

SOUTHERN ASIA MINOR AND NORTHWEST SYRIA AT THE END OF ANTIQUITY:  
A VIEW FROM THE COUNTRYSIDE

by

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## ABSTRACT

SOUTHERN ASIA MINOR AND NORTHWEST SYRIA AT THE END OF ANTIQUITY:

A VIEW FROM THE COUNTRYSIDE

by

Angela Rose Commito

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This dissertation examines the changes in Graeco-Roman life that mark the end of antiquity in southern Asia Minor and northwest Syria using the archaeology of the countryside. By 700 CE, the eastern Roman empire had changed fundamentally: many cities had been largely abandoned, economic networks reconfigured, and social relationships renegotiated. This process is often understood as a systemic collapse into a “dark age” caused by conflict with Persians and Muslims, political and economic instability, the rise of Christianity, plague, earthquakes, climate change, and land degradation. What did this process feel like for those experiencing it? Did Graeco-Roman life collapse, or change into something new?

Answers have traditionally been sought with evidence from cities alone, but doing so ignores the landscapes surrounding them. I look beyond cities and investigate the countryside using the methods of regional survey and environmental archaeology and science. I aim to

understand the end of antiquity by identifying broad patterns of change related to population and settlement dynamics, economic patterns, subsistence strategies, and environmental conditions. My secondary goal is to determine the usefulness of these methods in investigating a major historical problem.

My research suggests that society became less complex and life more difficult for many people in these regions during the seventh century. Population declined, communities became less secure, and access to many commodities, goods, and services became restricted or cut off. The post-seventh-century fates of two networks of exchange provide a key to understanding these changes and how communities responded to them. Whereas greater dependence on the state redistribution system made certain communities vulnerable to the disruptions of this period, the continuation of commercial exchange, operating primarily via local and regional networks but also interregionally, provided a safety net allowing future resilience. Communities survived the unpredictability of these centuries by eschewing long-term investment in favor of risk-sensitive strategies that increased their flexibility: they lived in villages rather than cities or farmsteads, abandoned intensive agriculture for more balanced agropastoralism, and restricted family size. These responses reflect an aggregate desire to make life safe and fulfilling in the face of apprehension about an unknown future.

## CHAPTER 1

### INTRODUCTION

The end of antiquity is an intriguing period of unanswered questions, of conflicting evidence and high-stakes interpretations. Much of the allure of studying the eastern Mediterranean during late antiquity stems from a desire to solve the mystery of what happened to the network of Graeco-Roman towns that characterized the Roman empire here and, even more intriguing, of how people living in these towns effected and responded to change. Such is the difficulty of understanding the evidence that the same pieces of information have been used to support contradictory answers to this problem, even at its most impressionistic. On the one hand, the changes experienced in urban life during the fourth through eighth centuries CE seem to comprise an unwelcome process of reversal, whereby the long, complex development of Graeco-Roman urbanization slowly unraveled in fits and starts. On the other hand, these changes might instead be viewed as a process of reconfiguration – that is, of adaptation and resilience in response to altered circumstances. Which is the more accurate depiction?

By the end of the seventh century CE, much of what had characterized ancient Graeco-Roman life in the eastern Mediterranean had disappeared or changed fundamentally. These changes are all the more striking in view of the remarkable growth and prosperity the east had enjoyed during the preceding fourth to early sixth centuries, at a time when the western empire

had already fallen to new rulers and seen the social and physical fabric of its cities become threadbare and rewoven. In Asia Minor, many of the towns and cities that had studded the landscape and defined life in the Roman empire had been largely abandoned, their residents clustered into scattered pockets of habitation across a cityscape no longer monumental. The grand public buildings, as well as the outdoor urban environments created by their façades – long the spaces of dynamic social interaction, civic pride, and élite display – had been dismantled, neglected, or repurposed, as priorities shifted and social relationships were renegotiated. Walls and churches now defined the urban landscape. The power and incentive to make decisions concerning the fate of cities and their residents had shifted from formal civic councils to informal bands of notables and bishops.

The old hierarchy of cities was reconfigured, so that some formerly prominent towns dwindled into backwaters, while others became newly important ecclesiastical, military, or administrative centers of the early Byzantine empire, itself re-organized in the seventh century into regionally circumscribed themes. As cities changed, so too did the economic networks that had connected them: surviving in some places but truncated or severed in others, these routes of exchange no longer delivered goods and commodities in bulk across the Mediterranean to the same extent they had in earlier centuries. Residents of towns across the eastern Mediterranean became less connected to each other, less likely to eat similar foods off of similar red-slipped table wares – less willing or able, that is, to share in the kind of social and material *koine* that had previously tied together urban residents all across the Mediterranean. The recurrence of plague every ten to fifteen years cut down a portion of each successive generation during the two hundred years between the mid-sixth and mid-eighth century. Town-dwellers were likely hit harder by pestilence than inhabitants of the countryside.

This, then, is the story of the end of antiquity as told by the cities. But what of the rest – what of everything and everyone beyond city walls, in the wide expanses of countryside in which most people lived and toiled? Exploring late antiquity through the evidence of cities alone has been a fruitful approach, but doing so ignores the richly peopled landscapes in which these cities were embedded and on which they depended for their most essential resources. And despite a long history of scholarship, the nub of the problem remains as vexing as ever: how did this all happen? Why was urban living no longer considered viable or desirable by this time? In other words, when did Graeco-Roman antiquity end, why, and how did this transition affect the lives of those who experienced it?

The “why” of this fundamental historical problem remains unsolved in part because there are so many plausible culprits, including violent conflict with Sasanian Persian and then Islamic forces, economic and political instability, social changes related to the rise of Christianity, devastating and recurring plague, and environmental factors including natural events such as earthquakes and climate deterioration, as well as human activities such as land clearance and the over-exploitation of natural resources. The “when” is equally thorny, because the identification of the tipping point between antiquity and the middle ages depends on the markers used to measure change, and therefore differs widely depending on which markers are chosen. For the eastern Mediterranean, the tipping point between the two periods has traditionally been placed in the seventh century, and the key instrument used to measure change has been the ancient Graeco-Roman city. Accordingly, the end of antiquity is marked by the disappearance of that Graeco-Roman city, followed by the start of a true “dark age.” This approach has been enormously productive, but if the goal is to understand this tipping point more generally, using a single index of change will not suffice. Throughout antiquity, the vast majority of people lived not in cities,

but in the countryside. Furthermore, even if we were concerned with the fate of cities alone, we could not satisfy our curiosity by looking myopically within the city walls. Cities did not exist in isolation but were inextricably linked to the suburbs and countryside surrounding them. If we want to figure out what happened to people living in cities, we have to look in the countryside, too.

In this dissertation I try to understand the changes in Graeco-Roman life that mark the timing, nature, and causes of the end of Graeco-Roman antiquity using a new approach: by looking beyond cities to the countryside. I investigate the countryside by analyzing evidence collected using the relatively new methods of regional survey and environmental archaeology and science. My main goal is to understand the end of antiquity by identifying broad patterns of change related to population and settlement dynamics, economic patterns, subsistence strategies, and environmental conditions. My second goal is to use the end of antiquity as a test case to determine the usefulness of these new methods in investigating a major historical problem.

Put more simply, I try to tell the story of the end of antiquity through the archaeology of the countryside, but without ignoring what the urban evidence has to say. This story revolves around the broad patterns outlined above in an effort to address a number of questions concerning life in later antiquity. The most important of these will be: Did the overall population decline? If so, why? Were fewer people living in cities, and more people living in rural settlements, particularly villages, as has been suggested? Were the same goods and commodities being produced and exchanged, and at the same scale? Were people producing and eating the same types of foods? Did they face environmental hardships, such as climate deterioration and erosion, that made it difficult or impossible to maintain traditional land use practices?

This study focuses on survey and environmental research in southern Asia Minor and northwest Syria, a cohesive area of investigation well poised for addressing the questions posed in this dissertation for several reasons (**figs. 1.1-1.4**). First, this geographical area incorporates and thereby connects two of the regions best suited for addressing these questions: at its eastern limit, the “Dead Cities” of the Limestone Massif in northwest Syria, with their century-long history of scholarship pertaining to the survey of the countryside; and at its western limit, the territory of Sagalassos, the subject of a uniquely interdisciplinary research agenda covering urban, suburban, and rural contexts. Second, the projects conducted in these two regions and in the wide southern swathe of Asia Minor that connects them apply diverse methods of survey and environmental research and cover varied landscapes, including flat coastal plains, accessible foothills, and remote mountain highlands. Third, this geographical area includes all three of the zones created as a result of the establishment of the Syro-Anatolian frontier separating Byzantine and Islamic powers: northwest Syria, now part of the growing Islamic caliphate; Cilicia and parts of Isauria, falling within the frontier zone itself and later partially settled by Muslims; and Pamphylia, Lycia, and Pisidia, subject to raids but remaining within the Byzantine empire. In addition to these regions, I include a number of projects from western and central Asia Minor as case studies with which to compare and contrast the evidence gleaned from the main area of focus, in order to add nuance and depth to my interpretations of that evidence.

Chapter 2 begins with an explanation of the geographical and chronological parameters of the dissertation, including issues of terminology and periodization. The bulk of the chapter concerns the long and complicated history of research on the subject of the end of antiquity, after which I describe the state of problem and discuss those among the long line-up of usual suspects blamed for the decline of the eastern empire and Graeco-Roman life in general that are related to

the kinds of broad patterns of change in which I am most interested. In Chapter 3, I outline the approach traditionally used to study the end of antiquity – namely, focusing on cities – and propose a new approach based on investigating the countryside through the methods of regional survey and environmental archaeology and science. Then I explore a set of models or interpretive frameworks useful for articulating relationships among the various kinds of evidence obtained from these methods for southern Asia Minor and northwest Syria, in particular relationships related to agricultural production, settlement expansion, and the exchange of goods and commodities. I also present hypotheses based on two networks of exchange, those defined by Late Roman Amphora 1 (LRA 1) and Cypriot Red Slip (CRS) ware, the fates of which after the seventh century provide a key to understanding the end of antiquity in the eastern Mediterranean overall. I propose that, given its greater independence from the state fiscal system, the commercially-driven regional network of CRS should have had a better chance of surviving the fiscal contraction and breakdown of the seventh century than the state-driven interregional network of LRA 1. Furthermore, this continuation of commercial exchange should have served as a safety net for communities otherwise made vulnerable by the disintegration of the fiscal system.

Chapters 4 through 8 form the heart of the dissertation: a presentation and analysis of the results of survey and environmental research conducted in northwest Syria and southern Asia Minor. Chapter 4 includes the regions of the Limestone Massif, Amuq valley, and Kahramanmaraş plain in northwest Syria. Chapter 5 focuses on various sites in Flat Cilicia, then moves on to southeastern Isauria, western Rough Cilicia, and inland to the Göksu valley. Chapter 6 presents a general discussion of Pamphylia, followed by analyses of research around Pednelissos, technically in southern Pisidia but on the very edge of the Pamphylian plain, and

around Kyaneai and Balboura in Lycia. Chapter 7 is dedicated to the interdisciplinary research carried out in and around the site of Sagalassos in Pisidia. Chapter 8 includes a number of additional research projects located throughout Asia Minor, which are considered in less detail as comparative case studies.

In the concluding Chapter 9 I present my conclusions concerning each of the main patterns of change that mark the long end of antiquity, organized as settlement, population, environmental conditions and subsistence strategies, standard of living and quality of life, and production and exchange. I return to the hypotheses presented in Chapter 3 and discuss how the data analyzed in Chapters 4 through 8 support or contradict these hypotheses. Greater dependence on the fiscal system made the LRA 1 network, and the communities who relied on it, more vulnerable to the disruptions and shutdown of that system during the seventh century. In contrast, the continuation of commercial exchange past the seventh century, operating primarily on local and regional networks but also interregionally, provided a source of future resilience for communities struggling to survive the challenges of this period. I also demonstrate how many of changes of the sixth and seventh centuries can be seen as the result of decisions made by apprehensive individuals and communities averse to long-term investment. Over the course of the sixth and seventh centuries, late antique and early Byzantine society became dramatically less complex in many ways. Communities responded to the disruption and unpredictability of this period by eschewing long-term investments in favor of risk-sensitive strategies that made them more flexible: they abandoned cities and farmsteads and organized themselves into communities at the scale of the village; moved away from intensive agriculture toward a more balanced agropastoral subsistence strategy, in some cases including a greater reliance on (semi-) transhumant pastoralism; maintained the vitality of local- and regional-scale exchange networks;

used a greater proportion of locally made goods such as handmade pottery rather than depending on imports; and, perhaps, intentionally restricted family size to limit the amount of food that had to be produced. Seeing these patterns as the result of intentional responses to disruption in favor of short- over long-term investments – in favor of greater flexibility and resilience – gives agency to these individuals and communities otherwise hidden by the perspective of collapse. These changes reflect an aggregate desire to make life as safe and fulfilling as possible when the future is unknown and surprise is expected.

## **CHAPTER 2**

### **HISTORY OF RESEARCH AND STATE OF THE PROBLEM**

In this chapter I present background information necessary to set the scene for the discussion of archaeological survey and palaeoenvironmental evidence that forms the heart of the dissertation in Chapters 4 through 8. I begin by delineating the geographical and chronological parameters of this study and defining important terms and concepts. Next I describe the history of research related to the central questions posed in the dissertation, and then outline the current state of the question. In the next chapter, I discuss previous and new approaches to these questions, and explain the approach I have chosen to use in this study.

#### **A. TERMINOLOGY AND PERIODIZATION**

##### **A.i. Asia Minor, Anatolia, and northwest Syria**

I use “Asia Minor” and “Anatolia” as essentially synonymous terms to refer to the peninsular landmass between the Aegean, Mediterranean, and Black Sea that makes up most of modern Turkey (see **fig. 1.2**). However, I often use “Anatolia” when referring more precisely to the central portion of this landmass, where it rises up from the plains and mountains fronting the

surrounding seas to form a plateau with a dramatically different landscape and climate from those of the coast. I draw the eastern limit of Asia Minor from the Gulf of Iskenderun up along the Taurus mountains heading north-northeast until they reach the Pontic mountains, then moving directly north to the Black Sea. I use “northwest Syria” in a narrow sense, to refer to a region encompassing the hills of the Limestone Massif (*Massif calcaire*, Syria Jebels) that lie between Antioch and Aleppo and extend south to Apamea, the valleys stretching northeast from Antioch, and the Amanus mountain range that separates these valleys from the Mediterranean and low-lying Cilician plain to the west.

#### **A.ii. Landscape and settlement classification**

Given that this dissertation is concerned primarily with evidence from the countryside, how should we define it? Here the countryside is defined as the landscape outside the boundaries of a city, whether those boundaries are sharply delineated by physical walls or more loosely circumscribed by a drop-off in the density of habitation. Landscape must therefore be defined as well. W. Bowden and L. Lavan have described the conception of landscape as a human artifact by historical geographers and landscape archaeologists, and the negative reaction by palaeoecologists who underscore the interactions between humans and nature as the primary force that shapes particular environments.<sup>1</sup> This dissertation will strive to reconstruct landscape as both a physical place susceptible to human activity and a natural environment capable of shaping and being shaped by the behaviors of its human occupants.

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<sup>1</sup> W. Bowden and L. Lavan, 2004, “The late antique countryside: An introduction,” in W. Bowden, L. Lavan, and C. Machado (eds.), *Recent Research on the Late Antique Countryside*, *Late Antique Archaeology* 2 (Leiden) xvii-xxvi, at xviii.

Another issue of terminology is the problem of classifying and correlating settlement types. How should we define and recognize a “town,” when such potentially defining features as population and size, official status, architecture and plan, and non-rural function are relative and not static through time? Definitions of a town, village, hamlet, and farmstead are relative, changing, and flexible. Different survey projects may classify site types in ways that are locally specific. Commonly used terms in sources from later antiquity and the early Byzantine period include *polis*, *komopolis* (large rural settlement), *kome* and later *chorion* (village), and *kastron* (fortified settlements with military functions).<sup>2</sup> But how should we envision these places? Authors of the sixth century may refer to *poleis* but it is not clear what these settlements looked like. A settlement might be deemed a *polis* simply because it was the seat of a bishop (as in the *Notitiae episcopatum*) or a center of secular administration. W. Brandes argues that the use of *polis* and *kastron* converges during the sixth and into the seventh century, perhaps reflecting a blurred distinction between the two types of settlement in terms of physical character.<sup>3</sup> The Latin term *castrum* was introduced as *kastron* in sixth-century sources in language associated with the military, and then becomes increasingly common<sup>4</sup> until it is “the term of everyday speech” to refer to a settlement from the seventh to ninth/tenth centuries.<sup>5</sup> Whereas the term *polis* was used to call to mind some impression of the classical past, the term *kastron*

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<sup>2</sup> For a discussion of these terms, see H. Saradi, 2006, *The Byzantine City in the Sixth Century: Literary Images and Historical Reality* (Athens) 96-100.

<sup>3</sup> W. Brandes, 1989, *Die Städte Kleinasiens im 7. und 8. Jahrhundert* (Amsterdam) 31-35 (on sixth-century sources)

<sup>4</sup> W. Brandes, 1999, “Byzantine cities in the seventh and eighth centuries – Different sources, different histories?” in G. P. Brogiolo and B. Ward-Perkins (eds.), *The Idea and Ideal of the Town between Late Antiquity and the Early Middle Ages* (Leiden) 25-57, at 29.

<sup>5</sup> J. F. Haldon, 1999, “The idea of the town in the Byzantine empire,” in G. P. Brogiolo and B. Ward-Perkins (eds.), *The Idea and Ideal of the Town between Late Antiquity and the Early Middle Ages* (Leiden) 1-23, at 17 (quote).

“represented day-to-day values and realities,” above all the need for physical security and economic stability.<sup>6</sup>

In general, I agree with Brandes that a town or city should be defined by multi-functionality,<sup>7</sup> or diversity of activity and of building types created specifically for those activities. This definition might include both settlements called *poleis* and those termed *kastra* in texts. For the most part, the regional survey projects discussed in Chapters 4 to 8 were created with the intention of surveying the presumed territory of a single town occupied in the Graeco-Roman period; for other periods, a town may not have existed in the same area, or (less commonly) more than one town may have existed. Other settlement types recorded through survey are usually described as villages, hamlets, or farmsteads. Since changes in settlement pattern loom large in the interpretation of the survey evidence, it is important to distinguish among these types. The primary differences are in area and the elaborateness of surface finds. Farmsteads are comprised of a single household; hamlets, of perhaps 15 or fewer; villages, of more than 15. The threshold number of households that separates villages from hamlets may differ from survey to survey; some number around 15 is common. When standing remains are preserved (e.g., around Kyaneai in Lycia, in southeastern Isauria, or on the Limestone Massif in northwest Syria), these residences may actually be counted. But for most surveys, settlement size must be inferred from the area of a surface scatter of artifacts, where those artifacts are concentrated in a certain density. In some projects, for instance, villages are defined as sites with a surface scatter over 1 hectare (10,000 m<sup>2</sup>); they might be further categorized as small (1-2 ha),

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<sup>6</sup> Haldon, 1999, “The idea of the town,” 18. Haldon notes that “the ‘official’ recognition of the transformation [from *polis* to *kastron*] occurs in a novel of Leo VI (886-912), when city rights were formally abolished,” but that this recognition reflected a situation that had existed for at least two centuries (16-17).

<sup>7</sup> Brandes, 1999, “Byzantine cities.”

medium (2-3 ha), and large (3+ ha).<sup>8</sup> Sites with a surface scatter below this threshold are considered hamlets, among which those with the smallest areas and lowest diversity of finds might be categorized as farmsteads. Because the size of surface scatters is not necessarily an accurate reflection of site size, the artifacts themselves may be used to classify sites. Settlements of more than a single household may be defined as places where both pottery and extensive *in-situ* architectural remains are found. In this case, the difference between a single-household farmstead and a multiple-household village or hamlet might be relatively clear, but distinguishing between villages and hamlets may not be possible.

### **A.iii. Late Roman, late antique, early Byzantine**

The terms late Roman, late antique, and early Byzantine – as well as their counterparts in other languages, notably French, German, and Italian – are often used interchangeably. I have chosen to capitalize only those terms that are derived from proper nouns (e.g., Roman, Byzantine), and not other terms, even those commonly capitalized to signify a recognized time period (e.g., late antiquity, dark age, middle ages). Each term has certain implications, which affect the characterization and interpretation of time periods, material remains, and social or political trends labeled as such. The full weight of these loaded meanings will become clearer in the next section on the history of research on late antiquity. But for now, a brief explanation of the development and use of these terms will serve as background information.

The concept of a succeeding time period and society somehow inferior to the Roman empire at its imagined height was first encapsulated into a term or phrase in the eighteenth

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<sup>8</sup> E.g., the southeastern Isauria and Sagalassos extensive (regional) survey.

century by C. Le Beau in his multivolume *Histoire du Bas-Empire* (1757-1817).<sup>9</sup> The terms “Bas-Empire” or “Late/r Roman Empire” (“basso impero,” “bajo impero”) became commonly used throughout the late nineteenth century and into the early twentieth to refer to the time period extending from Constantine to Muhammad. The term and its associated chronological boundaries became codified in English when J. B. Bury published the first standard English-language account of this time period: *A History of the Later Roman Empire, from Arcadius to Irene (395 A.D. to 800 A.D)* (1889).<sup>10</sup>

At the same time, A. Riegl coined the term “spätantiker Zeit” in his introduction to a museum catalogue of Egyptian textiles.<sup>11</sup> Thereafter, “Spätantike” was used to refer to a phase of artistic development newly identified by Riegl.<sup>12</sup> Although the term “Spätantike” had become commonplace in German historiography – first in art history, then in political history – by the turn of the twentieth century, the corresponding term in English was not routinely used until P. Brown’s *The World of Late Antiquity* (1971) made “late antiquity” commonplace in Anglo-American scholarship (though he was not the first to use it in English).<sup>13</sup> Because of this connection, the use of “late antiquity” in Anglo-American scholarship became associated with the optimistic, continuous, long perspective made popular by Brown in this and other works, described below. The term with its associated perspective spread out from its Anglophone stronghold and made its way into other languages as well (“tarda antichità,” “antiquité tardive,” “antegüedad tardia”). In any language, using “tarda antichità” instead of “basso impero” reflects

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<sup>9</sup> C. Le Beau, 1757-1817, *Histoire du Bas-Empire, en commençant à Constantin le Grand* (Paris).

<sup>10</sup> J. B. Bury, 1889, *A History of the Later Roman Empire, from Arcadius to Irene (395 A.D. to 800 A.D.)* (London).

<sup>11</sup> A. Riegl, 1889, *Die ägyptische Textilfunde im K.K. Österreichischen Museum* (Vienna) 15.

<sup>12</sup> A. Riegl, 1901, *Die spätromische Kunst-Industrie nach den Funden in Österreich-Ungarn dargestellt* (Vienna). Another early use of the term in a German-language publication is a catalogue of late antique and Coptic material by O. Wulff and W. F. Volbach (eds.), 1926, *Spätantike und koptische Stoffe aus ägyptischen Grabfunden in den Staatlichen Museen—Kaiser-Friedrich-Museum, Ägyptisches Museum, Schliemann-Sammlung* (Berlin).

<sup>13</sup> P. Brown, 1971, *The World of Late Antiquity: From Marcus Aurelius to Muhammad* (London). Earlier uses: P. Friedlaender (ed.), 1945, *Documents of Dying Paganism. Textiles of Late Antiquity in Washington, New York and Leningrad* (Berkeley); S. Sambursky, 1962, *The Physical World of Late Antiquity* (New York).

the idea that this period should be studied on its own terms, without the presumption of decline from the high empire, in order to recognize its value and unique developments.<sup>14</sup> The growing interest and specialization in this time period has spawned the development of internal subdivisions, such as “Frühspätantike” and “spätere Spätantike.”

Changes in terminology therefore came about as a result of a growing interest in the study of late antiquity as a time period and discipline distinct from the world of Graeco-Roman antiquity that preceded it. But they also developed from the opposite temporal direction, as a result of the growth of Byzantine studies. Early on, the “Byzantine” era was seen as beginning in the fourth century, based at least in part on changes in coinage; a later starting date of the seventh century became more popular after the recognition of late antiquity as a distinct period and of its prosperity and cultural achievements (aided in no small part by archaeological discoveries), as well as after the development and growth of the theory of an urban break in seventh century (discussed below and in Chapter 3), after which the seventh century was seen as an appropriate conceptual endpoint of the ancient world.<sup>15</sup>

#### **A.iv. Periodization**

The questions I address in the dissertation concern a long stretch of time, from about 300 to 900 CE. For the eastern Mediterranean, I consider this span of 600 years to comprise two periods. The first is marked by overall prosperity in the east, though also by changes that have been variously interpreted as decline or as a more neutral or optimistic process of transformation. I refer to this period as “late antique.” The second period begins when this general prosperity

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<sup>14</sup> See, e.g. A. Marcone, 2000, “La tarda antichità e le sue periodizzazioni,” *Rivista Storica Italiana* 112: 318-24.

<sup>15</sup> M. Whittow, 2009, “Early medieval Byzantium and the end of the ancient world,” *Journal of Agrarian Change* 91: 134-53, at 135-36.

ends. It has traditionally been considered a “dark age” characterized by population loss, de-urbanization, and widespread poverty. I refer to this period as “early Byzantine.”

This two-part periodization and my choice of terms are relatively uncontroversial, and I use them in part to promote a certain standardization that is already taking place but must be embraced more comprehensively if evidence gathered by different projects is to be synthesized and compared systematically. In identifying the boundary between one period and the other as a tipping point into less-prosperous circumstances, I make it clear that I agree with the traditional notion that *something* happened between 300 and 900 CE that deserves to be recognized as marking the end of Graeco-Roman antiquity. But what was that something? When did it happen, and how should we describe it? It is exactly this imaginary temporal dividing line between the Roman empire and Byzantium – between antiquity and the middle ages – that has been the point of so much contention in centuries of scholarship.

## **B. HISTORY OF RESEARCH**

The central questions driving this dissertation extend from a long and lively history of interrelated debates over when, how, and why antiquity “ended” – and what the process looked like. In the eastern Mediterranean, much of the controversy has swirled around a single touchstone: the Graeco-Roman city as a key indicator of the nature, pace, and cause of change.<sup>16</sup> Insofar as the city is considered one of the defining features of the Roman empire and Graeco-Roman antiquity more generally, the fate of the city has been presented as a surrogate for the fate of antiquity overall. Therefore, determining when, how, and why antiquity ended has

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<sup>16</sup> For more comprehensive coverage of the history of scholarship on the early Byzantine city, see the richly detailed work by H. Saradi (2006, *The Byzantine City in the Sixth Century*), particularly her first chapter, on “Methodological approaches and current state of scholarship” (13-45).

traditionally been tackled by focusing on the city. In the next chapter, I look at this approach in detail and present some of the important conclusions that have resulted from its application. However, I also argue that this approach is problematic, so much so that a new approach is needed. We need to expand our framework of investigation to include changes taking place not only in cities, but also in the suburban and rural landscapes with which they were inextricably linked. Only by looking beyond cities to the countryside can we begin to form a more complete picture of the major changes that characterized the end of antiquity in the eastern Mediterranean.

Before making that argument, it is necessary to place it in context by exploring the history of research on the end of the Roman empire and of Graeco-Roman antiquity in general. In this section I attempt to untangle this complex history of research and pinpoint salient features of the debates that have given structure to it. Because the debates over what happened to the city and what happened to Graeco-Roman life in general during late antiquity are so tightly intertwined, in some places they must be treated as two cords of a single thick line of inquiry.

### **B.i. Decline versus transformation: Opposing perspectives on late antiquity**

J. H. W. G. Liebeschuetz has provocatively applied A. Piganiol's dictum on the fate of the western empire ("elle a été assassinée") to the various ways scholars have described the unraveling of the eastern empire by dividing them into two categories: "those involving 'assassination,' that is explanations which stress barbarian invasions, and those which look for 'natural causes', that is signs of decay in basic institutions."<sup>17</sup> The natural causes position emphasizes the long-term development of structural weakness within the empire that set the

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<sup>17</sup> J. H. W. G. Liebeschuetz, 2001, *The Decline and Fall of the Roman City* (Oxford) 405; A. Piganiol, 1947, *L'Empire chrétien (325-395)* (Paris) 422.

course for its own demise, thereby blaming internal factors such as political instability and social change. The assassination position, on the other hand, maintains that the eastern empire was basically politically and economically sound, but could not survive the recurrent conflicts with Persians and Arabs because they followed so soon after each other.<sup>18</sup> It lays blame on external factors in the form of invading forces.

Generally speaking, those who favor natural causes see late antiquity as a period of slow decline that spelled inevitable disaster, while those who favor assassination see it as a period of transformation in which collapse was never a given. Accordingly, the natural causes group sees decline in urban life already by the fifth and sixth centuries, while the assassination group identifies the seventh century as the key moment of urban crisis. These two basic perspectives – (1) decline until death by natural causes, versus (2) transformation until death by assassination – and the compartmentalization into which they unnaturally force various lines of inquiry, have shaped the investigation of this period for decades (or centuries, if one starts with Gibbon). Those who study late antiquity have tended to identify themselves (and each other) as belonging to one of these two camps and to draw a clear line in the sand between each other. Members of the decline camp are characterized as pessimists and realists, while those in the transformation camp are seen as optimists and idealists. Depending on the source, these descriptors are used with admiration or derision, as a sign of respect or scorn. To understand the history of this intellectual battle, it is important to describe the perspective of each camp, but it is equally necessary to demonstrate areas in which they overlap. Looking down on the entire bivouac of late antique study, together the two camps form a larger and more interesting jumble of opinion. The combatants bicker but, sleeping under the same sky, equally marvel at its moonlight; they

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<sup>18</sup> As argued, for example, by M. Whittow, 1996, *The Making of Orthodox Byzantium, 600-1025* (London), on which more below.

fight on different sides but for the same goal: to understand this period on its own terms, rather than as an interstitial anomaly, and, on another level, to unpack the value judgments we cannot help but make, and to see what their contents tell us about ourselves.

### ***Firsthand perspectives***

Evolving perceptions of the fall of the Roman empire and, more specifically, changes in urban life during late antiquity are apparent not only in modern historiography but also in the works of authors who experienced these changes firsthand. As with modern scholars, their attitudes reveal much about their wider outlook on how to deal with change in general and, more importantly, how to judge its effects. Certainly events at Rome were felt around the Mediterranean; even if they had little direct consequence in many peoples' day-to-day lives, they had enormous symbolic meaning. Losing himself in grief over the sack of Rome by Alaric in 410, Jerome in Bethlehem lamented how "the whole world perished in one city":

Who would believe that Rome, built up by the conquest of the whole world, had collapsed, that the mother of nations had become also their tomb [...] that we should every day be receiving in this holy Bethlehem men and women who once were noble and abounding in every kind of wealth, but are now reduced to poverty?<sup>19</sup>

Upon the deposition and exile of Romulus Augustulus by Odoacer in 476, Marcellinus remarked that "the western empire of the Roman people came to an end."<sup>20</sup> The Germanic invasions were certainly a topic of interest in literature of the day (beginning with Valens' disaster against the Goths at Adrianople in 378), and the deposition of Romulus Augustulus was considered a decisive moment of change. But there was not the uproar one might expect, given the

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<sup>19</sup> Jerome, *Commentaries on Ezekiel*, Preface to Book I, Preface to Book III, trans. W. H. Fremantle, 1893, *The Principal Works of St. Jerome*, in P. Schaff and H. Wace (eds.), *A Select Library of Nicene and Post-Nicene Fathers of the Christian Church*, vol. 6 (New York) 500.

<sup>20</sup> Marcellinus, *Chron.* s.a. 476: hesperium Romanae gentis imperium periit.

importance placed on this date in modern historiography.<sup>21</sup> To those living in the eastern Mediterranean especially, this moment may have marked the end of the *caput mundi*, but not of the empire and of Graeco-Roman society as a whole, since this way of life was still very much alive and kicking all around them.

Illuminating perceptions of change can also be found for the fate of cities in the east. Surveying the oratory, poetry, and epigrams of the fifth to mid-sixth century, H. Saradi observes how authors in the east dwell on the theme of urban decline as caused by the deleterious passage of time and human neglect, but they nevertheless present an idealized, classicizing, and optimistic view of the city. Steeped in the tradition of the city *enkomion*, these intellectuals responded to the changes in urban life they witnessed around them with a mixture of denial and hope, because “assessment of the change, obvious to everyone, was too depressing for the classically educated élite to describe.”<sup>22</sup> Saradi detects a shift after the middle of the sixth century, however, with the historiographies of Agathias and Theophylact Simocatta, who abandon idealization for a realistic depiction of the new urban model they see around them: a small town, dominated and defined its by fortifications, surrounded by agricultural land.<sup>23</sup> What is interesting to note is how the earlier authors are either unwilling or unable to see (or comment on?) the fundamental changes around them, and how the later authors accept the new model of the town without comment on how it differs from the preceding classical model. This is perhaps not surprising, since it is rare to comprehend fully the consequences of changes in which one is taking part. Furthermore, as Saradi points out, some of these intellectual élite conceived of

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<sup>21</sup> A relative silence noted by A. Momigliano, 1980, “La caduta senza rumore di un impero nel 476 d.C.,” in idem, *Sesto contributo alla storia degli studi classici e del mondo antico* (Rome) 159-79; orig. pub. in 1973, *Annali della Scuola Normale Superiore di Pisa*, Serie III, vol. III, fasc. 2, 397-418.

<sup>22</sup> Saradi, 2006, *The Byzantine City in the Sixth Century*, 78-83, quote at 83.

<sup>23</sup> Saradi, 2006, *The Byzantine City in the Sixth Century*, 93-96; M. Whitby and M. Whitby (trans.), 1986, *The History of Theophylact Simocatta. An English Translation with Introduction and Notes* (Oxford); J. D. Frendo (trans.), 1975, *Agathias: The Histories* (Berlin).

change as a natural and inevitable aspect of the passage of time, each period of decline balanced by one of prosperity.<sup>24</sup> If it was difficult for these authors to identify and assess the brick-and-mortar alterations in the very fabric of the urban landscapes in which they lived, it must have been impossible for them to recognize and thereby judge the social, structural, and intangible changes taking place within the empire as a whole, around the entire Mediterranean.

### ***Origins and development of the decline camp***

With the passage of time, of course, recognizing change and judging its consequences becomes an easier exercise, though the results are not necessarily more accurate. Arguably the most famous member of the decline camp is E. Gibbon, who, with the critical clarity of millennium-long hindsight, deemed the changes of late antiquity an “awful revolution” culminating in the fall of the eastern empire at the Ottoman conquest of Constantinople in 1453. Gibbon was not alone in pondering the conundrum of Rome’s decline. Decades earlier, for instance, Montesquieu had laid out an argument for decline (“*décadence*”) in his *Considérations sur les causes de la grandeur des Romains et de leur décadence* (1734), which Gibbon read.<sup>25</sup> But it is Gibbon who forged the twin concept of Decline and Fall – in English, capitalized, and in no uncertain terms – that continues to shape how historians and the general public alike think about the fate of the Roman empire. In *The History of the Decline and Fall of the Roman Empire* (1776-1788), Gibbon identified a number of natural causes slowly killing the empire already by the late fourth century, among them an attenuated central government, a weakened military allowing barbarian invasions, and, most importantly, the growth of a new religion that encouraged factionalism and

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<sup>24</sup> Saradi, 2006, *The Byzantine City in the Sixth Century*, 79; citing, e.g., John Lydus, *De magistratibus* II.23; Theophylact Simocatta III.8.9.

<sup>25</sup> Nor was Montesquieu the first to wrestle with the issue of the end of the Roman empire and its wider philosophical implications: notably Petrarch, Machiavelli, and Voltaire all voiced opinions.

a redirection of resources – both money and energy – to the church at the expense of civic institutions and to the detriment of moral and intellectual standards.<sup>26</sup> By emphasizing Christianity as the main agent of degeneration, Gibbon was judging this period from a perch well-ensconced in the rationalist ideals of the eighteenth-century Enlightenment. Nevertheless, his model of an overburdened empire also strikes a chord consonant with the modern model of systems-collapse caused by excessive complexity, devised three centuries later and in a very different intellectual atmosphere (discussed below):

But the decline of Rome was the natural and inevitable effect of immoderate greatness. Prosperity ripened the principle of decay; the causes of destruction multiplied with the extent of conquest; and, as soon as time or accident had removed the artificial supports, the stupendous fabric yielded to the pressure of its own weight. The story of its ruin is simple and obvious; and, instead of inquiring why the Roman empire was destroyed, we should rather be surprised that it had subsisted so long.<sup>27</sup>

Like Gibbon, M. Rostovtzeff thought the seeds of decline had been scattered by the social tumult of the third century, and then encouraged to sprout and thrive by the oppressive reforms made by the emperors of the fourth century in order to save the empire, which unintentionally became thereafter “a vast prison for scores of millions of men.”<sup>28</sup> No longer founded on classical culture and urban self-government, the fourth-century state was an altogether different and frightening animal: a state “based on general ignorance, on compulsion and violence, on slavery and servility, on bribery and dishonesty.”<sup>29</sup> As he argued in *The Social and Economic History of the Roman Empire* (1926), the Roman empire declined and fell because the traditional

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<sup>26</sup> E. Gibbon, 2003 (orig. pub. 1776-1788), *The Decline and Fall of the Roman Empire*, ed. H.-F. Mueller (New York) 680-83.

<sup>27</sup> This frequently quoted excerpt is from Gibbon’s “General Observations on the Fall of the Roman Empire in the West,” located at the end of the first half of *The Decline and Fall* but likely written before the rest of the work; Gibbon, 2003, *The Decline and Fall of the Roman Empire*, 680.

<sup>28</sup> M. I. Rostovtzeff, 1957 (reprint of 1926 original), *The Social and Economic History of the Roman Empire*, vol. 1, 2nd ed. rev. by P. I. Fraser (Oxford) 532.

<sup>29</sup> Rostovtzeff, 1957, *The Social and Economic History of the Roman Empire*, vol. 1, 531.

“city-civilization” of Graeco-Roman antiquity – characterized by urban dynamism driven by the city *bourgeoisie* – was unable to “assimilate the masses.”<sup>30</sup> Politically, the western empire suffered barbarization from within, as Germans infiltrated the government and military, or settled en masse in the countryside; the eastern empire likewise succumbed to orientalizing. The previously standardized economy and complex social system, based on cities, collapsed into simplified, “primitive forms” and became locally differentiated. Classical creativity was exhausted, and the rise of Christianity shifted the energies of urban life from the élite to the masses. Without civic life and the *bourgeoisie* on whom it depended, Graeco-Roman antiquity ceased to exist:

The cities could no longer absorb – that is to say, no longer hellenize or romanize – the masses of the country population. The reverse is the case. The barbarism of the country begins to engulf the city population. Only small islands of civilized life are left, the senatorial aristocracy of the late Empire and the clergy; but both, save for a section of the clergy, are gradually swallowed up by the advancing tide of barbarism.<sup>31</sup>

The untamed countryside, realm of the barbarian, finally had its day, after enduring centuries of civilized urbanity.

Influenced by Rostovtzeff’s emphasis on economic and social structures, A. H. M. Jones similarly presented a number of factors in *The Later Roman Empire, 284-602: A Social, Economic and Administrative Survey* (1964) that contributed to the decline of the empire.<sup>32</sup> Most famously, he blamed economic decline on the increasing proportion of “idle mouths” – particularly the new and growing body of clergy – to economic producers, who could not

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<sup>30</sup> Rostovtzeff, 1957, *The Social and Economic History of the Roman Empire*, vol. 1, 534, 541.

<sup>31</sup> Rostovtzeff, 1957, *The Social and Economic History of the Roman Empire*, vol. 1, 533.

<sup>32</sup> A. H. M. Jones, 1964, *The Later Roman Empire, 284-602: A Social, Economic and Administrative Survey* (Oxford); issued in condensed form as idem, 1966, *The Decline of the Ancient World* (London).

withstand the overwhelming burden of taxation and rents.<sup>33</sup> Jones described at length various weaknesses of the late Roman empire, both internal and external: unequal distribution of wealth, administrative abuse and bloat, public apathy, and increased taxation to support a much larger army, resulting in agricultural and population decline.<sup>34</sup> He also stressed the important point, ignored by many scholars narrowly focused on the west, that although the western portion of the empire collapsed in the fifth century, the eastern portion continued to function as the Roman empire until 1453.<sup>35</sup> Given that both portions suffered more or less the same weaknesses just described, he concluded that it must have been the external pressure of the barbarians that caused the demise of the west.<sup>36</sup>

But other scholars have argued that invasion and armed conflict dealt a decisive blow to eastern urbanism and Graeco-Roman life in the east, too, and were able to do so only because internal preconditions for breakdown were already in place, such as economic decline and the abandonment of traditional Graeco-Roman social and political institutions.<sup>37</sup> C. Mango blamed the collapse of urbanization on a concatenation of calamities (plague, drought, famine, earthquakes), urban violence, Christianity-driven disavowal of Graeco-Roman urban culture and its physical amenities, and foreign invasion.<sup>38</sup> Foreign invasion, however, was simply the “immediate cause” of this collapse; since cities fell so easily, and failed to rebound immediately afterwards, Mango concluded that “military hostilities were merely the last shock that brought

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<sup>33</sup> Jones, 1964, *The Later Roman Empire*, vol. 2, 1046-47.

<sup>34</sup> Jones, 1964, *The Later Roman Empire*, vol. 2, 1025-67.

<sup>35</sup> Jones, 1964, *The Later Roman Empire*, vol. 2, 1026-27; J. B. Bury, 1958 (reprint of 1923 original), *History of the Later Roman Empire: From the Death of Theodosius I to the Death of Justinian* (New York) vol. 1, 308.

<sup>36</sup> Jones, *The Decline of the Ancient World*, 370; see also idem, 1964, *The Later Roman Empire*, vol. 2, 1067-68.

<sup>37</sup> For example, E. Patlagean, 1977, *Pauvreté économique et pauvreté sociale à Byzance, 4<sup>e</sup>-7<sup>e</sup> siècles* (Paris) 426 (e.g.); A. Kazhdan and A. Cutler, 1982, “Continuity and discontinuity in Byzantine history,” *Byzantion* 52: 429-78, at 440-41.

<sup>38</sup> C. A. Mango, 1980, *Byzantium: The Empire of New Rome* (London) 62-69.

down a tottering edifice.”<sup>39</sup> Armed with this model, and noting differences in the archaeological evidence for cities, Mango and those with similar viewpoints called attention to the variability in the timing of urban decay among various regions of the eastern empire, but highlighted the sixth century as the key period of accelerating decline, after which urban life sank into a nadir beginning in the seventh century.<sup>40</sup> One additional contribution Mango made to the debate over the extent of urban decline was clarifying how Constantinople, too, did not escape these troubled times unscathed, but suffered depopulation and damage from attack.<sup>41</sup> Nevertheless it maintained adequate critical mass – in terms of both population and urban infrastructure – to continue to function as a city when other, smaller cities ceased to exist as such.

Many proponents of decline propose a similar scenario of urban society weakened by a complex array of internal and external factors, finally killed off by the violent attacks of Persians and Arabs. It is an attractive model that embraces the complexity of the situation and obviates the seemingly impossible task of singling out any one factor as most decisive. A thread running through all these assessments of the process of decline is the assumption that collapse was inevitable. The goal has therefore been to look for general causes of decline paving a smooth highway to failure, visible on the distant horizon like the ruined skyline of a bleak yet unavoidable travel destination: the inevitable end of the road.<sup>42</sup> In this sense the argument for decline is often teleological: if collapse is taken as a known endpoint, then some logical process of decline must have preceded it. But what happens if we ignore the end of the story, and assume instead that collapse was never a given?

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<sup>39</sup> Mango, 1980, *Byzantium: The Empire of New Rome*, 69.

<sup>40</sup> Mango, 1980, *Byzantium: The Empire of New Rome*, 69-72.

<sup>41</sup> Mango, 1980, *Byzantium: The Empire of New Rome*, 81; and fully expanded in idem, 1985, *Le développement urbain de Constantinople (IV<sup>e</sup>-VII<sup>e</sup> siècles)* (Paris).

<sup>42</sup> E.g., F. W. Walbank’s identification of the culprit as low technology and the compensating institution of slavery (1946, *The Decline of the Roman Empire in the West* [London]), or A. E. R. Boak’s pinpointing of insufficient manpower and consequent impoverishment (1955, *Manpower Shortage and the Fall of the Roman Empire in the West* [Ann Arbor, MI]).

### *Origins of the transformation camp and the development of a “long” late antiquity*

It seems ironic how even supposedly arch-declinists Gibbon and Jones recognized that the Roman empire survived all the way to 1453.<sup>43</sup> But they saw it as survival red in tooth and claw: “one thousand and fifty-eight years in a state of premature and perpetual decay.”<sup>44</sup> This is decline in no uncertain terms. In contrast, members of the transformation camp believe that all the various developments and changes of late antiquity, when tallied up on a balance sheet, result not in a net loss, nor even a zero, but in a net gain – usually, a cultural gain. At a basic level, this perspective operates unburdened by assumption that collapse was inevitable.

The creation of the transformation camp depended first and foremost on the recognition of late antiquity as a distinct period in Mediterranean history worth of study on its own terms, rather than as the shameful, smears shadow of classical antiquity. As noted above, the conceptualization of these centuries as forming a discrete period parallels the development and use thereafter of terms that define it as an entity: first, “Bas-Empire” by C. Le Beau in the mid-eighteenth century, and second but more significant, “Spätantike” by art historian A. Riegl in the late nineteenth century.<sup>45</sup> Interest in the literary and artistic developments of late antiquity was to a large extent the result of contemporaneous developments in certain elements of European society. S. Rebenich recognizes the crucial influence of this specific time and place, whereby the “experience of political and social revolutions in Europe between 1789 and 1848 established Late Antiquity as an epoch in its own right, characterized by changes and reassessments that

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<sup>43</sup> As observed and discussed by Momigliano, 1980, “La caduta senza rumore”; G. W. Bowersock, 1996, “The vanishing paradigm of the fall of Rome,” *Bulletin of the American Academy of Arts and Sciences* 49.8: 29-43, *passim* but see, e.g., 32; C. Ando, 2009, “Chapter 5: Narrating decline and fall,” in P. Rousseau (ed.), *A Companion to Late Antiquity* (Chichester) 59-76, at 59-60.

<sup>44</sup> Gibbon, 2003, *The Decline and Fall of the Roman Empire*, 578.

<sup>45</sup> C. Le Beau, 1757-1817, *Histoire du Bas-Empire, en commençant à Constantin le Grand* (Paris); A. Riegl, 1889, *Die ägyptische Textilfunde im K.K. Österreichischen Museum* (Vienna) 15; idem, 1901, *Die spätromische Kunst-Industrie nach den Funden in Österreich-Ungarn dargestellt* (Vienna).

were, in turn, compared to phenomena in the present.”<sup>46</sup> Depending on one’s point of view, success or failure in such revolutions promoted positive or negative interpretations of seemingly analogous developments during late antiquity. But even bad publicity is better than no publicity: late antiquity was finally on the intellectual radar, and was there to stay.

In the mid- to late nineteenth century, while some European intellectuals wallowed blissfully in the “melancholic modernity” they felt they shared with the denizens of late antiquity,<sup>47</sup> others promoted a more clearly optimistic view of the period for political purposes. In his *History of the Greek Nation* (1865-1874), C. Paparrigopoulos resuscitated Byzantium (which here included late antiquity) as a torchbearer of Hellenism in order to construct a clear stream of continuity between ancient and modern Greece.<sup>48</sup> The publication of Paparrigopoulos’ Romantic historiography of continuous Hellenism – and its codification in the 1870s as the official historical narrative of the modern Greek state – advanced nationalist claims to regions outside the Kingdom of Greece, such as Macedonia, and marked the growth of Greek irredentism during the mid-nineteenth century.<sup>49</sup>

A less divisive and more widespread boost for late antiquity came in the field of art history. At the beginning of the twentieth century, Riegl employed his freshly minted concept of “Spätantike” to illuminate late antiquity – heretofore a “dark continent on the atlas of art historical research” – by identifying and celebrating the unique “Kunstwollen” (artistic intent, or taste) of the period: connected to classical antiquity yet distinct from it, and just as worthy of

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<sup>46</sup> S. Rebenich, 2009, “Chapter 6: Late antiquity in modern eyes,” in Rousseau (ed.), *A Companion to Late Antiquity* (Chichester) 77-92, at 80.

<sup>47</sup> Rebenich, 2009, “Chapter 6: Late antiquity in modern eyes,” 81.

<sup>48</sup> C. Paparrigopoulos, 1865-1874, *Istoria tou Ellinikou Ethnous [History of the Greek Nation]* (Athens).

<sup>49</sup> V. Roudometof, 2002, *Collective Memory, National Identity, and Ethnic Conflict: Greece, Bulgaria, and the Macedonian Question* (Westport, CT) 70-73. For the impact of early nationalism in the west, see Marcone, 2000, “La tarda antichità e le sue periodizzazioni.”

study.<sup>50</sup> By addressing the artwork on its own terms, and not purely in relation to classical forms, Riegl was the first to articulate a positive perspective of the artistic achievements of late antiquity, which came to be applied to other aspects of late antiquity, such as literature, and to the period in general. Early proponents of the positive view included historians S. Mazzarino and H.-I. Marrou. In his work on Stilicho (published in 1942 but based on his thesis of 1936), Mazzarino argued that we should see in this period not decline, but a “positive expression, and not a negative one, of a world that turns to new forms.”<sup>51</sup> In a similarly optimistic view of change, he later proposed the “democratizzazione della cultura” as a framework for interpreting late antiquity.<sup>52</sup> In a *Rectractatio* appended to the second edition (1949) of his *Saint Augustin et la fin de la culture antique* (1938), Marrou renounced his earlier, pessimistic perspective and rejected decline in the context of late antique culture.<sup>53</sup> In a book published posthumously in 1977, he expressed this sentiment more strongly, proposing new aesthetic standards by which to judge the literary and artistic developments of late antiquity, and encouraging his readers to celebrate the “originality” of this period.<sup>54</sup>

Greater appreciation of the developments of late antiquity on their own merits – along with the tendency to see in them reflections of modernity – encouraged many scholars to trace

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<sup>50</sup> A. Riegl, 1901, *Die spätromische Kunst-Industrie nach den Funden in Österreich-Ungarn dargestellt* (Vienna), 2<sup>nd</sup> ed. 1927, *Spätromische Kunstindustrie* (Vienna), 2: “dunkle Weltteil auf der Karte der kunstgeschichtlichen Forschung.”

<sup>51</sup> S. Mazzarino, 1942, *Stilicone: La crisi imperiale dopo Teodosio* (Rome) 327: “espressione positiva, e non già negativa, di un mondo che si volge verso forme nuove.”

<sup>52</sup> S. Mazzarino, 1960 (conference presentation), “La democratizzazione della cultura nel Basso Impero,” presented at the XI Congrès Internationale des Sciences Historiques, Stockholm; idem, 1974, *Il basso impero. Antico, tardoantico ed era constantiniana*, vol. 1 (Bari) 74-98.

<sup>53</sup> H.-I. Marrou, 1938, 2<sup>nd</sup> ed. 1949, *Saint Augustin et la fin de la culture antique* (Paris).

<sup>54</sup> H.-I. Marrou, 1977, *Décadence romaine ou antiquité tardive?: IIIe-VIe siècle* (Paris) 13 (published posthumously): “It is necessary to admit that Late Antiquity is not only the last phase of a continuous development; it is another antiquity, another civilization, whose originality one must learn to recognize and to appreciate on its own terms rather than following the criteria of earlier ages.” Marrou surmised that the growing capacity of scholars in the twentieth century to do just that may have been due in part to concurrent changes in aesthetics. Translation from E. James, 2008, “The rise and function of the concept ‘late antiquity’,” *Journal of Late Antiquity* 1: 20-30, at 23.

threads of cultural transformation from classical antiquity to the middle ages, and to downplay or ignore political events traditionally seen as ruptures tearing those threads apart. What effect could a single political event, they asked, such as the deposition of Romulus Augustulus in 476, really have had on the stronger, deeper currents of culture? Of what real import were such events for people simply going about the business of living at the time? A. Momigliano, though never an avowed member of the transformation camp, famously pondered this question, concluding that this moment traditionally seen as marking the fall of the western empire occurred “without noise,” since at the time it did not carry the significance modern historians have since ascribed to it: “this fall has become the archetype of every decline and thus the symbol of our fears.”<sup>55</sup>

Decades before these kinds of questions were lobbed at trenchant declinists, H. Pirenne had performed a bit of essential chronological spadework. By pushing the end of antiquity, and the Mediterranean unity that characterized it, ahead from the fifth century to the advent of Islam in the seventh, Pirenne cleared a long continuous path for late antiquity, far beyond its traditional political boundaries.<sup>56</sup> Armed now with a positive view of late antique aesthetics, the extended chronological purview of Pirenne, and the *longue durée* of the Annales School, the transformationists emerged in full force, led by P. Brown brandishing his revolutionary take on the period, presented in *The World of Late Antiquity* (1971).<sup>57</sup> Brown tells how as a young scholar at Oxford, he began “a dogged *guerrilla* against the dominant, melodramatic notion of the decline and fall of the Roman empire.”<sup>58</sup> Inspired by the new creative energies released by

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<sup>55</sup> Momigliano, 1980, “La caduta senza rumore,” at 159: “Dal Settecento in poi noi siamo ossessionati dalla caduta dell’impero romano: quest caduta ha assunto il valore di archetipo di ogni decadenza e quindi di simbolo delle nostre paure.”

<sup>56</sup> H. Pirenne, 1937, *Mahomet et Charlemagne* (Paris).

<sup>57</sup> Brown, 1971, *The World of Late Antiquity*. In some ways even more startling was his 1971 article “The rise and function of the holy man in late antiquity,” *Journal of Roman Studies* 61: 80-101.

<sup>58</sup> P. Brown, 1997, “SO debate: The world of late antiquity revisited,” *Symbolae Osloenses* 72: 5-90, at 9.

the phenomenon of social mobility in Britain during the 1960s, Brown proposed “social fluidity” as the key to understanding the surging cultural changes of late antiquity, especially those related to the rise of Christianity, whose missionaries “made most headway in just those areas where Roman society was most fluid.”<sup>59</sup> Brown explains how his new approach bore fruit:

This conviction would eventually enable me, when writing *The World of Late Antiquity*, to commit with confidence, indeed with palpable enthusiasm, the hubris of narrating the entire history of the religious and cultural revolution associated with the end of the ancient world without invoking an intervening catastrophe and without pausing, for a moment, to pay lip service to the widespread notion of decay. I proposed a social and cultural history that could be narrated, from end to end, almost in terms of ever-widening ripples of change, as different strata of the Roman world, and eventually, indeed, much of its non-Roman periphery, came to participate in a core of central concerns.<sup>60</sup>

Brown embraced the “new men” (*novi homines*) snubbed by earlier scholarship and celebrated the novel religious and cultural choices they made while still cleaving to classical tradition. The tone here could not be more different from the scathing judgment hurled, for example, by Rostovtzeff against the “barbarization” and “orientalization” of the empire after the third century.<sup>61</sup> Brown also burnished the image of early Christianity and the reputation of its practitioners. No “idle mouths” or “sacred indolence” here, but “holy men” – both Christian and Neoplatonist alike – worthy of proper study or, at the very least, our avid curiosity.<sup>62</sup>

Brown’s personal revolution was perhaps the single largest spark for the explosive popularity of the transformation camp and its focus on cultural history in place of political narrative and studies of social and economic structures. The transformation perspective was thus

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<sup>59</sup> Brown, 1997, “SO debate,” 26 (“social fluidity”); idem, 1971, *The World of Late Antiquity*, 32-33, 38-40, second quote at 65.

<sup>60</sup> Brown, 1997, “SO debate: The world of late antiquity revisited,” *Symbolae Osloenses* 72: 14-15.

<sup>61</sup> Rostovtzeff, 1957, *The Social and Economic History of the Roman Empire*, vol. 1, 532.

<sup>62</sup> Jones, 1964, *The Later Roman Empire*, vol. 2, 1046-47 (“idle mouths”); Gibbon, 2003, *The Decline and Fall of the Roman Empire*, 683 (“sacred indolence”); P. Brown, 1971, “The rise and function of the holy man in late antiquity,” *Journal of Roman Studies* 61: 80-101.

born in Anglo-American scholarship and continued to find particular support there. In addition to focusing on themes of religious and social history such as sexuality, monasticism, and the cult of the saints, in this and even more so in later works, Brown pushed the boundaries of late antiquity forward in time and outward in space, until they stretched out into the Abbasid period, and covered east and west.<sup>63</sup> This model of a “long” late antiquity encompasses the wide horizons of F. Braudel and sees Graeco-Roman antiquity surviving far beyond the fifth-century Germanic infiltration of the western empire.<sup>64</sup> In its “longest” form, the model sees the foundation and flowering of Islam as one more tide in the ebb and flow of long-term change across the late antique world, rather than a definitive break as Pirenne – and many others – would have it.<sup>65</sup>

The long model grew in prevalence in the 1990s with the publication of a wealth of studies promoting continuous transformation over decline. G. Bowersock, for instance, wove together the Graeco-Roman and Arab worlds, both before and after the foundation of Islam, by calling attention to the “Hellenized anthropomorphism” displayed in wall paintings at places such as the town of Qaryat al-Faw in Saudi Arabia of the Hellenistic and Roman periods, and Qusayr Amra, a desert retreat in Jordan built in the early eighth century for a member of the Umayyad dynasty.<sup>66</sup> Because of his conviction that these worlds should be tied together as part of a continuous Mediterranean history, Bowersock has sought to demonstrate connections such

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<sup>63</sup> For example, Brown extends his chronological and geographical scope of inquiry in 1996, *The Rise of Western Christendom: Triumph and Diversity, A.D. 200-1000* (Cambridge, MA).

<sup>64</sup> For an overview, see A. Cameron, 2002, “The ‘long’ late antiquity: A late twentieth-century model,” in T. P. Wiseman (ed.), *Classics in Progress: Essays on Ancient Greece and Rome* (Oxford) 165-91.

<sup>65</sup> Brown describes the specific importance of Braudel (as well as Evelyne Patlagean) on his own work, but a similar influence can be detected in all proponents of the “long late antiquity” viewpoint; Brown, 1997, “SO debate: The world of late antiquity revisited,” *Symbolae Osloenses* 72: 16-17. A similar but even wider vision, akin to that of Braudel rather than Pirenne, has been more recently articulated by P. Horden and N. Purcell, 2000, *The Corrupting Sea: A Study of Mediterranean History* (Oxford). They stress continuity over rupture in their exploration of the interaction between humans and the environment in the Mediterranean from antiquity to the modern period

<sup>66</sup> G. W. Bowersock, 1990, *Hellenism in Late Antiquity* (Ann Arbor, MI) 74-80.

as the many ways in which “Hellenism prepared the way for Islam by bringing the Arabs together and equipping them with a sense of common identity.”<sup>67</sup> G. Fowden has studied the creation of political monotheism in both the Roman empire and Islamic state across a long period of inquiry, from the second to ninth century.<sup>68</sup> The reference work on late antiquity that many consider a mouthpiece of the long model is the Harvard Guide *Late Antiquity*, edited by Brown, Bowersock, and O. Grabar (1999).<sup>69</sup> Not surprisingly, considering Grabar’s prominence as an historian of Islamic art and architecture,<sup>70</sup> in this volume late antiquity continues into the Abbasid period; Islam is deemed to belong to the world of late antiquity, not to mark a decisive break. It includes an entire chapter on Islam by H. Kennedy, who describes the “transition” in society and culture from late antiquity to the Islamic world as “gradual and multifaceted.”<sup>71</sup>

Although the perspective of continuity in general is not necessarily restricted to cultural history, the model of a long late antiquity ultimately downplays the impact of specific moments of rupture, such as devastating military losses and abrupt imperial succession. A. Cameron agrees with the warning made by A. Giardina that by presenting a continuous, thematic history of cultural change at the expense of economic, administrative, and institutional narrative, the long model can result in an overly optimistic and narrowly conceived view.<sup>72</sup> Nevertheless, Cameron is a strong supporter of a long late antiquity, and argues that the perspective of decline is “outmoded” because “it is premised on the idea that it is reasonable to expect cultures and

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<sup>67</sup> Bowersock, 1990, *Hellenism in Late Antiquity*, quote at 73.

<sup>68</sup> G. Fowden, 1993, *Empire to Commonwealth: Consequences of Monotheism in Late Antiquity* (Princeton).

<sup>69</sup> G. W. Bowersock, P. Brown, and O. Grabar (eds.), 1999, *Late Antiquity: A Guide to the Postclassical World* (Cambridge, MA).

<sup>70</sup> Especially relevant to the growth and early development of long late antiquity model is O. Grabar, 1973, *The Formation of Islamic Art* (New Haven).

<sup>71</sup> H. Kennedy, 1999, “Islam,” in Bowersock et al. (eds.), *Late Antiquity*, 219-37, at 235: so gradual, in fact, that “in many ways the earthquake of 747 and coming of Abbasids in 750 marked a bigger break than the coming of Islam.”

<sup>72</sup> Cameron, 2002, “The ‘long’ late antiquity,” 171, 171 n. 27, citing A. Giardina, 1999, “Esplosione di tardoantico,” *Studi Storici* 40: 157-80, at 172-3.

societies to be able to maintain themselves indefinitely in the same state.”<sup>73</sup> By summing up the changes of late antiquity as decline, she continues, historians make an implicit moral judgment without clearly or fairly explaining the grounds for this verdict of guilt.<sup>74</sup>

The growing prominence of the long late antiquity model has led to its codification in a number of serial publications and syntheses that emphasize cultural interaction<sup>75</sup> and multidisciplinary approaches<sup>76</sup> to the study of late antiquity in east and west, all the way through the eighth century.<sup>77</sup> The volumes published in “The Transformation of the Roman World” series, covering western and central Europe from the fourth to eighth century, and supported by the European Science Foundation, tend to see fluidity in the development of socio-political organizations defined neither by ethnicity nor race that emerged as the Roman world evolved into something new.<sup>78</sup> Their titles alone evoke continuity and transformation (*The Long Eighth Century* [2000]), and several deal with developments in the economy and the changing role of

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<sup>73</sup> A. Cameron, 1993, *The Mediterranean World in Late Antiquity, AD 395-600* (London) 198.

<sup>74</sup> Cameron, 1993, *The Mediterranean World in Late Antiquity*, 198-99.

<sup>75</sup> The papers presented and published as part of the “Late Antiquity and Early Islam” project, for example, cover cultural interaction in the eastern Mediterranean from death of Justinian to the end of the Umayyad dynasty (that is, the mid-sixth to mid-eighth century). See, for example, some of the early volumes: G. R. D. King and A. Cameron (eds.), 1994, *The Byzantine and Early Islamic Near East: Land Use and Settlement Patterns*, Studies in Late Antiquity and Early Islam 1.2 (Princeton); A. Cameron (ed.), 1995, *The Byzantine and Early Islamic Near East: States, Resources and Armies*, Studies in Late Antiquity and Early Islam 1.3 (Princeton).

<sup>76</sup> The French-language journal *L’Antiquité tardive*, first issued in 1993, covers the fourth through seventh centuries and embraces “une approche multidisciplinaire recouvrant l’histoire, l’archéologie, l’épigraphie, le droit et la philologie tentera d’abolir les frontières traditionnelles entre l’Antiquité et le Moyen Age, entre le monde byzantin parlant le grec et l’Occident latin et finalement entre l’art classique, profane et païen, et ce qu’on appelle l’art paléochrétien.” Descriptive blurb from the first issue (1993) on the Brepols Publishers website (accessed 16 June 2013), [http://www.brepols.net/Pages/ShowProduct.aspx?prod\\_id=IS-9782503503288-1](http://www.brepols.net/Pages/ShowProduct.aspx?prod_id=IS-9782503503288-1).

<sup>77</sup> E.g., a conference series entitled “Shifting Frontiers in Late Antiquity” was initiated in 1995 and led to the development of the English-language *Journal of Late Antiquity* in 2008, which covers the entire Mediterranean region, in its various Roman, Byzantine, Sasanian, and Islamic guises, from ca. 200-800. For additional works in English, see A. P. Kazhdan (ed.), 1991, *The Oxford Dictionary of Byzantium*, 3 vols. (New York); A. Cameron and P. Garnsey (eds.), 1998, *The Cambridge Ancient History XIII. The Late Empire, A.D. 337-435* (Cambridge); A. Cameron, B. Ward-Perkins, and M. Whitby (eds.), 2000, *The Cambridge Ancient History XIV. Late Antiquity: Empire and Successors, A.D. 425-600* (Cambridge); A. D. Lee (ed.), 2000, *Pagans and Christians in Late Antiquity: A Sourcebook* (London); M. Maas (ed.), 2000, *Readings in Late Antiquity: A Sourcebook* (London); idem (ed.), 2005, *The Cambridge Companion to the Age of Justinian* (Cambridge); E. Jeffreys, J. F. Haldon, and R. Cormack (eds.), 2008, *The Oxford Handbook of Byzantine Studies* (Oxford); S. F. Johnson (ed.), 2012, *The Oxford Handbook of Late Antiquity* (Oxford).

<sup>78</sup> A. Marcone, 2008, “A long late antiquity?: Considerations on a controversial periodization,” *Journal of Late Antiquity* 1: 4-19, at 9.

towns (*The Idea and Ideal of the Town* [1999]).<sup>79</sup> (This is not to say, however, that all contributors fully advocate continuity.) Other titles not associated with this project similarly emphasize change and evolution, such as *Towns in Transition: Urban Evolution in Late Antiquity and the Early Middle Ages* (1996) and *Landscapes of Change: Rural Evolutions in Late Antiquity and the Early Middle Ages* (2004).<sup>80</sup>

Part of the success of the long view may lie in the way it overturned or sidestepped awkward notions of social Darwinism popular in the late nineteenth and early twentieth centuries and their connection to extreme ethnocentricity and eugenics. Influenced by his teacher T. Mommsen, O. Seeck interpreted the “Untergang” (“decline”) of the Roman empire as the inevitable result of internal problems culminating in “die Ausrottung der Besten” (“the elimination of the best”) due to the hereditary weakening of society.<sup>81</sup> Similar social Darwinism fueled O. Spengler’s notion of society as organism, and his placement of the early-twentieth-century west in a phase of decay analogous to the late Roman empire.<sup>82</sup> Thus the imminent First World War was not simply the result of a series of contingent events, but an inevitable outcome of this decay.<sup>83</sup>

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<sup>79</sup> I. L. Hansen and C. Wickham (eds.), 2000, *The Long Eighth Century: Production, Distribution and Demand* (Leiden); G. P. Brogiolo and B. Ward-Perkins (eds.), 1999, *The Idea and Ideal of the Town between Late Antiquity and the Early Middle Ages* (Leiden). See also R. Hodges and W. Bowden (eds.), 1998, *The Sixth Century: Production, Distribution, and Demand* (Leiden); G. P. Brogiolo, N. Gauthier, and N. Christie (eds.), 2000, *Towns and Their Territories between Late Antiquity and the Early Middle Ages* (Leiden).

<sup>80</sup> N. Christie and S. T. Loseby (eds.), 1996, *Towns in Transition: Urban Evolution in Late Antiquity and the Early Middle Ages* (Aldershot); N. Christie (ed.), 2004, *Landscapes of Change: Rural Evolutions in Late Antiquity and the Early Middle Ages* (Burlington, VT).

<sup>81</sup> O. Seeck, 1895, *Geschichte des Untergangs der antiken Welt*, vol. 1 (Berlin) 257-89. For more on Seeck, see S. Rebenich, 2000, “Otto Seeck und die Notwendigkeit, Alte Geschichte zu lehren,” in W. M. Calder III et al. (eds.), *Wilamowitz in Greifswald, Akten der Tagung zum 150. Geburtstag Ulrich von Wilamowitz-Moellendorffs in Greifswald* (Hildesheim) 262-98.

<sup>82</sup> O. Spengler, 1918 and 1922, *Der Untergang des Abendlandes* (Munich). To Spengler, European imperialism was emblematic of western society’s maturation from a stage of “culture” to one of “civilization”: and so, “we cannot help it if we are born as men of the early winter of full Civilization instead of on the golden summit of a ripe Culture, in a Phidias or a Mozart time” (34). Thus “imperialism [...] is to be taken as the typical symbol of the end. Imperialism is Civilization unadulterated” (28). Quotes from O. Spengler, 1991, *The Decline of the West*, abridged ed., trans. C. F. Atkinson (New York) 28, 34.

<sup>83</sup> Spengler, 1991, *The Decline of the West*, 37.

But the western world did not collapse after World War I, nor yet after World War II. So A. Marcone has connected the ubiquity of the decline perspective in the early twentieth century to the pessimism that seeped into historiography after World War I and, as a contrapositive of sorts, the popularity of the transformation view in the late twentieth century to the optimism and progressive outlook that broke out after World War II, especially in the Anglo-American world.<sup>84</sup> As a strong advocate of this brighter perspective, Cameron too sees it as the product of a particular intellectual climate: the Anglo-American world of the late twentieth century, a period “when there was a sense of optimism about the contemporary world, and when for a brief time the barriers seemed to be coming down.”<sup>85</sup> Globalization, multiculturalism, progressivism, and, I would argue, North American and European economic prosperity, played no small role in cultivating this climate, particularly in the 1990s. Interest in ethnicity and identity, ethnogenesis, accommodation and assimilation, as well as subjects such as gender, memory, asceticism, and the self, characterize this intellectual (and, one might suggest, social and political) milieu. Cameron notes how the development of approaches in other disciplines that question the assumption of fixed truths awaiting discovery, such as the “thick description” proposed by C. Geertz for ethnography, and the combination of structuralism and literary theory known as the “linguistic turn,” had a particularly strong influence on the growth of this model.<sup>86</sup> Art historians caught the wave of optimism as well, detecting in the stylistic developments of late antique portraiture a “spiritual” quality that made these images much different from, but no less valuable than, images rendered according to the classical ideal, and by means of which they mark a

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<sup>84</sup> Marcone, 2008, “A long late antiquity?” 12-13. So Momigliano, too, had made similar connections: e.g., 1980, “La caduta senza rumore.”

<sup>85</sup> Cameron, 2002, “The ‘long’ late antiquity,” 190. See this article for a much more detailed exploration of the development, features, and contributions of the model of a long late antiquity than is possible here.

<sup>86</sup> Cameron, 2002, “The ‘long’ late antiquity,” 178-79. For “thick description,” see C. Geertz, 1973, *The Interpretation of Cultures* (New York).

transition – and even an active transmission – between the works of Graeco-Roman antiquity and the larger medieval world of both east and west.<sup>87</sup> The identification of spirituality as the main message and motivation behind the stylistic choices made in representing the human form has since been disputed, along with the assumed dependence of the development of Christian art on imperial art.<sup>88</sup> Far from nipping late antique optimism in the bud, these challenges expanded interest in late antiquity still further by broadening the frameworks applied to the interpretation of its art beyond the strictly religious and top-down.

To its proponents, the model of a long late antiquity and the cultural history approach deployed to explore it broke through the crusted build-up of political narrative, obsessed as it was by violent rupture and decline, and opened up a whole new world of dynamism and delightful surprise. The burden of explaining decline and fall had been lifted, and in its place began an exciting search for threads of connection between communities who practiced different religions, spoke different languages, and lived in ways that had previously made them seem categorical adversaries.

### ***Decline versus transformation and the fate of the Graeco-Roman city***

Of particular importance to this dissertation is the connection between the debate over decline versus transformation, on the one hand, and the debate over the fate of the Graeco-Roman city, on the other. The city has played a vital role not only in this debate, but also in differing

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<sup>87</sup> E. Kitzinger, 1977, *Byzantine Art in the Making: Main Lines of Stylistic Development in Mediterranean Art, 3rd-7th Century* (Cambridge, MA); K. Wietzmann (ed.), 1979, *The Age of Spirituality: Late Antique and Early Christian Art, Third to Seventh Century* (New York). For the idea of active transmission, see K. Wietzmann's earlier studies of classically-derived images in manuscripts and other media: K. Weitzmann, 1951, *Greek Mythology in Byzantine Art* (Princeton); idem, 1971 (orig. pub. 1954), "The classical heritage in the art of Constantinople," in H. Kessler (ed.), *Studies in Classical and Byzantine Manuscript Illumination* (Chicago) 126-50.

<sup>88</sup> E.g., R. R. R. Smith, 1999, "Late antique portraits in a public context: Honorific statuary at Aphrodisias in Caria, AD 300-600," *Journal of Roman Studies* 89: 155-89 (against the spirituality interpretation); T. F. Mathews, 1993, *The Clash of Gods: A Reinterpretation of Early Christian Art* (Princeton) (against the strict dependence on imperial art).

perspectives on how to view the changes of late antiquity more generally. Many scholars have deployed the ancient city as the single most sensitive instrument for measuring the degree and nature of change during this period, and for pinpointing the tipping point from antiquity into the middle ages. J. Haldon, for instance, reads in the archaeological record of shrunken and semi-abandoned cities across Asia Minor in the seventh century a pattern of earlier decline, of the late fifth and sixth century, caused by changing economic, social, and administrative structures, as well as earthquakes and plague.<sup>89</sup> The irrelevance of the city was symptomatic of just how much society had changed. The surviving cities were only those that “could fulfil a function in respect of the institutions of Church or state (as an administrative base, for example) or in respect of genuine economic and social patterns of demand.”<sup>90</sup>

Liebeschuetz, an outspoken member of the decline camp, highlights the changing city as a key indication that “decline or downward tendency or deterioration is blatantly obvious in late antiquity.”<sup>91</sup> He provides a wake-up call to those happily dozing in the golden summer reverie of transformation, in the form of a list of examples of decline in the context of cities:

1. Monumental town centres decay.
2. Timber replaces stone and brick in all building except that of churches.
3. Towns lose population; large empty areas appear in towns.
4. Long-distance trade comes to an end.
5. Literacy is limited to clergy, or nearly so.
6. Constitutional politics comes to an end.

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<sup>89</sup> J. F. Haldon, 1990, *Byzantium in the Seventh Century: The Transformation of a Culture* (Cambridge) 102-14. See also idem, 1985, “Some considerations on Byzantine society and economy in the seventh century,” *Byzantinische Forschungen* 10: 75-112; idem, 1999, “The idea of the town”; idem, 2006, “Social transformation in the 6th-9th c. East,” in W. Bowden, A. Gutteridge, and C. Machado (eds.), *Social and Political Life in Late Antiquity*, *Late Antique Archaeology* 3.1 (Leiden) 603-47; idem, 2009, “Social élites, wealth, and power,” in idem (ed.), *The Social History of Byzantium* (Chichester) 168-211; idem, 2011, “The end of Rome? The transformation of the eastern empire in the seventh and eighth centuries CE,” in P. Arnason and K. A. Raaflaub (eds.), *The Roman Empire in Context: Historical and Comparative Perspectives* (Chichester) 199-228.

<sup>90</sup> Haldon, 1990, *Byzantium in the Seventh Century*, 121.

<sup>91</sup> J. H. W. G. Liebeschuetz, 2001, “The uses and abuses of the concept of ‘decline’ in later Roman history, or, Was Gibbon politically incorrect?” in L. Lavan (ed.), *Recent Research in Late-Antique Urbanism*, *Journal of Roman Archaeology* Suppl. 42 (Portsmouth, RI) 233-37, at 233.

## 7. End of the *pax romana*, end of the empire.<sup>92</sup>

Liebeschuetz's model is similar to that of Haldon: long-term change resulted in "real structural weakness" by the mid-sixth century, so that cities were unable to adapt to new circumstances and rebound from the myriad challenges of the seventh century.<sup>93</sup> In particular, Liebeschuetz emphasizes how traditional Graeco-Roman institutions of self-government and civic life in general were slowly eroded by the shift in power within each town from decurions to notables: "Instead of responsibility for the city being borne by an assembly of formally appointed councilors, meeting and voting in public, it now rested with a vaguely defined, self-appointed group of magnates, making decisions and nominating officials in the privacy of the audience hall of one of the great houses."<sup>94</sup> The physical structure of the city itself deteriorated, as traditions of civic munificence, secular education, and civic identity faded away under the watch of a new crop of powerbrokers more concerned with the central administration in Constantinople and the personal demands of Christianity.

To Liebeschuetz, the concept of decline is not "immoral," as the transformation camp would have it, but useful and apt. Decline does not have to be polemical, but can be "quite value-free" if defined as "the recording of the fact that something which was large or numerous has ceased to be so and may even have disappeared altogether."<sup>95</sup> Furthermore, those historians who see only transformation focus too narrowly on history as a process of "recycling"; instead, historians must "assess the effects" of change, rather than simply document it.<sup>96</sup> The change in urban life during late antiquity, for instance, "can be summarized as an expansion of the sphere

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<sup>92</sup> Liebeschuetz, 2001, "The uses and abuses of the concept of 'decline'," 233.

<sup>93</sup> J. H. W. G. Liebeschuetz, 1992, "The end of the ancient city," in J. Rich (ed.), *The City in Late Antiquity* (London) 1-49, at 35.

<sup>94</sup> Liebeschuetz, 2001, *The Decline and Fall of the Roman City*, 405.

<sup>95</sup> Liebeschuetz, 2001, "The uses and abuses of the concept of 'decline'," 233 (immoral, value-free), 234 (polemical).

<sup>96</sup> Liebeschuetz, 2001, *The Decline and Fall of the Roman City*, 414.

of religion at the expense of the secular,” which in Liebeschuetz’s view is a decidedly negative turn of events:

The story of the city in Late Antiquity involves the end of a political tradition, the end of a pattern of urban design related to the political tradition, the end of a particular ideal of what makes for the good life, the end of a secular ideal of education, and in many cases a shrinkage of population. All this happened within a context of the collapsing structures of an empire and of the associated economic system. It abundantly merits to be described as decline.<sup>97</sup>

To Liebeschuetz and others of similar mind, the gauge of the ancient city reads “decline.”

But members of the transformation camp looking at the same gauge arrive at a different conclusion. M. Whittow has argued that “the decline of the curiales in the provincial cities of the late Roman empire was merely an institutional rearrangement. [...] If the focus is shifted away from the history of institutions, the continuous history of the late Roman urban elite right through to the early seventh century and beyond is revealed.”<sup>98</sup> Accordingly, the disappearance of curiales was not a disaster, because urban élite were replaced by bishops, clergy, and landowners, all of same social background, enabling municipal life to survive but in changed form.<sup>99</sup> Whittow does recognize the deleterious affects of military insecurity, plague, and recession in the sixth century, but nevertheless places these changes “in the context of an essentially prosperous society” lasting up to the early seventh century,<sup>100</sup> so much so that in the east “the strategic outlook for the Roman empire was more favorable in 600 than at any stage since at least the mid-fourth century”<sup>101</sup> – before it was killed off by the quick succession of the

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<sup>97</sup> Liebeschuetz, 2001, *The Decline and Fall of the Roman City*, 414-15.

<sup>98</sup> M. Whittow, 1990, “Ruling the late Roman and early Byzantine city: A continuous history,” *Past & Present* 129: 3-29, at 3.

<sup>99</sup> Whittow, 1990, “Ruling the late Roman and early Byzantine city,” 28-29.

<sup>100</sup> M. Whittow, 2003, “Decline and fall? Studying long-term change in the east,” in L. Lavan and W. Bowden (eds.), *Theory and Practice in Late Antique Archaeology*, Late Antique Archaeology Series 1 (Leiden) 404-23, at 407-8.

<sup>101</sup> Whittow, 1996, *The Making of Orthodox Byzantium*, 53.

Persian invasions and Arab conquest. Whittow insists his rejection of decline is not a disavowal of change, but rather a full-throated pledge of allegiance: “change is visible on every side, the distinctive approach implicit in the concept of Late Antiquity is to try to see change on its own terms, rather than through a prism of decline and fall,”<sup>102</sup> since “‘decline’ is not a fact, but a model, an ideology, which has been tested for the Roman empire until it no longer serves a historical purpose.”<sup>103</sup>

### *The debate continues*

Writing in 1995, Bowersock reflected on the growth of the long late antiquity model and rejoiced in “the possibility of turning one’s back on the majesty of the Roman Empire in order to salute Byzantium, Ravenna, and Mecca.”<sup>104</sup> But plenty of others have no desire to shun the Roman empire and caution would-be detractors that by disparaging its achievements they undermine the relevance of the very discipline that provides their daily bread.

To Liebeschuetz, the scholars of the “New Orthodoxy” of continuity are the unwitting mercenaries of an erringly progressive historical-political ideology that, in its misguided attempt to erase Anglo-American racial and imperialist crimes of the past and soothe their manifestations in the present, embraces an extreme form of multiculturalism, refuses to commit the supposed sin of value judgment, and considers the nation state an entity of little importance: obsolete at best, dangerous at worst.<sup>105</sup> Furthermore, he argues, this approach feeds into the progressive outlook

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<sup>102</sup> Whittow, 2003, “Decline and fall?” 408. See also idem, 2001, “Recent research on the late-antique city in Asia Minor: The second half of the 6th-c. revisited,” in L. Lavan (ed.), *Recent Research in Late-Antique Urbanism*, *Journal of Roman Archaeology* Suppl. 42 (Portsmouth, RI) 137-54.

<sup>103</sup> M. Whittow, 2001, “Was Gibbon politically incorrect, or just wrong?” in L. Lavan (ed.), *Recent Research in Late-Antique Urbanism*, *Journal of Roman Archaeology* Suppl. 42 (Portsmouth, RI) 241-43, at 243.

<sup>104</sup> Bowersock, 1996, “The vanishing paradigm of the fall of Rome,” 39.

<sup>105</sup> J. H. W. G. Liebeschuetz, 2003, “Late antiquity, the rejection of ‘decline,’ and multiculturalism,” in G. Crifò and S. Giglio (eds.), *Atti dell’Accademia Romanistica Costantiniana: XIV Convegno internazionale in memoria di Guglielmo Nocera* (Naples) 639-52, at 644-45. Fully immersed in this “ideology,” these scholars – so says

that innovation is always a good thing, even when the status quo is just fine,<sup>106</sup> and fuels the modern disinclination to view classical civilization as a model worthy of emulation.<sup>107</sup>

B. Ward-Perkins wholeheartedly agrees with Liebeschuetz that the end of antiquity was marked by decline, but pushes it further ahead in time to some moment around 400 in the west and 600 in the east, and offers a model of “fall and decline” rather than “decline and fall.”<sup>108</sup> In his 2005 book, provocatively titled *The Fall of Rome and the End of Civilization*, Ward-Perkins objects to the growing orthodoxies of “accommodationism” and “transformationism” and sets out to demonstrate “that the ancient world ended and that this was essentially a ‘bad thing’.”<sup>109</sup> Focusing on the western empire, Ward-Perkins sees in the fifth century a “profound military and political crisis” caused by the violent Germanic invasions, followed by a “dramatic decline in economic sophistication and prosperity,” concurrent with a drop in population and the collapse of long-distance trade networks.<sup>110</sup> Ward-Perkins’s attention to the dire situation of the western empire highlights another problem with the continuity model: it obtains much more in the east than in the west. It therefore privileges eastern evidence and can produce a one-sided perspective on change in the Mediterranean as a whole.<sup>111</sup>

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Liebeschuetz – know not what they do, and “therefore are not on their guard against the political exploitation of these ideas, as they have learnt to be on guard against older ideologies; another feature is that they make censorship acceptable in the name of ‘political correctness’ even in societies which profess to place a very high value on freedom of expression” (647).

<sup>106</sup> Liebeschuetz, 2001, “The uses and abuses of the concept of ‘decline’,” 238.

<sup>107</sup> J. H. W. G. Liebeschuetz, 2006, “Transformation and decline: Are the two really incompatible?” in J.-U. Krause and C. Witschel (eds.), *Die Stadt in der Spätantike – Niedergang oder Wandel?* (Stuttgart) 463-83, at 477-78.

<sup>108</sup> B. Ward-Perkins, 2001, “A brief comment,” in L. Lavan (ed.), *Recent Research in Late-Antique Urbanism*, *Journal of Roman Archaeology* Suppl. 42 (Portsmouth, RI) 239-41, at 240.

<sup>109</sup> Ward-Perkins, 2001, “A brief comment,” 239-40 (quotes); idem, 2005, *The Fall of Rome and the End of Civilization* (Oxford).

<sup>110</sup> Ward-Perkins, 2005, *The Fall of Rome*, 182-83.

<sup>111</sup> E. James, 2008, “The rise and function of the concept ‘late antiquity’,” *Journal of Late Antiquity* 1: 20-30.

Others are skeptical of the model's blinkered focus on cultural history.<sup>112</sup> C. Ando warns that some scholarship of this type has artificially "bracketed" and "elevated" culture, severing it from its natural connection to politics and economics.<sup>113</sup> He also warns that by using claims of new, unique (usually cultural) developments to define late antiquity as a distinct period, different from what came before and after it, and worthy of study for its own sake, scholars may back themselves in a corner, since these developments can often be traced over much longer stretches of time and therefore must be continually defended as unique, so much so that the defense may be inaccurate: "novelty is purchased at a price."<sup>114</sup>

Giardina argues that, like the golden age of the Greek *polis*, late antiquity has enjoyed such favor because it is seen as forming the roots of modern western civilization. Once seen in this modern light, it fills the dark void of the middle ages and thereby creates a direct line of continuity from antiquity to the modern period.<sup>115</sup> The long view sweeps over collapse and crisis, preferring to use the term transformation and seeing the success of late antiquity in its "pluralism, which dilutes the political dramas of the ancient West in a multiethnic perspective of cultural history."<sup>116</sup> Here Giardina lays out his offensive against what he calls the "esplosione di tardoantico," an explosion in terms of both its popularity and periodization. If late antiquity as a period continues to balloon out, it may soon pop and cease to exist altogether.<sup>117</sup> Even Cameron

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<sup>112</sup> On cultural history, see, e.g., J. W. Cook, 2012, "The kids are all right: On the 'turning' of cultural history," *American Historical Review* 117.3: 746-71.

<sup>113</sup> C. Ando, 2008, "Decline, fall, and transformation," *Journal of Late Antiquity* 1: 31-60, at 48-49.

<sup>114</sup> Ando, 2008, "Decline, fall, and transformation," 49. In a related argument, F. Millar thinks historians need to deal with government, law, and state finance as essential subjects, not just cultural history: F. Millar, 2000, "Pagan and Christian voices from late antiquity," *Journal of Roman Archaeology* 13: 757-79

<sup>115</sup> Giardina, 1999, "Esplosione di tardoantico," 163. It thereby "eliminates the old problem of the different rebirths celebrated to downsize the significance of the Renaissance, because it cancels them all in one birth: that of modernity in late antiquity" (translation).

<sup>116</sup> Giardina, 1999, "Esplosione di tardoantico," 171, 173 (quote, translated).

<sup>117</sup> Marcone, 2008, "A long late antiquity?" 18, agrees with him, and with the Italian historiographical tradition in general, that "a historical period is defined necessarily by its specific political, economic, and institutional structures, and those structures end up losing their distinctive character when considered exclusively from the point of view of continuity."

has recognized a potential problem with erasing temporal boundaries and expanding time periods: if neither the Germanic invasions nor the Arab conquest is considered a boundary between late antiquity and the middle ages, the two periods “can no longer be seen to be separable entities” if no specific event or moment can be identified to separate them: “Perhaps we are trying to do too much. Perhaps we have dissolved our very subject.”<sup>118</sup>

We can now go beyond this debate and write with more nuance and sophistication about the historiography and potential contributions of and problems with the current study of late antiquity and the early Byzantine period. The most recent write-ups and considerations of these periods have done just that.<sup>119</sup> As a clue to how different the conversation has become, note the conciliatory tone of the mission of the *Journal of Late Antiquity* (2008), in contrast to that of *L’Antiquité tardive* (1993) (for which see above): the editor of the younger journal aims “to be as inclusive as possible: we have no hidden agenda, and no intention of taking sides with regard to the manifold possible interpretations of what Late Antiquity connotes.”<sup>120</sup>

### ***Where do we go from here?***

Two decades ago, Bowersock felt confident enough to conclude that “it is probably fair to say that no responsible historian of the ancient or medieval world would want to address or acknowledge the fall of Rome as either fact or paradigm. [...] The fall of Rome is no longer needed, and like the writing on a faded papyrus, it no longer speaks to us.”<sup>121</sup>

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<sup>118</sup> A. Cameron, 1998 “The perception of crisis,” in *Morfologie sociali e culturali in Europa fra tarda antichità e alto Medioevo, Spoleto, 3-9 aprile 1997*, Atti dei convegni del Centro Italiano di studi sul basso Medioevo 45 (Spoleto) 9-31, at 30-31.

<sup>119</sup> Examples include the contributions of the inaugural volume of the *Journal of Late Antiquity* (2008), the introductory chapters of the *Oxford Handbook of Byzantine Studies* (2008), and the contributions to the Blackwell *Companion to Late Antiquity* (2009). The recent *Oxford Handbook of Late Antiquity* (2012) is dedicated to Brown and Cameron and follows the long late antiquity model, but is not polemically minded.

<sup>120</sup> R. Mathisen, 2008, “From the editor,” *Journal of Late Antiquity* 1: 1-3, at 2.

<sup>121</sup> Bowersock, 1996, “The vanishing paradigm of the fall of Rome,” 42-43.

But almost twenty years later, our ears still prick to the sound of its voice. A global “war on terror,” the perceived threat posed by a nuclear-armed Iran, the social revolutions and regime changes brought about by the “Arab Spring,” and concern over the spread of religious extremism enliven the discourse on conflict between world religions and empires. Economic collapse, long-lasting recession, and entrenched unemployment in Europe and North America – combined with the rising economic and political power of emerging powers such as China – make westerners feel vulnerable about their place in the world, especially America’s role as global hegemon and world “peace-keeper.” The world’s persistent dependence on fossil fuels, the growing prevalence of potentially dangerous techniques such as hydraulic fracturing, scientists’ predictions of a warming planet, and – most strikingly visible of all – the increasing frequency and ubiquity of record-breaking natural disasters and extreme weather events, underscore to many the unsustainable nature of habits and behaviors formed in pursuit of industrial development and a certain standard of living. Is our current way of living coming to an end? How soon? What can we learn from history?

The familiarity of the Roman empire, the modernity projected back into late antiquity, and the rough correspondence in time between the perceived collapse of Graeco-Roman antiquity and the rise of Islam have made this a ripe time for comparing the current weaknesses undermining western power with the traditional decline and fall narrative of the Roman empire. Doing so falls in line with a long pattern by which consensus on where to stand in the debate over decline versus transformation is intimately linked to real-world events and the ever-changing intellectual climate. Accordingly, a rash of recent English-language works for scholar and layperson alike foretells the “end of empire” for Europe and, even more so, the United States and provides lessons from history on how to avoid a Roman-style collapse. These range in tone

from sober and scholarly, such as Ward-Perkins' *The Fall of Rome* (2005), to popular and quasi-instructive, including C. Murphy's *Are We Rome?* (2007).<sup>122</sup> The sweeping, comparative approach of Spengler and Toynbee is periodically rejuvenated by the offer of a new all-encompassing thesis to explain the rise and fall of powerful civilizations over vast periods of time.<sup>123</sup> In their 2012 work *Why Nations Fail*, which includes discussion of the Roman Empire, D. Acemoğlu and J. Robinson argue that it is a nation's political and economic institutions that will ultimately determine its failure or success.<sup>124</sup> This is good news, they contend, because it means that people have the power to shape their own national destiny, rather than remain forever shackled by geographical or other forces outside their control. More recently, G. Hubbard and T. Kane pinpoint economic imbalance as the cause of civil collapse throughout history. In *Balance* (2013), Hubbard and Kane use sketchy historical examples as comparanda for modern trends and are especially interested in the United States.<sup>125</sup> Decline in the Roman empire is partly the result of the "growth of a welfare state and centralized governance," while the United States is in danger not from external forces but "from a breakdown in long-term fiscal discipline" related to "the creation of a middle-class entitlement state."<sup>126</sup>

The four authors of these two recent works are economists, and their theses offer manmade solutions to what they see as manmade problems. To others, it is not always within the power of human communities to prevent or solve the problems that ultimately lead to decline

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<sup>122</sup> Ward-Perkins, 2005, *The Fall of Rome*; C. Murphy, 2007, *Are We Rome?: The Fall of an Empire and the Fate of America* (Boston).

