: 54-74. Heraklion: Nea Kriti.
- Kennedy, H. 1985. From polis to madina: urban change in Late Antique and Early Islamic Syria. *Past and Present* 106: 3-27.
- Kennedy, H. 2008. Inherited Cities, in S. Jayyusi et al. (eds) *The City in the Islamic world*: 93-114. Leiden-Boston: Brill.
- Kennedy, H. 2011. The Feeding of the Five Hundred Thousand: cities and agriculture in early Islamic Mesopotamia. *Iraq* 73: 177-199.
- Klontza-Jaklovaa V. 2014. Transport and storage pottery from Priniatikos Pyrgos – Crete: a preliminary study, in N. Poulou-Papadimitriou, E. Nodarou, and V. Kilikoglou (eds) *LRCW 4 Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean*: 799-810. Oxford: Archaeopress.
- Klontza-Jaklovaa V. 2015. History hidden in broken pots or broken pots hidden in history? The Late Roman – Early Byzantine stratigraphy at Priniatikos Pyrgos (Crete). *Studia Archaeologica Brunensia* 20/2: 137-164.
- Kotsonas, A. 2019. Early Iron Age Knossos and the development of the city of the historical period, in C. Mitsotaki, L. Tzedaki-Apostolaki, and S. Giannadaki (eds) *On-line Proceedings of the 12th International Congress of Cretan Studies*. Heraklion: Society of Cretan Historical Studies. <https://12iccs.proceedings.gr/el/proceedings/category/39/35/811>.
- Leo Imperiale, M. 2004. Otranto, cantiere Mitello: un centro produttivo nel Mediterraneo bizantino. Note attorno ad alcune forme ceramiche di fabbricazione locale, in S. Patitucci Uggeri (ed.) *La ceramica altomedievale in Italia*: 327-342. Florence: All'Insegna del Giglio.
- Markoulaki, S. 2008a. Τα ψηφιδωτά δάπεδα του Ηρακλείου και το περιβάλλον τους, in A. Karetsou et al. (eds) *Ηράκλειο. Η άγνωστη ιστορία της αρχαίας πόλης*: 107-147. Heraklion: Nea Kriti.
- Markoulaki, S. 2008b. Η ανασκαφική έρευνα στη βόρεια επέκταση του Μουσείου Ηρακλείου, in A. Karetsou et al. (eds) *Ηράκλειο. Η άγνωστη ιστορία της αρχαίας πόλης*: 75-105. Heraklion: Nea Kriti.
- Martin, A. 1997. Ceramica comune: vasi da fuoco, in A. Di Vita, and A. Martin (eds) *Gortina II, Pretorio, il materiale degli scavi Colini 1970-1977* (Monografie della Scuola archeologica di Atene e delle missioni italiane in Oriente 7): 346-365. Padua.
- Miles, G.C. (ed.) 1970. *The coinage of the Arab Amirs of Crete*. New York: The American Numismatic Society.
- Neglia, G.A. 2008. Some Historiographical Notes on the Islamic City with Particular Reference to the Visual Representation of the Built City, in

- S. Jayyusi (eds) *The City in the Islamic world*: 3-46. Leiden-Boston: Brill.
- Panantonidou, G., and A.K. Vionis 2018. The river as an economic asset: Settlement and society in the Xeros Valley in Cyprus. *Land* 7: 157.
- Paton, S. 1994. Roman Knossos and the Colonia Julia Nobilis Cnossus, in D. Evely et al. (eds) *Knossos: a Labyrinth of History*: 141-153. London: British School at Athens.
- Paton, S. 1998. The Villa Dionysus at Knossos and its predecessors, in W.G. Cavanagh, and M. Curtis (eds) *Post-Minoan Crete: Proceedings of the First Colloquium on Post-Minoan Crete*: 123-128. London: British School at Athens Studies Series 2.
- Paton, S. 2004. Knossos: an imperial renaissance, in G. Cadogan, E. Hatzaki, and A. Vasilakis (eds) *Knossos: Palace, City, State* (British School at Athens Studies Series 12): 451-457. London.
- Penna, V. 2008. Νομίσματα από το χώρο της βόρειας επέκτασης του Μουσείου Ηρακλείου, in A. Karetsoy et al. (eds) *Ηράκλειο. Η άγνωστη ιστορία της αρχαίας πόλης*: 203-211. Heraklion: Nea Kriti.
- Petrucchioli, A. 2008. House and Fabric in the Islamic Mediterranean City, in S. Jayyusi et al. (eds) *The City in the Islamic world*: 851-876. Leiden-Boston: Brill.
- Portale, E.C. 2014. The sunset of Gortyn: Amphorae in 7th-8th centuries AD, in N. Poulou-Papadimitriou, E. Nodarou, and V. Kilikoglou (eds) *Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and archaeometry. The Mediterranean: a market without frontiers*: 477-489. Oxford: Archaeopress.