<sup>123</sup> For Spengler, see above. A. Toynbee, 1934-1961, *A Study of History* (London). See also P. M. Kennedy, 1987, *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000* (New York), who explains how military overstretch can cause collapse.

<sup>124</sup> D. Acemoğlu and J. A. Robinson, 2012, *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (New York).

<sup>125</sup> G. Hubbard and T. Kane, 2013, *Balance: The Economics of Great Powers from Ancient Rome to Modern America* (New York).

<sup>126</sup> <http://thedianerehmsow.org/shows/2013-05-30/glenn-hubbard-balance-economics-great-powers-ancient-rome-modern-america> (accessed 1 July 2013). It comes as no surprise to learn that Hubbard was the chair of President George W. Bush's Council of Economic Advisors and senior economics advisor to the Romney for President campaign, and that Kane was key economics advisor to the McCain for President campaign.

and collapse. J. Diamond, for instance, received both acclaim and criticism for highlighting the role of environmental factors on the fates of human societies in *Guns, Germs, and Steel* (1997).<sup>127</sup> He later took up the issue of social collapse and related it directly a society's ability to adapt and respond to environmental change or other challenges concerning resource availability, though his *Collapse* (2005) does not include a discussion of Rome.<sup>128</sup> One suspects the current "end of empire" approach – with its focus on religious conflict, political failure, and economic collapse, along with dire warnings of climate change – is a reflection of current anxieties in the western world, fascinated as it is by the potential of its own loss of hegemony and the demise of its own civilization, but unwilling or unable to do what is necessary to prevent it.

The way we think about this period – how we interpret the evidence and arrive at final judgments – will always be influenced by how we feel about what is happening in the world around us. Structured as decline versus transformation, this debate ultimately cannot be resolved: it offers a false dichotomy that no longer serves our needs. A strict separation between decline and transformation (or whatever words one uses) did not exist in late antiquity; nor should it exist in modern scholarship, and thus pigeonhole creative thinking. Examples of both decline and continuity in late antiquity can be identified. It is incontrovertible that many defining features and forms of classical antiquity (culture, institutions, structures, etc.) declined during late antiquity, in the sense that they ceased to exist, or operated to a lesser degree than before. Their decline did not create a vacuum; new institutions, structures, and cultural trends grew to replace them. What remains controvertible is the value placed by the investigator on those forms of classical antiquity. Those in the decline camp value them very highly; members

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<sup>127</sup> J. M. Diamond, 1997, *Guns, Germs, and Steel: The Fates of Human Societies* (New York).

<sup>128</sup> J. M. Diamond, 2005, *Collapse: How Societies Choose to Fail or Succeed* (New York). See also, e.g., C. Ponting, 2007, *A New Green History of the World: The Environment and the Collapse of Great Civilizations* (New York).

of the transformation camp, less so. Therefore, at the heart of this debate lies a conflict of personal taste, informed by personal history.

## **B.ii. Alternative approaches, new perspectives**

The best way to achieve détente and thereafter break free into uncharted territory is to look for new approaches and models with which to understand the complexity of change during late antiquity. We cannot frog-leap the old debate completely; it will always be there, a rough-and-ready mode of thinking holed up in our heads. Whittow, for instance, suggests we apply an “Intensification and Abatement” model of long-term change to understand the trends of late antiquity in a broader context.<sup>129</sup> These terms were used by Ø. LaBianca to describe periods of respective sedentarization and nomadization employed by the inhabitants of Hesban in Jordan in cycles over the past 3,000 years as deemed suitable depending on political, social, economic conditions.<sup>130</sup> Whittow promotes this model because it views change not necessarily as the result of large-scale, state-driven developments or catastrophic circumstances; rather, “we can instead visualize individuals and societies as being faced with a variety of pressures that they can react to in various ways.”<sup>131</sup> It thereby provides a way to link large-scale and small-scale mechanisms of change. As discussed in greater detail in Chapter 5, others have indeed applied this model in their research: G. Varinlioğlu, for example, uses it as a framework for understanding changes in agropastoral strategies noted through field survey in late antique southeast Isauria.<sup>132</sup>

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<sup>129</sup> Whittow, 2003, “Decline and fall?” 414-18.

<sup>130</sup> Ø. LaBianca, 1990, *Sedentarization and Nomadization: Food System Cycles at Hesban and Vicinity in Transjordan, Hesban 1* (Berrien Springs, MI) 38-49.

<sup>131</sup> Whittow, 2003, “Decline and fall?” 416.

<sup>132</sup> G. Varinlioğlu, 2008, *Rural Landscape and Built Environment at the End of Antiquity: Limestone Villages of Southeastern Isauria* (Ph.D. Diss., University of Pennsylvania) 174-75.

L. Lavan suggests we structure our way of thinking about this period (and history in general) by identifying and explaining “changes to the overall *scale* of society – of increasing simplification or complexity.”<sup>133</sup> In the period between late antiquity and the seventh century, he sees a definite “overall process of simplification,” a period of rupture indicated by changes in scale, but not necessarily changes in form.<sup>134</sup> So while some *forms* of antiquity continued through the seventh century – elaborate architecture, for example, or the production and exchange of ceramics – they survived only at a reduced *scale*, along with a simplification of society in general as marked most importantly by “the collapse of urban centres, the loss of mass-produced pottery or of great numbers of masonry-vaulted buildings, the contractions of cultivated areas, the loss of Mediterranean-wide trading in agricultural products and, in places, the end of tax collection.”<sup>135</sup> Once we begin thinking of the changes of late antiquity as changes of scale, Lavan continues, we can then explore “regional divergence,” which may be a more useful and accurate way to characterize the end of antiquity than “decline.”<sup>136</sup> I follow Lavan in this dissertation by understanding changes in this period as changes in scale, and by maintaining a regional focus, while also paying attention to interregional patterns of interest.

Another relatively recent theory concerning how to model the changes experienced during late antiquity comes from systems theory, whereby ancient complex societies are seen as either collapsing in the face of excessive stimuli, or exhibiting resilience and adapting into something new. Various approaches to modeling complexity, collapse, and resilience are used in mathematics, the humanities, and social and natural sciences. The idea of collapse as a result of

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<sup>133</sup> L. Lavan, 2001 “A brief comment,” in idem (ed.), *Recent Research in Late-Antique Urbanism*, *Journal of Roman Archaeology* Suppl. 42 (Portsmouth, RI) 243-45, at 244.

<sup>134</sup> Lavan, 2001, “A brief comment,” 245 (quote); idem, 2003, “Late antique archaeology: An introduction,” L. Lavan and W. Bowden (eds.), *Theory and Practice in Late Antique Archaeology*, *Late Antique Archaeology* 1 (Leiden) vii-xvi, at vii.

<sup>135</sup> Lavan, 2001, “A brief comment,” 244.

<sup>136</sup> Lavan, 2001, “A brief comment,” 245.

diminishing returns on investments in social complexity was applied to the western Roman empire by J. Tainter, whose *The Collapse of Complex Societies* (1988) continues to inspire scholarship, such as Diamond's approach in his own *Collapse* (2005), mentioned above (and which, Tainter stridently argues, does not actually include a single instance of true collapse).<sup>137</sup> The complex systems approach will not be discussed at length, but it is worth noting two examples here to demonstrate how commonplace it has become to use this model to understand many of the changes observed in late antiquity, and for the end of the Roman empire in general. In their study of the reduction and dispersal of settlement in the territory of Sagalassos, H. Vanhaverbeke and M. Waelkens have used Tainter's model to explain how multiple factors combined to create diminishing returns on continued investment in the excessively socio-politically complex system of the Roman empire.<sup>138</sup> Ward-Perkins applies complex systems collapse in his explanation of the decline of the Roman empire in the west, but narrows the focus to economic complexity.<sup>139</sup> According to his model, increasing specialization and investment resulted in complex, interlocking economies supported by exchange among communities during the Roman period. These complex economies were so interlocking, in fact, that even minor upsets in one section of the economy had widespread, rippling effects throughout the entire system.<sup>140</sup> In this understanding of economic complexity, the system is viewed as one global organism made up of many interacting parts.

A very different but related perspective is that of resilience, which has recently gained support as a more accurate way to model change in societies over time. For example, the

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<sup>137</sup> J. A. Tainter, 1988, *The Collapse of Complex Societies* (Cambridge); criticizing Diamond: idem, 2006, "Archaeology of overshoot and collapse," *Annual Review of Anthropology* 35: 59-74.

<sup>138</sup> H. Vanhaverbeke and M. Waelkens, 2003, *The Chora of Sagalassos: The Evolution of the Settlement Pattern from Prehistoric until Recent Times*, Series in Eastern Mediterranean Archaeology (SEMA) V (Turnhout) 288.

<sup>139</sup> Ward-Perkins, 2005, *The Fall of Rome*, 136-37, 144.

<sup>140</sup> Ward-Perkins, 2005, *The Fall of Rome*, 132, 136.

contributions to *Questioning Collapse* (2010), edited by P. McAnany and N. Yoffee, offer a direct challenge to the assumptions and interpretations of Diamond's *Collapse* and ask what right we have to judge a society as a failure or success.<sup>141</sup> Although resilience is usually defined as the capacity of a system to absorb external disturbances so as to retain essential function, structures, processes, and feedbacks, it is also about the capacity to take advantage of new opportunities to renew, regenerate, and re-organize; that is, "resilience provides adaptive capacity that allows for continuous development."<sup>142</sup> Deciding whether collapse or resilience is the more accurate characterization of the evidence it is often a matter of perspective, just like deciding whether such evidence indicates decline or transformation. Is the carving up of a monumental public building into private shops and houses an example of social collapse, or healthy resilience in the face of altered circumstances? So Vanhaverbeke and others working at Sagalassos have shifted the emphasis of their interpretation of the field survey results noted above from collapse, pure and simple, to something more optimistic, or at least more ambiguous: a return to self-sufficient "peer villages" in a pattern that had characterized the region for centuries before the appearance, growth, and multiplication of the Graeco-Roman city.<sup>143</sup>

I will argue that the changes in settlement patterns, exchange networks, and subsistence strategies evident in southern Asia Minor and northwest Syria should be viewed as the result of rational reactions to the challenges of later antiquity, which combined made society more resilient. Society became dramatically less complex, but it did not wholly collapse. Instead, it adapted to altered circumstances in ways that made it more resilient in the face of an

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<sup>141</sup> P. A. McAnany and N. Yoffee (eds.), 2010, *Questioning Collapse: Human Resilience, Ecological Vulnerability, and the Aftermath of Empire* (Cambridge).

<sup>142</sup> C. Folke, 2006, "Resilience: The emergence of a perspective for social-ecological systems analyses," *Global Environmental Change* 16: 253-67, at 257, 259 (quote).

<sup>143</sup> H. Vanhaverbeke, A. K. Vionis, J. Poblome, and M. Waelkens, 2009, "What happened after the 7<sup>th</sup> century AD? A different perspective on post-Roman rural Anatolia," in T. Vorderstrasse and J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia*, Phians 113 (Leiden) 177-90, at 186. See Chapter 7.

unpredictable future. Specific to the late antique and early Byzantine Mediterranean, those who embrace the resilience perspective usually do so in the context of demonstrating how the so-called dark ages were not actually so dark, how settlement and exchange continued at scales that suggest relatively high standards of living.<sup>144</sup> To entrenched members of the decline camp, this may look like Brownian cultural continuity disguised by pseudo-ecosystems modeling. My approach is different, because I do think the dark ages were relatively dark. At first glance, it seems obvious that those in favor of resilience over collapse must also favor transformation over decline. But embracing resilience does not require a dismissal of decline. In fact the opposite is true. As an advocate of resilience, which I discuss in the concluding chapter, I recognize that settlement and economic exchange were maintained past the sixth century only at a scale far below that of preceding centuries. Embracing resilience actually requires the *presumption* of declining complexity, because it is this loss of complexity that allows such adaptability in the first place.

## **C. STATE OF THE PROBLEM**

### **C.i. Defining the end of antiquity**

Faced with this tangled history of research, how then should we define the end of antiquity? And how can we possibly determine its cause or causes from among the long line-up of usual suspects? If we seek to describe the tipping point between late antiquity and whatever comes next, we must understand what happens on either side of that imagined threshold. The goal of

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<sup>144</sup> A. Walmsley, 2007, *Early Islamic Syria: An Archaeological Assessment* (London) 146-48, who calls for future research to use resilience theory to understand change in early Islamic Syria.

this study is to investigate the long process of change that preceded this tipping point as well as the immediate effects of that change. Examining what came next in detail is beyond the scope of this study, but it is necessary to address one question concerning this post-threshold period that has enjoyed a recent revival of interest and reinterpretation. The question is twofold: are we justified in calling the period from the mid-seventh to ninth century (sometimes referred to as the “long eighth century”) a “dark age,” and if so, what caused this “darkness”?

The identification of the mid-seventh century as the starting point of a dark age is primarily based on the assumption that the Islamic conquest in the mid-seventh century caused widespread population decline and economic hardship in the formerly Byzantine regions of the east (especially Syria and Palestine), and furthermore, relentless Muslim Arab invasions and raids into Asia Minor sparked panic, violent death, and the movement of people out of cities and into fortified citadels. That is, antiquity lasted all the way to the mid-seventh century, when it was finally “assassinated” by external forces.<sup>145</sup>

In contrast, the decline camp would peg this tipping point sometime earlier, because they believe decline ushered in the end of antiquity *before* the Islamic conquest. Additional high-profile advocates of this view are R. Hodges and D. Whitehouse, who looked at archaeological evidence and concluded that, *contra* Pirenne, the Mediterranean world had already collapsed by 600, before the arrival of the Muslims: therefore “Islamic expansion, like the Sasanian inroads a

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<sup>145</sup> Espousers of this perspective introduced above, who by definition belong in the transformation camp, include Pirenne, D. Zakythinos, Foss, and Whittow. In a well-received article, Zakythinos blamed the Slavic invasions, natural catastrophes, and – most of all – Arab supremacy at sea for rupturing overseas trade and thereby drastically impairing the economy and the network of cities dependent upon long-distance commerce: D. Zakythinos, 1966, “La grande brèche dans la tradition historique de l’Hellénisme du septième au neuvième siècle,” *Χαριστή εἰς Ἀναστάσιον Κ. Ὀρλάνδου*, vol. 3 (Athens) 300-27. More recently, Kenneth Holum has agreed with Whittow to conclude that “it was not the ‘regime of the notables’ that ended the cities, for the notables, too, were city-based and hence city-friendly. Instead, it was the Persian and Muslim conquests of the seventh century that would bring a decisive turn, for the Muslims would introduce not just a new religion but also new patterns of settlement and new forms of city.” K. G. Holum, 2005, “The classical city in the sixth century: Survival and transformation,” in M. Mass (ed.), *The Cambridge Companion to the Age of Justinian* (Cambridge) 87-112, quote at 108-9.

generation earlier, is a symptom of the deep-rooted social and economic decline of the Roman world, not a cause.”<sup>146</sup>

In contrast to both of these perspectives, out of the seeds of the long late antiquity model an even *longer* late antiquity is growing. A number of revisionists now argue that the Islamic conquest was not a death knell for the conquered regions and their Byzantine neighbors and, by way of proof, point to material evidence for continuity in demographic levels and economic activity after the mid-seventh century. These scholars call attention to the way the assumption that the Islamic conquest caused population and economic disaster has led to a dating of ceramics and other archaeological evidence to this historical event, without external verification.<sup>147</sup> Specific to cities, the “revisionist” view of conquest stresses that Graeco-Roman cityscapes and town planning had already changed dramatically by the time the Muslim Arabs arrived, so the Islamic conquest cannot be blamed for the disappearance of the classical city (however, this point was made decades earlier).<sup>148</sup> Others note continuity in occupation and economic activities pre- and post-conquest within conquered territories such as Syria and Palestine,<sup>149</sup> as well as the maintenance of exchange networks, indicated by ceramics such as amphorae and fine wares, between these conquered regions and the wider Mediterranean

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<sup>146</sup> R. Hodges and D. Whitehouse, 1983, *Mohammed, Charlemagne & The Origins of Europe: Archaeology and the Pirenne Thesis* (Ithaca) 76 (quote), 160-70,

<sup>147</sup> E.g., J. Magness, 2003, *The Archaeology of the Early Islamic Settlement in Palestine* (Winona Lake, IN), 199; P. Armstrong, 2012, “The survey pottery: Hellenistic and later,” in J. J. Coulton, *The Balboura Survey and Settlement in Highland Southwest Anatolia* (London) II, 31-82, at 79.

<sup>148</sup> H. Kennedy, 1985, “From polis to madina: Urban change in late antique and early Islamic Syria,” *Past & Present* 106: 3-27; idem, 1985, “The last century of Byzantine Syria: A reinterpretation,” *Byzantinische Forschungen* 10: 141-83; idem, 1999, “Islam,” 231; M. O. H. Carver, 1996, “Transitions to Islam: Urban rôles in the east and south Mediterranean, fifth to tenth centuries A.D.,” in N. Christie and S. T. Loseby (eds.), *Towns in Transition: Urban Evolution in Late Antiquity and the Early Middle Ages* (Aldershot) 184-212, at 189, citing S. M. Stern, 1970, “The constitution of the Islamic city,” in A. H. Hourani and S. M. Stern (eds.), *The Islamic City* (Oxford) 25-50.

<sup>149</sup> E.g., Magness, 2003, *The Archaeology of the Early Islamic Settlement*; Walmsley, 2007, *Early Islamic Syria*; A. A. Eger, 2008, *The Spaces between the Teeth: Environment, Settlement, and Interaction on the Islamic-Byzantine Frontier* (Ph.D. dissertation, University of Chicago). For more on this subject, see Chapter 4.

world.<sup>150</sup> Specific studies are not presented here because they will be treated in greater detail in the chapters that follow.

This trend is paralleled in research that does not rely primarily on archaeological evidence. It too portrays the Sasanians and Muslim Arabs as engaged participants in the late antique world, hell-bent not on destroying it but on assimilating the benefits of Mediterranean culture. Recent studies of the Sasanian empire include it in the world of late antiquity, thereby pushing its geographical borders ever-farther onto the Iranian plateau.<sup>151</sup> Other studies describe the history of the Sasanians and Muslims, and the development of Islam, as intertwined into the larger world of late antiquity, rather than as default cultural enemies. In his recent *Empires in Collision in Late Antiquity*, for example, Bowersock insists the Sasanian occupation of formerly Roman provinces did not cause damage, and argues that Muhammad was interested and involved in the conflict between the eastern Roman empire and the Sasanians, not simply an isolated observer of great power politics.<sup>152</sup> P. Pourshariati builds a fascinating case to argue that the Islamic conquest of the east Mediterranean and of Persia was initially light-handed and interested primarily in securing trade routes to the east, not in spreading religious doctrine, as it would later be portrayed in narratives of Islamic conquest (*futuh*).<sup>153</sup>

This revised perspective of a less disruptive Islamic conquest obtains primarily in those regions that came completely under Islamic governance. The same cannot necessarily be said of

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<sup>150</sup> E.g., P. Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," in M. Mundell Mango (ed.), *Byzantine Trade, 4th-12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham) 157-78; S. Gelichi, 2012, "Local and interregional exchanges in the lower Po valley, eighth--ninth centuries," in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 219-33. For more on this subject, see Chapters 3, 6, and 7, and the conclusions in Chapter 9.

<sup>151</sup> E.g., P. Crone, 2012, *The Nativist Prophets of Early Islamic Iran: Rural Revolt and Local Zoroastrianism* (Cambridge); P. Brown, 2013, "Recovering submerged worlds," *New York Review of Books* (July 11, 2013) 35-37, at 36, rejoices in the way Crone's work has "open[ed] up Iran to scholars of late antique religion."

<sup>152</sup> G. W. Bowersock, 2012, *Empires in Collision in Late Antiquity* (Waltham, MA) 49.

<sup>153</sup> P. Pourshariati, 2008, *Decline and Fall of the Sasanian Empire: The Sasanian-Parthian Confederacy and the Arab Conquest of Iran* (London) 464-65.

other, neighboring regions. From the mid-seventh to mid-eighth century, a vast swath of land covering both sides of the Taurus and Anti-Taurus mountains, and stretching from rugged Isauria through the flatlands of Cilicia and up to the northeast, became a frontier zone between warring Byzantine and Islamic forces. The war zone was forcibly depopulated and subjected to a scorched earth policy by both sides. Though not everyone agrees, surely decades of systematic devastation had a negative effect on settlement and quality of life (see Chapters 4 and 5).

If the Persian invasions and Islamic conquest did not have an unequivocally negative effect on population levels and economic conditions in some areas (outside this frontier zone), then perhaps the dark ages were not so dark after all. This is the ultimate stretch of the long late antiquity model: the idea, which enjoys growing support, that populations did not crash, and exchange networks did not entirely shut down, in the mid-seventh to ninth century to such a degree that this period deserves to be called a dark age. Certainly the period was marked by increased localization (or, at least, regionalization) and decreases in the quality of goods produced, but the contributors to a recent volume on Byzantine trade reflect the revised perspective when they agree on “the continuity of general settlement and economic activity in Asia Minor.”<sup>154</sup> Accordingly, many have abandoned the term “dark age” in favor of less critical phrase “transitional period.”<sup>155</sup> In the concluding Chapter 9, I will argue that much of the evidence from regional survey suggests that major aspects of life became relatively dark indeed.

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<sup>154</sup> C. Morriison, 2012, “Introduction,” in ead. (ed.), *Trade and Markets in Byzantium* (Washington, DC) 1-9, at 8.

<sup>155</sup> J. F. Haldon, 2012, “Commerce and exchange in the seventh and eighth centuries: Regional trade and the movement of goods,” in C. Morriison (ed.), *Trade and Markets in Byzantium* (Washington, DC) 99-122, at 99.

### **C.ii. Identifying the cause(s)**

Identifying the cause or causes of the end of antiquity seems an insurmountable task precisely because there is such a long line-up of usual suspects. The primary basis for pinpointing one or another among them has been timing: if changes meaningful enough to mark the end of antiquity occurred by year X, then any potential cause that began only after year X cannot have been the culprit. This method has only engendered, not resolved, disagreement, for the meaning of a change is in the mind of the inquisitor. Most of the suspect factors have been put forward as causes based on the interpretation of historical sources, coins, and urban archaeology: these include war and invasion, political upheaval, economic instability, and social shifts related to the rise of Christianity and ideological change. Most of these factors have been addressed above in the context of the history of research, which makes it clear that a verdict is far from decided. In some cases, it is not even obvious whether the factor is a cause or an effect of the end of the antiquity.

The approach of this study is to look beyond the city to the countryside, in order to identify broad patterns of change dealing with population, settlement, economy, and subsistence. In so doing, it is necessary to look beyond traditional forms of evidence as well, and reconstruct those patterns of change using the results of regional survey and palaeoenvironmental research. This approach makes it possible to test in a new way a suite of potential causal factors: those related to economic exchange, population, and environmental conditions, both natural and human-induced. These factors will be discussed here as background information that will inform the interpretations of the survey and palaeoenvironmental research in the chapters that follow.

### *Catastrophes: Plague, famine, earthquakes, climatic phenomena*

The outbreak of bubonic plague that appeared within Byzantine lands in 541 CE and reached Syria and Asia Minor, including Constantinople, the following year caused misery and hardship across the Mediterranean.<sup>156</sup> Its recurrence every ten to fifteen years over the next two centuries must have compounded its effects generation after generation, though the same regions were not hit by every wave.<sup>157</sup> The extent to which the so-called Justinianic plague – the first outbreak of 541/42 – and its recurrences caused depopulation in both cities and the countryside remains a contested unknown. Contemporary sixth-century accounts are unanimous in their assessment of the plague as disastrous for both individuals and entire communities. Some of these are harrowing, such as the description of its effects by Procopius, who was witness to its 542 arrival in Constantinople, where he noted the death of 10,000 victims in a single day.<sup>158</sup> John of Ephesus describes the devastating effects of the plague in the countryside as he traveled from Syria through Asia Minor (he mentions Cilicia, Mysia, Syria, Iconium, Bithynia, Asia, Galatia, and Cappadocia) en route to the capital: empty villages, corpses littering the fields, flocks wandering aimlessly, harvests left to rot.<sup>159</sup> By combining his study of historical sources with mathematical models of epidemics and a comparison to the fourteenth-century Black Death, D. Stathakopoulos estimates that around 20% of the population of Constantinople was lost to the

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<sup>156</sup> For a bibliographic survey on the plague, see D. Stathakopoulos, 2004, *Famine and Pestilence in the Late Roman and Early Byzantine Empire, A Systematic Survey of Subsistence Crises and Epidemics*, Birmingham Byzantine and Ottoman Monographs 9 (Aldershot).

<sup>157</sup> Additional waves are attested in Cilicia in 560-61, in Bithynia and Asia Minor in 599, and again in Asia Minor in 732-35. D. Stathakopoulos, 2007, "Crime and punishment: The plague in the Byzantine empire, 541-749," in L. K. Little (ed.), *Plague and the End of Antiquity: The Pandemic of 541-750* (Cambridge) 99-118, at 102-4.

<sup>158</sup> Procopius, *History of the Wars*, 2.23-33.

<sup>159</sup> John of Ephesus as preserved in Pseudo-Dionysius of Tel-Mahre, *Chronicle, Part III*; cited in D. Stathakopoulos, 2012, "Death in the countryside: some thoughts on the effects of famine and epidemics," *L'Antiquité tardive* 20: 105-14, at 109 n. 33.

first outbreak of plague in 542, though he does not suggest that we apply this rate of plague mortality to the empire at large, since too many variables are unknown.<sup>160</sup>

The archaeological evidence, however, is ambiguous. There is little physical evidence for the sixth century pointing clearly to an immediate increase in mortality: mass graves of the kind described in written sources, for instance, or upsurges in funerary inscriptions dating to this time. (New efforts to identify such “plague pits” and carry out molecular analysis of the human skeletal remains they contain may change this situation.<sup>161</sup>) How a sudden drop (as opposed to a gradual decline) in the population might be visible in the physical fabric of towns, not to mention in the countryside, is not intuitive or readily apparent. These considerations, as well as the tendency of contemporary authors writing about the plague to use unverifiable, exaggerated, and/or stock numbers for the dead, encouraged the growth in the 1990s of a revisionist perspective downplaying the demographic effects of the plague, especially in the countryside.<sup>162</sup>

But the dire effects of the plague may be evidenced more indirectly. Kennedy interprets the cessation of new building in cities and rural villages in Syria after the sixth century as evidence for a stagnating or declining population, likely a result of recurring plague, in concert with the other challenges of the time.<sup>163</sup> P. Sarris reviews non-literary numismatic, legal, and papyrological evidence and concludes that the weakness of state finances, demands for high wages, and unusually long and secure land leases from Egypt thus revealed suggest widespread

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<sup>160</sup> Stathakopoulos, 2004, *Famine and Pestilence*, 139-41.

<sup>161</sup> M. McCormick, 2007, “Toward a molecular history of the Justinianic pandemic,” in L. K. Little (ed.), *Plague and the End of Antiquity: The Pandemic of 541-750* (Cambridge) 290-312; L. K. Little, 2011, “Plague historians in lab coats,” *Past & Present* 213: 267-90.

<sup>162</sup> J. Durliat, 1989, “La peste du VI<sup>e</sup> siècle. Pour un nouvel examen des sources byzantines,” in C. Abadie-Reynal, C. Morrisson, and J. Lefort (eds.), *Hommes et richesses dans l'Empire byzantin, vol. 1 (IV<sup>e</sup>-VII<sup>e</sup> siècles)* (Paris) 107-19; Whittow, 1996, *The Making of Orthodox Byzantium*, 66-68; Brandes, 1999, “Byzantine cities.”

<sup>163</sup> H. N. Kennedy, 2007, “Justinianic plague in Syria and the archaeological evidence,” in L. K. Little (ed.), *Plague and the End of Antiquity: The Pandemic of 541-750* (Cambridge) 87-95.

agrarian depopulation after the arrival of the plague.<sup>164</sup> These are all trends that imply a significant reduction in the population; whether this demographic decline is due primarily to the plague and not some other circumstance cannot be determined with certainty, but of all the other possible factors, plague is the only one that could have caused both immediate and long-term increases in mortality and decreases in birth rates. Some survivors of the plague, however, may have benefited from the shortage of human labor in the form of secure and indefinite land leases, access to better land, higher wages, and inheritance of wealth.<sup>165</sup>

Stathakopoulos believes that population growth between the fourth and sixth centuries created an unsustainable situation, apparent from the frequency of subsistence crises noted in textual sources of this time (one famine every 3.3 years), the ease with which the first outbreak of plague spread across the empire, and the remarkable mortality it caused, so that “the intersection of the plague and a large population brought about an immediate, short-term, demographic decline.”<sup>166</sup> The possibility that it was not plague alone, but plague in concert with famine and a series of climatic phenomena, that may have caused serious population decline is suggested by contemporary sources. An unusually high number of famine episodes, deleterious climatic events (drought, extreme cold, etc.), and freak phenomena are reported for the sixth century, especially its first half.<sup>167</sup> It has also been pointed out that the quarter-century 525-549

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<sup>164</sup> P. Sarris, 2007, “Bubonic plague in Byzantium: The evidence of non-literary sources,” in L. K. Little (ed.), *Plague and the End of Antiquity: The Pandemic of 541-750* (Cambridge) 119-32. For the Egyptian land leases recorded in papyri to which Sarris refers, see J. Banaji, 2001, *Agrarian Change in Late Antiquity: Gold, Labour, and Aristocratic Dominance* (Oxford).

<sup>165</sup> Stathakopoulos, 2004, *Famine and Pestilence*, 168-69; Banaji, 2001, *Agrarian Change*; M. McCormick, 2012, “Movement and markets in the first millennium: Information, containers, and shipwrecks,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 51-98, at 90. Here McCormick uses the comparable situation of the Black Death, studies of which have shown that after the initial turmoil of mortality and property upheaval caused by such an epidemic, survivors inherited wealth, and some groups improved their financial lot considerably; citing, e.g., C. Dyer, 2002, *Making a Living in the Middle Ages: The People of Britain 850-1520* (New Haven, CT) 278-86.

<sup>166</sup> Stathakopoulos, 2004, *Famine and Pestilence*, 167.

<sup>167</sup> Conducted for his dissertation: I. G. Telelis, 1995, *Meteorologika phainomena kai klima sto Byzantio. Proseggise on pleroforion apo tes peges kai empeirikes endeixeis gia tes diakymanseis tou klimatos tes Anatolikes Mesogeiou kai Meses Anatoles 300-1500 m.Chr. [Meteorological Phenomena and Climate in Byzantium: Approach*

CE in which the first outbreak of plague occurred also has the highest number of reported famines (8) for the period covered in that study (100 BCE to 800 CE), divided by the quarter-century.<sup>168</sup> It is possible that the outbreak of plague – an uncommonly deadly phenomenon linked in many contemporary minds to divine will, Christian or otherwise – led to erroneous or multiplying reports of famine in the general panic and ill communication of the time. But it is just as likely that famine both exacerbated the mortal effects of the plague, and itself resulted from the outbreak, as channels of exchange between communities were cut off, both intentionally and unintentionally.

In addition to plague and famine, written sources report earthquakes and phenomena such as the solar veiling event of 536/37. These events, too, could have compounded the negative effects of famine and plague. The solar veiling event of 536/37 in particular is blamed in the sources for ensuing famine and starvation.<sup>169</sup> It is reported in sources across the Mediterranean, from Cassiodorus writing while praetorian prefect of Italy and Procopius while in Africa and Italy, to others in the east reporting firsthand or later chronicling firsthand accounts.<sup>170</sup> These sources all describe the same basic event: in 536 the sun became dark, radiating light and warmth only feebly; this darkness lasted a year to 18 months, during which time many crops were destroyed. Possibly caused by a volcanic eruption, this solar veiling may be linked to stress visible in tree rings from northern Europe for this time and a spike in sea-ice evidence for

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*of Documentary Information and Empirical Indications Concerning Climatic Fluctuations in the Eastern Mediterranean and the Middle East (A.D. 300-1500)* (Ph.D. dissertation, University of Ioannina). (In Greek with English summary.) Repeatedly cited events were included only once in the overall tallies for each period. Cited in J. Koder, 1996, "Climate change in the fifth and sixth centuries?" in P. Allen and E. Jeffreys (eds.), *The Sixth Century, End or Beginning?* (Brisbane) 270-85, at 274-75 nn. 13-14.

<sup>168</sup> M. McCormick et al., 2012, "Climate change during and after the Roman empire: Reconstructing the past from scientific and historical evidence," *Journal of Interdisciplinary History* 43: 169-220, at 182 fig. 6b, 198-99.

<sup>169</sup> Much has been written about this event. For details, see A. Arjava, 2005, "The mystery cloud of 536 CE in the Mediterranean sources," *Dumbarton Oaks Papers* 59: 73-94; J. D. Gunn (ed.), 2000, *The Years without Summer: Tracing A.D. 536 and Its Aftermath*, BAR Int. Ser. 872 (Oxford); L. B. Larsen et al., 2008, "New Ice Core Evidence for a Volcanic Cause of the A.D. 536 Dust Veil," *Geophysical Research Letters*: L04708.

<sup>170</sup> For discussion and analysis of these sources, see Arjava, 2005, "The mystery cloud of 536 CE," providing also the following references: Cassiodorus, *Variae* 12.25; Procopius, *History of the Wars* 4.14.5-6.

cooling in Greenland.<sup>171</sup> It is difficult to know what long-term effects this event had on agriculture and population levels, but it could only have made worse the already dire consequences of the plague, which followed only a few years later.

Earthquakes are also listed among the disasters that struck the eastern Mediterranean in the sixth and seventh centuries, and are often blamed for urban abandonment. Contemporary or near-contemporary accounts of the devastation and loss of human life they caused in the densely occupied cities of late antiquity are harrowing, especially when they occurred frequently and were preceded or followed by other calamities. In the sixth century alone, the inhabitants of Antioch, for example, suffered a fire in 525, an earthquake the next year, an even more severe earthquake in 528, sacking and deportation by the Persians in 540, plague in 542, an earthquake in 551, a cattle plague in 553, another earthquake in 557, recurrence of the plague in 560, Persian harassment in 573, more earthquakes in 577 and 588, a drought in 599, and a weevil infestation that destroyed the crops in 600.<sup>172</sup> The exact extent of damage caused by any one of these earthquakes will never be clear, and exaggeration can often be detected in written accounts, especially in the impossibly rounded and high casualty numbers sometimes given. The destruction of or damage to public buildings, houses, infrastructure, and services, especially food and water supply and waste removal, in addition to deaths caused directly by the earthquake itself, must have had lasting negative effects on the economic livelihood and health of the city and its residents. Earthquakes are sometimes blamed as the major or final stress that caused the abandonment of a town.<sup>173</sup> But earthquakes had occurred periodically throughout the history of

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<sup>171</sup> McCormick et al., 2012, "Climate change during and after the Roman empire," 177 fig. 2a, 195.

<sup>172</sup> C. Foss, 1997, "Syria in transition, A.D. 550-750: An archaeological approach," *Dumbarton Oaks Papers* 51: 189-269, at 190.

<sup>173</sup> E.g., a postulated mid-seventh-century earthquake at Sagalassos: M. Waelkens, M. Sintubin, P. Muechez, and E. Paulissen, 2000, "Archeological, geomorphological and geological evidence for a major earthquake at Sagalassos (SW Turkey) around the middle of the seventh century AD," in W. J. McGuire, D. R. Griffiths, P. L. Hancock, and I. S. Stewart (eds.), *The Archaeology of Geological Catastrophes*, Geological Society, Special Publication 171

these towns, and so they must have been a proximate, not an ultimate, cause of abandonment. That is, in normal situations, a town and its inhabitants could rebound from such a disaster. But given the other catastrophes that were taking place throughout the sixth and seventh centuries – war, invasion, depopulation, plague, famine, climate deterioration – towns were less likely to be able to restore buildings and livelihoods after suffering the damages caused by an earthquake.

### *Climate deterioration*

At the same time that they were trying to survive the catastrophes of the sixth and seventh centuries, people living in the eastern Mediterranean may also have been feeling the effects of a longer-term trend: climate deterioration. Two broad patterns of climate change on a regional and supra-regional scale in the Mediterranean have been identified for the period covered in this study, based on a combination of multiple forms of evidence including both historical sources and palaeoenvironmental data. The exact timing and nature of these climatic periods is debated, since the data collected at different sites (and the way they are interpreted) are not always in agreement, and may in fact represent real variation caused by locally-specific factors (such as differences in elevation, human activity, etc.). There is a general consensus, however, that Europe and the Mediterranean experienced relatively stable, warm, wet conditions theoretically favorable to agriculture during much of the Hellenistic and Roman periods (the Roman Climatic Optimum). A recent synthesis of historical and scientific data places this period from about 100 BCE to 200 CE,<sup>174</sup> though evidence from most individual sites in Turkey suggests significantly later end-dates, sometimes on the order of centuries. The end of the Roman Climatic Optimum

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(London) 373-83; M. Waelkens et al., 2006, "The late antique to early Byzantine city in southwest Anatolia. Sagalassos and its territory: A case study," in J.-U. Krause and C. Witschel (eds.), *Die Stadt in der Spätantike – Niedergang oder Wandel?* Historia Einzelschriften 190 (Stuttgart) 199-255, at 244-47.

<sup>174</sup> McCormick et al., 2012, "Climate change during and after the Roman empire," 174-84.

is signaled by a reversal in climatic conditions toward instability, cooling, aridity, and drought, along with famine and plague (for convenience, this period will be referred to here as the Early Medieval Cold Period). In some studies, this trend is observed as early as 400 CE or so,<sup>175</sup> but in most of the palaeoclimate records obtained in Turkey, it is first discernible in the sixth or seventh century. Broadly speaking, the seventh century seems to be a “low point” – that is, a period of markedly cool and arid conditions.<sup>176</sup>

The warm, moist conditions of the Roman Climatic Optimum have been linked to the continuing success and growth of agricultural activity during the fourth to sixth century in the eastern Mediterranean – not necessarily as a direct causal agent, but rather as a backdrop of amenable conditions allowing agricultural intensification and expansion in marginal lands.<sup>177</sup> In Asia Minor, this period generally overlaps with a phase of intensive human activity known as the Beyşehir Occupation (BO) Phase, characterized by the presence of cultivated plants and other human-induced changes in vegetation revealed in pollen records from sites across Turkey (for more on the BO Phase, see Chapter 3). How these various factors – climate, vegetation, and human activity – are related is a subject of on-going debate, especially since their relationships may differ from site to site, region to region. For records in which the end of the BO Phase predates the end of the climatic optimum, the end of intensive agriculture as indicated by the BO

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<sup>175</sup> McCormick et al., 2012, “Climate change during and after the Roman empire,” 184-202.

<sup>176</sup> S. W. Manning, 2013, “The Roman world and climate: Context, relevance of climate change, and some issues,” in W. V. Harris (ed.), *The Ancient Mediterranean Environment between Science and History* (Leiden) 103-70.

<sup>177</sup> E.g., for the Levant, Y. Hirschfeld, 2004, “A climatic change in the early Byzantine period? Some archaeological evidence,” *Palestine Exploration Quarterly* 136: 133-49, who connects moister conditions of the fourth to sixth century to greater productivity in marginal zones. For a synthesis on the possible connection between climate amelioration and agricultural expansion in Asia Minor, see A. Izdebski, 2011, “Why did agriculture flourish in the late antique East? The role of climate fluctuations in the development and contraction of agriculture in Asia Minor and the Middle East from the 4th till the 7th c. AD,” *Millennium. Jahrbuch zu Kultur und Geschichte des ersten Jahrtausends n. Chr.* 8: 291-312; idem, 2013, *A Rural Economy in Transition. Asia Minor from Late Antiquity into the Early Middle Ages*, *Journal of Juristic Papyrology Supplement* 18 (Warsaw) 132-43.

Phase is usually blamed on human events or decision-making, rather than on climate deterioration.<sup>178</sup>

The fact that a period of climate deterioration in the eastern Mediterranean (the Early Medieval Cold Period) overlaps in general not only with the end of the BO Phase of intensive agricultural land use, but also with the sixth-century plague and natural catastrophes (earthquakes, the solar veiling event), as well as seventh-century urban decline, provides a correlation ripe for conjecture about causation. But the timing and nature of this climate deterioration is difficult to pin down. In most records from Turkey, it appears as a trend toward cooler, drier conditions as indicated by a range of proxy data, such as stable isotopes, pollen, charcoal, and diatoms. Indications of increasing dryness appear at Bereket basin around 650 CE and at Gravgaz marsh during the eighth century, both in the territory of Sagalassos; at nearby lake Gölhisar during the eighth century; and at lake Nar in Cappadocia from 800-950 CE.<sup>179</sup> Similar trends toward aridification during this general period have also been identified in palaeoclimate records from other regions in the eastern Mediterranean, including the Dead Sea, the Ashdod coast, and Soreq cave in Israel.<sup>180</sup>

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<sup>178</sup> E.g., at Bereket basin near Sagalassos (J. Bakker et al., 2013, “Climate, people, fire and vegetation: New insights into vegetation dynamics in the eastern Mediterranean since the 1st century AD,” *Climate of the Past* 9: 57-87, at 76; see Chapter 7) and at Nar lake in Cappadocia (A. England, W. J. Eastwood, C. N. Roberts, R. Turner, and J. F. Haldon, 2008, “Historical landscape change in Cappadocia (central Turkey): A palaeoecological investigation of annually laminated sediments from Nar lake,” *The Holocene* 18.8: 1229-45; see Chapter 8).

<sup>179</sup> Bereket and Gravgaz: Bakker et al. 2013, “Climate, people, fire and vegetation.” Lake Gölhisar: W. J. Eastwood, M. L. Leng, N. Roberts, and B. Davis, 2007, “Holocene climate change in the eastern Mediterranean region: A comparison of stable isotope and pollen data from Lake Gölhisar, southwest Turkey,” *Journal of Quaternary Science* 22.4: 327-41. Lake Nar: J. Woodbridge and N. Roberts, 2011, “Late Holocene climate of the Eastern Mediterranean inferred from diatom analysis of annually-laminated lake sediments,” *Quaternary Science Reviews* 30.23–24: 3381-92, at 3387 fig. 6, 3388; England et al., 2008, “Historical landscape change in Cappadocia,” 1239 fig. 5. See also W. J. Eastwood, O. Gümüşçü, H. Yiğitbaşıoğlu, J. F. Haldon, and A. England, 2009, “Integrating palaeoecological and archaeo-historical records: Land use and landscape change in Cappadocia (central Turkey) since late antiquity,” in T. Vorderstrasse and J. J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia* (Leiden) 45-70.

<sup>180</sup> Dead Sea: Y. Enzel et al., 2003, “Late Holocene climates of the Near East deduced from Dead Sea level variations and modern regional winter rainfall,” *Quaternary Research* 60: 263-73. Ashdod coast: B. Schillman, A. Ayalon, M. Bar-Matthews, E. J. Kagan, and A. Almogi-Labin, 2002, “Sea-land paleoclimate correlation in the eastern Mediterranean region during the Late Holocene,” *Israel Journal of Earth Sciences* 51: 181-90. Soreq Cave:

Another barricade on the road to consensus is the suggestion based on written sources that the climate deterioration trend of the post-Roman period was characterized not by colder and drier conditions, but by colder and wetter conditions. Researchers participating in a project at the University of Ioannina pored over historical works, church histories, chronicles, geographical surveys, and Saints' Lives to cull out "approximately 600 concrete pieces of meteorological and parameteorological evidence and about 700 further accounts referring to this evidence" from 300 to 1500 CE for the reconstruction of climatic and other natural phenomena.<sup>181</sup> Synthesizing this enormous quantity of data in his dissertation, I. Telelis concluded that the warm period of the fourth to seventh century was followed by colder and moister conditions.<sup>182</sup> But Telelis and others working on these data address the problems inherent in using written evidence to reconstruct past climate.<sup>183</sup> For instance, political historians such as Procopius, Cassiodorus, Ammianus Marcellinus, and Zosimus seem more interested in proving the superiority of their benefactors than in describing climatic events, while chronographers such as John Malalas and Marcellinus Comes are likely to include observations of natural phenomena as evidence of God's will. The comments of church historians such as Eusebius, John of Ephesus, and Euagrius were also useful, and Saints' Lives contained sporadically helpful information. Judging the accuracy and trustworthiness of all of these sources, however, is not an easy task. Ancient historians may use stereotype expressions to describe climatic conditions, and chronographers often couch

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M. Bar-Matthews, A. Ayalon, A. Kaufman, and G. J. Wasserburg, 1999, "The eastern Mediterranean palaeoclimate as a reflection of regional events: Soreq Cave, Israel," *Earth and Planetary Science Letters* 166: 85-95.

<sup>181</sup> I. G. Telelis and E. Chrysos, 1992, "The Byzantine sources as documentary evidence for the reconstruction of historical climate," *Palaeoclimate Research* 7: 17-31, quote at 19.

<sup>182</sup> I. G. Telelis, 1995, *Meteorologika phainomena kai klima sto Byzantio. Proseggise on pleroforion apo tes peges kai empeirikes endeixeis gia tes diakymanseis tou klimatos tes Anatolikes Mesogeiou kai Meses Anatoles 300-1500 m.Chr. [Meteorological Phenomena and Climate in Byzantium: Approach of Documentary Information and Empirical Indications Concerning Climatic Fluctuations in the Eastern Mediterranean and the Middle East (A.D. 300-1500)]* (Ph.D. dissertation, University of Ioannina). (In Greek with English summary.)

<sup>183</sup> The following critique of the applicability of the written sources is from Telelis and Chrysos, 1992, "The Byzantine sources."

natural phenomena as expressions of God's displeasure with mankind.<sup>184</sup> The gap between past events and historical descriptions of them, just like the gap between past activities and the archaeological features left behind, must be minded with care.

While historical accounts may present clear evidence for specific events such as the dust veil of 536/7 or the severe winters of 763/4 and 927/8,<sup>185</sup> long-term climatic trends are more difficult to track in textual sources. Without the kind of detailed record-keeping and knowledge of past climatic conditions available from current scientific methods of documentation and research, late antique and Byzantine chronographers and authors were less likely to make accurate assessments of the climate and environment around them, especially in relation to past conditions. Still, even modern scholars engaged in scientific palaeoclimatic research acknowledge the “weakness of the present story” concerning climate and the ancient Roman world.<sup>186</sup> However, the majority of modern scientific studies suggest that the Early Medieval Cold Period was characterized by colder, drier conditions that become highly visible in palaeoclimate records for Asia Minor in the seventh and eighth centuries.

### ***Human-induced landscape degradation***

This trend of climate deterioration has been linked to another, roughly concurrent pattern indicated primarily by pollen data: the regression of cultivated land and the expansion of forests. There is always the danger of a circular argument here, for in some cases, the same pollen data are used as evidence for the regression of cultivated land *and* for a deteriorating climate. But when cooling, drying trends can be proven with independent data such as lake levels or isotopes,

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<sup>184</sup> Telelis and Chrysos, 1992, “The Byzantine sources,” 21.

<sup>185</sup> Telelis and Chrysos, 1992, “The Byzantine sources”; D. Stathakopoulos, 2003, “Reconstructing the climate of the Byzantine world: State of the problem and case studies,” in J. Laszlovsy and P. Szabó (eds.), *People and Nature in Historical Perspective* (Budapest) 247-61.

<sup>186</sup> Manning, 2013, “The Roman world and climate,” 170.

as in most of the studies above, then the pollen record can indeed be taken as separate evidence and interpreted independently. For Asia Minor, we are again concerned with the end of the BO Phase of intensive agriculture identified in pollen records between the seventh and ninth centuries. Generally speaking, in pollen records from across Asia Minor, the end of the BO Phase of intensive agriculture is signaled by the following trends: a decrease or absence of cultivated crops, especially trees (e.g., olive, walnut, chestnut, manna ash) but also cereals; a decrease in deciduous and evergreen oaks, and a dominance of pine. These trends are interpreted as indicating a partial abandonment of intensive agriculture and an increase in (semi-)pastoral animal herding. (A full treatment of the BO Phase with references appears in Chapter 3; see also the section on Sagalassos in Chapter 7.)

Most studies explain these changes in vegetation as the result of some combination of climate deterioration and human activity. However, for cases in which these vegetation changes correspond closely in time to either climate deterioration or human activity, but not both, that single factor is presented as the primary driver of such changes.<sup>187</sup> Assigning such broad vegetation changes to a single agent, however, rarely seems satisfactory. The reasons behind the end of intensive agriculture in Asia Minor are likely many and complicated: climate deterioration, war and invasion, migration, plague, and earthquakes may all have encouraged the abandonment of intensive farming in certain places and at certain times. J. Koder has emphasized the compounding effect of these multiple factors, which he believes together caused dramatic and long-lasting population decline, itself a “prerequisite” for the abandonment of cultivated land and the expansion of forests and woodland indicated by the pollen records of

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<sup>187</sup> E.g., climate: Bakker et al. 2013, “Climate, people, fire and vegetation” (Sagalassos); human activity: England et al., 2008, “Historical landscape change in Cappadocia” (lake Nar).

Asia Minor and the wider Aegean.<sup>188</sup> B. Geyer takes this tangled, multiple-factor scenario one step further. He makes two important statements regarding the intrinsically fragile structure of natural Mediterranean environments.<sup>189</sup> First, marginal lands are the last to be exploited and the first to be abandoned (when demand for agricultural production decreases). Second, exploitation and abandonment of marginal lands, rather than non-marginal lands, is more likely to cause erosion and land degradation. Geyer weaves these observations into the complex picture of stress in the sixth and seventh centuries: in his view, by the time the plague hit Asia Minor in 542, the landscape had already been made fragile by the preceding centuries of population growth, the expansion of cultivation into marginal lands, and the colder and possibly more arid climate at the end of the climatic optimum. The recurring plague, waves of war and invasions, and harsher climate resulted in population decline, migrations, and the abandonment of previously cultivated lands, especially marginal ones. Subjected to centuries of unsustainable land use practices and no longer maintained, the landscape succumbed to massive erosion, which degraded it in vast swaths.<sup>190</sup> However, Geyer's image of eroded wastelands at the end of antiquity, fundamentally derived from his interpretation of the pollen evidence, is a generalization too broad to be applied everywhere across the eastern Mediterranean. In fact, the pollen evidence is far from unambiguous and is difficult to interpret, and pollen records from different sites tell varying tales of locally specific landscape history.

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<sup>188</sup> Koder, 1996, "Climate change in the fifth and sixth centuries?"; idem, 1994, "Historical aspects of a recession of cultivated land at the end of the late antiquity in the east Mediterranean," in B. Frenzel (ed.), *Evaluation of Land Surfaces Cleared from Forests in the Mediterranean Region during the Time of the Roman Empire*, European Palaeoclimate and Man 5 (Mainz) 157-67. More specifically, the factors Koder identifies are: (1) mass migrations from the north and east due to cooling of climate beginning in early fifth century; (2) plague, in 541 and recurring, in addition to other natural disasters such as earthquakes; (3) Slavic occupation on Balkan peninsula beginning in the 580s; (4) wars with the Sasanians between 527 and 628, concurrent with plague episodes; and (5) the spread of Islam along the eastern Mediterranean coast, followed by naval attacks beginning in the 640s (164-65).

<sup>189</sup> B. Geyer, 2002, "Physical factors in the evolution of the landscape and land use," in A. Laiou (ed.), *The Economic History of Byzantium: From the Seventh through the Fifteenth Century*, vol. 1, Dumbarton Oaks Studies 39 (Washington, DC) 31-45, at 39-41.

<sup>190</sup> Geyer, 2002, "Physical factors," 40-42.

Severe erosion and rapid sedimentation sequences have been observed in many sediment profiles obtained in valleys across the eastern Mediterranean and are often interpreted as the result of unsustainable land use practices during the Roman period – essentially, deforestation and the mismanagement of arable land, especially in marginal areas. Usually, however, it is not clear whether these erosion episodes were caused by unsustainable land use practices, by changes in climate (such as severe and frequent precipitation events), or by both. Erosion has been recognized as a major characteristic in the geomorphological history of the Mediterranean since the pioneering work of C. Vita-Finzi in the 1960s and 70s.<sup>191</sup> Since that time, Vita-Finzi's initial proposal that the two major phases of sediment deposition (producing the Older and Younger Fills) recorded all over the Mediterranean were caused by climate has been challenged by studies showing the important, and sometimes primary, role of human activity in precipitating erosion events.<sup>192</sup> However, the most recent consensus is that neither climate nor human activity alone drives landscape change, but rather “local interactions between environmental context, climate fluctuations and human impact” – complex, multi-factor interactions that also change over time.<sup>193</sup> Even when human activity can be identified as a cause of erosion, it often remains unclear whether the problem was too much activity (intensive cultivation, deforestation, etc.) or too little activity (abandonment of land, neglect of terraces and other infrastructure, etc.).<sup>194</sup>

The type of human-related activity that has been blamed most frequently and for the longest time for causing erosion, widespread landscape degradation, and, in some cases, ensuing

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<sup>191</sup> C. Vita-Finzi, 1969, *The Mediterranean Valleys: Geological Changes in Historical Times* (London).

<sup>192</sup> E.g., T. H. van Andel, C. N. Runnels, and K. O. Pope, 1986, “Five thousand years of land use and abuse in the southern Argolid, Greece,” *Hesperia* 55: 103-28; J. Wiseman, 2007, “Environmental deterioration and human agency in ancient Macedonia: A case study,” *Geoarchaeology* 22.1: 85-110.

<sup>193</sup> J. Bintliff, 2002, “Time, process and catastrophism in the study of Mediterranean alluvial history: A review,” *World Archaeology* 33.3: 417-435.

<sup>194</sup> See, e.g., the criticism by A. T. Grove and O. Rackham of projects that “try to have it both ways,” by suggesting that erosion events can be the result of both too much and too little human activity: 2001, *The Nature of Mediterranean Europe: An Ecological History* (New Haven, CT) 307.

population and social collapse, is deforestation. Deforestation – the result of land clearance (due to the expansion of agriculture and/or animal grazing) and of the harvesting of trees for timber and wood fuel – has played a particularly prominent role in jeremiads, both ancient and modern, on the destruction of the ancient Mediterranean landscape as a garden of Eden, lost forever by human impudence and shortsightedness.<sup>195</sup> It is usually considered a result of population growth followed by social collapse and the arrival of pastoralists.<sup>196</sup> According to this view, population growth during antiquity demanded more arable land for food production, pastureland for animal grazing, and wood for construction and fuel, and encouraged the adoption of intensive land use practices sustainable only through constant management. Through this process, the naturally fragile Mediterranean landscape was irrevocably changed by the destruction of forests and the creation of a mosaic of managed agropastoral environments. With the weakening of the Roman state, the careful management systems required to stabilize these delicately balanced landscapes collapsed, a situation made worse by declining population levels. The arrival of pastoral communities into previously managed landscapes is seen as the final disaster, as unchecked grazing effectively prohibited forest regeneration.

This view has been criticized for its dependence on textual material (often anecdotal and inappropriately interpreted as evidence of ancient land use practices generally) and its limited understanding of Mediterranean ecology and the cyclical nature of vegetational regeneration.<sup>197</sup> The so-called modernist argument holds that ancient communities existed in “*relatively* stable

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<sup>195</sup> See, e.g., the “theory of the Ruined Landscape or Lost Eden” in Grove and Rackham on 2001, *The Nature of Mediterranean Europe*, 8-17.

<sup>196</sup> For this view, and the details that follow, see especially the work of J. V. Thirgood and J. D. Hughes: J. V. Thirgood, 1981, *Man and the Mediterranean Forest: A History of Resource Depletion* (London); idem, 1987, *Cyprus: A Chronicle of its Forests, Land, and People* (Vancouver); J. D. Hughes, 1975, *Ecology in Ancient Civilizations* (Albuquerque); J. D. Hughes and J. V. Thirgood, 1982, “Deforestation in ancient Greece and Rome: A cause of collapse,” *Ecologist* 12.5: 196-208.

<sup>197</sup> E.g., O. Rackham, 1996, “Ecology and pseudo-ecology: The example of ancient Greece,” in G. Shipley and J. B. Salmon (eds.), *Human Landscapes in Classical Antiquity: Environment and Culture* (London) 16-43.

symbiosis” with the environment, withstanding the changes and even crises that had always represented a recurrent feature of Mediterranean environments; decisive, widespread environmental instability and damage, including deforestation, did not occur until the nineteenth or twentieth century.<sup>198</sup> One strain of this perspective sees Mediterranean forests and savannas as “umpteenth-growth,” the current result of countless cycles of “depletion and regrowth,” rather than the result of a linear process of patchwork deforestation or reforestation.<sup>199</sup> The modernist argument is supported by studies in modern Mediterranean ecology, pollen data, and historical evidence for medieval timber use suggesting either that forests had never been depleted in antiquity, or if they had, they had regenerated by the early medieval period.<sup>200</sup>

For Asia Minor in later antiquity, the pollen data and geomorphological evidence related to deforestation seem contradictory. The former suggests a regression of cultivated land and an expansion of pine forests: a change in the composition of woodlands, perhaps, but not their widespread destruction. In contrast, the latter often suggests erosion, which should correspond to deforestation. Does this evidence mean that intensive Roman-period land use practices caused erosion episodes, which were eventually followed by land stabilization and forest regeneration? The problem with these forms of evidence is that they cannot be timed precisely and therefore in most cases cannot be linked causally to human activity versus natural events. Their chronological relationship to each other is also usually not clear. Furthermore, the pollen data can be interpreted in contradictory ways: do the high percentage values of pine over other plant taxa mean that the coring site was surrounded by dense pine forests, or simply that the weak pollen signal of these other plant taxa, reduced by a decline in agriculture or some other factor,

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<sup>198</sup> Horden and Purcell, 2000, *The Corrupting Sea*, 337-38, 339 (quote, emphasis theirs). An early proponent of the modernist perspective is R. Meiggs, 1982, *Trees and Timber in the Ancient Mediterranean World* (Oxford).

<sup>199</sup> Grove and Rackham, 2001, *The Nature of Mediterranean Europe*, 188.

<sup>200</sup> Timber use in the medieval period: Ü. Akkemik et al., 2012, “The archaeology of deforestation in south coastal Turkey,” *International Journal of Sustainable Development & World Ecology* 19.5: 395-405, at 397-98.

became overwhelmed by the abundant and well-dispersed pollen of a single stand of pine trees located many kilometers away? These interpretive problems loom large in the individual case studies that make up Chapters 4 to 8.

#### **D. SUMMARY**

The dissertation focuses on the changes that mark the end of antiquity between 300 and 900 CE in southern Asia Minor and northwest Syria as revealed through regional survey and environmental archaeology. The long and convoluted history of research has been presented to show the richness and contentiousness of this topic, and how it will always be timely and relevant to contemporary events and ways of thinking. This enduring historical problem will also continue to benefit from fresh approaches and new methods of inquiry. The unsettled state of the question demonstrates how necessary it is to apply new tools to unlock this old problem. The tools chosen in this dissertation are the relatively new methods of regional survey and environmental archaeology and science. Now is the time to apply them because we have reached a critical mass of data that must be synthesized and analyzed as one body of evidence concerning the archaeology of the countryside. Justification for this approach and its implications are presented in the next chapter.

## CHAPTER 3

### METHODOLOGICAL APPROACHES AND MODELS

In this chapter I discuss the methodological approaches and models applied in the dissertation. I begin by describing how the problem of the timing, nature, and cause of the end of antiquity in the eastern Mediterranean has traditionally been investigated by looking at evidence from cities, or from some urban context of creation: namely, monumental urban architecture, coins, inscriptions, and texts. Though this approach has been enormously productive, I argue that it offers a limited perspective and thereby presents a potentially skewed picture of life in late antiquity. Instead, it should be supplemented with a new approach, one that takes into account the vast realm of lived-in space beyond city limits: that is, the countryside, as investigated through regional survey and environmental archaeology and science. I then present my framework of investigation, or methodology, and explain why we should look for broad patterns as indices of change, rather than focus on single key indicators, such as the city. Next I discuss regional survey and environmental archaeology and science as the main methods for investigating the ancient countryside used in this dissertation. Finally, I introduce the interconnected economic models that structure how I interpret much of the evidence presented in the next five chapters, and present a series of hypotheses concerning how these interpretive frameworks can help us understand the end of antiquity in the eastern Mediterranean.

## **A. APPROACH: WHERE TO LOOK FOR EVIDENCE**

As noted in the last chapter, one of the most important patterns of change that scholars have used to define and characterize the end of antiquity concerns the fate of the ancient city. Over the course of the twentieth century, the focus has been on identifying changes in the physical fabric of cities and in civic institutions and behaviors, as revealed by text, archaeology, and objects in museum collections, especially coins. This approach has been enormously fruitful and remains prominent today. However, I think we need to expand our perspective. We have a better chance of understanding the end of antiquity if we cast a wider net and look for broader changes: changes in population levels, settlement patterns, economic networks and strategies, material standards of living, climatic conditions, landscape stability/change, and human exploitation of the environment. To reconstruct these patterns of change, we cannot look at cities alone. We must look at both city and countryside, artifact and ecofact. The reasons why are outlined here, along with selected methodological considerations.

### **A.i. Previous approach: Focus on the city**

To J. B. Bury, the most essential feature of the nature and functioning of the Roman empire was its composition as an “aggregate of cities” allowed to retain much of their original independence, self-governance, and exclusive self-definition.<sup>1</sup> So frequently has the Roman empire been described as an “aggregate” or “commonwealth of cities” that it has become a kind of bland

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<sup>1</sup> J. B. Bury, 1889, *A History of the Later Roman Empire, from Arcadius to Irene (395 A.D. to 800 A.D.)* (London) vol. 1, book 1, ch. IV, 37-38.

truism,<sup>2</sup> but the origin of this conceptualization lies in the very real expressions of those who enjoyed these urban landscapes firsthand. In the literary tradition of descriptions and praises of cities (*enkomion*, *enkomiastike ekphrasis*) that record these efforts, the cities of the Roman empire adorn it like jewels encrusting a royal crown.<sup>3</sup> For Aelius Aristides, writing in the second century CE, Rome deserves praise not only because of the sheer number of cities within her realm, but also because each one boasts cultural achievements and physical embellishments.<sup>4</sup>

Modern scholars have traditionally used the city as the key instrument with which to investigate the timing, nature, and cause of the end of antiquity in the eastern Mediterranean for three main reasons. First, as just noted, vibrant urban life really was a hallmark of Graeco-Roman antiquity, recognized by ancient authors and modern scholars alike. Accordingly, the city has served as a proxy for complex society in antiquity: its survival therefore signifies the continuity – and its disappearance, the end – of Graeco-Roman antiquity in general. Second, whereas in the west the removal of the last Roman emperor, Romulus Augustulus, in 476 marked a clear moment of political rupture (even if it was an event of little consequence in peoples' day-to-day lives<sup>5</sup>), no such political break occurred in the east. Instead, scholars have searched for other markers of change and naturally settled on the city because of the third reason for its predominance in scholarship: the vast majority of evidence (textual, epigraphic, and archaeological) for late antiquity and the early Byzantine period has come from cities, or, if not from a city directly, from some urban context of creation or discovery. Before the mid-twentieth

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<sup>2</sup> M. I. Rostovtzeff 1957 (reprint of 1926 original), *The Social and Economic History of the Roman Empire*, vol. 1 (Oxford) 127-29; G. Ostrogorsky, 1959, "Byzantine cities in the early Middle Ages," *Dumbarton Oaks Papers* 13: 47-66, at 48, following A. P. Rudakov, 1917, *Očerki vizantijskoj kul'tury po dannym grečeskoj agiografii* (Moscow); C. A. Mango, 1980, *Byzantium: The Empire of New Rome* (London), 73.

<sup>3</sup> For more on the literary tradition of the urban encomia from the second to sixth century, see H. Saradi, 2006, *The Byzantine City in the Sixth Century: Literary Images and Historical Reality* (Athens), 49-68.

<sup>4</sup> *Oratio XXVI.92-94 (To Rome)*.

<sup>5</sup> See Chapter 2, discussion of A. Momigliano, 1980, "La caduta senza rumore di un impero nel 476 d.C.," in idem, *Sesto contributo alla storia degli studi classici e del mondo antico* (Rome) 159-79; orig. pub. in 1973, *Annali della Scuola Normale Superiore di Pisa*, Serie III, vol. III, fasc. 2, 397-418.

century, this was true because scholars depended primarily on texts; after the 1950s, because virtually all of the increasingly abundant archaeological material came from excavations of towns and cities, and mostly concerned monumental architecture, or from inscriptions found reused in post-antique buildings and cemeteries.

### ***The city as key indicator of the end of Graeco-Roman antiquity***

Until the mid-twentieth century, scholarly tradition had assumed *a priori* that the economic and social fabric of eastern Mediterranean cities in the sixth and seventh centuries and beyond, although altered by political and religious changes, remained a tattered but essentially unrent garment stretched out seamlessly from the preceding urbanized Graeco-Roman world.<sup>6</sup> That is, the classical city, though draped in Byzantine dress, survived intact into the middle ages.

This assumption of urban longevity was seriously questioned only in the 1950s, when Byzantinist A. Kazhdan postulated a decline and ruralization of eastern cities in the seventh century dramatic enough to signal the end of Graeco-Roman urban life in Asia Minor and Greece.<sup>7</sup> Important to note, Kazhdan relied primarily on numismatic and archaeological – rather than textual – evidence, namely a decline in series of coins of the seventh and eighth centuries in museum collections and a lack of concurrent archaeological material at excavated cities. What

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<sup>6</sup> The most frequently cited scholars who advanced or encapsulated the tradition of the uninterrupted city in the early-mid-twentieth century are A. P. Rudakov and M. J. Sjuzumov. Though I have not been able to read these important publications, I recognize their immense value and cite them here: A. P. Rudakov, 1917, *Očerki vizantijskoj kul'tury po dannym grečeskoj agiografii* (Moscow); M. J. Sjuzumov, 1948, "Problemy ikonoborčeskogo dviženija v Vizantii," *Učenyje zapiski Sverdlovskogo Gosudavstvennogo Pedagogičeskogo Instituta* 4: 58 ff.; idem, 1956, "Rol' gorodov-emporiev v istorii Vizantii," *Vizantijskij vremennik* 8: 26-41. See also E. E. Lipšič, 1953, "K voprosu o gorode v Vizantii VIII-IX vv.," *Vizantijskij vremennik* 6: 113-31. These references are from Ostrogorsky, 1959, "Byzantine cities in the early Middle Ages," 48 nn. 2-3.

<sup>7</sup> For a summary of Kazhdan's thesis, see A. Kazhdan and A. Cutler, 1982, "Continuity and discontinuity in Byzantine history," *Byzantion* 52: 429-78, at 437-41; J. Russell, 1986, "Transformations in early Byzantine urban life: The contributions and limitations of archaeological evidence," *The 17<sup>th</sup> International Byzantine Congress, Major Papers* (New Rochelle) 137-54. Kazhdan's thesis was originally published in A. P. Kazhdan, 1954, "Vizantijskie goroda v VII-XI vv.," *Sovetskaja archeologija* 21: 164-88.

did this dramatic rupture look like, according to Kazhdan's theory? In an article published several decades later, Kazhdan and A. Cutler described the "caesura" as follows:

By the seventh century the city had collapsed taking with it ancient social gradations, traditional forms of dependence, the active circulation of money, clan links, "open" everyday life, schooling and the theater. A new society was born based primarily on the countryside, a society in which simpler social groupings functioned, namely a broad stratum of free laborers opposed to the social elite concentrated about the capital and throne. By that time Constantinople had acquired a bloated monopoly in the economy and in political life as in culture.<sup>8</sup>

Kazhdan's caesura theory sparked one of the main debates in the history of scholarship on the development of post-classical urbanism in the Byzantine world: was the development of Byzantine society before and after the seventh century *continuous*, as traditionalists would have it, or *discontinuous*, that is, marked by some kind of break, as Kazhdan proposed?<sup>9</sup> Part of the problem in reaching consensus was the ambiguity of the evidence, particularly the numismatic material and the terminology used in texts, which meant that contradictory interpretations could be argued with seemingly equal validity. For example, in contesting Kazhdan's caesura theory, G. Ostrogorsky looked at the same numismatic evidence, but emphasized the continuous issue of gold coins, in contrast to the decline in bronze issues, to argue for the continued existence of a monetary economy and the survival of towns (though in altered form, as the municipal organization of the Graeco-Roman *polis* declined and finally was eliminated by the introduction

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<sup>8</sup> Kazhdan and Cutler, 1982, "Continuity and discontinuity," 477.

<sup>9</sup> Important early responses in favor of urban rupture include papers by E. Kirsten and D. Zakythinos presented at the 21<sup>st</sup> International Byzantine Congress in Munich, published in 1958, *Berichte zum XI. internationalen Byzantinisten-Kongress* (Munich): E. Kirsten, "Die byzantinische Stadt," 1-48; D. Zakythinos, "Korreferat zu E. Kirsten: Die byzantinische Stadt," 48-54; idem, "La ville byzantine," 75-90; see also idem, 1966, "La grande brèche dans la tradition historique de l'Hellénisme du septième au neuvième siècle," *Χαριστή εἰς Ἀναστάσιον Κ. Ὀρλάνδου*, vol. 3 (Athens) 300-27. For arguments the caesura, see, e.g., S. Vryonis, 1971, *The Decline of Medieval Hellenism in Asia Minor and the Process of Islamization from the Eleventh through the Fifteenth Century* (Berkeley) 6-24; G. Weiss, 1977, "Antike und Byzanz. Die Kontinuität der Gesellschaftsstruktur," *Historische Zeitschrift* 224: 529-60

of the theme system [see **fig. 1.4**]).<sup>10</sup> Ostrogorsky supported this conclusion with textual evidence in the form of lists of bishoprics, whose continued presence he equated with the existence of corresponding cities. However, the fallacy of this argument has since been pointed out several times over: a bishop does not a city make.<sup>11</sup>

Thus by using the evidence available to them (texts, inscriptions, coins, and excavated urban material), virtually all of which came from urban contexts, scholars of the mid- and later-twentieth century such as Kazhdan proposed innovative and stimulating theories concerning the relationship between the end of the city and the end of antiquity in general. Once scholars began to pay attention to archaeological material, the use of the city as a primary tool for probing the problem of the end of antiquity exploded. For Asia Minor, an important catalyst for this interest was C. Foss's synthetic analysis in the 1970s of archaeological material from a collection of cities in western Asia Minor. Foss compiled the evidence of coin hoards, mints, and the destruction dates of a number of cities to chart a Persian path of damage through Asia Minor not recorded in written sources.<sup>12</sup> He saw a clear shift in the seventh century from a network of flourishing cities to a countryside studded with fortified refuges and villages: a final dissolution of the glorious urban habit of classical antiquity. Foss concluded that twenty years of Persian invasions in the early seventh century caused destruction so severe that cities were either destroyed or, unable to rebound, contracted from open classical *poleis* to small fortified towns. Mortality and economic stress were integral to this theory. He drew particular attention to the

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<sup>10</sup> Ostrogorsky, 1959, "Byzantine cities in the early Middle Ages," (decline at 65).

<sup>11</sup> E. Frančes, 1966, "La ville byzantine et la monnaie aux VII<sup>e</sup>-VIII<sup>e</sup> siècles," *Byzantinobulgarica* 2: 3-14, at 4; J. F. Haldon, 1990, *Byzantium in the Seventh Century: The Transformation of a Culture* (Cambridge) 121-23; W. Brandes, 1999, "Byzantine cities in the seventh and eighth centuries – Different sources, different histories?" in G. P. Brogiolo and B. Ward-Perkins (eds.), *The Idea and Ideal of the Town between Late Antiquity and the Early Middle Ages* (Leiden) 25-57, at 41-44.

<sup>12</sup> C. Foss, 1975, "The Persians in Asia Minor and the end of antiquity," *The English Historical Review* 90: 721-47, quote at 721; see also idem, 1977, "Archaeology and the 'twenty cities' of Byzantine Asia," *American Journal of Archaeology* 81: 469-86.

archaeological evidence for destruction, shrinkage, or other drastic changes at Sardis, Ephesos, Pergamon, Miletus, Priene, Magnesia on the Meander, and Hierapolis (as well as other sites), and later drew similar conclusions for sites along the Lycian and Pamphylian coasts, though these he considered in their larger regional contexts.<sup>13</sup>

The criticisms raised against Foss's conclusions highlight some of the problems with the archaeological evidence and the contradictory ways such evidence has been interpreted – from the 1950s to today. When Foss was synthesizing his data in the 1970s, many of the sites he included had been the focus of decades-long excavation, carried out primarily by European teams.<sup>14</sup> Most of these projects were aimed at uncovering the sculpture, inscriptions, and monumental architecture of classical antiquity at the expense of late antique and Byzantine material, which was removed rapidly and without documentation. Emphasis on clearing discrete buildings and streetscapes, disinterest or an inability to detect more ephemeral remains (e.g., wooden structures), and neglect of stratigraphy meant that, at the time, these projects yielded results unfavorable to the recovery and analysis of later-period occupation.

The ballooning body of archaeological material from urban excavations in the 1980s, and its increasing prevalence in the debate over the fate of the city and antiquity in general, raised awareness of its contradictory interpretations. Many scholars looked at the archaeological evidence and saw general continuity rather than a clean break in urbanization. J. Russell, for instance, argued that the drop in number of coins issued after 658 found in excavations should not be interpreted as evidence of economic breakdown and urban abandonment, as Kazhdan and

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<sup>13</sup> C. Foss, 1994, "The Lycian coast in the Byzantine age," *Dumbarton Oaks Papers* 48: 1-52; idem, 1996, "The Cities of Pamphylia in the Byzantine Age," in idem, *Cities, Fortresses and Villages of Byzantine Asia Minor* (Aldershot) 1-62.

<sup>14</sup> Miletos, Didyma, Pergamon (German teams since the 1890s); Ephesos (Austrians since 1895); Sardis (Americans since 1910, with a break between 1914-1959); Xanthos (French since 1950); Hierapolis (Italians since 1957); Side (Turks since 1946); Aphrodisias (Americans directed by Kenan Erim since 1961); Magnesia, Priene, Nysa (Germans around the turn of the century).

Foss had done, but rather as the result of an intentional act of imperial policy, such as that proposed by M. Hendy.<sup>15</sup> Russell also pointed out more general interpretive problems, including the conflation of strata from several areas within a city and the desire to relate certain strata, especially destruction levels, to documented historical events.<sup>16</sup> F. Trombley also criticized Kazhdan's and Foss's use of the archaeological evidence to suggest a widespread break in urbanization, noting textual and archaeological material that suggests continuity in urban occupation and a much less destructive impact of Persian and Arab invasion.<sup>17</sup>

Criticism of the break theory came in large part from those excavating specific urban sites that, by chance or as a result of the excavators' interest in documenting late antique and early Byzantine levels, revealed evidence of continuous occupation throughout the seventh century and beyond. So Russell at Anemurium, Trombley at Euchaita, and C. Lightfoot at Amorium all used evidence obtained at their respective sites to demonstrate how these instances of continuous occupation undermined the existing theory of a clean urban abandonment and required that all *a priori* assumptions of discontinuity be revisited in light of their new findings.<sup>18</sup> In a more general criticism, W. Treadgold noted how it was "striking that those who reject the continuity of the Byzantine civilization happen to be arguing that Byzantium changed drastically at just the beginning and end of the period we know least about."<sup>19</sup> This tendency to interpret an

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<sup>15</sup> Russell, 1986, "Transformations in early Byzantine urban life," 141-42, noting M. Hendy's theory of economic reform outlined in M. F. Hendy, 1985, *Studies in the Byzantine Monetary Economy, c. 300-1450* (Cambridge) 619-62.

<sup>16</sup> Russell, 1986, "Transformation in early Byzantine urban life," 140: a case in point being the attribution of the destruction of the Byzantine shops at Sardis and concurrent break in the city's coin series at 616 to a Persian capture of that year, even though no written evidence for such a capture exists.

<sup>17</sup> F. Trombley, 1985, "The decline of the seventh-century town: The exception of Euchaita," in S. Vryonis, Jr. (ed.), *Byzantine Studies in Honor of Milton V. Anastos* (Malibu) 65-90, at 75-81.

<sup>18</sup> See preceding footnotes for Russell and Trombley. For Lightfoot on Amorium, a recent discussion placing the town in broader context is C. Lightfoot, 2012, "Business as usual? Archaeological evidence for Byzantine commercial enterprise at Amorium in the seventh to eleventh centuries," in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 177-91.

<sup>19</sup> W. Treadgold, 1990, "The break in Byzantium and the gap in Byzantine studies," *Byzantinische Forschungen* 15: 289-316, at 294.

absence of evidence as evidence of absence, he continued, is compounded by problems with scholars' disjointed perspective in judging the evidence. That is, Byzantinists define urban transformation as decline because they compare Byzantine towns to their Roman predecessors and assume that reduced size meant overall decline. Treadgold highlights what he considers to be the error of this perspective by pointing out that Byzantine cities shrank to the size of classical Greek towns, and the number of public administrative officers to that of early Roman empire – but only the Byzantine town is deemed a failure, because “different standards are being applied before and after the seventh century.”<sup>20</sup>

Although much greater attention is now being paid to post-classical levels, the archaeological evidence remains fragmentary across all scales, from within individual towns to the entire empire. Late antique and early Byzantine strata may be lost or distorted by post-depositional processes such as erosion to a degree greater than earlier, deeper layers. Modern towns often thrive on the same sites as their ancient predecessors, making comprehensive excavation impossible. Difficulties detecting post-Roman structures such as earth floors and timber houses persist, so that occupation in more ephemeral structures remains undetected. An increasing dependence on locally produced ceramics means that pottery types remain little understood compared to widespread and standardized Roman-period wares. In the absence of solid chronologies and independent evidence, the default has often been to correlate archaeologically documented events and historical events (e.g., the appearance of a local pottery type and the Islamic conquest) following the illogic of circular dating. However, the recent creation of refined chronologies and other developments in the study of late Roman and early Byzantine pottery at sites such as Ephesus and Sagalassos, and for pottery types ranging from amphorae to fine wares to locally produced kitchen wares, are dramatically improving our ability

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<sup>20</sup> Treadgold, 1990, “The break in Byzantium,” quote at 303.

to date and track changes in production, distribution networks, consumption patterns, and settlement dynamics over time.<sup>21</sup>

The archaeological material may be fragmentary but is ever growing; the textual evidence, in contrast, will probably always remain scarce. The lack of documentary evidence is problematic already for the sixth century but becomes much worse for the seventh and eighth. Important historiographical material is found in the *Chronicle* of Marcellinus Comes, written in the sixth century and covering the period 379-534 CE; the works of Procopius of Caesarea from the reign of Justinian (*Wars*, *Buildings*, and *Secret History* or *Anecdota*); and the *Histories* of Agathias, written in the sixth century in continuation of Procopius' narrative.<sup>22</sup> Annalistic chronicles by Byzantine compilers provide valuable information on historical events and contemporary perspectives. The *Chronicle* of John Malalas, written in the sixth century, covers the Creation to 565 CE, while the *Paschal Chronicle*, compiled anonymously in the early seventh century, covers the period from the Creation to 629 CE.<sup>23</sup> The *History* of Theophylact Simocatta, written in the early seventh century, provides a narrative of the reign of emperor Maurice (582-602).<sup>24</sup> The two chronicles that cover the seventh and eighth centuries were compiled in the early ninth century but based largely on earlier sources: the *Chronography* of the monk Theophanes Confessor (covers 284-813 CE) and the *Brief History* of the patriarch

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<sup>21</sup> E.g., F. Krinzing (ed.), 2005, *Spätantike und mittelalterliche Keramik aus Ephesos, Archäologische Forschungen*, Band 13 (Vienna); A. K. Vionis, J. Poblome, and M. Waelkens, 2009, "The hidden material culture of the Dark Ages. Early medieval ceramics at Sagalassos (Turkey): New evidence (ca AD 650–800)," *Anatolian Studies* 59: 147-65.

<sup>22</sup> B. Croke (ed./trans.), 1995, *Chronicle of Marcellinus: Translation and Commentary* (Sydney); J. D. Frendo (ed./trans.), 1975, *Agathias: The Histories* (Berlin); translations of Procopius are numerous.

<sup>23</sup> E. Jeffreys, M. Jeffreys, and R. Scott (eds./trans.), 1986, *The Chronicle of John Malalas* (Melbourne); M. Whitby and M. Whitby (eds./trans.), 1989, *Chronicon Paschale 284-628 AD* (Liverpool).

<sup>24</sup> M. Whitby and M. Whitby (eds./trans.), 1986, *The History of Theophylact Simocatta* (Oxford).

Nikephoros (covers 602-769 CE).<sup>25</sup> These chronicles have been fundamental in the creation of modern chronologies for this period, particularly the seventh and eighth centuries.

Official state documents, such as edicts and law codes, form another important source of evidence for life in late antiquity and the early Byzantine period. Justinian's *Corpus iuris civilis* (*Corpus of Civil Law*), a compilation of earlier Roman law and jurisprudence, and his new laws published as *Novellae* provide information such as tax edicts and how civil and military authority is to be apportioned among various officials.<sup>26</sup> The so-called Farmers' Law of the seventh or eighth century and the *Ekloga* or law code of the eighth provide insight into agrarian relations and economic activities of these otherwise "dark" centuries.<sup>27</sup> The Farmers' Law provides a window into these critical centuries, and reveals a countryside of socially stratified village communities based on an economy of cereal, fruit, and vine cultivation, along with sheep and cattle raising. It also mentions communal lands belonging to the village and a policy allowing the renewed cultivation of abandoned land and its division among members of the village community.<sup>28</sup> Other forms of textual evidence include ecclesiastical documents, including acts of the Church councils and lists of episcopal sees (especially the *Notitiae episcopatum*), and miracles and saints' lives, such as the Life of Theodore of Sykeon, which describes a social and economic pattern of free peasant smallholders and communities for west-central Anatolia.<sup>29</sup>

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<sup>25</sup> C. A. Mango and R. Scott (eds./trans.), 1997, *The Chronicle of Theophanes Confessor: Byzantine and Near Eastern History, AD 284-813* (Oxford); C. A. Mango (ed./trans.), 1990, *Nikephoros, Patriarch of Constantinople: Short History* (Washington, DC).

<sup>26</sup> S. P. Scott (trans.), 1932, *The Civil Law: The Twelve Tables, The Institutes of Gaius, The Rules of Ulpian, The Opinions of Paulus, The Enactments of Justinian, and The Constitutions of Leo*, 17 vols. (Cincinnati); <http://www.constitution.org/sps/sps.htm>.

<sup>27</sup> J. F. Haldon, 1990, *Byzantium in the Seventh Century: The Transformation of a Culture* (Cambridge) 132-35. The Farmers' Law, a compilation based on parts of the *Codex Iustinianus* and customary law, may date to the late seventh or early eighth century but reflects long-standing traditions relating to the structure and functioning of peasant villages.

<sup>28</sup> Haldon, 1990, *Byzantium in the Seventh Century*, 136.

<sup>29</sup> J. Darrouzès, (ed.), 1981, *Notitiae episcopatum Ecclesiae Constantinopolitanae* (Paris); A.-J. Festugière (ed./trans.), 1970, *Vie de Théodore de Sykéon*, *Subsidia Hagiographica* 48 (Brussels); E. A. S. Dawes and N. H. Baynes (eds./trans.), 1977, *Three Byzantine Saints: Contemporary Biographies* (Crestwood, NY).

Hierokles' *Synekdemos*, which outlines the administrative divisions of the Byzantine empire and includes a list of cities in each, and the Anonymous *Strategikon* (*Treaty on Strategy*), a treaty on military strategy that includes tidbits on the militarization of townscapes, are additional sources for the number, location, and character of sixth-century cities.<sup>30</sup> The *Geoponika*, a compilation of texts created in tenth century but likely reflecting agricultural practices of the sixth, and the fourth-century *Expositio totius mundi* provide evidence for agricultural practices and regional specialties, and thereby offer limited insight into changing environmental conditions and economic strategies.<sup>31</sup> The relative abundance of literary texts pertaining to Constantinople provides great insight into, for instance, the statuary displays, urban environment, and court ritual of the capital, but is less helpful in our search for search for broader economic and demographic trends, especially concerning the wider empire and the countryside in particular.<sup>32</sup>

Epigraphic material has been used not only to date church construction and site occupation, but also to flesh out the social and economic life of late antique communities from the inscriptions on residents' tombstones.<sup>33</sup> However, inscriptions on stone virtually disappear in the seventh and eighth century. Sigillographic material, including the seals of officials and private individuals, survive but its value in the investigation of subjects such as fiscal administration is only slowly being exploited.<sup>34</sup> Coins, as we have seen, comprise a rich but controversial form of evidence.<sup>35</sup>

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<sup>30</sup> G. T. Dennis (ed./trans.), 1985, *Three Byzantine Military Treatises* (Washington, DC).

<sup>31</sup> T. Owen (ed./trans.), 1805-6, *Geoponika: Agricultural Pursuits* (London); J. Rougé (ed.), 1966, *Expositio totius mundi et gentium* (Paris).

<sup>32</sup> E.g., S. Bassett, 2004, *The Urban Image of Late Antique Constantinople* (Cambridge).

<sup>33</sup> See, e.g., the rich corpus of funerary inscriptions from Corycus in Cilicia, discussed in Chapter 5: F. Trombley, 1987, "Korykos in Cilicia Trachis: The economy of a small coastal city in late antiquity (*Saec.* V-VI) – A précis," *The Ancient History Bulletin* 1: 16-23; G. Varinlioğlu, 2011, "Trade, crafts, and agricultural production in town and countryside in southeastern Isauria," in O. Dally and C. Ratté (eds.), *Archaeology and the Cities of Asia Minor in Late Antiquity* (Ann Arbor, MI) 173-88.

<sup>34</sup> Byzantine lead seals have the potential to make up for the lack of textual evidence for the seventh eighth centuries but have been systematically studied only recently. See, e.g., W. Brandes, 2002, *Finanzverwaltung in Krisenzeiten*.

These various forms of textual and related evidence provide abundant information concerning city and countryside, empire-wide and local-level events, agricultural pursuits and religious attitudes. On the whole, however, they tend to provide information on specific events rather than general trends, and disproportionately represent the concerns of the urban élite and the imperial administration. In addition, they are difficult to interpret. The chronicles comprise “an amalgam of Old and New Testament, Jewish, Christian, and secular material in a mixture that reflects the interests and knowledge of the individual author.”<sup>36</sup> As such, they may contain apocryphal or otherwise inaccurate material, such as numbers of casualties due to earthquakes, plague, and war, according to the author’s beliefs and agendas. Accounts of climatic phenomena and epidemics, such as those included in the chronicles, have formed the basis of several scholars’ reconstructions of Byzantine-period climatic and demographic upsets.<sup>37</sup> However, these texts do not offer accurate figures with which to reconstruct population growth and decline, mortality as a result of epidemics, or levels of economic production, consumption, and exchange. Therefore quantitative analyses can only be impressionistic, giving a sense of magnitude of scale rather than precise numbers. Imperial edicts and law codes demonstrate official concerns and

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*Untersuchungen zur byzantinischen Administration im 6.-9. Jahrhundert*, Forschungen zur byzantinischen Rechtsgeschichte 25 (Frankfurt).

<sup>35</sup> R. Reece, 2003, “Coins and the late Roman economy,” L. Lavan and W. Bowden (eds.), *Theory and Practice in Late Antique Archaeology*, Late Antique Archaeology 1 (Leiden) 139-68.

<sup>36</sup> M. Whitby and M. Whitby (eds./trans.), 1989, *Chronicon Paschale 284-628 AD* (Liverpool) ix.

<sup>37</sup> D. C. Stathakopoulos, 2004, *Famine and Pestilence in the Late Roman and Early Byzantine Empire* (Aldershot); J. Koder, 1994, “Historical aspects of a recession of cultivated land at the end of the late antiquity in the east Mediterranean,” in B. Frenzel (ed.), *Evaluation of Land Surfaces Cleared from Forests in the Mediterranean Region during the Time of the Roman Empire*, European Palaeoclimate and Man 5, Special Issue (Mainz) 157-67; idem, 1996, “Climate change in the fifth and sixth centuries?” in P. Allen and E. Jeffreys (eds.), *The Sixth Century, End or Beginning?*, Byzantina Australensia (Brisbane) 270-85; I. Telelis, 1992, “The great climate risks of the past: The drought described by Byzantine sources (4th - 6th cent. A. D.),” *Proceedings of the SEP Pollution Meeting in Padova, Italy, March 29 - April 2, 1992*, 289-301; idem, 2000, “Medieval Warm Period and the beginning of the Little Ice Age in the eastern Mediterranean: An approach of physical and anthropogenic evidence,” in K. Belke et al. (eds.), *Byzanz als Raum. Zu Methoden und Inhalten der historischen Geographie des östlichen Mittelmeerraums* (Vienna) 223-43; I. Telelis and E. Chrysos, 1992, “The Byzantine sources as documentary evidence for the reconstruction of historical climate,” *Palaeoclimate Research* 7: 17-31.

efforts at problem-solving, but they cannot tell us whether those rules were ever followed, or in which regions of the empire.

Though sometimes used as evidence for the survival of hundreds of towns from the seventh to ninth century,<sup>38</sup> places listed as episcopal seats in the *Notitiae episcopatum* or as *poleis* in the subscriptions lists of Church Councils may in fact not conform at all to our idea of a town; their presence in these records does not tell us whether the settlement is a populous urban center or rural village. These documents cannot indicate the extent of urbanism at any one date, nor comparatively across time periods. This problem underscores the difficulty in reconciling the various terms used to refer to settlements, which differ by author, time period, and context – even within a single document.

### ***Why focusing on the city is problematic***

Because of the city's role as a key instrument for investigating the end of antiquity in the eastern Mediterranean, the urban evidence for the fate of the city has been buffeted by the same shifting winds of interpretation that have shaped the history of the larger debate over whether to view late antiquity as a period of decline or transformation.<sup>39</sup> The connection between the debate over the fate of the Graeco-Roman city, on the one hand, and the debate over decline versus transformation, on the other, was the subject of a 2003 colloquium and resulting publication entitled *Die Stadt in der Spätantike – Niedergang oder Wandel? (The City in Late Antiquity – Decline or Transformation?)*, the participants of which used as a catalyst for discussion the

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<sup>38</sup> E.g. G. Ostrogorsky, 1959, "Byzantine cities in the early Middle Ages," *Dumbarton Oaks Papers* 13: 47-66.

<sup>39</sup> As Cameron has pointed out (2002, "The 'long' late antiquity," 185): "Indeed, it would be fair to say that the arena in which the current argument over decline or continuity is most conspicuously being played out is in the debates largely conducted by archaeologists as to the fate or transformation of the late antique city."

argument presented by J. H. W. G. Liebeschuetz in his *Decline and Fall of the Roman City*.<sup>40</sup>

Liebeschuetz had proposed two stages in what he saw as the decline of the ancient city: the “Late City” of the fourth century, which still resembled the classical city, and the “later Late City” of the fifth and sixth centuries, a dramatically altered and inferior place.<sup>41</sup> But as Liebeschuetz himself concludes in his own contribution to the colloquium volume, “whether one sees what happened to cities in Late Antiquity as transformation or as decline depends on one’s point of view.”<sup>42</sup> The interpretive framework of decline versus transformation has outlived its usefulness for the city, just as it has for the study of late antiquity in general.

Nevertheless, the ways in which this debate has been framed specifically in reference to the city – the questions asked and the hypotheses offered in response – are relevant to the larger questions and approach of the dissertation in general. What did the late antique city look like? How Graeco-Roman was it? How can we categorize and date the changes it underwent; that is, can we formulate a periodization of urban change? When did the tipping point to some new urban form occur? What did that new form look like?

Efforts to characterize the late antique city and chart the process of urban change have focused on a number of key issues: private encroachment into public spaces, the break-up and ruralization of the urban landscape, the creation of a Christian topography, and the growing concern for security – all measured by the presence of new building types and activities at the expense of traditionally Graeco-Roman ones. So the following changes are variously noted in the archaeological record:

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<sup>40</sup> J.-U. Krause and C. Witschel (eds.), 2006, *Die Stadt in der Spätantike – Niedergang oder Wandel?* (Stuttgart).

<sup>41</sup> J. H. W. G. Liebeschuetz, 1996, “Administration and politics in the cities of the 5th and 6th centuries with special reference to the circus factions,” in C. Lepelley (ed.), *La fin de la cité antique et le début de la cité médiévale: de la fin du IIIe siècle à l’avènement de Charlemagne, Actes du colloque tenu à l’Université de Paris X Nanterre 1993* (Bari) 161-182, at 161, where he first proposed the two stages in the decline of the ancient city. The “later Late City” or “late Late Roman City” is the focus of his 2001 work *The Decline and Fall of the Roman City* (Oxford).

<sup>42</sup> J. H. W. G. Liebeschuetz, 2006, “Transformation and decline: Are the two really incompatible?” in J.-U. Krause and C. Witschel (eds.), *Die Stadt in der Spätantike – Niedergang oder Wandel?* (Stuttgart) 463-83, at 476.

- (1) Private residences and shops are expanded into or built atop monumental civic spaces previously dedicated for public use (a phenomenon summarized as “encroachment”) (**fig. 3.1**).<sup>43</sup>
- (2) Traditional civic amenities and infrastructure (e.g., streets, aqueducts, baths) are no longer maintained by either public or private spending.<sup>44</sup>
- (3) Churches become one of the defining features of a town,<sup>45</sup> the other being...
- (4) fortification walls, which encircle only a portion of the area covered by the town at its fullest extent, and usually the most easily defended portion (e.g., a hilltop) (**fig. 3.2**).
- (5) The town contracts or breaks up into several pockets of inhabited space, which take on the character of villages, in part as...
- (6) activities previously restricted to the suburbs or countryside (e.g., small-scale industry, threshing, burial of the dead) are now conducted within the previous boundaries of the city.

These changes have been interpreted as decline by some, as transformation by others. The decline view is typified by Saradi, who argues that during the sixth century, the fabric of the ancient city disintegrated and became increasingly rural because of three main factors: the disappearance of traditional institutions due to the adoption of Christianity, economic stagnation caused by the breakdown of overseas trade, and the decline of the urban élite. This process of disintegration, privatization, and ruralization was accelerated by the difficulties caused by the Persian and Arab invasions, in response to which the Byzantine state encouraged the

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<sup>43</sup> B. Ward-Perkins, 1996, “Urban survival and urban transformation in the eastern Mediterranean,” in G. P. Brogiolo (ed.), *Early Medieval Towns in the Western Mediterranean* (Padua) 143-53, which includes comments on Jean Sauvaget’s famous hypothetical model of urban evolution from ancient colonnaded street to medieval Arab *sug* for Laodikeia, Syria, and reactions; Saradi, 2006, *The Byzantine City in the Sixth Century*, 147-208.

<sup>44</sup> Saradi, 2006, *The Byzantine City in the Sixth Century*, 209-352.

<sup>45</sup> G. Brands and H.-G. Severin (eds.) 2003, *Die spätantike Stadt und ihre Christianisierung* (Wiesbaden).

militarization of towns. The result was a “new, medieval city, the *kastron*,” an urban form shaped by the demands of defense.<sup>46</sup> Part of Saradi’s argument rests on judging encroachment and privatization – indicated in part by the growing prevalence of small shops in monumental urban spaces – as signs of decline. In contrast, L. Lavan sees encroachment and privatization not as negative trends, but as part of a process of “commercialization,” which “did not cause urban decay or a loss of monumentality.”<sup>47</sup> In fact, the commercialization of city centers encouraged economic vibrancy and the upkeep of urban spaces, so much so that “when urban collapse arrived in the early seventh century, most cities of Asia Minor still had wide main streets lined with shops, as they did in the first two centuries A.D.”<sup>48</sup> This is just one example of how the same observations of a single aspect of urban change can result in very different interpretations of its timing and significance.<sup>49</sup>

Despite differences in how these changes are interpreted (as decline, transformation, or something else), many scholars agree that the seventh century marked the tipping point into a new urban form: a smaller type of settlement more rural, Christian, and concerned with security than its predecessor. But these developments did not unfold in the same way in every town; another defining feature of the process of urban change was the variety it created among towns, as the standardization that had characterized Graeco-Roman towns across the Mediterranean in earlier centuries broke apart. W. Brandes, for instance, identified four patterns of urban

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<sup>46</sup> Saradi, 2006, *The Byzantine City in the Sixth Century*, 471.

<sup>47</sup> L. Lavan, 2012, “From *polis* to *emporion*? Retail and regulation in the late antique city,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC): 333-77, at 366. See also idem, 2003, “Late antique urban topography: From architecture to human space,” in L. Lavan and W. Bowden (eds.), *Theory and Practice in Late Antique Archaeology*, *Late Antique Archaeology* 1 (Leiden) 171-95; idem, 2003, “The political topography of the late antique city: Activity spaces in practice,” in L. Lavan and W. Bowden (eds.), *Theory and Practice in Late Antique Archaeology*, *Late Antique Archaeology* 1 (Leiden) 314-37.

<sup>48</sup> Lavan, 2012, “From *polis* to *emporion*?” 362.

<sup>49</sup> For more on the interpretation of encroachment, see I. Jacobs, 2009, “Encroachment in the eastern Mediterranean between the fourth and the seventh century AD,” *Ancient Society* 39: 203-43; ead., 2013, *Aesthetic Maintenance of Civic Space: The “Classical” City from the 4th to the 7th c. AD* (Leuven).

development for towns in Asia Minor during the seventh and eighth centuries: reduction, relocation, decline, and relative continuity.<sup>50</sup> These specific patterns, and the towns he groups within each, are subject to revision as new archaeological evidence is revealed, but the point to note here is how Brandes recognized that different cities had very different fates. Some became significant ecclesiastical or military centers (e.g., Amorium), while others dwindled into relative obscurity (e.g., Sagalassos).

Over time, as more archaeological work has been carried out, this differentiation has only become more apparent, and a consensus has grown that sees continuity in urbanization instead of a clean break. Most towns were in fact *not* abandoned. This observation was made even by Foss, who saw the cities of the seventh century as much smaller and poorer versions of their Graeco-Roman selves, but on the whole still occupied. Growing interest in post-Roman levels, and the greater care and skill used to excavate them, has revealed more occupation and activity in towns during the seventh and eighth centuries, for instance at Ephesus and Amorium. Specifically for cities in Asia Minor, proponents of this perspective argue that the process by which the ancient city became smaller and less monumental (encroachment, privatization, ruralization, etc.) was already underway by the fifth/sixth century, so “there is no reason to assume *a priori* that urban development was disrupted in the intervening period [between the fifth/sixth century and the middle ages], and to conclude *ex silentio* that Anatolia witnessed a de-urbanisation during the Dark Ages.”<sup>51</sup> In addition, pottery types are now recognized as dating to this period, many as the result of revised chronologies that no longer assume production and exchange ended as a result of the Persian and Islamic invasions (see below). This is, of course,

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<sup>50</sup> W. Brandes, 1989, *Die Städte Kleinasiens im 7. und 8. Jahrhundert* (Amsterdam) 80-131: die Reduktion, die Verlagerung, die Untergang von Städten, Städte mit relativer Kontinuität.

<sup>51</sup> P. Niewöhner, 2007, “Archäologie und die ‘Dunklen Jahrhunderte’ im byzantinischen Anatolien,” in J. Henning (ed.), *Post-Roman Towns, Trade and Settlement in Europe and Byzantium*. Vol. 2, *Byzantium, Pliska, and the Balkans* (Berlin) 119-57, 140 (quote from English summary).

the same revisionist perspective that many scholars are applying to the period in general (treated in Chapter 2), not just for cities. As such, it is relevant for regions of the eastern Mediterranean that remained within the Byzantine empire, as well as for those taken by the Muslim conquest. For the latter, too, a key element of this perspective is the emphasis it places on changes that occurred *before* the conquest (that is, before the seventh century),<sup>52</sup> and/or on the degree of continuity between from pre- and post-Arab conquest.<sup>53</sup>

There is another key element to this perspective as it pertains to cities in Asia Minor: the possibility, given recent energy by P. Niewöhner among others, that urban settlement may have continued to exist outside the *kastra* walls that have traditionally been assumed to delimit the area of urban occupation.<sup>54</sup> C. Kirilov has recently argued that the much-reduced wall circuits built within towns during late antiquity in the eastern empire were never intended to encompass and thereby defend the entire urban populace, much of which lived outside the new walls.<sup>55</sup> Rather these walls reflect contemporary military strategy, according to which a small circuit is considered easier to maintain and defend. Niewöhner applies this logic to the *kastra* of the seventh and eighth centuries. The same basic idea has been proposed before: J. Haldon, for instance, imagined scattered settlements, each organized around a church, that together formed an atomized *polis* centered on a fortified *kastron*. Thus the use of the term *polis* in texts reflects the choice on behalf of the scattered settlements' inhabitants to identify themselves as belonging

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<sup>52</sup> E.g., H. Kennedy, 1985, "From polis to madina: Urban change in late antique and early Islamic Syria," *Past & Present* 106: 3-27; idem, 1985, "The last century of Byzantine Syria: A reinterpretation," *Byzantinische Forschungen* 10: 141-83; idem, 1999, "Islam," in G. W. Bowersock, P. Brown and O. Grabar (eds.), *Late Antiquity: A Guide to the Postclassical World* (Cambridge, MA) 219-37.

<sup>53</sup> M. O. H. Carver, 1996, "Transitions to Islam: Urban rôles in the east and south Mediterranean, fifth to tenth centuries A.D.," in N. Christie and S. T. Loseby (eds.), *Towns in Transition: Urban Evolution in Late Antiquity and the Early Middle Ages* (Aldershot) 184-212; J. Magness, 2003, *The Archaeology of the Early Islamic Settlement in Palestine* (Winona Lake, IN); A. A. Eger, 2008, *The Spaces between the Teeth: Environment, Settlement, and Interaction on the Islamic-Byzantine Frontier* (PhD Dissertation, University of Chicago).

<sup>54</sup> Niewöhner, 2007, "Archäologie und die 'Dunklen Jahrhunderte' im byzantinischen Anatolien."

<sup>55</sup> C. Kirilov, 2007, "The reduction of the fortified city area in late antiquity: Some reflections on the end of the 'antique city' in the lands of the eastern Roman empire," in J. Henning (ed.), *Post-Roman Towns, Trade and Settlement in Europe and Byzantium*. Vol. 2, *Byzantium, Pliska, and the Balkans* (Berlin) 3-24.

to a *polis* rather than to a village, when in fact the *polis* to which they refer is an entity very different from the classical Graeco-Roman one.<sup>56</sup>

In summary, the evidence from cities tells a story of variation, depending on each city's features and fate, such as geographical situation, strategic location, and ecclesiastical history. Most cities were not completely abandoned. Current consensus is against Kazhdan's clean break in urbanization, and for more continuity in occupation and economic activity. At the same time, however, there is general agreement that towns did get much smaller, in terms of physical extent and population, and poorer in general. And so Foss's basic argument that towns in Asia Minor suffered semi-abandonment and economic hardship during the seventh century yet remained partially occupied still holds, except more-extensive and detailed study of the archaeological material since Foss's time has suggested more continuity and vitality than he assumed, including the possibility of occupation outside *kastra* walls, and therefore greater population levels in general. However, the only way to test the new hypothesis and find out whether populations were actually much larger than assumed based on the reduced size of the fortified towns is by looking outside those city centers, and venturing out into the countryside.

#### **A.ii. New approach: A new view from the countryside, to find broad patterns of change**

For all the reasons outlined above, the fact that most of the archaeological evidence concerning Asia Minor and the wider eastern Mediterranean in late antiquity has come from urban contexts is problematic. In many cases this evidence is ambiguous, or prioritizes the activities and concerns of certain groups of people, such as the urban upper classes, over others. It also

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<sup>56</sup> J. Haldon, 1999, "The idea of the town in the Byzantine empire," in G. P. Brogiolo and B. Ward-Perkins (eds.), *The Idea and Ideal of the Town between Late Antiquity and the Early Middle Ages* (Leiden) 1-23, at 15-16.

presents an inaccurate picture of life in late antiquity, for at least two reasons. First, diverse and essential components of this life took place outside of cities: crops ripened, marble was quarried, armies marched, families and entire communities flourished. All the resources needed for food, fuel, and shelter came from outside cities. Second, towns did not exist in isolation. The ancient city included both the urban conglomerate at its heart and the rural territory it governed. Even when this strict classical rubric broke down, city and countryside continued to operate together as interdependent parts of a rich and varied landscape.

In the preceding section I outlined one reason why we need to look in the suburbs and countryside: to test the hypothesis that urban populations continued to exist outside city walls, and therefore that population levels and related economic activities may have been higher and healthier than previously thought. There is also another reason to look outside city walls: to test the prevalent view that as cities dwindled in population and importance, the village became the dominant form of settlement, newly ubiquitous and, if the seat of a bishop or military headquarters, potentially powerful. As Liebeschuetz has memorably quipped: “the end of the ancient city involved the emancipation of the countryside.”<sup>57</sup> This scenario of the “village ascendant” has been suggested for a number of places, both in Asia Minor and in the post-conquest Levant, based on various types of evidence, and will be discussed in relation to the survey evidence presented in the following chapters.<sup>58</sup> It is necessary to test both hypotheses in order to identify the kinds of broad patterns of change we are looking for, particularly population

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<sup>57</sup> Liebeschuetz, 1992, “The end of the ancient city,” in J. Rich (ed.), *The City in Late Antiquity* (London) 1-49, at 36.

<sup>58</sup> F. Trombley, 2001, “Town and *territorium* in late Roman Anatolia (late 5<sup>th</sup> – early 7<sup>th</sup> c.),” in L. Lavan (ed.), *Recent Research in Late-Antique Urbanism*, *Journal of Roman Archaeology* Suppl. 42 (Portsmouth, RI) 217-32, at 230-31; A. Walmsley, 2005, “The village ascendant in Byzantine and early Islamic Jordan: Socio-economic forces and cultural responses,” in J. Lefort, C. Morrisson, and J.-P. Sodini (eds.), *Les villages dans l’empire byzantin (IV<sup>e</sup>-XV<sup>e</sup> siècle)* (Paris) 511-22.

levels and settlement patterns. Did the population really plummet, or did people simply move out of cities and into the countryside?

This hypothesized shift in settlement pattern, whereby most of the population now lived in villages instead of cities, stems in part from the idea of the so-called “flight of the curiales”: the idea gleaned from written evidence that at some point during late antiquity, the urban élite who had always been the lifeblood of cities left them en masse. So the archaeological evidence for urban decline is interpreted in light of the logical conclusion that cities declined because they were no longer pumped full of money and used as billboards for the ideological displays that fueled upper-class power politics. This theory underscores the close connection between city and countryside, and the fact that we need to look in both places for evidence. Scholars who link this élite exodus to urban decline disagree on when, exactly, it occurred. Liebeschuetz, for instance, thinks it took place during the fifth/sixth century (the point at which his “Late City” morphs into the inferior “later Late City”), whereas M. Whittow does not see it happening until the seventh/eighth century. P. Brown, too, had argued that by the fourth century, wealth and status came from imperial service, not local euergetism; he believed that, particularly in the west, cities suffered as important men carried the public arena with them out of the city and into their rural estates.<sup>59</sup> In the villages and towns of the east, Brown continued, the holy man took over the day-to-day responsibilities and functions previously carried out by wealthy secular patrons.<sup>60</sup> These changes demonstrate how the politically active, landed élite embodied the close connection between the fate of the city and that of the countryside.<sup>61</sup>

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<sup>59</sup> Brown, *The World of Late Antiquity*, 40.

<sup>60</sup> P. Brown, 1971, “The rise and function of the holy man in late antiquity,” *Journal of Roman Studies* 61: 80-101, at 85-89.

<sup>61</sup> In the evocative words of Holum: “Lords of the most fertile land in a city’s territory, together with the means of exploiting it – the rural estates, villages, and farmsteads of dependent farmers – they linked city and countryside in their own persons.” The councilmen “upheld the city with their munificence as the proper setting for the display of wealth and influence. Hence cities were the artificial creations of the landed elite, or, as Peter Brown put it, ‘fragile

The theory that as cities declined, villages became more numerous, populous, and powerful – due to the “flight of the curiales” or to some other factor – has been argued on the basis of various types of evidence. Haldon thinks the failure of cities and estate owners to “cope with the problems of taking fiscal responsibility for their *territoria*” meant that by the fifth and sixth centuries, state officials were forced to assume these responsibilities and to “concentrate on the level at which wealth-production actually took place”: namely, villages, which “now replace the towns and cities in the fiscal administrative structure of the Byzantine state.”<sup>62</sup> Whittow too thinks the concern for peasants and communities shown in legal texts of the seventh and eighth century (the Farmers’ Law and the *Ekloga*) supports the theory that large estates and landowners were no longer prominent; instead “rural communities were at the heart of agrarian life, and both peasants and the state would have a strong vested interest in their protection and management.”<sup>63</sup> The disappearance of inscriptions and lavish spending on architecture within cities suggests to some that élites were no longer present there (or no longer chose to make their presence known in the same way), even in cities occupied continuously into the “dark ages.”<sup>64</sup> C. Wickham goes so far as to suggest that Asia Minor became 80% deurbanized as élites reconcentrated themselves in thematic capitals (e.g., Antalya, Izmir), some important old towns (e.g., Ephesus, Miletus), and Constantinople; deurbanization was initially caused by war and political crisis, which in turn spurred this social process.<sup>65</sup>

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excrescences in a spreading countryside.” Holum, 2005, “The classical city in the sixth century,” 88-89, quoting P. Brown, 1978, *The Making of Late Antiquity* (Cambridge, MA) 3.

<sup>62</sup> Haldon, 1990, *Byzantium in the Seventh Century*, 132-41, quote at 141, see 132 n. 21 for references to other historians’ interpretations of the Farmers’ Law.

<sup>63</sup> M. Whittow, 2009, “Early medieval Byzantium and the end of the ancient world,” *Journal of Agrarian Change* 9: 134-53, at 147.

<sup>64</sup> E.g., Liebeschuetz, 2001, *The Decline and Fall of the Roman City*; Whittow, 2009, “Early medieval Byzantium,” 146-47.

<sup>65</sup> C. Wickham, 2005, *Framing the Early Middle Ages: Europe and the Mediterranean 400-800* (Oxford) 633.

The appearance of inscriptions and monumental architecture in the form of churches in the countryside around Aizanoi in the fifth and sixth centuries suggests to Niewöhner that the “flight of the curiales” there was very real indeed.<sup>66</sup> Niewöhner was able to document these materials and come to this conclusion only by carrying out an extensive survey of the region surrounding Aizanoi (see Chapter 8). His project therefore illustrates the essential usefulness of survey for finding evidence otherwise neglected. However, by focusing on inscriptions and monumental architecture (for the most part reused in modern Turkish villages), the project missed out on another potential source of evidence: pottery scatters and other more ephemeral remains of extra-urban occupation and other activities. In order to test these theories, and to get a more complete picture of life in late antiquity and the early Byzantine period, we need to conduct comprehensive regional field survey, including when possible both extensive and intensive coverage.

To summarize, a study of the nature and pace of change in late antiquity and the so-called dark ages must account for evolutions in both urban cores and the surrounding countryside. The two contexts are not just complementary but inextricably linked, and it is impossible to understand the history of one without the other. We know towns got smaller and poorer. But where did people go? Were there fewer people overall, or were they simply living somewhere other than cities? Did people live shorter lives? What happened to the élite? Was the village really ascendant? What other changes did Graeco-Roman culture undergo at the end of antiquity? In order to answer these questions, and others addressed in the dissertation, we must look to the countryside.

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<sup>66</sup> P. Niewöhner, 2006, “Aizanoi and Anatolia. Town and countryside in late antiquity,” *Millennium* 3: 239-53; idem, 2010, “Aizanoi, Anatolien und der Nahe Osten Siedlungsentwicklung, Demographie und Klima in frühbyzantinischer Zeit,” in K. Rheidt (ed.), *Aizanoi und Anatolien. Neue Entdeckungen zur Geschichte und Archäologie im Hochland des westlichen Kleinasien* (Mainz) 146-53.

## B. FRAMEWORK OF INVESTIGATION

Now that the complicated history of scholarship has been presented, I can articulate the structure of the overarching methodological approach I take in this dissertation. I think of it as a framework of investigation, comprising a number of interrelated questions and methods of addressing those questions.

The first step in devising this framework of investigation is to articulate the questions asked in this dissertation. Each question sets the stage for the next one:

(1) When did antiquity end and the “dark ages” (transitional period) begin?

If that turning point occurred sometime *after* the fifth/sixth century, its cause was not internal but external.

(2) Of the possible external factors, which is the most likely cause?

- (a) The Islamic conquest (war and invasion)?
- (b) Recurring plague?
- (c) Single-event catastrophes (especially earthquakes)?
- (d) Climate deterioration?
- (e) Man-made landscape degradation?

Once this turning point occurred:

(3) What was life like at the end of antiquity?

The second step is to identify patterns of change that might best address these questions:

(A) Population levels

- (B) Settlement patterns
- (C) Economic networks
- (D) Subsistence strategies
- (E) Material standards of living
- (F) Climatic conditions
- (G) Landscape stability/change
- (H) Human exploitation of the environment

These questions and patterns of change can be investigated according to several lines of investigation:

Question (1) can be addressed by using urban archaeological and regional field survey evidence to determine changes in population levels, settlement patterns, economic networks and strategies, and material standards of living significant enough to mark the end of antiquity.

Question (2) can be addressed by using urban archaeological, regional field survey, and palaeoenvironmental evidence to determine the timing of those changes. Do those changes coincide with the Islamic conquest? With episodes of plague? With single-event catastrophes, especially earthquakes? If none of the above, palaeoenvironmental evidence concerning the degree and scope of climatic and landscape change, as well as regional field survey evidence concerning the extent of human exploitation of the environment, can be used to determine whether those changes coincide with climate deterioration or man-made landscape degradation.

Question (3) can be addressed by using urban archaeological and regional field survey evidence to determine and describe the extent of population decline, shifts in settlement pattern, changes in economic networks and strategies, and material standards of living, and, to a lesser extent, by

using palaeoenvironmental evidence to determine climatic conditions, landscape stability, and subsistence strategies.

It is especially necessary to study human and environmental history together because an important corollary of the debate over the timing and nature of change in late antiquity is a similarly opposed set of perspectives concerning the connection between late antique demographic and settlement change, on the one hand, and environmental conditions, on the other. According to the perspective of decline, the tipping point between late antiquity and the early Byzantine period was a time of urban implosion and massive population loss, whose survivors were left to scratch out a measly existence as pastoralists and opportunistic agriculturalists. In contrast, from the perspective of transformation, it was a time of gradual reconfiguration involving the reorganization of a relatively stable population out of cities and into villages, where inhabitants continued to cultivate the land intensively.

I test the various perspectives of the debate by integrating two primary methods of investigating the countryside. First, I use regional field survey data to reconstruct changes in population levels, settlement patterns, economic networks and strategies, and material standards of living. Were there fewer people overall? If so, was this drop due to higher mortality rates, lower birth rates, migration, or some combination of these factors? Were both city and countryside affected equally? Were fewer people living in cities, and more people living in villages or farmsteads? Did the relative proportions of each settlement type change? Were the same goods and commodities being produced and exchanged, and at the same scale? Were people producing and eating the same types of foods? What types of property did people

possess, and of what quality were their possessions? What other changes did people experience in their daily lives, and in wider society in general?

Second, I use palaeoenvironmental remains to determine changes in climatic conditions, landscape stability, and human exploitation of the environment. Did people change what crops they grew and what foods they ate? Were they cultivating the land less intensively, and relying more on raising livestock? Did climatic conditions change dramatically enough to upset preexisting agricultural strategies? Was landscape damage such as erosion so widespread that it threatened the livelihood of entire communities?

This project in essence concerns the archaeology of the countryside. In terms of the entire scope of the dissertation, I aim, first, to use these methods to address the problem of the end of antiquity in southern Asia Minor and northwest Syria in a new way and, second, to evaluate the usefulness of these new methods, using this historical problem as a test case.

### **C. METHODS FOR INVESTIGATING THE COUNTRYSIDE**

How exactly do we study the ancient countryside? Fortunately, interest in the archaeology of the countryside, on the one hand, and of the late antique and early Byzantine periods, on the other, is increasingly prevalent both in syntheses covering the periods broadly and in more specialized publications, particularly those concerning the economy.<sup>67</sup> Over the past decades, a growing

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<sup>67</sup> On the countryside: W. Bowden, L. Lavan, and C. Machado (eds.), 2004, *Recent Research on the Late Antique Countryside*, Late Antique Archaeology Series 2 (Leiden), which includes a valuable bibliographic essay by A. Chavarría and T. Lewit, "Archaeological research on the late antique countryside: A bibliographic essay," 3-51. See also G. P. Brogiolo, N. Gauthier, and N. Christie (eds.), 2000, *Towns and Their Territories between Late Antiquity and the Early Middle Ages* (Leiden); T. S. Burns and J. W. Eadie (eds.), 2001, *Urban Centers and Rural Contexts in Late Antiquity* (Lansing, MI); N. Christie (ed.), 2004, *Landscapes of Change: the Evolution of the Countryside in Late Antiquity and the Early Middle Ages* (Burlington, VT). On Byzantine economic activity: C. Morrisson, (ed.), 2012, *Trade and Markets in Byzantium* (Washington, DC); M. Mundell Mango (ed.), 2009, *Byzantine Trade, 4th–12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham); A. E. Laiou and C.

awareness that city and countryside must be studied together had led to an expansion of research outside city walls, pushed along by the now widespread application of regional field survey and a growing interest in reconstructing ancient landscapes, economic strategies, and human-environment interactions in general through the study of palaeoenvironmental evidence.

### **C.i. Regional survey**

Extensive and intensive field survey on a regional scale can provide evidence for rises and falls in population, shifts in settlement pattern, economic conditions related to degree of connectivity and standards of living, and human exploitation of the environment. Regional survey in particular has the great advantage of providing evidence for interactions between humans and the environment and between different forms of occupation (city and countryside, city and village and farm), and moreover provides evidence for changes in those interactions over time.

Choosing from among the myriad terms used to distinguish one conceptualization of survey from another is not an easy task. Why have I chosen to use the term “regional survey,” and not settlement archaeology, landscape archaeology, landscape survey, regional surface survey, or field survey? I use “regional survey” not as an indication of a specific methodology (e.g., extensive, intensive site, intensive off-site, intensive landscape), since I want the freedom to refer to any one or number of these methodologies at any given time, but rather to indicate that the aim of the research so described is to understand an entire region as a comprehensive unit encapsulating all human and non-human activity over all time scales. A “region” is also more

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Morrison, 2007, *The Byzantine Economy* (Cambridge); A. E. Laiou (ed.), 2002, *The Economic History of Byzantium: From the Seventh through the Fifteenth Century*, 3 vols. (Washington, DC); see also the sections on material culture in E. Jeffreys, J. F. Haldon, and R. Cormack (eds.), 2008, *The Oxford Handbook of Byzantine Studies* (Oxford).

readily defined than a “landscape,” which to most modern ears signifies a natural environment and thereby raises the debate over how exactly humans “fit in.” Regardless of the terms they use to identify themselves, survey projects define the region under scrutiny explicitly, tracing boundaries that, while sometimes artificially or anachronistically imposed, nevertheless provide a clear basis for the ensuing analyses.

Regional survey played a fundamental role in overturning negative perceptions of late antiquity during the early-to-mid-twentieth century by revealing the expansion and material wealth of towns and rural villages across the eastern Mediterranean during the fourth to sixth centuries. By reconstructing a peopled landscape dotted with prosperous villages, the survey work conducted by G. Tchalenko across the Limestone Massif of northwest Syria alone undermined the prevailing assumption of life in the eastern Mediterranean of late antiquity as a desolate wasteland, based on Libanius’ fourth-century quasi-apocalyptic complaint about the devolution of life in Antioch on the Orontes.<sup>68</sup> Recent work has only confirmed this picture of late antique rural prosperity.<sup>69</sup> In Asia Minor, early regional surveys carried out beginning in the 1980s by the *Tabula Imperii Byzantini (TIB)* project of the Austrian Academy of Sciences revealed a similarly vibrant late antique countryside.

Like the surveys conducted in northwest Syria, however, the *TIB* surveys in Asia Minor were focused on recording epigraphic and architectural remains. Only in the past few decades have more-intensive, systematic survey methodologies aimed at documenting all artifacts across a defined landscape been adopted and implemented by teams working in Turkey. Intensive field

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<sup>68</sup> G. Tchalenko, 1953-1958, *Villages antiques de la Syrie du Nord: le massif de Bélus à l’époque romaine*, 3 vols. (Paris). The region was first surveyed by H. C. Butler, 1903, *Publications of an American Archaeological Expedition to Syria in 1899-1900*, II, *Architecture and Other Arts* (New York). Important later work was carried out by G. Tate, 1992, *Les campagnes de la Syrie du Nord du IIe au VIIe siècle: un exemple d’expansion démographique et économique à la fin de l’antiquité*, I (Paris). See Chapter 4 for additional references and a full discussion of the evidence.

<sup>69</sup> See Chapter 4.

survey methods were first applied to archaeological research during the 1960s by the “New Archaeologists” or processualists working in the Americas and Mesopotamia. Thrilled by the prospect of repeatable, testable, scientific evidence for settlement patterns and demographics in the ancient world, classical archaeologists adopted these methods for their own surveys in the Mediterranean. Promoted particularly by Anglo-American projects, the use of field survey expanded rapidly from the 1980s to today, but came to Turkey late in relation to other regions around the Mediterranean. Survey is now commonly conducted in Turkey, where projects include both extensive and intensive components, but extensive survey is still the more common of the two. It is important to emphasize that the kind of intensive off-site survey (i.e, full-coverage or landscape survey) commonly carried out in regions such as Greece and Italy is, in fact, rarely conducted in Turkey.<sup>70</sup> Instead, survey projects in Turkey usually use the term “intensive” to indicate intensive *site* survey: that is, survey aimed at retrieving concentrated loci of human activity, usually habitation in the form of settlements ranging in size from a single to several dozen dwellings, but also such foci as funerary monuments, industrial activities (quarrying, pottery production), and rural infrastructure (roads, aqueducts), as opposed to retrieving a continuous landscape of human activity.

### ***Possibilities and problems with survey***

Survey as opposed to excavation is an attractive method of research not only because it can potentially reveal important trends in the settlement and demographic history of a region, but also because of its practical advantages: it is less expensive, may require less labor (depending on survey intensity), and is noninvasive. The vast amounts of data collected by survey can now

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<sup>70</sup> For projects Greece and Italy, see, e.g., S. E. Alcock and J. F. Cherry (eds.), 2004, *Side-by-Side Survey: Comparative Regional Studies in the Mediterranean World* (Oxford).

be managed and analyzed with relative ease and effectiveness in a geographic information system (GIS). Remote sensing techniques including satellite imaging and ground-based geophysical methods such as ground-penetrating radar and magnetometry have greatly increased the scale, effectiveness, and applicability of survey. The quantity of new data provided by survey, and the fact that they often come from rural rather than urban contexts, has already been vital in reshaping our perspective of late antiquity and the early Byzantine period. This perspective is getting more sophisticated and complex, as a result of revised ceramic chronologies (especially for late antiquity and the early Byzantine period), new studies of previously neglected pottery types (especially coarse wares<sup>71</sup>) that allow us to trace scales of exchange other than interregional alone, refinements and advancements in survey methods, and a growing frequency of intensive survey in rural, suburban, and urban contexts.

Some survey practitioners have within recent decades dropped their positivist optimism for a more hard-lined look at what can actually be learned from surface finds. The site distribution maps and ceramic studies that have resulted from survey paint a sketchy and incomplete picture of human settlement in a landscape structured as a human artifact. Survey data suffer from low chronological resolution so fundamentally that it is often impossible to determine when sites were created and abandoned with better precision than a scale of centuries. Discerning site function or functions, especially over time, is usually just as difficult. Transition-period sites suffering from low visibility due to the use of perishable building materials and locally made ceramics may fall completely under the radar of a survey. And in the fortunate case when shifts in settlement patterns can be detected with confidence, it is almost always impossible to pinpoint the cause(s) of such shifts. A further but less existential threat to the usefulness of

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<sup>71</sup> See in particular the regular meetings and volumes of *Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean* (LRCW), published in the BAR International Series by Archaeopress (Oxford).

survey is the variability of terms and methods employed by different survey projects, so that even the definition of a “site” can vary dramatically from one team of surveyors to another.<sup>72</sup>

How useful is survey, then, for reconstructing demographic and settlement patterns over time? Some practitioners despair, while others are skeptical but optimistic.<sup>73</sup> Survey results typically provide site numbers for a given area; the problem is figuring out how to translate site numbers into population numbers. The possibility of settlement nucleation and dispersion must be considered: for instance, a decrease in site numbers does not necessarily mean a decrease in population, if some number of remaining sites become larger at the same time. Scale matters, too, and different interpretive models for demographic change may need to be developed for data covering different scales of time (e.g., medium- versus long-term population cycles) and space (e.g., regional versus interregional).<sup>74</sup>

How can survey be used to reconstruct human exploitation of the environment, including its extent, variety, and change over time? The most important relevant evidence that can be gleaned from survey in Asia Minor and northwest Syria concerns settlement expansion, especially into marginal lands, and bumper production and export of cash crops, especially olive and grapevine, in the form of press equipment and amphora production. These indicators will appear again and again in the chapters that follow. Other types of evidence retrievable via survey include agricultural terraces, water-related structures (e.g., irrigation channels, cisterns,

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<sup>72</sup> Such problems have been discussed extensively in S. E. Alcock, 1993, *Graecia Capta: The Landscapes of Roman Greece* (Cambridge), 33-92; S. E. Alcock and J. F. Cherry, 2004, “Introduction,” in *idem*, 2004, *Side-by-Side Survey*, 1-12. For more on these and other methodological issues, see G. Barker and D. J. Mattingly (series eds.), 1999-2000, *The Archaeology of Mediterranean Landscapes*, 5 vols. (Oxford); E.-F. Athanassopoulos and L. Wandsnider (eds.), 2004, *Mediterranean Archaeological Landscapes: Current Issues* (Philadelphia); Alcock and Cherry, 2004, *Side-by-Side Survey*.

<sup>73</sup> See, e.g., the papers in J. L. Bintliff and K. Sbonias (eds.), 1999, *Reconstructing Past Population Trends in Mediterranean Europe (3000 B.C.-A.D. 1800)*, *The Archaeology of Mediterranean Landscapes* 1, POPULUS Project (Oxford).

<sup>74</sup> J. Bintliff, 1997, “Regional survey, demography, and the rise of complex societies in the ancient Aegean: Core-periphery, neo-Malthusian, and other interpretive models,” *Journal of Field Archaeology* 24: 1-38.

aqueducts), the collection and spreading of manure (resulting in pottery haloes around sites), and special surfaces built for threshing grain.<sup>75</sup>

### **C.ii. Palaeoenvironmental research**

Palaeoenvironmental research can provide evidence for climatic conditions, landscape stability, subsistence strategies, and human exploitation of the environment. Handbooks of methods related to environmental archaeology and science, as well as broader discussions of theoretical issues, are abundant, and the discipline is continuously growing.<sup>76</sup> Many types of evidence are gathered in the environmental research projects discussed in the chapters that follow. Fossilized pollen and phytoliths retrieved from sediments and other deposits can be used to reconstruct the vegetation of the ancient landscape. Analyses of stable isotopes, for example from microorganisms such as diatoms, or from cave formations (speleothems), provide information about the ancient climate, such as variations in temperature and precipitation. Lake levels (varves) and tree rings (dendroclimatology) can also provide reconstructions of climatic conditions. Charred seeds and charcoal are usually collected from excavated contexts and therefore provide evidence of human use of these materials, rather than about the landscape directly; similarly, faunal remains are most commonly retrieved from excavations and therefore serve as indicators of human activity. Studies of sediment morphology, micromorphology, and

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<sup>75</sup> For bibliography on agricultural buildings, field structures, cistern and terraces, agricultural tools, and productive installations, see Chavarría and Lewit, 2004, "Archaeological research on the late antique countryside," 10 nn. 14-17.

<sup>76</sup> Resources are too many to mention here. See, e.g., N. Branch, 2005, *Environmental Archaeology: Theoretical and Practical Approaches* (London); D. F. Dincauze, 2000, *Environmental Archaeology: Principles and Practice* (Cambridge); D. M. Pearsall, 2000, *Paleoethnobotany: A Handbook of Procedures* (San Diego); D. R. Piperno, 2006, *Phytoliths: A Comprehensive Guide for Archaeologists and Paleoecologists* (Lanham, MD). For earlier overviews and case studies on landscape archaeology and environmental reconstruction, see the papers in Leveau et al. (eds.), 1999, *Environmental Reconstruction in Mediterranean Landscape Archaeology*.

geochemistry have a range of applications, such as determining the affect of agriculture on sediment composition, or the rate of erosion over time. Rather than try to provide a comprehensive and critical analysis of these methods and the theories concerning their application, I will focus on a handful of issues that are most relevant to the problems addressed in this dissertation.

### ***Environmental change at different scales in space and time***

Environmental change operates simultaneously on multiple spatial and temporal scales. A single violent rainstorm may cause a river to overflow and inundate a low-lying village; a century of such severe rainstorms may have washed delicate topsoil from deforested hillsides and slowly raised that riverbed; a millennium of warmer, more humid conditions may have set the stage centuries earlier by generating those rainstorms and encouraging farmers to cultivate those hillsides. Thus the temporal and spatial scales of environmental change overlap and feed into each other in complex ways. Adding human activity to the mix makes reconstructing the causes behind these changes even more difficult.

Certain events function at known, well-defined spatial and/or temporal scales. Pollen from olive trees, for instance, is released annually and can travel only so far under certain conditions.<sup>77</sup> Olive pollen retrieved from a sediment core, then, can have been deposited only at a certain rate and can have come from only a certain distance away: a known pollen catchment. But even in these instances we have to rely on guesswork, inferences about past conditions based

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<sup>77</sup> See W. Eastwood, 2006, "Palaeoecology and landscape reconstruction in the eastern Mediterranean: Theory and practice," in J. Haldon (ed.), *General Issues in the Study of Medieval Logistics: Sources, Problems and Methodologies* (Leiden) 119-57, for a discussion of problems and limitations in interpreting pollen evidence and using it to reconstruct ancient landscapes, including issues concerning taphonomical processes (pollen production, dispersal, transport, deposition, preservation, and redeposition) and understanding the relationship between fossil pollen and past plant communities.

on the observable world around us (uniformitarianism), and the limits to investigation imposed by research design. How strong was the wind when that olive tree released its pollen between the years 500 and 550 – were the wind patterns the same as today, or different? Are there problems caused by the redeposition of older pollen, contamination by younger pollen, or preservation?

Our reconstructions of past environments and landscapes, then, will always be partly structured by the parameters of our investigation. For archaeologists interested in palaeoenvironmental reconstruction, the main framework into which such reconstructions are placed is the history of human activity in a specific location of interest – a site, perhaps, or a region – and covering a specific length of time – from the Neolithic to the current day, or just the Roman period. Palaeoenvironmental reconstruction in this context, then, is undertaken with specific spatial and temporal scales in mind, and projects are designed to focus on those processes relevant to the project's research goals.

For archaeologists wishing to understand possible relationships between human activity and environmental conditions – climate change, for instance, or landscape degradation and changes in vegetation – a major problem is the issue of timing. These kinds of environmental change operate at a range of temporal scales, and often the scale that is most easily detected and therefore available to the archaeologist is long-term change, occurring over centuries or more. The low chronological resolution available for much environmental research makes it difficult to correlate observed environmental changes with what may interest the archaeologist most: namely, shorter-term changes in human behavior, such as the abandonment of a city or the adoption of a new form of cooking vessel. Furthermore, the temporal mismatch between perceived changes in the environment and in human behavior means that, even when general

correlation can be established, it is impossible to attribute causation: did the erosion event observed in a sediment sequence cause the abandonment of the valley perceived from survey data, or did the abandonment of the valley (and consequent neglect of terraces) cause the erosion event? Without precise timing for each of these events, it is difficult to know.

When additional agents of change are added, establishing cause-and-effect relationships becomes even more challenging. A problem that recurs in the following chapters is how to determine whether some observed environmental change, such as in landscape stability or vegetation composition, is natural (the result of natural changes in the climate) or anthropogenic (the result of human activity). For the ancient Mediterranean, changes in the landscape are commonly interpreted as a result of complex local interactions among all three factors: the landscape, climate, and human behavior. This issue was addressed in Chapter 2, where I discussed how climate change and human behavior, as well as their compounding effects, have been singled out as potential causes of the changes in vegetation and settlement patterns theorized for the end of antiquity. Misunderstanding may also arise from the disconnect between the approaches of natural scientists and the desires of archaeologists to attribute causation, resulting in false – though compelling – positives.

An example these issues is provided by the Beyşehir Occupation Phase, an environmental pattern with important implications for the subject of this dissertation.

### ***The Beyşehir Occupation Phase***

One of the most successful and long-standing approaches to palaeoenvironmental reconstruction in Asia Minor has been pollen analysis, which since the 1970s has revealed a pattern of agricultural and pastoral activity perceived in the pollen sequences extracted from sediment cores

obtained since the 1970s from lakes, marshes, and wetlands throughout Turkey.<sup>78</sup> First identified as a distinct indication of human activity in the pollen diagram from lake Beyşehir in southwest Turkey, it has therefore been named the Beyşehir Occupation (BO) Phase. It is characterized by the presence of cultivated trees such as olive (*Olea europaea*), walnut (*Juglans regia*), chestnut (*Castanea sativa*), manna ash (*Fraxinus ornus*), and *Prunus*, as well as grapevine (*Vitis vinifera*) and cereals.<sup>79</sup> In addition to these intentionally cultivated species, it also includes

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<sup>78</sup> This pollen assemblage zone was first identified at lake Beyşehir in southwest Turkey (W. van Zeist, H. Woldring, and D. Stapert, 1975, "Late Quaternary vegetation and climate of southwestern Turkey," *Palaeohistoria* 17: 55-143). The following list is not exhaustive; for additional sites see the online European Pollen Database ([www.europeanpollendatabase.net](http://www.europeanpollendatabase.net)). For other sites in southwest Turkey, see van Zeist et al., 1975, "Late Quaternary vegetation and climate of southwestern Turkey"; S. Bottema and H. Woldring, 1984, "Late Quaternary vegetation and climate of southwestern Turkey II," *Palaeohistoria* 26: 123-49; W. J. Eastwood, N. Roberts, and H. Lamb, 1998, "Palaeoecological and archaeological evidence for human occupation in southwest Turkey: The Beyşehir Occupation Phase," *Anatolian Studies* 48: 69-86; W. J. Eastwood, N. Roberts, H. F. Lamb, and J. C. Tibby, 1999, "Holocene environmental change in southwest Turkey: A palaeoecological record of lake and catchment-related changes," *Quaternary Science Reviews* 18: 671-95). For sites in the southwest around Sagalassos, see M. Vermoere et al., 2002, "Palynological evidence for late-Holocene human occupation recorded in two wetlands in SW Turkey," *The Holocene* 12.5: 569-84; M. Vermoere, 2004, *Holocene Vegetation History in the Territory of Sagalassos (Southwest Turkey): A Palynological Approach*, Studies in Eastern Mediterranean Archaeology 6 (Turnhout); D. Kaniewski, E. Paulissen, V. De Laet, K. Dossche, and M. Waelkens, 2007, "A high-resolution Late Holocene landscape ecological history inferred from an intramontane basin in the Western Taurus Mountains, Turkey," *Quaternary Science Reviews* 26: 2201-18; J. Bakker et al., 2012, "Man, vegetation and climate during the Holocene in the territory of Sagalassos, western Taurus mountains, SW Turkey," *Vegetation History and Archaeobotany* 21.4-5: 249-66. For sites in western and northwestern Turkey, see S. Bottema, H. Woldring, and I. Kayan, 2001, "The Late Quaternary vegetation history of western Turkey," J. J. Roodenberg and L. C. Thissen (eds.), *The Ilipinar Excavations II* (Istanbul) 327-54; S. Leroy et al., 2002, "Abrupt environmental changes within a late Holocene lacustrine sequence south of the Marmara Sea (Lake Manyas, N-W Turkey): Possible links with seismic events," *Marine Geology* 190.1-2: 531-52; M. Knipping, M. Müllenhoff, and H. Brückner, 2008, "Human induced landscape changes around Bafa Gölü (western Turkey)," *Vegetation History and Archaeobotany* 17.4: 365-80. For sites in northern Turkey, see S. Bottema, H. Woldring, and B. Aytuğ, 1993/1994, "Late Quaternary vegetation history of northern Turkey," *Palaeohistoria* 35/36: 13-72. For sites in central and eastern Turkey, see Bottema and Woldring, 1984, "Late Quaternary vegetation and climate"; H. Woldring and S. Bottema, 2001/2002, "The vegetation history of east-central Anatolia in relation to archaeology: The Eski Acıgöl pollen evidence compared with the Near Eastern environment," *Palaeohistoria* 43/44: 1-34; N. Roberts et al., 2001, "The tempo of Holocene climatic change in the eastern Mediterranean region: New high-resolution crater-lake sediment data from central Turkey," *The Holocene* 11.6: 721-36; A. England, W. J. Eastwood, C. N. Roberts, R. Turner, and J. F. Haldon, 2008, "Historical landscape change in Cappadocia (central Turkey): A palaeoecological investigation of annually laminated sediments from Nar lake," *The Holocene* 18.8: 1229-45; L. Wick, G. Lemcke, and M. Sturm, 2003, "Evidence of Lateglacial and Holocene climatic change and human impact in eastern Anatolia: high-resolution pollen, charcoal, isotopic and geochemical records from the laminated sediments of Lake Van, Turkey," *The Holocene* 13.5: 665-75.

<sup>79</sup> K.-E. Behre, 1981, "The interpretation of anthropogenic indicators in pollen diagrams," *Pollen et Spores* 23: 235-247; idem, 1990, "Some reflections on anthropogenic indicators and the record of prehistoric occupation phases in pollen diagrams from the Near East," in S. Bottema, G. Entjes-Nieborg, and W. van Zeist (eds.), *Man's Role in the Shaping of the Eastern Mediterranean Landscape* (Rotterdam) 219-30; S. Bottema and H. Woldring, 1990,

plants that are favored by the habitats produced or unintentionally introduced by human activity, such as weeds that thrive on disturbed soils and grasses well-suited for pasturage.<sup>80</sup> In pollen diagrams, the BO Phase shows up like a particularly protracted, egregious yarn on a lie-detector test: a series of sharp spikes in the percentage values of the plants listed above, roughly between 1500 BCE and 800 CE (**fig. 3.3**). These species constitute a line-up of usual suspects. They are the primary and secondary anthropogenic indicators of intensive agropastoral activity conducted in a landscape by its human occupants.<sup>81</sup>

Although the BO Phase has been recorded in almost every core taken in Turkey, its start- and end-dates are not the same at every site. Furthermore, while in the pollen diagrams it ends abruptly in terms of palaeoenvironmental time-scales, the chronological resolution of this time-scale is usually too low to have precise and meaningful implications for the history of corresponding human events and lifetimes. In addition, the mechanisms by which the end of the BO Phase is dated for each core are rough, and the cores have been dated by different research teams using a variety of methods over a period of decades. Therefore, it is difficult to determine whether the asynchronous timing observed for the end of the BO Phase at different sites is in fact real or simply the result of the inaccuracies of and inconsistencies between dating methods.

In order to begin addressing these problems, it is necessary to find palaeoenvironmental data with higher spatial and temporal resolution. Data with these characteristics will have greater applicability when integrated with archaeological and textual evidence. Determining when exactly the BO Phase of intensive agropastoralism ended at a particular site is one

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“Anthropogenic indicators in the pollen record of the eastern Mediterranean,” in Bottema et al. (eds.), *Man’s Role in the Shaping of the Eastern Mediterranean Landscape* (Rotterdam) 231-65.

<sup>80</sup> Important secondary anthropogenic indicators include wild grasses (Cerealia pollen type, such as *Aegilops*), *Plantago lanceolata*, *Sanguisorba minor*, *Polygonum aviculare* type, *Polygonum cognatum* type, *Rumex acetosella* type, *Centaurea solstitialis* type, *Mercurialis annua*, and *Eryngium campestre*. Vermoere et al., 2002, “Palynological evidence for late-Holocene human occupation,” 572.

<sup>81</sup> Behre, 1990, “Some reflections on anthropogenic indicators.”

promising avenue toward explaining when and why complex settlement changed as well. Two high-resolution sediment sequences have recently been collected in Turkey and analyzed for multiple features: at the Bereket Basin near the ancient city of Sagalassos and at lake Gölü near Koloneia in western Cappadocia.<sup>82</sup> The BO Phase ends at dramatically different times not only at sites located hundreds of kilometers apart (such as Bereket and lake Gölü), but also at sites within the same region, located only 10 or so kilometers apart (such as Bereket and the neighboring Gravgaz wetland, discussed in Chapter 7). The variety of start- and end-dates for the BO Phase highlights the importance of local human activity versus regional or supra-regional climate change in determining locally specific landscape change. In addition, the fact that the BO Phase ended at all begs the question: what came next? What did the end of intensive agropastoralism mean for inhabitants of both city and countryside who had depended on these strategies for centuries? These questions will be addressed in the chapters that follow, particularly in Chapter 7 on Sagalassos and in the concluding Chapter 9.

#### **D. MODELS: PEOPLE, PRODUCTION, AND NETWORKS OF EXCHANGE**

To summarize thus far: one of the main goals of the dissertation is to figure out why antiquity “ended” in the eastern Mediterranean, when, and what life was like for the generations who experienced this transition. This transition is best understood by tracking changes concerning population, settlement, production and exchange, subsistence strategies and environmental conditions, and standard of living and quality of life. These broad patterns of change can be identified only by looking beyond the city to the countryside, using evidence from regional

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<sup>82</sup> Kaniewski et al., 2007, “A high-resolution Late Holocene landscape ecological history” (Bereket); England et al., 2008, “Historical landscape change in Cappadocia” (lake Gölü).

survey and environmental archaeology and science. Before discussing this evidence in the following chapters, here I will present a number of hypotheses concerning these broad patterns of change and provide some necessary background information for these proposals.

The patterns or indices of change listed above are tightly interconnected and interdependent. There are many overarching mechanisms governing these complex relationships, but we can begin to dissect this dense interdependence by looking at it through specific lenses. The lens that I find especially useful is that of economic activity, taken very broadly. From this starting point, we can try to identify connections among a number of factors: the ancient economy as an overarching system for the production and movement of goods, people, money, and ideas; the role of the state versus private commerce as a motor of exchange; agricultural production, including the possibility of surplus production for export (especially olive oil and wine); cycles of expansion into and the abandonment of marginal land; the importance of pottery as a proxy for production, exchange, and communication in general; and the relationship between agricultural production and exchange, on the one hand, and economic prosperity and population growth, on the other. Presented as a list, these issues appear jumbled and gathered at random. But tinker with them long enough, and it becomes apparent that they interlock in myriad ways, at some places joining in a snug dovetail, at others barely held together with a wobbly nail. The result is a complicated three-dimensional structure that must be continually reworked and reassembled, but can eventually serve as an interpretive framework for understanding the overarching mechanisms connecting the broad patterns of change that provide our best means of understanding life at the end of antiquity.

By way of illustration, general connections among some of these economic issues can be proposed. The apparent economic vitality and material prosperity enjoyed by rural inhabitants of

many regions in northwest Syria and southern Asia Minor during late antiquity has been interpreted as the result of the successful endeavors of small-scale cultivators, residing in autonomous villages, in producing agricultural commodities such as olive oil and wine in some degree of surplus to meet the demands of the newly eastern-oriented empire and of long-distance fiscal and commercial markets. Such endeavors are all the more striking because they seem to have encouraged expansion into land previously deemed marginal, the cultivation of which would have required investment and maintenance beyond normal estimations. The term “marginal” is commonly used in this context to denote areas with topographic, climatic, or other natural conditions that inhibit the land’s agricultural potential, the implication being that inhabitants make use of such areas only when non-marginal land is unavailable, when they have adequate resources to make large investments in time and labor, and when the expected return on such investments is large enough to justify these efforts.

In addition, it is generally assumed that an overall picture of economic prosperity – concluded on the basis of the relatively high quality of materials used in these villages and the density of such remains, both imported and local – corresponds to high population numbers and population density. Therefore, evidence of economic vitality in the form of surplus production of cash crops (especially olive and grape as indicated by press equipment) and the long-distance export of such commodities (as sometimes indicated by local amphora production) is considered at some length in this study, inasmuch as it can be considered indirect evidence for relative population levels and density, as well as economic prosperity. Of course, not all goods were transported in amphorae, nor required the kind of stone processing equipment that remains highly visible and easy to record. Therefore, tracing production and distribution patterns of these material objects is not the same as tracing patterns of trade and exchange overall; there is no

guaranteed one-to-one correlation.<sup>83</sup> Nevertheless, olive oil and wine production and distribution are studied here as a subset of the larger economy because they can indeed (to some extent) be traced using well-preserved remains, and because growing these crops required certain conditions that presuppose landscape stability, resource availability, and a favorable climate. Because this type of economic prosperity – as well as the population enlivened by it – depends on the surplus production and export of agricultural commodities, it assumes reliable agricultural production, and therefore landscape stability, both of which are in turn affected by climate and landscape change.

Thus it should be clear how using economic activity as a starting point leads to a consideration of how the various indices of change of interest to us – population, settlement, production and exchange, subsistence strategies and environmental conditions, and standard of living and quality of life – are interwoven and interdependent. In addition, this approach reveals some of the important overarching mechanisms that govern the relationships between these indices. Primary among them is the mechanism of exchange, including the movement of materials and people, as well as the transmission of ideas and information. In this study, I use two specific networks of exchange in operation in the eastern Mediterranean in late antiquity and the early Byzantine period as a linchpin in my interpretation of how we should characterize the changes that mark the end of antiquity. Together they provide a kind of interpretive model, which serves not as a means to describe and quantify precise relationships, but rather as an explanatory framework with which to piece together these broad patterns of change into a meaningful whole. Although these networks of exchange are superficially defined by the goods

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<sup>83</sup> As noted, for example, by H. Elton, 2005, “The economy of southern Asia Minor and LR1 Amphorae,” in J. M. Gurt i Esparraguera, J. Buxeda i Garrigós, and M. A. Cau Ontiveros (eds.), *LRCW I: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*, BAR Int. Ser. 1340 (Oxford) 691-95, at 692.

and commodities that traveled on them, their scope is much broader, because the activities and behaviors to which they are connected had consequences that rippled out into every aspect of ancient life, particularly those most basic aspects concerning where people lived, what they ate, and how they survived – the fundamental markers of standard of living and quality of life that comprise the essence of what this dissertation seeks to discover: namely, what the end of antiquity “felt” like for those who lived through it. These two networks are essential to my interpretations not only because they reflect one of the overarching mechanisms governing the broad patterns of change with which this study is interested, but also because their fate after the mid-seventh century neatly encapsulates the post-antique trajectories of all these patterns into a comprehensive narrative.

The two networks of exchange highlighted in this study are two of the many in operation in the eastern Mediterranean from the fourth through at least the seventh century. One is the interregional network defined partly by the movement of Late Roman Amphora type 1 (LRA 1) made in Cilicia/Isauria and Cyprus and carrying local wine (and oil) through the Aegean to Constantinople and the lower Danube. The other is the more regionally circumscribed network defined by the production and distribution of Cypriot Red Slip (CRS, or Late Roman D) ware within the eastern Mediterranean. After defining the different scales of exchange used here and discussing some of their implications for the study of later antiquity, I will discuss these two networks in turn, and end by presenting a number of hypotheses to propose how these networks might begin to tell the story of the end of antiquity in a meaningful way.

### **D.i. Defining local, regional, and interregional scales of exchange**

Scholarship on the ancient economy has developed an increasingly heightened sensitivity to identifying differences in scale – scales of production, of distribution, and of exchange – and in recognizing how these different scales or levels of economic activity operated both independently and in overlapping ways. More to the point, by identifying the scale or scales of exchange to which inhabitants of a particular place had access, we can begin to reconstruct the material conditions they experienced and opportunities they may have enjoyed, in order to get closer to answering some of the questions central to this study: What types of property did people possess; of what quality were these possessions; and where were they made? What did people eat, and where did this food come from? To what extent were people aware of and affected by events that took place hundreds of kilometers away – in Constantinople, for instance, or along the Syro-Anatolian frontier?

As will become apparent throughout this study, one major change concerning economic activity that seems to mark the end of antiquity is a dwindling of long-distance exchange and a concurrent growth of regional and local production, distribution, and exchange networks. This pattern has in large part come into focus as a result of new developments in pottery studies, as greater attention is paid to ceramics of the late antique and early Byzantine periods, many of which are coarse wares produced locally in the region in which they are found and therefore fall outside the rubrics of production and distribution created for more easily recognized pottery types found across the Mediterranean. Developing antennae tender enough to sense economic activity operating on a regional or local scale requires an understanding of these locally produced

and distributed commodities and goods – usually pottery in and of itself, or as a proxy for some other item or service.

What exactly is the difference between local, regional, and interregional scales of interaction (**fig. 3.4**)? In this study I adopt, with a slight qualification, the definitions proposed by C. Morrisson in her introduction to the papers of the 2008 Spring Symposium at Dumbarton Oaks, the participants of which presents material and textual evidence to demonstrate the existence of markets, trade, and exchange in the Byzantine economy and therefore required a common definition of the concepts of local, regional, and interregional exchange.<sup>84</sup> Morrisson defines local trade “as a one-day transit time, or within a radius of less than about 50 kilometers (31 miles) by land or the distance of one day’s sailing, to a maximum of two or three days’ travel on foot.”<sup>85</sup> Local exchange, she explains, is the most challenging level to discern: it operates largely via local producers rather than professional traders, and involves daily staples (meaning food) and pottery, as well as raw materials and sources of energy. Regional exchange operates “above this limit and below ten days’ travel” and corresponds to a radius of 100 to 300 kilometers; it involves professional traders, who similarly moved food, pottery, raw materials, and sources of energy.<sup>86</sup> The largest scale, interregional, “connects two different regions that each have a radius of 100 to 300 kilometers”; it is not necessarily long distance, but most frequently so, because “the two regions are not systematically coterminous.”<sup>87</sup> Morrisson also notes that the distinction between regional and interregional scales is more blurred for maritime than land trade because of the lower transportation cost of sea travel, and that regional and interregional levels “often intermingle, since commodities that travel long distances often end up

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<sup>84</sup> C. Morrisson, 2012, “Introduction,” in ead. (ed.), *Trade and Markets in Byzantium* (Washington, DC) 1-9.

<sup>85</sup> Morrisson, 2012, “Introduction,” 4.

<sup>86</sup> Morrisson, 2012, “Introduction,” 5.

<sup>87</sup> Morrisson, 2012, “Introduction,” 5.

in regional exchanges and vice versa.”<sup>88</sup> My only qualification concerns the network of Cypriot Red Slip ware, which, though interregional by these definitions, remained relatively circumscribed within the eastern limit of the Mediterranean, showing up primarily in southern Asia Minor, the Levant, and Cyprus. I therefore categorize this network as regional rather than interregional.

#### **D.ii. Network one: Interregional exchange, olive oil and wine, and Late Roman Amphora 1 (LRA 1)**

The interregional network of exchange highlighted in this study is defined primarily by the movement of wine and olive oil produced in Cilicia/Isauria and later Cyprus, carried in Late Roman Amphora 1 (LRA 1) through the Aegean to Constantinople and the lower Danube, as well as to other regions of the eastern Mediterranean and Egypt. It also incorporates the distribution of Phocaean Red Slip (PRS, or Late Roman C) ware from western Asia Minor around the broader eastern Mediterranean, from Egypt and to Constantinople and across the Levant.<sup>89</sup> The articulation of this network reflects the current consensus that, beginning in the fourth century, rural communities in the eastern Mediterranean were encouraged to increase agricultural production to surplus levels in order to meet the demands of the newly-oriented empire: in particular, the large population living in the capital at Constantinople, the army stationed in the eastern provinces, and the urban populations of the largest eastern cities.<sup>90</sup> In

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<sup>88</sup> Morrisson, 2012, “Introduction,” 5.

<sup>89</sup> See T. Lewit, 2011, “Dynamics of fineware production and trade: The puzzle of supra-regional exporters,” *Journal of Roman Archaeology* 24: 313-32, and the related discussion in Chapter 9.

<sup>90</sup> See, for example, the argument as encapsulated by S. Mitchell, 2005, “Olive cultivation in the economy of Roman Asia Minor,” in S. Mitchell and C. Katsari (eds.), *Patterns in the Economy of Roman Asia Minor* (Swansea) 83-113, at 99.

one version of this model, this agricultural expansion was officially promoted by the state, and the subsequent mass movement of these foodstuffs was made possible by the state fiscal system in the form of the civic and military *annona*. In another version, it is private commerce that served as the main impetus and mechanism of movement. In both versions, large-scale, long-distance demand is presented as the reason why agricultural production seems to have increased in the eastern Mediterranean region beginning in the fourth century, as well as why rural settlement and prosperity appears to have expanded at the same time. This scenario does not exclude the important role of smaller-scale (local and regional) demand and distribution (for example, the towns within Cilicia or northwest Syria), but the widespread and heavy distribution of LRA 1 suggests that overseas interregional exchange was common and driven by a powerful overarching mechanism. The model in all its possible versions relies heavily on the evidence of surplus production of oil and/or wine, on the one hand, and of amphora kiln sites and distribution networks, on the other.

### ***Olive oil and wine production***

Patterns of olive and grape cultivation, oil and wine production, and the exchange of these goods can be charted using several forms of evidence. Olive oil press components, including counterweight blocks, socket blocks, crushing basins, grinding stones, and press beds, are easily identifiable objects made out of durable materials with a high rate of survival over the centuries. Unfortunately, these objects cannot be easily dated without an archaeological context, and wine and oil presses can be easily confused. The identification of oil- or wine-carrying amphora production sites and dispersal patterns can corroborate evidence for oil and wine production based on press elements alone and can have far-reaching implications concerning the export and

economic significance of these products for a particular region. D. Mattingly's work on olive oil production and export in North Africa during the Roman imperial period has demonstrated how this evidence can be used to estimate the quantities of oil produced annually and to reconstruct the markets to which the oil was shipped.<sup>91</sup> In addition to hard evidence made of stone and fired clay, olive cultivation and oil production leave other traces. Archaeobotanical data, including olive pollen and olive plant remains (such as wood, pits, and post-pressing cakes), can indicate not only the existence of olive cultivation within a region, but also a broad chronology for its beginning and end.

In addition, olives are useful as evidence for changes in settlement patterns and land use practices because their cultivation and production into oil require significant investment of time and capital, as well as the assumption that such long-term investment will pay off in the future. The plant requires over a decade to reach a mature stage of productivity; olive cultivation often necessitates the construction of terraces; and press installations are expensive.<sup>92</sup> In addition, olives have considerable tolerance for drought and can grow in a range of soil types, enabling them to thrive on lands not suited for other cultivated species.<sup>93</sup> Olive cultivation may therefore indicate agricultural expansion into marginal lands. For all these reasons, olive cultivation and oil production (and to a lesser extent, wine) provide insight into cultivators' long-term view of the future, particularly their perceptions of security and stability, as related both to economic markets and to the physical landscape. Working with evidence for intensive olive cultivation and oil production in North Africa during the second to third centuries, R. Hitchner identified a

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<sup>91</sup> One article among many: D. J. Mattingly, 1996, "First fruit? The olive in the Roman world," in G. Shipley and J. Salmon (eds.), *Human Landscapes in Classical Antiquity: Environment and Culture* (London) 213-53.

<sup>92</sup> D. J. Mattingly, 1988, "Oil for export? A comparison of Libyan, Spanish and Tunisian olive oil production in the Roman empire," *Journal of Roman Archaeology* 1: 33-56, at 51.

<sup>93</sup> M. Decker, 2001, "Food for an empire: Wine and oil production in north Syria," in S. Kingsley and M. Decker (eds.), *Economy and Exchange in the East Mediterranean during Late Antiquity* (Oxford) 69-86, at 71.

series of indicators including “a mass market, regional security, a developed transportation infrastructure, agricultural expansion, technological serialization, spawning of complementary industries (ceramics), and urban development,” that will be present in various combinations in the local economies of regions that produce olive oil intensively.<sup>94</sup> Many of these indicators have been identified in the archaeological and textual record of northwest Syria and Asia Minor in late antiquity, discussed in the chapters below.

### ***Late Roman Amphora 1 (LRA 1)***

The second category of evidence in support of the economic model presented above concerns the local production and interregional distribution of amphorae, since these are the vessels in which oil and wine were transported beyond the local and regional levels (though they could be used for these scales of exchange as well, even transported overland,<sup>95</sup> in addition to perishable containers such as barrels and skins or bladders). One particular amphora type has been the linchpin in the argument for some amount of surplus oil and/or wine production and export for northwest Syria and the southeastern regions of Asia Minor, particularly Cilicia/Isauria, as well as Cyprus: the Late Roman Amphora 1 type (LRA 1). It therefore serves as the major defining marker of the interregional network of exchange highlighted in this dissertation.

LRA 1 is one of six amphora types defined by J. A. Riley in the excavations at Carthage that together formed “a standard ‘package’”<sup>96</sup> found throughout the Mediterranean and traditionally dated to the late fourth to seventh centuries (but predominantly in the fifth and sixth

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<sup>94</sup> R. B. Hitchner, 1993, “Olive production and the Roman economy: The case for intensive growth in the Roman empire,” in W. Scheidel and S. von Reden (eds.), *The Ancient Economy* (New York) 71-83, at 79-80.

<sup>95</sup> For overland transport of amphorae and bladders by pack animal, see M. McCormick, 2012, “Movement and markets in the first millennium: Information, containers, and shipwrecks,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 51-98, at 65, 92-93; Decker, 2001, “Food for an empire,” 77.

<sup>96</sup> J. A. Riley, 1989, “Fieldwork on the Red Sea coast: The 1987 season. The pottery,” *Journal of the American Research Center in Egypt* 26: 149-61, at 151.

centuries), all of which were produced in the east (**fig. 3.5**).<sup>97</sup> Riley's original typology and chronology have since been amended and made more complex, as on-going research continues to show the remarkably complicated variations of amphora form and fabric, as well as the possibility of production and distribution beyond 700 CE (**fig. 3.6**). LRA 1 in its various sizes has the widest distribution and is the most commonly found of all the amphora types from late antique contexts (**figs. 3.7a-c, 3.8**).<sup>98</sup> The amphora type has been found throughout the Mediterranean, in Palestine, Egypt, North Africa, Constantinople, Athens, Rome, southern France, and Spain, as well as farther afield, such as on the Danube and in Britain.<sup>99</sup> The results of early petrological fabric analysis suggested that source material for the amphora type came from Cyprus and the area around the Gulf of Iskenderun (eastern Cilicia and northwest Syria) and thus it was produced there (**fig. 3.9**).<sup>100</sup> More recent NAA analysis has shown that some LRA 1 fabric groups do not contain this signature material, and thus other regions could also have manufactured the amphora type.<sup>101</sup>

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<sup>97</sup> J. A. Riley, 1982, "New light on relations between the eastern Mediterranean and Carthage in the Vandal and Byzantine periods: The evidence from the University of Michigan Excavations," in *Actes, Colloque sur la céramique antique, Carthage 23-24 Juin 1980* (Carthage) 111-22. The other amphora-types in this "package" are LRA 2 from the Aegean, LRA 3 from western Asia Minor, LRA 4 from Palestine (Gaza), LRA 5/6 from Palestine, and LRA 7 from Egypt.

<sup>98</sup> Important early studies present contexts from Rome (Crypta Balbi) and Constantinople (Saraçhane), in which LRA 1 predominates. See L. Sagui, 1998, "Il deposito della Crypta Balbi," in ead. (ed.), *Ceramica in Italia: VI-VII secolo* (Florence) 305-30; J. W. Hayes, 1992, *Excavations at Saraçhane in Istanbul. Vol. 2, The Pottery* (Princeton).

<sup>99</sup> J.-Y. Empereur and M. Picon, 1989, "Les régions de production d'amphores impériales en Méditerranée orientale," in M. Lenoir, D. Manacorda, and C. Panella (eds.), *Amphores romaines et histoire économique: dix ans de recherche* (Rome) 223-48, at 236-43; C. Panella, 1993, "Merci e scambi nel Mediterraneo tardoantico," in A. Carandini, L. Cracco Ruggini, and A. Giardina (eds.), *Storia di Roma 3. L'età tardoantica. II. I luoghi e le culture* (Turin) 613-97, at 657-73; P. G. van Alfen, 1996, "New light on the 7<sup>th</sup>-c. Yassi Ada shipwreck: Capacities and standard sizes of LRA1," *JRA* 9: 189-213, at 208-10.

<sup>100</sup> D. P. S. Peacock and D. F. Williams, 1986, *Amphorae and the Roman Economy: An Introductory Guide* (London) 185-87; D. F. Williams, 1979, "The heavy mineral separation of ancient ceramics by centrifugation: A preliminary report," *Archaeometry* 21: 177-82. See also idem, 2005, "An integrated archaeometric approach to ceramic fabric recognition. A study case on Late Roman Amphora 1 from the eastern Mediterranean," in Gurt i Esparraguera et al. (eds.), *LRCWI*, 613-24. Before such analyses, the region of production was thought to be Egypt based on the prevalence of LRA 1 found there.

<sup>101</sup> M. L. Rautman et al., 1999, "Amphoras and roof-tiles from late Roman Cyprus: A compositional study of calcareous ceramics from Kalavassos-Kopetra," *Journal of Roman Archaeology* 13: 377-91.

J.-Y. Empereur and M. Picon identified probable kiln sites on the ground based on the presence of heavy concentrations of amphora sherds, wasters, and slag, on Rhodes, Cyprus, and studding the coastline of Flat Cilicia (as far west as Elaiussa-Sebaste) and the Gulf of Alexandretta (**fig. 3.10**).<sup>102</sup> Definite kiln sites, where actual kilns and/or wasters have been found, include Anemurium, Elaiussa-Sebaste, Soles, Tarsus, Magarsus (Antioch on the Pyramus), and Aigeai on the Cilician/Isaurian coast; and Paphos, Amanthonte, and Zygi on Cyprus.<sup>103</sup> (Another possible kiln site producing a variant of LRA 1 has been very tentatively identified in western Rough Cilicia.<sup>104</sup>) Some of these definite kiln sites have even been excavated: for example, on Cyprus and at Elaiussa-Sebaste, where hundreds of LRA 1 wasters, both fragmentary and intact, demonstrate the large scale of production over the course of more than two hundred years between the fourth to seventh century (**fig. 3.11**).<sup>105</sup> What is notable about this list is the absence of any confirmed production site in northwest Syria, given that this region is often presented as a major exporter of locally produced oil (and wine) in what are

<sup>102</sup> Empereur and Picon, 1989, “Les régions de production d’amphores impériales,” 236-43, 239 figs. 18-19.

<sup>103</sup> Empereur and Picon, 1989, “Les régions de production d’amphores imperiales,” 236-43; P. Reynolds, 2005, “Levantine amphorae from Cilicia to Gaza: A typology and analysis of regional production trends from the 1st to 6th centuries,” in Gurt i Esparraguera et al. (eds.), *LRCW I*, 563-612, at 566. For Cyprus and Elaiussa-Sebaste, see below.

<sup>104</sup> N. K. Rauh and K. W. Slane, 2000, “Possible kiln sites in western Rough Cilicia,” *Journal of Roman Archaeology* 13: 319-330, at 326.

<sup>105</sup> Cyprus: Rautman et al., 1999, “Amphoras and roof-tiles from late Roman Cyprus”; S. Demesticha and D. Michaelides, 2001, “The excavation of a Late Roman 1 Amphora kiln in Paphos, Cyprus,” in E. Villeneuve and P. M. Watson (eds.), *La céramique byzantine et proto-islamique en Syrie-Jordanie (IV-VIII siècles apr. J.C.)* (Beirut) 289-96; S. W. Manning et al., 2000, “Late Roman Type 1a amphora production at the late Roman site of Zygi-Petrini, Cyprus,” *Report of the Department of Antiquities, Cyprus*: 233-57. Elaiussa-Sebaste: E. Equini Schneider, 2007, “Elaiussa Sebaste – Report of 2006 excavation season,” *Kazı Sonuçları Toplantısı* 29.2: 299-310; ead., 2008, “Elaiussa Sebaste – The 2007 excavation and conservation season,” *Kazı Sonuçları Toplantısı* 30.4: 177-90; A. F. Ferrazzoli and M. Ricci, 2007, “Elaiussa Sebaste: produzioni e consumi di una città della Cilicia tra V e VII secolo,” in M. Bonifay and J.-C. Trégliat (eds.), *LRCW 2: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*, BAR Int. Ser. 1662 (Oxford) 671-88; eadem, 2010, “Un centro di produzione delle anfore LR1: Elaiussa Sebaste in Cilicia (Turchia). Gli impianti, le anfore,” in S. Menchelli, S. Santoro, M. Pasquinucci, and G. Guiducci (eds.), *LRCW 3: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry: Comparison between the Western and Eastern Mediterranean*, BAR Int. Ser. 2185 (Oxford) 815-26; V. Iacomi, 2010, “Some notes on late-antique oil and wine production in Rough Cilicia (Isauria) on the light of epigraphic sources: Funerary inscriptions from Korykos, LR 1 amphorae production in Elaiussa Sebaste and the Abydos Tariff,” in Ü. Aydınoğlu and A. K. Şenol (eds.), *Olive Oil and Wine Production in Anatolia during Antiquity* (Mersin, Turkey) 19-32.

assumed to have been locally produced LRA 1.<sup>106</sup> Possible kiln sites have been suggested at Rhodus and Seleucia Pieria, but the evidence (LRA 1 sherds) is ambiguous.<sup>107</sup> In Chapter 4, I discuss the evidence in more detail and propose that the oil and wine production of the region, particularly the Limestone Massif, was aimed not at overseas export, but at supplying the local and regional demands of the numerous cities in the region, Antioch paramount among them, as well as the army along the eastern frontier. Syrian oil and wine could have reached these consumers through a combination of the state redistribution system (both to Antioch and to the army) and commercial markets.

In contrast, LRA 1 production in Cilicia/Isauria and Cyprus is well established. The amphora type appeared in the fourth century with a distribution limited to the Levantine coast, Cyprus, and Egypt. In the late fourth century it began to spread out to the Black Sea and lower Danube (perhaps as part of the military *annona*,<sup>108</sup> discussed in Chapter 5), then pushed out farther into the Mediterranean, Aegean, and Black Sea in the early fifth. It appeared in Britain in the late fifth to mid-sixth century. In the sixth century, or perhaps as early as the late fifth, Cyprus began producing LRA 1 as well and became part of this network, linking the island to the armies on the lower Danube and to the markets of Egypt.<sup>109</sup> During the seventh century, Cyprus seems to have superseded Cilicia as the main production center of LRA 1. The latest finds of LRA 1 have traditionally been dated to the mid-seventh century, but new research suggests that the amphora type was produced through the eighth and even into the ninth century (see discussion on exchange beyond 700 CE below).

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<sup>106</sup> E.g., Decker, 2001, "Food for an empire," 76-77.

<sup>107</sup> Empereur and Picon, 1989, "Les régions de production d'amphores impériales," 236-43, 239 figs. 18-19; Reynolds, 2005, "Levantine amphorae from Cilicia to Gaza," 566.

<sup>108</sup> O. Karagiorgou, 2001, "LR2: A container for the military *annona* on the Danubian border?" in S. Kingsley and M. Decker (eds.), *Economy and Exchange in the East Mediterranean during Late Antiquity* (Oxford) 129-66.

<sup>109</sup> Reynolds, 2005, "Levantine amphorae from Cilicia to Gaza," 577.

### ***LRA 1 and interregional exchange***

The appearance of LRA 1 is part of a fundamental shift in amphora distribution that occurred during the fourth century, when a relatively small number of new types – most produced, like the members of Riley’s “package,” in the east – replaced the more numerous and diverse repertoire of the Roman imperial period.<sup>110</sup> The creation of a new and more restricted set of amphora types produced in the east fits into the model of increased rural settlement, agricultural production, and commodities exchange to meet the demands of the newly-oriented empire beginning in the fourth century. The connection between eastern rural agricultural producers and Constantinople was indeed articulated by LRA 1 – which is the most common amphora type (c. 15-20%) found at Saraçhane in sixth-to-seventh-century deposits (fourth- and early fifth-century deposits are not well represented)<sup>111</sup> – but that does not necessarily mean that Constantinople served as the main pull for the commodities it contained.

So what *was* the primary driving force behind the exchange of LRA 1: the state or private commerce? And which agricultural product(s) did it usually contain: olive oil, wine, or something else? The survey and palaeoenvironmental evidence presented in the following chapters will help us determine answers to these questions, which will in turn have major implications for how we interpret the broad trends such as population and settlement change in later antiquity that are the focus of this study. Furthermore, the contrast between the fate of this interregional network of exchange after the seventh century, and that of the regional network presented below, will prove to be a key to understanding the end of antiquity in the eastern Mediterranean.

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<sup>110</sup> Karagiorgou, 2001, “LR2: A container for the military *annona* on the Danubian border?”; Mitchell, 2005, “Olive cultivation in the economy of Roman Asia Minor,” 150.

<sup>111</sup> J. W. Hayes, 1992, *Excavations at Saraçhane in Istanbul. Vol. 2, The Pottery* (Princeton) 63-64.

### D.iii. Network two: Regional exchange and Cypriot Red Slip (CRS) ware

Cypriot Red Slip (CRS) ware is the name given by J. Hayes in place of Late Roman D ware to the most common fine ware found on Cyprus in the late Roman and early Byzantine periods.<sup>112</sup> “Late Roman D” was the original name given by F. O. Waagé to one of the main red slipped wares found at Antioch, and is still used by archaeologists working in the Levant.<sup>113</sup> Some scholars working in Asia Minor have raised a call to arms, asking that the older term be used, not only because Cyprus has not yet been confirmed as a production center, but more importantly because they believe this fine ware belongs to “a broader socio-cultural and socio-economic common language or *koinè* of pottery production, which is best covered by a very old flag – that of Late Roman D.”<sup>114</sup> They wish to include under the umbrella of Late Roman D not only CRS, but also Sagalassos Red Slip ware and other lines of pottery produced in southwest Asia Minor. This request is reasonable, but since I wish to discuss fine ware that has been identified as CRS by many different teams, and not to confuse it with fine ware identified as something else, I will use term CRS throughout this dissertation.

CRS was produced beginning in the fourth century and distributed across the eastern Mediterranean, especially in southern Asia Minor, the Levant, and Cyprus. The series of CRS kilns recently discovered at Gebiz near Pednelissos in southern Pisidia constitute the only known production center of this fine ware, formerly thought to have been produced on Cyprus (see

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<sup>112</sup> J. W. Hayes, 1972, *Late Roman Pottery* (London) 371-86; idem, 1980, *A Supplement to Late Roman Pottery* (London) 528-29.

<sup>113</sup> F. O. Waagé, 1948, *Antioch-on-the-Orontes IV.I: Ceramics and Islamic Coins* (Princeton).

<sup>114</sup> M. Jackson, M. Zelle, L. Vandeput, and V. Köse, 2012, “Primary evidence for Late Roman D Ware production in southern Asia Minor: A challenge to ‘Cypriot Red Slip Ware’,” *Anatolian Studies* 62: 89-114, 111; quote from J. Poblome and N. Firat, 2011, “Late Roman D. A matter of open(ing) or closed horizons?,” in M. A. Cau Ontiveros, P. Reynolds, and M. Bonifay (eds.) *LRFW 1: Late Roman Fine Wares: Solving Problems of Typology and Chronology* (Oxford) 49-55, at 49. I thank Mark Hammond for these references.

Chapter 6, with **figs. 6.3, 6.4**).<sup>115</sup> No doubt other production centers existed as well, in southern Asia Minor and also on Cyprus, but so far the kilns at Gebiz provide our only picture of the kind of clustered rural industries operating during late antiquity within this specific regional network, which included inland routes serving relatively isolated places like Balboura in highland Lycia, as well as overseas routes to Egypt and the Levant.

The CRS network slimly qualifies as interregional according to the definitions presented above, but it never achieved the same scale of output or distribution across the eastern and western Mediterranean as did another fine ware produced in the east, Phocaean Red Slip (PRS) ware from western Asia Minor. In contrast to the varied distribution of PRS, most CRS has been found in a much smaller number of places, primarily Cyprus and the (southern) Levant, followed by southern Asia Minor (**fig. 3.12a-b**). I therefore categorize this network as a regional. T. Lewit has suggested that ships carrying grain from Egypt and ships carrying oil (and wine) in LRA 1 from Cilicia and the Levant stopped at Phocaea to pick up fine ware and other products on their way to Constantinople and again as ballast on their return. Imagining Phocaea as an “entrepôt between the Egyptian grain route and that of oil from E Anatolia” would explain why PRS is found in Constantinople, Egypt, southern Anatolia, and the Levant, as well as why both PRS and LRA 1 are prevalent in Constantinople and Egypt.<sup>116</sup>

Unlike the interregional network defined by LRA 1 and PRS (and Egyptian grain), the regional network of CRS appears never to have spread beyond the edges of the eastern Mediterranean. What accounts for this difference? And what happened to each network after the seventh century, when both are assumed to have fallen apart?

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<sup>115</sup> Jackson et al., 2012, “Primary evidence for Late Roman D Ware production.”

<sup>116</sup> Lewit, 2011, “Dynamics of fineware production and trade,” 326.

#### **D.iv. The networks of LRA 1 and CRS beyond 700 CE**

Comparing and contrasting the fates of these two networks of exchange after the seventh century provides a key to understanding the process and nature of the end of antiquity. It has been generally assumed that after 700 CE, with some exceptions, the amphora types of Riley's "package," along with other amphora types and red-slipped wares, either ceased to be produced or, if still produced, were no longer transported beyond the region where they were made.<sup>117</sup> The logic goes that just as the late antique amphora "package" and its cousins had replaced the more diverse repertoire of the Roman imperial period during the course of the fourth century, so too were they replaced by new amphora types by the end of the seventh or beginning of the eighth century, distributed on a smaller scale and with much greater regional diversity. Certainly interregional exchange contracted dramatically. But the exceptions to this general picture are growing in number and deserve mention. Recent excavations and re-assessments have blown apart Riley's "package" into a complex constellation of new amphora types and new chronologies.<sup>118</sup> The argument that these pottery types – and the commodities they carried – continued to be produced and distributed through the eighth and possibly into the ninth century is growing on the basis of new finds and a reconsideration of cases in which the excavators accept an end date of 700 because of tradition rather than careful analysis.

One example is Constantinople, where Syro-Palestinian amphorae have been found at Saraçhane up to the end of the eighth century; such amphorae are also found in eighth-century

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<sup>117</sup> Panella, 1993, "Merci e scambi nel Mediterraneo tardoantico," 670-72, esp. 671.

<sup>118</sup> As discussed, e.g., by D. Pieri, 2012, "Regional and interregional exchanges in the eastern Mediterranean during the early Byzantine period: The evidence of amphorae," in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 27-49.

levels at the Crypta Balbi in Rome, but are rare.<sup>119</sup> Amphorae continue to be present in eighth- and ninth-century levels at sites in northern Italy on the Adriatic and up the Po valley, including Rimini, Verona, the Venetian lagoon, and Comacchio: these early medieval globular amphorae “derive from the similar Aegean forms LR 2 [Late Roman amphora type 2] and they have a clear link with the Yassı Ada 2 type (typologically speaking, a variant of the large category LR 2), which is still widespread in the Aegean and the Mediterranean Sea in the seventh century.”<sup>120</sup> The eighth- to ninth-century amphorae at the river emporium of Comacchio may have been produced in southern Italy and/or the eastern Mediterranean, particularly Syria-Palestine and the Aegean (possibly from Pontus, as well); together, “their uniformity suggests that the containers may have been sent directly from a single center—presumably the capital of the Byzantine Empire,” based on comparisons with amphorae from Saraçhane.<sup>121</sup>

Recent research suggests that LRA 1 and CRS were similarly produced and exchanged beyond the traditional end-date of 700 CE. P. Armstrong has argued that LRA 1 and CRS, along with Dhiorios cooking pots (named after a kiln site on Cyprus, but possibly produced elsewhere as well) and dimple-bottomed jugs, formed a “neat range of ceramic types – fine and plain tablewares, cooking ware, and storage/trade vessels” – that was in circulation and fulfilled the various needs of households in the eighth century.<sup>122</sup> Late examples of LRA 1 have been identified from eighth-century contexts on Pseira off the northeast coast of Crete, Limyra in

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<sup>119</sup> Hayes, 1992, *Excavations at Saraçhane in Istanbul*, 100-5; Panella, 1993, “Merci e scambi nel Mediterraneo tardoantico,” 672; L. Sagui, 1998, “Il deposito della Crypta Balbi,” in ead. (ed.), *Ceramica in Italia: VI-VII secolo* (Florence) 305-30.

<sup>120</sup> S. Gelichi, 2012, “Local and interregional exchanges in the lower Po valley, eighth–ninth centuries,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 219-33, at 228-29 nn. 33-34.

<sup>121</sup> Gelichi, 2012, “Local and interregional exchanges,” 229, citing C. Negrelli, 2007, “Produzione, circolazione e consumo tra VI e IX secolo dal territorio del Padovetere a Comacchio,” in F. Berti, M. Bollini, S. Gelichi, and J. Ortalli (eds.), *Genti nel Delta da Spina a Comacchio. Uomini, territorio e culto dall’Antichità all’Alto Medioevo* (Ferrara) 437-71, at 454-68.

<sup>122</sup> P. Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” in M. Mundell Mango (ed.), *Byzantine Trade, 4th-12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham) 157-78, at 167.

Lycia, and possibly at a kiln site near Paphos on Cyprus; a ninth-century example has been documented at Emporio on Chios.<sup>123</sup>

The latest examples of CRS come from archaeological contexts dated to the eighth century and include two forms: Hayes Form 9 and “Well form.” Hayes dated the later variants of Form 9 (B and C) up to the end of the seventh century,<sup>124</sup> but Armstrong notes that examples of the form have been identified in a coin-dated eighth-century destruction deposit at Panagia on Cyprus; in a likely eighth-century context at Kornos cave, also on Cyprus, where CRS was found in association with dimple-bottomed jugs, known only from the eighth century; and reportedly in association with ninth-century glazed Islamic ceramics at Limyra.<sup>125</sup> “Well form” is named after the well deposit at Anemurium in which it was first identified; the deposit is dated to the late seventh to early eighth century (post-630 CE), but examples of the same form have since been found in securely-dated eighth-century deposits at Limyra.<sup>126</sup>

Variations of Form 9 have been found at Balboura, Limyra, Gebiz/Pednelissos, Xanthos, and Anemurium (where it formed the largest single pottery type from two late contexts, the well deposit and the sea baths) in southwest Anatolia; Kalavastos-Kopetra on Cyprus (where it comprised over 50% of the excavated fine ware); Emporio on Chios; sites in Syria, Jordan, and Palestine; and Berenice.<sup>127</sup> In addition to Anemurium and Limyra, “Well form” has been found

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<sup>123</sup> Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 163-64, 163-64 nn. 22-27.

<sup>124</sup> Hayes, 1972, *Late Roman Pottery*, 382.

<sup>125</sup> Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 159, 160-61 (Panagia; silver coin of Artavasdos and Nikephoros of 742/43 CE); 161-65 (Kornos cave); 164 (Limyra); including references.

<sup>126</sup> C. Williams, 1989, *Anemurium: The Roman and Early Byzantine Pottery*, Subsidia mediaevalia 16 (Toronto) 34-35, nos. 191-94, fig. 15. Limyra (eastern part of the lower city): J. Vroom, 2005, “New light on ‘Dark Age’ pottery: A note on finds from south-western Turkey,” *Rei Cretariae Romanae Fautorum acta* 39: 249-55; ead., 2007, “Limyra in Lycia: Byzantine/Umayyad pottery finds from excavations in the eastern part of the city,” in S. Lemâitre (ed.), *Céramiques antiques en Lycie: VIIe s. a.C. – VIIIe s. p.C.: les produits et les marchés* (Pessac) 261-92, at, e.g. 271, 277.

<sup>127</sup> Balboura: P. Armstrong, 2012, “The survey pottery: Hellenistic and later,” in J. J. Coulton, 2012, *The Balboura Survey and Settlement in Highland Southwest Anatolia* (London) II, 31-82, at 60. Limyra (eastern part of the lower city): Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 164, citing pers. comm. with J. Vroom). Gebiz: Jackson et al., 2012, “Primary evidence for Late Roman D Ware production.” Xanthos (unclear

at Balboura, Gebiz/Pednelissos, Perge, and Hierapolis in southwest Anatolia; Dhiorios and Kalavastos-Kopetra on Cyprus; Jordan and Syria; Berenice; and Alexandria in Egypt.<sup>128</sup>

Together, these findspots of the final forms of CRS suggest that the fine ware continued to circulate around the eastern Mediterranean throughout the eighth and possibly into the ninth century, connecting Chios, southwest and southern Asia Minor, Cyprus, Alexandria, and the Levantine coast and inland in Syria, Jordan, and Palestine (**fig. 3.13**).<sup>129</sup> For the purposes of this dissertation, it is important to emphasize that kilns at Gebiz in southern Pisidia, noted above and discussed in Chapter 6, produced the whole range of CRS, including the two final forms (**fig. 3.14a-b**).<sup>130</sup> The recognition of the continued operation of this regional trade network is all the more significant because, first, it indicates on-going interaction among eastern regions after the

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exactly which final form, from the cathedral and agora): E. Pellegrino, 2002, "Le matériel céramique issu des fouilles menées en 1995 et 2000 sur l'acropole lycienne de Xanthos," *Anatolia Antiqua* 10: 245-60, at 247-48. Anemurium: Williams, 1989, *Anemurium*. Kalavastos-Kopetra: Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," 168; citing M. L. Rautman et al., 2003, *A Cypriot Village of Late Antiquity: Kalavastos-Kopetra in the Vasilikos Valley*, *Journal of Roman Archaeology*, Suppl. Ser. 52 (Portsmouth). Emporio: Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," 170. Syria, Jordan, and Palestine: Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," 171, citing A. Uscatescu, 2003, "Report on the Levant pottery (5<sup>th</sup>-9<sup>th</sup> century AD)," in C. Bakirtzis (ed.), *Congrès international sur la céramique médiévale en Méditerranée, Thessaloniki 11-16 octobre 1998* (Athens) 546-58. Berenice: Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," 174, citing P. M. Kenrick, 1985, *Excavations at Sidi Khrebish Benghazi (Berenice)*, vol. 3, Suppl. to *Libya Antiqua* 5 (Tripoli) 399-401, 8717.1-2.