- Portale E.C., and Romeo, I. 2001. Contetitori da trasporto, in A. Di Vita (ed.) *Gortina V, 3. Lo scavo del Pretorio (1989-1995). I materiali*: (Monografie della Scuola Archeologica Italiana di Atene e delle Missioni Italiane in Oriente XII): 260-410. Padua-Athens.
- Poulou, N. 2008. Στιγμές από την ιστορία του Ηρακλείου, in A. Karetsoy et al. (eds) *Ηράκλειο. Η άγνωστη ιστορία της αρχαίας πόλης*: 149-201. Heraklion: Nea Kriti.
- Poulou, N. 2011. Τεκμήρια υλικού πολιτισμού στην Βυζαντινή Κρήτη: 7ος-12ος αι., in E. Kapsomenos, M. Andreadaki-Vlazaki, and M. Andrianakis (eds) *Proceedings of the 10th' Cretological International Conference*: 381- 447. Chania: Society of Cretan Historical Studies.
- Randazzo, M. 2019. Archaeological Approaches to the Islamic Emirate of Crete (820s-961 CE): a starting point. *Journal of Greek Archaeology* 4: 311-336.
- Ranymond, A. 2008. The Spatial Organization of the City, in S. Jayyusi et al. (eds) *The City in the Islamic world*: 47-70. Leiden, Boston: Brill.
- Rousaki, M., Y. Brokalakis., et al. 2019. A glimpse into the Knossian mortuary landscape: The Roman tombs at the Venizeleio Hospital, from the 2014 and 2015 excavation seasons, in C. Mitsotaki, L. Tzedaki-Apostolaki, and S. Giannadaki (eds) *On-line Proceedings of the 12th International Congress of Cretan Studies*. Heraklion: Society of Cretan Historical Studies. <https://12iccs.proceedings.gr/el/proceedings/category/38/32/921>
- Starida, L. 2016. Αρχιτεκτονικά κατάλοιπα στο Ηράκλειο από την περίοδο της αραβοκρατίας, in M.S. Patetakis, and K.D. Yapitsoglou (eds) *Μαργαρίται. Μελέτες στη Μνήμη του Μανόλη Μπορμπουδάκη*: 58-76. Siteia.
- Sweetman, R. 2003. The Roman mosaics of the Knossos Valley. *Annual of the British School at Athens* 98: 517-547.
- Sweetman, R. 2004a. The changing nature of Knossos, Roman to Late Antique: some problems, in G. Cadogan, E. Hatzaki, and A. Vasilakis (eds) *Knossos: Palace, City, State* (British School at Athens Studies Series 12): 481-488. London.
- Sweetman, R. 2004b. Late Antique Knossos. Understanding the development of the city: the evidence of mosaics and religious architecture. *Annual of the British School at Athens* 99: 315-354.
- Sweetman, R. 2005. Knossos Medical Faculty site: Late Antique graves and other remains. *Annual of the British School at Athens* 100: 331-369.
- Sweetman, R., and D. Grigoropoulos 2010. Roman Knossos: discovering the city through the evidence of rescue excavations. *Annual of the British School at Athens* 105: 339-379.
- Sythiakaki, V., E. Kanaki, E., and C. Bilmezi 2015. Older fortification of Heraklion: A different approach based on recent excavation data, in P. Karanastasi, A. Gigounaki, and C. Tsigonaki (eds) *Archaeological Work in Crete* 3: 395-410. Rethymno: Faculty of Letters Publications, University of Crete.
- Talbot, A.M. and D.F. Sullivan 2005. *The History of Leo the Deacon. Byzantine Military Expansion in the Tenth Century* (Dumbarton Oaks Studies 41). Washington D.C.
- Trainor, C. 2019. Polis, colony and beyond: urban Knossos from Archaic to Late Antique times, in C. Mitsotaki, L. Tzedaki-Apostolaki, and S. Giannadaki (eds) *On-line Proceedings of the 12th International Congress of Cretan Studies*. Heraklion: Society of Cretan Historical Studies. <https://12iccs.proceedings.gr/el/proceedings/category/39/35/814>
- Trombley, F. 2001. Mediterranean sea culture between Byzantium and Islam (c. 600-850 A.D.), in E. Kountoura-Galake (ed.) *The Dark*

- Centuries of Byzantium (7th-9th C.):* 133-169. Athens: National Research Foundation.
- Tsigonaki, C. 2007. Les villes crétoises aux VII^e et VIII^e siècles: l'apport des recherches archéologiques à Eleutherna. *Annuario della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente* 85: 263-297.