<sup>128</sup> Balboura: Armstrong, 2012, "Survey pottery," II, 60. Gebiz: Jackson et al., 2012, "Primary evidence for Late Roman D Ware production." Perge: Firat, 2000, "So-called 'Cypriot red slip ware'," 37, fig. 3. Hierapolis: D. Cottica, 2000, "Late Roman imported and locally produced pottery from Hierapolis (Pamukkale, Turkey): Preliminary evidence," *Rei Cretariae Romanae Fautororum acta* 36: 49-56, at 50, no. 12; Dhiorios: Vroom, 2007, "Limyra in Lycia," 273, citing H. W. Catling, 1972, "An Early Byzantine pottery factory at Dhiorios in Cyprus," *Levant* 4: 1-82, at 9 fig. 5 P28 and P95. Kalavastos-Kopetra: Vroom, 2007, "Limyra in Lycia," 273, citing M. C. McClellan and M. L. Rautman, 1994, "The 1991-1993 field seasons at Kalavastos-Kopetra," *Report of the Department of Antiquities, Cyprus*, 289-307, fig. 4, no. 4; Rautman et al., 2003, *A Cypriot Village of Late Antiquity*, fig. 5.3, nos. 32-34. Jordan and Syria: Armstrong, 2012, "Survey pottery," II, 60, citing Uscatescu, 2003, "Report on the Levant pottery (5<sup>th</sup>-9<sup>th</sup> century AD)," 551. Berenice: Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," 174, citing Kenrick, 1985, *Excavations at Sidi Khrebish Benghazi (Berenice)*, B715. Alexandria: Vroom, 2007, "Limyra in Lycia," 271.

<sup>129</sup> Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," 171-74, who calls it an "extensive trade network" (171).

<sup>130</sup> Jackson et al., 2012, "Primary evidence for Late Roman D Ware production," quote at 90. See the discussion in Chapter 6.

Islamic conquest and, second, it seems to have operated “more or less independently of Constantinople, where the same ceramics did not penetrate.”<sup>131</sup>

#### **D.v. Hypotheses: Networks of exchange and the end of antiquity**

I propose that the difference in scale between these two networks was a result of the primary mechanism by which they operated: the interregional network defined by LRA 1 (along with PRS) was driven primarily by the demands of the state *annona* system (while also serving commercial markets), while the regional network of CRS seems to have been guided primarily by local and regional demand and commercial markets (while still benefiting indirectly from the fiscal system). In other words, state demand and subsidy drove the bulk exchange of food commodities in LRA 1 and enabled the interregional distribution of piggy-backing goods (PRS), while private commerce fueled the smaller-scale exchange of CRS.

To the extent that each network depended on state subsidy and investment, the communities of producers, transporters, and consumers who relied on it were vulnerable to the disruptions suffered by the Byzantine state and the shutdown of the fiscal system we know occurred during the seventh century. Given its greater independence from the state fiscal system, the regional network of CRS should have had a better chance of surviving fiscal contraction and breakdown than the interregional network of LRA 1 (and PRS). Following this logic, communities could survive insofar as they were able to decouple from the state system and invest their energies in privately-run commercial production and exchange. In other words, the continuation of commercial exchange, operating primarily via local and regional networks but

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<sup>131</sup> Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 175.

also interregionally, should have provided a safety net for some communities, making them resilient in the face of the disruptions of the seventh century.

## **E. SUMMARY**

Instead of using urbanization as the key instrument with which to measure the timing, pace, and nature of the end of antiquity in Asia Minor, I aim to use broader patterns as indices of change: population levels, settlement dynamics, economic networks, subsistence strategies, material standards of living, and environmental conditions. In order to find evidence for these patterns, I look beyond the city and investigate the countryside by integrating two primary methods: regional survey and environmental archaeology and science.

Survey evidence should be able to tip the scales of the debate in favor of one of the following reconstructions: either the tipping point between late antiquity and the early Byzantine period – the end of antiquity – was a time of rapid and definitive change involving the implosion of cities and considerable population loss, or it was a time of gradual transformation involving the reorganization of a relatively stable population out of cities and into villages and continuation of pre-existing, intensive land use practice. Palaeoenvironmental evidence can indicate whether climatic deterioration and land degradation were adequately harsh, widespread, and abrupt to encourage rapid population loss and the disintegration of urban networks, to discourage resistance to other stresses, and to prevent recuperation – that is, to make the second view untenable and to support the first.

The post-seventh-century fates of two networks of exchange in operation in late antiquity and the early Byzantine period may provide a key to understanding the end of antiquity in the

eastern Mediterranean. The interregional network defined primarily by LRA 1 from Cilicia/Isauria and later Cyprus was driven mainly by the state fiscal system, while also serving commercial markets. The regional network defined by CRS was fuelled primarily by commercial demand, but benefited from the fiscal system. Greater dependence on the fiscal system made the LRA 1 network, and the communities who relied on it, more vulnerable to the disruptions and shutdown of that system during the seventh century. I propose that, in contrast, the continuation of commercial exchange past the seventh century, operating primarily on local and regional networks but also interregionally, provided a safety net for some communities, making them resilient in the face of these challenges. I test these hypotheses with the evidence presented in the following chapters, and in Chapter 9, I discuss my conclusions and explore how their implications relate to the other broad patterns of change that characterize the end of antiquity in the eastern Mediterranean.

## CHAPTER 4

### CONQUEST AND THE COUNTRYSIDE: NORTHWEST SYRIA

#### A. INTRODUCTION

To a large extent, our understanding of the flourishing and disappearance of late antique settlement in the eastern Mediterranean is informed by the decades-old and continuously debated investigation of the hundreds of villages or “Dead Cities” on the Limestone Massif (also called the *Massif calcaire*, Syrian Jebels, or limestone hills) of northwest Syria, which has served as a kind of template for picturing the economic mechanisms and historical lifespan of a seemingly comparable pattern of prosperous late antique village life in other regions, including those along the southern coast of Anatolia. Taking a closer look at the archaeological evidence on the Limestone Massif and the debates it has engendered is absolutely necessary in order to put into context the material from southern Asia Minor and beyond; indeed, insofar as the Syrian material, first published over a century ago, has been in the minds of those surveying the late antique remains across Asia Minor, it should be in ours as well.

In addition to the long-standing archaeological investigations of the villages of the Limestone Massif, interdisciplinary and methodologically up-to-date research has recently been carried out in the Amuq valley spreading northeast from the ancient city of Antioch on the

Orontes and in the narrower Kahramanmaraş plain to the north (**fig. 4.1**). Together, these projects provide a rich dataset of archaeological and palaeoenvironmental evidence from a countryside that included a range of microenvironments, from low-lying marshes to limestone uplands and towering mountain heights, and was closely intertwined with a network of vibrant cities. In addition, it has long been recognized that northwest Syria was a major producer of olive oil and wine in late antiquity. As such, we can look to this region to investigate changes in the production and movement of commodities such as foodstuffs (oil and wine) as a major pattern of change marking the end of antiquity, as well as begin to articulate the connection between this kind of economic activity and the other indices of change central to this study, including population dynamics, settlement patterns, and landscape change. Finally, this region, historically a source of prosperity for those who controlled it, was periodically invaded by the Sasanians in the sixth century and occupied by them for 20 years before the Byzantine state irretrievably lost it to Islamic conquest in 636. Thereafter it lay on the Islamic side of the Syro-Anatolian frontier zone, an area where violent conflict was not just a threat, but often a reality. For all of these reasons, northwest Syria is an ideal region for studying the end of antiquity through the lens of the countryside.

## **B. LIMESTONE MASSIF**

From the mid-fourth through at least the mid-sixth century, hundreds of villages were settled across the Limestone Massif, the series of limestone hills between Antioch and Beroia (Aleppo), stretching down south to Apamea.<sup>1</sup> Others had been built in the preceding centuries, but most

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<sup>1</sup> H. C. Butler, 1903, *Publications of an American Archaeological Expedition to Syria in 1899-1900*, II, *Architecture and Other Arts* (New York); idem, 1920, *Syria*, II B. *Architecture* (Leiden); G. Tchalenko, 1953-1958, *Villages*

date to this particular period of two hundred years – with a peak in population and wealth during the late fifth and early sixth centuries – of late antiquity, just before Syria was occupied by the Persians and then taken by the Arabs. Located between 50 and 100 km from the coast, the limestone hills rise to elevations of up to 1000 masl. The settlements are composed predominantly of houses, ranging from a handful to about two hundred, which seem to have been built over time, added alongside pre-existing dwellings without following a predetermined plan (**fig. 4.2**). In contrast, public buildings and spaces are rare, though each village had at least one church, and some were equipped with “inns” (structures with multiple rooms and colonnades), “androns” (buildings usually of a single room with a colonnade or open arcade), and bath complexes (**fig. 4.3**).<sup>2</sup> All these structures, including the houses, were built of carefully cut limestone blocks. The houses typically had two stories, with four or fewer rooms on each floor (though they could have up to thirteen), many with balconies and colonnades, the edges of doorways and windows embellished with moldings and sculpture in relief (**figs. 4.4, 4.5**).<sup>3</sup> Other notable features of the villages are cisterns and, important for the discussion to follow, pressing facilities for olive oil and wine (**fig. 4.6a-b**).

### **B.i. The village economy: monoculture or mixed agropastoralism?**

The ubiquity of the villages – over 700 have been recorded – as well as their hodge-podge internal organization and the skilled craftsmanship required for the ashlar masonry and sculptural

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*antiques de la Syrie du Nord: le massif de Bélus à l'époque romaine*, 3 vols. (Paris); G. Tate, 1992, *Les campagnes de la Syrie du Nord du IIe au VIIe siècle: un exemple d'expansion démographique et économique à la fin de l'antiquité*, I (Paris). See also: C. Foss, 1997, “Syria in transition, A.D. 550-750: An archaeological approach,” *Dumbarton Oaks Papers* 51: 189-269; O. Callot, 1984, *Huilleries antiques de Syrie du Nord* (Paris); M. Decker, 2007, “Frontier settlement and economy in the Byzantine East,” *Dumbarton Oaks Papers* 61: 217-67.

<sup>2</sup> Tchalenko, 1953, *Villages antiques*, I, 21-30; Tate, 1992, *Les campagnes*, I, 72-81 (androns and inns).

<sup>3</sup> Tchalenko, 1953, *Villages antiques*, I, 10-14; Tate, 1992, *Les campagnes*, I, 15-64, 85-188.

decoration of the houses and churches, speak of relatively well-off peasant proprietors prospering from the exploitation of some local resource.<sup>4</sup> For decades, olive oil seemed to be the answer. H. C. Butler first surveyed the region at the turn of the twentieth century; in the 1930s-40s, G. Tchalenko carried out his own impressive study and proposed olive monoculture – aimed at surplus production for export – as the economic mechanism driving the late antique material prosperity and high population density of the massif, the latter reaching a peak in the fifth century.<sup>5</sup> Some idea of the number and density of the “countless” presses noted by Tchalenko is offered by the work of G. Tate, who recorded 245 presses in his survey of 45 villages across four jebels between Antioch and Beroia.<sup>6</sup> Presses were found in every conceivable context and arrangement: inside large villas and small farms; isolated under the watchful gaze of a tower; associated with androns, temples, churches, and convents; alone and shared by a community; and clustered in multiples within a village and outnumbering the houses.<sup>7</sup> Most, though, were located on the periphery of villages, either inside structures or out in the open.

Tate’s press count is only one element of his broader study of the village houses and economic strategies of their peasant inhabitants. Whereas Tchalenko interpreted the presses as evidence of olive monoculture for export, for Tate they represent just one aspect – albeit an

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<sup>4</sup> Tchalenko and Tate both assume peasant proprietors; C. Wickham agrees, after considering literary and archaeological evidence for villages or large estates owned by Antiochenes: 2005, *Framing the Early Middle Ages: Europe and the Mediterranean 400-800* (Oxford) 447-48, *contra* P. Horden and N. Purcell, *Corrupting Sea*, 274-75 (reference from Wickham, 447, n. 14). The skilled craftsmen, some of whom inscribed their work, were either “specialized itinerant builders” (Wickham, 2005, *Framing the Early Middle Ages*, 445), or “local people, peasants like the others, who [...] practiced their trade in intervals between farming” (Foss, 1997, “Syria in transition,” 200), or perhaps both. Initially itinerant specialists could have settled in the area, especially during the decades of intense building and expansion. Another rich body of epigraphic evidence for builders and others employed in construction comes in the form of the funerary inscriptions of the cemetery of Corycus, in Isauria. See, for example, G. Varinlioglu, 2008, *Rural Landscape and Built Environment at the End of Antiquity: Limestone Villages of Southeastern Isauria* (Ph.D. dissertation, University of Pennsylvania) 87-90.

<sup>5</sup> Butler, 1903, *Publications of an American Archaeological Expedition to Syria*; idem, 1920, *Syria*; Tchalenko, 1953, *Villages antiques*, I, 413-14, 422-26.

<sup>6</sup> Tchalenko, 1953, *Villages antiques*, I, 40 (“innombrable”); Tate, 1992, *Les campagnes*, I, 243. For a more in-depth look at the presses, see O. Callot, 1984, *Huileries antiques de Syrie du Nord* (Paris).

<sup>7</sup> Tchalenko, 1953, *Villages antiques*, I, 41.

important one – of the peasant inhabitants’ strategy of mixed farming, characterized by the production of a diversity of crops (olive, grape, wheat, legumes, fruit trees) as well as stock-raising.<sup>8</sup> Indeed, the limestone hills harbor enough pockets of arable land and receive adequate rainfall (400-600 mm annually) to permit dry farming, and each pocket could be maximally exploited by intercropping olive groves with cereals or grazing animals beneath the trees.<sup>9</sup> In Tate’s view, the villagers were successful subsistence farmers who produced neither olive oil nor any other product exclusively for overseas export, though they did take advantage of local markets at towns such as Antioch and Apamea.<sup>10</sup>

In a contradictory argument, M. Decker uses Tate’s numbers (at least 245 presses in 45 villages) to suggest that the region encompassing all 700 recorded villages may have had almost 3,800 presses, and by extending the same press density (1.5 presses per sq. km) to include the unsurveyed portions of the territories of Antioch and Apamea, the number could grow to as many as 8,000 presses overall.<sup>11</sup> A large lever and screw press from the village of Qirqbize, one of eight presses in a village of 22 houses and presumably not many more than 200 people, was capable of producing between 2,500 and 5,000 liters of oil annually, fulfilling the annual 20-liter requirement of between 125 and 250 people.<sup>12</sup> Following this logic, the region around Antioch

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<sup>8</sup> Tate, 1992, *Les campagnes*, I, 243-56. Stock-raising is indicated by the visible remains of troughs in houses and excavated remains of domestic animals (246-47).

<sup>9</sup> M. Decker, 2001, “Food for an empire: Wine and oil production in North Syria,” in S. Kingsley and M. Decker (eds.), *Economy and Exchange in the East Mediterranean during Late Antiquity* (Oxford) 69-86, at 73.

<sup>10</sup> Tate, 1992, *Les campagnes*, I, 331: “Le Massif calcaire dépendait davantage des marchés locaux que des marchés lointains.”

<sup>11</sup> Decker, 2001, “Food for an empire,” 81-82.

<sup>12</sup> Decker, 2001, “Food for an empire,” 73. A total of 22 houses and 51 rooms is recorded for Qirqbize (Tate, 1992, *Les campagnes*, I, 207 table 23). Decker combines Tate’s suggestion that each room housed one family (1992, *Les campagnes*, I, 183-84) with an estimated family size of four persons to arrive at a village population of 204 people. The eight presses are noted by Tchalenko, 1953, *Villages antiques*, I, 320; the large lever and screw press used here is studied by Callot (1984, *Huileries antiques*, plate 61). For the oil production estimates, Decker cites D. J. Mattingly and R. B. Hitchner, 1993, “Technical specifications of some North African olive presses of Roman date,” in M.-C. Amouretti and J.-P. Brun (eds.), *La production du vin et de l’huile en Méditerranée, Bulletin de correspondance hellénique Suppl.* 26 (Paris) 439-62. The figure of 20 liters per capita for average annual

and Apamea could have supplied anywhere between 500,000 and two million people. Armed with these estimates, Decker is adamant that the northwest Syrian villages produced a surplus of not just oil but also wine for overseas export to meet state demand newly oriented towards Constantinople and the army, kicked off by the rapid growth of the capital and the loss of North African oil due to Vandal control for most of the fifth century and into the sixth.<sup>13</sup>

Unfortunately, hashing out these numbers provides ambiguous results, confirming neither Tate's argument for subsistence production nor Decker's for surplus production aimed at overseas export. Following Tate's guidelines, C. Foss estimates a population of 300,000 for the limestone hills around Antioch, not including the fertile plain around the city where continued occupation has obscured ancient remains, while the city itself may have had 150,000 people in this period.<sup>14</sup> Conceivably, then, assuming the combined fifth-century population of Antioch and Apamea and their territories was something along the lines of 1.1 million, oil production in the region *could* have been restricted to supplying the regional urban and rural population only. But if Decker's high estimate of 8,000 presses is correct, oil could have just as possibly been produced in surplus and exported.

### ***Late Roman Amphora 1 (LRA 1) in northwest Syria?***

A factor crucial to the debate remains: based on this evidence of large-scale oil and/or wine production, northwest Syria is assumed to have been a major producer of Late Roman Amphora

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consumption is suggested by M.-C. Amouretti, 1986, *Le pain et l'huile dans la Grèce antique. De l'aire au moulin* (Paris) 177-96.

<sup>13</sup> Decker, 2001, "Food for an empire," 83.

<sup>14</sup> Foss, 1997, "Syria in transition," 201, citing figures from Tate, 1992, *Les campagnes*, I, 183-86. J. H. W. G. Liebeschuetz estimates a possible range of 150,000 to 300,000 for the population of the city of Antioch (not including those living in suburbs and countryside, both plains and limestone hills) in of the fourth century but suggests that "the problem of food supply – at least as long as there was no large-scale imperial provision – would set strict limits to the size of the city," keeping it closer to the lower end of the range. The figure 150,000 is generally accepted for late antiquity.

1 (LRA 1; see Chapter 3) and the oil and wine it likely contained.<sup>15</sup> However, the only confirmed kiln sites for this amphora type are located in Cilicia and Cyprus (see Chapter 3, **fig. 3.10**). In northwest Syria, J.-Y. Empereur and M. Picon recorded the presence of LRA 1 sherds at three sites around Rhosus (Arsuz) and one near Seleucia Pieria on the coast near Antioch.<sup>16</sup> But the evidence for LRA 1 sherds at Seleucia is ambiguous, and no wasters (nor actual kiln sites) have been found at any of these locations; nor has LRA 1 been found in the villages of the Limestone Massif.<sup>17</sup> The absence of LRA 1 in the villages suggests that the amphora type was not produced in the hills near the pressing sites, but this is not surprising, since it will have been more convenient to carry the liquids in animal skins from the hills down to kilns located on the coast and transfer them into amphorae there.<sup>18</sup> But if this were the case, where are the coastal LRA 1 kilns?

It is possible that Syrian oil and wine were exported overseas in some other, locally produced container; however, there is no obvious candidate. Or perhaps LRA 1 was brought empty to northwest Syria from production sites in Cilicia and filled with Syrian oil and wine at coastal centers; but this scenario is too convoluted, and it would have been difficult to justify the transportation of empty containers on such a massive scale. That leaves two possibilities: either Syrian oil was exported overseas in LRA 1 made locally at kilns that simply have not been discovered yet, or Syrian oil and wine were not exported overseas. The first possibility is very

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<sup>15</sup> E.g., Decker, 2001, "Food for an empire."

<sup>16</sup> J.-Y. Empereur and M. Picon, 1989, "Les régions de production d'amphores impériales en Méditerranée orientale," in M. Lenoir, D. Manacorda, and C. Panella (eds.), *Amphores romaines et histoire économique: dix ans de recherché* (Rome) 223-48, at 236-43, 239 figs. 18-19.

<sup>17</sup> P. Reynolds, 2005, "Levantine amphorae from Cilicia to Gaza: A typology and analysis of regional production trends from the 1st to 6th centuries," in J. M. Gurt i Esparraguera, J. Buxeda i Garrigós, and M. A. Cau Ontiveros (eds.), *LRCW I: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*, BAR Int. Ser. 1340 (Oxford) 563-612, at 566.

<sup>18</sup> Amphorae carried by pack animal: Decker, 2001, "Food for an empire," 77. Goat-skins: J. J. Rossiter and J. Freed, 1991, "Canadian-Turkish Excavations at Domuztepe, Cilicia (1989)," *Echos du Monde Classique* 35: 145-74, at 173, citing evidence from second-century Palmyra: J.-B. Chabot, 1926, *Corpus Inscriptionum Semiticarum* II.3, No. 3913; J. F. Matthews, 1984, "The tax law of Palmyra: Evidence for economic history in a city of the Roman East," *JRS* 74: 157-80.

real but gets us nowhere, so we should think seriously about the second one. Local and regional demand for the oil and wine produced on the Limestone Massif was high. It came from the numerous cities in the region, Antioch paramount among them, as well as the armies along the eastern frontier. Syrian oil and wine could have reached these consumers through a combination of the state redistribution system (both to Antioch and to the army) and commercial markets.

What, then, are all those LRA 1 sherds doing at Seleucia and Rhosus? As noted above, no LRA 1 wasters were found at these locations. At two sites near Rhosus, LRA 1 sherds were found along with tile and other ceramics such as fine wares; at the third site, “make-up” deposits of LRA 1 and other pottery supported a series of rooms, and Phocaeen Red Slip (PRS, or Late Roman C) ware and Cilician cooking wares were identified on the sea shore nearby.<sup>19</sup> At the site near Seleucia, P. Reynolds interprets the LRA 1 sherds as part of an amphora dump associated with a warehouse for imports from Sinope, and observes frequent finds of PRS at the site as well.<sup>20</sup> The close association between LRA 1 and PRS at these sites supports the argument made by T. Lewit that Phocaea served as an “entrepôt between the Egyptian grain route and that of oil from E Anatolia.”<sup>21</sup> That is, both LRA 1 and PRS were brought to northwest Syria as a result of the state-driven movement of ships carrying oil (and wine) in LRA 1 from southeast Asia Minor to Constantinople and the lower Danube, which stopped at Phocaea to pick up PRS and other products both en route to the capital, and on the return trip as ballast. The arrival of LRA 1 and PRS in northwest Syria could have been both the direct and indirect result of this movement. The state ensured that Cilician/Isaurian wine and oil carried in LRA 1 were transported directly to the citizens of Antioch (as part of the civic *annona*) and, via Antioch, to soldiers on the eastern

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<sup>19</sup> Reynolds, 2005, “Levantine amphorae from Cilicia to Gaza,” 566.

<sup>20</sup> Reynolds, 2005, “Levantine amphorae from Cilicia to Gaza,” 566.

<sup>21</sup> T. Lewit, 2011, “Dynamics of fineware production and trade: The puzzle of supra-regional exporters,” *Journal of Roman Archaeology* 24: 313-32, quote at 326.

frontier (as part of the military *annona*). But, as an indirect offshoot, PRS and excess oil and wine in LRA 1, having entered the eastern Mediterranean because of the state system, could have thereafter been transported and sold commercially in “free-enterprise” markets. According to this scenario, the LRA 1 sherds found near Seleucia and Rhosus would have been dumped there after the wine (and oil) they had contained were removed for distribution on the civic and military *annona*e (in the latter case perhaps repackaged in receptacles more easily transported overland, such as skins), as well as for sale on urban markets.

Obviously the vast majority of the oil and wine consumed in the cities and villages of northwest Syria, as well as the army stationed nearby, could have been produced locally, in the hundreds of villages across the Limestone Massif and elsewhere in the region, such as the hills around the plain of Antioch (see below). This oil and wine would have been transported in some container other than LRA 1. This local production and consumption, however, does not preclude the possibility that additional oil and wine was imported from Cilicia/Isauria, shipped to northwest Syria in the LRA 1 that have been found dumped at the coastal ports of Rhosus and Seleucia.

***Agropastoralism for subsistence; surplus production for something more***

While there does exist an inherent contradiction between monoculture and mixed agropastoralism as economic strategies, no such mutual exclusivity exists between agropastoralism for subsistence and surplus production. It is possible to integrate the two. C. Wickham suggests that the peasant population depended on mixed farming rather than the market for subsistence, but that olive oil was “the main *exchange* specialization” of the region;

inhabitants produced it for export, and it was the basis of their material prosperity.<sup>22</sup> Oil, wine, and other foodstuff such as animal products could all have been produced by rural villagers to meet the demands of their own households as well as local and regional markets.<sup>23</sup> B. Ward-Perkins insists that it is specifically *overseas* demand – or, more to the point, the sale of oil and wine in response to it – that brought money into the pockets of these near eastern producers, and persuaded them to spread cultivation into marginal land previously deemed deficient.<sup>24</sup> I would argue, however, that the demand from the numerous towns in the region, Antioch especially, could also have brought money into the pockets and villages of these agricultural producers. Antioch was likely served not only by commercial markets but also by the state redistribution system, both of which would have served as an impetus for the local production of oil and wine on the nearby Limestone Massif. Only the commercial markets, however, would help explain the source of the surplus wealth exhibited by the peasant-proprietors of this region.

This middle-of-the-road scenario is the most convincing: the peasant-proprietors of the villages of the Limestone Massif depended for their subsistence on a mixed agropastoral economic strategy including various crops (olive, grape, cereals, beans, vegetables, fruits) and animals (cows and sheep),<sup>25</sup> but in order to finance such finely constructed houses, churches, and public buildings, they must have sold some amount of surplus oil (and possibly wine) in commercial markets. This scenario does not preclude the provision of Syrian oil and wine to the

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<sup>22</sup> Wickham, 2005, *Framing the Early Middle Ages*, 445 (emphasis his), who mentions Decker n. 8 in reference only to Decker's argument for wine in addition to oil production, and not to his argument for considerable surplus production of both.

<sup>23</sup> Foss, 1997, "Syria in transition," 199-200, accepting the claim for mixed farming, but with surplus production of olive oil and perhaps animal products sold at local towns, or passed on to external markets through middlemen.

<sup>24</sup> B. Ward-Perkins, 2000, "Specialized production and exchange," in A. Cameron, B. Ward-Perkins, and M. Whitby (eds.), *The Cambridge Ancient History, Volume XIV. Late Antiquity: Empire and Successors, A.D. 425-600* (Cambridge) 346-91, at 373-76, especially 374. In general: "I have argued that overseas trade, on a scale large enough to enrich those who were exporting their goods, is the easiest way to explain the coincidence in time between the prosperity of certain regions of the ancient world and the spread of their products overseas" (375-76).

<sup>25</sup> Tate, *Les campagnes*, I, 243-56.

state as tax, rather than in return for coin. But without selling some of their surplus and receiving coin or barter-worthy goods in return, it is difficult to see how these peasant-proprietors could have arranged for the construction of such stone houses and churches, or the donation of items such as the costly silver liturgical objects found in the village of Kaper Koraon.<sup>26</sup> Assuming some of the inhabitants of the other hundreds of villages gave similarly rich gifts to their own local churches, their endeavors at surplus production and export must have run at a profit. In other words, surplus production raised the standard of living of these villagers to levels above mere subsistence, but it was not necessarily required for their survival.

### **B.ii. The timing and nature of “decline”**

When and why did the comfortable lifestyle and booming agricultural production of the late Limestone Massif come to an end? The answers will have implications for the nearby regions of southern Asia Minor and beyond. It is important to decide where to stand on the spectrum of debate between a mixed economy for subsistence, on the one hand, and an export economy based on the monoculture, surplus production, and overseas export of a cash crop, on the other, because theories concerning the timing of and reasons behind the sharp drop-off in new construction and population depend in part on how one views the economic activities that made these villages hum in the first place.

Exactly when this booming area began to decline in economic prosperity and population remains a subject of dispute, the resolution of which is hindered by the scarcity of modern survey

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<sup>26</sup> Some of the 56 silver objects found at Kaper Koraon, located on Jebel Zawiye (between Antioch and Apamea), have inscriptions revealing them to be gifts of imperial officials as well as less notable local men. They date from about 540 to 640. M. Mundell Mango, 1986, *Silver from Early Byzantium: The Kaper Koraon and Related Treasures* (Baltimore).

and excavation in the region. To a large extent reconstructing the chronology of growth and decline depends on the dating of the village buildings, but excavations have been carried out and published at a single village only (discussed below). Relying on epigraphic evidence, Tchalenko surmised that while the cities in the region, such as Antioch, were suffering badly in the sixth century due to Persian invasions,<sup>27</sup> earthquakes, famine, and plague, the villages remained largely unaffected until the last decades of the sixth and early decades of the seventh century, when new construction ceased.<sup>28</sup> Interpreting the cessation of new construction as an indication of economic and demographic decline, he concluded that decades of Persian harassment and occupation, followed by the Islamic conquest of the region in 636, severed the villagers from the overseas markets on which their livelihoods had depended. For Tchalenko, it is isolation from long-distance markets caused by Persian conflict and Islamic conquest, rather than conflict itself, that led to rural depopulation precisely because, in his view, the maintenance of village life in late antiquity had depended so heavily on olive monoculture for export.<sup>29</sup>

But since, as argued above, it seems instead that villagers exploited a mixed agropastoralist strategy, and produced oil (and possibly wine) in surplus for predominantly local and regional consumption, a severing of their connection to overseas exchange networks would not necessarily spell disaster. This perspective dovetails with the more recent conclusions that economic decline in the villages actually began in the mid-sixth century, earlier than Tchalenko would have it, and that rural population levels were maintained without a significant reduction until the ninth century, much later than Tchalenko's seventh-century demographic drop-off.

Tate, for instance, sees village population and prosperity growing in tandem until the mid-sixth

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<sup>27</sup> Persians attacked Antioch in 529, destroyed the city in 540, besieged it in 573, and captured it in 609/10. Syria was under Persian occupation until 630. After a brief period of Byzantine reconquest, it came under Muslim control from 636/37 to 969.

<sup>28</sup> Tchalenko, 1953, *Villages antiques*, I, 426-31.

<sup>29</sup> Tchalenko, 1953, *Villages antiques*, I, 431-38.

century, when overpopulation and diminishing demand from troubled local urban markets caused a kind of “Malthusian crisis” visible archaeologically as reduced wealth and the cessation of new monumental construction activity, concurrent with a leveling off, but not decrease, of population.<sup>30</sup> Certainly the sixth-century troubles at Antioch and other regional centers would have hurt villages to the extent that villagers depended on income generated by the sale of surplus products there and used them as entrepôts to wider markets.

Tate’s assessment is based largely on findings from the only excavation of these villages, at the village of Dehes, of three groups of houses, which the excavators (of whom Tate was one) interpreted as built during two main phases, the fourth and the sixth centuries respectively, and with continued occupation into the ninth and perhaps up to the tenth century (**fig. 4.7a-b**).<sup>31</sup> The evidence from the Dehes excavation was the single most important factor in changing the long-standing view proposed by Tchalenko of complete seventh-century abandonment of the Limestone Massif. According to the excavators, the houses studied at Dehes remained occupied during the ninth century, perhaps into the tenth, but the inhabitants’ standard of living had begun to decline during the seventh century, visible in both the end of new construction and in their endeavors to maintain the houses in ways that seem slapdash or inferior in the eyes of the excavators when compared to the efforts of earlier times. Furthermore, the excavations unearthed a sequence of coins spanning from the early sixth through early ninth century, peaking in the second half of the seventh.<sup>32</sup> The village’s money economy suggests ongoing economic activity and exchange with the wider region.

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<sup>30</sup> Tate, 1992, *Les campagnes*, I, 335-42; “Malthusian crisis” at 340.

<sup>31</sup> J.-P. Sodini, G. Tate, B. and S. Bavant, J.-L. Biscop, and D. Orssaud, 1980, “Déhès (Syrie du Nord), Campagnes I-III (1976-1978), Recherches sur l’habitat rural,” *Syria* 57: 1-304, at 294-95.

<sup>32</sup> Sodini et al., 1980, “Déhès,” 267-87, 301.

The excavators' interpretation of the Dehes material, elaborated by Tate, opposes Tchalenko's view in two ways. Whereas Tchalenko imagined the villages as flourishing right up to the Persian and Arab invasions of the early seventh century, followed starkly by abandonment, the Dehes team sees serious economic decline already in the mid-sixth century, while at the same time points out traces of continuous occupation through the ninth, rather than total abandonment. The latter view of mid-sixth-century decline tallies with the belief shared by H. Kennedy and J. H. W. G. Liebeschuetz that already by the sixth century, urban society in the region had been fundamentally transformed into something much different from – and, their readers can infer, worse than – the earlier world as described by Libanius and structured by the Theodosian Code.<sup>33</sup> Their argument stems from Kennedy's earlier conclusion that the Arab invaders were able to capture Byzantine Syria with surprising ease because of the “demographic and economic weaknesses of the cities which prevented any serious resistance” – weaknesses that were ultimately the result of massive mortality caused by recurring plague.<sup>34</sup> According to this view, demographic and economic catastrophe had caused the “collapse of the market” by the mid-sixth century, which resulted in disaster for both cities and villages.<sup>35</sup> Kennedy assumes that the fate of the villages was linked to that of the cities because the villages were engaged in olive monoculture, and therefore depended on urban markets (as well as wider markets via the cities) both as consumers of their oil and as a mechanism for obtaining all the basic foodstuffs they

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<sup>33</sup> H. Kennedy and J. H. W. G. Liebeschuetz, 1988, “Antioch and the villages of northern Syria in the fifth and sixth centuries A.D.: Trends and problems,” *Nottingham Medieval Studies* 32: 65-90, at, e.g., 88.

<sup>34</sup> H. Kennedy, 1985, “The last century of Byzantine Syria: A reinterpretation,” *Byzantinische Forschungen* 10: 141-183, at 147 (quote), 161, 180-83. For Kennedy, the symptoms of sixth-century crisis include the break-up of classical urban monumentality, the inability of cities to rebuild and recover after earthquakes and invasions, the shift of economic activity from coastal cities to inland communities bordering the desert (related to the increasing presence of nomadic Arab tribes such as the Ghassānids), and the consolidation of land into ever-larger monastic estates, all the result of the plague: “The loss of population was the underlying cause which meant that earthquakes and invasions were so damaging” (183).

<sup>35</sup> Kennedy, 1985, “The last century of Byzantine Syria,” 160-61 (quote at 161).

failed to produce themselves.<sup>36</sup> Thus by 600 Kennedy sees a landscape of abandoned villages, their inhabitants dead or displaced by plague and invasions, the urban markets for their olive oil withered away, and their land gobbled up by religious and wealthy elite estates.<sup>37</sup> In such a scenario, depopulation was not absolute, but “only villages sustained by a mixed economy or a much visited sanctuary would have survived.”<sup>38</sup>

Foss combines Kennedy’s and Liebeschuetz’s emphasis on sixth-century urban decay with Tate’s image of village life continuing but suffering “increasing squalor” (Foss’s words) into the ninth century, so that in 636 the Arabs found in the countryside around Antioch and Apamea “a large and not altogether impoverished rural population in the entire countryside east of the Orontes,” but the cities of the north were in dire straits, with buildings still in ruins and others abandoned after the catastrophes of the sixth century.<sup>39</sup> Life in countryside started to decline, however, as visible in the remains from Dehes, while deurbanization and depopulation of the large cities continued, especially striking at Apamea; real decline hit the region in the ninth century.<sup>40</sup>

Against the picture of decline, J. Magness has dramatically reinterpreted the excavated material at Dehes to conclude that all the excavated houses were actually built in the second half of the sixth to early seventh century, rather than the fourth, and that the buildup of debris in and

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<sup>36</sup> Kennedy, 1985, “The last century of Byzantine Syria,” 158, 161,

<sup>37</sup> On the end of secular construction around the end of the first half of the sixth century, and the continuation of ecclesiastical and especially monastic construction into the early seventh: Kennedy, 1985, “The last century of Byzantine Syria,” 161, citing Tchalenko, 1953, *Villages antiques*, I, 135, 142-32, 283-84, 290 (secular); 118-19, 149-51, 177-78, 181, 279, 317-18 (ecclesiastical).

<sup>38</sup> Kennedy, 1985, “The last century of Byzantine Syria,” 161-62.

<sup>39</sup> Foss, 1997, “Syria in transition,” “squalor” at 204, 262-64, 267. Foss adds that the Persian occupation may have encouraged the departure of elite from the cities, disrupting patronage networks and leading to the collapse of public works and services; while at the same time, peasants remained, and the countryside seemed to endure (262-63).

<sup>40</sup> Foss, 1997, “Syria in transition,” 265-68.

around the houses indicates dense occupation and prosperity, rather than poverty or squalor.<sup>41</sup> This fresh look at the Dehes evidence results from her attempt to correct the argument for mid-sixth-century decline in Syria and Palestine by addressing what she sees as its central weakness: “the dating of Dehes (and the other northwest Syrian villages) has been influenced or dictated largely by the historical view that the Persian invasions and/or Muslim conquest marked the beginning of a decline in prosperity.”<sup>42</sup> Directly challenging the view of both Kennedy and the Dehes excavators, she concludes with the opposite view: “Palestine and Syria experienced a tremendous growth in population and prosperity between the mid-sixth and mid-seventh centuries.”<sup>43</sup>

Magness bases this conclusion on her reinterpretation of the Dehes excavations plus evidence of mid-sixth- and mid-seventh-century activity in Antioch and Caesarea, including the renovation or construction of new buildings, some elaborately decorated, and the presence of a wide variety of imported amphora types and fine wares.<sup>44</sup> Her reassessment is part of a growing recognition of post-conquest continuity in occupation and economic activity in Syria and Palestine,<sup>45</sup> and is therefore certainly a useful corrective to the historically biased narrative of doom-by-invasion that has tenaciously stuck to the back burners of many scholars’ minds, consciously or not. Her redating of the houses at Dehes and re-evaluation of their debris as evidence of economic vitality are logical, especially in view of the abundance of seventh-century coins. Ultimately, though, Magness’s claim for a “tremendous growth in population and prosperity” in northwest Syria cannot stand on the limited and scattered evidence at hand (though

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<sup>41</sup> J. Magness, 2003, *The Archaeology of the Early Islamic Settlement in Palestine* (Winona Lake, IN) 198-99, 205-6.

<sup>42</sup> Magness, 2003, *Archaeology of the Early Islamic Settlement*, 199.

<sup>43</sup> Magness, 2003, *Archaeology of the Early Islamic Settlement*, 215.

<sup>44</sup> Magness, 2003, *Archaeology of the Early Islamic Settlement*, 199-213.

<sup>45</sup> See, e.g., A. Walmsley, 2012, “Regional exchange and the role of the shop in Byzantine and early Islamic Syria-Palestine,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 311-30; idem, 2007, *Early Islamic Syria: An Archaeological Assessment* (London); and the conclusions at the end of this chapter.

her case for Palestine is not considered here). In particular, it falters when applied to the northwest Syrian countryside at large, which in her argument is represented by the Dehes excavations alone.

The upshot of this debate is that a general consensus has emerged that occupation in the Limestone Massif continued into the ninth or perhaps the tenth century. But what this continuous occupation looked like – its extent, density, and complexity – is unresolved. What can we learn by looking elsewhere?

### C. AMUQ VALLEY

Fortunately, the story of late antique northwest Syria does not end in the Limestone Massif. Elaborate and modern interdisciplinary research has been published on the settlement and landscape history of the plain and foothills around Antioch, enabling us to expand what would otherwise be a limited perspective based solely on the Limestone Massif, with its distinctive landscape and cultural remains. The decade-long Amuq Valley Research Projects (1995-2005) have produced a recent flourishing of reports and dissertations.<sup>46</sup> Many of their conclusions are based on the integration of survey and geoarchaeological investigations.

The Amuq valley, or plain of Antioch, spreads out at an elevation of 80-85 masl to the northeast from the ancient city (modern Antakya) and is bordered by the high Amanus mountains

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<sup>46</sup> See, for instance, K. A. Yener, C. Edens, T. P. Harrison, J. Verstraete, and T. J. Wilkinson, 2000, “The Amuq Valley Regional Project, 1995-1998,” *American Journal of Archaeology* 104: 163-220; J. Casana, 2003, *From Alalakh to Antioch* (Ph.D. dissertation, University of Chicago); K. A. Yener (ed.), 2005, *The Amuq Valley Regional Projects, vol. 1, Surveys in the Plain of Antioch and Orontes Delta, Turkey, 1995-2002* (Chicago: Oriental Institute Publications 131); F. Gerritsen, A. De Giorgi, A. Eger, R. Özbal, and T. Vorderstrasse, 2008, “Settlement and landscape transformations in the Amuq Valley, Hatay. A long-term perspective,” *Anatolica* 34: 241-314; A. A. Eger, 2008, *The Spaces Between the Teeth: Environment, Settlement, and Interaction on the Islamic-Byzantine Frontier* (Ph.D. dissertation, University of Chicago). Seminal work in the area was undertaken by R. Braidwood, 1937, *Mounds in the Plain of Antioch* (Chicago).

(1900-2250 masl) to the west, the lower Kurt Dağ to the northeast, and a series of limestone hills to the south and east, the Jebel al-Aqra and Jebel Zawiye (up to 800 masl) (see **fig. 4.1**). The plain is watered by three main rivers: the largest is the Orontes, which enters the valley from the south, while the Afrin and Kara Su arrive from the east and north, respectively. These two smaller streams previously collected in a lake and wetlands in the west-center of the plain, which then flowed into the Orontes at a point northeast of Antioch; the lake was drained in the 1960s.<sup>47</sup> The valley lies just northwest of and adjacent to the area of the Limestone Massif discussed above.

### **C.i. Survey**

The survey area defined by the project covers an area of about 30 by 30 km, which the team covered in two main periods of fieldwork: 1995 to 1998, when the team focused on the plain, and 2000 to 2002, when attention was shifted to the surrounding hills and upland valleys.<sup>48</sup> The surveys carried out during the first two field seasons were primarily extensive, full-coverage surveys, followed by two seasons of more-intensive surveys (100-m transects with field walkers placed at 20-m intervals), the latter covering a total of about 110 ha of the Amuq valley.

Between 2000 and 2002, the team devised a “semi-intensive” sampling strategy for surveying the surrounding uplands: they used natural drainage basins to define the boundaries of sample survey areas and covered selected drainage basins with surveyors placed at 100-m intervals. In addition

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<sup>47</sup> General information is from Gerritsen et al., 2008, “Settlement and landscape transformations,” 242-43.

<sup>48</sup> The following information on survey sampling strategy and design is from J. J. Casana and T. J. Wilkinson, 2005, “Settlement and landscapes in the Amuq region,” in K. A. Yener (ed.), *The Amuq Valley Regional Projects, vol. 1, Surveys in the Plain of Antioch and Orontes Delta, Turkey, 1995-2002* (Chicago) 25-65, at 26-28; J. Verstraete and T. J. Wilkinson, 2000, “The Amuq regional archaeological survey,” in K. A. Yener et al., “The Amuq Valley Regional Project, 1995-1998,” *American Journal of Archaeology* 104: 179-92.

to these pedestrian surveys of the plain and uplands, the team studied satellite imagery to identify sites and other features, and to correct ambiguities in the results from their own and earlier surveys.

By virtue of its diversity of landscape, the well-watered plain of Amuq and the uplands ringing it provide a multifaceted picture of settlement significantly different from that of the more homogenous Limestone Massif.<sup>49</sup> Important to note from the start, however, is that both micro-regions shared a new predominance of upland village settlement in late antiquity. That is, the area within the Amuq valley survey region that saw the densest occupation during late antiquity was a group of hills in the south (the Jebel al-Aqra), which are essentially an extension of the hills of the Limestone Massif. The research team divides the relevant centuries into late Roman (fourth to mid-seventh centuries) and early Islamic (mid-seventh to mid-tenth centuries), the mid-seventh-century turning point hinging not only on the obvious political shift from Byzantine to Islamic rule, but also new preferences in settlement location, site types, and economic strategies. Unfortunately, this periodization – though apparently based on the archaeological evidence itself – renders even more enticing the already easy inclination to attribute all changes in settlement pattern to that very chronological interstice predetermined by the researchers: the mid-seventh century. However, the team took several steps to avoid this pitfall: instead of simply identifying each site as late Roman, late Roman to early Islamic, or early Islamic, the sites were identified as pre-existing or “*de novo*,” and were also studied in terms of site size and assemblage size.<sup>50</sup> And the team was able to fine-tune the chronology of several important settlement trends, discussed below.

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<sup>49</sup> The following discussion of settlement in the Amuq valley in the late Roman (fourth to mid-seventh centuries) and early Islamic (mid-seventh to mid-tenth centuries) periods is from Gerritsen et al., 2008, “Settlement and landscape transformations,” 260-74, and Eger, 2008, *Spaces Between the Teeth*, 88-150, 309-56.

<sup>50</sup> Information on periodization and site categories is from Eger, 2008, *Spaces Between the Teeth*, 90-100.

The overall drop in site numbers from the Roman to late Roman, and then late Roman to early Islamic periods, is unequivocal (**fig. 4.8a-d**). The translation of site numbers into population numbers, however, is difficult and mostly untried. Occupation of the valley peaked in the Roman period (first century BCE to third century CE), when 205 out of a total of 287 studied sites (72%) were inhabited.<sup>51</sup> By the fourth century, the number of occupied sites had fallen to 136 (47%), and of these, only 15 were newly founded. During the early Islamic period, occupation was found at only 67 sites (23%), of which 6 were newly founded.<sup>52</sup>

Taking a closer look at the late Roman period, the marked decrease in site numbers that had occurred by the fourth century was unevenly spread across the different landscapes of the valley; these various changes in the mosaic of settlement all seemed to gel in the mid-sixth century.<sup>53</sup> The drop-off in site numbers was most severe on the plain, as pre-existing villages were consolidated and only a few sites were newly founded. While Antioch staggered through a series of catastrophes (including Persian invasions, earthquakes, famine, and plague), a network of minor towns with markets emerged around the valley. At the same time, the lake and marshlands in the west-entrance of the plain expanded and became permanent, which could have deterred occupation on the surrounding valley floor. (Further discussion of the evidence and implications of environmental change in the valley is provided below.) In contrast to the plain, settlement in upland areas flourished, most notably on the Jebel al-Aqra, which forms the southern boundary of the Amuq plain and is located adjacent to the eastern edge of Antioch.

Almost every site discovered on the Jebel was occupied during the late Roman period (as opposed to the earlier and later periods). Scattered across slope and hilltop, lowland and upland,

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<sup>51</sup> Gerritsen et al., 2008, "Settlement and landscape transformations," 260.

<sup>52</sup> Site numbers for the late Roman and early Islamic periods are from Eger, 2008, *Spaces Between the Teeth*, 99 table 1.

<sup>53</sup> The information in the following two paragraphs on late Roman settlement is from Gerritsen et al., 2008, "Settlement and landscape transformations," 260-66.

the sites seem to have been villas or large farmsteads rather than small-scale farms situated in isolation, and included both pre-existing and newly founded sites. The proportion of newly founded to pre-existing sites was higher on the Jebel than in the plain, and all *de novo* sites were situated on hilltops in the uplands of the Jebel, rather than the Jebel's slopes and lowlands. The researchers also note an "expansion of oleoculture"<sup>54</sup> on the Jebels. Settlement on the Jebel al-Aqra reached a maximum by the mid-fifth to mid-sixth century, meaning that most sites were not occupied after the mid-sixth. In contrast, occupation continued at some sites on the plain from the late Roman period into the early and even mid-to-late seventh century.

Though separated from the bulk of the Limestone Massif by the Orontes, settlement on the Jebel al-Aqra can be seen as the northwestern extent of the sphere of rural prosperity and self-sufficiency found across the Limestone Massif. In addition to sites on the Jebel al-Aqra, the survey team points to sites on the Amanus mountain range as evidence of general flourishing upland occupation during the late Roman period.<sup>55</sup> Upon further consideration, though, the Amanus sites are far fewer in number and were either fortified or linked to mining industries; that is, they were not villas or farmsteads. Therefore, neither the Amuq plain nor the Amanus mountains should be considered part of the late antique settlement phenomenon of the Limestone Massif. It is also important to note that, in contrast to the ashlar-constructed villages of the Limestone Massif, here in the lowlands and uplands of the Amuq valley, settlements were constructed of wood and mudbrick, and survive today as scatters of pottery and building materials.<sup>56</sup>

The survey team links the overall settlement trends of contraction on the plain and expansion on the Jebel al-Aqra to three main factors, which are both causes and results. First,

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<sup>54</sup> Gerritsen et al., 2008, "Settlement and landscape transformations," 260.

<sup>55</sup> Gerritsen et al., 2008, "Settlement and landscape transformations," 262.

<sup>56</sup> Casana and Wilkinson, 2005, "Settlement and landscapes in the Amuq region," 40.

the growth of the lake and marshlands in the plain, if such a development did indeed occur at this time, would have made settlement there unattractive (on which more below). Second, the region's economic activity was no longer driven by the relationship between Antioch and its countryside, but shifted to a new network of self-sufficient minor towns and villages on the limestone hills to the southeast. Third, the aggregation and increase of sites on the plain is interpreted as the result of efforts by wealthy Antiochene families to consolidate farms and villages into large private estates.<sup>57</sup>

Moving into the early Islamic period (mid-seventh to mid-tenth century), the number of occupied sites is again slashed in half. When ceramic evidence is applied to subdivide the early Islamic period in two, however, the plot thickens. Of the 67 sites occupied in the early Islamic period as a whole, only 25 were inhabited in the mid-seventh to mid-eighth century (37% of 67), while 42 were inhabited in the succeeding eighth to tenth century (63% of 67).<sup>58</sup> The drop in occupied sites from the late Roman period to the beginning of the early Islamic period is therefore not 136 to 67, but a steeper fall from 136 to 25. As A. Eger notes in his detailed study of the Amuq valley and adjacent regions comprising the early Islamic-Byzantine frontier, the depth of this mid-seventh-to-mid-eighth-century occupation nadir may be an artifact of errors in the dating of ceramics or the inability of surface collection to detect the full scope of occupation. Given that many sites with eighth-to-tenth-century occupation had also been inhabited in the late Roman period, Eger suggests some of these sites may actually have been inhabited in the intervening period as well but at a reduced scale, so that this low-point is actually an underestimation of the extent of settlement in the valley during the mid-seventh to mid-eighth

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<sup>57</sup> Gerritsen et al., 2008, "Settlement and landscape transformations," 265-66. The survey team bases the third factor mostly on the comments of Libanius (47.4).

<sup>58</sup> Eger, 2008, *Spaces Between the Teeth*, 99 table 1.

centuries.<sup>59</sup> Even if it is exaggeration, however, the low-point nevertheless marks a meaningful fall in site numbers.

As Eger points out, the settlement nadir of the mid-seventh to mid-eighth century runs contrary to the argument for continuous occupation in the region from the sixth to tenth centuries made, for example, by Magness for the region as a whole, including the villages of the Limestone Massif (the latter based, as we have seen, on her reinterpretation of the excavation at Dehes).<sup>60</sup> Even when the early Islamic period is taken as a whole, with 67 occupied sites, the reduction by half from the late Roman period undermines any sweeping argument for across-the-board continuity of settlement. In fact, the Amuq valley data lend credence to the opposite argument, against which Magness was reacting: namely, that settlement and population declined at some point during the centuries before the ninth-century drop-off that everyone seems to agree on (but this decline happened at some point after the mid-sixth century).<sup>61</sup> At the most basic level, the Amuq data confirm what logic already suggests: that looking at more sites in more diverse landscapes will return a more complicated picture of regional settlement history. Neither of these discrete areas – not the Amuq valley, and certainly not the single village of Dehes – should be used as a template for the entire region, most of which remains unsurveyed and unexcavated.

Some insight into the complexities at work comes from what happened after the mid-seventh-century break in settlement in the Amuq valley, which is not merely the product of

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<sup>59</sup> Eger, 2008, *Spaces Between the Teeth*, 93.

<sup>60</sup> Eger, 2008, *Spaces Between the Teeth*, 99-100; Gerritsen et al., 2008, "Settlement and landscape transformations," 267-68; Magness, 2003, *The Archaeology of the Early Islamic Settlement*, 196-214.

<sup>61</sup> The various variations on this theme are as follows: the population (1) suffered serious decline already in the mid-sixth century: Kennedy, 1985, "The last century of Byzantine Syria," 160-61, 180-83; Kennedy and Liebeschuetz, 1988, "Antioch and the villages of northern Syria," 88 and elsewhere; (2) was wiped out by Arab invasions in the early- to mid-seventh century: Tchalenko, 1953, *Villages antiques*, I, 426-38; or (3) persisted in poverty until the tenth century: Sodini et al., 1980, "Déhès," 294-95; Tate, 1992, *Les campagnes*, I, 335-42; Foss, 1997, "Syria in transition," 262-68.

artificial periodization, misunderstood ceramic chronologies, or low site visibility. By about the end of the seventh century, more than half of the sites occupied in the late Roman period had been abandoned, and only a handful (6 of 67) of settlements were newly founded over the course of the next few centuries. Presumably population numbers plummeted as well, though by what degree remains unestimated. Some trends established in the late Roman period persisted, including continued occupation of lowland sites situated on rivers, canals, and important travel routes; canal construction; avoidance of tell sites; consolidation of pre-existing sites; and an increasing equality among major cities, which were in decline, and minor towns, which were becoming ever more self-sufficient. The most important new trends were the abandonment of most upland sites, a new preference for settlement on the plain at sites associated with the canals and marshlands around the lake, and the construction of fortified square enclosure sites or “waystations” replacing the late Roman fortified upland sites, which reappeared later, during the middle Islamic period.<sup>62</sup>

### **C.ii. Environmental research**

Research on the geoarchaeology and geomorphology of the Amuq valley and surrounding hills led primarily by T. Wilkinson and J. Casana has resulted in the identification of two main processes of environmental change that took place in this region during the first millennium CE: (1) sedimentation (upland erosion and valley aggradation) and (2) the expansion and development of a permanent lake in the plain surrounded by marshes.<sup>63</sup> This conclusion is based

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<sup>62</sup> Early Islamic settlement trends are from Eger, 2008, *Spaces Between the Teeth*, 321-56, with overall at 321-22 and 370-73; Gerritsen et al., 2008, “Settlement and landscape transformations,” 267-74.

<sup>63</sup> The following summary of geoarchaeological research in the Amuq valley is compiled from a number of publications: T. J. Wilkinson, 1997, “The history of the lake of Antioch: A preliminary note,” in G. Young, M.

on the evidence of stratigraphic sedimentary sequences either obtained from cores taken in the center of the lake of Antioch and the smaller lake Gölbaşı to the northeast, or recorded as exposed on the ground surface at various locations throughout the region, each dated radiometrically and/or in relation to archaeological strata (**figs. 4.9, 4.10**).<sup>64</sup>

Sedimentation across the plain is not standardized but rather occurred at different rates and as the result of a number of different processes (see **fig. 4.9**).<sup>65</sup> A series of cobble and gravel fans, for instance, extends out into the plain from the foothills of the Amanus mountains; these alluvial deposits accumulated rapidly as a result of episodic channel flow. Elsewhere, colluvial deposits mark similarly rapid episodes of slope wash: that is, erosion events caused by sustained human occupation and cultivation of thereby destabilized uplands. Flooding of the Orontes resulted in alluviation across the river flood plain. In contrast, no sediment accumulation was detected in at least one part of the region: the south-central part of the larger Amuq plain.

The several streams and numerous springs of the Amuq valley created a patchwork of marshes and small lakes that waxed and waned in size throughout the entire Holocene.<sup>66</sup> However, the expansion and development of a large and permanent lake in the plain in the mid-first millennium CE (Roman to late Roman period), followed by the development of an extensive belt of marshland north of the lake in the mid to late first millennium CE (late Roman or early

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Chavalas, and R. Averback (eds.), *Crossing Boundaries and Linking Horizons: Studies in Honor of Michael C. Astour on his 80th Birthday* (Bethesda); idem, 1999, "Holocene valley fills of southern Turkey and northwestern Syria: Recent geoarchaeological contributions," *Quaternary Science Reviews* 18: 555-71; idem, 2000, "Geoarchaeology of the Amuq plain," in K. A. Yener et al., "The Amuq Valley Regional Project, 1995-1998," *American Journal of Archaeology* 104: 163-220, at 168-79; T. J. Wilkinson, E. S. Friedman, E. Alp, and A. P. J. Stampfl, 2001, "The geoarchaeology of a lake basin: Spatial and chronological patterning of sedimentation in the Amuq plain, Turkey," *Recherches en archéométrie* 1: 211-26; Casana, 2003, *From Alalakh to Antioch*, 32-77, 392-434; Casana and Wilkinson, 2005, "Settlement and landscapes in the Amuq region"; Gerritsen et al., 2008, "Settlement and landscape transformations"; A. A. Eger, 2011, "The swamps of home: Marsh formation and settlement in the early Medieval Near East," *Journal of Near Eastern Studies* 70: 55-79.

<sup>64</sup> See Wilkinson, 2000, "Geoarchaeology of the Amuq plain"; Wilkinson et al., 2001, "The geoarchaeology of a lake basin."

<sup>65</sup> Wilkinson et al., 2001, "The geoarchaeology of a lake basin," 213-15.

<sup>66</sup> For the following on lake development, see Wilkinson, 2000, "Geoarchaeology of the Amuq plain," 175-79; Wilkinson et al., 2001, "The geoarchaeology of a lake basin."

Islamic period), was a marked change in the landscape (**fig. 4.11**). The development of the lake was likely the result of climatic changes operating on a regional scale, exacerbated by local human activity. Speleothem data from Soreq cave in southern Palestine suggest higher annual precipitation for this period, while pollen studies from the wider region chart deforestation and the spread of cultivated crops, such as olive and grape.<sup>67</sup> (Unfortunately, pollen and diatom preservation in cores obtained from the Amuq valley was too poor to enable comparable analysis within the study region itself.<sup>68</sup>) The sedimentary sequences noted above provide evidence for increased erosion in the valley during the Roman to early Islamic periods, likely the result of sustained settlement and cultivation of uplands.<sup>69</sup>

The important thing about these two main processes – sedimentation and lake development – is their timing and the relationship between them. Erosion had been increasing since the third millennium BCE, and small lakes and marshes had always been present in the valley, but both of these processes increased notably during the Roman to early Islamic period: erosion and valley aggradation in the early first millennium CE (Roman and late Roman periods), and the expansion and development of a permanent lake surrounded by marshes in the mid to late first millennium CE (late Roman to early Islamic periods). These two processes resulted from a combination of natural and anthropogenic factors, but they increased dramatically at the same time that settlement and cultivation of the uplands expanded and

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<sup>67</sup> M. Bar-Matthews, A. Ayalon, and A. Kaufman, 1998, “Middle to late Holocene (6,500 yr. period) palaeoclimate in the eastern Mediterranean region from stable isotopic composition of speleothems from Soreq cave, Israel,” in A. Issar and N. Brown (eds.), *Water, Environment and Society in Times of Climatic Change* (Dordrecht) 203-14; Y. Yasuda, H. Kitagawa, and T. Nakagawa, 2000, “The earliest record of major anthropogenic deforestation in the Ghab valley, northwest Syria: A palynological study,” *Quaternary International* 73/74: 127-36; U. Baruch and S. Bottema, 1999, “A new pollen diagram from Lake Hula: Vegetational, climatic, and anthropogenic implications,” in H. Kawanabe, G. W. Coulter, and A. C. Roosevelt (eds.), *Ancient Lakes: Their Cultural and Biological Diversity* (Ghent) 75-86. For a more detailed interpretation of these studies in relation to the Amuq valley, see Casana, 2003, *From Alalakh to Antioch*, 32-77, 392-434.

<sup>68</sup> Wilkinson, 2000, “Geoarchaeology of the Amuq plain,” 174.

<sup>69</sup> Wilkinson, 2000, “Geoarchaeology of the Amuq plain,” 177.

increased: namely, the Roman and late Roman periods. Here, then, is a familiar case of chronological correlation with probable but unproven causation. One can take only a tentative stand, as Casana and Wilkinson do, stressing the likelihood that it was human activity that spurred the surge of sedimentation and the formation of a permanent lake in the first millennium, given that human activity expanded and intensified more at this time than any other in the valley, and that this human activity is a more significant, clearly observed, and locally relevant change than the possible climate change (increase in precipitation) inferred from speleothem data from Palestine.<sup>70</sup>

Insight into how these natural and anthropogenic factors may have combined to cause sedimentation and lake formation is provided by a model Casana developed specifically for the Jebel al-Aqra, the group of hills that marks the southern edge of the Amuq valley (see **fig. 4.1**). Casana looked at evidence from a number of different sources to reconstruct a set of variables, including sedimentary sequences from three valleys within the Jebel to trace erosion patterns; archaeological survey results and texts to understand human settlement patterns and land use practices (i.e., which crops were grown, over what areas, and how intensively); pollen records (from outside the Amuq valley, cited above) to reconstruct vegetation patterns, in particular to determine what crops were grown and the extent of deforestation; and isotopic analysis from speleothems in southern Palestine to reconstruct climate changes, in this case an increase in average annual precipitation (cited above).<sup>71</sup> Running a model using different values for slope, land use and land cover, and precipitation, Casana was able to note a number of key relationships with major implications for the Roman through early Islamic period. Land use/cover matters

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<sup>70</sup> Wilkinson, 2000, “Geoarchaeology of the Amuq plain”; Wilkinson et al., 2001, “The geoarchaeology of a lake basin”; Casana and Wilkinson, 2005, “Settlement and landscapes in the Amuq region,” e.g., at 46: “It therefore seems likely that human activity in the form of clearance of woodland, aggradation of sediment on the valley floors, and increased outflow on the plain from canals may all have contributed to the development of the lake.”

<sup>71</sup> Casana, 2003, *From Alalakh to Antioch*, 348-434.

enormously: the conversion of pastureland to agricultural production increases landscape sensitivity, or the potential for erosion, enormously.<sup>72</sup> Second, the long-term increase in annual precipitation averages inferred from speleothem data for this period may have occurred not as the result of a gradual and moderate increase in rainfall, but as the result of a greater frequency in and severity of rainfall events (i.e., storms) – and it is these storms, rather than moderately higher rainfall, that dramatically increase landscape sensitivity.<sup>73</sup> Together, these two agents of landscape sensitivity interact in a feedback cycle with a magnifying effect: “land use practices during the Roman and late Roman periods vastly increase the potential for erosion to occur, by strongly exaggerating the erosive effects of higher intensity rainstorms and generally wetter years.”<sup>74</sup> To summarize, not only did the widespread (notably extending to the uplands) and intensive (namely agricultural) land use practices of the Roman and late Roman periods increase the potential for erosion in and of themselves, but they also interact positively with precipitation to increase the potential of rainfall to cause erosion.

#### **D. KAHRAMANMARAŞ PLAIN**

North of the Amuq plain lies the Kahramanmaraş plain, surrounded by steep mountains including the Amanus to the west, Kurt Dağ to the east, and the Taurus to the north (see **figs. 1.2, 4.1**). Similar to the Amuq, the landscape offers a dramatic partnership between lowland and high, and sweeps up from the valley at 500 masl to the heights of the Taurus at around 2,400 masl. As part of his research on the Byzantine-Islamic frontier, Eger studied the ceramics previously collected over several years of extensive and intensive modern survey by the

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<sup>72</sup> Casana, 2003, *From Alalakh to Antioch*, 425, with accompanying figures.

<sup>73</sup> Casana, 2003, *From Alalakh to Antioch*, 428, with accompanying figures.

<sup>74</sup> Casana, 2003, *From Alalakh to Antioch*, 428.

Kahramanmaraş Archaeological Survey Project led by E. Carter, which documented over 250 sites covering the lowlands and uplands of an area of about 1,100 km<sup>2</sup> between 1993 and 1997.<sup>75</sup> This entire area was surveyed extensively, and two smaller corridor-like valleys in the southern part of the plain were surveyed intensively; one of these was the 35-km<sup>2</sup> Emirlir valley, of which 5% was covered intensively in 20 transects (**fig. 4.12**).<sup>76</sup> Though the survey covers portions of the wider valley, geoarchaeological and pollen studies have mostly been limited to the area surrounding the site of Domuztepe (that is, the *höyük* 45 km southeast of the modern town of Kahramanmaraş labeled in **fig. 4.12**; not the site on the edge of the Cilician plain labeled in **fig. 1.2**). Much of the research carried out on the Kahramanmaraş plain has focused on the site of Domuztepe, and particularly on occupation during the Halaf period (c. 6100 to 5400 BCE).<sup>77</sup> Detailed analysis of the ceramics collected during the survey, especially those Roman and later, was not begun until 2001, followed by Eger's study in 2003 and 2006.<sup>78</sup>

Taken together, the results of survey and palaeoenvironmental research suggest that the settlement and landscape history of the Kahramanmaraş plain is very similar to that of the Amuq valley.<sup>79</sup> The estimated ratio of late Roman to early Islamic sites is also 2:1, and 29% of the early Islamic sites were newly established. Furthermore, out of the 31 definite early Islamic sites, only 12 (39%) were occupied during the mid-seventh to mid-eighth century, while 19

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<sup>75</sup> Eger, 2008, *Spaces Between the Teeth*, 151-92. As Eger notes, that fact that he did not participate in the survey introduces potential inconsistencies in his application of methodologies devised for the Amuq Valley Regional Project when studying the ceramics gathered by the Kahramanmaraş team (160-61). For the Kahramanmaraş Archaeological Survey Project, see E. Carter, 1995, "The Kahramanmaraş Archaeological Survey Project: A preliminary report on the 1994 season," *Araştırma Sonuçları Toplantısı* 13.1: 289-305; E. Carter, Ç. Eissenstat, C. Hill, and L. Swartz, 1998, "The Kahramanmaraş Archaeological Project Surveys – 1997," *Araştırma Sonuçları Toplantısı* 16.2: 569-76; E. Carter (ed.), forthcoming, *Excavations and Surveys Along the Syro-Anatolian Frontier* (Los Angeles).

<sup>76</sup> Carter et al., 1998, "The Kahramanmaraş Archaeological Project Surveys – 1997," 569, 573-74.

<sup>77</sup> See, for example, S. Campbell et al., 1999, "Emerging complexity on the Kahramanmaraş plain, Turkey: The Domuztepe Project, 1995-1997," *American Journal of Archaeology* 103: 395-418.

<sup>78</sup> Eger, 2008, *Spaces Between the Teeth*. The analyses of 2001 were carried out by J. Vroom and D. Whitcomb.

<sup>79</sup> As Eger points out, but may perhaps overstate when it comes to the palaeoenvironmental evidence: 2008, *Spaces Between the Teeth*, 151, 155.

(61%) were occupied during the eighth to tenth century.<sup>80</sup> This mid-seventh-to-mid-eighth-century nadir in site numbers is also present in the Amuq data. Occupation of upland sites and related upland cultivation seem to be restricted to the late Roman period, as in the Amuq valley.<sup>81</sup> The uplands were not occupied in the early Islamic period; instead, settlements either continued or were newly established on the plain, where canalization seems to have been expanded and the lake and wetlands became permanent features of the landscape.<sup>82</sup>

As part of the Domuztepe Environments Project, B. Gearey and A. Fletcher excavated 43 boreholes along transects centered on or near the site of Domuztepe.<sup>83</sup> Stratigraphic sequences were determined for the resulting sediment cores, up to 9 m deep; sub-samples of the cores were studied for diatoms, ostracods, and mollusks; and a single bulk sample was examined for coleoptera (beetles) and plant microfossils. Based on their analyses of the lithology of the sediments, palaeoenvironmental conditions indicated by the organisms preserved in the sediment samples, and radiocarbon dates, the team arrived at a series of broad conclusions concerning the range of depositional environments at the site and the timing of their creation. Environmental conditions and changes are identified at a scale of thousands of years: increasing humidity during the Early Holocene, for example.<sup>84</sup> These are important conclusions, but because of their low chronological resolution, it is not possible to consider them in correlation with human activity in the valley, nor indeed to suggest some causal relationship. Two salient points can be made, however. First, wetlands have likely been a “key feature” of the local environment around Domuztepe throughout much of the Holocene; widespread evidence for seasonally wet

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<sup>80</sup> Eger, 2008, *Spaces Between the Teeth*, 163-64, 164 table 9.

<sup>81</sup> Eger, 2008, *Spaces Between the Teeth*, 155.

<sup>82</sup> Eger, 2008, *Spaces Between the Teeth*, 155, 168.

<sup>83</sup> B. R. Gearey et al., 2011, “From site to landscape: Assessing the value of geoarchaeological data in understanding the archaeological record of Domuztepe, eastern Mediterranean, Turkey,” *American Journal of Archaeology* 115: 465-82. The boreholes were excavated using a hand-operated gouge auger.

<sup>84</sup> Gearey et al., 2011, “From site to landscape,” 475.

conditions include backswamp areas in which Roman pottery was found.<sup>85</sup> Second, deep alluvial deposits of silts and clays observed on all sides of Domuztepe seem to have been formed during the later Holocene; the uppermost deposits may date to the Roman period and later, based on the Roman pottery present in the upper alluvial clays observed at a location east of the site, which therefore provides a terminus post quem for their formation.<sup>86</sup> Eger notes a single-period, eighth-to-tenth-century site overlaying alluvial fans on one side of outcroppings in the center of the plain, and presents it as corroborating evidence for deforestation and intensive cultivation during the Roman and late Roman periods at this location within the plain, and likely elsewhere as well.<sup>87</sup>

Analysis of pollen and macrobotanical remains in and around Domuztepe suffers from similarly low chronological resolution. Early pollen studies indicate that from 8000 to 4000 BCE oak-pistachio steppe covered the region around Domuztepe; after 4000 BCE, oak forest dominated.<sup>88</sup> Plant remains retrieved at Domuztepe include wetland taxa, which “all suggest that Domuztepe may have been situated near a marshy area, although there are too few seed remains at present on which to base any reliable conclusions.”<sup>89</sup> Palynological analysis of sediment cores from around Domuztepe (not yet available) and from nearby Sağlık lake, in the southwestern part of the valley, conducted by H. Woldring and E. Kleine reinforce this reconstruction of a wetland environment and identify vegetational changes along similarly broad chronological

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<sup>85</sup> Gearey et al., 2011, “From site to landscape,” 470 (backswamp areas), 479 (quote).

<sup>86</sup> Gearey et al., 2011, “From site to landscape,” 475, 475 n. 43.

<sup>87</sup> Eger, 2008, *Spaces Between the Teeth*, 155.

<sup>88</sup> Campbell et al., 1999, “Emerging complexity on the Kahramanmaraş plain, Turkey,” 397, 397 n. 18, citing W. van Zeist, 1969, “Reflections on prehistoric environments in the Near East,” in P. J. Ucko and G. W. Dimbleby (eds.), *The Domestication and Exploitation of Plants and Animals* (London) 35-46.

<sup>89</sup> Campbell et al., 1999, “Emerging complexity on the Kahramanmaraş plain, Turkey,” 397.

boundaries.<sup>90</sup> Since their results await publication, the following account depends on summaries provided by others, and so risks oversimplification or misrepresentation. Pollen analysis of a sediment core from Sağlık lake indicates a transition away from steppe vegetation of the Late Glacial period to an expansion of pine- and oak-dominated woodland during the Early and continuing into the Middle Holocene, coincident with increasingly humid conditions indicated by peat formation during the Early Holocene.<sup>91</sup> Unsurprisingly, the pollen data demonstrate human disturbance to vegetation in the region from the Middle Holocene (ca. 4500 BCE) onward.<sup>92</sup> In general, the pollen and sediment analyses at Sağlık lake suggest that after 1250 BCE, the basin was no longer subject to alternating seasonal flooding and drying, but was instead permanently inundated with a marshland environment.<sup>93</sup>

Piecing together these bits of evidence, Eger concludes that “intensive cultivation and subsequent erosion and aggradation of the plain and canals [occurred] sometime at the end of the Late Roman and the beginning of the Early Islamic period,” followed by the permanence of seasonal marshlands.<sup>94</sup> Given that settlement on the uplands – presumably accompanied by agricultural activities – was a trend unique to the late Roman period here in the Kahramanmaraş plain, as in the Amuq valley, Eger is probably correct. However, the dating of the environmental evidence is simply too imprecise to support this conclusion with certainty.

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<sup>90</sup> H. Woldring and E. Kleine, forthcoming, “Preliminary report on Holocene vegetation and landscape of the Kahramanmaraş Valley,” in E. Carter (ed.), *Excavations and Surveys Along the Syro-Anatolian Frontier*, vol. 1 (Los Angeles).

<sup>91</sup> Gearey et al., 2011, “From site to landscape,” 475, 475 n. 42, citing Woldring and Kleine, forthcoming, “Preliminary report.”

<sup>92</sup> Gearey et al., 2011, “From site to landscape,” 470, 470 n. 24, citing Woldring and Kleine, forthcoming, “Preliminary report.”

<sup>93</sup> Eger, 2008, *Spaces Between the Teeth*, 153. Evidence for the 1250 BCE change includes a drop in water level and the spread of marsh vegetation around the basin, including fen sedge and bur reed.

<sup>94</sup> Eger, 2008, *Spaces Between the Teeth*, 156.

## E. DISCUSSION

Overall, both the Amuq and Kahramanmaraş valleys show neither perfect continuity nor total abandonment, but rather a complicated, complex history. Furthermore, the complexity of these settlement changes is apparent only when the full range of the region's landscape types is included in the researcher's perspective: if we were to look just at the limestone hills, we would miss the settlement on the plains, which became such an important area of occupation beginning in the mid-seventh century. In these valleys, and across the neighboring Limestone Massif, great changes were taking place at this time and in the century leading up to it: obvious political transitions, including Persian occupation and Islamic conquest, with all the physical conflict and social disruption that accompanied such upheavals; the reconfiguring of economic networks, as new markets were formed, and production and distribution were reorganized to meet them; and the slower and even less visible processes of cultural change and decision-making, in response to the altered circumstances just noted, as well as to changes in the surrounding environment and the arrival of new communities, some with religious beliefs and traditional subsistence strategies that must have seemed revolutionary to long-standing inhabitants. On the ground, and integrated into these transformations, the environment was transforming as well. Which of these changes is most likely to have caused the sharp drop in the number of occupied sites and the new settlement patterns that mark the transition from the late Roman to early Islamic period in the mid-seventh century?

The palaeoenvironmental and survey evidence indicates that, over time, human activity and climatic variation interacted to create landscape change, including alternating periods of erosion and stability. However, the dating of these trends is not precise enough to determine

clear causal relationships between landscape change and human behavior. For instance, we still cannot determine whether the periods of landscape stability observed in the sediment sequences were caused by decreases in the frequency or severity of rainstorms, slackening of agricultural activity, or both; or, indeed, some altogether unknown factor. What happens when we reverse our line of inquiry, and instead of trying to determine the effects of climate change and human activity on landscape change, we look for the effects of landscape change on human activity? To be sure, we are similarly shackled by an inability to tease out causal relationships. We cannot tell, for instance, whether the development of the permanent lake and marshlands in the Amuq valley in the mid- to late first millennium CE played a role in the apparent shift in settlement emphasis from the plain to the uplands during the late Roman period. Certainly some previously cultivable land would have now been inaccessible, but other factors were at work at the same time: the growing importance of the adjacent Limestone Massif as a center of agricultural production and rural investment, and the related wish to expand local production of valuable wine and olive oil; the consolidation of estates on the plain owned by Antiochene families; efforts to exploit other natural resources, such as metals on the Amanus mountains; and perhaps settlement of veterans.<sup>95</sup>

What about the changes in settlement patterns noted for the transition from the late Roman to early Islamic period: were these behavioral responses to environmental change? As noted above, the main trends at this time were an overall drop in site numbers, the abandonment of most upland sites, and a new preference for settlement on the plain at sites associated with the canals and marshlands around the now-permanent lake. Eger believes that the expansion and development of the lake and surrounding marshlands was indeed a cause – but not the only one –

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<sup>95</sup> Casana and Wilkinson, 2005, “Settlement and landscapes in the Amuq region,” 44; Gerritsen et al., 2008, “Settlement and landscape transformations,” 265-66.

of these changes in the Amuq valley (as well as the in Kahramanmaraş plain and the wider region in general). He concludes that whereas inhabitants during the late Roman period retreated from the advancing marsh in the plain to establish new upland sites across hillslopes and hilltops, those of the early Islamic period reversed this movement, preferring the marshlands to the uplands and thereby “showing an adaptation in terms of settlement and land use to the changing environment and the inheritance of marsh subsistence strategies by resettled marsh-dwellers” from farther east.<sup>96</sup> That is, the new settlement patterns beginning in the mid-seventh century were the result of a landscape altered by erosion-induced expanded marshes and canals *in concert with* the preferences of a new group of inhabitants. Eger argues that the “hydraulic villages” situated on canals and marshes to control water rights and exploit new marsh-based subsistence strategies were occupied by predominantly Muslim communities; the area was also used as a staging ground for raids across the frontier, with movement across the borderlands regulated by waystations.<sup>97</sup> A. Walmsley also links the change in settlement preference from uplands to river valleys to the presence of new inhabitants with new priorities for exploiting the land, in particular by “the digging of long irrigation canals and the acquisition and foundation of large farm estates owned by members of the ruling Umayyad family.”<sup>98</sup>

Eger uses the categorizations of settlement location and occupation period to suggest which “ethno-cultural” groups may be associated with each site type. According to his scheme, the villages associated with canals and marshes on the plain were likely the home of the new Muslim inhabitants. Urban nodes and sites on the Yaghra river that had been occupied in the late

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<sup>96</sup> Eger, 2008, *Spaces Between the Teeth*, 371.

<sup>97</sup> Eger, 2008, *Spaces Between the Teeth*, 371-73.

<sup>98</sup> A. Walmsley, 2007, “Economic developments and the nature of settlement in the towns and countryside of Syria-Palestine, ca. 565-800,” *Dumbarton Oaks Papers* 61: 319-52, at 350. Here Walmsley refutes Andrew Watson’s “green revolution” argument that agricultural changes resulted from the expansion of new crops such as rice and hard wheat after the development and spread of an Islamic state, in favor of recent archaeobotanical evidence that the production of such crops actually predates the advent of Islam. See *ibid.*, 350 nn. 75-76 for references. See also *idem*, 2007, *Early Islamic Syria*, 107-14.

Roman period and grew in the early Islamic period may have comprised both incoming Muslim and pre-existing Christian communities. Late Roman sites on the plain that dwindled, as well as those on the uplands that squeaked by, may correspond to long-lasting Christian groups.<sup>99</sup> Eger concludes: “These shifts in settlement patterns do not indicate general abandonment, decline, or a level of ‘squalor’ in the early Islamic period or by the mid-fifth century as argued by historians and archaeologists alike, but show new changes in settlement as well as patterns of continuity.”<sup>100</sup> This perspective, based on both data-driven observations and more hypothetical musings, charts an elegant path between arguments for devastating abandonment, on the one hand, and full-fledged continuity, on the other, and does so by integrating the implications of environmental, political, demographic, and cultural changes observed for the seventh century.

One chink in the armor of this reconstructed scenario, however, is an inability to gauge the true scale of immigration into the region of marsh-dwellers from farther east, either as part of a centralized political and economic program, or as the result of unorchestrated decision-making by numerous independent communities. How many immigrants with marsh-dwelling experience actually flooded into the Amuq valley – enough to constitute a majority of the local population and thereby influence settlement and economic trends? Eger cites one documented account of immigration, whereby in 669/70 the Umayyad caliph Mu<sup>C</sup>āwiya transferred and resettled marsh-dwelling tribes from southern Iraq to Syria, the Amuq, and Antioch, and later to other frontier towns; presumably these immigrants “came with their families and thousands of water buffalo, ready to continue their wetland-based mode of life.”<sup>101</sup> The Syrian army of the Umayyads

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<sup>99</sup> “Hypothetical ethno-cultural inferences” are from Eger’s contribution on the early Islamic period in Gerritsen et al., 2008, “Settlement and landscape transformations,” 274.

<sup>100</sup> Eger’s contribution on the early Islamic period in Gerritsen et al. 2008, “Settlement and landscape transformations,” 274.

<sup>101</sup> Eger, 2011, “The swamps of home,” 77, 77 n. 134 with the reference: al-Balādhurī, *Futuḥ al-buldān*, 230. See also Gerritsen et al. 2008, “Settlement and landscape transformations,” 269-71.

included a northern division made up primarily of north Arabian tribes who had arrived at the time of the conquests.<sup>102</sup>

Though their actual numbers and cultural make-up are unknown, it is clear from the archaeological and environmental evidence that a significant proportion of people living in the valley were now living in the lowlands in close proximity to marshlands and exploiting wetland resources as never before. An influx of transferred marsh-dwelling communities provides a reasonable explanation for this new settlement location preference, as Eger proposes, though presumably there could have been some pre-existing tradition of wetland-exploitation in the Amuq before the Islamic conquest, since the lake and wetlands had been expanding for generations. However, such immigration cannot explain (and in fact makes more mysterious) the precipitous drop in site numbers in the mid-seventh century and the assumed corresponding decline in population. What was the cause of the settlement nadir that lasted from the mid-seventh to mid-eighth century?

The two environmental processes discussed above – sedimentation (erosion and valley aggradation) and lake formation – are potential culprits, especially considering the disastrous effect widespread erosion would have had on upland agriculture, and thereby on the livelihood of all those late Roman communities who depended on it. However, these two processes were slow and had been taking place over alternating periods of stability and instability for hundreds of years. And these upland communities displaced by erosion could presumably have resettled on those portions of the valley floor not flooded by the lake or wetlands, as indeed many did (be they locals or immigrants). The evidence, however, does not suggest that the upland population changed location but was mostly maintained in size; instead, overall site numbers dropped

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<sup>102</sup> H. A. R. Gibb, 1958, "Arab-Byzantine relations under the Umayyad caliphate," *Dumbarton Oaks Papers* 12: 219-33, at 223.

dramatically in uplands and lowlands. In any case, the timing of these environmental changes is too imprecise to determine clear cause and effect.

### **E.i. Conflict, plague, and new patterns of exchange**

Instead, the population decline of the seventh century may have been caused by the long-lasting combined effects of on-going violent conflict, plague, and the ensuing disruptions to and reworking of the networks of production and exchange on which inhabitants of this region depended. Wickham has argued that the seventh-century rupturing of the “international exchange network” altered life in the Limestone Massif in that it “forced an exporting economy back into local exchange,” thereby reducing wealth.<sup>103</sup> But since I have argued that, regarding oil and wine at least, the producers of region primarily served local and regional demand, via both the state system (to Antioch and the army on the eastern frontier) and commercial markets (especially in urban centers), a severing of specifically interregional exchange cannot be blamed for the economic hardships and population loss of the seventh century.

In fact, there is growing evidence that exchange at all scales continued, though it was especially vibrant at the local and regional levels. The strength of economic activity in post-conquest Syria-Palestine is noted by A. Walmsley on the basis of the ceramic and numismatic evidence he synthesizes for the “stubborn persistence of a monetary economy” as well as an “ongoing commercial role for towns” and notable “vibrancy of rural areas.”<sup>104</sup> This economic vitality was based on local and regional networks, which were especially strong from the sixth to early ninth century and thereby “contributed to the uninterrupted prosperity of Syria-Palestine

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<sup>103</sup> Wickham, 2005, *Framing the Early Middle Ages*, 458.

<sup>104</sup> Walmsley, 2007, “Economic developments,” 321, 332.

over this period.”<sup>105</sup> Furthermore, these local and regional networks also spurred the movement of goods outside the region into interregional networks, since the two scales were overlapping and interdependent.<sup>106</sup> In some cases, products moved overseas across long distances, as indicated by the growing body of evidence for Syro-Palestinian amphorae in seventh-, eighth-, and possibly even ninth-century contexts in places such as Constantinople, Rome, and northern Italy (see Chapter 3).

One example of the survival and even intensification of regional exchange is Brittle Ware, the name commonly used to refer to the cooking ware found in Syria from the Roman to the Abbasid period (**fig. 4.13a-b**). Studying the forms and fabrics of Brittle Ware excavated from fifth- to eighth-century contexts in Apamea, Androna, and Dibsī Faraj, A. Vokaer suggests that the three Brittle Ware fabrics she identified were likely produced from terra rossa soils in the greater Limestone Massif area.<sup>107</sup> Though the fabrics change over time, with some workshops superseding others, the basic repertoire of shapes known from these three sites is found on many sites all across northwest Syria in the Byzantine period (fourth to seventh century) (**fig. 4.14a**). This distribution network spreads out even wider in the early Islamic period, stretching west into Tarsus (in Cilicia, on the Syro-Anatolian frontier) and southeast down the Euphrates to Abu Sarifa (**fig. 4.14b**).<sup>108</sup> Vokaer pinpoints two salient points: first, this long-lived cooking ware continues to be produced and distributed in northern Syria after the Islamic conquest (for the most part retaining the standard repertoire of Byzantine shapes but with some new shapes added during the Umayyad period), and second, its production and exchange seems to be circumscribed

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<sup>105</sup> Walmsley, 2012, “Regional exchange,” 312.

<sup>106</sup> Walmsley, 2012, “Regional exchange,” 312, 321.

<sup>107</sup> A. Vokaer, 2009, “Brittle Ware trade in Syria between the 5th and 8th centuries,” in M. Mundell Mango (ed.), 2009, *Byzantine Trade, 4th–12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham) 121–36.

<sup>108</sup> Vokaer, 2009, “Brittle Ware trade in Syria,” 133–34.

within a discrete region following “mainly the frontiers of the Empire,” since it is not found in areas immediately adjacent (Cilicia, Arabia, Palestine, and Cyprus), nor does it import cooking ware from those regions.<sup>109</sup> Vokaer furthermore notes that only one amphora type shares this particular regional distribution pattern – “Northern Syrian Type 1,” or “carinated amphora” – which, although its source and function remain unknown, reinforces the picture of a tightly bounded regional exchange network, possibly linked to the supply of the eastern Byzantine frontier before the Islamic conquest, that survived intact past the conquest (**fig. 4.15**).<sup>110</sup>

In some cases, however, certain networks of exchange could not survive, or could do so only by shifting into new routes. Looking at almanacs of the Islamic period in which Muslim authors recorded trade routes and fairs, many with a pre-Islamic legacy, in Syria-Palestine and along the Euphrates, A. Binggeli has found a striking disappearance of two networks of fairs that had been active during late antiquity.<sup>111</sup> One is the string of maritime fairs along the Mediterranean coastline, as far north as Aigeai in Flat Cilicia; this network is not mentioned in the almanacs during the early caliphate until the ninth/tenth-century renewal. The second is a line of fairs stretching through northwest Syria from Aigeai to India and China. Binggeli suggests that this route was abandoned and replaced by a new one farther south, because the pre-existing, northern one was located dangerously close to the active frontier zone between Byzantine and Islamic forces.<sup>112</sup> In addition to this new southern route across Syria and the Jazira, the sources record a new node of economic activity and prosperity in southern Syria and Jordan, near Damascus, especially vibrant during the Umayyad period when this city was the capital of the caliphate. These forms economic exchange were forced to reroute because of

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<sup>109</sup> Vokaer, 2009, “Brittle Ware trade in Syria,” 134.

<sup>110</sup> Vokaer, 2009, “Brittle Ware trade in Syria,” 135.

<sup>111</sup> A. Binggeli, 2012, “Annual fairs, regional networks, and trade routes in Syria, sixth–tenth centuries,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 281-96, esp. 293-96.

<sup>112</sup> Binggeli, 2012, “Annual fairs,” 295.

changing circumstances on the ground, namely the establishment of new centers of political power and the effects of violent conflict.

Political transition and corresponding violent conflict, as well as the threat of conflict, is an important factor in this discussion. The first Muslim incursions into Syria were carried out by 633 by local Muslims intent on controlling the Syrian Arab population; the commander Khalid b. al-Walid arrived in 634 and captured Damascus the following year.<sup>113</sup> The city's short reoccupation by Byzantine forces ended with their defeat at Yarmuk in 636, after which Islamic forces captured Jerusalem and controlled most of Syria up to the area around Antioch. With a formal frontier not yet established, this northwest region remained a contested space between Byzantines desperate to regain such an important and wealthy region, and Muslims determined to solidify the gains of their incipient caliphate. D. Cook notes the virulent nature of the conflict in this region, where "we find so much of the borderland ethos that was to become important in the development of the doctrine of *jihad*."<sup>114</sup> Following the conquest of Syria, the Amuq valley was used as a staging ground and winter garrison for raids across the frontier, a borderland not defined formally until the later eighth century, into Byzantine Anatolia.<sup>115</sup>

Of course, the region had been crisscrossed by those bent on wresting it from Byzantine control before: namely, the Sasanians, who attacked Antioch in 529, destroyed the city in 540, besieged it in 573, and captured it in 609/10. After twenty years of Persian occupation, Syria was briefly reconquered by the Byzantines in 630 until the Islamic takeover six years later. Could a century of armed conflict, of shuffling borders, upheaval, and uncertainty, have been the root cause of the dramatic drop in site numbers noted in the Amuq and Kahramanmaraş valley

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<sup>113</sup> The following historical information on the early Islamic presence in Syria is from D. Cook, 2009, "Syria and the Arabs," in P. Rousseau (ed.), *A Companion to Late Antiquity* (Chichester) 465-78, at 470-71.

<sup>114</sup> Cook, 2009, "Syria and the Arabs," 271.

<sup>115</sup> Eger, 2011, "The swamps of home," 77; idem, 2008, *Spaces Between the Teeth*, 371-73.

surveys, and assumed for the Limestone Massif? It is not difficult to imagine families and even entire communities diminished by violence, with others deciding to trek over the mountains into Anatolia rather than risk a similar fate. Still other groups could have been forcibly removed and resettled farther east.<sup>116</sup> Such movements would not have been on the scale of the devastating Syrian refugee crisis currently unfolding as a result of the civil war between the Assad regime and myriad rebel groups, but should rather be imagined as a slow, meandering trickle of the internally displaced, fanning out over generations of conflict. However, villagers would have been loath to abandon their land and houses, their only known source of food and shelter; no centralized government system was in place to care for them as refugees. In lieu of actually abandoning their land, agropastoralists could have switched to lower-investment subsistence strategies, such as planting fast-growing crops with multiple harvests per year, or transforming arable land into pasture and thereby investing more energy and resources in moveable animals rather than permanent crops such as olive and grape. These shifts in investment have been observed in modern rural Colombia over the past four decades of sustained conflict between the country's armed forces, leftist guerillas, and right-wing paramilitary groups.<sup>117</sup>

In contrast to the other potential factors explored above, long-lasting violent conflict clearly corresponds chronologically with the settlement decline and location changes noted through survey, and seems to have adequate explanatory power. We can probe this hypothesis by asking, of all these factors working against population growth and prosperity, which (singly or in combination) could have caused the population not just to plateau but to decline dramatically? Since population decline can only be caused by greater mortality, lower birth

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<sup>116</sup> For the forced movement of populations from Antioch into Persia during the Persian campaigns of the fifth century and its economic effects, see R. Van Dam, forthcoming (2014), "Big cities and the dynamics of the Mediterranean during the fifth century," in M. Maas (ed.), *The Cambridge Companion of the Age of Attila* (Cambridge).

<sup>117</sup> "Conflict's harvest," *The Economist*, 26 October 2013: 44-45.

rates, emigration, or some combination of these, we should look for relationships between these mechanisms of population decline and the potential factors outlined above: environmental change, arrival of new communities, disruption of long-distance trade networks, and violent conflict; plague must be added to this list as well. In other words, which factor(s) could have resulted in greater mortality, lower birth rates, and/or emigration?

First, greater mortality and lower birth rates could have been caused indirectly by insufficient food supply, in terms of quantity and/or nutritional value, which itself could have been the result of (1) a lack of cultivable land, due to landscape degradation or damage by military forces; (2) a breakdown of markets at which basic foodstuffs required for subsistence but not produced locally were obtained, either by exchange or bought with money earned from the sale of local surplus products (oil and wine); and/or (3) a labor force insufficient to work the land. Second, greater mortality could also have been caused directly by violent conflict (local inhabitants as civilian victims, and/or fighting within a formally recognized group); the likelihood that males would have died in proportionally greater numbers than females could also have negatively affected the birth rate. Third, greater mortality was an obvious result of the plague of the mid-sixth century, which recurred in waves and likely had a dampening affect on birth rates as well (see Chapter 2). It is impossible to make an accurate estimation of how many people died as a result of these epidemics. It seems likely that urban environments were particularly conducive to its spread, but the densely settled countryside of the Limestone Massif must also have suffered. Fourth, emigration could have been caused by any number of factors, including a search for sufficient food, avoidance of violent conflict, forced movement, or greater economic opportunities and a better standard of living.

This exercise makes it clear how these various factors can be intertwined to chart any number of convoluted but navigable paths to reach the settlement decline and changing location preferences noted through survey. However, based on the arguments presented above, recurring plague and prolonged violent conflict, in concert with the sustained threat of such conflict, seem to be the mostly likely factors causing these dramatic demographic and settlement changes. We can reasonably assume that over a century of conflict had a negative effect on population; we cannot as securely make the same assumption for environmental change, displacement by new communities, or disruption of long-distance trade, because their timing is too imprecise and/or because clear evidence of their effects has not been found. That is not to say that these other factors had no role in causing population decline, but what that role was is difficult to discern clearly.

One additional factor must be explored. Even if, as suggested above, the disruption of specifically interregional exchange did not matter much to the production and distribution of locally-produced oil and wine, something else *did* matter: the severing of this region from the Byzantine state, the disappearance of the fiscal system, and the retreat of the Byzantine army from the eastern frontier. Disconnection from the Byzantine state meant a major source of demand for local agricultural products disappeared: state provision to residents of Antioch and to the army. The other main source of demand, commercial markets in the cities of the region, especially Antioch, would also have diminished, as a result of the prolonged violent conflict and recurring plague discussed above. Disintegration of both local and regional demand, both state- and commerce-driven, would have forced villagers in the region to scale down production of foodstuffs such as oil and wine, with negative knock-on effects for rural prosperity and population.

Disruptions to the supply to these cities would also have affected them negatively, in a feedback cycle exacerbating population decline and their ability to rebound. Since much of a city's food supply came from the surrounding territory, damage to this local supply network, or to the land itself, through landscape change or the presence of military forces, would have negatively affected urban inhabitants as well. Wealthy urban éites who depended on the sale or exchange of agricultural commodities produced on their local estates to maintain their own lifestyles and pump resources in urban communities would also have suffered the consequences of landscape degradation, occupation, and disruptions to exchange networks, with reverberating effects on the entire urban population. Cities in the region were also vulnerable because, even though much of their oil and wine needs could be met locally, they nevertheless required additional goods and foodstuffs, such as wheat, and served as major players in long-distance exchange in general (especially Antioch). To the extent that the operation of these local, regional, and interregional exchange networks depended on the involvement of a powerful Byzantine state, the disappearance of the state would have destroyed them.

To summarize, population decline and settlement reorganization most likely resulted from the severing of region from the Byzantine state fiscal system, which took away the army and a portion of urban inhabitants as consumers; prolonged violent conflict; recurring plague; and, perhaps, the arrival of new communities with different dietary customs and habits, including Muslim communities that were not consumers of wine. The maintenance and even growth of vibrant local and regional networks of exchange, along with limited interregional exchange, was driven by private commerce, in many cases following the legacy of late antique trade.

## F. CONCLUSIONS

Overall, how scholars have described the changes of the sixth and seventh centuries in northwest Syria seems to rely heavily on what each is trying to prove concerning the impact of the Islamic conquest, and on how each uses the historical and material evidence to determine demographic and economic trends of the period. The wide range of preconceptions and agendas over time and across schools of thought translates into a wide range of perspectives,<sup>118</sup> from catastrophe (Tchalenko, Liebeschuetz, Kennedy), to continuity but in squalor or decline (Tate, Foss, Wickham), to significant but healthy transformation (Eger, Walmsley), and finally to prosperity and vibrancy (Magness).

What really can be said about the sixth and seventh centuries based on the evidence at hand? From the excavations at Antioch, Caesarea, and Dehes, it is clear that the renovation and construction of new buildings continued, while the ubiquity and abundance of coins implies persistent monetized economic activity, and the presence of imported pottery and amphorae points to sustained, though diminished, interregional overseas exchange. Many local and regional exchange networks were maintained and even became stronger in relation to interregional networks than they had been before. Some of these conclusions follow the controversial redating and synthesis of evidence by Magness, but part of what she has done is to highlight findings made by excavators that have been overlooked or ignored by those who wish to prove that the Islamic conquest wrought complete devastation. But while it is apparent that markets, monetized activity, and exchange at all scales were maintained at these places, it is difficult to say on what scale, nor is it clear whether these places are representative of the region

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<sup>118</sup> See, for example, Magness, 2003, *Archaeology of the Early Islamic Settlement*, 1-5, for a discussion of these problems.

at large. Furthermore, we should not gloss over the impression, provided by changes in the urban fabric and monumentality of these cities, as well as written descriptions of the harrowing effects of plague, earthquakes, and invasions, that life in these cities had indeed become considerably more difficult.

The only clear evidence for occupation on the Limestone Massif during and beyond the seventh century comes from the village of Dehes. Though the dating of the last phase of house construction is debated – either the sixth century (Sodini et al.), or the later sixth to early seventh century (Magness) – the coin finds spanning the early sixth through early ninth century are perhaps revealing enough, for they speak of a continued rural monetary economy and of exchange with the wider region. We cannot extrapolate from the single example of Dehes concurrent occupation in all the villages on the Limestone Massif past the seventh century, especially considering the mid-seventh-century abandonment of many upland sites on the Jebel al-Aqra near Antioch. But the evidence from Dehes is important nonetheless.

During the seventh century, the number of occupied sites in the Amuq and Kahramanmaraş valleys dropped by half. It remains unclear how this trend correlates to population numbers, because some sites were consolidations of several others, but this is a stark drop-off that should not be discounted wholesale because of the limitations of survey methodology.<sup>119</sup> Some upland villages remained occupied, but most were abandoned, resulting in a shift of investment from upland to lowland settlement. Based on this shift, we can assume

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<sup>119</sup> It will be interesting to see how this settlement picture compares to the one being compiled on the western side of the Amanus mountains by the Mopsos Landscape Archaeology Project, whose members have been intensively and extensively surveying various portions of the İssos, İskenderun, and Arsuz plains beginning in 2004. An overall picture is emerging of around 200 documented sites clustered most densely in the transitional area between the coastal plain and the foothills of the Amanus mountains; the majority of these sites have been dated to the Hellenistic through late Roman periods (fourth century BCE to seventh century CE). The project is directed by A. E. Killebrew of Pennsylvania State University. See the annual fieldwork reports on the Mopsos Landscape Archaeology Project published in *Araştırma Sonuçları Toplantısı*; e.g., A. E. Killebrew, 2010, “Summary of the 2009 Cilicia survey (İskenderun Bay region),” *Araştırma Sonuçları Toplantısı* 28.1: 39-46; ead. and G. Lehmann, 2009, “Summary of the 2008 Cilicia survey (İskenderun Bay region),” *Araştırma Sonuçları Toplantısı* 27.3: 319-38.

that oil and wine production, which had been located in the hills, was reduced, perhaps in accordance with the dietary restrictions and customs of new settlers, including Muslims. These new communities may also, as Eger suggests, have been well-versed in the exploitation of wetland resources, explaining their preference for settlement on the lowlands around the expanding lake and marshlands of the Amuq valley.

A theorized arrival of new communities, however, cannot explain the overall drop-off in site numbers. Two trends, then, need to be explained: the decline in oil and wine production, as evidenced by the shift from upland to lowland settlement, and the decline in population. The two trends are interdependent, because the first trend can be explained as a reaction to a dramatic decrease in demand for these products, resulting from a number of factors. One is the arrival of new communities with different dietary requirements, just noted. Perhaps more important is the abolishment of the Byzantine fiscal system, and the retreat of Byzantine armies from the former eastern frontier to the Anatolian side of the Taurus and Anti-Taurus mountain ranges. Another factor was the drying up of commercial demand supplied via local and regional markets, especially in cities, due to urban population decline caused by prolonged violent conflict, displacement, and recurring plague. These events would also have reduced rural populations, which in turn would have resulted in a decline in oil and wine production through a lack of labor and general unwillingness to maintain the long-term investment of such production.

What survived these changes of the sixth and seventh century was commercial exchange, operating at all scales, but especially local and regional rather than interregional. The survival of the regional exchange network of “Northern Syrian Type 1,” or “carinated amphora,” past the Islamic conquest may underscore how important the state-driven regional distribution of oil and wine to Byzantine armies on the frontier had been before the conquest, but it also shows that this

network was able to function even without the presence of the Byzantine state – that is, it was maintained by commercial activity. The sequence of coins from the excavations at Dehes suggests that this upland village was able to survive, probably as a result of the maintenance of a specifically monetary economy: that is, commercial activity.

The abandonment of many upland villages and the contraction of cities such as Antioch underscores another pattern that will be apparent throughout the case studies in this dissertation: an equalization or decrease in the differentiation between site types, as many cities became more like small towns or even villages, sustained by local and regional rather than long-distance exchange, and as single-family farmsteads were largely abandoned as a settlement type. The result is a settlement pattern less hierarchical than that of the late Roman period: more flexible in the face of changing circumstances such as conflict and insecurity, and less dependent on the kind of large-scale agricultural production and bulk exchange that made the growth and nourishment of an enormous city like Antioch possible in the first place.<sup>120</sup> The new preferences in settlement pattern demonstrate a desire for greater flexibility and for short-term rather than the kind of long-term investment required by intensive agricultural production. The local and regional patterns of exchange that had always been important in northwest Syria – driven both by the fiscal system and by commerce – were maintained even after the retreat of the Byzantine state by the legacy of private enterprise, which enjoyed a newly important role along routes rewired to avoid the challenges of conflict and to meet the needs of new populations and political rulers.

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<sup>120</sup> On hierarchy and heterarchy, see, e.g., C. L. Crumley, 1995, “Heterarchy and the analysis of complex societies,” in R. M. Ehrenreich, C. L. Crumley, and J. E. Levy (eds.), *Heterarchy and the Analysis of Complex Societies*, Archaeological Papers of the American Anthropological Association, no. 6 (Arlington, VA) 1-6; ead., 2003, “Alternative forms of social order,” in V. L. Scarborough, F. Valdez Jr., and N. P. Dunning (eds.), *Heterarchy, Political Economy, and the Ancient Maya* (Tucson) 136-45.

## CHAPTER 5

### SURPLUS, SHIPPERS, AND THE STATE: CILICIA AND ISAURIA

#### A. INTRODUCTION

Scattered survey projects employing a diverse array of methods have been carried out along the southern coastal regions of Asia Minor, from Lycia in the west to Cilicia in the east. This chapter will focus on those projects in the eastern portion of the coast, in Cilicia and Isauria, each located somewhere along the often dramatic incline between the coast and the Taurus mountain range rearing up behind it. In some places this gradient is precipitous, with foothills dropping down to meet a thin band of flat coastland or simply directly into the sea; in others, rivers have created expansive alluvial plains. Here, as everywhere, geography mattered: environmental factors influenced what resources were available, which crops could be grown to support settlement, and how the landscape responded to human activities; the proximity of the Mediterranean opened the area to shipping and all the opportunities of long-distance exchange and dangers of attack by sea; and the eastern end of this coastal region, namely the flatlands of eastern Cilicia, separated from the Anatolian plateau by the Taurus mountains, became a frontier zone between Byzantine and Islamic forces in the seventh century, after the Byzantine loss of Syria.

This chapter focuses on the eastern portion of southern Asia Minor, including Flat Cilicia, Rough Cilicia, and Isauria. Before diving into the archaeological evidence, it is necessary to describe the changing administrative delineation of the provinces in this area, as survey projects and studies refer to the regions anachronistically, often on the basis of the period of greatest perceived importance or interest (see **fig. 1.3**). Before the end of the third century, the province of Cilicia encompassed two regions of dramatically different topography: to the west, the rugged Taurus mountains and narrow coastal strips of Rough Cilicia (Cilicia Tracheia), and to the east, the large alluvial plains of Flat Cilicia (Cilicia Pedias). Diocletian then restructured the provinces, combining Rough Cilicia with the inland regions of the Taurus – the territory in which the province called Isauria had previously been circumscribed – to create a newly delineated province of Isauria, with its metropolis at Seleucia on the Calycadnus. What had been Flat Cilicia was divided into two provinces: Cilicia I to the west, with its metropolis at Tarsus, and Cilicia II to the east, with its metropolis at Anazarbus. When Valens reshuffled the bureaucratic borders once again in 371, so that the mountainous heart of Isauria became part of Lycaonia, the province referred to as Isauria in name now covered only the region formerly known as Rough Cilicia.<sup>1</sup>

Isauria, Cilicia I, and Cilicia II were the westernmost provinces of the diocese of Oriens, which stretched down along the eastern coast of the Mediterranean through Syria and Palestine. Topographically, the Cilicias and the coastlands of Isauria seem to form a more cohesive unit with northwest Syria to the southeast (though divided from it by the Amanus mountains) than with the bulk of Anatolia to the north, from which they are separated by the Taurus mountain range (see **fig. 1.2**). Also like northwest Syria, Cilicia and Isauria were part of the shifting Syro-

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<sup>1</sup> In Hierocles' *Synecdemus*, the list of administrative units from the fifth century includes Isauria (Seleucia), Cilicia I (Tarsus), and Cilicia II (Anazarbus); see A. H. M. Jones, 1937, *The Cities of the Eastern Roman Provinces* (Oxford).

Anatolian frontier between Byzantine and Islamic forces created in the seventh century (**fig. 5.1a-b**), but unlike it, portions of these regions lay directly within the heart of the frontier zone. The primary transportation and communication route from this area over the mountains and to the plateau is the pass known as the Cilician Gates, north of Tarsus. This chapter will move from east to west, looking first at evidence from Cilicia I and II (formerly Flat Cilicia) and Isauria (formerly Rough Cilicia and Isauria). Before doing so, a number of issues must be addressed.

### **A.i. The Syro-Anatolian frontier**

The establishment of the Syro-Anatolian frontier was a major source of stress and change, both for the regions through which it ran, and for regions farther afield. Preceding Persian invasions had certainly taken their toll on communities in Asia Minor over more than a decade of devastation: invaders sacked Caesarea in 610, took Tarsus and Melitene in 614, and raided central and western Asia Minor repeatedly from 615 onwards until Heraclius' successful counter-attacks beginning in 622/23.<sup>2</sup> C. Foss, of course, went so far as to blame the Persian invasions for the abandonment of open cities in Anatolia in favor of fortified hilltop strongholds.<sup>3</sup> But to others, the Persian invasions served only as a softening blow before the much more significant Arab attacks that followed, launched after the Islamic conquest of Syria.<sup>4</sup>

What effect did the invasions of Muslim forces have on Cilicia and Isauria? During the second half of the seventh century, the Byzantine defense system in southeast Asia Minor disintegrated, and imperial armies retreated north of the Taurus and Anti-Taurus mountain

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<sup>2</sup> J. F. Haldon, 1990, *Byzantium in the Seventh Century: The Transformation of a Culture* (Cambridge) 102-4.

<sup>3</sup> C. Foss, 1975, "The Persians in Asia Minor and the end of antiquity," *English Historical Review* 90: 721-47.

<sup>4</sup> For example, Haldon, 1990, *Byzantium in the Seventh Century*, 104; W. E. Kaegi, 1992, *Byzantium and the Early Islamic Conquests* (Cambridge) 236-37, 240.

ranges.<sup>5</sup> The resulting frontier zone covered areas on both sides of the mountains, and stretched from Isauria (former Rough Cilicia) through the Cilicias (the flatlands) and northwest Syria up to the northeast. Written evidence suggests that many towns on the Cilician plain were abandoned at this time, only to be repopulated by Muslim settlers in the later eighth century as part of Abbasid resettlement policy<sup>6</sup>; these towns included Tarsus, Adana, Sision, Anazarbus, and Mopsuestia (see **fig. 5.1b**).<sup>7</sup> The archaeological evidence, however, may tell a different tale. Excavations at Tarsus, for instance, and other sites in Cilicia and northwest Syria have not revealed the kind of evidence of destruction expected from such accounts, nor evidence of complete abandonment. Nevertheless, some degree of depopulation and ruin were central tenets of the strategy employed by Heraclius, who “consciously devastated the border areas along the southern approaches to the Taurus Mountains in 637-41, for he strove to create a free-fire no man’s land of destruction and emptiness as part of his defense-in-depth against the Arabs.”<sup>8</sup> From the 640s to the 740s, the towns, fortresses, and countryside of the frontier zone along with its borderlands endured continual raids, which jeopardized or made impossible the regular upkeep of communications, agriculture and pastoralism, and market activity.<sup>9</sup> The uncertainty and disruption of the time were evident in and likely exacerbated by the policy of population transfer employed by both sides.<sup>10</sup> Once the frontier had been formally established along the

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<sup>5</sup> J. F. Haldon and H. Kennedy, 1980, “The Arab-Byzantine frontier in the eighth and ninth centuries: Military organisation and society in the borderlands,” *Zbornik Radova Vizantoloski Institut (Recueil des travaux de l’Institut d’études byzantines)* 19: 79-116, at 80-82.

<sup>6</sup> Haldon and Kennedy, 1980, “The Arab-Byzantine frontier,” 106-9.

<sup>7</sup> Haldon, 1990, *Byzantium in the Seventh Century*, 106 map 5.

<sup>8</sup> Kaegi, 1992, *Byzantium and the Early Islamic Conquests*, 237.

<sup>9</sup> Haldon, 1990, *Byzantium in the Seventh Century*, 104-7. The frontier areas included the provinces of Pisidia, Lycaonia, Isauria, Cappadocia, and Armenia II and IV; the regions beyond them (Phrygia, Galatia, Helenopontus and a third tier formed by Lydia, Bithynia, and Paphlagonia) were also affected. For a detailed survey of annual raids, Haldon (107 n. 34) refers his reader to R.-J. Lilie, 1976, *Die byzantinische Reaktion auf die Ausbreitung der Araber*, *Miscellanea Byzantina Monacensia* XXII (Munich).

<sup>10</sup> Haldon, 1990, *Byzantium in the Seventh Century*, 56, 144-45; P. Charanis, 1961, “The transfer of populations as a policy in the Byzantine empire,” *Comparative Studies in Society and History* 3: 140-54.

Taurus mountain range in the later eighth century, Islamic colonization of Flat Cilicia just to the southeast began and accelerated in earnest.

Some of these invasions targeted the very heart of the Byzantine empire. Governing the Umayyad caliphate in the 660s and 670s, Mu<sup>C</sup>āwiya endorsed a strategy of raids and invasions into Anatolia aimed at disrupting economic activity and defenses with the ultimate goal of taking Constantinople itself; the attacks continued after his defeat by Byzantine forces at Constantinople in 674 and into the early eighth century.<sup>11</sup> The Cilician Gates through the Taurus mountains and onto the Anatolian plateau marked an important route for these armies, and while the western portions of Isauria and Cilicia may have been off this beaten track, Cappadocia lay squarely en route. In fact, this recurrent devastation has been blamed for the depopulation of Cappadocia and the end of intensive agriculture and pastoralism around 670 evident in the pollen record collected at lake Nar, a climatically sensitive crater lake located about 36 km southeast of Aksaray (ancient Koloneia).<sup>12</sup> This project will be discussed in Chapter 8.

Even if the Islamic conquest of Syria did not cause the kind of absolute population decline and economic downturn previously assumed, it does correspond chronologically with a drop in site numbers and a reduction of interregional trade, and decades of violent conflict may indeed have been a cause of these changes, as argued at the end of the previous chapter. The effects this violent conflict had on nearby regions of Asia Minor, which were not incorporated

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<sup>11</sup> Haldon, 1990, *Byzantium in the Seventh Century*, 63-83.

<sup>12</sup> J. Haldon, 2007, “‘Cappadocia will be given over to ruin and become a desert’: Environmental evidence for historically-attested events in the 7th and 10th centuries,” K. Belke (ed.), *Byzantina Mediterranea: Festschrift für Johannes Koder zum 65. Geburtstag* (Vienna) 215-30; A. England, W. J. Eastwood, C. N. Roberts, R. Turner, and J. F. Haldon, 2008, “Historical landscape change in Cappadocia (central Turkey): A palaeoecological investigation of annually laminated sediments from Nar lake,” *The Holocene* 18: 1229-45, at 1242-43; W. J. Eastwood, O. Gümüşçü, H. Yiğitbaşıoğlu, J. F. Haldon, and A. England, 2009, “Integrating palaeoecological and archaeo-historical records: Land use and landscape change in Cappadocia (central Turkey) since late antiquity,” in T. Vorderstrasse and J. J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia* (Leiden) 45-70.

into the Islamic sphere but rather either remained part of the Byzantine empire or became part of the interstitial borderlands, may have been entirely different.

### **A.ii. Oil, wine, and Late Roman Amphora 1 (LRA 1)**

The conclusions presented in the preceding chapter based on evidence from northwest Syria provide valuable interpretive scaffolding for making sense of the material from the southern coast of Asia Minor, where the material evidence is scattered and the debate over the regional economy and settlement has had less time to develop breadth and complexity. The most important elements of the northwest Syrian framework that should be kept in mind when looking at the evidence from Cilicia, Isauria, and farther west are: (1) a layered rural village economy based on mixed agropastoral subsistence strategy but with the possibility of surplus production of some commodities (especially oil and wine) for local, regional, and even interregional exchange, driven by a combination of fiscal and commercial incentives; (2) relative rural prosperity and population growth in villages based on this layered economy; (3) the greater vulnerability of communities dependent on large-scale production and bulk exchange driven by the fiscal system; and (4) the capacity of commercial exchange to provide a safety net for these and other communities, which (5) constitutes one of several trends indicating a preference for short- over long-term investment and greater flexibility.

One feature that makes these regions different from northwest Syria, however, is the important role that Cilicia and Isauria, along with Cyprus, played as a major producer of Late Roman Amphora 1 (LRA 1), conventionally dated to the fourth to seventh centuries, but with

new research suggesting production into the eighth and even ninth century (see Chapter 3).<sup>13</sup> Definite kiln sites, where actual kilns and/or wasters have been found, include Anemurium, Elaiussa-Sebaste, Soles, Tarsus, Magarsus (Antioch on the Pyramus), and Aigeai on the Cilician/Isaurian coast; and Paphos, Amanthonte, and Zygi on Cyprus (see **fig. 3.10**).<sup>14</sup> Another possible kiln site producing a variant of LRA 1 has been very tentatively identified in western Rough Cilicia.<sup>15</sup> Since no kiln sites have been confirmed in northwest Syria, it is reasonable to argue that the foodstuffs carried in LRA 1 were likely produced not in northwest Syria, but rather in the rural villages of Cilicia and Isauria.<sup>16</sup> Thus the heavy presence of kiln sites along the Cilician/Isaurian coast can be linked with the growth of villages during late antiquity to suggest that the region produced oil and wine in surplus for overseas export, following the logic that such production spawned the “complementary industry” of amphora manufacture, analogous to the situation in imperial (second- to third-century) North Africa.<sup>17</sup> Oil and wine could have been

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<sup>13</sup> P. Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” in M. Mundell Mango (ed.), *Byzantine Trade, 4th-12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham) 157-78. See Chapter 3.

<sup>14</sup> J.-Y. Empereur and M. Picon, 1989, “Les régions de production d’amphores impériales en Méditerranée orientale,” in M. Lenoir, D. Manacorda, and C. Panella (eds.), *Amphores romaines et histoire économique: dix ans de recherché* (Rome) 223-48; P. Reynolds, 2005, “Levantine amphorae from Cilicia to Gaza: A typology and analysis of regional production trends from the 1st to 6th centuries,” in J. M. Gurt i Esparraguera, J. Buxeda i Garrigós, and M. A. Cau Ontiveros (eds.), *LRCW I: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*, BAR Int. Ser. 1340 (Oxford) 563-612, at 566; S. Demesticha and D. Michaelides, 2001, “The excavation of a Late Roman 1 Amphora kiln in Paphos, Cyprus,” in E. Villeneuve and P. M. Watson (eds.), *La céramique byzantine et proto-islamique en Syrie-Jordanie (IV-VIII siècles apr. J.C.)* (Beirut) 289-96; S. W. Manning, S. J. Monks, D. A. Sewell, and S. Demesticha, 2000, “Late Roman Type 1a amphora production at the late Roman site of Zygi-Petrini, Cyprus,” *Report of the Department of Antiquities, Cyprus*: 233-57; A. F. Ferrazzoli and M. Ricci, 2010, “Un centro di produzione delle anfore LR1: Elaiussa Sebaste in Cilicia (Turchia). Gli impianti, le anfore,” in S. Menchelli, S. Santoro, M. Pasquinucci, and G. Guiducci (eds.), *LRCW 3: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry: Comparison between the Western and Eastern Mediterranean*, BAR Int. Ser. 2185 (Oxford) 815-26.

<sup>15</sup> N. K. Rauh and K. W. Slane, 2000, “Possible kiln sites in western Rough Cilicia,” *Journal of Roman Archaeology* 13: 319-30, at 326.

<sup>16</sup> Reynolds, 2005, “Levantine amphorae from Cilicia to Gaza,” 566.

<sup>17</sup> This is one of the key indicators articulated by R. B. Hitchner (in reference to imperial North Africa) for a growing economy based on surplus agricultural production: “a mass market, regional security, a developed transportation infrastructure, agricultural expansion, technological serialization, spawning of complementary industries (ceramics), and urban development.” R. B. Hitchner, 1993, “Olive production and the Roman economy: The case for intensive growth in the Roman Empire,” in W. Scheidel and S. von Reden (eds.), *The Ancient Economy* (New York) 71-83, at 79-80, based on evidence from D. J. Mattingly, 1988, “Oil for export? A

transported down from the hills by donkey or mule, carrying the liquid in amphorae or, more likely, in animal skins or bladders.<sup>18</sup> Even more practical would have been floating the liquids on the many rivers that flow from the uplands down past lowland towns – some of which were equipped with confirmed LRA 1 kiln sites – on the alluvial Cilician plain and rugged southeastern Isaurian coastline: these include, from east to west, the Pyramus, Sarus, Cydnus, and Calycadnus, as well as other waterways.

What are the implications of the large-scale production of LRA 1 in Cilicia and Isauria? In order to understand how LRA 1 production fit into a larger system of agricultural production, exchange, and settlement change during late antiquity and the early Byzantine period, it is necessary to determine which agricultural commodity was the predominant content of LRA 1, who the main shippers of LRA 1 were, and which mechanism was the primary driver of the production and movement of these commodities: the fiscal system or private commerce.

### ***LRA 1: A container for olive oil or wine?***

It seems that LRA 1 could be used to ship both olive oil and wine, and sometimes carried other products as well. However, the evidence leans in favor of wine.<sup>19</sup> Historical sources highlight the rural prosperity of the region, but these prove what we already know: namely, that people living in Cilicia, Isauria, Lycia, and Pamphylia, like those in much of the Mediterranean, grew olives for oil and made wine. They do not give a helpful indication of relative scale. For

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comparison of Libyan, Spanish and Tunisian olive oil production in the Roman Empire,” *JRA* 1: 33-56; idem, 1988, “The olive boom. Oil surplus wealth and power in Roman Tripolitania,” *Libyan Studies* 19: 21-41.

<sup>18</sup> Amphorae carried by pack animal: M. Decker, 2001, “Food for an empire: Wine and oil production in North Syria,” in S. Kingsley and M. Decker (eds.), *Economy and Exchange in the East Mediterranean during Late Antiquity* (Oxford) 69-86, at 77. Goat-skins: J. J. Rossiter and J. Freed, 1991, “Canadian-Turkish Excavations at Domuztepe, Cilicia (1989),” *Echos du Monde Classique* 35: 145-74, at 173, citing evidence from second-century Palmyra: J.-B. Chabot, 1926, *Corpus Inscriptionum Semiticarum* II.3, No. 3913; J. F. Matthews, 1984, “The tax law of Palmyra: Evidence for economic history in a city of the Roman East,” *JRS* 74: 157-80.

<sup>19</sup> See, e.g., M. Decker, 2005, “The wine trade of Cilicia in late antiquity,” *ARAM* 17: 51-59.

example, the *Geoponica*, a compilation of texts created in the tenth century but likely reflecting agricultural practices of the sixth, contains two references to Cilicia as an olive-producing region, one identifying Anazarbus in particular.<sup>20</sup> The fourth-century *Expositio totius mundi* mentions Cilicia as follows: “by producing much wine [the region] brings happiness also to other provinces,” but this gives no indication of the actual extent or scale of export.<sup>21</sup> Cilician raisin wine (*passum*) had been praised and recommended for medicinal purposes by earlier Roman authors such as Pliny and Galen.<sup>22</sup> Ammianus Marcellinus claims that Isauria was known for its wine and fruit.<sup>23</sup>

The amphorae, too, tell a varied tale. Some have oil residue and dipinti related to oil; others contain pitch, resin, or grape seeds. In some cases, the dipinti relate to dry goods such as wheat.<sup>24</sup> It is similarly difficult to determine which product, oil or wine, was predominant based on the press equipment recorded on the ground, both because the equipment itself can be ambiguous, and because a single press could presumably have been used for both according to the season, as G. Varinlioğlu argues for southeast Isauria (see below). Further complicating the picture is the fact that variations in the quality of olive oil and wine (including regional

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<sup>20</sup> One of these references gets specific: “They say also, that in Anazarbus of Cilicia, chaste boys cultivate the olive, and for this reason, that the olive is there very fruitful.” *Geoponica*, 9.II. *Geoponica: Agricultural Pursuits*, 1805-6, trans. rev. T. Owen (London); for the usefulness of the *Geoponica* as a source for late antique agricultural practices, see M. Decker, 2009, *Tilling the Hateful Earth: Agricultural Production and Trade in the Late Antique East* (Oxford) 263-71 (Appendix). The “Anazarbus Tariff,” a sixth-century customs inscriptions recording taxes on items brought into the city, is another interesting source: among other items, it lists plant cuttings, vines, garum, garlic, salt, carob, saffron, silk, camel-hair rope, tin, and lead; see G. Dagron and D. Feissel, 1987, *Inscriptions de Cilicie* (Paris) 171-85.

<sup>21</sup> *Expositio totius mundi*, XXXIX. Translation from S. Mitchell, 2005, “Olive cultivation in the economy of Roman Asia Minor,” in S. Mitchell and C. Katsari (eds.), *Patterns in the Economy of Roman Asia Minor* (Swansea) 83-113, at 108 n. 83: *Deinde iterum regio Ciliciae, quae faciens multum vinum laetificat et alias provincias*.

<sup>22</sup> Also Athenaeus and Dioscorides. For textual references, see N. K. Rauh, M. J. Dillon, C. Dore, R. Rothaus, and M. Korsholm, 2006, “Viticulture, oleoculture, and economic development in Roman Rough Cilicia,” *Münstersche Beiträge zur antiken Handelsgeschichte* 25: 49-98, at 57 n. 26.

<sup>23</sup> *Roman History* 14.8.1.

<sup>24</sup> For more information on determining what product(s) these amphorae carried, see, for example, H. Elton, 2005, “The economy of southern Asia Minor and LR1 Amphorae,” in J. M. Gurt i Esparraguera et al. (eds.), *LRCWI*, 691-95; P. G. van Alfen, 1996, “New light on the 7<sup>th</sup>-c. Yassi Ada shipwreck: Capacities and standard sizes of LRA1,” *JRA* 9: 189-213; Rauh et al., 2006, “Viticulture, oleoculture, and economic development.”

specialties such as Cilician raisin wine), as well as variations in climate among different micro-regions, meant that these products were shipped even into regions that already produced them – oil, for instance, was imported into Africa, and wine imported into wine-producing regions.<sup>25</sup> The similarities between oil and wine production, however, are salient: both required similar technology, long-term investment, and labor for the production and maintenance of crops and of equipment (though olive trees take longer to mature), as well as similar complementary industries in the form of transport vessels, including amphorae but also animal skins, and possibly barrels as well.<sup>26</sup>

### *Cilician producers and shippers*

However, a unique piece of evidence may tip the scales in favor of wine, and provides inferential information about the shippers of LRA 1 as well. An inscription known as the “Tariff of Abydos,” dated to the reign of Anastasius (ca. 492 CE), lists the various taxes paid to state officials at Abydos customs in the Dardanelles by merchants bringing foodstuffs to Constantinople, and identifies four categories of trader: “all wine freighters which are carrying wine to the Imperial City, except only those from Cilicia”; transporters of oil, dried vegetables, and lard; Cilician shippers; and wheat traders.<sup>27</sup> Cilician traders are obviously considered special: they are designated by their place of origin rather than by the commodity they transport;

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<sup>25</sup> Elton, 2005, “The economy of southern Asia Minor and LR1 Amphorae,” 692-93.

<sup>26</sup> For the use of bladders in local, overland transportation, and for the possibility of a partial shift to barrels during late antiquity or later, see M. McCormick, 2012, “Movement and markets in the first millennium: Information, containers, and shipwrecks,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 51-98, at 65, 92-93.

<sup>27</sup> J. Durliat and A. Guillou, 1984, “Le tarif d’Abydos (vers 492),” *Bulletin de correspondance hellénique* 108: 581-98, quoted text at 583 ll. 22-23.

they are mentioned twice; and they paid less in import tax than the other merchants.<sup>28</sup> M.

McCormick suggests the double mention means that Cilician shippers were carrying wine, and that the lower import tax enjoyed by Cilician shippers reflects the lower value of Cilician wine compared to the other imported wine (presumably from Palestine and elsewhere), olive oil, dried vegetables, and lard.<sup>29</sup>

And yet the tariff inscription from Abydos can be interpreted in another way. Perhaps LRA 1, which seems to have been produced predominantly in Cilicia, were indeed filled with wine, but the Cilician ships on which they traveled – the Cilician shippers referred to in the inscription – carried mixed cargo as part of the state *annona* system. According to this interpretation, the Cilician shippers would have been singled out and allowed to pay less, not because they carried inferior wine, but because they carried mixed cargo, and because that mixed cargo was partially subsidized by the state.

This is the interpretation proposed by O. Karagiorgou. Struck by the abundance of LRA 1 and Late Roman Amphora 2 (LRA 2; see **figs. 3.6, 3.7d-e**) at military, but not civilian, establishments along the Danube frontier, Karagiorgou has suggested that Cilicians received this tax privilege because they were the “main transporters” of the military *annona* supplied to the soldiers stationed there.<sup>30</sup> Furthermore, she proposes that LRA 1 and LRA 2 were the “main receptacles” – respectively – of wine and olive oil shipped to the Danube frontier as part of the

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<sup>28</sup> Wine shippers other than Cilicians pay 6 folles and 2 *xestai* (of wine); transporters of oil, dried vegetables, and lard pay 6 folles; transporters of wheat pay 3 folles and one measure of wheat; Cilicians pay 3 folles. Durliat and Guillou, “Le tarif d’Abydos,” 583 ll. 22-25.

<sup>29</sup> McCormick, 2012, “Movement and markets,” 64-65.

<sup>30</sup> O. Karagiorgou, 2001, “LR2: A container for the military *annona* on the Danubian border?” in S. Kingsley and M. Decker (eds.), *Economy and Exchange in the East Mediterranean during Late Antiquity* (Oxford) 129-66, at 154-55. As Karagiorgou notes (150), a similar economic link between an oil-producing region and a military zone had been established between Baetica in Spain and the northwestern frontiers of the Roman empire in the late third to fourth centuries.

military *annona*.<sup>31</sup> According to this scheme, Cilician merchants would have first loaded their ships with LRA 1 containing wine (but possibly also olive oil) produced close to home in Cilicia, and then picked up LRA 2 filled with Aegean oil as they passed through that sea en route to the Constantinople and the lower Danube.<sup>32</sup> What are the implications of this interpretation?

It is clear that the towns along the coast of Isauria and Cilicia were bustling centers of economic activity in late antiquity, and Cilician shippers played an essential role in this movement of goods. A fraction of the numerous shipmasters, sail-makers, wine-importers, potters, public officials, food vendors, and others who made these coastal and inland communities hum has come to light via funerary inscriptions of the fourth to seventh centuries from the necropoleis of towns in eastern and western Rough Cilicia that record the office, rank, or trade of the deceased.<sup>33</sup> The vast majority of these come from the various necropoleis of a single town, Corycus, on the coast of eastern Rough Cilicia (= southeastern Isauria).<sup>34</sup> In Varinlioğlu's compilation of the number of times each trade name appears in the inscriptions, she found the two main categories to be manufacturing and ecclesiastical, followed by food production and distribution; in smaller numbers appear public officials, as well as trades related to retail (of food and textiles), construction, service, military, finance, maritime, and health.<sup>35</sup>

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<sup>31</sup> Karagiorgou, 2001, "LR2: A container for the military *annona* on the Danubian border?" 149.

<sup>32</sup> Karagiorgou, 2001, "LR2: A container for the military *annona* on the Danubian border?" 154.

<sup>33</sup> These have recently been the focus of research by G. Varinlioğlu; see the section on her survey work in southeastern Isauria below. G. Varinlioğlu, 2011, "Trade, crafts, and agricultural production in town and countryside in southeastern Isauria," in O. Dally and C. Ratté (eds.), *Archaeology and the Cities of Asia Minor in Late Antiquity* (Ann Arbor, MI) 173-88; ead., 2008, *Rural Landscape and Built Environment at the End of Antiquity: Limestone Villages of Southeastern Isauria* (Ph.D. dissertation, University of Pennsylvania) esp. 126-37, 180-97 (Appendices 1-3); and ead., 2007, "Living in a marginal environment: Rural habitat and landscape in southeastern Isauria," *Dumbarton Oaks Papers* 61: 287-317. For the publications of the inscriptions on which she relies, see ead., 2008, *Rural Landscape and Built Environment at the End of Antiquity*, 127 n. 181.

<sup>34</sup> F. Hild and H. Hellenkemper, 1990, *Kilikien und Isaurien, Tabula Imperii Byzantini* 5 (Vienna) 108-27; F. Trombley, 1987, "Korykos in Cilicia Trachis: The economy of a small coastal city in late antiquity (*Saec.* V-VI) – A précis," *The Ancient History Bulletin* 1: 16-23. Varinlioğlu (2011, "Trade, crafts, and agricultural production," 175) reports the number of times trade names appear in inscriptions from Corycus (451), Seleucia ad Calycadnum and St. Thecla (57), Corasium (32), Olba and Diocaesarea (28), and other parts of western Cilicia (93).

<sup>35</sup> Varinlioğlu, 2011, "Trade, crafts, and agricultural production," 175, 176 table 1, 177 graph 1.

Manufacturing craftsmen formed the largest single trade community and worked predominantly with metal, clay, flax/linen, wool and goat hair, and leather.

These inscriptions record a healthy range of local industries supporting a multifaceted economy based on the manufacture and export of products made from local resources. But they cannot tell us whether these products were transported within a system that was primarily run by the state or by the mechanisms of a “free-enterprise” market. In Karagiorgou’s scenario, the state is clearly the sole motor driving the movement of staple commodities shipped in LRA 1 and 2 to the Danube frontier. But both amphora types have been found across the Mediterranean, including to North Africa and Britain, which were not part of civic or military *annona* at this time. Karagiorgou explains these far-flung amphorae as “taxes levied in kind, which proved to be surplus to seasonal military requirements [and] subsequently entered the trade chain as commercial produce.”<sup>36</sup>

It seems likely that the various movements of LRA 1 around the entire Mediterranean were driven both by the state and by private commerce, in varying degrees depending on the circumstances. Their appearance in Britain was ultimately the result of private commerce, but they may have completed some of the journey there as part of a state-subsidized shipment (to Ravenna, say). In contrast, they must have arrived in Constantinople and the lower Danube as the result of the state civic and military *annonae*. But even these state-subsidized shipments did not necessarily carry goods and commodities exclusively for the *annonae*; the Cilician shippers who brought wine (and probably oil, too) in LRA 1 to the capital and military sites likely sold some in commercial markets along the way, and they no doubt added to their cargo of state-tagged LRA 1 and LRA 2 some of the numerous manufactured goods and natural resources for which their homeland was known, such as wool and goat-hair products, metal implements, and

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<sup>36</sup> Karagiorgou, 2001, “LR2: A container for the military *annona* on the Danubian border?” 155.

timber. On the way back to Cilicia, they could have picked up and sold along the way other goods and commodities, such as Phocaeen Red Slip and Cypriot Red Slip ware, found across southern Asia Minor and the Levant (see Chapters 3, 6, and 9).

### *Summary*

In the preceding chapter I suggested that the oil and wine production of the Limestone Massif was aimed not at overseas export, but at supplying local and regional demand from the numerous cities in the region, particularly Antioch, as well as the armies along the eastern frontier. Syrian oil and wine would have reached those consumers through a combination of the state *annona* system and commercial markets. In Cilicia and Isauria, the situation seems different, in several ways. There are many confirmed LRA 1 production centers. There is no abnormally large city in the region (unless, of course, one counts Antioch), and the army is farther away. There is also the special privilege that Cilician shippers received as revealed by the “Tariff of Abydus,” likely as a result of their role as major transporters of state-subsidized oil and wine to Constantinople and to the armies on the lower Danube. Finally, there is the unique corpus of funerary inscriptions of the fourth to seventh century, primarily from Corycus, that reveal the region’s multifaceted economy based on the production and export of goods and commodities made from local natural resources. Therefore, it seems likely that rural inhabitants in Cilicia and Isauria produced wine (and oil) in surplus for overseas export in LRA 1 produced close at hand. The movement by Cilician shippers of wine and oil and LRA 1 to Constantinople and the lower Danube was primarily driven by the state, but it did not preclude the introduction of LRA 1 to commercial markets, nor prohibit Cilician shippers from engaging in commercial exchange, at all

scales. Do the results of survey and environmental research support this scenario? What happens to this picture after the seventh century?

## **B. FLAT CILICIA**

Surveying the region for the *Tabula Imperii Byzantini* project of the Austrian Academy of Sciences, F. Hild and H. Hellenkemper did much to expose the extent of late antique settlement in Cilicia and Isauria, literally dotting a map to indicate the remains of habitation from the fourth to fifteenth centuries.<sup>37</sup> One of the most striking patterns is a rash of “unfortified settlements” dated to the fourth to seventh centuries that spreads across the highlands of western Isauria (Rough Cilicia), sweeps down along the coastline to Seleucia, flares up inland between and around the Calycadnus and Lamus rivers and again north of Tarsus, and speckles the extensive plains of Flat Cilicia. This pattern of late antique villages in combination with the ubiquitous remains of press installations and evidence for the local production of LRA 1 is consonant with the perspective of this region as an oil- and wine-producing powerhouse, selling these products on local and regional markets, but also supplying foodstuffs for the civic *annona* at Constantinople and military *annona* for the army on the Danube frontier.

Hild and Hellenkemper conclude that demographic collapse, the abandonment of towns, and a contraction of long-distance trade likely began in the sixth century and had fully occurred sometime within the seventh century. This assessment is based indirectly on the evidence of the sixth-century plague, the Islamic conquests and raiding of the seventh century, ninth-century Islamic accounts of the region as containing only abandoned and ruined towns, Islamic colonization in the Cilician plain, and medieval reoccupation of these towns in only a fraction of

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<sup>37</sup> Hild and Hellenkemper, 1990, *Kilikien und Isaurien*.

their Roman-period footprint.<sup>38</sup> With expert eyes focused more on inscriptions than pottery, Hild and Hellenkemper were interested in visiting and documenting known sites; their intention was never to conduct a systematic survey complete with a chronological framework established by pottery collection. Their distribution map and the discussion accompanying each site are impressive achievements but cannot indicate precisely when settlements were abandoned or why. The widespread evidence they record of oil and wine production, however, does support the scenario proposed above.

Fragmentary pieces of evidence add to the picture of Flat Cilicia in late antiquity. The results of a four-year survey (1994–1998) of two relatively well-preserved villages called Akören I and II give a sense of what life was like in the kind of agriculturally-based settlements of the fifth and sixth century whose products may have filled LRA 1. In terms of their construction and the integration of private and public space, as well as evidence of agropastoral activities conducted inside the residences, these villages were very similar to those of the Limestone Massif in northwest Syria (**figs. 5.2a-b, 5.3**).<sup>39</sup>

Perhaps unsurprisingly, Tarsus was an important producer and consumer of local and imported foodstuffs, as evidenced by “substantial numbers” of LRA 1, LRA 5, and LRA 6 found there in rescue excavations at Republic Square.<sup>40</sup> There is rich evidence for urban occupation and activity at Anazarbus in the sixth and seventh centuries (fortification walls, public buildings,

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<sup>38</sup> Hild and Hellenkemper, 1990, *Kilikien und Isaurien*, I, 99.

<sup>39</sup> G. Mietke, 1996, “Survey der römisch-frühbyzantinischen Siedlung bei Akören in Kilikien 1994,” *Araştırma Sonuçları Toplantısı* 13.1: 35-48; ead., 1997, “Survey der römisch-frühbyzantinischen Siedlung bei Akören in Kilikien 1995,” *Araştırma Sonuçları Toplantısı* 14.1: 423-34; ead., 1999, “Survey der römisch-frühbyzantinischen Siedlung bei Akören in Kilikien 1996 und 1997,” *Araştırma Sonuçları Toplantısı* 16.1: 75-93; U. Wulf, 2003, “Akören. Zur Stadtplanung und Wohnarchitektur zweier Siedlungen in Kilikien,” in G. Brands and H.-G. Severin (eds.), *Die spätantike Stadt und ihre Christianisierung* (Wiesbaden) 299-307; U. Wulf-Rheidt, 2011, “Akören: Two late antique villages in Cilicia,” in O. Dally and C. Ratté (eds.), *Archaeology and the Cities of Asia Minor in Late Antiquity* (Ann Arbor, MI) 189-204.

<sup>40</sup> M. Decker, 2007, “Frontier settlement and economy in the Byzantine East,” *Dumbarton Oaks Papers* 61: 217-67, at 247.

and aqueducts) before the Arab occupation.<sup>41</sup> A team from the University of Pisa has conducted topographical survey around the site of Mopsuestia, comprising two centers Misis and Gecitli, on the right and left bank of the Pyramus river, plus archaeological survey of the urban center itself, to study the pottery and architectural features such as the theater, stadium, and sixth-century defensive walls.<sup>42</sup> Comprehensive results await publication.

Compared to other regions, excavation and survey on the Cilician plain and surrounding uplands is scarce, and it remains difficult to get a clear picture of how settlement and population may have changed over time. Centuries of alluvial deposits in Flat Cilicia may also have obscured archaeological remains. Contemporary descriptions – both Byzantine and Islamic – of the region as a depopulated wasteland may exaggerate the desolation for ideological reasons, as has recently been argued,<sup>43</sup> but violent conflict and forced depopulation must have caused some degree of demographic decline and damage to urban and rural infrastructure alike. In addition to these factors, the Islamic conquest and settlement of Flat Cilicia and the cessation of the Byzantine fiscal system resulted in a diminished demand (local, regional, and interregional) for Cilician wine and oil, and must have disrupted the patterns of agriculture and local LRA 1 production that had previously driven the networks of exchange described above.

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<sup>41</sup> R. Posamentir, 2011, “Anazarbos in late antiquity,” in O. Dally and C. Ratté (eds.), *Archaeology and the Cities of Asia Minor in Late Antiquity* (Ann Arbor, MI) 205-224; Hild and Hellenkemper, 1990, *Kilikien und Isaurien*, I, 178-84; Decker, 2007, “Frontier settlement and economy,” 248.

<sup>42</sup> G. Salmeri and A. L. D’Agata, 2012, “Cilicia Survey 2010,” *Araştırma Sonuçları Toplantısı* 29.3: 165-70.

<sup>43</sup> A. A. Eger, 2008, *The Spaces Between the Teeth: Environment, Settlement, and Interaction on the Islamic-Byzantine Frontier* (Ph.D. dissertation, University of Chicago) 1-6.

## B.i. Domuztepe

Small-scale survey has been carried out around the site of Domuztepe, located where the Pyramus river flows through a gorge in the Taurus foothills near the northeastern extent of the Cilician plain, with the Amanus mountains rising to the east (figs. 5.4, 5.5).<sup>44</sup> The project identified nine sites in a 25-km<sup>2</sup> area within the northern territory of Hierapolis-Castabala. The period of most extensive occupation (seven out of nine sites) as determined by collected pottery was the late fifth/early sixth century, but a few sites contained pottery dated to the early seventh century. Domuztepe itself was one of three “major village sites” characterized as such by the remains of public buildings and press installations, seemingly for producing oil rather than wine; these were also the sites with evidence of occupation into the late sixth or early seventh century.<sup>45</sup> Domuztepe contained the remains of several stone olive presses, one preserved within two rooms of a large building. The equipment included a collection tank of such capacity as to suggest to the excavators production at a commercial scale, especially when considering that this was probably only one of several installations at the site.<sup>46</sup> The research team concluded that the “oil boom in this part of Cilicia was relatively short-lived,” largely restricted to the fifth-sixth centuries and aimed mainly at the markets at Hierapolis-Castabala, but from which the oil could have been transported farther afield.<sup>47</sup>

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<sup>44</sup> Rossiter and Freed, 1991, “Canadian-Turkish Excavations at Domuztepe.”

<sup>45</sup> Rossiter and Freed, 1991, “Canadian-Turkish Excavations at Domuztepe,” 172-73, 172 table 3. The three sites with press installations are Karatepe-Sarıdüz, Çunur, and Domuztepe. The three sites with pottery from the late sixth/early seventh century are Karatepe-Sarıdüz, Çunur, and Pinarözü, but the site of Domuztepe itself “probably formed part of a single community centred on the modern village of Pinarözü” (172).

<sup>46</sup> Rossiter and Freed, 1991, “Canadian-Turkish Excavations at Domuztepe,” 153.

<sup>47</sup> Rossiter and Freed, 1991, “Canadian-Turkish Excavations at Domuztepe,” 173. The absence of amphora sherds at the survey sites and excavations at Domuztepe leads the authors to suggest that goat-skins may have been used to transport oil from processing facilities to markets.

The number of occupied sites in the small study area nestled in the foothills rose during the fourth to early sixth century and then fell by more than half, from seven in the late fifth/early sixth century, to three in the late sixth/early seventh century.<sup>48</sup> There is no evidence for renewed occupation at any of the sites until the thirteenth century. Admittedly, the study region is small, and so is the number of identified sites, making generalizations about settlement trends suspect. Domuztepe itself was one of the sites seemingly abandoned in the sixth century, with an end date for the excavated building containing the press installation falling sometime during the second quarter of the sixth century.<sup>49</sup> The complete lack of occupation at all sites in the survey region after the early seventh century is a more vivid and meaningful indication of structural change and the contraction of village life on the Byzantine-Islamic frontier.

### C. SOUTHEASTERN ISAURIA

A survey project led by G. Varinlioğlu covered a portion of southeastern Isauria lying on the border with Cilicia I, between the alluvial delta of the Calycadnus river and, 12 km to the northeast, the seasonal stream known as Yenibahçe (**fig. 5.6**).<sup>50</sup> Focusing on the countryside rather than the well-known towns, the project comprised an informant-based reconnaissance survey of a region about 120 km<sup>2</sup> in area; a study of surface pottery, soil characteristics, and modern land use; and a mapping program and architectural study of two villages with extensive standing remains.<sup>51</sup> Having recorded only sites with architectural remains over an area greater than 1 ha, Varinlioğlu recognizes the survey's limitations: small, isolated, and poorly-preserved

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<sup>48</sup> Rossiter and Freed, 1991, "Canadian-Turkish Excavations at Domuztepe," 172, 172 table 3.

<sup>49</sup> Rossiter and Freed, 1991, "Canadian-Turkish Excavations at Domuztepe," 173.

<sup>50</sup> Varinlioğlu, 2008, *Rural Landscape*; ead., 2007, "Living in a marginal environment"; ead., 2011, "Trade, crafts, and agricultural production."

<sup>51</sup> Varinlioğlu, 2008, *Rural Landscape*, 16.

structures remain under-represented; only diagnostic pottery was collected or noted, and then only selectively; and so-called off-site scatters were ignored.<sup>52</sup>

The southeastern Isauria project does not provide the kind of detailed information about shifting settlement patterns across time and space made possible by more-intensive coverage, and is similar to the research conducted on the villages of the Limestone Massif in northwest Syria, especially in its efforts to map and study the architecture of the two largest villages, Işıkkale and Karakabaklı. But this architectural study gives us important information about the economic activities and social fabric of rural life in the region. Masonry types, epigraphic and funerary evidence, church construction, and the surface pottery record tell of major occupation between the fourth and seventh centuries, with a main period of building expansion and economic vitality during the fifth and sixth centuries.<sup>53</sup> We can take a closer look at how this prosperity came about and what it meant for the inhabitants' quality of life. But without more precise dating, we cannot determine exactly when or why it ended without recourse to the historical-political narrative of seventh-century turmoil wrought by the Islamic conquest.

Varinlioğlu summarizes the key elements of rural prosperity as seen in the survey record during the fourth to seventh centuries as “the expansion of settlements, tendency for nucleation, and the appearance of commercial, religious, and perhaps administrative rural centers.”<sup>54</sup> While their stone construction, organic growth, and mixture of houses, churches, and agricultural facilities make these southeast Isaurian villages appear similar to those of the Syrian Limestone Massif, they are in fact different in important ways. Even the largest villages in the survey region do not surpass 5 ha – on the small end of the Syrian scale – and these, as well as the smaller villages, were not densely settled but formed by clusters of structures integrated with

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<sup>52</sup> Varinlioğlu, 2008, *Rural Landscape*, 18.

<sup>53</sup> Varinlioğlu, 2008, *Rural Landscape*, 52.

<sup>54</sup> Varinlioğlu, 2008, *Rural Landscape*, 53.

open spaces, likely used for garden plots, animal pens, and other, more ephemeral trappings of rural life (**fig. 5.7**).<sup>55</sup> Farmsteads, hamlets, and villages varying in size from 1-5 ha were for the most part dispersed across the region, likely a result of inhabitants' desire to settle close to the similarly scattered pockets of arable land.<sup>56</sup> The larger villages can be viewed as clusters of expanded hamlets, knitted together as “neighborhoods” separated by open spaces but together forming economically and socially cohesive units.<sup>57</sup> These composite villages are also surrounded by more hamlets, which remained as satellite settlements. It is not possible to determine precisely when any of these settlements was founded or abandoned, nor pick up on how occupation may have waxed or waned.

### **C.i. Işıkkale and village life**

What life was like in this rural countryside is best seen in Işıkkale and Karakabaklı, the two best-preserved villages that were the subjects of the mapping program and architectural study (see **fig. 5.7**).<sup>58</sup> Both are formed by a mixture of Roman-period structures – reused, repurposed, or added to in late antiquity – and buildings wholly new to the fifth/sixth century. Both, for example, have a sixth-century church connected by a paved road to an earlier tetrapylon converted into a chapel. Freestanding buildings in one and two storeys, churches, tombs, and irregular complexes of rooms are integrated with open spaces, cisterns, stables, press facilities, and threshing floors.

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<sup>55</sup> Varinlioğlu, 2008, *Rural Landscape*, 39.

<sup>56</sup> Varinlioğlu, 2008, *Rural Landscape*, 39 (site hierarchy); 43, 47. Land suitability was determined by analogy with the modern landscape. Four groups of settlements were determined based on area: hamlets and farmsteads (0.2-0.6 ha), small villages (1-2 ha), medium-size villages (2-3 ha, but most around 3 ha), and large villages (3-5 ha). Each large village also contained at least one church.

<sup>57</sup> Varinlioğlu, 2008, *Rural Landscape*, 45-46.

<sup>58</sup> Varinlioğlu, 2008, *Rural Landscape*, 53-67.

These were rural communities of a few hundred people, characterized by houses and agricultural facilities, and only a handful of more elaborate structures.

Looking at patterns of co-occurrence among threshing floors, lever and weights presses, and cisterns, Varinlioğlu concluded that threshing floors were likely used not only to thresh and winnow grain, but also as surfaces on which to crush olives using millstones or rollers, hence the need for a nearby water source (**fig. 5.8a-b**). These presses could be used to produce both olive oil and wine. In contrast, threshing floors did not co-occur with lever and screw presses, which instead had rotary mills for crushing olives. Found less commonly than the “ubiquitous” lever and weights presses, the lever and screw presses were always situated within buildings, and were likely developed for large-scale production of olive oil alone.<sup>59</sup>

Based on the number and capacity of the presses, Varinlioğlu concludes that these villages could have produced enough oil and wine to meet the demands of the immediate region.<sup>60</sup> Such production seems to have accelerated at some point during the fourth to seventh centuries, when all buildings housing a lever and screw press were either newly constructed or renovated. This acceleration – a result of the greater efficiency and output of the screw press – may be associated with the general building boom and prosperity of the fifth and sixth centuries.<sup>61</sup> But just as Tate overturned Tchalenko’s theory of olive monoculture in northwest Syria by arguing for a mixed agropastoral economy, so Varinlioğlu rejects Hild and Hellenkemper’s suggestion of olive monoculture in Cilicia and Isauria and emphasizes instead the diversity of products consumed within and exported from this hinterland: olive, grape, and grain; foodstuffs, hair, and skin from sheep and goats; and forest products such as timber,

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<sup>59</sup> Varinlioğlu, 2008, *Rural Landscape*, 144-51 (for all preceding information on presses).

<sup>60</sup> Varinlioğlu, 2008, *Rural Landscape*, 139.

<sup>61</sup> Varinlioğlu, 2008, *Rural Landscape*, 147.

pistachio, laurel, and saffron.<sup>62</sup> However, she goes so far as to say that the settlement expansion and rural prosperity apparent in the fifth and sixth centuries “may be closely related to the intensification of olive oil production.”<sup>63</sup> As concluded in Chapter 4, agropastoralism and surplus production do not have to be mutually exclusive; like the rural villagers of northwest Syria, these Cilicians could also have subsisted on a mixed economy of crops and animal products, while also producing some surplus oil and wine for distribution in local, regional, and even interregional networks of exchange, the later traced by LRA 1.

Though problematic, the surface pottery data corroborate this general picture of rural production and self-sufficiency.<sup>64</sup> Over half of the studied sherds were collected at the single site of Işıkkale, the activities at which may be correspondingly overrepresented; it seems safer to make limited conclusions based on distribution patterns of pottery from this site only. The small assemblage of 281 sherds from Işıkkale (as well as from the overall assemblage) consists mostly of locally-made storage jars and pithoi (38%), followed by roof and floor tiles (26%); next come jars, jugs, and juglets (17%), and then cooking wares (10%). Only five amphora sherds (2%) were collected at Işıkkale. Looking at the pottery from both Işıkkale and the overall assemblage, Varinlioğlu calls attention to the striking contrast between the ubiquity and quantity of storage jars and pithoi, on the one hand, and the scarcity of amphorae, on the coast and even more so inland, on the other.<sup>65</sup> At Işıkkale, the entire pottery assemblage except a single sherd consists of

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<sup>62</sup> G. Tchalenko, 1953-1958, *Villages antiques de la Syrie du Nord: le massif de Bélus à l'époque romaine*, 3 vols. (Paris) I, 413-14, 422-26; G. Tate, 1992, *Les campagnes de la Syrie du Nord du IIe au VIIe siècle: un exemple d'expansion démographique et économique à la fin de l'antiquité* (Paris) I, 243-56; Hild and Hellenkemper, 1990, *Kilikien und Isaurien*, 109; Varinlioğlu, 2008, *Rural Landscape*, 139, 159 (where she makes clear her adoption of Tate's argument).

<sup>63</sup> Varinlioğlu, 2008, *Rural Landscape*, 159.

<sup>64</sup> Varinlioğlu, 2008, *Rural Landscape*, 151-58 (for discussion of all surface pottery).

<sup>65</sup> Varinlioğlu, 2008, *Rural Landscape*, 152, 153 graphs 2-3, 154. The breakdown for the overall assemblage of 497 collected sherds is as follows: storage jars and pithoi (24%); jars, jugs, and juglets (17%); roof and floor tiles (16%); cooking wares (13%); bowls (10%); amphorae (less than 2%), including sherds from coastal Mylai (17) and Hutepe (29).

coarse wares, several of which share characteristic fabric, form, or decoration with other wares from Rough and Flat Cilicia.

The almost complete lack of fine wares and amphorae – that is, imported products – at Işıkkale, a village located only 10 km from a coastal harbor and certainly accessible via transport animals, seems telling at first glance.<sup>66</sup> Varinlioğlu notes finds of imported fine ware and a handful of amphorae sherds from other villages both closer to and farther away from the coast than Işıkkale, concluding that “coastal settlements are naturally richer in fine ware.”<sup>67</sup> The scarcity of amphorae is not so surprising, since the villagers likely produced much of what they needed themselves, especially the foodstuffs typically transported in amphorae, and so would not have imported them in large quantities. And if they exported the oil and wine they produced, they likely carried it down to coastal amphora kiln sites in perishable transport containers made of wood, animal skin, or hair,<sup>68</sup> as at Domuztepe and in northwest Syria.

Based on the assemblage from Işıkkale, it is reasonable to conclude, as Varinlioğlu does, that “pottery types that were widely traded in the Mediterranean penetrated the countryside only to a limited extent,”<sup>69</sup> but this village is unusual in the survey region for its lack of imported pottery and perhaps should not be taken as indicative of the rural communities as a whole. The incomplete and biased nature of pottery collection means that the assemblages are potentially misleading.<sup>70</sup> And without more-detailed description of each site, it is not possible to determine how representative the activities evidenced at Işıkkale are of the other villages in the region. Looking at the evidence from Işıkkale alone, though, one gets the sense of a local processing

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<sup>66</sup> Varinlioğlu, 2008, *Rural Landscape*, 155.

<sup>67</sup> Varinlioğlu, 2008, *Rural Landscape*, 156.

<sup>68</sup> Varinlioğlu, 2008, *Rural Landscape*, 157.

<sup>69</sup> Varinlioğlu, 2008, *Rural Landscape*, 156.

<sup>70</sup> E.g., Varinlioğlu notes that at Kümbetlibelen, like Işıkkale located 10 km from the coast, illicit digging revealed several amphorae and fine ware sherds (2008, *Rural Landscape*, 155).

center servicing satellite villages in the vicinity: it boasts five threshing floors, each with an associated pressing facility; a large, freestanding building containing millstones and a lever and screw press built into it; and abundant remains of locally-made storage jars and pithoi, which are the “predominant” group within the pottery assemblage collected around agricultural structures (presses and threshing floors) and open spaces.<sup>71</sup>

Işıkkale, and probably many if not all the other villages in the region, was certainly a site of rural production and seems to have been largely self-sufficient, at least in the sense that its residents did not rely heavily on imported ceramics and foodstuffs in amphorae and had equipment capable of producing the staple goods oil, wine, and grain. We cannot say whether they relied on other commodities – say, fish sauce, or a particular type of grain such as bread wheat or durum wheat – that for some reason had to be imported and were transported and stored in containers that are not preserved. But it seems safe to imagine the rural inhabitants of the region making much of what they needed – notably the oil-wine-grain triad, building materials, and textiles – on their own and moving the surplus down to coastal entrepôts. What and how much of it they brought back in return is unclear, but it does not seem to have been much.<sup>72</sup> On the whole, rural southeastern Isauria appears to have enjoyed a boom period similar to that of the Limestone Massif of northwest Syria, but it was smaller, less populous, and exhibited less wealth.

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<sup>71</sup> Varinlioğlu, 2008, *Rural Landscape*, 58, 63-65, 154. In contrast to the pottery assemblage from around agricultural facilities and open spaces, that collected around large buildings with high-quality masonry is “predominantly” cooking pots, jars, and bowls (154).

<sup>72</sup> Varinlioğlu, 2008, *Rural Landscape*, 64, states the point more strongly: the large number of locally made storage jars versus the handful of amphorae and fine ware “suggests a one-way commerce, or at least limited reciprocal commerce with the regional or interregional markets at Corasium and Seleucia.”

## C.ii. Işıkkale in context

Varinlioğlu stresses the symbiotic economic relationship between people living in the semi-arid marginal limestone hills and those residing within the alluvial Calycadnus valley, delta, and coastal plains, who also participated in trade with exterior markets. Residents of the hills could have processed grain, olives, and grapes at the many facilities located within rural villages, but other raw materials, such as wool, goat hair and leather, were apparently brought down to the harbor towns for manufacture into finished products such as textiles and clothing.<sup>73</sup> The latter industries are known from tomb inscriptions from urban contexts only; in the occasional instances of inscribed tomb monuments in the countryside, professions are not given.<sup>74</sup> Also important to the local economy were the metal manufacturing industry, attested in the coastal towns, and the arms factory in Seleucia on the Calycadnus.<sup>75</sup>

Indeed, it is to Seleucia and other coastal towns where excavations have been carried out that we must turn in order to obtain more precisely dated evidence for changes in occupation and economic activity during late antiquity and beyond in this region. To do so is not to forsake the survey evidence but to broaden its value and applicability by complementing it with evidence that is relevant and adds something new. At Elaiussa-Sebaste, the residents dramatically altered the buildings in the southeastern side of the city's promontory (adjacent to the southern harbor) during the fifth-sixth century to create a mixed-use zone of residential, commercial, and/or industrial structures, the latter including kilns, cisterns, and water conduits. In addition to several kilns producing LRA 1 located within and on the outskirts of the city, a cistern in this mixed-use zone contained hundreds of LRA 1 finds, many intact and others preserved as large fragments,

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<sup>73</sup> Varinlioğlu, 2008, *Rural Landscape*, 126-37.

<sup>74</sup> Varinlioğlu, 2008, *Rural Landscape*, 137.

<sup>75</sup> Varinlioğlu, 2008, *Rural Landscape*, 160-61, 169-70.

all dated to between the mid-fifth and first half of the seventh century (see **fig. 3.11**).<sup>76</sup> The excavators take these remains as evidence of the city as a “specialized centre” for wine trade and LRA 1 production and suggest the intentional deposit of the amphorae in the cistern – as well as the end of amphora production in general – was related to the effects of the Arab invasion of this region of the Cilician coast in the mid-late seventh century, concurrent with the apparent abandonment of the city.<sup>77</sup> Evidence for Corycus and Corasium ceases after the seventh century, but this absence of evidence cannot be translated into a clearer or more meaningful picture of the degree of population decline.<sup>78</sup>

Farther to the west, Anemurium and its hinterland are considered participants in the general rural prosperity and settlement expansion of late antiquity based on press remains and LRA 1 finds (including evidence for LRA 1 production), but activity in and around the city evidently slowed to a halt during the last decades of the seventh century.<sup>79</sup> However, new analysis of two late forms of Cypriot Red Slip ware (CRS; see Chapter 3) found at Anemurium and other sites in Asia Minor suggest that they were in circulation in the eighth century and possibly into the ninth.<sup>80</sup> “Well form” is named after the well deposit at Anemurium in which it was first identified; the deposit is dated to the late seventh to early eighth century (post-630 CE), and examples of the same form have since been found in securely-dated eighth-century

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<sup>76</sup> E. Equini Schneider, 2008, “Elaiussa Sebaste – The 2007 excavation and conservation season,” *Kazı Sonuçları Toplantısı* 30.4: 177-90, at 179, 187 fig. 10; Ferrazzoli and Ricci, 2010, “Un centro di produzione delle anfore LR1.”

<sup>77</sup> Equini Schneider, 2008, “Elaiussa Sebaste,” 179 (“specialized centre”); ead., 2007, “Elaiussa Sebaste – Report of 2006 excavation season,” *Kazı Sonuçları Toplantısı* 29.2: 299-310, at 301 (the excavators also record a coin hoard found in this complex comprised of coins of the seventh century, the last dating to the reign of Constans II [641-668]); Ferrazzoli and Ricci, 2010, “Un centro di produzione delle anfore LR1,” 819.

<sup>78</sup> Varinlioğlu, 2007, “Living in a marginal environment,” 315, who notes that Corycus reappears in the ninth century in administrative and military texts.

<sup>79</sup> J. Russell, 2002, “Anemourion,” in A. Laiou (ed.), *The Economic History of Byzantium: From the Seventh through the Fifteenth Century*, vol. 1 (Washington, DC) 221-28, who reconstructs a “once thriving olive industry in the chora of Anemourion” based on press fragments found in some of the early Byzantine villages settled during this time of rural prosperity and expansion (223); Decker, 2001, “Food for an empire,” 76 (LRA 1).

<sup>80</sup> Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 174. The start date is currently unknown.

deposits at Limyra in Lycia.<sup>81</sup> Also at Anemurium, Hayes Form 9 formed the largest single pottery type from two late contexts, the well deposit and the sea baths.<sup>82</sup> These pottery finds suggests limited but continued occupation at the site past the seventh century.

Varinlioğlu combines the urban excavation evidence and survey results with the traditional historical trajectory for the region to conclude that upland villages and towns fared better than coastal towns, which were more valuable and accessible targets of Muslim raids, and would have suffered from disruption to overseas exchange more severely than small rural communities to the extent that their residents depended on the commercial and state-organized movement of goods.<sup>83</sup> Rural Isaurians could have shifted to nomadic or semi-nomadic strategies instead of intensive agriculture as the circumstances demanded, relying on vertical transhumance and perhaps the continued production of olive oil at reduced subsistence levels during the eighth century and later.<sup>84</sup> Her argument for continued, and even intensified, land exploitation and rural settlement, on the one hand, and diminished occupation at coastal towns, on the other, is based not so much on archaeological evidence as on the logical supposition that coastal areas were more vulnerable to attack and disruptions in trade, while conversely these disruptions must have made resources and goods produced locally all the more vital for supplying the arms factory and community at Seleucia and the soldiers engaged in military activities near and within the frontier zone of Flat Cilicia just to the east.<sup>85</sup> Indeed, the importance of Seleucia in maintaining production, manufacturing, and economic activity and settlement in general in this region past

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<sup>81</sup> C. Williams, 1989, *Anemurium: The Roman and Early Byzantine Pottery*, *Subsidia mediaevalia* 16 (Toronto) 34-35, nos. 191-94, fig. 15. For Limyra, see J. Vroom, 2005, "New light on 'Dark Age' pottery: A note on finds from south-western Turkey," *Rei Cretariae Romanae Fautorum acta* 39: 249-55.

<sup>82</sup> Williams, 1989, *Anemurium*.

<sup>83</sup> Varinlioğlu, 2007, "Living in a marginal environment," 315-16; Varinlioğlu, 2008, *Rural Landscape*, 172.

<sup>84</sup> Varinlioğlu, 2008, *Rural Landscape*, 174-75. Here she uses the "intensification and abatement" model developed by Ø. LaBianca, 1990, *Sedentarization and Nomadization: Food System Cycles at Hesban and Vicinity in Transjordan, Hesban 1* (Berrien Springs, MI) 38-49.

<sup>85</sup> Varinlioğlu, 2007, "Living in a marginal environment," 313-16.

the seventh past cannot be stressed enough. Its role as an administrative, military, and religious center during the eighth to tenth centuries is indicated by episcopal lists, ecclesiastical registers, and lead seals of the *genikoi kommerkiarioi* of the *apotheke* of Isauria, Cilicia I, and Cilicia II.<sup>86</sup> By fulfilling these functions, Seleucia was unusual in that it survived the seventh century as a town, not in the Graeco-Roman sense but according to a new set of priorities, military and ecclesiastical being primary among them. Its presence alone would have provided incentive for rural producers to continue making oil, wine, and other foodstuffs, along with the animal products required for textiles and leather goods.

Without a more systematic collection of ceramics in the survey region, as well as a refined chronology, Varinlioğlu's reconstruction remains a tentative but useful model for picturing a possible shift in investment from agricultural to pastoral subsistence strategies, and a narrowing but continuity of agricultural production and manufacturing to meet the needs of a regional center throughout and beyond the seventh century.

#### **D. WESTERN ROUGH CILICIA**

On the western shore of the mountainous bulge of Isauria (Rough Cilicia) stand the remains of a number of Roman towns along a coastal strip of about 60 km that together, along with portions of the adjacent uplands, have been the focus of multifaceted survey and environmental research by the Rough Cilicia Archaeological Survey Project since 1996 (**fig. 5.9**).<sup>87</sup> The region of

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<sup>86</sup> Varinlioğlu, 2008, *Rural Landscape*, 169-70.

<sup>87</sup> R. E. Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns of the Coast Lands of Western Rough Cilicia*, BAR International Series 879 (Oxford); Rauh et al., 2006, "Viticulture, oleoculture, and economic development"; N. K. Rauh et al., 2009, "Life in the truck lane: Urban development in Western Rough Cilicia," *Jahreshefte des Österreichischen Archäologischen Institutes in Wien*, Band 78 (Vienna) 253-312; M. C. Hoff and R. F. Townsend (eds.), 2013, *Rough Cilicia: New Historical and Archaeological Approaches* (Oxford).

interest covers an area of about 300 km<sup>2</sup>, in which the team has conducted extensive survey and environmental studies. From north to south, the towns of Iotape, Selinus, Cestrus, Nephelion, and Antiochia ad Cragum lie on a thin strip of coastal plain; Lamos (a metropolis) and a handful of unidentified settlements located upland from the sea share urban features with the coastal towns, while other types of settlement such as villages, fortified sites, farmsteads, “industrial complexes,” and tombs flesh out the suburban and rural landscape.<sup>88</sup>

Archaeological survey work on the coastal cities of western Rough Cilicia began in the 1960s with a project led by E. Rosenbaum-Alföldi and G. Huber.<sup>89</sup> The first systematic survey of the region, directed by R. Blanton, was carried out in 1996-1997 across an area of about 45 km<sup>2</sup> along the coast. The team delineated survey tracts varying between 10 ha and 1 km<sup>2</sup> in size using boundaries based on the local topography – small valleys and alluvial plains, for instance – each of which was traversed by a team of between 3 and 7 fieldwalkers spaced 20-30 m apart.<sup>90</sup> When a discrete patch of pottery sherds and/or building materials (a “site”) was encountered, the team measured the area of the site; collected a grab-bag sample of diagnostic sherds within one or more discrete collection areas; and noted the density and types of remains, local environmental characteristics, and other relevant features. Well-dated diagnostic pottery types were found to be present for the late Roman and Byzantine periods (divided at 700), but the team did not determine distinctions in pottery between the early and late Byzantine periods (divided at 970).<sup>91</sup> Each of the sites thus identified (including the previously known towns) was categorized as an urban center, village, or residence/hamlet (i.e., isolated farmstead). Population estimates

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<sup>88</sup> Rauh et al., 2009, “Life in the truck lane,” 257.

<sup>89</sup> E. Rosenbaum, G. Huber, and S. Onurkan (eds.), 1967, *A Survey of Coastal Cities in Western Cilicia. Preliminary Report*, Türk Tarih Kurumu Yayınlarından 6.8 (Ankara)

<sup>90</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 3, providing all of the comments on survey methodology that follow.

<sup>91</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 19. The pottery chronology is divided into the following periods: Early Roman (65 BCE-249 CE), late Roman (250-699), early Byzantine (700-969), late Byzantine (970-1071).

were then made for each site using the site's area as recorded during the pedestrian survey, according to the following estimated population densities: 125 persons/ha for farmsteads and villages, and 210 persons/ha for urban centers.<sup>92</sup>

Based on these results, Blanton concluded that population and settlement growth began only in the Hellenistic and Roman periods, because “only strong states make settlement of the coast feasible” given the region's ruggedly mountainous terrain with no large alluvial plains for extensive agriculture.<sup>93</sup> Comparing the estimated agricultural carrying capacity of the survey area and each of the city hinterlands with population estimates based on pottery surface scatters, Blanton determined that the survey area – with its high population densities and settlement nucleation at centers located in “defensible, but agriculturally marginal locations” – could not have been locally self-sufficient in staple foodstuffs but must have imported them, which it was well-situated to do.<sup>94</sup>

Using the number of occupied sites for each time period, site areas, and the population densities noted above, Blanton calculated estimated population sizes for each time period. The highest population growth rate occurred from the Hellenistic to early Roman period (65 BCE-249 CE), when population grew from 1,400 to 18,000; that is, just over 16,000 in 300 years (or some shorter period within that 300-year span).<sup>95</sup> Cestrus and Antiochia were newly founded at this time. The transition from the early to late Roman period (250-699) saw continued but slower growth, from about 18,000 to 24,500, an increase of 6,500, with particular growth noted

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<sup>92</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 3, 7, 76. For estimated population densities per site type, Blanton (76) cites J. Cherry, J. L. Davis, and E. Mantzourani (eds.), 1991, *Landscape Archaeology as Long-Term History: Northern Keos in the Cycladic Islands from Earliest Settlement until Modern Times*, Monumenta Archaeologica 16 (Los Angeles) 280; M. H. Jameson, C. N. Runnels, T. H. Van Andel, and M. H. Munn, 1994, *A Greek Countryside: The Southern Argolid from Prehistory to the Present Day* (Stanford) 542-50.

<sup>93</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 57, 17.

<sup>94</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 69, 71-72.

<sup>95</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 58 table 4.1, 60, for all of the population estimates that follow in this paragraph.

at Selinus and Nephelion. The population growth of the late Roman period seems to occur without concurrent new construction, a situation markedly different from that observed for the eastern Mediterranean in general, for instance in northwest Syria and southeastern Isauria. Around the beginning of the early Byzantine period (700-969), there was a decline in population of about 20,000 total (from 24,500 to 4,800), with evidence of habitation at three sites only, all of which are urban centers: Iotape, Selinus, and Antiochia. In Blanton's opinion, the evidence of reduced population after 700 suggests possible abandonment at large.

These population estimates provide useful indications of the scale of habitation and resource exploitation in the survey region. However, the survey region is quite limited – so limited, in fact, that it does not cover the area around each city designated by Blanton as a hinterland, that is, “the area contiguous to a city and most likely to have contained rural communities involved in its polity and economy, and where city-dwelling farm families are most likely to have grown their crops.”<sup>96</sup> Nor does it cover the larger region, extending up into the forested highlands, rich in natural resources likely exploited by the region's inhabitants. This limitation has a number of implications. First, population estimates based on it may be too low, since sites associated with the survey region but located outside of its purview will have gone unnoticed. However, given the ruggedness of the terrain and the history of extensive survey in the area, it is unlikely that there exist additional urban centers in this region, nor that rural occupation was so dense as to greatly increase the population estimates. Second, estimates of carrying capacity may be too low, since they are based only the territory immediately surrounding the main towns. This underestimation is more likely. Consequently, Blanton's conclusion that the region's population greatly exceeded its carrying capacity may be an

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<sup>96</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 7.

overstatement. The results of more recent survey work, discussed below, suggest that indeed it is.

The survey team identified press equipment at only 10 sites, sometimes present in multiples, and assumed it was all dedicated to oil production alone.<sup>97</sup> Four sites contained evidence of ceramic production, including amphorae, though Blanton says these were probably for local use.<sup>98</sup> Blanton concludes that local wheat and oil production was insufficient to meet even local needs, requiring inhabitants to import additional supplies, and wine production was probably small-scale if existent at all.<sup>99</sup> According to this assessment, the population densities achieved in the early and late Roman periods required the presence of a strong state providing military and political security as well as an “urban elite whose interests would have been in commerce and shipping” in order to remain sustainable through the import of basic foodstuffs.<sup>100</sup> It follows that the inverse also obtains: Blanton sees this switch flipping by about 700, when the state no longer secured the regular import of basic food commodities, and communities, now supplied by local resources alone, dwindled or disappeared, as observed in the drop-off in site numbers between the late Roman and early Byzantine periods.

However, in addition to a probable underestimation of carrying capacity, the survey project may also have underestimated the scale of oil and wine production. What are the implications of this revised perspective?

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<sup>97</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 71.

<sup>98</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 71.

<sup>99</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 71 (wheat and oil), 17 (wine).

<sup>100</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 74. He continues: “These activities concentrated the wealth of the region in the hands of urban interests. The surface densities of imported fine ware pottery and imported transport amphora are strongly skewed toward the urban settlements.” Rather than resulting in “consumer cities” preying on rural producers, however, “[c]ity growth appears to have stimulated a minor degree of rural development, but city economies were based largely on interregional exchange, not on the exploitation of local rural populations.”

## **D.i. Oil, wine, and amphora production**

More than a decade's worth of research since Blanton's survey has provided more data with which to judge the nature and extent of these activities. Though largely focused on the urban development of the region and a revised core/periphery interpretation of the interplay between Graeco-Roman and indigenous traditions, the recent project's research agenda includes reconstructing the ancient environment and determining how human occupants exploited and transformed it, particularly in relation to deforestation as a result of the production of timber and of agricultural commodities such as wine and olive oil, which in turn give an indication of the extent to which the region produced goods for export and played a role in long-distance exchange.<sup>101</sup>

What is relevant to the immediate argument is an assessment of the extent of wine and olive oil production and its larger implications for the region's connectivity to Mediterranean-wide exchange networks, in so far as these patterns can indicate something about the rise and fall of population, in combination with the expanded universe of settlement data from the field survey itself. In contrast to Blanton's assessment, the team led by N. Rauh argues that the region produced wine and oil in surplus, based on the evidence of press equipment, kiln sites where widely distributed amphora types were made, textual evidence, and vestigial wild grape growth.<sup>102</sup> Though the team members agree that the region's inhabitants produced some

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<sup>101</sup> Rauh et al., 2009, "Life in the truck lane," 254-68; Rauh et al., 2006, "Viticulture, oleoculture, and economic development."

<sup>102</sup> Rauh et al., 2006, "Viticulture, oleoculture, and economic development," 49. The wild grape vine was revealed by "remote sensing operations with multispectral satellite data."

agricultural commodity in large-scale surplus, they have not yet reached consensus on whether it was wine, olive oil, or both, and if both, in what ratio.<sup>103</sup>

Blanton recorded 10 sites with press equipment (press beds), sometimes found in multiples; recent publications present the data differently in order to emphasize what the team now sees as the ubiquity and importance of wine and/or oil production in the region: 11 rural “press complexes” plus “additional ones at several of the urban and village sites,” altogether “representing as many as 28 press installations.”<sup>104</sup> In addition, at least three kiln sites have been documented in the survey region.<sup>105</sup> The kilns may have produced Pamphylian amphorae, “Koan-type” amphorae (Dressel 2, 3, and 4), the pinched-handle amphora (Zemer 41), which together suggest amphora production in the region from the first century BCE through the fourth century CE.<sup>106</sup> Though the first two are commonly found in the survey region, only the pinched-handle amphora can be said with certainty to have been produced locally.<sup>107</sup> In addition, the team makes a very tentative identification of what may be a variant of Benghazi LR 1 at a possible kiln site not far from the more certain Bıçkıcı kiln site.<sup>108</sup>

As discussed above for Flat Cilicia, the region in general is noted for its wine in the fourth-century *Expositio totius mundi*, and its special raisin wine (*passum*) is praised and recommended for medicinal purposes by various Roman-period authors, including Pliny and

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<sup>103</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 51.

<sup>104</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 71; Rauh et al., 2009, “Life in the truck lane,” 258 table 1, 267 n. 33; Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 56.

<sup>105</sup> Rauh et al., 2009, “Life in the truck lane,” 258 table 1, 267 n. 33; Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 55. The kiln sites are located at Bıçkıcı, Syedra, and Antioch.

<sup>106</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 55-56; Rauh and Slane, 2000, “Possible kiln sites in western Rough Cilicia,” 327-28.

<sup>107</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 56-57.

<sup>108</sup> Rauh and Slane, 2000, “Possible kiln sites in western Rough Cilicia,” 326.

Galen.<sup>109</sup> However, it is not clear from these sources to which part of Cilicia they refer: Rough, Flat, or both. In addition to the textual evidence, the team assumes that the pinched-handle amphora and (more tentatively) the Koan-style amphora remains found commonly in the region were dedicated to the transport of wine.<sup>110</sup> In addition, one collaborator used multispectral satellite imagery to classify the spectral chromatic reflectance signature of a vineyard confirmed through ground-truthing by the pedestrian survey and then identified all locations in the imagery where this signature was present to create a map showing the extent of possible grape vine vegetation, current or vestigial.<sup>111</sup> Struck by the ubiquity of the signature and the apparent efficacy of this method, the team endorses this approach as “offer[ing] perhaps the most compelling argument of all for the existence of a significant industry of surplus wine production in the survey region at the height of the Roman Empire;”<sup>112</sup> presumably the vines could have been cultivated into late antiquity as well. The results of this method are not at all easily interpreted, however; current and vestigial vine is not a perfect proxy for vine growth and wine production in antiquity.

Evidence for olive oil, as opposed to wine, production comes predominantly in the form of the press elements themselves. The press elements (press beds, press frames, counterweights, and crushing wheels and basins) are found in various combinations, making it difficult to pick out a pattern indicating oil versus wine production, but the frequency of crushing elements suggests to the team that most presses were used to produce oil (though perhaps also used for

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<sup>109</sup> The following references are from Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 57 n. 26: Pliny, *NH* 14.109; Athenaeus 1.33b; Galen, *De Vict. Att.* 99, *In Hippoc. De Vict Acut.* 3.8; Dioscorides, *Materia Medica* 5.40.1; *Expositio totus mundi* 39.

<sup>110</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 58.

<sup>111</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 61-62.

<sup>112</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 63.

crushing and pressing raisins for *passum*).<sup>113</sup> For oil containers, the team tentatively points to the remains of Pamphylian amphora or imagines that currently unrecognized amphorae, some other type of ceramic vessel, or non-ceramic containers such as animal skins were used.<sup>114</sup>

### ***Surplus production?***

Despite its insistence on the “importance of surplus production of wine and oil in this region,”<sup>115</sup> the team notes an odd discrepancy: whereas the press evidence suggests greater oil over wine production, the “export evidence” weighs heavily on the side of wine as the main export product (i.e., textual sources praising the region’s raisin wine, and the abundance of amphora types supposedly for wine over types supposedly for oil).<sup>116</sup> This apparent conundrum is explained as a result of the greater volume of oil that had to be produced relative to wine in order to meet local consumption needs.

It is instructive to apply M. Decker’s oil production estimate noted in Chapter 4 for a large lever and screw press from the village of Qirqbize in northwest Syria to the situation in western Rough Cilicia. This press was capable of producing between 2,500 and 5,000 liters of oil annually, fulfilling the annual 20-liter requirement of between 125 and 250 people.<sup>117</sup> Screw presses such as this one were capable of producing more oil than lever and weights presses. No definitive evidence for screw presses has been found in Rough Cilicia; the team’s suggestion that this technology was used in the region is based on “a handful of peculiar stone elements that

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<sup>113</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 69-71. The “conventional wisdom” used to identify the presses is as follows: “lever presses plus storage dolia point to wine production and lever presses plus crushers olive oil production” suggesting in turn that “press installations with multiple lever presses and olive crushers served as combined installation for both wine and oil production” (73).

<sup>114</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 75.

<sup>115</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 49.

<sup>116</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 73.

<sup>117</sup> Decker, 2001, “Food for an empire,” 73. See the discussion on oil production across the northwest Syrian Limestone Massif in Chapter 4 for further references.

resemble those of comparanda for screw presses published elsewhere,” and in any case they would have been rare in contrast to the commonplace lever and weights presses.<sup>118</sup> Therefore the Qirqbize press differs from those of Rough Cilicia in two important ways: it is a screw press, and it was definitely used to produce oil. Even assuming all 28 possible press installations were used for olive oil, all were operating at the same time, and each produced quantities similar to the screw press at Qirqbize (an estimate likely too high), they could only have produced enough oil to fulfill the annual 20-liter requirement of between just 3,500 to 7,000 people – nowhere near Blanton’s maximum regional population estimate of 24,500 (third to seventh century), which if anything is an underestimate, and is accepted in the more recent publications.<sup>119</sup> Western Rough Cilicians like town-dwellers across the Roman empire considered bathing a relatively high priority, and would have needed every drop of that 20-liter-per-capita requirement; baths are preserved at five urban sites, three of which have more than one.<sup>120</sup> In addition, the presence of Dressel 20 amphorae from Spain suggests that this local oil production was not always sufficient to meet local demand, especially as the population grew.<sup>121</sup>

In order to meet even local demand, then, the inhabitants of Rough Cilicia would have had to import considerable quantities of olive oil. This kind of topping off of the local supply with imports is not unusual, nor is the importation of foodstuffs from specialist regions even when those foodstuffs can be adequately produced at home. But if “the lion’s share of Rough Cilician olive oil was consumed locally,”<sup>122</sup> and local oil production sometimes could not meet local demand, it seems unlikely that oil was normally produced in surplus, or exported. A

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<sup>118</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 67-68.

<sup>119</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 58 table 4.1; Rauh et al., 2009, “Life in the truck lane,” 261 n. 16.

<sup>120</sup> Rauh et al., 2009, “Life in the truck lane,” 295.

<sup>121</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 74-75.

<sup>122</sup> Rauh et al., 2006, “Viticulture, oleoculture, and economic development,” 75.

different scenario can be suggested: the region produced oil for local consumption only and had to import additional supplies to meet these local needs, and produced raisin wine not as a surplus product, but as a specialized product. According to this scenario, only wine, not oil, would have been exported from the region.

#### **D.ii. Pottery**

As in most projects, the current difficulty in dating locally produced coarse wares and cooking wares means that periods without imported fine wares and amphorae chronologically identified elsewhere in the Mediterranean are potentially underrepresented. Well-documented imports are used to establish four broad chronological periods for the region: pre-Roman (eighth to first century BCE), early Roman (first to third century CE), late Roman (fourth to seventh century), Byzantine (ninth to twelfth century).<sup>123</sup> Almost 46% of the 7,313 sherds processed by the project were coarse wares and cooking wares.<sup>124</sup> The identification of the seventh century as a cut-off point for the late Roman period, and the chronological gap in the eighth century, may be artifacts of problems identifying and dating early Byzantine coarse wares. It would be interesting to take a closer look at these, to see if perhaps some of the cooking pots could be identified as known types with implications for prolonged occupation – for example, the Dhiorios-type cooking pots found in Lycia and discussed in Chapter 6.

Of the 3,424 datable sherds processed by the project, 391 (11%) are dated to the pre-Roman period, 2,038 (60%) to the early Roman, 920 (27%) to the late Roman, and 75 (2%) to

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<sup>123</sup> Rauh et al., 2009, “Life in the truck lane,” 261 n. 17.