- Tsigonaki, C. 2019. Crete, a Border at the Sea: Defensive Works and Landscape-Mindscape Changes (Seventh-Eighth centuries AD), in M.A. Cau Ontiveros, and C. Mas Florit (eds) *Change and Resilience. The Occupation of Mediterranean Island in Late Antiquity*: 163-192. Oxford: Oxbow.
- Tsigonaki C., and Sarris, A. 2016. Recapturing the Dynamics of the Early Byzantine Settlements in Crete: Old Problems-New Interpretations through an Interdisciplinary Approach. *Proceedings of the 3rd International Landscape Archaeology Conference (LAC 2014)*: 1-11.
- Tsoulgarakis, D. 2011. Rites of passage. Από την υστερορωμαϊκή στη βυζαντινή Κρήτη: οικιστική εξέλιξη και κοινωνικοί μετασχηματισμοί, in E. Kapsomenos, M. Andreadaki-Vlazaki, and M. Andrianakis (eds) *Proceedings of the 10th Cretological International Conference*: 281-307. Chania: University of Crete.
- Turner, S. and J. Crow 2010. Unlocking historic landscapes in the Eastern Mediterranean: Two pilot studies using Historic Landscape Characterisation. *Antiquity* 84/323: 216-229.
- Tzavella, E. 2019. Πρινατικός Πύργος: Οι μαρτυρίες των αμφορέων της μεταβατικής περιόδου (7ος-9ος αι.): μια πρώτη προσέγγιση, in C. Mitsotaki, L. Tzedaki-Apostolaki, and S. Giannadaki (eds) *On-line Proceedings of the 12th International Congress of Cretan Studies*. Heraklion: Society of Cretan Historical Studies. <https://12iccs.Proceedings.gr/El/Proceedings/Category/38/33/765>.
- Vroom, J. 2003. *After Antiquity. Ceramics and Society in the Aegean from the 7th to the 20th Century A.C. A Case Study from Boeotia, Central Greece*. Leiden: Brill.
- Walmsley, A. 2007. Economic Developments and the Nature of Settlement in the Towns and Countryside of Syria-Palestine, ca. 565-800. *Dumbarton Oaks Papers* 61: 319-352.
- Walmsley, A. 2015. Remodelling urban Landscapes: the Christian and Muslim impact on the cities of Syria-Palestine, in T. Riis (ed.) *The 'Dead Cities' of Northern Syria and their Demise* (Proceedings of the Danish Institute in Damascus X): 131-151.
- Warren, P., and G. Miles 1972. An Arab building at Knossos. *Annual of the British School at Athens* 67: 285-296.
- Whitelaw, T. 2018. Reconsidering polities in prehistoric Crete, in M. Relaki, and Y. Papadatos (eds) *From the foundations to the legacy of Minoan Archaeology*: 210-255. Oxford: Oxbow.
- Whitelaw, T. 2019. Feeding Knossos: Exploring Economic and Logistical Implications of Urbanism on Prehistoric Crete, in D. Garcia et al. (eds) *Country in the City. Agricultural Functions in Protohistoric Urban Settlements (Aegean and Western Mediterranean)*: 88-121. Oxford: Archaeopress.
- Whitelaw, T., M. Bredaki, and A. Vasilakis 2019. Long-term urban dynamics at Knossos: the Knossos Urban Landscape project, 2005-16, in C. Mitsotaki, L. Tzedaki-Apostolaki, and S. Giannadaki (eds) *On-line Proceedings of the 12th International Congress of Cretan Studies*. Heraklion: Society of Cretan Historical Studies. <https://12iccs.proceedings.gr/el/proceedings/category/39/35/816>
- Wilson, D., P. Day and N. Dimopoulou 2004. The Pottery From Early Minoan I-II B Knossos and its Relations with the Harbour Site of Poros-Katsambas, in G. Cadogan, E. Hatzaki, and A. Vasilakis (eds) *Knossos: Palace, City, State* (British School at Athens Studies Series 12): 67-74. London.
- Xanthopoulou, M. 2004. Early Christian pottery of ancient Itanos, in A. Di Vita (ed.) *Creta romana e protobizantina. Atti del Congresso Internazionale*: 1013-1027. Padua: Bottega d'Erasmio.
- Yangaki, A.G. 2016. Pottery of the 4th-early 9th centuries AD on Crete: The Current State of Research and New Directions, in J.E. Francis, and A. Kouremenos (eds) *Roman Crete: new perspectives*: 199-234. Oxford: Oxbow.
- Zanini, E. 2013. Creta in età protobizantina: un quadro di sintesi regionale, in D. Michaelides, P. Pergola, and E. Zanini (eds) *The Insular System of the Early Byzantine Mediterranean, Archaeology and history*: 173-189. Oxford: Archaeopress.