<sup>124</sup> Rauh et al., 2009, “Life in the truck lane,” 262 table 2. Out of 7,313 total sherds processed, 2,460 were coarse wares and 872 were cooking wares.

the Byzantine (**fig. 5.10**).<sup>125</sup> To the authors, the reduction by half of datable pottery between the early Roman to late Roman period in the fourth century CE does not indicate significant population decline, since the late Roman pottery count is still “significantly higher” than the pre-Roman count.<sup>126</sup> Using tallies of imported wares as a proxy for population levels is difficult, but the drop in imported wares during the late Roman period may be meaningful, as it happens to coincide with the end of amphora production inside the region, based on the kiln sites noted above that produced containers from the first century BCE through the fourth century CE. If, as concluded above, the region engaged in the specialized production of wine for export, and produced the amphorae in which it was transported, then the cessation of that amphora production after the fourth century suggests that such production and export also ceased at that time. Of course, the discovery of possible kiln site producing later amphora types could change this picture completely (see above), but this discovery remains extremely tentative.

Regardless of its implication concerning population levels, the simultaneous drop in imported pottery and amphora production around the fourth century is important, because it means that western Rough Cilicia did not experience the kind boom in rural settlement and agricultural development seen elsewhere in the eastern Mediterranean during the fourth to seventh centuries, such as in the Limestone Massif and southeastern Isauria. In contrast to those other regions, western Rough Cilicia may always have had lower population numbers and settlement density, without the same diversity of site types, in particular villages inhabited by relatively prosperous peasant-proprietors. I will discuss reasons for this discrepancy in the summary below.

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<sup>125</sup> Rauh et al., 2009, “Life in the truck lane,” 262 table 2.

<sup>126</sup> Rauh et al., 2009, “Life in the truck lane,” 304.

The dramatic drop in datable pottery between the late Roman period (ending in the seventh century) and Byzantine period (beginning in the ninth century), the latter represented by only 2% of datable sherds, is also significant. To some extent, this drop, as well as the absence of any pottery dated to the eighth century, must be a result of current difficulties in recognizing the pottery used during these centuries, much of which was coarse ware. But the disappearance of imports is itself a meaningful trend. The seventh-century cut-off in datable pottery parallels the general historical trajectory assumed for this region, whereby Arab raids and invasions beginning in the mid-seventh century result in widespread abandonment of towns and villages along the southeastern coast. The team largely adopts this scenario, concluding that “the decline in urban density in the late Roman era might safely be described as a ›slow burn‹ until such time as it was cut off midstream by later disturbances” during the mid-seventh century (that is, Arab incursions).<sup>127</sup> Does the project’s environmental research shed any light on this scenario?

### **D.iii. Environmental research**

The Rough Cilicia Archaeological Survey Project has undertaken a multi-pronged palaeoenvironmental research agenda. Since the results of most of these studies remain preliminary, at this point they hint at broad patterns of landscape change over time, without precise chronological sequencing. These investigations include geomorphological mapping and modeling of river basin erosion over time; geomorphic trench excavations by backhoe of alluvial deposits along lowland river basins (as well as trench excavations by hand in highland sinkholes and head waters of streams); analyses of organic remains (woody tissues, carbon, macrobotanical remains, phytoliths, and pollen) from soil samples obtained from these trenches;

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<sup>127</sup> Rauh et al., 2009, “Life in the truck lane,” 304.

dendrochronological studies of existing highland cedar and juniper forests; and remote sensing (satellite imagery, as discussed above) to determine the extent of olive and grapevine growth in the region.<sup>128</sup>

The team excavated over twenty geomorphic trenches in lowland river basins; carbon retrieved from four of these trenches has provided rough rates of alluvial deposition over periods lasting between 400 and 2500 years.<sup>129</sup> These date ranges are too broad to make meaningful conclusions about changes in the rate and type of sedimentation as related to phases of human occupation in the region, but they do tell a tale of relatively significant landscape disturbance in the region since the mid-first millennium BCE, the earliest date recorded in the trenches. Pollen samples retrieved from some number of the trenches suggest that native tree species in the Gazipaşa basin were replaced by species of grass and cultivated trees such as black walnut; these changes are interpreted by the team as indicative of “a pattern of increasingly degraded vegetation” caused by overgrazing and the replacement of highland forests by colonizing scrub species resulting from human activity.<sup>130</sup> The timing of this change in vegetation has not yet been determined.

The dendrochronological studies were undertaken to determine the age and cycles of regrowth of cedar and juniper trees and thereby to test various theories about the timing and nature of deforestation in the region, regarding in particular the cedar forests for which Cilicia was famous in antiquity.<sup>131</sup> Ü. Akkemik obtained tree-ring samples from the oldest surviving trees in two main areas: the relic cedar forest at the crest of Gürçam Karatepe, and forests in the

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<sup>128</sup> Rauh et al., 2009, “Life in the truck lane,” 264-68.

<sup>129</sup> Ü. Akkemik et al., 2012, “The archaeology of deforestation in south coastal Turkey,” *International Journal of Sustainable Development & World Ecology* 19: 395-405, at 400, 400 Table 1.

<sup>130</sup> Rauh et al., 2009, “Life in the truck lane,” 266. See also H. Caner, N. K. Rauh, and L. A. Wandsnider, 2004, “The palynological analysis of surface samples from the Western Rough Cilicia,” *Proceedings of the International Symposium on Earth System Sciences, 2004, Istanbul, Turkey*, Institute of Marine Sciences and Management and Department of Geography (Istanbul) 139-45.

<sup>131</sup> Akkemik et al., 2012, “The archaeology of deforestation.”

Bıçkıcı highlands, including relic forests on the Taşeli Plateau.<sup>132</sup> Of the seven cedars sampled on Gürçam Karatepe, the oldest was 423 years, but the mean lifespan of all seven was only 280.7 years. Of the fifteen cedars sampled in the Bıçkıcı highlands, the mean lifespan was 304.5 years, the oldest of which (445 years) was located in a remote pocket of particularly long-lived trees older than 390 years. The growth of these existing highland cedar forests, then, began 300-400 years ago, indicating that the “original” forests had been depleted some time earlier, long before the modern era. In fact, highland cedar forest elimination and rejuvenation has likely occurred several times over the course of human occupation in the region. Pollen retrieved from a trench on the Taşeli Plateau reveals several cycles of cedar depletion and regrowth, demonstrated by periods of alternating dominance in cedar versus non-cedar (fir, pine, and juniper) pollen (**fig. 5.11**).<sup>133</sup> Carbon samples taken from the trench to date these changes have not yet been processed. The limited age range for the sampled cedar trees suggests these forests were depleted in “harvest events,” which could have occurred at varying times across different highland basins or groups of basins.<sup>134</sup>

These multifaceted environmental studies provide evidence of human activity and disturbance in the landscape of Rough Cilicia. The team members offer the reasonable conclusion that the alluvial deposition observed in the river basins of the region are the result of the widespread abandonment of a landscape much altered by agriculture, animal raising, and the husbanding of natural resources that they argue took place on the tails of population decline around 600 CE.<sup>135</sup> However, given the preliminary nature of the palaeoenvironmental results,

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<sup>132</sup> Akkemik et al., 2012, “The archaeology of deforestation,” 399-400.

<sup>133</sup> Akkemik et al., 2012, “The archaeology of deforestation,” 401-402, 402 fig. 5.

<sup>134</sup> A wider age range would be expected for undisturbed forests, which exhibit stochastic mortality. Akkemik et al., 2012, “The archaeology of deforestation,” 400, citing (“harvest events”) W. A. Reiner, 1983, “Disturbance and basic properties of ecosystem energetic,” in H. A. Mooney and M. Godron (eds.), *Disturbance and Ecosystems: Components of Response* (New York) 83-98.

<sup>135</sup> Akkemik et al., 2012, “The archaeology of deforestation,” 403.

especially as regards dating, it seems premature to make conclusions that tie these results to the trajectory of population decline in the region. Without a clearer understanding of the chronology, it is just as possible that massive erosion occurred during the period of greatest, densest population, and that it was a contributing cause of population decline, rather than a result of it. In addition, population decline is inferred from the pottery data, the interpretation of which may require refinement after the coarse wares and other non-imported types are identified chronologically, and from an assumption that Arab attacks would have necessarily spelled disaster for the population of Rough Cilicia. Certainly episodes of conflict or insecurity would have undermined rather than augmented the stability and health of the population, but to use this historical datum point as the linchpin on which a sequence of additional conclusions are based seems premature. Their very reasonable hypothesis can be tested once the finalized results of these various environmental projects are available.

#### **D.iv. Western Rough Cilicia in context**

The evidence presented above suggests that western Rough Cilicia may have engaged in the specialized production of wine for export, but produced olive oil for local consumption only. However, the export of wine seems to have ended after the fourth century, indicated by the cessation of amphora production. At the same time, the amount of imported ceramics is significantly reduced. Though these changes do not necessarily imply population decline, they certainly indicate that something had changed. More significantly, they demonstrate that the inhabitants of western Rough Cilicia did not share in the rural expansion and prosperity seen in

the wider eastern Mediterranean during the fourth to seventh centuries – including in areas close by, such as southeastern Isauria. What might account for this discrepancy?

This micro-region never had an important urban hub like Antioch in northwest Syria or even Seleucia on the Calycadnus in Isauria, and it seems never to have been so densely settled with small villages built up by peasant-proprietors industriously squeezing out massive volumes of wine and oil for large-scale consumption. Instead, site types appear to be organized more heterarchically than hierarchically, with the majority of sites (a dozen or so) categorized by the survey team as “urban sites” (i.e., “cities” or *poleis*) based on “significant traces of monumental architectural and/or inscriptions that indicate the existence of civic institutions” and a similar number of sites recorded as “villages” or possible “monumental villages.”<sup>136</sup> But these cities were small: Blanton estimates a maximum of only 3,000 to 9,000 urban residents for each of the five better-known cities along the coast (Iotape, Selinus, Cestrus, Nephelion, and Antiochia).<sup>137</sup> The continued operation of traditional, native Cilician social power in the Roman period via cities may explain the settlement pattern of the region, with its predominance of small urban sites – each a center from which long-lived native families could wield and maintain a firm grip on power – rather than villages run (semi)autonomously by relatively prosperous peasant-proprietors.<sup>138</sup> Together, these mutually reinforcing socio-economic and settlement scenarios dovetail with the suggestion that oil and wine were produced at a relatively limited scale.

Another reason for the discrepancy may be the insecurity caused by repeated uprisings and rebellions during the mid-third to fifth century against imperial forces by various Isaurian leaders and so-called warlords, who used the region as a base of operations that included attacks

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<sup>136</sup> Rauh et al., 2009, “Life in the truck lane,” 257, 257-61 table 1.

<sup>137</sup> Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns*, 74.

<sup>138</sup> The role played by powerful native Cilician families in shaping the social, political, and economic development of the region is stressed by Rauh et al., 2009, “Life in the truck lane,” 296.

and raids by sea of towns along the entire southern coast from Rhodes to Syria.<sup>139</sup> The survey has identified a number of fortified sites with late Roman remains strung along the uplands that form the southern slopes of the Taurus mountains. Including mostly refuge and castle sites but also the town of Lamos, they seem to have been created to form a line of defense against Isaurian raids from the interior of the Taurus.<sup>140</sup> They are difficult to date, but the walls at Lamos include an inscription from the reign of Gallienus (260s), and portions of those at Selinus seem to have been built in the mid-third and fifth centuries.<sup>141</sup> Like Selinus, the other coastal towns also became equipped with fortifications during these centuries.

In light of these issues, what can we conclude about the near disappearance of datable pottery in the region after the seventh century? In contrast to other regions, here in western Rough Cilicia, a process of disconnecting from the wider Mediterranean can be seen already by the fourth and fifth centuries, indicated by the decline in imported pottery and in amphora production – a full two hundred years before the seventh-century development of similar trends seen elsewhere. The eventual disappearance of datable pottery is perhaps not as surprising as in these other regions, for it came on the tails of a longer process by which the region became less complex economically, and perhaps less populated (what the survey team calls a “slow burn”). The extent to which population levels during the final stages of this process are underrepresented due to an inability to date coarse wares of the post-seventh century remains unknown.

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<sup>139</sup> Rauh et al., 2009, “Life in the truck lane,” 302-3; N. Lenski, 1999, “Assimilation and Revolt in the Territory of Isauria,” *Journal of the Economic and Social History of the Orient* 42: 413-65.

<sup>140</sup> Rauh et al., 2009, “Life in the truck lane,” 299.

<sup>141</sup> Rauh et al., 2009, “Life in the truck lane,” 299-302; quote at 299.

## E. GÖKSU VALLEY

A keyhole glimpse into what was going on in a more remote part of this region is provided by the Göksu Archaeological Project, which began extensive and intensive survey of the upper Göksu river (ancient Calycadnus) valley in east-central Isauria in 2002 (**fig. 5.12**).<sup>142</sup> One of the major results of the project was the identification of a small Graeco-Roman town (first century BCE to seventh century CE) under the modern village of Alahan (950 masl), near a complex of fifth- to sixth-century Christian buildings previously thought to have been built and occupied as an isolated community.<sup>143</sup> Furthermore, the survey team documented a network of cemeteries, suburban communities, outlying villages, and smaller foci of rural activity that made up the territory of this classical town, revealing a picture of a largely self-sufficient population relying on little imported material (as far as imported pottery can be considered a proxy for overall imports) and producing olive oil and even more so wine in abundance.<sup>144</sup> As seen elsewhere in the wider region, such as in southeastern Isauria and northwest Syria, inhabitants lived in villages rather than isolated farmsteads, for which the team observed very little evidence.<sup>145</sup> Identifiable ceramics from the village of Alahan are “overwhelmingly late Roman in date” (third to seventh century) and reinforce the picture of community vibrancy, if not outright prosperity, suggested

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<sup>142</sup> See, for example, H. Elton, 2008, “Göksu Archaeological Project 2005-2006,” *Araştırma Sonuçları Toplantısı* 25.2: 237-250, as well as other project reports published in *Araştırma Sonuçları Toplantısı*.

<sup>143</sup> H. Elton, 2008, “Göksu Archaeological Project 2005-2006,” *Araştırma Sonuçları Toplantısı* 25.2: 237-250; idem, 2006, “The Roman countryside at Alahan, Turkey,” in A. S. Lewin and P. Pellegrini (eds.), *Settlement and Demography in the Near East in Late Antiquity* (Rome) 59-66; idem, 2006, “Recent work at Alahan,” in S. Günel (ed.), *Festschrift for Hayat Erkanal* (Istanbul) 310-16; idem et al., 2006, “A new late Roman urban centre in Isauria,” *Journal of Roman Archaeology* 19: 300-11.

<sup>144</sup> Elton, 2008, “Göksu Archaeological Project 2005-2006,” 240-45; idem, 2006, “The Roman countryside at Alahan,” *passim*.

<sup>145</sup> Elton, 2006, “The Roman countryside at Alahan,” 62.

by the construction of the churches in the complex just outside the town in the fifth to sixth centuries, as well as in a number of the villages.<sup>146</sup>

Though by 2006 an impressive count of 16 olive oil and 71 wine presses had been documented, director H. Elton only tentatively connects this agricultural production to the apparent prosperity (or, at the least, population density) enjoyed by the inhabitants of Alahan and its territory in the late Roman period, whereby an increase in such production could have been a response to the new demand from Constantinople beginning in the fourth century.<sup>147</sup> Leaving open the possibility of surplus production for export, Elton prefers instead to emphasize the role of olive oil and especially wine production in the local economy only. Given the large number of presses over a relatively small and isolated region,<sup>148</sup> however, the possibility of wine production and export beyond the local and regional levels seems very real. Wine could have been transported in perishable containers from press sites to the coast via the Calycadnus river (Göksu), which runs through the survey region and is navigable below the town of Mut.<sup>149</sup>

Though identifiable ceramics from Alahan itself are predominantly late Roman, in the upper Göksu valley overall the majority of identifiable ceramics span the late Roman (third to

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<sup>146</sup> Elton, 2008, "Göksu Archaeological Project 2005-2006," 240 (ceramics); idem et al., 2006, "A new late Roman urban centre in Isauria," 310-11 (churches). For more on the churches, see H. Elton, 2013, "Late Roman churches in the upper Göksu valley, Isauria," in M. C. Hoff and R. F. Townsend (eds.), *Rough Cilicia: New historical and archaeological approaches* (Oxford) 233-51, who downplays a possible interpretation of the churches as a sign of prosperity, since they were "relatively cheap" in cost compared to temples or theaters, which the area lacks: "Thus the apparently large number of churches found in the Upper Göksu Valley should be seen as more significant of the impact of Christianity than reflecting anything about the economy of late Roman Isauria" (246).

<sup>147</sup> Elton, 2008, "Göksu Archaeological Project 2005-2006," 242 (numbers of presses); idem, 2006, "The Roman countryside at Alahan," 64 (subsistence versus surplus for export). Though Elton discusses the implications for subsistence versus surplus production based on an earlier count of 14 olive oil and 32 wine presses in the 2006 publication (62), his conclusions remain the same in the 2008 publication, despite the increase in the number of documented presses.

<sup>148</sup> The exact area of the survey region is not provided, but from published maps it appears to be somewhere on the scale of perhaps 200 km<sup>2</sup>, larger than that of the southeastern Isauria survey (120 km<sup>2</sup>) and smaller than that of the Rough Cilicia survey (> 300 km<sup>2</sup>); only 28 press installations have been recorded in the latter.

<sup>149</sup> Potential methods of transportation also noted in Elton 2006, "The Roman countryside at Alahan," 64.

seventh centuries) and medieval (eleventh to fifteenth centuries) periods.<sup>150</sup> Based on this trend, Elton concludes that “the upper part of the valley was continuously occupied, with many rural sites showing continuity from the late Hellenistic into the medieval period,” though overall site numbers fell after the late Roman period (**fig. 5.13**); the town of Alahan “continued in a contracted fashion” after this period as well.<sup>151</sup> At this point it does not seem possible to estimate relative population densities, nor to zoom in on the chronological interstice between the seventh and eighth centuries – possibly an artificial gap created by broadly-dated pottery typologies – to see when exactly and to what extent this contraction took place.

Nevertheless, evidence for continual occupation is meaningful, as it draws a distinction between the upper Göksu valley and places exhibiting an absolute lack of evidence for occupation after the seventh century, such as Corasium on the southeastern Isaurian coast, or a gap in evidence for the eighth century, such as Corycus and the coastal region of western Rough Cilicia.<sup>152</sup> This relatively remote valley, then, seems to have a late antique settlement history more in common with that of the upland regions of southeastern Isauria (and Balboura in Lycia; see Chapter 6) and even the single village of Dehes on the Syrian Limestone Massif, typified by the general trends of a nucleated late Roman settlement pattern and contracted continuity beginning sometime in the seventh century and extending into the eighth and perhaps beyond.

Recently resumed excavations at one of the settlements in the survey area, Kilise Tepe, provide rare insight into a type of rural settlement quite different from the ashlar-masonry villages located down closer to the coast in southeastern Isauria and in northwest Syria (see **fig.**

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<sup>150</sup> Elton, 2008, “Göksu Archaeological Project 2005-2006,” 244.

<sup>151</sup> Elton, 2008, “Göksu Archaeological Project 2005-2006,” 244 (upper valley), 245 (Alahan).

<sup>152</sup> Southeastern Isauria: Varinlioğlu, 2007, “Living in a marginal environment,” 315; Corycus reappears in the ninth century in administrative and military texts. Western Rough Cilicia: Rauh et al., 2009, “Life in the truck lane,” 261 n. 17. This eighth-century gap may in fact be an artifact of the pottery chronologies, which split between the late Roman (ending with the seventh century) and Byzantine (beginning in the ninth century) periods.

5.12).<sup>153</sup> Early Byzantine houses investigated near the church of Kilise Tepe were constructed with foundations of unworked, unmortared fieldstones that likely supported mud-brick walls. Amended and built up slowly over a long period of time, the houses appear to have been abandoned at some currently unknown point after the early seventh century; finds and complete pottery vessels have been found lying in-situ on floors.

The early Byzantine ceramic assemblage for these houses is comprised of wheel- and mold-made lamps, juglets and jugs in plain ware with painted decoration, cooking pots, a small number of (imported) red-slipped bowls, as well as locally made and imported amphorae, including LRA 1. M. Jackson notes the similarity between the cooking pots, amphorae, and fine wares here at Kilise Tepe and those found at many other sites in the region, including Alahan, Anemurium, and Elaiussa-Sebaste.<sup>154</sup> The presence of these wares underscores the connection between coastal and inland settlements, demonstrated by other small, relatively remote areas across southern Asia Minor, such as the Balbourike in highland Lycia (see Chapter 6). Pits in a courtyard area between the houses contained refuse and agricultural products such as wheat; only preliminary research of the contents has been completed. The excavation of early Byzantine Kilise Tepe provides a rare glimpse into life in a small inland town at the end of antiquity – as well as into its apparently sudden abandonment. With on-going work, it will no doubt demonstrate the value of combining regional survey with targeted excavation.

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<sup>153</sup> The following information on the excavated dwellings at Kilise Tepe is from M. Jackson, 2013, “Byzantine settlement at Kilise Tepe in the Göksu valley,” in M. C. Hoff and R. F. Townsend (eds.), *Rough Cilicia: New Historical and Archaeological Approaches* (Oxford) 219-32.

<sup>154</sup> Jackson, 2013, “Byzantine settlement at Kilise Tepe,” 230.

## F. CONCLUSIONS

As in regions all across the Mediterranean, rural inhabitants in late antique Cilicia and Isauria produced oil and wine, and engaged with the wider world through various networks of exchange. What seems to make this corner of eastern Mediterranean unique is the evidence for LRA 1 production at a number of coastal centers, as well as the important role played by Cilician shippers documented in the tariff inscription from Abydus, in concert with the corpus of funerary inscriptions mainly from Corycus that reveal the vibrant multi-layered economy of this coastal region.

Although the press evidence for surplus wine and oil production is not as striking here in Cilicia and Isauria as it is in the Limestone Massif, the cluster of documented LRA 1 kiln sites along the coastline is indirect proof enough that some local commodity was produced and exported on a massive scale. The physical and textual evidence suggests that this commodity was wine, though LRA 1 need not have carried one foodstuff exclusively. Surplus wine (and oil?) production for export was probably concentrated on the foothills surrounding the plain of Cilicia and up the Calycadnus river, perhaps as far north as the region around Alahan. From rural production centers, only some of which have been documented, the products could have been floated down the numerous rivers to kiln sites located near the coast, in Flat Cilicia especially, but also at Elaiussa-Sebaste and as far west as Anemurium. It seems likely that western Rough Cilicia was never part of this web of production and export.

That this web supplied both fiscal and commercial demand, operating on local, regional, and interregional scales of exchange, is suggested by the diverse findspots of LRA 1: in military forts on the lower Danube supplied by the military *annona*, for instance, but also in North Africa

during the Vandal period; as far away as Britain, but also as close as Kilise Tepe. It seems certain that at least one particular route wired into these various networks of exchange was driven primarily by the fiscal system: the route by which Cilician/Isaurian wine (and oil) was transported to Constantinople and the lower Danube. The operation of this route did not preclude the introduction of LRA 1 to commercial markets, nor prevent shippers of LRA 1 from engaging in commercial exchange, at all scales. In fact, it likely bolstered commercial activity and provided shippers with access to a wider network of commercial markets. The Cilician (and other) shippers who brought full LRA 1 to the capital and on to military sites must have sold some in commercial markets along the way, and carried along with cargo ear-marked for the state some of the manufactured goods and natural materials for which Cilicia and Isauria were known. On the way back to Cilicia, they would have picked up and sold along the way other goods and commodities, such as Phocaeen Red Slip and Cypriot Red Slip ware, found across southern Asia Minor and the Levant (see Chapters 3, 6, and 9). Together, this main fiscal route, along with its commercial offshoots, formed an interregional network of exchange defined – and traceable in the archaeological record – by LRA 1.

Because of their dependence on this network to obtain goods and foodstuffs directly, and/or to obtain the cash with which to buy these items and to pay for services, rural producers and the larger communities to which they belonged were vulnerable to its disruption. In the seventh century, the loss of state control over the Balkans and the Islamic conquest and recurrent raiding of Cilicia broke this network,<sup>155</sup> along with the end of the free grain supply in Constantinople after 618 CE, and the establishment of the theme system (see **fig. 1.4**), as a result

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<sup>155</sup> As argued by Karagiorgou, 2001, “LR2: A container for the military *annona* on the Danubian border?” 155, claiming that this rupture is seen in the recycling of LRA 2 and its “indiscriminate use” as a container for both olive oil and wine rather than exclusively for oil.

of which the army was now stationed and supplied regionally.<sup>156</sup> The vulnerability of these communities may account for the decline in occupation discerned in the survey data, or at least for the drop in datable pottery types by which such occupation decline is inferred, after the seventh century. This decline, based as it is on pottery, may be an artifact of our on-going difficulty in recognizing and dating pottery types, especially coarse wares, of the seventh to ninth centuries. But the almost wholesale disappearance of wares other than coarse wares is itself meaningful, suggesting a severing of connectivity to the wider Mediterranean, diminished standards of living, or changing foods and dietary practices.

In some places, however, there is evidence for continuity or renewal of occupation: around Alahan, for example, and at Anemurium, where the latest forms of Cypriot Red Slip (CRS) ware have been found. The extended dating of these forms through the eighth century (see above and Chapter 3) suggests occupation of those places where they are found likewise continued past the seventh century. The newly important role of Seleucia ad Calycadnum during the eighth to tenth centuries as an administrative, military, and religious center makes it a unique example of urban continuity in the region. During these centuries, Seleucia must have depended heavily on local and regional communities and resources for the food, animals, textiles, leather goods, and metal implements required by both its residents and the army active along the newly established Syro-Anatolian frontier.

Opinions differ on how the development of that frontier zone, which ran directly through Flat Cilicia, affected communities living in this region, but it must have had a negative impact on population and the security needed to maintain regular intensive agriculture and rural production, including the cultivation and processing of wine and oil. As in the Amuq valley discussed in

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<sup>156</sup> For the latter two developments, see C. Wickham, 2005, *Framing the Early Middle Ages: Europe and the Mediterranean 400-800* (Oxford) 126-27.

Chapter 4, new Muslim communities arriving in Flat Cilicia in the eighth century, in some cases settling in pre-existing towns (see **fig. 5.1b**), would have had different dietary requirements, without the same demand and consumption of wine that had formed such an important part of the local rural economy in previous centuries.

To summarize, the major sources of demand for Cilician/Isaurian wine, oil, and other products after the rupture of the interregional LRA 1 network and the fiscal system that had driven it were local or regional: Seleucia and the army. The contraction of demand from an interregional to a regional or even local level, in addition to the establishment of the frontier, may partly account for the decline in settlement and drop in recognizable pottery types. It may also account for evidence from pollen records at lake Nar in Cappadocia suggesting that olive cultivation in Cilicia/Isauria ceased around 670 CE (see Chapter 8).<sup>157</sup> The communities that survived were those whose products or services were in demand by the residents of Seleucia and the army, as well as those who remained connected to the commercial networks still in operation, which were primarily local and regional in scale.

The continued operation of these commercial networks beyond the seventh-century contraction of the fiscal system is illustrated by the distribution of the latest forms of CRS (see **fig. 3.13** and Chapter 3), produced at Gebiz/Pednelissos in Pisidia (see Chapter 6) and likely on Cyprus as well. In Cilicia and Isauria, this map of findspots is blank except for Anemurium. This does not mean that the rest Cilicia and Isauria was abandoned completely: Seleucia was a center of activity, as just described, and occupation either continued or was renewed at some places, such as the Göksu valley. And it may be that other sites in Cilicia and Isauria have also

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<sup>157</sup> A. England, W. J. Eastwood, C. N. Roberts, R. Turner, and J. F. Haldon, 2008, "Historical landscape change in Cappadocia (central Turkey): A palaeoecological investigation of annually laminated sediments from Nar lake," *The Holocene* 18.8: 1229-45, at 1241. The authors suggest the olive pollen in the sediment core from lake Nar came from somewhere across the Taurus mountain range, namely Cilicia/Isauria. See Chapter 8 for details.

yielded these later forms CRS, but they have not been identified as such. But their absence here is striking nonetheless, especially when compared to their presence in neighboring regions, and to the important role Cilicians played as shippers in general through the seventh century. It underscores how communities in these regions may have been made more vulnerable, and less likely to survive, not only because of their proximity to the frontier, but also because of their dependence on the primarily state-driven LRA 1 network and the connections to interregional commercial markets it provided. In light of this argument, it is significant that the primary impetus behind the survival and growth of Seleucia as a center of economic activity was its fulfillment of administrative, military, and ecclesiastical functions: in other words, functions related to the operation of the Byzantine state.

## CHAPTER 6

### KILNS AND *KOMAI*: PAMPHYLIA AND LYCIA

#### A. INTRODUCTION

The vibrancy of towns and rural settlements in Pamphylia and Lycia during the fifth and sixth centuries is evident in the archaeological record (**figs. 6.1, 6.2**).<sup>1</sup> Cities such as Perge and Side were thriving centers with well-maintained urban fabrics and new building projects to boot. Both regions nurtured networks of villages, towns, and elaborately adorned cities, fed by the agricultural products of well-exploited countrysides. C. Foss compares the economic strategies and settlement pattern of Lycia to those of northwest Syria and Cilicia during late antiquity, marked by the abundance of prosperous, stone-built villages nestled in hills and producing foodstuffs for towns along the coast and for wider export.<sup>2</sup> Pamphylia in particular appears in the *Expositio totius mundi*, compiled in the mid-fourth century, as “an excellent region which is self-sufficient, producing moreover abundant oil and supplying other regions.”<sup>3</sup> Strabo notes the

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<sup>1</sup> C. Foss, 1996, “The cities of Pamphylia in the Byzantine age,” in idem, *Cities, Fortresses and Villages of Byzantine Asia Minor* (Aldershot) 1-62; idem, 1994, “The Lycian coast in the Byzantine age,” *Dumbarton Oaks Papers* 48: 1-52.

<sup>2</sup> Foss, 1994, “The Lycian coast,” 48.

<sup>3</sup> *Expositio totius mundi*, XLV. Translation from S. Mitchell, 2005, “Olive cultivation in the economy of Roman Asia Minor,” in S. Mitchell and C. Katsari (eds.), *Patterns in the Economy of Roman Asia Minor* (Swansea) 83-113, at 108 n. 83: *Post [Isauriam] est Pamphylia, regio optima sibi sufficiens, oleum autem multum faciens et alias regions implens.*

hills above Side and Aspendus in Pamphylia and the fertile region around Selge, located in the foothills above the Pamphylian plain, as areas abundant in olive cultivation.<sup>4</sup> Large oil presses have been documented in the upper Pamphylian plain and throughout neighboring Pisidia.<sup>5</sup> Strabo, of course, wrote his *Geography* several centuries before the period of focus here, and the oil presses documented by through field survey may date to any period from the Hellenistic to the Byzantine, but this evidence provides an impression of rural productivity that is borne out in much of these regions throughout late antiquity.

To Foss, the material prosperity of the economically vibrant cities and villages of Pamphylia and Lycia in late antiquity, and during the sixth century in particular, “makes the subsequent collapse even more spectacular.”<sup>6</sup> The Persian and then Muslim attacks beginning in the seventh century, he argued, were “devastating,” and brought “catastrophic decline” in city and village alike, pushing both regions into a dark age that saw no light until the pale glimmers of a wan ninth-century renewal.<sup>7</sup> Foss notes the potential role of environmental factors in this decline, as well: without the resources for large public works, cities on the delicate coastal fringe were unable to prevent the silting-up of their harbors and the growth of insalubrious marshes.<sup>8</sup> He also includes the disruption of trade networks as a factor pushing these regions into isolation

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<sup>4</sup> Pamphylia (Strabo, *Geography*, XII 7.1, 569): “Contiguous to these are the Pisidians, and in particular the Selgeis, who are the most notable of the Pisidians. Now the greater part of them occupy the summits of the Taurus, but some, situated above Side and Aspendus, Pamphylian cities, occupy hilly places, everywhere planted with olive-trees.” Pisidia, but Selge in particular (Strabo, *Geography*, XII 7.3, 570): “And the nature of the region is wonderful, for among the summits of the Taurus there is a country which can support tens of thousands of inhabitants and is so very fertile that it is planted with the olive in many places, and with fine vineyards, and produces abundant pasture for cattle of all kinds; and above this country, all round it, lie forests of various kinds of timber.” Translations from Strabo, 1924, *The Geography of Strabo*, ed. by H. L. Jones (Cambridge, MA).

<sup>5</sup> Mitchell, 2005, “Olive cultivation in the economy of Roman Asia Minor,” 108 n. 84; idem, 1999, “Archaeology in Asia Minor 1990-98,” *Journal of Hellenic Studies Archaeological Reports* 45: 125-91.

<sup>6</sup> Foss, 1994, “The Lycian coast,” 45-51, quote at 48; idem, 1996, “The cities of Pamphylia,” 48-51.

<sup>7</sup> Foss, 1996, “The cities of Pamphylia,” 3 (“devastating”), 48 (“catastrophic decline”); idem, 1994, “The Lycian coast,” 48 (“complete transformation”); “Dark Ages” *passim* in both.

<sup>8</sup> Foss, 1994, “The Lycian coast,” 50, 50 n. 192 (Xanthus and Limyra); idem, 1996, “The cities of Pamphylia,” 50 (Side).

and driving population decline, but overall his focus is on violent conflict as the catalyst exacerbating the negative effects of all other factors.<sup>9</sup>

These conclusions are based on the architectural features of those cities and villages that remained relatively visible upon the time of Foss's assessment, as well as lurid historical accounts of recurring Arab attacks by sea. But Foss is fully aware that continuity or even expansion is discernible in some small pockets of the region. These small candles of activity against the dark age curtain – exceptions that prove the rule, or frail signs of a surprisingly widespread survival that is otherwise difficult to detect? – are most visible when he assesses the two regions against each other and finds these surviving lights in the interior of Lycia, with its wide range of settlement types from small cities to villages and more thoroughly explored countryside, but not in Pamphylia, the homogenously large cities of which have been studied at the expense of investigations into rural settlement patterns.<sup>10</sup>

Indeed, the picture of complete ruin has changed as more survey work has been conducted, aimed as it is at observing traces of occupation less monumental than large-scale masonry remains. Such is the case more for Lycia than Pamphylia; for the latter, a general overview will have to suffice here until the results of surveys such as the current Aspendos Project are compiled and made available in a comprehensive fashion.<sup>11</sup> Indeed, for Pamphylia, Foss may have chosen to focus on the cities – including Attaleia, Magydos, Perge, Selge, Syllaion, Aspendos, and Side – in large part because those urban remains constituted the

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<sup>9</sup> Foss, 1994, "The Lycian coast," 50; idem, 1996, "The cities of Pamphylia," 50.

<sup>10</sup> Foss, 1994, "The Lycian coast," 49; idem, 1996, "The cities of Pamphylia," 50-51, where he suggests that the distinction pans out for the post-ninth-century recovery as well, when Byzantine Pamphylia was able to sustain only one large city, while Lycia seems to have enjoyed "more recovery," perhaps because "the available human and physical resources were suitable for rebuilding on a small scale in many small places, but not for reconstructing large cities or even the fortresses to which they had been reduced" (51).

<sup>11</sup> For now, see V. Köse, 2012, "Aspendos Yüzey Araştırması 2010 Sezonu Çalışmaları," *Araştırma Sonuçları Toplantısı* 29.3: 251-60; idem, 2011, "Aspendos Projesi: Aspendos Antik Kenti 2009 Sezonu Araştırmaları," *Araştırma Sonuçları Toplantısı* 28.3: 353-71; idem, 2010, "Aspendos Yüzey Araştırması Projesi 2008 Yılı Birinci Sezon Çalışmaları," *Araştırma Sonuçları Toplantısı* 27.1: 373-94; <http://www.aspendosproject.com/>.

majority of the evidence available for assessing the region's settlement history. A more complete picture of habitation beyond the late antique walls of those large urban centers is provided by the impressive survey work of H. Hellenkemper and F. Hild for the *Tabula Imperii Byzantini* (TIB) series, but given that this project records only architectural and epigraphic remains, and not pottery, it is a picture far from complete.<sup>12</sup> Nevertheless, they identified dozens of late antique and Byzantine settlements, most without fortifications, across western Rough Cilicia and throughout the coastal and rugged uplands of Pamphylia and Lycia. While in many of the larger towns and cities, some degree of occupation survived what the authors call an accelerating decline in the seventh century and continued into the eighth and beyond, many of the smaller, unfortified settlements (which we should imagine as small towns or villages) that flourished from the fourth and into the seventh centuries apparently ceased to exist at the end of this period.<sup>13</sup> Hellenkemper and Hild view the decay of urban infrastructure in the cities and the abandonment of smaller, more rural settlements as two indications of an overall trend of decreasing prosperity, population decline, a decrease in agricultural production, and a contraction of overseas trade. Observing this trend across both the coast and inland areas of Pamphylia and Lycia, they weave it into the familiar narrative of demographic and economic “stagnation and recession” apparently experienced across all of Asia Minor beginning in the seventh century.<sup>14</sup>

Foss offers an overarching framework for understanding these change in Lycia that is useful to keep in mind when reviewing the more-recent survey work that follows in this chapter. Looking at excavations and extensive surveys from along the Lycian coast, he proposes (1) a narrative of late antique prosperity and expansion peaking in the sixth century, followed by the

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<sup>12</sup> H. Hellenkemper and F. Hild, 2004, *Lykien und Pamphylien*, *Tabula Imperii Byzantini* 8 (Vienna).

<sup>13</sup> Hellenkemper and Hild, 2004, *Lykien und Pamphylien*, 212.

<sup>14</sup> Hellenkemper and Hild, 2004, *Lykien und Pamphylien*, 212: “Nicht nur die küstennahen Siedlungen, sondern alle Landschaften Lykiens und Pamphyliens, und darüberhinaus das gesamte Kleinasien, werden von Stagnation und Rezession demographisch und wirtschaftlich erfasst.”

decline, contraction, and abandonment of both towns and villages due to the Persian war and successive Arab attacks beginning in the seventh century, and (2) contends that city and countryside prospered and suffered together.<sup>15</sup> The underlying assertion that supports and unites these two arguments is an economic one: city, coast, and mountainous countryside were interdependent trade partners who required a “network of connection” not only among themselves, but also with the wider eastern Mediterranean, in order to maintain the prosperity and relatively large population of the fifth and especially the sixth century; when Persian and Arab violence tore this network apart, all these areas declined.<sup>16</sup> Only at some well-defended ports (e.g., Andriace and Phoenix) and isolated inland sites is there evidence of continuity, and sometimes even expansion.<sup>17</sup>

Do the results of two decades of survey work confirm or refute this hypothesis? We should recall that these conclusions are based on architectural and epigraphic remains only. Pottery and other forms of evidence more ephemeral or less visible than standing architecture, fallen stone blocks, and decaying masonry are often more sensitive indicators of the duration of and breaks in occupation, especially during periods when inhabitants may not have had the resources needed to build or maintain long-lasting structures. Surely it is meaningful that at some point inhabitants ceased to consider large-scale masonry construction and the erection of inscriptions viable (or desirable), but getting a better sense of when exactly this happened, and

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<sup>15</sup> Foss, 1994, “The Lycian coast,” 2, 29-30, 36, 45-50. In his argument for great prosperity in coastal cities in the fifth and sixth centuries, Foss disagrees “profoundly” with M. Harrison, who, impressed with the magnificence of the late antique churches he documented in the hills, concluded that late antiquity was a time of decline for Lycian cities, as a large portion of the population moved from coastal cities to inland communities and built these churches there (46 n. 185). See, e.g., R. M. Harrison, 1963, “Churches and chapels of central Lycia,” *Anatolian Studies* 13: 117-52; idem, 1977, “Lycia in late antiquity,” *Yayla* 1: 10-15; idem, 1980, “Upland settlement in early medieval Lycia,” in H. Metzger (ed.), *Actes du colloque sur la Lycie antique* (Paris) 109-18; idem, 2001, *Mountain and Plain: From the Lycian Coast to the Phrygian Plateau in the Late Roman and Early Byzantine Periods* (ed. W. Young) (Ann Arbor, MI) 2.

<sup>16</sup> Foss, 1994, “The Lycian coast,” 30, 47-48, 49 (overall population decline).

<sup>17</sup> Foss, 1994, “The Lycian coast,” 49.

whether the population declined and shifted into new settlement patterns at the same time, depends on the kind of examination of pottery remains and other forms of non-monumental evidence included as a matter of course in most current field survey.

## **B. PAMPHYLIA**

Until the comprehensive results of more-intensive surveys in Pamphylia such as the Aspendos Project are published, some insight into the livelihoods of communities outside the major towns of Pamphylia is provided by the mainly architectural surveys of several villages in the region. These have characteristics in common with the villages in northwest Syria and southeastern Isauria covered in the preceding chapters, as well as in some regions of Lycia to be discussed below: churches, houses, and other buildings skillfully constructed in stone masonry, large cisterns, and various agricultural facilities.<sup>18</sup> Press equipment is ubiquitous, and seems to have been used for both olive oil and wine production, but perhaps more of the former.

Lyrboton Kome, a village on the Pamphylian plain in the orbit of Perge (see **fig. 6.1**), is a well-documented example. The number of presses, their organization into workshops, and imperial-period inscriptions on a tower in the village documenting the gift of that tower as well as lands with hundreds of olive trees, together demonstrate the importance of oil production and a concern for its protection in the village, and probably the wider region, throughout the Roman period.<sup>19</sup> Continuity in occupation and oil production from the imperial Roman into the late Roman and Byzantine periods (no dates are specified, however) is suggested by the use of Roman-period foundations for the later construction that remains visible today, the discovery of

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<sup>18</sup> Foss notes this similarity for the Lycian coast: Foss, 1994, "The Lycian coast," 48.

<sup>19</sup> N. Çevik, 1996/97, "An olive oil production center in Pamphylia: Lyrboton Kome," *Lykia: Anadolu-akdeniz kültürleri* 3: 79-101, at 82-83, 86-88, 93.

a small number of late Roman and Byzantine pottery sherds associated with the press equipment, and the use of weight stones dated to the late Roman through early Byzantine periods.<sup>20</sup>

Smaller-scale oil production took place across the region, as indicated by the press equipment found, for example, at the smaller villages of Kelbessos, Trebenna, and Neapolis in the foothills west of Attaleia.<sup>21</sup> Unfortunately, the survey team was not able to study the chronology of occupation in detail, concluding only that, in addition to earlier occupation, the standing remains visible today “date to Roman, Byzantine and Later Periods.”<sup>22</sup>

Using somewhat superficial and problematic inferences drawn the *TIB* map, population estimates for towns based on the circumference of their reduced wall systems, and textual sources such as the *Chronographia* of Theophanes documenting attacks by sea and the movements of prisoners and refugees, J. Grainger suggests that for Pamphylia it was not the Persians but the Arabs who were “the real enemy,” responsible for tipping the region into rural abandonment and urban decline.<sup>23</sup> In Grainger’s opinion, the recurring Arab raids in the seventh century turned Pamphylia into a “frontier land” and so dramatically altered the region that by the eighth century, the countryside had been destroyed by raiders; oil production had been abandoned; “rural settlements had been wiped out”; and survivors had taken flight to the relative safety of nearby cities, which despite the influx of rural refugees contracted, presumably as a result of increased mortality, since residents now “could be fed only with difficulty.”<sup>24</sup>

Grainger’s emphasis on a veritable wipeout of rural habitation results from his reliance on the

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<sup>20</sup> Çevik, 1996/97, “An olive oil production center in Pamphylia: Lyrboton Kome,” 81, 86-87.

<sup>21</sup> Çevik, 1996/97, “An olive oil production center in Pamphylia: Lyrboton Kome,” 87-88.

<sup>22</sup> Çevik, 1996/97, “An olive oil production center in Pamphylia: Lyrboton Kome,” 92.

<sup>23</sup> J. D. Grainger, 2009, *The Cities of Pamphylia* (Oxford) 206-23, quote at 207. In doing so he aims to set coastal Pamphylia apart from western Asia Minor and the theory Foss developed for that region, in which he blames the Persian invasions of the early seventh century for urban collapse therein (206-7, 206 n. 1, citing C. Foss, 1975, “The Persians in Asia Minor and the end of antiquity,” *English Historical Review* 90: 721-47). Foss does, however, concur that “the Arab raids were particularly devastating in Pamphylia” (1996, “The cities of Pamphylia,” 3).

<sup>24</sup> Grainger, 2009, *The Cities of Pamphylia*, 207-9 (quotes at 209), 214 (“frontier land”), 223.

architectural and epigraphic survey that forms the basis of the *TIB* map and therefore does not reflect the potential evidence for continued rural occupation in the form of pottery and other remains. Indeed, the cities, which have enjoyed a relative abundance of scholarly attention, fare better in his estimation: naval activities and new, though reduced, fortifications demonstrate “a certain continuing vitality in Pamphylia in the vulnerable coastal cities, though the inland cities suffered badly.”<sup>25</sup>

In this respect, Grainger’s general impression of coastal vitality (via naval and trade activity) and inland damage stands in contrast to G. Varinlioğlu’s conclusion for southeast Isauria that upland villages and towns fared better than coastal towns, which suffered because of Arab attacks and their dependence on trade.<sup>26</sup> The two regions differ geographically, but each housed a military/naval headquarters in the seventh century, which served an impetus for continuing economic activity and the movement of groups of people (soldiers, sailors, those providing services for them, etc.). Similar to the role of Seleucia ad Calycadnum in Isauria, Attaleia became the main base when Pamphylia was set up as an independent naval command, the Kibyrrheot *thema*, in the late seventh century and, as an important trading center, fared best of the Pamphylian cities.<sup>27</sup> Attaleia maintained its early walls while other cities such as Side and Phaselis built greatly reduced circuits. Grainger assumes that all inhabitants lived within these walls, and thus the areas they encompass (both of which had been reduced by about sixty percent) can be used as the basis for population estimates: 4,000 for Side and 2,200 at Phaselis.<sup>28</sup> These reduced circuits may have instead been constructed as places of refuge for a considerably

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<sup>25</sup> Grainger, 2009, *The Cities of Pamphylia*, 213-14.

<sup>26</sup> G. Varinlioğlu, 2007, “Living in a marginal environment: Rural habitat and landscape in southeastern Isauria,” *Dumbarton Oaks Papers* 61: 287-317, at 315-16; ead., 2008, *Rural Landscape and Built Environment at the End of Antiquity: Limestone Villages of Southeastern Isauria* (Ph.D. dissertation, University of Pennsylvania) 172.

<sup>27</sup> Grainger, 2009, *The Cities of Pamphylia*, 212-17; Foss, 1996, “The cities of Pamphylia,” 3-4.

<sup>28</sup> Grainger, 2009, *The Cities of Pamphylia*, 215, using areas of 20 hectares at Side and 11 at Phaselis, and the “perhaps optimistic” formula of 200 inhabitants per hectare.

larger population that lived both inside and outside the walls. However, the fact that they were built at all, in addition to evidence for an inability or unwillingness to maintain other urban buildings and monumental spaces, is a sign of fundamental change in both the physical structure of these cities and the concerns and livelihoods of their inhabitants.

In this region we do not yet have the other side of the coin: the countryside. Perhaps some of the difference between the conclusions of Varinlioğlu and Grainger (and Foss) can be explained by the fact that they are looking in different places to answer the question of what happened in the seventh century: Varinlioğlu in the countryside, and Grainger and Foss in the cities. Without survey evidence, in Pamphylia we cannot say whether the reduced cities correspond to a devastated, abandoned countryside, as Grainger argues on the basis of the *TIB* map and the implications of textual sources for recurring violent raids; or to relatively stable, continued rural occupation. What insights does new evidence from the countryside provide, for both Pamphylia and Lycia?

### **C. PEDNELISSOS**

Pednelissos and its surrounding countryside are located on the uplands of the northern Pamphylian plain and, though technically part of southern Pisidia, are considered here for two reasons. First, Pednelissos has more in common, in terms of geographical setting and connectivity to exchange networks via the coast, with other towns in Pamphylia and with coastal towns in Lycia such as Kyaneai than with those in highland areas which make up most of Pisidia, such as Sagalassos. Second, the recent discovery of a series of kilns producing Cypriot Red Slip ware (CRS, or Late Roman D; see Chapter 3) near Pednelissos upsets the assumption that Cyprus

was the most important, or indeed the only, center of production of CRS, and has far-reaching implications for the wider region.

The survey project at Pednelissos, codirected by L. Vandeput and V. Köse, is an offshoot of the large-scale Pisidia Survey Project established in the 1980s (see Chapter 7).<sup>29</sup> In 2007 the Pednelissos survey team shifted its focus from the city to its territory. Although the survey results are still somewhat preliminary in that they have not yet been distilled into a comprehensive publication, some general patterns have already started to crystallize. The team has established a preliminary settlement typology consisting of a “dense network” of isolated structures including olive oil workshops, farmsteads, villas, and watchtowers, along with more complex settlement types including villages, settlements clustered around a “Herrenhaus,” and a settlement around a shrine.<sup>30</sup> So striking was the apparent density of occupation in the territory after just one season of fieldwork that the team was able to assert that “every piece of arable land was in use in antiquity, a situation which strongly differs from present-day land-use in the region” (an observation made for the territory around Kyaneai as well, noted below).<sup>31</sup>

The isolated farmhouses are large structures boasting door and window frames built out of massive, well-cut ashlar blocks and appear to be concentrated around Pednelissos. The team interprets them as rural villages serving as the “seats of estates, revealing a rich stratum of the population.”<sup>32</sup> These farmsteads are situated on both defensible outcrops and more vulnerable

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<sup>29</sup> L. Vandeput and V. Köse, 2008, “Pisidia survey project 2008: Research in the territory of Pednelissos,” *Anatolian Archaeology* 14: 32-33; L. Vandeput, V. Köse, and M. Jackson, 2010, “Pisidia Survey Project 2010: The high and the low in the territory of Pednelissos,” *Anatolian Archaeology* 16: 29-31; L. Vandeput and V. Köse, 2010, “Pisidia Survey Project: Survey in the territorium of Pednelissos,” *Araştırma Sonuçları Toplantısı* 27.2: 179-94; L. Vandeput, V. Köse, and M. Jackson, 2011, “Pisidia Survey Project 2009: Research in the territory of Pednelissos,” *Araştırma Sonuçları Toplantısı* 28.3: 75-90; eidem, 2012, “Results of the 2010 Pisidia Survey Project: Fieldwork in the territory of Pednelissos,” *Araştırma Sonuçları Toplantısı* 29.3: 269-92.

<sup>30</sup> Vandeput and Köse, 2008, “Pisidia survey project 2008,” 32; eidem, 2010, “Pisidia Survey Project,” 180.

<sup>31</sup> Vandeput and Köse, 2008, “Pisidia survey project 2008,” 32; eidem, 2010, “Pisidia Survey Project,” 180.

<sup>32</sup> Vandeput and Köse, 2010, “Pisidia Survey Project,” 181.

sites; some contain pottery indicating habitation into the seventh century.<sup>33</sup> The villages, defined by clusters of what must be houses, are small and unfortified. The team sees these villages as “directly related with or even depending from a villa or from the city of Pednelissos itself” and therefore “clearly inhabited by the personnel of rich landowners,” who lived either in a nearby farmhouse or in the city, but were buried in tombs erected on their land.<sup>34</sup> Continued survey is revealing an increasingly nuanced picture of settlement within the territory, with different patterns observed in the mountainous highlands around Pednelissos versus the plain of the Cestrus (modern Aksu) river to the south/southwest.<sup>35</sup> The exact parameters of these differences are not entirely clear, but one element that emerges from the preliminary survey publications is the existence of large villas outfitted with equipment for olive oil production that seem to be “seats of large agricultural enterprises” incorporated into a “ring” of large farmsteads centered around the city of Pednelissos.<sup>36</sup> Late antique ceramics were among those collected at two of these large villas. Based on the ubiquitous finds of press remains at these and other sites, the team concludes that olive oil production was “one of the main sources of income” in the region.<sup>37</sup>

Dense occupation of the territory continued in late antiquity (no precise dates provided) at both fortified and unfortified sites, suggesting to the team that no “external threat” caused widespread disruption of the settlement pattern in late antiquity.<sup>38</sup> For example, the large and prosperous village of Kocamehmetler Asarı, located near Pednelissos, Selge, and Sillyon, and likely dependent on one of these *poleis*, contained numerous finds of CRS dated to the seventh-

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<sup>33</sup> Vandeput and Köse, 2010, “Pisidia Survey Project,” 183-4: Haspinar, Kaşanak Mevkii and Asarkaya.

<sup>34</sup> Vandeput and Köse, 2010, “Pisidia Survey Project,” 181.

<sup>35</sup> Vandeput et al., 2012, “Results of the 2010 Pisidia Survey Project,” 269-70.

<sup>36</sup> Vandeput et al., 2012, “Results of the 2010 Pisidia Survey Project,” 271.

<sup>37</sup> Vandeput and Köse, 2010, “Pisidia Survey Project,” 185-86.

<sup>38</sup> Vandeput and Köse, 2010, “Pisidia Survey Project,” 185.

eighth century.<sup>39</sup> Both in its settlement pattern of rich estates and villages, and in the longevity of larger villages as the most important form of settlement in the seventh and eighth centuries, the team finds parallels between the territory of Pednelissos and that of Sagalassos.<sup>40</sup> They note how these trends differ from those observed around Kyaneai (see below), where the most important settlement type in this period appears to be the small village, though earlier centers of settlement continued to be occupied as well.<sup>41</sup> It is notable that in all three regions, inhabitants cease to live in single-family farmsteads during the course of later antiquity.

### **C.i. The CRS kilns at Gebiz**

The dense settlement pattern of villae-farmsteads and villages, the use of all arable land, and the ubiquity of olive oil production are all characteristics of settlement in the territory of Pednelissos observed by the Pisidia Survey Project. But it is the discovery in 2008 of a series of kilns producing CRS that is especially revelatory for our understanding of life here and in the wider region in late antiquity and the early Byzantine period. The kilns, located around the town of Gebiz near Pednelissos, only 32 km from the coast, produced almost the entire standard repertoire of CRS, the earliest of which date to the fourth century (**figs. 6.3, 6.4**; see also **fig.**

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<sup>39</sup> Vandeput et al., 2011, “Pisidia Survey Project 2009,” 78.

<sup>40</sup> Vandeput and Köse, 2010, “Pisidia Survey Project,” 181, 181 nn. 2-3, citing H. Vanhaverbeke and M. Waelkens, 2003, *The Chora of Sagalassos: The Evolution of the Settlement Pattern from Prehistoric until Recent Times*, Series in Eastern Mediterranean Archaeology (SEMA) V (Turnhout) 244-46; Vandeput et al., 2011, “Pisidia Survey Project 2009,” 78, 78 n. 8, citing H. Vanhaverbeke, F. Martens, M. Waelkens, and J. Poblome, 2004, “Late Antiquity in the territory of Sagalassos,” in W. Bowden, L. Lavan, and C. Machado (eds.), *Recent Research on the Late Antique Countryside*, Late Antique Archaeology 2 (Leiden) 247-79, at 259.

<sup>41</sup> Vandeput et al., 2011, “Pisidia Survey Project 2009,” 78, 78 n. 9, citing F. Kolb, 2008, *Burg – Polis – Bischofssitz: Geschichte der Siedlungskammer von Kyaneai in der Südwesttürkei* (Mainz) 391-97, 406-12.

**3.14a-b).**<sup>42</sup> These kilns constitute the only confirmed production center of CRS, though additional production centers must also have existed (especially on Cyprus, where CRS is the most common fine ware found in late Roman and early Byzantine contexts<sup>43</sup>), since some forms of the ware have not been found at the Gebiz kilns, and since the chemical composition of CRS sherds found on Cyprus suggests that they could indeed have been made on the island.<sup>44</sup>

Definitive conclusions await the results of archaeometric ceramics analyses.

The varying quality and color of the CRS products made at Gebiz reflects the relatively “simple techniques” used at the small kilns, which should be seen as “a series of workshops operating as part of a larger economic unit” and therefore as an example of the “modes of production forming nucleated industries [that were] typical of the countryside in the later Roman world.”<sup>45</sup> The ceramic products of these “nucleated rural workshops” (and here the authors follow the model of D. Peacock<sup>46</sup>) were transported down the tributary Küçükaksu river to the Aksu (Cestrus) and then on to the Mediterranean, stopping along the way at Perge, a main regional market, where so many formerly unidentified forms of CRS have been found that it was

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<sup>42</sup> M. Jackson, M. Zelle, L. Vandeput, and V. Köse, 2012, “Primary evidence for Late Roman D Ware production in southern Asia Minor: A challenge to ‘Cypriot Red Slip Ware’,” *Anatolian Studies* 62: 89-114, quote at 90. I thank Mark Hammond for this essential reference.

<sup>43</sup> J. W. Hayes, 1972, *Late Roman Pottery* (London) 371-86; idem, 1980, *A Supplement to Late Roman Pottery* (London) 528-29.

<sup>44</sup> Jackson et al., 2012, “Primary evidence for Late Roman D Ware production,” 109-110, and providing the following references. One example of a common form of CRS that “seems not to be present” at the Gebiz/Pednelissos kilns is the full range of basin rims, published in particular from Anemurium: C. Williams, 1989, *Anemurium: The Roman and Early Byzantine Pottery* (Toronto). For Cyprus: H. Meyza, 1995, “Cypriot Sigillata and Cypriot Red Slip Ware: Problems of origin and continuity,” in idem and J. Młynarczyk (eds.), *Hellenistic and Roman Pottery in the Eastern Mediterranean: Advances in Scientific Studies* (Warsaw) 179-202; idem, 2007, *Nea Paphos V. Cypriot Red Slip Ware. Studies on a Late Roman Levantine Fine Ware* (Warsaw); M. Rautman, 1995, “Neutron Activation Analysis of Cypriot and related ceramics at the University of Missouri,” in H. Meyza and J. Młynarczyk (eds.), *Hellenistic and Roman Pottery in the Eastern Mediterranean: Advances in Scientific Studies* (Warsaw) 331-49.

<sup>45</sup> Jackson et al., 2012, “Primary evidence for Late Roman D Ware production,” 110, 112. Rather than indicating imitations, as they often are, these poorer-quality products are the result of “the simple techniques of stacking and firing a basic updraft kiln, without ‘kiln furniture’” (110).

<sup>46</sup> Jackson et al., 2012, “Primary evidence for Late Roman D Ware production,” 112, citing D. P. S. Peacock, 1982, *Pottery in the Roman World. An Ethnoarchaeological Approach* (London) 103

originally considered a likely production center.<sup>47</sup> The Pisidia Survey team stresses the importance of pottery as proxy evidence for the overseas export of other important bulk products such as cereals, textiles, olive oil, and wine, as well as for inland exchange networks, which would otherwise go undetected, of products such as olive oil, produced inland around Pednelissos (as indicated by press remains) and similarly transported downriver to the coast.<sup>48</sup> This reconstruction is comparable to the situation imagined for Cilicia (Chapter 5), whereby the wine and oil produced at upland rural villages could have been similarly transported down the many waterways that moved through the lowlands to coastal towns and LRA 1 production centers.

What is important about the Gebiz kilns for the study of late antique settlement and economic dynamics is the picture they provide of clustered rural industries operating within a regional network, including both overseas and inland routes, that latter vital to a relatively isolated place like Balboura (see below). Furthermore, they show that southern Asia Minor was a center of production as well as consumption of a ceramic type that circulated throughout the eastern Mediterranean during late antiquity, and may serve as a marker of the exchange of other products such as agricultural goods. Most significant, however, is P. Armstrong's recent argument that this trade network did not grind to a halt by 700 CE, but rather continued to operate through the eighth century (see Chapter 3 for discussion).<sup>49</sup> This suggestion hinges on

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<sup>47</sup> Jackson et al., 2012, "Primary evidence for Late Roman D Ware production," 112. For Perge as a formerly proposed production center of CRS, see N. Atik, 1995, *Die Keramik aus den Südthermen von Perge*, *Istanbuler Mitteilungen Beiheft 40* (Tübingen); N. Firat, 2000, "So-called 'Cypriot red slip ware' from the habitation area of Perge (Pamphylia)," *Rei Cretariae Romanae Fautorum acta* 36: 35-38. References from P. Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," in M. Mundell Mango (ed.), *Byzantine Trade, 4th-12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham) 157-78, at 159 n. 8.

<sup>48</sup> Jackson et al., 2012, "Primary evidence for Late Roman D Ware production," 112.

<sup>49</sup> In general, see Armstrong, 2009, "Trade in the east Mediterranean in the 8th century." See also ead., 2006, "Rural settlement in Lycia in the eighth century: New evidence," in K. Dörtlük et al. (eds.), *III. Likya Sempozyumu, 7-10 Kasim 2005, Antalya = The IIIrd Symposium on Lycia, 07- 10 November 2005, Antalya*, vol. 1 (Antalya) 19-29; J. Vroom, 2005, "New light on 'Dark Age' pottery: A note on finds from south-western Turkey," *Rei Cretariae*

Armstrong's extended dating of the latest forms of CRS, Hayes Form 9 and "Well form," both of which were produced at the Gebiz kilns, the former found in large numbers.<sup>50</sup> As the only confirmed production center of CRS, southern Pisidia now looms large in our reconstructions of the production and regional distribution of a pottery type that is one of the main forms of evidence for settlement continuity and economic exchange in centuries previously deemed a complete dark age.

#### D. KYANEAI

A survey of the territory of ancient Kyaneai, located about 8 km as the crow flies from the southern coast of Lycia, is notable for its comprehensive coverage, longevity, and the number of detailed studies of individual villages and aspects of ancient life it has engendered (**fig. 6.5a-b**; see also **fig. 6.2**). Begun in 1989 under the direction of F. Kolb, and resulting in regular publications for the following two decades, the Kyaneai survey encompasses an area of 136 km<sup>2</sup>, of which an incredible 106 km<sup>2</sup> has been covered "intensively."<sup>51</sup> Of course, "intensive" here in

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*Romanae Fautorum acta* 39: 249-55; ead., 2007, "Limyra in Lycia: Byzantine/Umayyad pottery finds from excavations in the eastern part of the city," in S. Lemâitre (ed.), *Céramiques antiques en Lycie: VIIe s. a.C. – VIIIe s. p.C.: les produits et les marchés* (Pessac) 261-92.

<sup>50</sup> Jackson et al., 2012, "Primary evidence for Late Roman D Ware production," 109.

<sup>51</sup> The list of relevant publications is long and is provided in the bibliography for the benefit those who wish to conduct more detailed research on specific subjects. The discussion presented here is intended as an overview, and therefore relies primarily on the comprehensive survey publication of Kolb, 2008, *Burg – Polis – Bischofssitz*. Periodic publications of the survey results appear as the series *Lykische Studien* 1-6 (*Asia Minor Studien*), 7-9 (*Tübinger Althistorische Studien*), all edited by F. Kolb. Numerous single-author studies on special topics have also been published; only a select and relevant few are listed here. For late antiquity and the early Byzantine period at Kyaneai and environs, see F. Kolb, B. Kupke, M. Miller, and M. Zimmermann, 1991, "Spätantike und byzantinische Besiedlung auf dem Gebiet der lykischen Polis Kyaneai," *Klio* 73: 563-85; H. Blum, 1994, "Demographie und Kirchenorganisation in Zentrallykien: Bemerkungen zur Vita Nicolai Sionitae," *Lykia* 1: 52-67; W. Tietz, 2006, "Die lykischen Städte in der Spätantike," in J.-U. Krause and C. Witschel (eds.), *Die Stadt in der Spätantike – Niedergang oder Wandel?* (Stuttgart) 257-81. For oil production and agriculture in the area, see A. Konecny, 1998, "Lykische Ölpressen: Einige Ölpressen auf dem Bonda Tepesi und im Gebiet von Istlada," *Jahreshefte des Österreichischen archäologischen Instituts in Wien* 67: Beiblatt, 121-94; idem, 1999, "Lykische Ölpressen II: Die Ölverarbeitungsanlagen in der Siedlung auf dem Dinek Tepesi," *Jahreshefte des Österreichischen archäologischen Instituts in Wien* 68: Beiblatt, 144-70; A. Şanlı-Erler, 2006, *Bauern in der Polis. Ländlichen Siedlungen und*

the rugged, maquis-covered “Yavu-Bergland” – the name adopted by the team for the survey region, after the Turkish village of Yavu situated at the foot of the acropolis of Kyaneai – is not the same as “intensive” in a region of plowed agricultural land. Here the steep plateau-like hills, which rise up to elevations of 900 masl, over 500 m higher than the lowlands in the survey area, and the dense, hard-scrabble vegetation prohibited comprehensive, systematic pottery collection but also contributed to the preservation of ancient remains, which are highly visible and easily recorded. This degree of preservation, and the emphasis on architectural rather than ceramic evidence, makes the situation around Kyaneai more akin in many ways to that of the Limestone Massif in northwest Syria, rather than that of a place like Balboura or Sagalassos, discussed below. Nevertheless, pottery plays an important role in dating occupation at sites throughout the survey area, as we shall see.<sup>52</sup>

Of the 136 km<sup>2</sup> comprising the survey area, about 106 km<sup>2</sup> were surveyed “intensively,” that is, covering as much of the ground surface as possible and documenting all visible architectural remains and small finds (especially pottery); an additional 20 km<sup>2</sup> were treated extensively; and the remaining 10 km<sup>2</sup> could not be investigated.<sup>53</sup> Such remarkable coverage resulted in the documentation of about 3200 archaeological features of various types within the 106-km<sup>2</sup> area of intensive survey, including settlements, isolated structures, graves, oil/wine presses, cisterns, and agricultural terracing complexes; this works out to an average of around 30 features per km<sup>2</sup>.<sup>54</sup> The settlements themselves can be differentiated: in addition to the town of

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*agrarisches Wirtschaftsformen im zentrallykischen Yavu-Bergland*, *Tübinger Althistorische Studien* 1 (Bonn). For subsidiary sites in the survey region, see T. Marksteiner, 2002, *Trysa – eine zentrallykische Niederlassung im Wandel der Zeit siedlungs-, architektur- und kunstgeschichtliche Studien zur Kulturlandschaft Lykien* (Vienna); A. Thomsen, 2002, *Die lykische Dynastensiedlung auf dem Avşar Tepesi* (Bonn); G. Rumpff, 2006, *Die antike Siedlung bei Hoyran in Zentrallykien*, *Tübinger Althistorische Studien* 3 (Bonn).

<sup>52</sup> For a discussion of methodological concerns, including pottery collection and dating techniques for masonry, see Kolb, 2008, *Burg – Polis – Bischofssitz*, 17, 22ff.

<sup>53</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 14.

<sup>54</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 15.

Kyaneai, there are seven large villages, 74 rural hamlets (including a handful of “manor houses” and several fortresses or places of refuge), and about 430 farmsteads, of which 137 were equipped with a tower; an additional 100 or so single-room complexes dot the landscape.<sup>55</sup> The large villages should be understood as *komai*, communities that were connected to Kyaneai but exercised partial self-government from the Hellenistic period onwards.<sup>56</sup>

Even without chronological differentiation, these site tallies are interesting because they speak of a density of occupation and degree of resource exploitation unmatched in the modern period. Press installations, extensive terracing complexes, cisterns, and outbuildings cover both hill-slope and plain in such density that Kolb concludes the region was engaged in market-oriented olive oil and wine production from the Hellenistic to the late antique or early Byzantine period (fourth/third century BCE to sixth/seventh century CE).<sup>57</sup> Determining when exactly terraces were used and what people grew on them is difficult, but the density of press installations alone suggests that local production likely exceeded local needs: about 370 press installations were found within the 106-km<sup>2</sup> area of intensive survey alone, corresponding to an average density of 3.5 per km<sup>2</sup>.<sup>58</sup> That press density is *over two times greater* than the press density M. Decker estimates for the Limestone Massif of northwest Syria (1.5 per km<sup>2</sup>).<sup>59</sup> Extrapolating from that density to the entire region of 136 km<sup>2</sup>, and making adjustments to account for problems of visibility and *in-situ* preservation, Kolb estimates that at least 600

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<sup>55</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 15.

<sup>56</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 207-11.

<sup>57</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 327, 329

<sup>58</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 327.

<sup>59</sup> M. Decker, 2001, “Food for an empire: Wine and oil production in North Syria,” in S. Kingsley and M. Decker (eds.), *Economy and Exchange in the East Mediterranean during Late Antiquity* (Oxford) 69-86, at 81-82.

presses were potentially in operation in the region.<sup>60</sup> Presses were located in *komai*, hamlets, and isolated structures; at only 10 of the 74 recorded hamlets were no press installations found.<sup>61</sup>

However, greater press density does not necessarily mean greater production. It might instead be a result of a practical accommodation inhabitants made in response to the rugged landscape, for surely it was easier to build many small presses close to each fragmentary olive grove than to haul an accumulated heavy harvest across the stepped and jagged landscape. Or perhaps it reflected social organization, according to which each household, clan, village, or other social unit desired its own press. Even press size does not resolve the issue, since producers may well have decided to build as large a press as possible, even one that clearly exceeded their needs, if the cost of doing so was not prohibitively greater than building a smaller press, and if they anticipated the possibility of greater yields in the future. That is, a large press neither requires nor proves large yields. The red flag of high-volume production oriented toward surplus is instead the organization of multiple press installations into “factories” of the kind seen, for example, in North Africa during the imperial period, and in the Limestone Massif in late antiquity. At least one comparable settlement has been documented in the territory of Kyaneai, settlement LVII, which consists of eight buildings, including three one-room and four two-room complexes, as well as a church (**fig. 6.6**).<sup>62</sup> The settlement was founded in the early imperial period and remained occupied through the late antique and early Byzantine periods; its heyday may have been late antiquity. The three-room complex labeled “1” includes pressing room “c” with a press (“Pr 5”) and a storage room “b” with unusually thick walls and access by stairway or ladder only. The presence of four additional press installations nearby (“Pr 1-4”) suggests to

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<sup>60</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 327, 327-55 (full discussion of oil and wine production). See also Konecny, 1998, “Lykische Ölpresse”; idem, 1999, “Lykische Ölpresse II”; Şanlı-Erler, 2006, *Bauern in der Polis*.

<sup>61</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 327, 407.

<sup>62</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 407, 407 fig. 467.

Kolb that the inhabitants of this seemingly humble settlement were engaged in intensive olive oil production, perhaps on the part of a wealthy local landowner.

Pottery finds and architectural evidence such as church construction help provide a more detailed picture of settlement dynamics and economic activity in late antiquity (here, the fourth to mid-sixth century) and the Byzantine period (mid-sixth to thirteenth/fourteenth century). Similar to many regions in Asia Minor and the eastern Mediterranean reviewed in this chapter, Kyaneai and its countryside flourished in the fourth, fifth, and sixth centuries. Kyaneai itself boasted refurbished fortification walls, impressive churches, densely packed houses, and a lively economy.<sup>63</sup> During the fifth and sixth centuries, churches were constructed across the landscape, in Kyaneai and in rural settlements alike, including a dozen three-aisled basilicas with architectural decoration within the 136-km<sup>2</sup> survey area.<sup>64</sup> In the countryside, many hamlets occupied in the Roman imperial period were expanded in late antiquity, raising the average number of households per hamlet from five to six. Six imperial-period hamlets were abandoned, but 19 were newly founded, resulting in an increase from 55 to 67 or 68. Kolb observes an interesting trend in the location of these abandoned and newly founded hamlets: whereas almost all of the abandoned hamlets were located in peripheral areas far from major roads, most of the new hamlets were founded near major transportation routes and on the lowlands. The resulting pattern was similar to that seen in the imperial period: a concentration of rural villages in the area around Kyaneai, along the main east-west route, and in the area between that route and coast to the south, especially between Kyaneai and the port of Timiussa.<sup>65</sup>

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<sup>63</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 391.

<sup>64</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 396-406, 415.

<sup>65</sup> The preceding information on rural settlement in late antiquity in this paragraph is from Kolb, 2008, *Burg – Polis – Bischofssitz*, 406-7.

Olive oil and wine production continued to be important economic activities in these hamlets, including those newly founded in late antiquity, five of which contained one or sometimes more elements for a screw press, perhaps indicating an intensification of production<sup>66</sup> – or, at the very least, a concern to keep up with press technology. The hamlet with the greatest number of press installations had eight presses, 17 cisterns, a late antique basilica with architectural ornamentation, and 15-18 small building complexes, which Kolb sees operating as individual farms or farming households.<sup>67</sup> Based on the settlement location preferences and ubiquitous press finds, Kolb concludes that late antiquity and the early Byzantine period – that is, up through the sixth century, roughly – was a time of market-oriented production and prosperity, as it had been in the preceding Roman imperial period.<sup>68</sup>

Also during late antiquity, a trend away from occupation in isolated farmsteads that had begun in the imperial period accelerated. Only 14 isolated farmsteads were newly constructed during this period. There is archaeological evidence for 82 isolated farmsteads occupied in late antiquity, but Kolb thinks there were probably over 100, which still indicates a decrease from the preceding period. In contrast, the 67 or 68 hamlets constitute about 400 farming households. Extrapolating for the entire territory in late antiquity, then, there were maybe 600 farming households. These isolated farmsteads, though, were concentrated around Kyaneai and the *komai* in late antiquity, leading Kolb to conclude that for isolated farmsteads, as for hamlets, people preferred to situate themselves in the southern part of the territory, in closest proximity to the sea (though farmsteads were present in the north/northwest around Korba and Tüse, too).<sup>69</sup>

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<sup>66</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 407.

<sup>67</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 409.

<sup>68</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 406.

<sup>69</sup> The preceding information on farmsteads in late antiquity in this paragraph is from Kolb, 2008, *Burg – Polis – Bischofssitz*, 416-17.

## D.i. Seventh-century changes

Important changes occurred in the seventh century. As with every project discussed in this dissertation, to a certain degree this impression results from the lack of evidence for diagnostic ceramics. Kolb notes the difficulty in recognizing and dating ceramics of the seventh-to-ninth-century “gap” between the well-known late Roman fine wares that are assumed to precede it, and the glazed, colored wares that appear after it in the tenth/eleventh century.<sup>70</sup> If, the argument goes, it was no longer feasible during this period to import fine wares on a scale recognizable in the archaeological record, then locally-produced coarse wares are likely to be the only evidence of occupation. But these local coarse wares are difficult or impossible to distinguish from those produced in preceding periods, so the changes in settlement they can potentially reveal remain undetected.

However, as in other regions in southern Asia Minor, the late forms of CRS found here at Kyaneai and its surrounding territory help fill in this seventh-to-ninth-century ceramic “gap” to some extent. Indeed, in contrast to the small amounts of African Red Slip (ARS) ware and Phocaeen Red Slip (PRS, or Late Roman C) ware collected by the survey, CRS is one of the most commonly found fine ware types for late antiquity in the region, which imported mainly bowls and dishes “in a fairly large number.”<sup>71</sup> Kolb tentatively follows Armstrong in accepting the possibility that CRS may have been produced and distributed through the eighth and as late as the ninth century.<sup>72</sup> As in the Balbourike to the north (treated below), most of the CRS sherds were found at sites in the countryside, not the city: only three out of 47 sherds were found inside

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<sup>70</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 415.

<sup>71</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 390: “in recht großer Zahl.”

<sup>72</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 390, citing Armstrong, 2006, “Rural settlement in Lycia in the eighth century.” See Chapter 3 for a full discussion of the extended dating.

Kyaneai itself. Also, cooking and storage vessels are naturally recorded in greater quantity than fine wares throughout this period, but it is unclear whether the proportion of coarse to fine wares increases at this time relative to the preceding period, as at Balbura.<sup>73</sup>

Despite problems with pottery, a decline in the number of settlements in the survey area during the seventh century seems certain. Of the handful of *komai*, only Hoyran shows clear signs of settlement continuity, including the presence of CRS.<sup>74</sup> At Kyaneai, urban investment shifted as church organization replaced the institutions of the *polis*; since at least the sixth century, the city was the seat of a bishop, a change that strengthened the political and administrative role of the city in relation to the previously semi-autonomous *komai*. Secular buildings with political functions and temples were abandoned, but the urban center remained densely inhabited.<sup>75</sup> In both city and countryside, the three-aisled basilicas of late antiquity were replaced with much smaller churches.<sup>76</sup>

Kolb describes an apparent correspondence between a decline in monumental architecture and a reduction in settlement: only 30 of the 67 or 68 hamlets occupied in late antiquity seem to remain inhabited after the sixth century, on the basis of architectural evidence. However, occupation at 11 of these 30 hamlets is attested only by the presence of churches, with no ceramic evidence. In addition to these 30 hamlets, Byzantine pottery sherds were found at seven others, and by subscribing to the extended redating of Form 9 of CRS to the eighth century, occupation can be extended to the seventh/eighth century at three more settlements. Accepting this scattered ceramic evidence, then, as many as 40 settlements may have been occupied in the early Byzantine period (compared to the 67 or 68 recorded for the preceding late

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<sup>73</sup> The preceding information on CRS in this paragraph is from Kolb, 2008, *Burg – Polis – Bischofssitz*, 390.

<sup>74</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 396, 415,

<sup>75</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 391.

<sup>76</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 415.

antique period); however, as Kolb points out, it remains unclear whether these limited scatters of pottery indicate a real settlement, a single household, or some more temporary or sporadic activity, even by people living elsewhere.<sup>77</sup>

In addition to the overall reduction in the number of *komai* and hamlets occupied after the sixth century, Kolb suggests that smaller hamlets were abandoned more than larger ones.<sup>78</sup> This trend concurs with another, much more certain process that had begun in the imperial period and accelerated during late antiquity: the abandonment of isolated farmsteads, which disappear almost entirely in the early Byzantine period.<sup>79</sup> No isolated farmsteads are newly constructed or newly occupied after the sixth century.<sup>80</sup>

To summarize, settlement changes beginning in the seventh century are characterized by a preference for habitation in hamlets rather than larger villages or isolated farmsteads; the latter, in fact, appear to be almost completely abandoned as a settlement type. Kolb urges his reader to look on the bright side of this demographic development: yes, the region did experience population decline, but it was not as severe as the first glance would suggest. At least 30, and maybe as many as 40, hamlets remained occupied, with an average of 7-8 houses each, for a total of 1,200-1,400 inhabitants; that number, plus 1,000-1,200 residents in Kyaneai and perhaps 500-800 people living in the *komai*, results in an estimated total maximum population in the survey area during the early Byzantine period of 3,500 people – double the modern population.<sup>81</sup>

Furthermore, the rural settlement pattern in the early Byzantine period continues a trend already discernible in late antiquity: the abandonment of villages in the west, northwest, and

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<sup>77</sup> The preceding information on rural settlement in the early Byzantine period in this paragraph is from Kolb, 2008, *Burg – Polis – Bischofssitz*, 415.

<sup>78</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 415-16: of the 12 largest hamlets occupied in late antiquity (that is, those with more than seven building complexes), only three do not have Byzantine finds.

<sup>79</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 415-16.

<sup>80</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 417.

<sup>81</sup> The preceding summary statements are from Kolb, 2008, *Burg – Polis – Bischofssitz*, 416-17.

northeast, in contrast to a maintenance of villages in the area between and surrounding Büyük Avşar and Hoyran, and the area immediately south of Kyaneai. That is, early Byzantine settlement was concentrated near the city center and along the main routes to the coastal ports, whereas remote areas – in both mountain and plain – were largely abandoned. Kolb points out that this trend contradicts the assumption that inhabitants lived in constant fear of Arab invasions, and suggests that overseas exchange, including locally produced oil and wine, must have remained attractive to them. On the other hand, an apparent abandonment of marginal land fits into a picture of shrinking demand for local agricultural products, which had previously encouraged expansion into all available arable land.<sup>82</sup> On the whole, then, Kolb seems to conclude that the overall effect of recurrent conflict on both interregional and regional exchange must have been negative; since the prosperity of Kyaneai and its territory depended so intimately on coastal trade (based on his assumption that inhabitants produced oil and perhaps wine in surplus for overseas export), any disruption in these trade networks would have caused both direct and indirect negative effects. Gone were the craftsmen, architects, and materials required for the elaborate and sophisticated architecture of previous periods, as inhabitants now faced a more hardscrabble existence.<sup>83</sup>

## **E. BALBOURA**

A more varied picture of settlement in late antique Lycia can be obtained by moving away from the coast and adding to our investigation the results of research carried out in the mountainous interior. Located about 50 km as the crow flies from the western coast of Lycia, the town of

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<sup>82</sup> The preceding information in this paragraph is from Kolb, 2008, *Burg – Polis – Bischofssitz*, 416.

<sup>83</sup> Kolb, 2008, *Burg – Polis – Bischofssitz*, 415: “Die Substanz der antiken Kultur zerbröckelte und machte gewissermaßen einem Notstandssystem Platz.”

Balboursa controlled a Roman-period territory of around 700 km<sup>2</sup> situated between 1,200 and 2,600 masl (see **fig. 6.2**). In the eyes of J. J. Coulton, director of the Balboursa Survey, this high altitude made the “small and rather poor *polis*” and its territory so agriculturally marginal that the survival of permanent settlement – and especially Graeco-Roman city life – was dependent on the maintenance of trade connections with the wider Mediterranean world.<sup>84</sup> The town had an athletic festival, for instance, but residents of the territory seem not to have produced olive oil, which could be imported easily enough from neighboring areas such as the Lycian lowlands.<sup>85</sup> The general impression is that residents of the Balbourike subsisted on a mixed agropastoral economy, growing wheat, barley, grapes, and vegetables, and raising animals, most importantly sheep and goats, for their primary and secondary products, while at the same time exploited the surrounding forests for resources such as tree nuts, honey, timber, and wood to make charcoal.<sup>86</sup> The maximum population that could be supported from the territory of Balboursa is estimated to be between 10,000 and 20,000, most likely falling at the lower end of that range.<sup>87</sup>

The British Institute at Ankara conducted survey projects at Balboursa between 1986 and 1993 and at Oinoanda, its neighbor 20 km to the south, between 1974 and 1983.<sup>88</sup> In contrast to Oinoanda, where only the city was studied, the project at Balboursa set out from the beginning to study city and countryside together; the three seasons devoted to the former were complemented by four to the latter, and the team carried out systematic and controlled collection of surface

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<sup>84</sup> J. J. Coulton, 2012, *The Balboursa Survey and Settlement in Highland Southwest Anatolia* (London) I, 181; II, 201.

<sup>85</sup> Coulton, 2012, *Balboursa Survey*, I, 106-7. Based on the survey team’s identification of 25 press weights in the territory of the Balboursa but no elements specifically connected to olive pressing, Coulton concludes: “The cumulative weight of the negative evidence makes it reasonable to conclude, at least as a working hypothesis, that olive oil was not produced in the Balbourike” (107), but wine certainly was.

<sup>86</sup> Coulton, 2012, *Balboursa Survey*, I, 100-18.

<sup>87</sup> J. M. Wagstaff, J. J. Coulton, and A. Erdentuğ, 2012, “The territory and environment of Balboursa,” in Coulton, *Balboursa Survey*, I, 17-41, at 40.

<sup>88</sup> Coulton, 2012, *Balboursa Survey*, I, 4; idem, 1998, “Highland cities in south-west Turkey: The Oinoanda and Balboursa Surveys,” in R. Matthews (ed.), *Ancient Anatolia: Fifty Years’ Work by the British Institute of Archaeology at Ankara* (London) 225-36.

pottery at both. The project at Balboura included three parts: systematic pottery collection and documentation of inscriptions, building remains, and funerary monuments at the city; extensive, informant-based survey and systematic pottery collection in a 150 km<sup>2</sup>-area of the territory defined as the “survey area”; and intensive fieldwalking of a series of 1-km-wide transects laid out in various parts of the survey area and covering a total of 12 km<sup>2</sup> (8% of the survey area) (figs. 6.7a-e, 6.8a-b).<sup>89</sup>

In combination with the results of the rural survey, to be discussed below, Coulton turns to an inscription from nearby Oinoanda to understand what types of settlement existed in the countryside surrounding Balboura in the Roman period. The Oinoanda Festival Inscription records the numbers of oxen that rural settlements in the city’s territory were expected to provide for sacrifice during a quadrennial festival founded in 125 CE.<sup>90</sup> It lists two types of rural settlement, villages (*komai*) and “isolated properties” (*monagriai*), but Coulton infers a third type, hamlets, which are linked on the inscription by the word σὺν to a village and therefore likely of subordinate status. Of the 21 villages on the inscription, however, only two had hamlets, suggesting that only *komai* and *monagriai*, in contrast to hamlets, were “standard features” of Oinoanda’s territory. Furthermore, the *monagriai* are all associated with a *kome* and seem to be occupied arable land-holdings (essentially farmsteads) rather than summer pastures.<sup>91</sup> The overall picture of the Oinoandan countryside, and presumably the Balbourike as well, is one of relatively dispersed rural settlement distributed across both highlands and basins, and organized into central villages of a handful to perhaps twenty houses, each village a kind of nucleus of habitation and activity for a number of isolated properties scattered around it.

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<sup>89</sup> Coulton, 2012, *Balboura Survey*, I, 5-9.

<sup>90</sup> Coulton, 2012, *Balboura Survey*, I, 99, for all information on the Oinoanda Festival Inscription included here.

<sup>91</sup> Coulton, 2012, *Balboura Survey*, I, 99, referring to the conclusion of C. Schuler, 1998, *Ländliche Siedlungen und Gemeinden im hellenistischen und römischen Kleinasien* (Munich) 32, 80-81.

This pattern of scattered farmsteads is similar to the pattern Kolb proposes for the territory of Kyaneai in the Roman period, described above, which he links to a system of heavily intensive agriculture with widespread terracing to enable the production of surplus olive oil and wine for export.<sup>92</sup> In contrast, in the Balbourike, there is no definitive evidence for oil production, only “scanty” evidence at best for terracing, and evidence for wine production that, while plentiful, does not obviously point to surplus production for export.<sup>93</sup> In addition, in the Balbourike the density of remains defined as “sites” was only 1.85 sites/km<sup>2</sup>, much lower than the 12-30 sites/km<sup>2</sup> observed in the territory of Kyaneai.<sup>94</sup> In the case of both Balboursa and Kyaneai, the pattern of villages and scattered farmsteads appears to have developed in tandem with the growth of these two main settlements as Graeco-Roman towns in the Hellenistic and Roman periods, and the connection between changes in the town and changes in the countryside continued into late antiquity as well. In a broad sense, the rural settlement pattern established in the Roman period continued largely unchanged, as indicated by pottery dating through at least the seventh century.<sup>95</sup> Coulton claims that “only two sites active in the Middle Roman period [first to late third century CE] show no sign of activity in the seventh to eighth century,” and five sites “revive” in either the sixth to seventh century or the seventh to eighth century, after a period of abandonment lasting somewhere between one and four centuries, depending on the site.<sup>96</sup>

However, a comparison of the two tables listing sherd counts at rural sites during the middle Roman period (first to late third century) and during the fifth to eighth century, respectively, clouds the picture: of the 42 sherded sites with some evidence of occupation within

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<sup>92</sup> Coulton, 2012, *Balboursa Survey*, I, 111, providing this reference: F. Kolb, 2008, *Burg – Polis – Bischofssitz: Geschichte der Siedlungskammer von Kyaneai in der Südwesttürkei* (Mainz) 329-55.

<sup>93</sup> Coulton, 2012, *Balboursa Survey*, I, 112.

<sup>94</sup> Coulton, 2012, *Balboursa Survey*, I, 246, providing this reference: F. Kolb, 2000, “Einleitung,” in idem (ed.), *Die Siedlungskammer des Yavu-Berglandes: Berichte über die Ergebnisse der Feldforschungskampagne 1995 auf dem Territorium der zentrallykischen Polis Kyaneai*, *Lykische Studien* 5, *Asia Minor Studien* 41 (Bonn) 1-8, at 8.

<sup>95</sup> Coulton, 2012, *Balboursa Survey*, I, 169.

<sup>96</sup> Coulton, 2012, *Balboursa Survey*, I, 169.

the first to late third century, four restart in the sixth to seventh century, two restart in the seventh to eighth century, 23 remain occupied continuously through the seventh to eighth century, and two cease after the sixth century; the remaining 11 sherded sites in the table of first-to-late-third-century sites are not accounted for in the table of fifth-to-eighth-century sites.<sup>97</sup> Do they too cease? Using the data from these tables instead of the text, then, there appears to be a drop in the number of sherded rural sites from 42 occupied in the first to late third century, to 29 occupied in the fifth to eighth century. But if non-sherded sites are also considered (the evidence for dating coming from funerary altars, sarcophagi, and votive reliefs rather than surface pottery), then the drop is a steeper one of 72 to 29. To some extent the discrepancy between text and table may be explained by Coulton's qualifying statement that "almost all the sites which produced a *significant* number of sherds continued in use at least through the seventh century" (emphasis added), but it is unclear to which time period he is referring at the starting point (the first to late third century, or the fifth to eighth century?), and in any case, some of the relevant sites produced only a single sherd during one or both of those two time periods in question.<sup>98</sup> A number of pottery types dating to the eighth century are found variously at the city and at 14 rural sites (two of which may be located in the territory of Oinoanda); these are among the latest types of pottery found during the survey before the Avlan Ware of the Seljuk (or perhaps Byzantine) nomadic pastoralists who are present in the region a few centuries later.<sup>99</sup> The city and these 14 (or 12) sites, then, seem to mark a final period of settlement before the territory is abandoned, or at least no longer occupied permanently.

The sherd counts also present a problem. Looking at individual sites, the sherd counts for each time period (second to fourth, fifth to sixth, sixth to seventh, seventh to eighth) are almost

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<sup>97</sup> Coulton, 2012, *Balboursa Survey*, I, 153-54 table 6.3, 170 table 7.1.

<sup>98</sup> Coulton, 2012, *Balboursa Survey*, I, 169.

<sup>99</sup> P. Armstrong, 2012, "The survey pottery: Hellenistic and later," in Coulton, *Balboursa Survey*, II, 31-82, at 79, 81

all in the single digits (**table 6.1**).<sup>100</sup> What does it really mean if the sherd count changes over the course of those time periods from 1 to 3 to 3 to 8 (site Gk.96 Sarıçiçek-Beşiktaş), or even from 24 to 8 to 4 to 10 (site Çl.32 Hamurdöken)?<sup>101</sup> One way to address this problem is to interpret the sherds in aggregate only. Coulton looks at the total number of sherds from the countryside for each period, as well as the corresponding totals from the city, and finds that the total number of sherds in both places rises in the fifth century, increases again in the sixth, and peaks in the seventh (more dramatically in the countryside than the city), before falling off in the eighth (**fig. 6.9, table 6.2**).<sup>102</sup> The problem then arises, as Coulton points out more than once, that these increasing sherd numbers must be partly due to the greater visibility of the latest sherds at any site.<sup>103</sup> Nevertheless, Coulton identifies a significant change in these total sherd counts. Whereas in each century from the second century BCE to the fifth century CE, the total sherd count for the city is greater than the total sherd count for the countryside, this long-lasting rule flips in the sixth century, so that in the sixth, seventh, and eighth centuries, it is the total sherd count from the *countryside* that is greater (see **fig. 6.9**).<sup>104</sup>

This change is even more meaningful considering the drop in the number of occupied rural sites after the fourth century (though the actual numbers are unclear, as noted above) (see **fig. 6.7c-e**). In addition, the distribution of sites occupied in the fifth to eighth century reveals no overwhelming preference for naturally defensive positions such as hilltops over more vulnerable positions in valleys.<sup>105</sup> Indeed, the settlement pattern of the Roman imperial period described above seems unchanged, as well as the internal organization of the few individual settlements

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<sup>100</sup> Coulton, 2012, *Balboura Survey*, I, 170 table 7.1.

<sup>101</sup> Coulton is fully aware of this problem: e.g., 2012, *Balboura Survey*, II, 236-37.

<sup>102</sup> Coulton, 2012, *Balboura Survey*, II, 239 table 19.7, 240 fig. 19.14. The corresponding “estimated” total number of sherds for each century from the fourth to the eighth, respectively, are as follows: city = 64, 51, 63, 69, 50; countryside = 38, 47, 74, 119, 60.

<sup>103</sup> Coulton, 2012, *Balboura Survey*, I, 169, 171; II, 224-40.

<sup>104</sup> Coulton, 2012, *Balboura Survey*, I, 171.

<sup>105</sup> Coulton, 2012, *Balboura Survey*, I, 169-70.

with well-preserved architectural remains,<sup>106</sup> although continuous occupation since the Hellenistic period and the difficulty of dating rubble walls may mask some changes.

Changes in lifestyle, however, are suggested by the pottery. In contrast to earlier periods, in the sixth, seventh, and eighth centuries, there is a “substantial increase” in the proportion of food preparation vessels to table wares in both the city and countryside, but especially the latter (**table 6.3**).<sup>107</sup> Coulton further highlights the dual nature of this change: “in previous periods the proportion of food preparation vessels was not only much lower, but also similar in town and country.”<sup>108</sup> He tentatively interprets the change as indicating either “a decline in the formalities of dining” more evident in the countryside than the city, or possibly a shift in subsistence strategy toward greater dependence on pastoralism.<sup>109</sup>

Taken together, these various bits of evidence, carefully shuffled and scrutinized by Coulton, give an impression of a similar kind of shift in investment from city to countryside, or a degree of equalizing between urban and rural sites, observed for late antiquity by survey projects in other regions of Asia Minor and northwest Syria.<sup>110</sup> It must be noted, as Coulton does, that the survey area covers only 150 km<sup>2</sup> of the 700-km<sup>2</sup> territory, and this is the area closest to the city itself, so that it remains unclear whether settlement dynamics observed in the survey area accurately reflect those of the entire territory.<sup>111</sup>

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<sup>106</sup> Coulton, 2012, *Balboura Survey*, I, 170-71.

<sup>107</sup> Coulton, 2012, *Balboura Survey*, I, 171; II, 240 table 19.9.

<sup>108</sup> Coulton, 2012, *Balboura Survey*, I, 171.

<sup>109</sup> Coulton, 2012, *Balboura Survey*, I, 171. See also Armstrong, 2012, “Survey pottery,” II, 75-76.

<sup>110</sup> As Coulton notes: 2012, *Balboura Survey*, I, 171.

<sup>111</sup> Coulton, 2012, *Balboura Survey*, I, 175.

### **E.i. Developments from pottery studies: New patterns of change after the seventh century**

A number of pottery types dated to the eighth century found in the Balbourike suggest not only that some amount of occupation continued in the region past the seventh century, but also that these surviving communities belonged to a regional network of exchange that connected southern Asia Minor to Cyprus and to the wider eastern Mediterranean through the eighth century and perhaps beyond. Though the pottery assemblage that appears on this network in the late seventh and eighth century – characterized by coarse and cooking wares – was largely new, the regional network on which it circulated was not: instead, it was patterned on the network defined by the production and movement of CRS in operation from the fourth through the eighth centuries. As we shall see, the survival of this network is presaged by the growing predominance and greater longevity of CRS relative to ARS and PRS during the seventh century. CRS therefore forms a kind of bridge or segue between the pottery assemblage of late antiquity, characterized by red-slipped table wares imported from North Africa and Phocaea, and that of the so-called dark age of the late seventh to early ninth century, characterized by coarse and cooking wares with a regional “Cypriot” flavor (a term that perhaps should no longer be used; see below).

#### ***Extended occupation beyond 700 CE***

The pottery types found in the Balbourike that point to prolonged occupation past the seventh century include CRS and Dhiorios-type cooking pots. The evidence Armstrong garners in favor of an extended dating for the latest forms of CRS past 700 CE through the eighth century is presented in Chapter 3. Dhiorios cooking pots are named after their only known production

center, a large-scale factory at Dhiorios on Cyprus, but they are found throughout the Mediterranean in contexts dating to the seventh-eighth centuries.<sup>112</sup> These pottery types are the last evidence of permanent occupation in the Balbourike until the arrival of Avlan Ware of nomadic pastoralists, be they Byzantine or Seljuk, a few centuries later.<sup>113</sup> Their extended dating into the eighth century means that early Byzantine occupation of the Balbourike must also be extended to the early/mid-eighth century, a century or more beyond the seventh century, the traditional date of abandonment.<sup>114</sup> If the later chronology is used, “then a much more complex, and realistic, picture emerges of what is happening in the rural landscape in the eighth century”: not only were some sites occupied through the sixth into the eighth century, but others were newly founded in the second half of the seventh century and occupied into the eighth century.<sup>115</sup> This argument holds not only for the Balbourike, but for all areas where the latest forms of CRS have been found, in southwest and southern Asia Minor, Cyprus, and the Levant (see **fig. 3.13**).

### ***The growing predominance of CRS***

The presence of CRS and Dhiorios-type cooking pots could indicate that some kind of connection was established or strengthened between the Balbourike and Cyprus in the seventh and eighth centuries.<sup>116</sup> But while the CRS and Dhiorios-type cooking pots found in the

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<sup>112</sup> For examples and references, see Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 165-67.

<sup>113</sup> Coulton, 2012, *Balboura Survey*, I, 175-76.

<sup>114</sup> Coulton (2012, *Balboura Survey*, I, 179-81) presents evidence for climate change in the period leading up to decline and abandonment in the Balbourike, ultimately concluding that it is too ambiguous to link climate change directly to settlement dynamics. However, since the territory’s high altitude made it so marginal in terms of agricultural production, “any worsening of climate would inevitably have a more drastic effect than on city territories in more favourable environments” (180-81). Armstrong concludes that the “presently available evidence on pottery chronology leads firmly to the conclusion that before AD 800 permanent settlement had effectively ceased, both at the city and in the western part of its territory,” since “the real breakdown in the social structures of the east Mediterranean happened in the mid eighth century as a result of the depopulation brought about by the bubonic plague which was at its worst from AD 743-750” (2012, “Survey pottery,” II, 79).

<sup>115</sup> Armstrong, 2006, “Rural settlement in Lycia in the eighth century,” 25.

<sup>116</sup> Armstrong, 2006, “Rural settlement in Lycia in the eighth century,” 25. Here Armstrong suggests that a wave of new settlers entered the region, and that these settlers may have come from Cyprus, perhaps as part of an imperial

Balbourike could indeed have come directly from Cyprus, it is more likely that came from closer to home. The CRS found in the Balbourike could have been produced at the Gebiz/Pednelissos kilns, which we know produced the latest forms of this red slip ware; indeed, some of the CRS forms found in the Balbourike were unidentified and undated until the discovery and study of the Gebiz/Pednelissos kilns.<sup>117</sup> Rather than indicating strong connections to Cyprus, perhaps the CRS found in the Balbourike means that during the course of the seventh century, the surviving communities in this marginal highland region began to rely more heavily on table wares from Gebiz/Pednelissos, closer to hand and accessible via inland routes, in large part because the interregional, overseas routes by which they had previously imported table wares such as ARS and PRS were no longer in operation.

This suggestion is supported by the pottery data from the survey, which reveals a growing predominance of CRS over other imported red slip table wares. Whereas in the fifth and sixth centuries, ARS and CRS were “roughly on par with each other as imports” looking at city and countryside together, the seventh and eighth centuries see a notable predominance of CRS.<sup>118</sup> This pattern is determined by the growing number of rural sites on which CRS was found for each century from 0 (zero) in the fourth-fifth century, to 2 in the fifth-sixth, to 7 in the sixth-seventh, and to 10 in the seventh-eighth; during these periods, the number of rural sites on which ARS and PRS is found is zero (except ARS is found at three rural sites in the fifth-sixth century) (**table 6.4, fig. 6.10**).<sup>119</sup> This pattern plays out in terms of sherd counts, as well. In the fifth-sixth centuries, there is 1 CRS sherd from rural sites (7 from the city), 0 PRS from rural

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resettlement scheme. In Armstrong, 2012, “Survey pottery,” II, 63, she backs off from this idea, seeing the “indirect connection” instead. Notably, the 2006 article was published at least two years before the discovery of the CRS kilns at Gebiz/Pednelissos.

<sup>117</sup> Armstrong, 2012, “Survey pottery,” II, 60 (classification numbers 4127-4130 in the Balboura Survey pottery catalogue).

<sup>118</sup> Armstrong, 2012, “Survey pottery,” II, 59 table 12.8, 61.

<sup>119</sup> Armstrong, 2012, “Survey pottery,” II, 59 table 12.8.

sites (2 from the city), and 5 ARS from rural sites (0 from the city); the totals (rural plus city) are thus 8 CRS, 2 PRS, and 5 ARS sherds, so that CRS and ARS are “roughly comparable.”<sup>120</sup> In the seventh-eighth centuries, there are a relatively impressive 24 CRS sherds from rural sites (2 from the city) and 0 ARS from rural sites (1 from the city), so that the totals are 26 CRS to 1 ARS sherd.<sup>121</sup> Certainly sample size is a problem, as Armstrong acknowledges, but two important changes are discernible beginning in the seventh century: a new prevalence of CRS, and an increase in the proportion of imported fine table wares in the countryside over the city. This is the same flip that Coulton observes beginning in the sixth century, discussed above, when all pottery types are considered together.<sup>122</sup> Another trend to keep in mind is the increasing prevalence of plain table wares, some in new shapes, over fine wares (**fig. 6.11**).

The same shift to a predominance of CRS over other imported red-slipped wares such as ARS beginning in the seventh century is also seen at Limyra and Xanthos.<sup>123</sup> It indicates that the inhabitants of the Balbourike continued to import CRS as imports of ARS and PRS dwindled to a trickle and dried up. In other words, it reveals the breakdown of the interregional network on which ARS and PRS arrived to Lycia, and the concurrent survival of the regional CRS network that connected southwest and southern Asia Minor to Cyprus and the Levantine coast and inland in Syria, Jordan, and Palestine, and perhaps even to places as far away as Chios and Alexandria (see **fig. 3.13**).<sup>124</sup> The presence of the latest forms of CRS at the Gebiz kilns demonstrates that southern Pisidia played a major role in the survival of this network through the eighth century.

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<sup>120</sup> Armstrong, 2006, “Rural settlement in Lycia in the eighth century,” 25, 25 table 3.

<sup>121</sup> Armstrong, 2006, “Rural settlement in Lycia in the eighth century,” 25, 25 table 3.

<sup>122</sup> Coulton, 2012, *Balboura Survey*, I, 171.

<sup>123</sup> Armstrong, 2012, “Survey pottery,” II, 61, with references.

<sup>124</sup> Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 171-74 (quote on 171).

### *A new assemblage of cooking pots and coarse wares*

Another shift that occurs in the sixth-eighth centuries, introduced above, is the increase in the proportion of food preparation vessels (cooking pots) to table wares, especially in the countryside (**fig. 6.12**).<sup>125</sup> One of these cooking pots is the Dhiorios type, which, as noted above, dates to the seventh-eighth centuries, and is found throughout the eastern Mediterranean but has only one known production center: a large-scale factory at Dhiorios on Cyprus.<sup>126</sup> It is unclear whether this factory was the only production center of this type of cooking pot, or whether an additional center or centers were operating at the same time in places where the pot is prevalent, such as the Levant.<sup>127</sup> In Balboura and its territory, Dhiorios-type cooking pots become increasingly prevalent from the sixth century onward: the percentage of cooking pots that are of the Dhiorios type (from city and countryside combined) increases from none in the fifth century, to 68% in the sixth, and to 85% in the seventh-eighth.<sup>128</sup>

Cooking pots from Dhiorios, as well as probable imitations produced elsewhere, constitute one branch of a confusing diversity of forms, fabrics, production centers, and findspots that together hint at the development of a new assemblage of cooking pots and coarse wares in the later seventh and eighth century. Variations of this loose, mutable assemblage show up across southern Asia Minor and western Cyprus (and the Levant, see below) and therefore, it has been argued, they should no longer be called “Cypriot” nor be taken as evidence of a definite

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<sup>125</sup> Coulton, 2012, *Balboura Survey*, I, 171; II, 240 table 19.9.

<sup>126</sup> Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 165-67.

<sup>127</sup> Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” 166-67.

<sup>128</sup> Armstrong, 2012, “Survey pottery,” II, 62 table 12.9; ead., 2006, “Rural settlement in Lycia in the eighth century,” 24-25, 24 table 2. Of the 66 total cooking pots (19 city and 47 rural) dated to the fifth century, none are of the Dhiorios type. Of the 96 total cooking pots (36 city and 60 rural) of the sixth century, 65 (68%) are of the Dhiorios type. Of the 88 dated to the seventh-eighth centuries, 74 (85%) are of the Dhiorios type.

connection between Cyprus and those sites where its constituent parts have been found, such as Balboura and, as described in the next chapter, Sagalassos.<sup>129</sup>

Another branch of this assemblage is formed by cooking pots that fall under the umbrella of Brittle Ware, which seems to have been produced not only in Dhiorios, but also at some number of currently unidentified sites in Syria and in Palestine (see Chapter 4); this type of cooking pot, as well as another type found commonly at Xanthos, have been found in the Balbourike but in local fabrics, indicating local production of regional or international forms.<sup>130</sup> (Certain plain table wares, too, found in the Balbourike are similar to examples produced at Dhiorios, but are produced in local fabrics.<sup>131</sup>) So, although most of the food preparation wares of the period from 400 to 800 CE found around Balboura were produced locally, they still belie a connection to this wider network connecting southwest Asia Minor to Cyprus and the Levant.<sup>132</sup> Sherds of cooking pots similar to Brittle Ware cooking pots known from Dhiorios have also been identified at Limyra, Sagalassos, and Anemurium.<sup>133</sup>

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<sup>129</sup> J. Poblome et al., 2010, "Sic transit gloria mundi. Does it really? Wasting seventh century AD Sagalassos (SW Turkey)," in S. Menchelli et al. (eds.), *LRCW 3: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry: Comparison between the Western and Eastern Mediterranean*, vol. 2, BAR Int. Ser. 2185 (Oxford) 791-801, at 793-94.

<sup>130</sup> Armstrong, 2012, "Survey pottery," II, 63. For Brittle Ware, see also Vroom, 2007, "Limyra in Lycia," 278.

<sup>131</sup> Armstrong, 2012, "Survey pottery," II, 61.

<sup>132</sup> Armstrong, 2012, "Survey pottery," II, 63, emphasizes the Cypriot connection: "there is clearly a strong Cypriot influence; some of the forms are too idiosyncratic for this to be coincidental and there are too any parallels with Cypriot finds to dismiss the association," which was probably not "direct (for example, immigration)" but rather "indirect (via some third place)," since "the influences were not fossilised but continued over two centuries."

<sup>133</sup> Limyra: Vroom, 2005, "New light on 'Dark Age' pottery," 253; ead., 2007, "Limyra in Lycia," 278. Sagalassos: A. K. Vionis, J. Poblome, and M. Waelkens, 2009, "Ceramic continuity and daily life in medieval Sagalassos, SW Anatolia (ca. 650-1250 AD)," in T. Vorderstrasse and J. J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia* (Leiden) 191-213, at 196. Anemurium: C. Williams, 1977, "A Byzantine well-deposit from Anemurium (Rough Cilicia)," *Anatolian Studies* 27: 175-90, at 180-81 (reference from Vionis et al., 2009 "Ceramic continuity and daily life," 196 n. 34).

## F. CONCLUSIONS

These analyses of the late antique and early Byzantine pottery in Lycia are emblematic of recent research that is revealing a previously discounted degree of complexity regarding settlement and exchange in this period. From the trees, it is important to see the forest. The pottery types highlighted here constitute a small subset of the full range of ceramics on which such conclusions are based. But even full range constitutes only part of the picture. We should imagine not only pottery, but also other goods and foodstuffs, as well as people and ideas, in circulation in the eastern Mediterranean beyond the seventh century. But the scale and nature of this circulation had changed in important ways.

The late forms of CRS, Dhiorios-type cooking pots, and Brittle Ware cooking pots found in the Balbourike and elsewhere in Lycia demonstrate the maintenance of a network of exchange connecting southwest Asia Minor, Cyprus, and the Levant through the seventh and eighth centuries. It is plausible and even likely that all (or at least most of) the CRS found in Lycia was produced locally, at the Gebiz/Pednelissos kilns, as some of the forms certainly were. As for the cooking pots, the forms reveal a connection to this wider regional network, but at Balboursa at least, the fabrics demonstrate that the majority of them were produced locally. In their knowledge of and desire to imitate these wares, however, the inhabitants of the rural Lycian highlands were participating in a broader network of exchange, of both materials and ideas, that continued to operate through the so-called dark age.

This regional network seems not to have included Constantinople,<sup>134</sup> and perhaps depended on the kind of rural centers of production, such as the kilns at Gebiz/Pednelissos, that had always been more important to the operation of networks of production and distribution that

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<sup>134</sup> Armstrong, 2009, "Trade in the east Mediterranean in the 8th century," 177-78.

were relatively circumscribed (e.g., CRS), as opposed to interregional (e.g., PRS). Furthermore, this network, which in the eighth century came to be defined by the loose assemblage of cooking pots and coarse wares described above, was the same network that had been previously been defined by CRS. The circulation of CRS in the seventh and eighth centuries can therefore be seen as a bridge or transitional phase between the assemblages of red slip ware (ARS, PRS, and CRS) produced during late antiquity and the assemblages of cooking and coarse wares emblematic of the eighth and early ninth centuries.

The survival of this network undermines the traditional, historical argument that the seventh-century Persian conflicts and Arab conquest of some parts of the Mediterranean necessarily resulted in widespread isolation and termination of overseas exchange. Despite my emphasis on this particular regional network, Lycia and Pamphylia did remain connected to interregional, overseas networks as well, including some that stretched to the capital. In her analysis of the post-Roman ceramics from excavations in the eastern part of the lower city at Limyra, J. Vroom has identified wares and fabrics with parallels to identical or similar examples from around the eastern Mediterranean and from Saraçhane in Istanbul dating to the eighth, ninth, and tenth centuries. Far from being abandoned after the seventh century, “Limyra belonged in Late Antiquity to an important but complex trading system, which connected various regions of the east Mediterranean,” including Syria and Palestine, Egypt, via Cyprus, to the Turkish coast, and in particular may also have “benefited from its position on the main shipping route between Constantinople, the Near East and Egypt.”<sup>135</sup> But what had changed was the

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<sup>135</sup> Vroom, 2005, “New light on ‘Dark Age’ pottery,” 252-54, quote at 254. Vroom notes, for example, a double-handled jug “probably coming from Constantinople” found in Limyra and in a seventh-century context in Xanthos (one jug), which has a lid in some cases decorated with a painting technique similar to that found on certain early Byzantine wares from Crete dated between the end of the sixth and eighth centuries, in the Levant (including in Syria dated as late as the ninth century), Egypt, southern Turkey (Xanthos, Perge, in the Konya plain, and at the monastery of Alahan and Kilise Tepe in Cilicia). Also, examples of a grey gritty cooking ware have been found in Limyra, the Balboura survey in Lycia (possibly dated to late eighth century), and Saraçhane in Istanbul in eighth-

disappearance of a major mechanism behind this interregional movement. In contrast to similar interregional exchange in preceding centuries, these post-seventh-century movements were not driven by the demands of the Byzantine fiscal system, since the state no longer controlled many of these regions, but instead must have been driven by commercial enterprise.

The trends revealed especially by the survey around Balboura beginning in the sixth/seventh century demonstrate these shifting patterns of exchange and the effect they must have had on the kinds of materials that were available and standards of living and changing lifestyles that resulted. These trends include a flip in the proportion of total number of sherds from city to countryside (sixth century), and increase in the ratio of food preparation wares to table wares (sixth century), and a new predominance of CRS over ARS and PRS (seventh century). When the fiscal system that had served as the primary driver of the interregional movement of ARS and PRS to places like Lycia ruptured in the seventh century, commercial exchange operating on a local and regional scale picked up the slack, relatively speaking, as seen in the new predominance of CRS in the assemblages of the seventh century, and of coarse wares and Dhiorios-type and Brittle Ware cooking pots in the assemblages of the eighth century.

In summary, it was commercial exchange that remained intact and provided the means by which communities in areas as remote as Balboura or as accessible as Kyaneai remained connected to the wider eastern Mediterranean beyond the seventh century. The communities that survived through the eighth century and into the ninth in various pockets of Lycia and Pamphylia, both near the coast and farther inland, were able to do so because of the legacy of late antique commercial trade, kept alive primarily on local and regional networks of exchange,

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tenth-century context; examples of a different cooking pot of very similar fabric have been found in Limyra, Gortys on Crete (late seventh to late eighth centuries), and Saraçhane (early tenth century). Vroom also provides other examples of wares and fabrics from sites around the eastern Mediterranean and the Saraçhane excavations that are similar to those in the collection of post-Roman ceramics she is studying from the eastern part of the city of Limyra. See also ead., 2007, "Limyra in Lycia."

but also extending interregionally. In this context it is important to note the greater evidence for continued post-seventh-century production and rural occupation in Lycia and Pamphylia in contrast to Cilicia and Isauria. This difference is illustrated by the findspots of the later forms of CRS, which are clustered in southwest Asia Minor and western Cyprus but absent in southeast Asia Minor (see **fig. 3.13**). Obviously no single marker can accurately serve as evidence for ancient occupation and activity. But it is interesting that, unlike Cilicia and Isauria, Lycia and Pamphylia appear not to have been deeply integrated into a network of production and exchange that depended on the maintenance of the fiscal system. The role that Cilicians and Isaurians played as producers and shippers of wine (and oil) in LRA 1 to supply the civic and military *annonae*, as well as the commercial markets thereby made accessible to them, may account for their inability to survive the rupture of this system as successfully as inhabitants of regions farther west did, who had instead been integrated into the kind of commercial, regional networks of exchange (like that of CRS) that remained in operation well beyond the contraction of the state.

There are other important patterns of change to note for Lycia and Pamphylia in late antiquity and the early Byzantine period, such the increasing importance of the village relative to other types of settlement, especially cities and farmsteads. These comments will be integrated into the conclusions presented at the end of the following chapter on Sagalassos, since these regions share patterns that become more meaningful when considered together.

## CHAPTER 7

### PEOPLE, POTTERY, AND POLLEN: SAGALASSOS IN PISIDIA

#### A. INTRODUCTION

The long-standing and large-scale Pisidia Survey Project was established by S. Mitchell and M. Waelkens in 1982 and has since splintered off into multiple projects with various research goals and methods. Covering a large area and focusing mostly on urban sites and extensive survey, Mitchell and Waelkens initiated a project at Pisidian Antioch and then in 1985 moved to Kremna and Sagalassos,<sup>1</sup> the latter becoming the focus of a large-scale interdisciplinary project directed by Waelkens including excavation, extensive and intensive survey, and environmental research. Mitchell and others continued to conduct regional survey in southern Pisidia through the 1990s, focusing on specific sites such as Kremna, Oinoanda, and Ariassos.<sup>2</sup> The survey project is now directed by L. Vandeput and has maintained this southern focus, with detailed investigations of sites including Melli and, most recently, the town and territory of Pednelissos (see Chapter 6).

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<sup>1</sup> S. Mitchell, 1986, "Cremna and Sagalassos," *Anatolian Studies* 36: 8-10.

<sup>2</sup> See, for example, S. Mitchell, 1991, "Ariassos 1990," *Anatolian Studies* 41: 159-72; idem, 1994, "Three cities in Pisidia," *Anatolian Studies* 44: 129-48; idem, 1995, *Cremna in Pisidia: An Ancient City in Peace and in War* (London); idem, 1995, "Oenoanda and west Pisidia," *Anatolian Studies* 45: 14-17; idem, 1996, "Pisidia," *Anatolian Archaeology* 2: 19-21; S. Aydal, S. Mitchell, T. Robinson, and L. Vandeput, 1997, "The Pisidian Survey 1995: Panemoteichos and Ören Tepe," *Anatolian Studies* 47: 141-72; S. Aydal, S. Mitchell, and L. Vandeput, 1998, "1996 yılı Pisidia yüzey araştırması," *Araştırma Sonuçları Toplantısı* 15(2): 275-94.

Mitchell has noted that literary and archaeological evidence for settlement in Pisidia after about 600 CE is both difficult to find and identify, and challenging to interpret. In terms of the archaeological evidence, he believes that part of the problem lies in the fact that settlement in Pisidia before about 600 was characterized by the Graeco-Roman city, the identification of which has so shaped the training of classical archaeologists that they cannot recognize settlement in any other form: “an archaeologist does not find what she does not seek.”<sup>3</sup> What she should be seeking, Mitchell contends, are the remains of villages, because on the basis of textual and archaeological evidence, he continues, it seems that in late antiquity the village began to replace the city as the most important unit of social and economic organization.<sup>4</sup> This process involved both the growth of the village and the diminution of the city – in physical and ideological terms – so that communities that had once been regarded as cities were now called villages in texts such as Justinian’s *Novella XXIV.1* and had become “ruralized” in ways that gave them the character of villages in the archaeological record as well.<sup>5</sup> Mitchell implores archaeologists to seek and learn to identify forms of settlement other than the Graeco-Roman city, as evidenced by architectural remains and sherd scatters; recognition of the latter depends on new research to identify diagnostic pottery types and devise pottery chronologies for the period.

Fortunately, researchers have heeded this call to arms, illuminating this so-called dark age with the light of just such efforts. By acknowledging the importance of identifying and documenting non-urban sites such as isolated farmsteads and small villages, as well as tracking pottery production and distribution through the identification and dating of later ceramic forms

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<sup>3</sup> S. Mitchell, 2000, “The settlement of Pisidia in late antiquity and the Byzantine period: Methodological problems,” in K. Belke et al. (eds.), *Byzanz als Raum: Zu Methoden und Inhalten der historischen Geographie des östlichen Mittelmeerraumes, Tabula Imperii Byzantini 7* (Vienna) 139-52, at 142, 144.

<sup>4</sup> Mitchell, 2000, “Settlement of Pisidia,” 145.

<sup>5</sup> Mitchell, 2000, “Settlement of Pisidia,” 145, providing the reference to *Novella XXIV.1* (535/36 CE): “very populous villages” (πολύάνθρωποι κῶμαι).

and fabrics, projects such as the surveys around Balboura and Pednelissos have already made Mitchell's lament happily obsolete. So too has the comprehensive research carried out at Sagalassos, to which this chapter is devoted. Sagalassos serves as a uniquely replete case study for investigating the changes of late antiquity and the early Byzantine period through the lens of the countryside, combined with evidence from the city. New pottery studies confirm that Sagalassos and its territory, like the areas of Lycia discussed in Chapter 6, participated in the regional network of exchange that connected southwest Asia Minor to Cyprus and the wider eastern Mediterranean after the seventh century. The results of extensive palaeoenvironmental research conducted in the city and the surrounding landscape suggest that occupants altered the balance of their agropastoral subsistence strategies toward animal herding as part of a risk-sensitive movement away from the long-term investment of intensive agriculture. At the same time, surveys carried out at different scales and intensities throughout the region indicate that inhabitants chose to create villages and hamlets rather than live in single-family farmsteads or maintain a dense urban settlement. Combined, these broad changes suggest that, faced with the myriad challenges of the sixth and seventh centuries, communities in this region reacted to the anxiety they felt about an unpredictable future by adopting risk-sensitive strategies and eschewing long-term investment, thereby making themselves more flexible in the face of unforeseeable future challenges.

## **B. SAGALASSOS**

In 1993 the then three-year-old Sagalassos Archaeological Research Project created a survey team to explore the archaeology, geomorphology, and palaeoenvironment of the territory

surrounding the ancient city (**fig. 7.1**). Since then, different teams have conducted various types of survey: extensive (“reconnaissance”) regional survey (1993-1998), intensive urban (intramural) survey (1998-2004), intensive (but not full-coverage) suburban (extramural) survey (1999-2006), and full-coverage intensive surveys in various locations throughout the territory of the city (2008-present).<sup>6</sup>

The extensive regional survey endeavored to cover the entire ancient *chora*, delineated at 1800 km<sup>2</sup> and divided into 10 geo-topographical units based on the team’s interpretation of inscriptions, milestones, literary evidence, and regional topography (see **fig. 7.1**).<sup>7</sup> The goal of this reconnaissance survey was to find as many sites as possible, without extrapolating from them the entire potential universe of ancient settlement, and then to combine the survey results with excavation, historical, geomorphological, geological, and palaeobotanical data in an interdisciplinary approach to chart the development of human activity in the region from as early as the Palaeolithic.<sup>8</sup> A “site” was defined as “every archaeological testimony of human activity,

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<sup>6</sup> In addition to the survey-specific publications listed in the footnotes that follow, the results of these surveys form the basis of a number of important synthetic articles to which the current discussion will frequently refer: H. Vanhaverbeke, F. Martens, M. Waelkens, and J. Poblome, 2004, “Late antiquity in the territory of Sagalassos,” in W. Bowden, L. Lavan, and C. Machado (eds.), *Recent Research on the Late Antique Countryside*, Late Antique Archaeology 2 (Leiden) 247-79; M. Waelkens et al., 2006, “The late antique to early Byzantine city in southwest Anatolia. Sagalassos and its territory: A case study,” in J.-U. Krause and C. Witschel (eds.), *Die Stadt in der Spätantike—Niedergang oder Wandel?* Historia Einzelschriften 190 (Stuttgart) 199-255; H. Vanhaverbeke, F. Martens, and M. Waelkens, 2007, “Another view on late antiquity: Sagalassos (SW Anatolia), its suburbium and its countryside in late antiquity,” in A. G. Poulter (ed.), *The Transition to Late Antiquity on the Danube and Beyond*, *ProBritAc* 141 (Oxford) 611-48; H. Vanhaverbeke, A. K. Vionis, J. Poblome, and M. Waelkens, 2009, “What happened after the 7<sup>th</sup> century AD? A different perspective on post-Roman rural Anatolia,” in T. Vorderstrasse and J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia*, *Phians* 113 (Leiden) 177-90.

<sup>7</sup> H. Vanhaverbeke and M. Waelkens, 2003, *The Chora of Sagalassos: The Evolution of the Settlement Pattern from Prehistoric until Recent Times*, Series in Eastern Mediterranean Archaeology (SEMA) V (Turnhout) 62. The heart of this book is a reworking of a doctoral dissertation by H. Vanhaverbeke, who synthesized the results of a series of regional surveys conducted from 1993 to 1996 by M. Waelkens: H. Vanhaverbeke, 1999, *The Evolution of the Settlement Pattern on the Territory of Sagalassos (Pisidia, SW Turkey). Palaeo-ecology and Palaeo-economy from the Prehistory until Recent Times* (Ph.D. Thesis, Katholieke Universiteit Leuven). See also the preliminary reports on the survey and excavation campaigns of the Sagalassos Archaeological Research Project, published by the Leuven University Press in the Sagalassos Series, *Acta Archaeologica Lovaniensia Monographiae*.

<sup>8</sup> Vanhaverbeke and Waelkens, 2003, *The Chora of Sagalassos*, foreword.

ranging from an isolated *graffito* to the remains of a town.”<sup>9</sup> The team visited each modern village and sought local informants with knowledge of ancient remains, and examined topographical maps with site references, previously published surveys of mound-sites, and epigraphic material.<sup>10</sup> Once a site had been identified in this way, pottery was collected in informal grab samples, with surveyors wandering around an area picking up diagnostics and recording architectural remains. Fieldwalking was employed unsystematically as a method of collecting pottery in order to date previously identified sites, and not as a method of “finding” sites in the first place. In 2002 some sites were revisited in order to discern pre- and proto-historic, medieval, and sub-recent material. H. Vanhaverbeke characterizes the 1993-1996 regional survey as preliminary reconnaissance work only, providing a sketch of settlement through time that should be amended and added to in the future.<sup>11</sup>

The intensive urban survey was directed by F. Martens from 1998 to 2004 (**fig. 7.2**).<sup>12</sup> From the beginning, Martens recognized that the conditions at Sagalassos made it a unique and challenging site for survey: the area to be surveyed lay within the walls of the ancient city, with a steeply sloping topography and an unplowed soil surface. The project benefited from a concurrent geophysical survey within the city and an intensive suburban (extramural) field survey, along with the ongoing urban excavations. The urban survey covered 21.5 ha

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<sup>9</sup> Vanhaverbeke and Waelkens, 2003, *The Chora of Sagalassos*, 12.

<sup>10</sup> Vanhaverbeke and Waelkens, 2003, *The Chora of Sagalassos*, 7.

<sup>11</sup> Vanhaverbeke and Waelkens, 2003, *The Chora of Sagalassos*, 14.

<sup>12</sup> F. Martens, 2004, *Interdisciplinary Research Concerning the Urban Development of Sagalassos, Settlement Development, Urban Layout and Infrastructure* (Ph.D. Thesis, Katholieke Universiteit Leuven); ead., 2005, “The archaeological urban survey of Sagalassos (south-west Turkey): The possibilities and limitations of surveying a ‘non-typical’ classical site,” *Oxford Journal of Archaeology* 24: 229-54. An interesting discussion of the comparability of the results of the urban and suburban surveys can be found in F. Martens, H. Vanhaverbeke, and M. Waelkens, 2008, “Town and *suburbium* at Sagalassos: An interaction investigated through survey,” in H. Vanhaverbeke, J. Poblome, F. Vermeulen, M. Waelkens, and R. Brulet (eds.), *Thinking about Space: The Potential of Surface Survey and Contextual Analysis in the Definition of Space in Roman Times*, Studies in Eastern Mediterranean Archaeology (SEMA) VIII (Turnhout) 127-49. See also J. Poblome, R. Willet, N. Firat, F. Martens, and P. Bes, 2013, “Tinkering with the urban survey data. How many Sagalassos-es do we have?” in P. Johnson and M. Millet (eds.), *Archaeological Survey and the City* (Oxford) 146-74.

(approximately two-thirds) of the entire urban area, using different sampling strategies as the project progressed, finally settling on a grid system of 20 x 20 m squares, each fully covered by 5 people walking 4 m apart, first east to west, then returning along a pass 2 m to the south of their first pass (= 10 passes, 2 m wide). A sixth surveyor assessed the visibility and recorded density counts.<sup>13</sup> Martens was aware of the potential problems of post-depositional processes and superposition from the start of the project and made a point of trying to understand the impact of these situations on the survey evidence. However, these biases effectively made it impossible to use density counts to measure changes in site size or the history of occupation in the city, or to identify “functional organization and spatial evolution of the urban area”; test soundings revealed that the surface materials did not accurately represent the subsurface materials due to severe erosion on steeply sloping areas (the surface pottery was mostly late Roman, but the stratigraphic sequence was early to middle Roman).<sup>14</sup>

Suburban survey was carried out from 1999 to 2006 over a total area of about 50 km<sup>2</sup>, covering a number of locations within a 5 km radius of the city center, mostly in the hills and valley of Ağlasun southeast of the city, and on the hillslopes west and southwest of the city (**fig. 7.3**).<sup>15</sup> Developed and otherwise inaccessible areas could not be surveyed; only areas large enough to include at least ten 50 x 50 m squares were considered, and effort was made to cover all topographical zones. Within each 50 x 50 m survey square, fieldwalkers were spaced at intervals of 6-7 m; surface visibility was recorded according to a system of five classes; and density counts were obtained with clickers. All ceramic material was counted, including

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<sup>13</sup> The changing survey strategy is described in Martens, 2005, “The archaeological urban survey of Sagalassos,” 235-40. This sampling design was used during the final four years of the six-year urban survey.

<sup>14</sup> Martens, 2005, “The archaeological urban survey of Sagalassos,” 237-38, quote from abstract.

<sup>15</sup> M. Waelkens, F. Martens, H. Vanhaverbeke, J. Poblome, B. Mušič, and B. Slapšak, 2005, “The 2003 survey season at Sagalassos and in its territory,” *Araştırma Sonuçları Toplantısı* 22.1: 369-84; M. Waelkens, 2007, “Report on the 2005 survey season at Sagalassos,” *Araştırma Sonuçları Toplantısı* 24.2: 249-66; Vanhaverbeke et al., 2007, “Another view on late antiquity”; Martens et al., 2008, “Town and *suburbium* at Sagalassos.”

building materials and pottery, and all pottery, both diagnostic and non-diagnostic, was collected, along with other finds. Architectural fragments and in-situ features were recorded. The team estimates that the suburban survey retrieved about 64% of the total surface record in the 50 km<sup>2</sup> area of interest.<sup>16</sup>

Since 2008, full-coverage intensive surveys have been carried out in a number of locations throughout the territory of Sagalassos, which in most cases had been investigated during the regional survey or even earlier, and found to contain evidence of ancient occupation. These locations include the Bereket basin, the valley at the southwest edge of the territory and the highest in elevation (2008); the western part of the valley of Bağsaray at the territory's southern edge (2009); and, within the Burdur plain at the westernmost extent of the city's territory, on the western hillslopes of the valley and along two parallel streams flowing into lake Burdur from the south: the Düğer Çayı to the west (2010 and 2011), and the Boz Çayı to the east (2012) (see **fig. 7.1**). At Bereket, the team collected materials from previously known sites, as well as carried out a full-coverage survey covering nearly 8 km<sup>2</sup> consisting of 33 transects in varying lengths of between 300 to 1200 m traversed by fieldwalkers spaced 20 m apart, who counted and/or collected all surface remains.<sup>17</sup> One of the goals of the survey in the Bereket basin was to correlate the survey data with pollen and other environmental indicators retrieved from sediment cores obtained from the same area, discussed below. In the valley of Bağsaray, a number of sites known from the regional survey were revisited and studied in greater detail.<sup>18</sup> On the Burdur plain, a total area of 4.7 km<sup>2</sup> was surveyed in transects (with fieldwalkers at 20 m

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<sup>16</sup> This information on survey design is from Martens et al., 2008, "Town and *suburbium* at Sagalassos."

<sup>17</sup> H. Vanhaverbeke, M. Waelkens, I. Jacobs, M. Lefere, E. Kaptijn, and J. Poblome, 2011, "The 2008 and 2009 survey season in the territory of Sagalassos," *Araştırma Sonuçları Toplantısı* 28.3: 139-53, at 142. See also E. Kaptijn, J. Poblome, H. Vanhaverbeke, J. Bakker, and M. Waelkens, 2013, "Societal changes in the Hellenistic, Roman and early Byzantine periods. Results from the Sagalassos Territorial Archaeological Survey 2008 (southwest Turkey)," *Anatolian Studies* 63: 75-95.

<sup>18</sup> Vanhaverbeke et al., 2011, "The 2008 and 2009 survey season."

intervals) covering portions of the hilly western edge of the valley along with the banks of the Düğer Çayı; a complementary survey was then carried out along the banks of the nearby Boz Çayı.<sup>19</sup> In this way the Burdur survey studied known sites more comprehensively and identified previously unknown sites, including a number of settlements with early and middle Byzantine occupation.

These survey projects were able to benefit from the large-scale and long-standing excavations at the site of Sagalassos itself (**fig. 7.4**), providing a relatively extensive and fine-tuned pottery sequence that could be applied during pottery collection and the dating of sites. This ceramic chronology is less developed for the sixth and succeeding centuries CE, but recent pottery studies, discussed below, are helping to fill this gap. The surveys also benefit from a history of interdisciplinary research at Sagalassos, although this may have introduced problems in the form of preconceived ideas about the development of the landscape and its ability to support different types and degrees of settlement. The excavations at Sagalassos are discussed to some extent here because they form an essential component of the project's comprehensive research agenda, covering archaeological and environmental data, and urban, suburban, and rural contexts.

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<sup>19</sup> M. Waelkens et al., 2012, "Sagalassos 2010 Yüzey Araştırması," *Araştırma Sonuçları Toplantısı* 29.2: 185-204; E. Kaptijn, R. Vandam, J. Poblome, and M. Waelkens, 2012, "Burdur Ovası'nda İskan: 2010 ve 2011 Sagalassos Projesi Yüzey Araştırmaları. Inhabiting the Plain of Burdur: 2010 and 2011 Sagalassos Project Survey," *ANMED. Anadolu Akdenizi Arkeoloji Haberleri 2012-10. [News of Archaeology from Anatolia's Mediterranean Areas]*: 142-47; R. Vandam, E. Kaptijn, J. Poblome, and M. Waelkens, 2013, "Sagalassos Arkeolojik Araştırma Projesi 2012 Yılı Yüzey Araştırmaları. The 2012 Archaeological Survey of the Sagalassos Archaeological Research Project," *ANMED. Anadolu Akdenizi Arkeoloji Haberleri 2013-11. [News of Archaeology from Anatolia's Mediterranean Areas]*: 230-33.

## **B.i. Settlement history through survey and excavation**

The population and settlement patterns of Sagalassos and its territory were transformed in several important ways from the fourth through seventh centuries. In general, the project members conclude that there was a reduction in the overall number of sites, an increased tendency toward nucleated settlement, a new emphasis on strategically located settlements, movement of some economic activity from the city to the surrounding countryside, and an establishment of rural churches (**figs. 7.5a-d, 7.6**).

### ***The fourth and fifth centuries***

The late imperial period (300-450/75 CE) was a time of prosperity in Sagalassos and in Pisidia in general.<sup>20</sup> Survey results attribute to this period the highest overall number of sites ever in the territory of Sagalassos. Another significant trend was the renewal of settlement in less-accessible areas on hill- or mountain-tops, as in the early and mid-Hellenistic period (indeed, some of the same Hellenistic-period sites were reoccupied). These areas may have functioned as convenient locations for sheep and goat breeding, which the researchers suggest replaced cattle breeding to a large extent beginning in the early fifth century (evidence discussed below).

Like towns all across the late antique eastern Mediterranean, Sagalassos was supported by a network of farms and villages (defined as settlement with an area greater than 1 ha), whose inhabitants produced foodstuffs and raw materials for themselves and for Sagalassos (as well as rents and taxes). Evidence for agricultural production comes in the form of press weights,

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<sup>20</sup> Information on the late imperial period is from Vanhaverbeke et al., 2004, "Late antiquity in the territory of Sagalassos," 251-52, 255-58; and Vanhaverbeke and Waelkens, 2003, *Chora of Sagalassos*, 242-43, 250-51, 264-65.

proximity to rich arable land, and the pollen record, in which the imperial period can be identified as the time of peak agricultural exploitation in the region, discussed below.

In contrast to the earlier imperial period, only one suburban villa can be securely identified as inhabited during the fourth to fifth centuries. It is unclear what type of occupation to associate with late imperial pottery scatters at the other suburban sites. On this basis it appears that the élite of Sagalassos did not move into the countryside following the kind of rural “flight of the curiales” evident in other regions, but may have instead moved into the city, building or refurbishing expansive mansions; another viable option for the wealthy and well-connected must have been to move away from Sagalassos altogether.<sup>21</sup>

For the most part, urban living within the city itself maintained its high standards. From the fourth and fifth centuries there is evidence of an increased number of public dedications and a revival of building activity in the city, including the modification or repair of elements in the Upper Agora, nymphaeum, library, and colonnade streets and squares.<sup>22</sup> A new fortification wall surrounding the city center was built around 400 CE, largely on the footprint of the Hellenistic circuit.<sup>23</sup> Though perhaps built in response to widespread insecurity over the Isaurian raids of 404-406, the new circuit incorporated *spolia* and earlier buildings – including stones from the

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<sup>21</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 222-23; a large urban mansion was rebuilt in the fourth to fifth centuries to include dozens of rooms over multiple terraces, including a private bath complex and reception hall (218-19). See also M. Waelkens et al., 2007, “Two late antique residential complexes at Sagalassos,” in L. Lavan, L. Özgenel, and A. Sarantis (eds.), *Housing in Late Antiquity: From Palaces to Shops*, Late Antique Archaeology 3.2 (Leiden) 495-513; Vanhaverbeke et al., 2004, “Late antiquity in the territory of Sagalassos”; Vanhaverbeke et al., 2007, “Another view on late antiquity.” The concept of the “flight of curiales” is usually taken to mean the movement of élite residents out of the city and into the countryside, but also to Constantinople. See, for example, J. H. W. G. Liebeschuetz, 2000, *The Decline and Fall of the Roman City* (Oxford), and Chapter 3.

<sup>22</sup> F. Martens, 2008, “Urban traffic in the hills of the eastern Mediterranean. The development, maintenance, and usage of the street system at Sagalassos in south-western Turkey,” in P. Ballet, N. Dieudonné-Glad, and C. Saliou (eds.), *La rue dans l'antiquité. Définition, aménagement et devenir de l'Orient méditerranéen à la Gaule* (Rennes) 191–200; colonnaded streets/square built around same time as circuit walls, around 400 CE, at 196 ff.

<sup>23</sup> L. Loots, M. Waelkens, and F. Depuydt, 2000, “The city fortifications of Sagalassos from the Hellenistic to the Late Roman period,” in M. Waelkens and L. Loots (eds.), *Sagalassos V: Report on the Survey and Excavation Campaigns 1996 and 1997*, ActaArchLov Monographiae 11 a–b (Leuven) 595-634, at 616-18 (dates the wall to the early Byzantine period, around 400 CE).

now defunct bouleterion – in a careful manner that suggests, to the researchers, civic pride rather than panic.<sup>24</sup> Along with a separate circuit surrounding the hilltop of the temple of Hadrian and Antoninus Pius (which may instead date to middle Byzantine period), these walls enclosed an area of almost 14 ha, or less than a third to half of the urban area of the imperial period.<sup>25</sup> Of course, occupation was not necessarily limited to the area within the walls, which instead may have been intended to protect the vital city center and old residential district to the west, and provide a place of refuge for all inhabitants in times of conflict. While the city remained prosperous, nevertheless changes were afoot in its urban fabric and the use of urban spaces: a large industrial zone was created in the eastern portion of the city, replacing the public and wealthy residential area established there in the imperial period, and surface pottery scatters suggest that occupation moved closer to the new wall at the time of its construction.<sup>26</sup> However, despite these apparent internal shifts in the mosaic of urban settlement, the overall distribution of surface pottery collected as part of the urban survey indicates that occupation was maintained over the full extent of the city, at least 31.5 ha, diminishing only in the mid-sixth century.<sup>27</sup>

In the mid-fifth century, life in and around Sagalassos began a slow process of transformation, an evolution that revved up to an accelerated pace in the mid-sixth century, changing Sagalassos from a vibrant city to a smaller and less densely populated settlement: in the opinion of the research team, primarily a “refuge center” for the inhabitants of the surrounding countryside.<sup>28</sup> This evolution is first evident in the suburbs, where, beginning in the fifth century, the land-use mosaic of élite estates and limited olive cultivation (and possibly gardens)

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<sup>24</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 220, 221.

<sup>25</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 218.

<sup>26</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 210, 218; Martens, 2005, “Archaeological urban survey,” 248; Martens et al., 2008, “Town and suburbium at Sagalassos,” 138.

<sup>27</sup> Martens, 2005, “Archaeological urban survey,” 248; Martens et al., 2008, “Town and suburbium at Sagalassos,” 138.

<sup>28</sup> Chronological framework: Vanhaverbeke and Waelkens, 2003, *Chora of Sagalassos*, 140; Vanhaverbeke et al., 2004, “Late antiquity in the territory of Sagalassos,” 270.

prevalent throughout the first three centuries CE was converted into a productive landscape of intensive farming and grazing, as indicated an increase in heavy metal levels in cattle bones, geomorphological indications of the use of suburban terraces, and an increase in phosphorus from the application of manure on these terraces.<sup>29</sup>

### *The sixth to mid-seventh centuries*

By the mid-sixth century, the character of life in Sagalassos had reached a tipping point. As the population shrank and occupation density diminished, infrastructure was no longer maintained, and the increasingly ruralized city broke apart until it resembled one of the villages in the countryside surrounding it. Almost all the urban surface pottery dating from the mid-sixth to mid-seventh century has been found near and within the wall of 400 CE – that is, within the original municipal core and residential district – as well as some found east of the theater.<sup>30</sup>

These ceramic assemblages include an increasing number of local and regional wares, including a new table ware produced only 20 km from Sagalassos at Bağsaray and an as yet unprovenanced fabric from Asia Minor, the presence of which confirms the end of the regional dominance of Sagalassos Red Slip ware (see section on pottery studies below).<sup>31</sup>

The major trends of the one hundred years spanning the mid-sixth to mid-seventh century, are a “ruralization” of the city, marked by the dissolution of its monumental

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<sup>29</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 223, 237-38. For manuring as a Byzantine practice to increase yields, see M. Decker, 2007, “Frontier settlement and economy in the Byzantine East,” *DOP* 61: 217-67, at 254, 262, who recognizes T. J. Wilkinson as originally identifying sherd scatters as the remains of applied organic matter (in the Byzantine east context, at least): T. J. Wilkinson, 1982, “The definition of ancient manured zones by means of extensive sherd-sampling techniques,” *JFA* 9: 323-33.

<sup>30</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 231-32; Martens, 2005, “Archaeological urban survey,” 249.

<sup>31</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 236. For the Bağsaray table ware and other fabrics of the period, including several coarse wares, see Vanhaverbeke et al., 2009, “What happened after the 7th century AD?” 180-81; J. Poblome, H. A. Ekinici, I. Öztürk, P. Degryse, W. Viaene, and M. Waelkens, 2000, “An early Byzantine tile and lime kiln in the territory of Sagalassos,” in M. Waelkens and L. Loots (eds.), *Sagalassos V: Report on the Survey and Excavation Campaigns 1996 and 1997*, ActaArchLov Monographiae 11 a-b (Leuven) 669-683. See also the discussion below.

infrastructure and the prevalence of agricultural activities; the presumed weakening or lack of municipal institutions to maintain vital urban necessities such as waste disposal and water supply; and the disappearance of the social élite from both city and countryside. Widening our perspective, these changes can be bundled into a general theme of contraction and simplification: as the residents of Sagalassos increasingly depended on the immediate land of the suburbs for subsistence, differences between life in the city and countryside diminished. Sagalassos became a village among villages, without even the industrial activities found in some of the other settlements in the territory such as pottery production and metallurgy.

One of the starkest forms of evidence for these trends is the dumping of food remains, cattle dung, and human waste in private and public structures.<sup>32</sup> While the research team is careful to note that such patterns of waste disposal may have been in practice earlier as well,<sup>33</sup> certainly the transformation of spaces with specific functions that had previously been vital to city-living – water supply, commerce, bathing – into units for dumping and waste collection meant that residents’ ability or desire to maintain these functions had ceased. In the case of the fountains and baths, such altered use may have been a sensible reworking of structures rendered defunct by insufficient water supply; the concurrent construction of slapdash cisterns within the city was only the latest attempt to correct for apparent water shortages that had begun after the earthquake of around 500 CE.<sup>34</sup>

In the countryside, changes in settlement pattern and population levels took place at a pace that cannot be determined with resolution higher than the course of the fifth and sixth

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<sup>32</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 233.

<sup>33</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 233.

<sup>34</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 228, 233. Apparently, the earthquake either damaged the aqueducts to the extent that the city was unable to muster adequate resources for their repair, or caused changes in the location or discharge of the springs that fed them. See also F. Martens, 2008, “Water abundance and shortage at Sagalassos (SW-Turkey),” in C. P. J. Ohlig (ed.), *Cura aquarum in Jordanien* (Siegburg) 247-62.

centuries taken together as a single unit.<sup>35</sup> The main trends were a marked decrease in the overall number of sites, with a concurrent increase in the appearance of strategically located sites on hill- and mountain-tops (the latter a pattern noticeable as early as the late imperial period) (see **figs. 7.5a-d, 7.6**). The team claims that there was an increase in the proportion of villages to farms, and that together these trends suggest that people were choosing to live more clustered together, often in less-accessible locations, perhaps in response to real or perceived threats of invasion and conflict (**fig. 7.7**). Ten rural churches, each located within or close to a village, chart the spread of Christian building from the city to the countryside and constitute the only possible trace of elite expenditure in the territory, as no villas or monumental tombs have been found.<sup>36</sup>

In addition, the team suggests that villages became more self-sufficient by taking over some of the production activities previously restricted to the city, including pottery production and iron-working.<sup>37</sup> Even though the city was a diminished consumer and no longer had the infrastructure to support these industries, there was still a demand for iron objects, tile, and pottery and the knowledge of how to produce them, suggesting the survival of some minimal threshold population in the territory at large.

### ***The mid-seventh century and beyond***

At some point in the mid-seventh century, the city may have been hit by a severe earthquake and suffered damage from which large-scale building and occupation never recovered.<sup>38</sup> Evidence

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<sup>35</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 237-42; Vanhaverbeke et al., 2004, “Late antiquity in the territory of Sagalassos,” 259-62, 269-70, 273; Vanhaverbeke and Waelkens, 2003, *Chora of Sagalassos*, 285-98.

<sup>36</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 240.

<sup>37</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 241.

<sup>38</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 244-47; Vanhaverbeke et al., 2004, “Late antiquity in the territory of Sagalassos,” 269, 271-73. Possible seventh-century citadels include *spolia*-built structures on the promontory of the Antoninus Pius sanctuary; a “fortified monastery” on Alexander’s Hill; and the modern village, with evidence of a middle Byzantine church, that grew after Sagalassos was abandoned.

for military occupation within the city is documented historically for the tenth century and archaeologically for the ninth/tenth through thirteenth centuries.<sup>39</sup> It remains unclear, however, whether survivors of the mid-seventh-century earthquake remained in the city immediately afterward, and where exactly they lived if they did. While the end of significant occupation of the city is explained, ultimately, as the result of the earthquake, the team attributes the decline in urban life that preceded this catastrophe, and the slower decline or contraction of rural settlement that succeeded it, to the myriad challenges of the sixth and seventh centuries which culminated in a collapse of social complexity.<sup>40</sup>

It is important to note that the decrease in overall number of sites in the territory was much greater between the late imperial and early Byzantine periods than between the early Byzantine and post-early Byzantine periods (see **fig. 7.6**). So although the nadir for settlement numbers was not reached until after the mid-seventh century, the most precipitous decline in settlement numbers had already occurred two centuries earlier. By the mid-seventh century, it seems that much of the territory that had been steadily abandoned in the preceding decades remained unoccupied. How should we visualize the seventh-century city and countryside, in order to understand what had happened?

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<sup>39</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 244. The promontory of the temple of Hadrian and Antoninus Pius was occupied presumably as a *kastron* during the middle Byzantine period (ninth/tenth to tenth/eleventh century), while similar occupation has been recorded on Alexander’s Hill for the twelfth-thirteenth centuries. The bishops of Sagalassos are also mentioned at least until the eleventh century (*Notitiae episcopatum*), though these mentions do not necessarily prove habitation.

<sup>40</sup> Vanhaverbeke et al., 2007, “Another view on late antiquity,” 640; Waelkens et al., 2006, “The late antique to early Byzantine city,” 247; Vanhaverbeke et al., 2004, “Late antiquity in the territory of Sagalassos,” 262-68; Vanhaverbeke and Waelkens, 2003, *Chora of Sagalassos*, 298. In their model of complexity and collapse, the authors follow J. A. Tainter, 1990, *The Collapse of Complex Societies* (Cambridge). Looking at the situation in more detail, the research team offers two possible ways to interpret the nature of this collapse: either settlement really did decline, or it contracted. Settlement decline could have been caused by greater mortality, declining birthrate, or migration, any or all of which could have been precipitated by earthquakes in the sixth and seventh centuries; increased aridity; an outbreak of plague in the mid-sixth century; economic decline due to an unraveling of exchange networks; or a combination of any or all of the above, plus the effects of changing social institutions. Possible mechanisms behind settlement contraction include a reworking of food production strategies to support nucleated, self-sufficient villages, as discussed above, and/or the desire for increased security in the face of invading Persians and Arabs in the seventh century.

The research team at Sagalassos has recently espoused a newly “explicit and optimistic” view of rural – but not urban – settlement continuity in the region after the seventh century, following the premise that “nothing much changed in the countryside after the 7<sup>th</sup> century AD”; that is, “life continued as it was, centred on villages, hamlets and farms, but these functioned in a ‘decapitated’ landscape; a landscape in which most former cities were abandoned, reduced in size to ‘kastra’ or had become mere villages” (**fig. 7.8**).<sup>41</sup> As these optimists note, conceptualizing the Graeco-Roman city as an aberration on the Anatolian landscape is not a new viewpoint, but they claim to be among the few who are actually devoting research to confirming or challenging it.<sup>42</sup> The survey results indicate that life did go on in many villages in the countryside (and even within Sagalassos itself). However, emphasizing the continuity of settlement after the mid-seventh century downplays the dramatic decline in site numbers that had preceded it, and this decline should not be ignored, for it indicates that something did indeed change in the countryside, as well as in the city.

## **B.ii. New developments from pottery studies**

Recent studies of post-Roman-period pottery collected by the survey and retrieved during excavation at Sagalassos itself have enabled a refinement of settlement dynamics following the seventh century (**fig. 7.9**).<sup>43</sup> Two groups of pottery types can now be dated to this period: a fine

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<sup>41</sup> Vanhaverbeke et al., 2009, “What happened after the 7th century AD?” 177.

<sup>42</sup> Vanhaverbeke et al., 2009, “What happened after the 7th century AD?” 178, citing S. Mitchell as an early advocate of this view: S. Mitchell, 1993, *Anatolia: Land, Men and Gods in Asia Minor*, vol. 1 (Oxford) 9: “the foundation of cities, which flourished only for a relatively brief period in the long evolution of Anatolian history, modified but did not supersede the indigenous pattern of settlement which has, in many respects, persisted until the present day.”

<sup>43</sup> Vanhaverbeke et al., 2009, “What happened after the 7th century AD?” 180-81; A. K. Vionis, J. Poblome, and M. Waelkens, 2009, “Ceramic continuity and daily life in medieval Sagalassos, SW Anatolia (ca. 650-1250 AD),” in T. Vorderstrasse and J. J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia* (Leiden) 191-213;

ware similar to CRS produced at a kiln found near the village of Bağsaray, located about 20 km southwest of Sagalassos, from the second half of the sixth to the early eighth century; and an assemblage of four coarse wares, described shortly, dated from the late seventh and eighth centuries.<sup>44</sup> By means of the identification, dating, and description of these wares, occupation in post-seventh-century Sagalassos and the region has become immediately more visible. In addition to Bağsaray itself, the Bağsaray fine ware has been found in archaeological contexts at Sagalassos and at 10 sites in the territory, which are mostly located in the eastern half of the territory in remote valleys or on hill- and mountain-slopes (showing a preference for inaccessibility that had begun during the late imperial period). Surface finds of earlier periods retrieved from these sites suggest they were farms, hamlets, or villages in the Roman period, but as the team notes, it is not possible to determine the extent to which these sites maintained their size and function in the seventh century and later.<sup>45</sup>

The dated assemblage of four coarse wares of the late seventh and eighth centuries was identified at two excavated areas at Sagalassos: the Sanctuary of Apollo Klarios and the Sanctuary of Hadrian and Antoninus Pius (see **fig. 7.4**).<sup>46</sup> (Also of interest is a middle Byzantine assemblage of common wares and glazed table wares dating from the early tenth to mid-thirteenth century found in excavations at Alexander's Hill next to Sagalassos and at nine rural sites by the survey; see the summary below.) Five of the coarse fabrics found by the survey match (in terms of both form and fabric) the coarse wares from this assemblage, which therefore

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eidem, 2009, "The hidden material culture of the Dark Ages. Early medieval ceramics at Sagalassos (Turkey): New evidence (ca AD 650–800)," *Anatolian Studies* 59: 147-165.

<sup>44</sup> Vanhaverbeke et al. (2009, "What happened after the 7th century AD?" 181) give the date range for this assemblage as the late seventh to ninth century, whereas Vionis et al. (2009, "Ceramic continuity and daily life," 192) give a date range of late seventh and eighth centuries. The current discussion follows Vionis et al.

<sup>45</sup> Vanhaverbeke et al., 2009, "What happened after the 7th century AD?" 181.

<sup>46</sup> The following information about the post-seventh-century pottery assemblages is from Vionis et al., 2009, "Ceramic continuity and daily life"; eidem, 2009, "The hidden material culture of the Dark Ages"; Vanhaverbeke et al., 2009, "What happened after the 7th century AD?" 180-82.

provides evidence of continuous occupation at Sagalassos and these rural sites through the seventh and eighth centuries. It is also meaningful that this seventh-and-eighth-century assemblage is “completely different” from the known ceramic forms of the preceding late Roman and early Byzantine period (fourth to late seventh century) and the succeeding middle Byzantine period (early tenth to mid-thirteenth century) at Sagalassos.<sup>47</sup> The assemblage is comprised of coarse kitchen wares with parallels at a number of other sites in the Aegean and the eastern Mediterranean.<sup>48</sup> These parallels suggest that inhabitants living in and around Sagalassos, like at Balboura, Limyra, Anemurium, and other sites in Asia Minor, (1) participated in the regional exchange network operating in the eastern Mediterranean in the seventh, eighth, and possibly ninth centuries that is slowly becoming more visible as more attention is paid to so-called dark age pottery from sites across the region (see also Chapters 3 and 6),<sup>49</sup> while (2) at the same time, grew more dependent on local handmade wares, since formerly imported wares were no longer available.

This coarse kitchen ware assemblage is comprised of (1) handmade (or made on a slow wheel) non-kiln-fired cooking pots; (2) wheel-made kiln-fired cooking pots with a fabric similar to that of Brittle Ware from Cyprus; (3) closed vessels (“table” jugs); and (4) so-called “pattern-burnished” ware, jugs or jars decorated with burnished lines, likely made on a slow-turning wheel. The handmade non-kiln-fired cooking pots are similar to handmade cooking pots from Kalavassos-Kopetra and Kourion in Cyprus, but of “modest manufacture” and made in such a variety of sizes as to suggest local, household-level production (though no fabric analysis has yet

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<sup>47</sup> Vionis et al., 2009, “Ceramic continuity and daily life,” 192.

<sup>48</sup> Vionis et al., 2009, “Ceramic continuity and daily life,” 193.

<sup>49</sup> P. Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” in M. Mundell Mango (ed.), *Byzantine Trade, 4th-12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham) 157-78.

been conducted to test this hypothesis) (**fig. 7.10**).<sup>50</sup> The wheel-made cooking pots are “either imported from Cyprus or an imitation of vessels of the ‘Cypriot’ tradition” with a gritty fabric similar to that used in the cooking pot type known as Brittle Ware from excavations of the large-scale production center at Dhiorios on Cyprus.<sup>51</sup> Parallels to this type of cooking pot have also been found at Limyra, Anemurium, and in the territory of Balboursa, where it is made in what is thought to be a local fabric, indicating local production of regional or international forms (see Chapter 6).<sup>52</sup> In addition to Sagalassos, wares from this assemblage have been found by the survey at nine rural sites. But in contrast to the ten rural sites at which Bağsaray fine ware of the same period has been found, these nine sites have different characteristics: the pottery scatters marking the sites are thin and low in density – suggesting to the survey team that these sites are small and/or only seasonally occupied – and the sites are situated along “natural corridors” or, as with the Bağsaray fine ware sites, in positions made inaccessible by their elevation.<sup>53</sup>

This seventh-to-eighth-century pottery assemblage has a number of implications. First, it is a variation of the loose, mutable assemblage of cooking pots and coarse wares that appears across south(west) Asia Minor, Cyprus, and parts of the Levant in the later seventh and eighth centuries. As described in Chapter 6, a version of this dark-age assemblage shows up in areas of Lycia as well, including Balboursa and Limyra. Though often called “Cypriot,” the presence of members of this mutable assemblage should not be considered evidence of a necessarily direct

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<sup>50</sup> Vionis et al., 2009, “Ceramic continuity and daily life,” 195, see 195 nn. 23-24 for references on Cypriot material.

<sup>51</sup> Vionis et al., 2009, “Ceramic continuity and daily life,” 196.

<sup>52</sup> Limyra: J. Vroom, 2005, “New light on ‘Dark Age’ pottery: A note on finds from south-western Turkey,” *Rei Cretariae Romanae Fautorum acta* 39: 249-55, at 253; ead., 2007, “Limyra in Lycia: Byzantine/Umayyad pottery finds from excavations in the eastern part of the city,” in S. Lemâitre (ed.), *Céramiques antiques en Lycie: VIIe s. a.C. – VIIe s. p.C.: les produits et les marchés* (Pessac) 261-92, at 278. Anemurium: C. Williams, 1977, “A Byzantine well-deposit from Anemurium (Rough Cilicia),” *Anatolian Studies* 27: 175-90, at 180-81 (reference from Vionis et al., 2009 “Ceramic continuity and daily life,” 196 n. 34). Balboursa: P. Armstrong, 2012, “The survey pottery: Hellenistic and later,” in J. J. Coulton, 2012, *The Balboursa Survey and Settlement in Highland Southwest Anatolia* (London) II, 31-82, at 63.

<sup>53</sup> Vanhaverbeke et al., 2009, “What happened after the 7th century AD?” 181.

connection to Cyprus, but rather of participation in a wider regional exchange network connecting all the areas where they have been found.<sup>54</sup> At the end of Chapter 6, I suggested that this particular network of exchange, which in the eighth century came to be defined by the loose assemblage of cooking pots and coarse wares described above, was the same network that had been previously defined by Cypriot Red Slip (CRS) ware. It survived past the seventh century, in contrast to networks dependent on the fiscal system, because its operation had always been driven by commercial rather than fiscal incentives.

Second, in this assemblage, handmade cooking pots are found in association with wheel-made cooking pots, and both display similarities with cooking pots from Cyprus and from elsewhere in the wider network just described. Though the simultaneous use of handmade and wheel-made vessels is not unheard of at Sagalassos, it certainly contrasts with the situation of the Roman period, when the easy access to high-quality wheel-made vessels, including those produced right at Sagalassos itself (Sagalassos Red Slip ware) and those imported from farther away, made handmade vessels obsolete. This association may indicate that both the handmade pots and the wheel-made pots were locally made – for why would inhabitants make and use inferior cooking pots (inferior in that they are non-kiln-fired) if better (wheel-made, kiln-fired) ones were available through importation? (Though perhaps they *were* imported but only in small quantities.) The authors conclude that both pots are not imports but local imitations in the “Cypriot” tradition, and use this point to argue that inhabitants had to be self-sufficient now that longer-distance trade networks had broken down.<sup>55</sup> In contrast, J. Poblome and others have suggested that most of the wares of this assemblage “do not seem to be of local/regional

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<sup>54</sup> J. Poblome et al., 2010, “Sic transit gloria mundi. Does it really? Wasting seventh century AD Sagalassos (SW Turkey),” in S. Menchelli, S. Santoro, M. Pasquinucci, and G. Guiducci (eds.), *LRCW 3: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry: Comparison between the Western and Eastern Mediterranean*, vol. 2, BAR Int. Ser. 2185 (Oxford) 791-801, at 793-94.

<sup>55</sup> Vionis et al., 2009, “Ceramic continuity and daily life,” 203.

signature” but were rather imported.<sup>56</sup> Assuming the pots are locally-made imitations of regional forms, the situation here would parallel that in the Balbourike, where Dhiorios-type and Brittle Ware cooking pots have been found produced in what appears to be local fabrics.<sup>57</sup>

Third, the four identified ware-types at Sagalassos are all kitchen wares, vessels used for food preparation and short-term storage; in other words, there is a notable absence of open table wares.<sup>58</sup> This absence is especially striking in Sagalassos because of the town’s long tradition of local fine ware production (Sagalassos Red Slip ware), examples of which can be found in contexts as late as the seventh century, and it has been suggested that the local/regional tradition must have collapsed in order for this seventh-to-eighth-century assemblage to “take hold” at Sagalassos.<sup>59</sup> The pattern of an increase in the proportion of food preparation vessels (including the Dhiorios- or Cypriot-type cooking pot) to table wares has also been observed at the town and territory of Balboura in the sixth to eighth centuries, especially at rural sites, which J. J. Coulton interprets as either “a decline in the formalities of dining” or a shift toward pastoralism (see Chapter 6).<sup>60</sup> The team at Sagalassos interprets the predominance of locally made kitchen wares over table wares in more far-reaching terms. To them, it is emblematic – along with the predominance of locally made over imported wares just noted – of a gradual shift in production mode from “Roman mass-produced and customised wares (that started to disappear from the market) to non-specialised local/regional production (that started to satisfy basic household needs)”; in other words, it demonstrates “general decline in trade, rural and/or urban life” in

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<sup>56</sup> Poblome et al., 2010, “Sic transit gloria mundi,” 793-94.

<sup>57</sup> Balboura: Armstrong, 2012, “Survey pottery,” II, 63. See Chapter 6.

<sup>58</sup> Vionis et al., 2009, “Ceramic continuity and daily life,” 202.

<sup>59</sup> Poblome et al., 2010, “Sic transit gloria mundi,” 794. The context discussed by Poblome et al. dates to the (early sixth)/seventh century and comes from small Room 2 in the North-East Building at the northeast corner of the Upper Agora of Sagalassos, in which occupational waste and food remains were regularly dumped.

<sup>60</sup> Coulton, 2012, *The Balboura Survey*, I, 171; II, 240 table 19.9. Or, indeed, it could result from the use of dishes and platters made from perishable materials such as wood (S. Herbert).

post-classical Sagalassos, and perhaps the wider region as a whole.<sup>61</sup> This overarching trend – the predominance of locally made kitchen wares – appears not only in southwest Asia Minor but in other regions as well, such as Cyprus, and seems to be one defining characteristic of the changes in material standards of living apparent during the seventh century.<sup>62</sup>

### **B.iii. Environmental research**

Environmental research in and around the site of Sagalassos is broad in scope and interdisciplinary in design, and includes studies in the geology, geomorphology, palynology, archaeobotany, and zooarchaeology of the city and the wider region. Pollen studies are especially well represented and will form the bulk of the discussion here; in some cases, charcoal, non-pollen palynomorph, and other palaeoenvironmental data are available and will be discussed as well. Sediment cores with pollen data, and sometimes other remains, have been obtained from four marshy or lacustrine valleys in the territory surrounding Sagalassos: Ağlasun, Çanaklı, Gravgaz, and Bereket (see **fig. 7.1**). Since no radiocarbon ages are available for the Çanaklı core, nor for the travertine sections at Başköy (from which pollen was extracted), these will not be considered in the current discussion.<sup>63</sup> Pollen has also been collected at the city site itself and will be treated here briefly.

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<sup>61</sup> Vionis et al., 2009, “Ceramic continuity and daily life,” 203.

<sup>62</sup> R. S. Gabrieli, M. P. C. Jackson, and A. Kaldekkı, 2007, “Stumbling into the darkness: Trade and life in post-Roman Cyprus,” in M. Bonifay and J.-C. Tréglia (eds.), *LRCW 2: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*, vol. 2, BAR Int. Ser. 1662 (Oxford) 791-801.

<sup>63</sup> These are, nevertheless, important sources of palaeoenvironmental data. For the Çanaklı core, see M. Vermoere, S. Bottema, L. Vanhecke, M. Waelkens, E. Paulissen, and E. Smets, 2002, “Palynological evidence for late-Holocene human occupation recorded in two wetlands in SW Turkey,” *The Holocene* 12.5: 569-84. For the travertine section at Başköy, see M. Waelkens et al., 1999, “Man and environment in the territory of Sagalassos, a classical city in SW Turkey,” *Quaternary Science Reviews* 18: 697-709, at 702-5.

The multiple cores obtained at Ağlasun, Gravgaz, and Bereket have been extensively studied, and details beyond the scope of the current discussion can be found in a number of publications.<sup>64</sup> Of particular relevance to the questions posed here are the nature and timing of the end of the Beyşehir Occupation (BO) Phase, that period of intensive agro-pastoral activity revealed in pollen sequences from all across Turkey somewhere within the date range of about 1500 BCE to 800 CE (see Chapter 3), and its connection to changes in population and settlement patterns as revealed by survey data. Pollen counts for identified taxa are represented as percentage values of the pollen sum for each layer analyzed. Human activity around the coring sites is examined by studying proportions of primary anthropogenic indicators (intentionally cultivated species) and secondary anthropogenic indicators (species favored or introduced by human activity, such as grasses that thrive on disturbed soil or those well-suited for pasturage).<sup>65</sup> These are the hallmarks of the BO Phase (see **fig. 3.3**). For this region, primary anthropogenic indicators may include cultivated trees such as *Olea europaea* (olive), *Juglans regia* (walnut), *Castanea sativa* (chestnut), *Fraxinus ornus* (manna ash), and *Prunus*, as well as *Vitis vinifera* (grapevine) and cereals. Secondary anthropogenic indicators may include wild grasses (Cerealia

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<sup>64</sup> For Ağlasun, see M. Vermoere, 2004, *Holocene Vegetation History in the Territory of Sagalassos (Southwest Turkey): A Palynological Approach*, SEMA 6 (Turnhout); J. Bakker, E. Paulissen, D. Kaniewski, V. De Laet, G. Verstraeten, and M. Waelkens, 2012, "Man, vegetation and climate during the Holocene in the territory of Sagalassos, western Taurus mountains, SW Turkey," *Vegetation History and Archaeobotany* 21.4-5: 249-66. For Gravgaz, see Vermoere et al., 2002, "Palynological evidence for late-Holocene human occupation"; M. Vermoere et al., 2002, "Late Holocene local vegetation dynamics in the marsh of Gravgaz (southwest Turkey)," *Journal of Paleolimnology* 27.4: 429-51; Bakker et al., 2012, "Man, vegetation and climate"; J. Bakker, D. Kaniewski, G. Verstraeten, V. De Laet, and M. Waelkens, 2012, "Numerically derived evidence for late-Holocene climate change and its impact on human presence in the southwest Taurus Mountains, Turkey," *The Holocene* 22.4: 425-38; J. Bakker et al., 2013, "Climate, people, fire and vegetation: New insights into vegetation dynamics in the eastern Mediterranean since the 1st century AD," *Climate of the Past* 9: 57-87. For Bereket, see D. Kaniewski, E. Paulissen, V. De Laet, K. Dossche, and M. Waelkens, 2007, "A high-resolution Late Holocene landscape ecological history inferred from an intramontane basin in the Western Taurus Mountains, Turkey," *Quaternary Science Reviews* 26: 2201-18; Bakker et al., 2012, "Man, vegetation and climate"; Bakker et al., 2013, "Climate, people, fire and vegetation."

<sup>65</sup> Primary and secondary anthropogenic indicator species for this region have been determined by S. Bottema and H. Woldring, 1990, "Anthropogenic indicators in the pollen record of the eastern Mediterranean," in S. Bottema, G. Entjes-Nieborg, and W. van Zeist (eds.), *Man's Role in the Shaping of the Eastern Mediterranean Landscape* (Rotterdam) 231-65. See also the section on the Beyşehir Occupation Phase in Chapter 3.

pollen type, such as *Aegilops*), *Plantago lanceolata*, *Sanguisorba minor*, *Polygonum aviculare* type, *Polygonum cognatum* type, *Rumex acetosella* type, *Centaurea solstitialis* type, *Mercurialis annua*, and *Eryngium campestre*. In cores from around Sagalassos, the BO Phase is indicated by increases in the pollen percentage values for some number of these species, as well as by increases in pollen from oak, both deciduous (especially *Quercus cerris* type) and evergreen (especially *Quercus coccifera* type), and increase in local wetland species (e.g., *Carex*, *Apium/Berula* type, *Sparganium/Typha angustifolia*).<sup>66</sup> Agriculture is indicated by high percentages of cultivated species; pastoralism, by an increase in the proportion of meadow steppe species over species indicative of agriculture or forest. Animal grazing at the coring site itself may also be indicated by the presence of coprophilous fungi.<sup>67</sup>

Since some of the types of landscape change indicated by the palaeoenvironmental remains from these sediment cores (e.g., vegetation patterns, fire, erosion) may result either from changes in climate, which work on regional and supra-regional scales, or from human activity, which most often operates on a local scale, or indeed from some combination of the two, the best way to try to determine the role of local human activity is to compare results from locations located in close enough proximity that they would have been affected by the same changes in climate. They may still have been affected in different ways (since one location, for instance, may be higher in elevation than others), but this is one way to place some degree of control on climate as variable affecting landscape change. What do the cores from the Ağlasun, Gravgaz, and Bereket valleys reveal about the relationship between landscape change, climate, and human activity in the region around Sagalassos?

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<sup>66</sup> Bakker et al., 2012, “Man, vegetation and climate,” 251.

<sup>67</sup> Bakker et al., 2012, “Man, vegetation and climate,” 251.

### *Palaeoenvironmental evidence from the region*

A small number of radiocarbon dates were obtained for the three Ağlasun cores, making them less chronologically sensitive indicators of landscape change than the cores from Gravgaz and Bereket (**fig. 7.11**). At Ağlasun the BO Phase begins earlier and ends later than at the other two valleys by several centuries in each direction, starting sometime between 800 and 500 BCE and ending around 1000 CE, even though it is located closest to Sagalassos.<sup>68</sup> To some extent this difference in timing may be the result of the problems with the radiocarbon dates from the Ağlasun cores, but it is probably a real difference to be explained by other, climatic and/or human, factors. Here the BO Phase is indicated by increased percentages of secondary anthropogenic indicators and an increase in oak woodlands, which the team suggests were used as grazing grounds for pigs, though this proposal may be something of an over-explanation.<sup>69</sup>

Data from two cores from the Gravgaz marsh (1215 masl; 25 km southwest of Sagalassos) published in 2002 have recently been supplemented with data from a new core obtained, along with new coring at Bereket, as part of a program of palaeoenvironmental research with a special interest in the late and post-Roman periods (**fig. 7.12**).<sup>70</sup> The second of three pollen assemblage zones identified in the two earlier cores corresponds to the BO Phase, here characterized by an increase in the primary anthropogenic indicator species olive (*Olea europaea*), walnut (*Juglans regia*), and *Fraxinus ornus* (manna ash); the others (chestnut and grapevine) are not well represented (though *Vitis vinifera* is largely self-pollinating, so its pollen

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<sup>68</sup> For the Ağlasun cores in detail, see Vermoere, 2004, *Holocene Vegetation History in the Territory of Sagalassos*. These start and end dates are from Bakker et al., 2012, “Man, vegetation and climate,” 253, 255.

<sup>69</sup> Bakker et al., 2012, “Man, vegetation and climate,” 258.

<sup>70</sup> Related largely to the work initiated by J. Bakker as part of his dissertation research: J. Bakker, 2012, *Late Holocene Vegetation Dynamics in a Mountainous Environment in the Territory of Sagalassos, Southwest Turkey (Late Roman till Present)* (Ph.D. Thesis, Katholieke Universiteit Leuven). For the articles presenting this research, see the works cited by Bakker et al. in the current discussion.

percentages are always low).<sup>71</sup> This phase also contains high values of oak (both deciduous and evergreen) pollen and of grasses considered secondary anthropogenic indicators. Cereals are also present. In these cores, the BO Phase ends sometime between 540 and 810 CE. The succeeding pollen assemblage zone is characterized by a striking increase in and dominance of pine pollen percentage values, concurrent with a decrease in cultivated trees and deciduous and evergreen oak, perhaps indicating local deforestation. The overwhelming dominance of pine is usually interpreted as a result of over-grazing and land degradation (more on this interpretation below).<sup>72</sup>

In the more recent core from Gravgaz, the BO Phase is manifest as well, beginning between 400 and 260 BCE, and with a slightly more precise end-date of the mid-seventh century.<sup>73</sup> Higher chronological resolution allows the authors to identify changes within the BO Phase. From the late third to the mid-seventh century (that is, the period leading up to the end of the BO Phase), the cultivated trees olive, walnut, and chestnut (*Castanea sativa*, which was barely present in the two earlier cores) gradually decrease, as species indicative of moist deciduous woodland (e.g., *Populus*, *Platanus*, *Alnus*), meadows (e.g., *Sanguisorba*, *Plantago*, *Artemisia*), and pine forest gradually increase. (Interesting to note is a short period during the second half of third century, when cereals and olive disappear and then return but in lower values.) Around 640 CE, olive and cereal cultivation end at Gravgaz, marking the local end of the BO Phase. After that, taxa indicating an open, dry shrub-steppe and maquis landscape appear; percentage values of pine fluctuate but remain consistently high until the beginning of

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<sup>71</sup> Unless noted otherwise, all information presented here on the two earlier cores from Gravgaz (G96 and G99) is from Vermoere et al., 2002, "Palynological evidence."

<sup>72</sup> E.g., S. Bottema and H. Woldring, 1995, "The environment of classical Sagalassos: A palynological investigation," in M. Waelkens and J. Poblome (eds.), *Sagalassos III. Report on the Fourth Excavation Campaign of 1993*, Acta Archaeologica Lovaniensia Monographiae 7 (Leuven) 327-340.

<sup>73</sup> Unless noted otherwise, all information presented here on the recent core Gravgaz (SA06EPB01) is from Bakker et al., 2013, "Climate, people, fire and vegetation."

the 10<sup>th</sup> century. Between the mid-tenth and mid-thirteenth century, there is an increase in secondary anthropogenic indicators, including indicators of grazing, as well as a decrease in dry steppe species and evidence for limited cereal cultivation. To the team, these trends suggest a resurgence of human activity in the middle Byzantine period concentrated mostly on animal herding but with some cereal agriculture.

Since the chronology was too imprecise in the upper portion of the early cores obtained at Bereket basin (1410-1430 masl, 11 km southwest from Gravgaz; 36 km southwest of Sagalassos) to make claims related to the landscape history from the seventh century and after, a new core was recently obtained to supplement and refine the earlier results.<sup>74</sup> The pollen, charcoal, and sediment record from the new Bereket core provides uniquely high-resolution evidence of biennial-to-decadal landscape change. At Bereket the BO Phase begins around 280 CE, comparable to the record at Gravgaz, but ends much earlier than in any other record from around Sagalassos, sometime in the early fourth century; the end-date of 400 CE based on the early cores has since been revised to 300-350 CE after study of the more recent core. According to data from the recent core, the end of the BO Phase is ushered in during the mid-third century, when olive cultivation ends, arboriculture overall diminishes, and species indicative of grassy steppe gradually take its place. At the same time, there are indications that some of the valley becomes marshy or flooded: a drop in dung-signaling *Sporormiella*, an increase in the presence of a fungus (T200) that grows on water-living helophytes, and high percentage values of Poaceae, perhaps indicating reeds. The early and recent cores at Bereket demonstrate that the change in human activity indicated by the end of BO Phase around 300 CE was followed by a regeneration of the basin's "natural" vegetation – that is, vegetation similar to what had preceded

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<sup>74</sup> Unless noted otherwise, all information presented here on the earlier cores from Bereket (BKT1/2) is from Kaniewski et al., 2007, "A high-resolution Late Holocene landscape ecological history"; and all information on the recent core (SA09JBDrill02) is from Bakker et al., 2013, "Climate, people, fire and vegetation."

the first major human disturbances in the region around 5,000 years ago – of deciduous oak, as part of a probable riparian woodland located near the coring site until around 650 CE.<sup>75</sup>

In the seventh century, the trend toward moister conditions that began in the mid-third century began to reverse.<sup>76</sup> The sediment unit corresponding to the seventh century is rapidly deposited and contains pollen indicating open, dry vegetation. This unit is followed by one containing species possibility indicating the initial stages of secondary afforestation.

Macrobotanical remains from this layer include leaf and wood remains from deciduous trees and grasses, suggesting that what had been a marshy environment was being replaced by grasses and riparian woodland. Together these changes, as well as the disappearance of certain aquatic plant species and the appearance of a sedge fungus (clasterosporium), suggest desiccation of the marshy wetland. Pollen percentages for pine forest become increasingly important until they dominate at the top of the zone bounded by the mid-seventh and mid-tenth centuries. Beginning in the mid-tenth century, there is an increase in secondary anthropogenic indicators, riparian woodland taxa, and aquatic plant taxa, similar to the concurrent evidence from Gravgaz, though here at Bereket there is less indication of crop cultivation than at Gravgaz. As in the pollen record from the other valleys, pine becomes increasingly dominant

In addition to these interpretations of the botanical remains, mostly pollen, the research team identifies sedimentological parameters of the sediment cores from Gravgaz and Bereket, especially organic matter and calcium carbonate content.<sup>77</sup> Two seemingly synchronous changes appear at both Gravgaz and Bereket, which suggest to the authors that these changes operated on a regional rather than local scale. First, during second half of third century, there is a shift to moister environmental conditions, indicated by increases in organic matter content. Second is a

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<sup>75</sup> Bakker et al., 2012, “Man, vegetation and climate,” 261.

<sup>76</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 72-74.

<sup>77</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 74-75.

thirteenth-century shift to a drier environment. Before that thirteenth-century shift, however, the two locations undergo different local trends: at Bereket, clayey peat continues from the sixth to the thirteenth century, demonstrating that conditions are still moist. At Gravgaz, local humidity fluctuates: it increases from the early third century till 700 CE but starts to get drier (organic matter decreases) during the eighth century.

### *Discussion*

J. Bakker and the other researchers responsible for analyzing these sediment cores are trying to tease out relationships between climate, vegetation/landscape, and human impact. One of their main goals is to determine whether changes observed in the botanical and sediment records are the result of regional or supra-regional changes in climate, local changes in human activity, or some combination of the two. In so doing, they offer a major conclusion: the presence and timing of vegetation changes are linked to moisture availability, which in turn is driven by well-defined European climatic shifts.<sup>78</sup> Essentially, that is, both vegetation/landscape change and human impact in this region have been primarily driven by climate change. The basis of this argument is the co-occurrence of those changes in vegetation, outlined above, relating to wet or dry conditions, on the one hand, and major known climatic shifts, as indicated by independent proxies for Europe and the Middle East, on the other. The following major climatic periods defined by Bakker et al. for southwest Turkey correspond with well-known climatic periods for Europe and the Middle East as follows:<sup>79</sup>

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<sup>78</sup> Bakker et al., 2012, “Numerically derived evidence”; Bakker et al., 2012, “Man, vegetation and climate”; Bakker et al., 2013, “Climate, people, fire and vegetation.”

<sup>79</sup> Bakker et al., 2012, “Numerically derived evidence,” 432-36.

Roman Wet Period (beginning of BO Phase to 650 CE) = Roman Climatic Optimum

Early Medieval Dry Period (650-940 CE) = Dark Ages (Early Middle Ages) Cold Period

Medieval Wet Period (940-1280 CE) = Medieval Climate Anomaly

Post Medieval Dry Period (1280-1710 CE) = Little Ice Age

This proposed relationship provides the foundation for a number of more-detailed arguments made by the authors regarding the region around Sagalassos. They note that the period of moist conditions between the mid-third and mid-seventh century evidenced by the botanical and sediment records at Gravgaz and Bereket corresponds with the last part of the so-called Roman Climatic Optimum (see Chapter 2).<sup>80</sup> So it seems odd, they note, that arboriculture and cereal cultivation appear to decrease during this period at both Gravgaz and Bereket in favor of pastoralism, at a time when the warm, wet climate would have been amenable to intensive agriculture, and when in other parts of the eastern Mediterranean agriculture persisted or even expanded. Adding to the intrigue are the results of recent intensive survey at Bereket, which demonstrate that the population of occupied sites in this valley did not decrease at this time (that is, the fourth through sixth century).<sup>81</sup> At Bereket, large-scale agriculture never returned; at Gravgaz, it returned to a limited extent in the tenth century. Bakker et al. suggest the increase in moist conditions beginning in the mid-third century may have resulted in encroachment by marshes and wetlands into arable land on the valley bottoms at Bereket and Gravgaz, reducing their suitability for growing crops.<sup>82</sup> However, the same pattern did not play out everywhere in the region: in the valley of Ağlasun, an increase in wetlands does not correspond with a decrease in crop cultivation in the local pollen record, suggesting that the changes at Bereket and Gravgaz

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<sup>80</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 75-76.

<sup>81</sup> Kaptijn et al., 2013, “Societal changes in the Hellenistic, Roman and early Byzantine periods,” 79.

<sup>82</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 76.

may be very local reactions to environmental change, rather than indicative of widespread (territory- or region-wide) changes in agro-pastoralist strategies.<sup>83</sup>

Just as they relate the vegetation and sediment record of the mid-third to mid-seventh century to the wet, warm Roman Climatic Optimum, so Bakker et al. connect the changes of the mid-seventh to mid-tenth century to the dry, cold Dark Ages (or Early Middle Ages) Cold Period. To summarize the points presented above, the beginning of an aridification trend is suggested by pollen and decreasing organic matter content in the sediment cores from the eighth century to about 900 CE at Gravgaz, and by pollen and an influx of sediments rich in calcium carbonate around 650 CE at Bereket.<sup>84</sup> Although recent survey results from the region suggest there was greater occupation at this time than previously thought (as new sites previously unrecorded are now made visible by more-intensive survey and by recognition of early Byzantine pottery types), the picture of overall population decline still stands. Bakker et al. link the shift in post-seventh-century settlement pattern (fewer sites overall, plus a change from large nucleated settlements to small settlements) to a shift from agriculture to semi-pastoral or pastoral livestock herding, both caused by a combination of climatic deterioration toward cold, dry conditions (the Dark Ages Cold Period) and on-going Arab incursions beginning in the seventh century.<sup>85</sup>

The authors consider the increasing dominance of pine pollen after the seventh century to have been much more gradual in Gravgaz and Bereket than previously thought. In the ongoing debate over what these high percentages of pine pollen actually signify – either rapidly growing

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<sup>83</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 76. For increasing wetlands around Sagalassos, they cite evidence of wetland taxa in late imperial and early/middle Byzantine archaeobotanical assemblages from the city, as well as evidence that domestic animals had diets rich in wetland plants, presented in B. T. Fuller et al., 2012, “Isotopic reconstruction of human diet and animal husbandry practices during the Classical-Hellenistic, imperial, and Byzantine periods at Sagalassos, Turkey,” *American Journal of Physical Anthropology* 149.2: 157-71, at 167.

<sup>84</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 76.

<sup>85</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 76.

pine forests, since pine is an early pioneer of abandoned land and is tolerant of dry conditions, or simply an open landscape, the combined pollen signal of which is not adequately abundant or well-dispersed to compete with the pine pollen signal – the authors support the former based on the signals observed from modern pollen samples collected in comparable environments.<sup>86</sup> They argue, furthermore, that this pine dominance may be the result of soil degradation caused by animal grazing, since the lack of deciduous oaks could be explained by their intolerance of degraded, calcareous soils, and any deciduous and evergreen oaks that could survive may have been kept in check by grazing, which would have reduced their pollen production.<sup>87</sup>

Geomorphological studies demonstrate that sediment deposition in the region decreased near the end of the BO Phase and never increased again, even during subsequent periods of increased human activity, suggesting that a majority of available soils had already eroded from mountainsides.<sup>88</sup> In other words, increase in human activity as indicated by the pollen record as the BO Phase also coincides with dramatic increase in deposition rates, but the chronological resolution is not precise enough to determine cause and effect: that is, before or after population shifts.<sup>89</sup>

The argument that pine-dominated woodlands resulted from soil degradation, which was in turn caused by overgrazing by animals, is a reasonable and commonly-cited interpretation of recorded or assumed instances of landscape deterioration throughout the eastern Mediterranean.

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<sup>86</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 77. For modern pollen precipitation studies, see e.g., M. Vermoere et al., 2001, “Modern pollen studies in the territory of Sagalassos (southwest Turkey) and their use in the interpretation of a late Holocene pollen diagram,” *Review of Palaeobotany and Palynology* 114: 29-56.

<sup>87</sup> Bakker et al., 2012, “Man, vegetation and climate,” 261.

<sup>88</sup> B. Dусar, G. Verstraeten, B. Notebaert, and J. Bakker, 2011, “Holocene environmental change and its impact on sediment dynamics in the Eastern Mediterranean,” *Earth-Science Reviews* 108.3–4: 137-57; B. Dусar et al., 2012, “Sensitivity of the Eastern Mediterranean geomorphic system towards environmental change during the Late Holocene: A chronological perspective,” *Journal of Quaternary Science* 27.4: 371-82.

<sup>89</sup> S. Six et al., 2008, “Late Holocene sediment characteristics and sediment accumulation in the marsh of Gravgaz: Evidence for abrupt environmental changes,” in P. Degryse and M. Waelkens (eds.), *Sagalassos VI: Geo- and Bio-archaeology at Sagalassos and in its Territory* (Leuven) 189-208.

Still, here this line of reasoning is a hypothesis, not a proven fact. Furthermore, it remains unclear which animal or animals are to blame, since although sheep and goats are usually pinpointed as the culprits of overgrazing, cattle too could have played some role, and indeed all three appear in the faunal record at Sagalassos.

### *Palaeoenvironmental evidence from archaeological contexts*

Faunal, macrobotanical, and pollen remains collected from excavated contexts at the city site cannot be used to reconstruct larger-scale changes in vegetation or climate, but they can tell us something about human use of natural resources and changes in diet. Because these data come from the city site, results based on their analysis cannot be applied blindly to settlements across the region. However, it would be foolish to omit them for this reason alone, since they provide depth to the far-flung palaeoenvironmental research in the region. Systematically collected and analyzed assemblages of plant and animal remains from post-Roman archaeological contexts are relatively rare in Asia Minor, and the fact that the assemblages from Sagalassos can be considered in association with survey and environmental data makes them even more valuable. In addition, to the extent that Sagalassos itself began to look and act more like a rural village than an urban center after the sixth century, these data may actually serve as a reasonably accurate representation of subsistence strategies at settlements throughout the countryside in the post-Roman period, which have not been similarly excavated.

Analysis of thousands of faunal remains collected from across the excavated area of Sagalassos demonstrates changes in the proportions of pig, sheep/goat, and cattle remains recovered from the city over time (**fig. 7.13**).<sup>90</sup> In the early-middle imperial period (25 BCE to 300 CE), sheep/goat predominate, followed by cattle and then pig. In the late imperial period

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<sup>90</sup> Fuller et al., 2012, “Isotopic reconstruction of human diet and animal husbandry practices,” 160 fig. 3.

(300-450 CE), the proportion of cattle remains almost doubles, solely at the expense of sheep/goat, while pig stays the same. In the early Byzantine period (450-600 CE), the proportions readjust roughly to what they had been in the early-middle imperial period, with a slightly lower proportion of cattle than in that period, and remain this way in the middle Byzantine period (800-1200 CE). What is interesting here is that the proportions actually remain roughly the same in all periods, with the striking exception of the enormous rise in the proportion of cattle remains and corresponding drop in the proportion of sheep/goat remains in the late imperial period. From this perspective, the changes of the period 450-600 CE represent a return to the pattern of animal husbandry and human diet that had obtained before the anomalous late imperial period and that would persist thereafter. The ratio of sheep/goat to cattle remains is a good proxy for seasonally transhumant pastoralism,<sup>91</sup> as well as representing a more risk-sensitive subsistence strategy, since sheep and goats are able to forage on a wider range of landscapes and require less water and fodder than cattle.<sup>92</sup> However, this return to pre-existing conditions is itself meaningful, for it implies that something – access to appropriate fodder, economic structures, tastes? – had changed. Unfortunately, the gap of remains from contexts dated to the period between 600 and 800 CE may be artificial and means that we lack insight into these critical centuries.

The charred plant remains retrieved by machine flotation at Sagalassos also provide insight into what plants inhabitants ate and used over time. In comparison to the proportions of main staple crops in the late imperial period, the early Byzantine period (450-600 CE) shows a reduction by half of wheat, bread wheat, and hulled barley, while the proportion of (presumably

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<sup>91</sup> N. F. Miller, M. A. Zeder, and S. R. Arter, 2009, "From food and fuel to farms and flocks: The integration of plant and animal remains in the study of the agropastoral economy at Gordion, Turkey," *Current Anthropology* 50: 915-24.

<sup>92</sup> J. M. Marston, 2011, "Archaeological markers of risk management," *Journal of Anthropological Archaeology* 30: 190-205, at 195.

hull-less) barley more than doubles, and millet appears for the first time, becoming even more prevalent in the middle Byzantine period (**fig. 7.14**).<sup>93</sup> The authors suggest millet was used as an animal fodder, especially for cattle (see below), but it seems just as likely that inhabitants at Sagalassos consumed some portion of this hardy grain, especially given the fact that more than twice as many sheep and goat remains as cattle remains were found at the site in this period (though presumably variation in taphonomy and retrieval could warp the veracity of these numbers). The higher ratio of barley (a lower quality, drought-resistant grain) to wheat (a higher quality, water-sensitive grain) in the early Byzantine period compared to the preceding late imperial suggests that something compelled inhabitants at Sagalassos to adopt a more risk-sensitive agricultural strategy.<sup>94</sup> Interesting to note for the middle Byzantine period is a resurgence of wheat and reduced proportion of barley, in addition to the growing importance of millet – signs of a limited expansion of wheat cultivation and population, as suggested by the pollen record from Gravgaz and pottery evidence from Sagalassos and the territory (see above)?

Carbon ( $\delta^{13}\text{C}$ ) and nitrogen ( $\delta^{15}\text{N}$ ) stable isotope ratio analysis of bone collagen from the faunal and human remains collected at Sagalassos help determine what inhabitants and animals ate and therefore where animals were kept or grazed.<sup>95</sup> Cattle have the highest  $\delta^{13}\text{C}$  values, statistically distinct from the other domesticated animals, indicating a diet including  $\text{C}_4$  plants, likely in the form of millet and wetland pasture; these foddering and grazing practices become increasingly important in the early Byzantine period. A decrease in  $\delta^{15}\text{N}$  values of sheep and goats between the imperial and Byzantine periods suggests that these animals were grazed at different locations around Sagalassos during these two times, and that there was some overlap in

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<sup>93</sup> Fuller et al., 2012, “Isotopic reconstruction of human diet and animal husbandry practices,” 162 fig. 5.

<sup>94</sup> Marston, 2011, “Archaeological markers,” 195.

<sup>95</sup> Fuller et al., 2012, “Isotopic reconstruction of human diet and animal husbandry practices,” 163-68, with accompanying figures, for the information that follows.

their herding and grazing practices. Separate research on the analysis of trace elements in animal bones identified changes in lead and copper contents over time: cattle and goat bones had elevated heavy metal content in the early-middle imperial and early Byzantine periods, indicating they were kept or herded within the polluted area around the city, in contrast to the late imperial period, when lower heavy metal concentrations suggest they were grazed or brought in from farther away.<sup>96</sup>

Pollen profiles obtained from the potters' quarter and a latrine in the Roman baths at Sagalassos have also been analyzed to complement the pollen studies of sediment cores from marsh and lake environments in the region discussed above.<sup>97</sup> The profile from the potters' quarter was broken down into three pollen assemblage zones and dated by reference to potsherds embedded in the profile and with radiocarbon dating. The earliest zone dates to the late Hellenistic period and is characterized by a dominance of *Artemisia* pollen with relatively high pollen percentages of *Vitis vinifera* (grapevine) and *Juglans regia* (walnut). In contrast to the pollen record from Gravgaz and Çanaklı (the latter not discussed in detail above due to lack of radiocarbon dates), pollen percentage values of *Olea europaea* were relatively low, suggesting that olives were not cultivated near the city. Continuous cultivation of grapevine and walnut near the city is indicated by the succeeding pollen assemblage zone, dated to the late Hellenistic/early Roman periods. The presence of *Pinus* and *Cedrus libani* forests located near the collection site is also suggested by the pollen record. As recorded in the cores from Gravgaz and Çanaklı, pine pollen dominates the most recent zone, perhaps indicating the absence of other

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<sup>96</sup> P. Degryse, P. Muechez, B. De Cupere, W. Van Neer, and M. Waelkens, 2004, "Statistical treatment of trace element data from modern and ancient animal bone: Evaluation of Roman and Byzantine environmental pollution," *Analytical Letters* 37: 2819-34; H. Vanhaverbeke et al., 2011, "Urban-rural integration at ancient Sagalassos (SW Turkey). Archaeological, archaeozoological and geochemical evidence," *Archaeofauna* 20: 73-83.

<sup>97</sup> M. Vermoere et al., 2003, "Pollen sequences from the city of Sagalassos (Pisidia, southwest Turkey)," *Anatolian Studies* 53: 161-73.

wind-pollinated trees. The seventh-century CE profile taken from a latrine in the Roman baths is dominated by *Pinus* and *Cedrus libani*, while also containing high percentage values for herbaceous plants that suggest to the authors a degraded, overgrazed landscape.

#### **B.iv. Discussion**

Beginning in the mid-fifth century, the number of sites in the territory of Sagalassos began to fall dramatically from its late-imperial-period height. Both larger settlements and single-household farmsteads were abandoned in favor of smaller settlements (villages or hamlets) on strategically located hill- or mountain-sides. The urban character of Sagalassos itself broke apart, but portions of the city remained inhabited as islands of occupation. New types of pottery appeared both at the city and rural sites: handmade and wheel-made kitchen wares predominated and demonstrate the importance of local and regional production centers and exchange networks, as interregional wares were no longer available.

Environmental research suggests that in the seventh century, the wet, warm climatic trend of the Roman period came to an end, gradually replaced by cold, dry conditions theoretically less favorable to agriculture. This climate shift may have been the primary factor behind a concurrent vegetation change from a wet, wooded environment to a dry, open landscape. But human activity played a role as well. The end of BO Phase of intensive agriculture (begins and ends at different times in the different valleys where pollen has been collected. This variation may be partially related to the effects of climate – since the Bereket basin, for instance, is higher in elevation than the other valleys – but it could also be the result of inhabitants' decision-making. Evidence for climate deterioration begins in the seventh century, a full three centuries

after the end of the BO Phase at Bereket around 300 CE. In addition, settlements in the valley continued to be occupied for centuries after 300 CE. These clues suggest that inhabitants of this valley intentionally moved along the spectrum of agropastoralism away from intensive agriculture and toward pastoralism for some other, human-motivated reason, either voluntarily or by necessity.<sup>98</sup>

The overall correlation between the end of the BO Phase and the drop in rural site numbers is important. This correlation tells us nothing about causation among the interconnected changes in evidence at this time: climate deterioration, landscape and vegetation change, and settlement decline and movement. However, it does suggest that the overall population of the region did decline, rather than simply move from the city into the countryside, since it indicates a large-scale abandonment of the kind of intensive agriculture required to maintain earlier population levels. Whether this decline was a result of greater mortality, lower birth rates, emigration, or some combination of these possibilities remains unclear. The possibility that semi-pastoral or pastoral livestock herding became more important, especially sheep and goat herding, may provide a clue to the changes in pottery types observed from the rural surveys and urban excavations, as inhabitants began to rely on different foods, as a result of what was probably a combination of cultural factors and practical considerations.

However, if a greater proportion of the population in the region was engaged primarily in (semi-) pastoral livestock herding as opposed to sedentary agriculture, these inhabitants would no longer be as visible through pottery collected by extensive or even intensive survey.<sup>99</sup> Thus

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<sup>98</sup> The research team views this apparent shift from crop cultivation to pastoralism as a “deliberate, rational decision,” perhaps an attempt at “economic specialisation” in livestock, most likely the cattle that became so prevalent in Sagalassos at this time (the late imperial period, 450-600 CE), an argument reinforced by the evidence for lower heavy metal concentrations in cattle bones for this period, suggesting cattle came from outside the polluted vicinity of Sagalassos: Kaptijn et al., 2013, “Societal changes in the Hellenistic, Roman and early Byzantine periods,” 91-92.

<sup>99</sup> I thank Robert Rosenswig for this insight.

the proposed shift from intensive crop cultivation to pastoralism might in part account for the drop in site numbers, and, pushing this line of reasoning to its full potential, might actually mean that the overall population did not drop as dramatically as it seems, but rather ceased to be visible archaeologically. For now, these conjectures must remain just that. However, it is heartening to consider the success of the Balboura survey in retrieving pottery known as Avlan Ware deposited presumably by nomadic pastoralists in the twelfth and thirteenth centuries, perhaps earlier.<sup>100</sup>

Certainly, as at least some members of the Sagalassos team wish to prove, we now know that there was no “occupational gap” in the countryside after the seventh century, or at least not a long-lasting one. Though the dating of the post-Roman pottery types is not exact, and it is not possible to tell on the basis of the pottery scatters what types of activities were going on at these sites or the extent of occupation, it seems probable that the true extent of post-seventh-century habitation in the landscape has been underestimated due to the low visibility of – and an openly admitted lack of familiarity on the part of surveyors with – post-Roman site types and materials, particularly ceramics.<sup>101</sup>

In the recent publications by members of the Sagalassos team, the authors’ goal is to prove that “after the collapse of complex urban life at Sagalassos from the later 6<sup>th</sup> century AD onwards,” the post-seventh-century “dark ages” were in fact not so dark at all in the countryside, but instead simply saw a return to self-sufficient “peer villages” in a pattern that had characterized the region for centuries before the appearance, growth, and multiplication of the Graeco-Roman city.<sup>102</sup> Is this a useful way of thinking about the major social changes of later

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<sup>100</sup> Armstrong, 2012, “Survey pottery,” II.

<sup>101</sup> Vanhaverbeke et al., 2009, “What happened after the 7th century AD?” 185.

<sup>102</sup> Vanhaverbeke et al., 2009, “What happened after the 7th century AD?” 186. Country life continued but still may have changed in the succeeding centuries. The authors note that in the seventh to ninth centuries, the settlements seem to be villages, located in particular around Sagalassos, itself the site of continued occupation among a handful of hamlets; however, in the tenth and eleventh centuries, villages seem to disappear, while smaller-sized settlements endure, often situated near a rural church.

antiquity? Rural settlement may have indeed recalibrated from a hierarchical pattern of city-village-hamlet-farmstead in the Roman period, to a heterarchical pattern of village-village-village-village (or hamlet-hamlet-hamlet-hamlet, or village-village-hamlet-hamlet) beginning in the seventh century.<sup>103</sup> But what did this change mean for people living in the countryside? And, more dramatically, what happened to all those people who had lived in the city? Even if life for the average rural inhabitant reverted to “normal,” the urban inhabitants had not escaped this change without some kind of trauma.

To look more closely at this apparent shift from a hierarchical to a heterarchical settlement pattern, the mid-fifth to mid-seventh century saw a decrease in the number of single-household farms, and a concurrent increase in the number of villages.<sup>104</sup> This settlement nucleation may also help explain the overall decrease in site numbers from the late imperial to the early Byzantine period (rather than simply population decline). Both nucleation and preference for strategic locations may be reactions to brigandage, violence, and insecurity in general.<sup>105</sup> This proposal is attractive because it seems to follow an intuitive logic of survival: faced with uncertainty, inhabitants nucleated and condensed themselves into key kernels of subsistence, villages and hamlets, that were more self-sufficient, mobile, politically and economically flexible, and adaptive than either towns or farmsteads. This trend does not mean that more-complex settlements – including real towns – ceased to exist across Asia Minor. As researchers at Sagalassos themselves point out, the existence of important administrative, commercial, or military communities at places such as Ancyra, Amorium, Hierapolis, and

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<sup>103</sup> C. L. Crumley, 1995, “Heterarchy and the analysis of complex societies,” in R. M. Ehrenreich, C. L. Crumley, and J. E. Levy (eds.), *Heterarchy and the Analysis of Complex Societies* (Arlington, VA) 1-6; ead., 2005, “Remember how to organize: Heterarchy across disciplines,” in C. S. Beekman and W. W. Baden (eds.), *Non-linear Models for Archaeology and Anthropology: Continuing the Revolution* (Aldershot) 35-50.

<sup>104</sup> Waelkens et al., 2006, “The late antique to early Byzantine city,” 238-39, 239 fig. 11, following Vanhaverbeke et al., 2004, “Late antiquity in the territory of Sagalassos.”

<sup>105</sup> For details, see, for example, Waelkens et al., 2006, “The late antique to early Byzantine city,” 239-40.

Pessinus throughout the so-called dark ages adds a layer of settlement complexity to the continuation of village life and reminds us that social complexity had not wholly collapsed.<sup>106</sup>

In fact, the resilience of Byzantine society is underscored not only by these continuing centers of complex society, which may have made little difference to a relatively remote area like that around Sagalassos, but also by evidence of continued rural settlement and a limited resurgence in human activity in the landscape beginning in the tenth century, perhaps earlier. Settlement is indicated by the presence of a middle Byzantine assemblage of common wares and glazed table wares dating from the early tenth to mid-thirteenth century found in excavations at Alexander's Hill next to Sagalassos and at nine rural sites.<sup>107</sup> As noted above, evidence for renewed human land use comes from the pollen record for Gravgaz and Bereket, which shows an increase in secondary anthropogenic indicators and, at Gravgaz, limited cereal cultivation.<sup>108</sup> The pollen suggests renewed human activity was focused primarily on animal herding but with some cereal agriculture; important to note is the absence of olive cultivation or other arboriculture. A similar resurgence of cereal cultivation and indicators of livestock herding in the later tenth to eleventh century has been observed in the pollen record from lake Nar in Cappadocia (see Chapter 8).<sup>109</sup> The annually laminated lake sediments (varves) of lake Nar constitute an even higher-resolution record than the biennial-to-decadal sediments of Bereket basin, and it is likely no coincidence that these two records reveal subtle diachronic changes in

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<sup>106</sup> Vionis et al., 2009, "Ceramic continuity and daily life," 201.

<sup>107</sup> Vionis et al., 2009, "Ceramic continuity and daily life"; eidem, 2009, "The hidden material culture of the Dark Ages"; Vanhaverbeke et al., 2009, "What happened after the 7th century AD?" 180-82.

<sup>108</sup> Bakker et al., 2013, "Climate, people, fire and vegetation," 77-78.

<sup>109</sup> A. England, W. J. Eastwood, C. N. Roberts, R. Turner, and J. F. Haldon, 2008, "Historical landscape change in Cappadocia (central Turkey): A palaeoecological investigation of annually laminated sediments from Nar lake," *The Holocene* 18.8: 1229-45; W. J. Eastwood, O. Gümüşçü, H. Yiğitbaşıoğlu, J. F. Haldon, and A. England, 2009, "Integrating palaeoecological and archaeo-historical records: Land use and landscape change in Cappadocia (central Turkey) since late antiquity," in T. Vorderstrasse and J. J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia* (Leiden) 45-70.

pollen percentage values not discernible in the lower-resolution records from other sites in Turkey.

In keeping with their overarching argument that climatic trends have been the main driver of landscape change in the region around Sagalassos, Bakker and the other researchers suggest that the tenth-century resurgence in agriculture and human activity at Bereket and Gravgaz was not simply part of the middle Byzantine social and economic revival made possible by administrative reforms and military success, but was more directly caused by “the amelioration of the climate [known as the Medieval Climate Anomaly] which acted as a catalyst, further enabling the already ongoing expansion of agriculture into areas previously less attractive for agricultural practices.”<sup>110</sup> This seems to be something of an over-explanation. The essential point to make is that no factor – be it administrative reforms and military success, or climate amelioration – can by itself bring about a resurgence of intensive human activity in a landscape. People are what is needed: some fundamental population surviving at the threshold level needed to maintain or increase in number, and along with them the knowledge of how to raise animals and cultivate the land. Now that new developments in the study of late antique and early-to-middle Byzantine pottery has made it possible to “see” previously invisible seventh-to-ninth-century occupation in and around Sagalassos, it is clear that this baseline population and agropastoral knowledge was adequately maintained during these seemingly dark centuries to make possible the resurgence of the tenth and succeeding centuries. More succinctly: resurgence was a manifestation of resilience – the capacity to withstand disturbance and preserve certain social structures.

Interesting comparisons can be made between the results of survey and environmental research from around Sagalassos and those of the Amuq and Kahramanmaraş valleys near

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<sup>110</sup> Bakker et al., 2013, “Climate, people, fire and vegetation,” 78.

Antioch (see Chapter 4). In both areas, researchers connect the apparent encroachment of wetlands to a decrease in agriculture, but only in the case of northwest Syria is the immigration of outsiders proposed as a causal factor. The situation around Sagalassos is a reminder that changes in land use need not imply the arrival of new communities with specialized knowledge of different landscapes and subsistence strategies. Secondly, periods of high sedimentation observed in both places correlate to periods of high population, but causation cannot be determined. The low resolution of geomorphological data and the difficulty of relating it to human activity within a given region are problems that continue to plague research throughout the Mediterranean and beyond.

### **C. CONCLUSIONS**

The following conclusions cover the results from research at Sagalassos as well as those of the projects in Lycia discussed in the previous chapter, since they are best considered together to draw out more meaningful conclusions. These surveys incorporate evidence from both the towns and the countryside surrounding them and reveal several overall trends for the time period of interest to us, especially the key centuries at the end of late antiquity: the sixth, seventh, and eighth centuries.

In all three areas, there was a drop in the number of occupied sites in the entire survey area over time. Important to reiterate is the fact that around Balboura, some sites were actually newly founded in the late seventh century and occupied into the eighth. There was also an increasing preference for living in hamlets or villages of, say, 7 to 15 households, rather than living in single-household farmsteads. In fact, farmsteads virtually ceased to exist. The main

urban center in each area became depopulated, so that it began to look more like a village. There was also a shift in activity from the main city to the countryside. For example, around Balbura, this shows up as a flip in the proportion of pottery from the city versus the countryside. That is, whereas in each century from the second century BCE to the fifth century CE, the total pottery sherd count for the city is greater than the total sherd count for the countryside, this long-standing rule flips in the sixth century, so that in the sixth, seventh, and eighth centuries, it is the total sherd count from the countryside that is greater.

Beginning in the sixth century, there is an increase in the proportion of food preparation vessels, and most are produced locally, over table wares. This happens in both the city and countryside. Another trend, beginning in the seventh century, is the new predominance of CRS over interregionally-exchanged ARS and PRS.

The population of each survey does seem to have gotten smaller. Inhabitants were not simply moving out of towns and into the countryside, or drawing together into more densely settled villages. Another important conclusion can be drawn from the flip in pottery predominance from city to countryside, which indicates a shift in investment, or a degree of equalizing between urban and rural settlements. As the settlement hierarchy of the Roman period broke down, the most common form of settlement was now the village or hamlet: these were self-sufficient communities, mobile, politically and economically flexible, and adaptive in the face of changing circumstances.

Most of the pottery used by people living in these areas was now locally or regionally made and exchanged, as many of the interregional exchange networks directly or indirectly dependent on the fiscal system appear to have shut down or contracted. New types of hand-made food preparation vessels such as cooking pots appeared, used simultaneously with other,

wheel-made types. In some places, the pottery assemblages are dominated by these cooking wares, as the kinds of table wares that had characterized earlier centuries virtually disappeared. The disappearance of these table wares could indicate changing dining practices, foods, or access to imports.

As in Lycia, the coarse kitchen ware assemblage of the seventh and eighth centuries found at Sagalassos and a number of surrounding rural sites demonstrates inhabitants' participation in a network of exchange connecting southwest Asia Minor, Cyprus, and the Levant beyond the seventh century – the same regional network, that is, on which CRS had circulated. The primary mechanism that had driven the movement of CRS was commerce, and it was this commercial impetus that remained intact beyond the seventh century – even as the fiscal system ruptured – and connected communities in areas as isolated as Sagalassos to the wider eastern Mediterranean through the so-called dark age.

Regarding the palaeoenvironmental evidence, the real determining factor of locally specific landscape change around Sagalassos seems to have been neither climate nor human activity alone, but rather the interaction between the two, and differed from valley to valley. Although we cannot attribute causation, the fact that the end of intensive agriculture as indicated by environmental data in general correlates in time with a gradual drop in the population as suggested by survey data is important, because it reinforces the conclusion that the overall population did in fact decrease in this region at the end antiquity, rather than simply move from the city into the countryside. The possibility that pastoralism became more important, especially sheep and goat herding, may provide a clue to the changes in pottery types observed from the survey data described earlier, as people began to rely on different foods, due to a combination of cultural factors and practical considerations. A greater investment in animal herding over

intensive agriculture also suggests a desire for increased mobility, since animals are mobile sources of food and forms of wealth, in the face of an unpredictable future.

## **CHAPTER 8**

### **COMPARATIVE CASE STUDIES**

This short chapter is structured like an appendix or gazetteer in that it presents a number of recent research projects in western Asia Minor and the central Anatolian plateau as case studies with which to compare and contrast the evidence from the main area of focus of the dissertation, southern Asia Minor and northwest Syria, in order to add nuance and depth to interpretations of that evidence. Many other relevant survey and environmental research projects have been conducted or are currently underway across Asia Minor. I have made targeted choices to explore the range of methods and approaches used while still keeping the discussion manageable. Conclusions based on these studies will be integrated into the discussion in Chapter 9.

#### **A. EASTERN TROAD**

Four seasons of fieldwork from 2004-2007 by the Granicus River Valley Survey Project have yielded results suggesting that settlement, and presumably population, increased dramatically from the early/mid-Roman to the late Roman period, primarily the fifth and sixth century, in the eastern Troad. The project covers the area around and between the Granicus and Aesepus rivers,

which flow through the eastern Troad into the Sea of Marmara (**fig. 8.1**).<sup>1</sup> The survey team carried out intensive fieldwalking and collection of all visible artifacts at specific locations deemed sites, many of which were tumuli rather than settlements.<sup>2</sup>

Naturally C. B. Rose, also head of the post-Bronze Age excavations at Troy, and other members of the survey team are interested in weaving together the settlement history of the survey region with that of the city of Ilion. However, since Ilion lies over 50 km beyond the western edge of the survey region, it will be necessary to study the area in between – that is, the western Troad – in comparable detail before any final conclusion can be drawn. A preliminary survey of the western Troad had indeed been carried out; the results are still sketchy, but even without intensive survey, the project has recorded a complex settlement pattern of farmsteads and villages in the late Roman period.<sup>3</sup>

Even when considered in isolation, however, the survey of the area in and between the Granicus and Aesepus river valleys in the eastern Troad has of course revealed important trends, including late Roman settlement expansion in contrast to the preceding early and mid-Roman periods. This increase is more marked in the flat area that stretches from the Sea of Marmara to the town of Biga, in contrast to the hilly area south of Biga. These conclusions are based on relative percentages of the total number of pottery sherds collected in each area. (Note that three field seasons of survey were devoted to the north area, and only one to the south.) In the flat area to the north, just over 1% of the (presumably, identifiable) ceramics are early to mid-Roman in date (mostly third century); 29% are late Roman (primarily the fifth and sixth century); and 14%

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<sup>1</sup> C. B. Rose, 2011, "Troy and the Granicus river valley in late antiquity," in O. Dally and C. Ratté (eds.), *Archaeology and the Cities of Asia Minor in Late Antiquity* (Ann Arbor, MI) 151-72; C. B. Rose, B. Tekkök, and R. Körpe, 2007, "Granicus River Valley Survey Project, 2004-2005," *Studia Troica* 17: 65-150; C. B. Rose and R. Körpe, 2008, "The Granicus River Valley Survey Project, 2006," *Araştırma Sonuçları Toplantısı* 25.2: 103-16; eidem, 2009, "The Granicus River Valley Survey Project, 2007," *Araştırma Sonuçları Toplantısı* 26.2: 343-56.

<sup>2</sup> Rose et al., 2007, "Granicus River Valley Survey Project, 2004-2005," 76-77.

<sup>3</sup> G. Bieg, B. Tekkök, and R. Aslan, 2006, "Die spätrömische Besiedlung der Troas – ein Überblick," *Studia Troica* 16: 147-70.

are Byzantine (mainly the late twelfth or early thirteenth century).<sup>4</sup> In the hilly area to the south, almost 4% are early to mid-Roman; 10% are late Roman; and 15% are Byzantine.<sup>5</sup> Settlement in the late Roman period, then, was concentrated more in the north than in the south. (This pattern is the reverse of the Hellenistic period, when settlement was concentrated in the south.) Looking at the evidence in terms of sites rather than percentages of sherds, almost 60% of the 86 sites identified in the overall survey area have a late Roman occupation phase.<sup>6</sup>

At the city of Ilion itself, Rose paints a bleak picture for the late Roman period: residents seem to have abandoned their houses even before two closely timed earthquakes hit the western Troad around 500, after which the remaining residents moved to the acropolis.<sup>7</sup> It is unclear how late the acropolis was occupied, but three coins of the sixth century and one of the seventh have been found there. In any case, Rose suggests that the entire city site, including the acropolis, was abandoned by the early seventh century; occupation was not renewed until the late twelfth century.<sup>8</sup>

Rose partially explains the concurrent depopulation of Ilion and population expansion in the eastern Troad in the late fifth to early seventh century as the interlocking results of an increase in seismic activity in the Troad, which destroyed buildings in coastal towns and created malarial swamplands, which, when combined with the sixth-century plague, ultimately convinced people to abandon their coastal towns and move the countryside. Here they re-inhabited cultivable land that had not been densely settled or exploited since the fourth century BCE.<sup>9</sup>

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<sup>4</sup> Rose, 2011, "Troy and the Granicus river valley," 164.

<sup>5</sup> Rose and Körpe, 2009, "The Granicus River Valley Survey Project, 2007," 345.

<sup>6</sup> Rose, 2011, "Troy and the Granicus river valley," 164.

<sup>7</sup> Rose, 2011, "Troy and the Granicus river valley," 162.

<sup>8</sup> Rose, 2011, "Troy and the Granicus river valley," 162.

<sup>9</sup> Rose, 2011, "Troy and the Granicus river valley," 164.

The identification of earthquakes as a key factor in forcing population movement from urban to rural sites should at this point be considered a theory only. However, the overarching shifts observed in the survey data are clear. The abundant evidence for late Roman occupation, primarily in the fifth and sixth century, is striking, all the more so because of the paucity of remains for preceding early and mid-Roman settlement. As noted above, this increase in late Roman occupation is more marked in the flat northern area of the survey region than in the hilly area to the south. It is interesting to note that during the Archaic and Classical period, this flat northern plain bordering the Sea of Marmara was “dominated primarily by large estates that dissolved at the beginning of the Hellenistic period,” whereas the hilly southern area contained many more towns than estates.<sup>10</sup> It would be interesting to know whether the late Roman expansion, concentrated as it was on this northern plain, primarily took the form of estates, as it had in the Archaic and Classical period, or some other form, such as more modest farmsteads or hamlets.

The evidence for fifth- and sixth-century expansion includes not only ceramics, but also major architectural remains. Among these is an elaborate and sprawling ecclesiastical complex at Babayaka in the lower Aesepus river valley, which includes a structure interpreted as the mausoleum of some high-profile community member built in the fifth or sixth century.<sup>11</sup> Even more impressive are two fortified citadels at Hamdibey Asartepe and Alacaoluk, located respectively in the upper and lower Aesepus river valley, and dated to the period between 400 and 600 on the basis of the style and technique of wall construction (**fig. 8.2**). Rose suggests they may have been built in association with the imperial building program of massive walls across Thrace and the Gallipoli peninsula around 500, in which case their presence in the eastern

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<sup>10</sup> Rose and Körpe, 2009, “The Granicus River Valley Survey Project, 2007,” 347.

<sup>11</sup> Rose, 2011, “Troy and the Granicus river valley,” 165-67; Rose and Körpe, 2008, “The Granicus River Valley Survey Project, 2006,” 106.

Troad should be linked to the increase in population and commercial activity indicated by the dense late Roman settlement and maintenance of road systems recorded by the survey.<sup>12</sup>

Another fascinating aspect of late Roman settlement and economic activity in the eastern Troad is evidence for ore processing at a handful of sites in the upper Aesepus river valley, only 2 km away from a silver mine that is still in operation and which may have been so in antiquity as well. Though the pottery collected at these sites dates to various periods, the survey team thinks that ore processing probably occurred during the late Roman period.<sup>13</sup>

For how long did this population density and economic activity in the eastern Troad last? The survey team sees the seventh century as the time of decline, presumably on the basis of datable pottery collected during the survey, and links it to historical events, in particular the unification by Heraclius of the Hellespont with Bithynia into a theme with the capital at Nicaea, “which had a negative effect on the area’s commerce,” followed by Sassanian and Arab raids that “further decimated the population” and forestalled recovery.<sup>14</sup> The linchpin is this argument is, as ever, the pottery chronology. Characteristic late Roman or early Byzantine pottery types collected at several sites in the survey area include Phocaeen Red Slip ware, Late Roman Light Colored ware, LRA 2 and LRA 3.<sup>15</sup> In summary, Rose states that a few collected sherds may date to the seventh century, but “there is nothing securely datable” between the mid-seventh and early twelfth century, though he also concedes that “pottery of this date is notoriously difficult to recognize.”<sup>16</sup>

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<sup>12</sup> Rose, 2011, “Troy and the Granicus river valley,” 167-69; Rose and Körpe, 2009, “The Granicus River Valley Survey Project, 2007,” 347-49.

<sup>13</sup> Rose and Körpe, 2009, “The Granicus River Valley Survey Project, 2007,” 347.

<sup>14</sup> Rose and Körpe, 2009, “The Granicus River Valley Survey Project, 2007,” 349.

<sup>15</sup> See, for example, the site of Pegae/Priapus (Karabiga): Rose et al., 2007, “Granicus River Valley Survey Project, 2004-2005,” 90-94, 102-3.

<sup>16</sup> Rose et al., 2007, “Granicus River Valley Survey Project, 2004-2005,” 105, 103.

## B. AIZANOI

A pattern of expanding land use during the fifth and sixth centuries has been noted by P. Niewöhner in the plain and surrounding foothills and mountains that form the territory of the remote town of Aizanoi on the central Anatolian plateau (at about 1000 masl) (**fig. 8.3**).<sup>17</sup> The team surveyed the approximately five dozen modern villages located within the territory three times, twice looking for inscriptions and once for stonemasonry. The following conclusions are based on this extensive survey of inscriptions and stonemasonry; no fieldwalking or pottery studies were conducted.

The team observed that most of the inscriptions came from Roman imperial-period gravestones and votives; about 60% were found in Aizanoi versus 40% in villages; and of those found in the villages, almost all were located in the plain around Aizanoi rather than the foothills and mountains (**fig. 8.4**).<sup>18</sup> In contrast, stonemasonry other than gravestones and votives (i.e., architectural sculpture and liturgical furniture) was found mostly in the countryside: 20% was found in Aizanoi versus 80% in villages. In the villages, this stonemasonry comes from churches built in the fifth or sixth century, what Niewöhner calls “late late antiquity.”<sup>19</sup> These churches seem to mark real settlements spread across both plain and mountains, but only those on the plain date back to the Roman imperial period.

Niewöhner interprets this evidence as indicating that in the Roman imperial period, settlement was restricted to the town and the immediate plain, but in the fifth and sixth centuries,

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<sup>17</sup> P. Niewöhner, 2006, “Aizanoi and Anatolia. Town and countryside in late late antiquity,” *Millennium 3*: 239-253; P. Niewöhner, 2010, “Aizanoi, Anatolien und der Nahe Osten Siedlungsentwicklung, Demographie und Klima in frühbyzantinischer Zeit,” in K. Rheidt (ed.), *Aizanoi und Anatolien. Neue Entdeckungen zur Geschichte und Archäologie im Hochland des westlichen Kleinasien* (Mainz) 146-53.

<sup>18</sup> Niewöhner, 2006, “Aizanoi and Anatolia,” 242-43, 246 fig. 2.

<sup>19</sup> Niewöhner, 2006, “Aizanoi and Anatolia,” 243, 246, 246 fig. 2.

settlement spread to nearby foothills and mountains. He suggests the number of villages and, presumably, the amount of farmed land supporting those villagers increased by around 100% in relation to the Roman imperial period, in a pattern attributable to a rapid growth in population, forcing inhabitants to farm the marginal lands of the mountains.<sup>20</sup> In villages scattered across both plain and mountains, inhabitants built churches embellished with architectural stonemasonry, a type of building activity previously restricted to the city. At the same time, large-scale public and private building projects other than churches ceased within the city.<sup>21</sup> K. Rheidt, director of the excavations at the city, sees these changes in urban investment as indicative of a “dramatic decline in the attractiveness and importance of the city as the center of a larger area of settlement,” commensurate with a shifting focus of settlement activity from town to countryside, so that living in the city was no longer so different from living in one of the newly-appointed surrounding villages.<sup>22</sup>

Niewöhner views the shift in resources from town to countryside beginning in the fifth century as a result of the “flight of the curiales,” in combination with urban poverty and, in the sixth century, plague and natural disasters; and also as evidence of the Roman city’s fundamental role as a consumer living parasitically off its territory, which was allowed to prosper only after the city itself declined.<sup>23</sup> He suggests that the apparent “paradox” of early Byzantine rural demographic increase and economic prosperity might be explained as the result of more favorable climatic conditions, which enabled expansion into previously useless land and

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<sup>20</sup> Niewöhner, 2006, “Aizanoi and Anatolia,” 242-43; idem, 2007, *Aizanoi, Dokimion und Anatolien: Stadt und Land, Siedlungs- und Steinmetzwesen vom späteren 4. bis ins 6. Jh. n. Chr.*, *AF* 23 (Wiesbaden) 87-88.

<sup>21</sup> Niewöhner, 2006, “Aizanoi and Anatolia,” 248-49.

<sup>22</sup> K. Rheidt, 2003, “Archäologie und Spätantike in Anatolien. Methoden, Ergebnisse und Probleme der Ausgrabungen in Aizanoi,” in G. Brands and H.-G. Severin (eds.), *Die spätantike Stadt und ihre Christianisierung* (Wiesbaden) 239-47, at 247 (“Die drastisch gesunkene Attraktivität und Bedeutung der Stadt als Zentrum einer größeren Siedlungskammer”).

<sup>23</sup> Niewöhner, 2006, “Aizanoi and Anatolia,” 250-52.

therefore the maintenance of population growth.<sup>24</sup> However, he argues, once there was no additional land to exploit, the inevitable Malthusian crisis occurred, perhaps exacerbated by the recurring sixth-century plague and/or deteriorating climatic conditions, and the population plummeted and the hills and mountains were abandoned by the seventh century.<sup>25</sup>

This reconstruction makes sense but is oversimplified insofar as it views the town/countryside relationship as a seesaw on which a fixed quantity of resources might slide back and forth, depending on who is in charge of allocating them. Other factors may have been at work. The same pattern could have resulted from an increased demand for rural products (such as wine and olive oil) from the state (civic and military *annona*) or from regional markets (nearby towns, or even Constantinople), encouraging expanded agricultural development of the countryside. Such a pattern is seen in areas such as Rough Cilicia, where villages flourished in the fourth to sixth centuries, but not at the expense of larger towns. The ability and willingness of rural villagers to invest resources in the large-scale construction of elaborate churches is a trend new to the fifth and sixth centuries around Aizanoi and, like the limestone villages of northwest Syria, suggests some degree of relative economic prosperity. However, it does not

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<sup>24</sup> Niewöhner emphasizes how this pattern of fifth-to-sixth-century rural prosperity is seen not only at Aizanoi, but all over the Anatolian countryside, including the Konya plain, the Troad, Rough Cilicia, Paphlagonia, and the areas around Pessinus, Miletus, and Sinope. Niewöhner, 2010, "Aizanoi," 150, 150 n. 4; idem, 2011, "The riddle of the Market Gate: Miletus and the character and date of earlier Byzantine fortifications in Anatolia," O. Dally and C. Ratté (eds.), *Archaeology and the Cities of Asia Minor in Late Antiquity* (Ann Arbor, MI) 103-22, at 120-21, 120 n. 68; citing the following surveys: D. Baird, 2004, "Settlement expansion on the Konya Plain, Anatolia: 5th-7th Centuries AD," in W. Bowden, L. Lavan, and C. Machado (eds.), *Recent Research on the Late Antique Countryside*, Late Antique Archaeology 2 (Leiden) 219-46; J. M. Cook, 1973, *The Troad. An Archaeological and Topographical Study* (Oxford) 369-73; R. E. Blanton, 2000, *Hellenistic, Roman and Byzantine Settlement Patterns of the Coast Lands of Western Rough Cilicia*, BAR International Series 879 (Oxford) 60; R. Matthews, 2000, "Time with the past in Paphlagonia," in P. Matthiae (ed.), *Proceedings of the First International Congress on the Archaeology of the Ancient Near East, Rome, May 18th-23rd 1998* (Rome) 1013-27; F. Vermeulen, M. de Dapper, and T. Wiedemann, 1998, "Vers une approche géo-archéologique intégrée: le territoire antique de Pessinonte (Turquie)," in M. Clavel-Lévêque and A. Vignot (eds.), *Cité et territoire II* (Paris) 123-39, at 132 fig. 10; J. Devreker and F. Vermeulen, 1998, "Fouilles et prospections à Pessinonte: campagne de 1996," *Anatolia Antiqua* 6: 249-58, at 257; H. Lohmann, 2004, "Milet und Milesia. Eine antike Großstadt und ihr Umland im Wandel der Zeiten," in F. Kolb (ed.), *Chora und Polis* (Munich) 325-60, at 352; O. P. Doonan, 2004 *Sinop Landscapes: Exploring Connection in a Black Sea Hinterland* (Philadelphia) 103, 106, 109, 156 f.

<sup>25</sup> Niewöhner, 2010, "Aizanoi," 152-53 ("paradox" on 152).

necessarily mean that there was a concurrent population boom in the countryside, in particular the mountains, nor that lands beyond the plain were not exploited for agriculture or pastoralism, or both, in the Roman imperial period. It is possible that other settlements existed for which only pottery or stonemasonry that is not an inscription, architectural sculpture or liturgical furniture is preserved; these types of sites, if they do indeed exist, will not have been recorded by the survey.

Niewöhner makes innovative use of a unique dataset to present interesting interpretations with implications for a much broader swathe of Asia Minor. There are some biases in the survey data, however. First, only modern villages were surveyed, so other types of settlement preserved only as, for example, sherd scatters, were not identified. This type of study also favors the identification of stonework (both inscriptions and architectural pieces) with features that have made them attractive for reuse in later buildings, such as the use of sculpted circular ambo components in modern fountains.<sup>26</sup> Furthermore, a single church may yield many fragments, and it seems unfair to compare these elements from the countryside, which boasted at least 25 churches, with elements recovered at the single town of Aizanoi, which would have had only a few at most. Without the greater coverage and chronological refinement potentially provided by pottery, the settlement history of the Aizanitis as based on inscriptions and architectural fragments can be sketched only in broad strokes, and exactly what happened after the fifth- and sixth-century prosperity emphasized by Niewöhner remains unclear. It would be interesting to see, for example, whether more detailed study of pottery collected at both Aizanoi and the rural villages might reveal continued habitation beyond the sixth century, as it has in other places such as Sagalassos, Lycia, and Anemurium.

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<sup>26</sup> Niewöhner, 2010, "Aizanoi," 146 fig. 147, 148-49, 152 fig. 154.

## C. GORDION

The preliminary results of integrated field survey and environmental research in the region around Gordion provide a sweeping picture of settlement decline and landscape degradation after the Roman period. From 1996-2002 the Gordion Regional Survey conducted three seasons each of systematic intensive survey (fieldwalking across transect units) and geomorphological sampling (coring and auguring at selected sites throughout the region, as well as mapping landscape features).<sup>27</sup> In terms of the archaeological field survey, the team covered around 1-2% of the total survey area of 360 km<sup>2</sup> and collected all visible artifacts from nine transect units.<sup>28</sup> All ceramics were analyzed; in addition to identifying stylistically diagnostic sherds, the team is using geochemical analyses to determine fabric matches between the nondiagnostic survey sherds (the majority of the pottery collected during the survey) and pottery from dated excavation contexts.<sup>29</sup>

Because these geochemical analyses are not yet finished, the dating of site occupation is based “only on a small percentage of diagnostic fabric matches” and should be considered preliminary.<sup>30</sup> Looking at sherd densities and total site numbers, the team observes two major periods of settlement intensification, the middle(/late) Bronze Age and the Roman period (up to the fifth century CE), the latter followed by a post-Roman decline in the number of occupied

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<sup>27</sup> L. Kealhofer, 2005, “Settlement and land use: The Gordion Regional Survey,” in ead. (ed.), *The Archaeology of Midas and the Phrygians: Recent Work at Gordion* (Philadelphia) 137-48; B. Marsh, 2005, “Physical geography, land use, and human impact at Gordion,” in L. Kealhofer (ed.), *The Archaeology of Midas and the Phrygians: Recent Work at Gordion* (Philadelphia) 161-71.

<sup>28</sup> Kealhofer, 2005, “Settlement and land use,” 139. Kealhofer points out that the region surveyed covers around 5% of the “stable landscape” within the survey area and about 50% of land within 500 m of a water source (excluding the river floodplain).

<sup>29</sup> The fabric-matching methodology was developed by Peter Grave. See P. Grave, L. Kealhofer, and B. Marsh, 2005, “Ceramic compositional analysis and the Phrygian sanctuary at Dümrek,” in L. Kealhofer (ed.), *The Archaeology of Midas and the Phrygians: Recent Work at Gordion* (Philadelphia) 149-60.

<sup>30</sup> Kealhofer, 2005, “Settlement and land use,” 147.

sites and in the percentage of diagnostic post-Roman pottery sherds (**fig. 8.5a-c, 8.6**).<sup>31</sup> The numbers of recorded sites for each period are 7 early Bronze Age, 11 middle Bronze Age, 10 late Bronze Age, 1 early Iron Age, 15 Phrygian, 10 Hellenistic, 15 Roman, 8 Byzantine, and 5 Ottoman. These numbers are small in comparison to the sherd count from some of the other survey regions, likely because, as noted above, the survey covered only 1-2% of the region.

The geomorphological data reveal the post-Roman period as a time of “substantial increases in erosion and instability” in the uplands, as well as “major increases in sediment deposition” in the floodplain of the valley.<sup>32</sup> The post-Roman date is based on the observation that a Roman road crossing the region is cut by deep erosion gullies that must have postdated the conjectured seventh-century abandonment of the road.<sup>33</sup> Potential causes of this post-Roman upland erosion and floodplain alluviation are provided by analyses of plant remains retrieved from archaeological contexts at the site of Gordion. These data come from Gordion alone, not from sites across the survey region, but their analysis has interesting implications for the landscape surrounding this single site. A high wild seed to cereal ratio from Roman-period contexts in which dung was burned as fuel suggests that animals were grazed much more than foddered, and a very low ratio of healthy steppe to overgrazed steppe plants indicates that these grazing practices were extensive enough to cause landscape degradation (**fig. 8.7a-b**).<sup>34</sup> The Roman-period emphasis on grazing over foddering may be the result of a concurrent agricultural system focused on wheat production rather than cereal diversification, as indicated by low ratios

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<sup>31</sup> Kealhofer, 2005, “Settlement and land use,” 142 fig. 11.3 (diagnostic sherd percentages by period), 146 table 11.2 (site numbers).

<sup>32</sup> Kealhofer, 2005, “Settlement and land use,” 145, 147.

<sup>33</sup> Marsh, 2005, “Physical geography,” 169.

<sup>34</sup> J. M. Marston, 2011, “Archaeological markers of risk management,” *Journal of Anthropological Archaeology* 30: 190-205, at 199, 200 figs. 6-7.

of barley to naked wheat seed and rachis (**fig. 8.8**).<sup>35</sup> Study of wood charcoal remains suggests gradual deforestation of the region during and since antiquity.<sup>36</sup>

When combined, these Roman-period trends of intensive agriculture (naked wheat production augmented by irrigation), extensive grazing, and ongoing deforestation provide a neat package of unsustainable practices that could have led to the observed upland erosion and floodplain alluviation. Based on these findings, the team suggests that “increasing pastoralism across the region, unsustainable intensification after the 2<sup>nd</sup> century BC, or shifts in the climatic regime (increasing seasonality and changes in rainfall that maximize erosion)” might account for the decrease in site numbers and pottery noted by the survey after the Roman period – that is, after the fifth century.<sup>37</sup> Without more precise dating for the end of these trends and the onset of erosion/alluviation, however, it remains unclear how they related to each other, and to the decline in rural settlement.

Because the dating is imprecise and the conclusions preliminary, these survey results provide sketchy impressions for Roman and post-Roman settlement in the region of Gordion. The lack of precise dating for landscape degradation (erosion, deforestation, overgrazing) means that these trends cannot be linked causally to settlement decline after the fifth century. That settlement decline, as indicated by a drop in site numbers and in the percentage of post-Roman pottery, seems clear. However, the limited coverage of the survey may undermine conclusions about the extent and patterns of settlement, although it does seem reasonable that the rural landscape around Gordion may never have been as densely settled as other regions in Asia Minor, such as coastal Lycia. Furthermore, the precipitous drop in percentages of all diagnostic

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<sup>35</sup> Marston, 2011, “Archaeological markers,” 197, 199 fig. 5.

<sup>36</sup> N. F. Miller, 1999, “Seeds, charcoal and archaeological context: Interpreting ancient environment and patterns of land use,” *TÜBA-AR* 2: 15-27.

<sup>37</sup> Kealhofer, 2005, “Settlement and land use,” 148.

pottery sherds collected in each transect from 20-50% datable to the Roman period to 10% or less datable to the post-Roman period may in part be due to the fact that the most of the pottery types used in the post-Roman period (that is, after the fifth century) were nondiagnostic coarse wares that have not yet been identified. It will be interesting to see whether the completed geochemical analyses will help to identify currently unrecognizable pottery types and, like the careful stylistic and fabric studies carried out in places such as Lycia that are illuminating previously unrecognized pottery production and distribution networks operating in the sixth to ninth centuries, thereby reveal greater levels of occupation and economic activity beyond the Roman period in the Gordion region.

#### **D. CENTRAL ANATOLIA**

Extensive early Byzantine settlement (330-630 CE in this study) similar to that in the Konya plain has also been noted by the extensive surveys conducted in central Anatolia (within Kırşehir, Ankara, Konya, and Aksaray provinces, around lake Tuz; ancient Galatia) since 1986 by the Japanese Institute of Anatolian Archaeology (see **fig. 1.2**). In his study of the late Roman, early Byzantine, and middle Byzantine finds collected by the survey, W. Anderson observes that red-slipped wares typical of the second to seventh century are less commonly found in central Anatolia than in more accessible places along the coast and near major production centers, but they do indeed show up in the ceramic record and thereby indicate some level of activity in the region for this time period.<sup>38</sup> However, the exact forms of red-slipped ware are not provided; it would be important to know, for example, whether examples of the late forms of Cypriot Red

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<sup>38</sup> W. Anderson, 2008, "Settlement change in Byzantine Galatia: An assessment of finds from the General Survey of Central Anatolia," *Anatolian Archaeological Studies: Kaman-Kalehöyük 17*: 233-40, at 234.

Slip ware were found, since they might indicate settlement through the seventh and eighth centuries (see Chapter 3), and thereby suggesting settlement continuous with that assumed on the basis of glazed ceramics finds dated to the middle Byzantine period (seventh to eleventh century).

Acknowledging problems with consistency in the extensive survey carried out over such a large region, Anderson nevertheless emphasizes a notable cluster of Byzantine (early and middle) in the southwest portion of the survey region in Konya province, the area closest to the Konya plain. The sites in this area should perhaps be seen as part of the same pattern of population expansion and agricultural intensification that D. Baird notes in the Konya plain in the early Byzantine period (see below). Both survey projects also observed a shift in site location preference from mounds to flat sites. In the Konya plain, Baird sees this shift as concurrent with early Byzantine expansion. In the central Anatolia survey, the director of the project, S. Omura, initially proposed the early Byzantine period as the time of transition from mound to flat sites for central Anatolia as well, but has more recently suggested the Roman period instead.<sup>39</sup>

Whereas in the Konya plain, Baird notes a drop in population sometime during the seventh-eighth centuries (though perhaps a result of problems in dating pottery), here almost immediately to the north in central Anatolia, Anderson finds clear evidence for occupation continuing in the middle Byzantine period (seventh to eleventh century) on the basis of glazed fine wares, prevalent in Anatolia beginning in the seventh century.<sup>40</sup> There does, however, appear to be a drop in the number of sites identifiable as early and middle Byzantine on the basis

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<sup>39</sup> S. Omura, 2002, "Preliminary report of the general survey in Central Anatolia (2001)," *Anatolian Archaeological Studies* 11: 45-112, at 61 (Byzantine period); idem, 2006, "Preliminary report of the 2005 general survey in Central Anatolia," *Anatolian Archaeological Studies* 15: 63-102, at 72 (Roman period). References from Anderson, 2008, "Settlement change," 237.

<sup>40</sup> Anderson, 2008, "Settlement change," 235-36.

of the presence of red-slipped versus glazed fine wares from 58 to 35, which Anderson explains as potentially due in part to problems identifying sites without diagnostic sherds, but also to the “widely acknowledged” assumption that “the number of settlements did fall during and after the seventh century.”<sup>41</sup> However, an additional 49 sites could only be deemed “uncertain,”<sup>42</sup> and surely this ambiguity – considering that the assignation of some number of these sites to the early or middle Byzantine period could alter the picture completely – gives one pause. Furthermore, as Anderson notes, problems with pottery identification and chronology mean that some number (“most”) of the sites dated to the middle Byzantine period (seventh to eleventh century) may have in fact been occupied only during the later and “more prosperous” sub-period of the ninth to eleventh centuries, and not in the preceding seventh to ninth.<sup>43</sup>

Given these problems and ambiguities, it seems safest to emphasize only some broad trends observed from the results of the surveys in this part of central Anatolia. First among these is the expansion of site numbers in the fourth to seventh centuries. Equally important is the continuity of settlement, though perhaps at a lower level, through the seventh century and beyond. This trend of settlement continuity through the so-called dark ages on the inland Anatolian plateau has also been noted for the town of Amorium (see Chapter 9).<sup>44</sup>

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<sup>41</sup> Anderson, 2008, “Settlement change,” 237.

<sup>42</sup> Anderson, 2008, “Settlement change,” 237.

<sup>43</sup> Anderson, 2008, “Settlement change,” 238.

<sup>44</sup> E.g., C. Lightfoot, 2012, “Business as usual? Archaeological evidence for Byzantine commercial enterprise at Amorium in the seventh to eleventh centuries,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 177-91.

## E. KONYA PLAIN

A similar pattern of expanding settlement and rural prosperity has been documented by D. Baird on the Konya plain (**fig. 8.9**). The survey region is an area of 1000 km<sup>2</sup> around the town of Çumra, south of Konya. The project included both extensive and intensive survey, the latter consisting of fieldwalking and the “intensive collection of all artifacts from a scraped and sieved grid of 3 x 3 m squares evenly distributed across a sites.”<sup>45</sup> Diagnostic materials were also collected from the entire surface of a site outside the squares. In contrast to most survey projects presented in this study, here sites were defined as “settlement locales represented by mud brick and occupational material” – that is, by mounds (*höyük*s) and by patches of soil distinctive in color from the surrounding alluvium (both the result of mud brick in varying stages of decomposition), and not by surface scatters of pottery or by architectural elements.<sup>46</sup> Instead, these artifact scatters were considered the remains of non-settlement activity. Chronology was determined by pottery, divided by period into Roman (first to fourth century CE), late Roman (third to fourth century), and early Byzantine (fifth to seventh century). Only the early Byzantine period is specified as “defined by pottery on the survey,” in this case ceramic assemblages of imported and regional wares that are still not well understood and cannot be dated with precision higher than the fifth to seventh century.<sup>47</sup>

Geomorphological studies carried out prior to and concurrent with the survey identified areas where alluvial soils potentially blanketed ancient soils and the sites built on them.<sup>48</sup> This

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<sup>45</sup> Baird, 2004, “Settlement expansion on the Konya plain,” 226. For a more detailed account and analysis of the survey goals and methods, see idem, 1996, “The Konya plain survey: Aims and methods,” in I. Hodder (ed.), *On the Surface: Çatalhöyük 1993-95* (Cambridge) 41-46.

<sup>46</sup> Baird, 2004, “Settlement expansion on the Konya plain,” 226-27.

<sup>47</sup> Baird, 2004, “Settlement expansion on the Konya plain,” 227-28.

<sup>48</sup> C. Kuzucuoğlu, M. Fontugne, M. Karabiyikoğlu, and C. Hatté, 1998, “Evolution de l’environnement dans la plaine de Konya (Turquie) pendant l’Holocene,” in M. Otte (ed.), *Anatolian Prehistory: At the Crossroads of Two Worlds*,

allowed the survey team to consider the effects that differential burial might have had on the visibility of sites of various times periods. For instance, Roman to early Byzantine levels are buried under alluvium in the southern and central portions of an alluvial fan stretching across the survey area, but this issue of site visibility is offset by the preference of early Byzantine inhabitants to resettle earlier mounds and hilltops.<sup>49</sup>

From the results of the survey, Baird infers population growth in the survey area in the early Byzantine period (fifth to seventh centuries) based not only on an increase in number of settlements and in total settlement area (**figs. 8.10, 8.11**), but also on the concurrent changes in settlement pattern. While settlement on alluvial fans and sand ridges continued an earlier Roman pattern, there was also an increase in the number of sites situated on hill-slope soils and on or at the edge of soft lime soils, which are marginal lands for agriculture (**fig. 8.12**). Baird suggests that intensive land use and increased population density forced new agricultural communities to settle on marginal land because the more fertile land was already owned and therefore unavailable.<sup>50</sup> Evidence of manuring, the creation of shallow pools near settlements, and drainage operations corroborate this picture of intensive farming practices and land management in the fifth to seventh centuries (a more precise date is not possible).

In addition to an increase in site numbers from the Roman to early Byzantine period, the survey team also noted that a great majority of early Byzantine sites had also been occupied in the late Roman period, and some even earlier. This stable settlement continuity is complemented

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ERAUL 85 (Liege) 605-24; N. Roberts, P. Boyer, and R. Parish, 1996, "Preliminary results of geoarchaeological investigations at Çatalhöyük," in I. Hodder (ed.), *On the Surface: Çatalhöyük 1993-95* (Cambridge) 19-40; P. Boyer, N. Roberts, and J. Merrick, 2007, "KOPAL excavations at Çatalhöyük 1996-2001," in I. Hodder (ed.), *Excavating Çatalhöyük: South, North and Kopal Area Reports from the 1995-1999 Seasons*, Çatalhöyük Research Project 3 (Cambridge) 551-70; P. Boyer, N. Roberts, and D. Baird, 2006, "Holocene environment and settlement on the Çarşamba alluvial fan, south-central Turkey: Integrating geoarchaeology and archaeological field survey," *Geoarchaeology* 21: 675-698.

<sup>49</sup> Baird, 2004, "Settlement expansion on the Konya plain," 224.

<sup>50</sup> Baird, 2004, "Settlement expansion on the Konya plain," 239.

by new early Byzantine settlement characterized by flat settlements located adjacent to mounds, on which all earlier occupation was located. These flat settlements include stone elements likely from churches and are located near basins created for water management on this annually flooded plain. Though in some cases, parts of the mounds may have been used as cemeteries during the early Byzantine period, there is also evidence of simultaneous occupation of a mound and the adjacent flat areas, indicating that the new early Byzantine settlement pattern was not simply a movement of occupation from mound to plain. The most important indicator of demographic change from the already populous late Roman to early Byzantine periods was an increase in aggregate site area (30% increase from 400 to 530 ha), rather than in number of sites; of course, this calculation assumes a representative proportion of sites of each period has been documented.<sup>51</sup>

Baird suggests the region produced a surplus of some marketable product in levels that barely supported the population and was perhaps directed at markets in the nearby town of Konya, resulting in a delicately poised economic system, highly vulnerable to any increase in demands related to taxation or trade, that crashed in the seventh-eighth centuries.<sup>52</sup> This conclusion is based on the drop in aggregate site area (and presumably number of sites) after the seventh century, so that by the medieval period, aggregate site area had fallen from the early Byzantine high of 530 ha to under 100 ha.<sup>53</sup> The exact timing of this decline is not clear, and the exact forms of early Byzantine pottery are not presented. Here in the Konya plain, as elsewhere, it is unclear why exactly this area experienced population decline at some point in the seventh or eighth century (though this trend may be an artifact of problems dating the pottery), nor to provide a more precise timing of the phenomenon, but Baird notes that Arab invasions during

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<sup>51</sup> Baird, 2004, "Settlement expansion on the Konya plain," 231.

<sup>52</sup> Baird, 2004, "Settlement expansion on the Konya plain," 245.

<sup>53</sup> Baird, 2004, "Settlement expansion on the Konya plain," 232 fig. 4.

these centuries likely encouraged general unease and a reluctance to maintain the high levels of investment and labor required to sustain intensive agriculture at high-density population levels within a landscape demanding constant irrigation and the upkeep of water management systems.

## F. CAPPADOCIA (LAKE NAR)

An unassuming lake in Cappadocia is very special because from it has been extracted a rare annually laminated sediment sequence for the late Holocene in Anatolia.<sup>54</sup> Pollen, stable isotopes, and charcoal preserved in the sediment core from lake Nar, located in central Anatolia about 36 km southeast of Aksaray (ancient Koloneia), provide coupled multiproxy indicators enabling the reconstruction of changes in climate, vegetation, and land use over time (**fig. 8.13**).<sup>55</sup> Stable oxygen isotope ( $\delta^{18}\text{O}$ ) data indicate drier periods during 300-500, 800-950,<sup>56</sup> and 1400-1960, and wetter intervals during 560-750, 1000-1400, and post-1960. These wetter intervals suggest climatic periods better suited for dry-farming agriculture, especially in

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<sup>54</sup> A sequence from Eski Acıgöl in east-central Anatolia is annually laminated like the lake Nar sequence, but only for the Late Glacial and early-mid Holocene (and therefore not for the last 2000 years): H. Woldring and S. Bottema, 2003, "The vegetation history of east-central Anatolia in relation to archaeology: the Eski Acıgöl pollen evidence compared with the Near Eastern environment," *Palaeohistoria* 43/44: 1-31.

<sup>55</sup> Unless otherwise noted, the information in this section on the sediment sequence from lake Nar is from A. England, W. J. Eastwood, C. N. Roberts, R. Turner, and J. F. Haldon, 2008, "Historical landscape change in Cappadocia (central Turkey): A palaeoecological investigation of annually laminated sediments from Nar lake," *The Holocene* 18.8: 1229-45. See also J. Woodbridge and N. Roberts, 2011, "Late Holocene climate of the Eastern Mediterranean inferred from diatom analysis of annually-laminated lake sediments," *Quaternary Science Reviews* 30.23-24: 3381-92; W. J. Eastwood, O. Gümüşçü, H. Yiğitbaşıoğlu, J. F. Haldon, and A. England, 2009, "Integrating palaeoecological and archaeo-historical records: Land use and landscape change in Cappadocia (central Turkey) since late antiquity," in T. Vorderstrasse and J. J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia* (Leiden) 45-70; M. D. Jones, M. J. Leng, C. N. Roberts, M. Türkeş, and R. Moyeed, 2005, "A coupled calibration and modelling approach to the understanding of dry-land lake oxygen isotope records," *Journal of Paleolimnology* 34: 391-411; M. D. Jones, C. N. Roberts, M. J. Leng, and M. Türkeş, 2006, "A high-resolution late Holocene lake isotope record from Turkey and links to North Atlantic and monsoon climate," *Geology* 34: 361-64.

<sup>56</sup> The drier period of 800-950 CE is apparent in Woodbridge and Roberts, 2011, "Late Holocene climate of the Eastern Mediterranean," 3387 fig. 6, 3388; England et al., 2008, "Historical landscape change in Cappadocia," 1239 fig. 5.

Cappadocia, where the free-draining volcanic soils are particularly susceptible to loss of moisture.

The research team found that these climatic shifts do not correspond chronologically with vegetation changes discernable in the pollen record from the same sediment sequence. Pollen and charcoal fragments indicate four main phases of land use for Cappadocia and beyond (**fig. 8.14a-b**). The pollen record of the late Roman and early Byzantine periods (300-670) is characterized by primary anthropogenic indicators related to the intensive cultivation of trees and cereals, including cultivated olive, walnut, sweet chestnut, grapevine, rye, wheat, and barley.<sup>57</sup> The presence of weeds common to cultivated land and used as pasture for grazing animals (secondary anthropogenic indicators) such as salad burnet, ribwort plantain, and dock reinforces the reconstruction of a mixed strategy of intensive agriculture and pastoralism in the region during this time period.<sup>58</sup> As discussed in Chapter 3, these pollen types correspond to those found in multiple sequences from southwest Turkey during the Beyşehir Occupation (BO) Phase of human impact.

The second principal vegetation phase from 670-950 is characterized by a considerable increase in tree pollen representing a real and abrupt increase in tree cover and/or density and a decrease in primary and secondary anthropogenic indicators such as olive, cereals, and weeds related to land disturbance. While agricultural activity declined, local deciduous oak woodland expanded in area and/or density and pine forests spread out across the Taurus and Pontic mountain ranges.

The third vegetation phase (950-1830) shows a gradual return of anthropogenic activity, according to which percentages for arboreal pollen had returned to BO Phase levels by 950.

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<sup>57</sup> *Olea*, *Juglans*, *Castanea sativa*, *Vitis vinifera*, *Secale cereale*, *Avena/Triticum*, and *Hordeum*.

<sup>58</sup> *Sanguisorba minor*, *Plantago lanceolata*, and *Rumex acetosella*.

However, in contrast to the pre-670 BO Phase, in this period pollen from olive and tree crops is practically absent, while emphasis appears to have been placed on cereal and pastoral activities. This situation is comparable to the resurgence in human activity, primarily pastoralism and limited cereal cultivation, beginning in the tenth century in the records at Bereket and Gravgaz valleys near Sagalassos (see Chapter 7).

The authors note that the climatic shifts revealed by the isotope data do not correspond chronologically with vegetation changes. Likewise, vegetation changes indicated by the boundaries of pollen assemblage zones (e.g., the end of the BO Phase c. 670) do not match significant changes in the isotope values. Specifically for the time period highlighted in this dissertation, the climate did not start getting drier (c. 750) until after the pollen record shows the abandonment of agriculture and expansion of woodland (c. 670). The unsynchronized nature of the climatic versus human patterns, and the close correspondence between the pollen record and the record of human occupation, suggests to the authors that “the timing of landscape changes in Cappadocia during historical times has been determined primarily by human factors rather than by climate or natural agencies.”<sup>59</sup>

In the search for specific human factors responsible for the timing of the end of the BO Phase around 670 CE at lake Nar, J. Haldon points a finger at the Arab raids and invasions that targeted Cappadocia, along with Cilicia, Armenia IV, Isauria, Phrygia, and the coastal Aegean, in a quest for permanent occupation of Byzantine territory.<sup>60</sup> During the second half of the seventh century, Muslim forces sought to seize control of the Cilician and Taurus mountain

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<sup>59</sup> England et al., 2008, “Historical landscape change in Cappadocia,” 1242.

<sup>60</sup> J. Haldon, 2007, “‘Cappadocia will be given over to ruin and become a desert’: Environmental evidence for historically-attested events in the 7th and 10th centuries,” in K. Belke (ed.), *Byzantina Mediterranea: Festschrift für Johannes Koder zum 65. Geburtstag* (Vienna) 215-30; England et al., 2008, “Historical landscape change in Cappadocia,” 1242-43.

border zone in order to harm Byzantine defenses, depopulate the region, and damage the local economy in a strategy of softening up the empire before attacking Constantinople itself.<sup>61</sup>

### **F.i. Archaeological and historical research**

Cappadocia has been selected as a case study because it was recently the subject of the detailed palaeoenvironmental study just described. The kind of comprehensive regional survey that forms the other main source of evidence in this dissertation is not available. Instead, most studies of the region have been art historical and have focused on the fascinating rock-cut churches and residential structures dating to the middle Byzantine period.<sup>62</sup> Nevertheless, the wealth of historical sources for late antiquity and physical remains can provide socio-economic context for the palaeoenvironmental data from lake Nar and deserve brief treatment here.

Archaeological evidence for settlement in Cappadocia in late antiquity and the early Byzantine period exists in the form of scattered rural settlements, some with substantial cut-stone masonry churches, but these have not been analyzed in terms of the wider settlement context to which they belong.<sup>63</sup> There appears to have been a phase of masonry church building in the fifth and sixth centuries on the northern slopes of Hasan Dağı, just south of Aksaray. Some of these churches are associated with additional structures or even entire villages such as Viranşehir (Mokissos), which had multiple churches.<sup>64</sup> A church just east of Aksaray known as Kızıl Kilise because of the red color of its non-local stone blocks may have been an important pilgrimage site

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<sup>61</sup> England et al., 2008, “Historical landscape change in Cappadocia,” 1242.

<sup>62</sup> See especially work by G. de Jerphanion, N. and M. Thierry, M. Restle, L. Rodley, R. Ousterhout, and V. Kalas.

<sup>63</sup> M. Restle, 1975, “Viranşehir, ein befestigter Platz in Kappadokien,” *Jahrbuch der Österreichischen Byzantinistik* 24: 195-207; F. Hild and M. Restle, 1981, *Kappadokien (Kappadokia, Charsianon, Sebasteia und Lykandos)*, *Tabula Imperii Byzantini* 2 (Vienna).

<sup>64</sup> Restle, 1975, “Viranşehir”; Hild and Restle, 1981, *Kappadokien*.

in the sixth and seventh centuries, for it stands in a wide plain without evidence of additional settlement. A church dedicated to Sts. Constantine and Helen at Eski Andaval near Niğde (Nakida) has a typical late antique basilica plan and several phases of reconstruction attesting to its continued use in the middle Byzantine period.

This pattern of village-based settlement, with inhabitants engaged in agriculture and pastoralism, is likely comparable to that noted for regions throughout Asia Minor and northwest Syria in the fourth to sixth century. The degree to which these villages may have produced commodities in excess of their own needs is difficult to estimate, but Justinian's investment of money and labor in the rebuilding of fortifications along the eastern frontier, and the presence of military units such as the *Legio XII Fulminata*, may have placed a burden on the rural producers in this region during the sixth and seventh centuries.<sup>65</sup> That the imperial administration relied on local agricultural production for the supply of soldiers stationed across Anatolia is evident in the compulsory purchase of food supplies (the *synone* or *coemptio*) common in sixth-century sources.<sup>66</sup> Because state establishments remaining in the seventh century were likely too few to supply all of the imperial field armies, an *apotheke* system was created according to which contract-farmers called *kommerkiarioi* arranged the production and delivery of weapons,

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<sup>65</sup> T. B. Mitford, 1980, "Cappadocia and Armenia Minor: Historical Setting of the Limes," *Aufstieg und Niedergang der römischen Welt* II.7.2: 1161-1228, at 1210. In fact, Justinian was so concerned with maintaining the stability of Cappadocia, an "extremely populous" region "of great extent and wonderfully fertile," that he appointed a Proconsul as its chief magistrate, adding to the position's civic and military jurisdiction the command of soldiers stationed in Fiscal lands. The granting of this triple jurisdiction was deemed necessary to squelch rampant corruption and abuse of power in the region. Third Collection, Title IX, 30<sup>th</sup> New Constitution, Preface and Chapter 5, *The Civil Law: The Twelve Tables, The Institutes of Gaius, The Rules of Ulpian, The Opinions of Paulus, The Enactments of Justinian, and The Constitutions of Leo*, trans. by S. P. Scott, 17 vols. (Cincinnati), online at <http://www.constitution.org/sps/sps.htm>.

<sup>66</sup> C. Wickham, 2005, *Framing the Early Middle Ages: Europe and the Mediterranean 400-800* (Oxford) 75; J. F. Haldon, 1990, *Byzantium in the Seventh Century: The Transformation of a Culture* (Cambridge) 147-48, 179, suggesting that land-tax assessment had been reorganized by the 660s to include such collection in kind (148).

clothing, and other military equipment from local craftsmen and from state factories and warehouses.<sup>67</sup>

What might Cappadocia have produced for these levies in kind? Strabo notes olive cultivation around Metilene, and presses, notoriously difficult to date, have been documented in western Cappadocia around Archelais.<sup>68</sup> Documents written by the Cappadocian Fathers (Basil of Caesarea, Gregory of Nyssa, and Gregory of Nazianzus) provide evidence for commodities produced in the fourth century, giving some indication of what the region may have contributed to the *synone* or *apotheke* system in later periods. The region's pre-Roman-period reputation as open territory quilted with large farms and ranches still held true in the fourth century,<sup>69</sup> when the Cappadocian Fathers described the export of grain along the Halys river, the production of local wine, and the breeding of livestock, including camels, horses, cattle, sheep, and pigs.<sup>70</sup> The region was not a paradise, however. Gregory of Nazianzus describes the area around Sasima, a small town on a level plain about 25 km southeast of lake Nar, as poor, dusty, waterless, and treeless.<sup>71</sup> In addition, residents imported wine from Syria and Armenia and olive oil, suggesting that the region did not produce enough of these staples to support itself (though the wine could have been imported because it was preferred over that produced locally).<sup>72</sup>

The fact that Cappadocians imported olive oil in the fourth century is important, because significant values of olive pollen are recorded in the lake Nar record for this time period. This discrepancy underscores a key point made by the analysts of the pollen data. They suggest that

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<sup>67</sup> Haldon, 1990, *Byzantium in the Seventh Century*, 240.

<sup>68</sup> Strabo, *Geography* XII 2.1, 535; S. Mitchell, 2005, "Olive cultivation in the economy of Roman Asia Minor," in S. Mitchell and C. Katsari (eds.), *Patterns in the Economy of Roman Asia Minor* (Swansea) 83-113, at 91.

<sup>69</sup> R. Van Dam, 2002, *Kingdom of Snow: Roman Rule and Greek Culture in Cappadocia* (Philadelphia) 20-21.

<sup>70</sup> Basil of Caesarea, *Ep.* 365, and *Hom. in Hexaemeron* 2.3; Gregory of Nazianzus, *Ep.* 57; Basil of Caesarea, *Hom.* 7.2. These references come from Van Dam, 2002, *Kingdom of Snow*, 14-15.

<sup>71</sup> Gregory of Nazianzus, *Ep.* 15.1, from Van Dam, 2002, *Kingdom of Snow*, 15-6.

<sup>72</sup> John of Ephesus, *Lives of the Eastern Saints* 8; Basil of Caesarea, *Regulae fusius tractatae* 19.2. From Van Dam, 2002, *Kingdom of Snow*, 15.

the pollen record reflects landscape and vegetation changes across Cappadocia and beyond rather than just the catchment area of lake Nar. In particular, olive is a wind-pollinated plant with far-flying pollen, and the authors suggest that pollen from the lake Nar record may have blown in from the Cilician coast across the Taurus mountains. Their hypothesis is supported by modern pollen tests, which show that even when modern surface samples contain only trace percentages of olive pollen, “a lake with a regional pollen catchment in Cappadocia has the potential to receive significant amounts of long-distance olive pollen influx if large-scale olive cultivation is taking place along Turkey’s southern Mediterranean littoral.”<sup>73</sup> The pollen record at lake Nar may therefore have implications for neighboring regions such as Cilicia and Isauria. Along the same lines, the increase in pine pollen around 670 at lake Nar likely reflects non-local expansion in pine forest, as pine does not grow in Cappadocia today and is even more successful than olive at dispersing large quantities of air-borne pollen over long distances.<sup>74</sup>

The pollen values recorded at lake Nar for wind-pollinated plants such as olive and pine might therefore provide some indication of changes in vegetation for Cilicia and Isauria, where similar palaeoenvironmental research has not been carried out. These regions are linked to Cappadocia not only by streams of migratory pollen wafting in from the coast, but also by an important pass through the Taurus mountains, along which Muslim forces entered the Anatolian plateau beginning in the seventh century. Two passages from the seventh-century *Apocalypse of Pseudo-Methodius*,<sup>75</sup> quoted by Haldon in his argument, deserve attention here:

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<sup>73</sup> England et al., 2008, “Historical landscape change in Cappadocia,” 1241.

<sup>74</sup> England et al., 2008, “Historical landscape change in Cappadocia,” 1238.

<sup>75</sup> Haldon, 2007, “Cappadocia will be given over to ruin and become a desert,” 228 n. 30, noting that the original text was composed in Syriac c. 690-692 in Singara, northeastern Mesopotamia, with Greek and Latin translations made c. 700-710; the Syriac version does not contain the reference to Cappadocia.

Armenia and its inhabitants will fall into captivity and to the sword; Cappadocia will be given over to ruin and become a desert, and those who dwell in it will be consumed by captivity and slaughter [...] Cilicia will become a desert and its inhabitants will perish by the sword and be led into captivity [...] The land of the Romans will be given over to ruin and slaughter and its inhabitants will be turned to flight, and the islands of the sea will become a desolation and their inhabitants will be destroyed by the sword and by captivity.

[...] and cities will become deserts and the land will be uncultivated because of the scarcity of people; and the earth will be defiled with blood and will withhold its fruits.<sup>76</sup>

Allowing for the author's rhetorical exaggeration, use of biblical topoi, and narration as if predicting events, Haldon affirms the ability of these passages to provide insight into the real or perceived impact of the Muslim raids of the seventh century on the inhabitants of Cappadocia and Cilicia and on the rural economy their agricultural efforts fueled.<sup>77</sup> This example shows just how tightly settlement patterns, demography, and economic activity (agriculture, stocking-raising, and trade) were knitted together with armed conflict and the damage it wrought on the landscape. These relationships should be borne in mind when looking at the survey evidence from the other regions discussed in this study.

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<sup>76</sup> Haldon, 2007, "Cappadocia will be given over to ruin and become a desert," 227-28, 228 n. 30, citing W. J. Aerts and G. A. A. Kortekaas (eds.), 1998, *Die Apokalypse des Pseudo-Methodius, Die ältesten griechischen und lateinischen Übersetzungen I-II* (Leuven) 144-45 (cap. 11.9-11), 152-53 (cap. 17).

<sup>77</sup> Haldon, 2007, "Cappadocia will be given over to ruin and become a desert," 228.

## CHAPTER 9

### CONCLUSIONS

Cities still existed throughout later antiquity beyond the seventh and into the eighth and ninth centuries. But if what has so impressed ancient observers and modern researchers of the organization of the Roman empire as an “aggregate of cities” is the sheer number of towns, both large and small, as well as the standardization and elaborateness of their civic adornment, then the eastern empire by the seventh century had become something very different. What had changed was not only the number of towns that could be called cities, but also the qualities that had come to define what a city should be in the first place, as well as the sheer number of people available to maintain a densely settled urban environment. These qualifications now included fortifications and a network of churches, as well as some formal or official function that gave purpose to a certain density of occupation and shared interest on behalf of the residents. In earlier centuries, one of the most important of these functions, and the one that had defined a city as such, had been self-governance by appointed assembly. But by the sixth century, this function had ceased to exist. Furthermore, the physical and social maintenance of a city required resources that by the seventh century had dwindled into relatively short supply, and was gathered only into those towns – those foci of activity – that fulfilled functions deemed most vital to the continuation of society, here largely as part of the operation of the early Byzantine state. Chief

among these resources was people, a resource that had diminished dramatically. Cities that survived or gained new importance during the sixth and seventh centuries played some role as ecclesiastical, administrative, military, or commercial centers. Mere local governance was neither a sufficient nor a relevant function.

The difference was not that people no longer wished or were willing to live at a certain density so that they might reap the benefits of shared social space and the easier exchange of resources and services, because where possible – for instance in Constantinople, Ancyra, Amorium, Seleucia ad Calycadnum – people did just that. The difference (or, more provocatively, the problem) was rather that they were unable to do so, for a number of reasons. First, local self-governance by assembly no longer existed as an incentive for the creation or maintenance of a town. Second, the viable functions that did exist were more difficult to fulfill: only so many places could be a military headquarters, for instance, or an important pilgrimage site. Third, the resources required to support a city – people, money, goods, commodities, skills, and services – were no longer as universally available across the eastern empire. This diminished availability was due primarily to the effects of on-going violent conflict, the plague, and the contraction of exchange caused by the disruption of the fiscal system. Where these resources were lacking (that is, in the majority of the now reduced empire) communities organized themselves in a new way, as a rational reaction to altered and challenging circumstances. These rational reactions resulted in certain changes: organization into villages and hamlets instead of towns or single-family farmsteads; production and use of handmade and coarse or plain pottery; a movement away from intensive agriculture toward a more balanced and less risky mixed agropastoral strategy, in some cases with a greater reliance on (semi-) transhumant pastoralism; and, possibly, the restriction of family size. In some cases these

reactions were forced, because people had no other options: for example, they could not have supported a city even if they wanted to. In other cases, however, other options did exist, and so these reactions must have been the intentional result of a cost-benefit analysis in favor of short-over long-term investments.

In this dissertation I have tried to understand the changes in Graeco-Roman life that mark the timing, nature, and causes of the end of antiquity by looking beyond cities to the countryside. I have investigated the countryside by analyzing evidence collected using the methods of regional survey and environmental archaeology and science. My main goal has been to understand the end of antiquity by identifying broad patterns of change related to population and settlement dynamics, economic patterns, subsistence strategies, and environmental conditions. My second goal has been to use the end of antiquity as a test case to determine the usefulness of these new methods in investigating a major historical problem.

More to the point, I have tried to tell the story of the end of antiquity through the archaeology of the countryside, but without ignoring what the urban evidence has to say. This story has concentrated on the broad patterns outlined above in order to address a number of questions concerning life in later antiquity in southern Asia Minor and northwest Syria. The most important of these have been: Did the overall population decline? If so, why? Were fewer people living in cities, and more people living in rural settlements, particularly villages, as has been suggested? Were the same goods and commodities being produced and exchanged, and at the same scale? Were people producing and eating the same types of foods? Did they face environmental hardships that made it difficult or impossible to maintain traditional land use practices and subsistence strategies?

In the discussion that follows, I first present my conclusions concerning each of the main patterns of change that mark the long end of antiquity, organized as settlement, population, environmental conditions and subsistence strategies, standard of living and quality of life, and production and exchange. Over the course of the sixth and seventh centuries, late antique and early Byzantine society became dramatically less complex in many ways. Based on these indices, I argue that people responded to the disruption and unpredictability of this time – primarily the result of violent conflict, plague, and the contraction of exchange caused by the disruption of the fiscal system – by adopting risk-sensitive strategies that made society more resilient. This greater adaptability and process of re-organization eventually led to the resurgence of the middle Byzantine period. Finally, I discuss the usefulness of regional survey and environmental research in addressing the end of antiquity as a historical problem, and offer concluding remarks.

## **A. BROAD PATTERNS OF CHANGE AT THE END OF ANTIQUITY**

### **A.i. Settlement**

I start this discussion with settlement rather than population because to a large extent the conclusions about changes in population levels outlined below are inferences based on the changes in settlement patterns inferred from the survey data. That is, they are inferences of inferences. It is difficult, in any case, to estimate actual settlement size, and thereby population, from surface finds, and our pre-existing notions of population dynamics, based, for example, on the recurrence of the plague, may influence such estimations that we are forced to make.

Another problem with using survey data to estimate diachronic population size is that practitioners will recover only some unknown fraction of the actual extent of human occupation in a landscape, and, by virtue of the greater visibility of their surface finds or site location preferences, some periods of occupation may be recovered more completely than others.

Nevertheless, some general conclusions can be made about settlement in the countryside on the basis of the regional surveys investigated in this dissertation, in most cases determined by the number of sites and/or percentage proportion of pottery sherds by period, but also by dated architecture (**table 9.1**). These conclusions are painted with the broadest of brushes, but such impressionistic dabbling is meaningful in that it tries to create from very disparate datasets a comprehensive whole, without invalidating any one of its integral parts. During the late Roman / late antique period, in general covering the fourth through sixth centuries, the level of occupation in the countryside can be seen as a continuation of the long-term increasing trend that began during the preceding three centuries of the early and middle Roman imperial period. In many places, rural occupation appears to have increased in the fourth to sixth centuries: Kyaneai, Domuztepe, the Göksu valley, Aizanoi, Konya plain, central Anatolia, the eastern Troad. In others it decreased: the Amuq valley, western Rough Cilicia, Sagalassos, Aphrodisias.<sup>1</sup>

Much has been made about booming rural prosperity in this geographical area during late antiquity relative to the early and middle Roman period, and in some of the survey regions, this trajectory is borne out – but not everywhere, and this diversity in settlement history from region to region is important. Where this increase does occur, it may appear more significant because it comes on the tails of the third century, a period with its own set of economic, political, and

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<sup>1</sup> For the regional survey around Aphrodisias, see C. J. Ratté and P. D. De Staebler, 2011, “Survey evidence for late antique settlement in the region around Aphrodisias,” in O. Dally and C. J. Ratté (eds.), *Archaeology and the Cities of Asia Minor in Late Antiquity* (Ann Arbor, MI) 123-36; eidem (eds.), *Aphrodisias V: The Aphrodisias Regional Survey* (Darmstadt).

military hardships. I have chosen to present these increases in late antique settlement as the continuation of a pre-existing long-term trend for two reasons. First, such an increase does not take place across the entire geographical area under study, as some models of late antique settlement and economic prosperity for in the eastern Mediterranean have suggested. Second, this increase seems to be part of the longer, more gradual trend of settlement expansion that begins to blossom in the early Roman imperial period, and it is small relative both to that longer trend and to the dramatic drop that comes next, after the sixth/seventh century. From this point of view, the disparate settlement increases of late antiquity look more like background noise than a true signal.<sup>2</sup> Emphasizing them runs the risk of over-explanation – for instance, by assuming that these increases must in every case be linked to the needs of Constantinople (and in many cases they were), rather than looking for other, more local or regional explanations, such as the needs of Antioch and the other, smaller towns spread across the eastern Mediterranean.

To summarize, the increases in settlement during late antiquity occurred on a region-by-region basis, and are most apparent in a similarly narrow temporal perspective. Changes revealed by this narrower point of view, relatively circumscribed in both space and time, are certainly important: the repeated decisions on behalf of generations of inhabitants living in and around Aizanoi to invest a greater proportion of their resources and attention to rural over urban architecture and communal space, for instance, is enormously meaningful, both for those inhabitants and for archaeologists who seek to understand the evolving nature of their civic and personal priorities. Nevertheless, in order to address the questions concerning the timing, nature, and pace of change at the end of antiquity that formed the starting point of this dissertation, it is the broader point of view – supra-regional and extending before and after the Roman empire –

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<sup>2</sup> For a popular discussion of overfitting (in relation to predictive modeling), see N. Silver, 2012, *The Signal and the Noise: Why So Many Predictions Fail – But Some Don't* (New York).

that matters. My suggestion that we see rural settlement in late antiquity as a continuation of an increasing trend begun centuries earlier during the early to middle Roman imperial period, rather than everywhere forming a new and unusual spike, does not undermine the mid-twentieth-century model of late antique rural prosperity in the eastern Mediterranean that flew in the face of earlier judgments of the late Roman empire and late antiquity as periods of economic and demographic stagnation and decline. There need not have been an-across-the-board increase to prove that earlier viewpoint wrong. An overall continuation of imperial-period settlement growth – exceeding expectations in some places and not meeting them in others, but on average continuing the upward trend – fits that model just as well, and avoids overfitting it to the disparate datasets that reflect the normal variation of life on the ground across a vast geographical area and time span.

From this broader perspective, there is a true signal that blasts out more obviously across space and time: the dramatic drop in evidence for rural occupation during the sixth/seventh century, or as late as the eighth/early ninth. In contrast to the varied trajectories of regional settlement increase and decline in the fourth to sixth centuries revealed by the surveys analyzed in this study, in almost all places there is a drop in evidence for rural occupation in the sixth/seventh century. In some places, such as the Amuq valley, Kahramanmaraş plain, and the territory around Kyaneai, this drop is on the order of a 50% decrease; in other places, such as the eastern Troad and the region around Aphrodisias, it appears to have been more severe, resulting in little to no evidence of occupation. A major exception to this rule is central Anatolia, with more obvious evidence of occupation from the fourth through the eleventh century. The interesting case of settlement continuity through the so-called dark ages on the inland Anatolian

plateau has also been noted for the town of Amorium and will be discussed in the section on economy below.<sup>3</sup>

There does not seem to be a clear preference for certain kinds of site locations in this period: contrast, for example, the more remote locations of post-seventh-century sites around Sagalassos with the more easily accessible locations of those around Kyaneai. The signal of precipitous settlement decline varies somewhat in its local details but is remarkable for its regularity, especially on the supra-regional scale: it is perceptible in coastal regions and farther inland, in the territories of important and middling towns alike, and in all three areas of the tripartite frontier zone separating Byzantine and Islamic powers.

To some extent, the general dating of this settlement decline to the seventh century – in some places earlier, in others later – may be a product of rigid and potentially erroneous ceramic chronologies that peg 700 CE as the end-date of all amphorae and red-slipped wares produced and exchanged in the Roman tradition, often on the assumption that the Islamic conquest of portions of the eastern Mediterranean caused the wholesale collapse of interregional exchange. New pottery studies that eschew this assumption and pay closer attention to dating pottery types, including typological changes of previously neglected coarse wares, by association with stratigraphic contexts are overturning such preconceived notions and shattering the sanctity of 700 CE as a fixed, enshrined endpoint. P. Armstrong's extended dating of the latest forms of Cypriot Red Slip (CRS, or Late Roman D) ware beyond 700, through the eighth century and even, tentatively, into the early ninth, means that occupation at sites where these late forms of table ware have been found – which span most of southern Asia Minor and the Levant (see **fig.**

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<sup>3</sup> E.g., C. Lightfoot, 2012, "Business as usual? Archaeological evidence for Byzantine commercial enterprise at Amorium in the seventh to eleventh centuries," in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 177-91.

3.13) – may be similarly extended in time.<sup>4</sup> On the basis of this reassessment, occupation of as many as 14 rural sites in the territory of Balboursa may have to be extended past the seventh century and well into the eighth.<sup>5</sup> The recent dating of a locally produced (Bağsaray) fine ware to the mid-sixth to early eighth century, and of a coarse ware assemblage to the late seventh to eighth century, has required a similar extension of occupation for both Sagalassos and the ten or so rural sites in the surrounding countryside where such wares have been found.<sup>6</sup>

Recognition of post-seventh-century wares has indeed revealed occupation that was previously invisible. Nevertheless, this newly exposed occupation existed at a level far below that of the preceding centuries, and thus the post-seventh-century drop in settlement, while perhaps less precipitous in some regions than previously thought, remains a true signal.

### ***Settlement organization***

Even at the height of the empire as an “aggregate of cities,” the vast majority of the population lived in farms and villages in the countryside. In the second century CE the population of the Roman empire may have swelled to as many as 60 million people, around 15% of whom lived in several thousand cities spread across the empire.<sup>7</sup> In contrast, somewhere between 75 and 90%

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<sup>4</sup> See the discussions in Chapters 3 and 6. P. Armstrong, 2009, “Trade in the east Mediterranean in the 8th century,” in M. Mundell Mango (ed.), *Byzantine Trade, 4th-12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham) 157-78.

<sup>5</sup> See Chapter 3. P. Armstrong, 2006, “Rural settlement in Lycia in the eighth century: New evidence,” in K. Dörtlük et al. (eds.), *III. Likya Sempozyumu, 7-10 Kasım 2005, Antalya = The IIIrd Symposium on Lycia, 07-10 November 2005, Antalya*, vol. 1 (Antalya) 19-29; ead., 2012, “The survey pottery: Hellenistic and later,” in J. J. Coulton, 2012, *The Balboursa Survey and Settlement in Highland Southwest Anatolia* (London) II, 31-82.

<sup>6</sup> See Chapter 7. A. K. Vionis, J. Poblome, and M. Waelkens, 2009, “Ceramic continuity and daily life in medieval Sagalassos, SW Anatolia (ca. 650-1250 AD),” in T. Vorderstrasse and J. J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia* (Leiden) 191-213; eadem, 2009, “The hidden material culture of the Dark Ages. Early medieval ceramics at Sagalassos (Turkey): New evidence (ca AD 650-800),” *Anatolian Studies* 59: 147-165; H. Vanhaverbeke, A. K. Vionis, J. Poblome, and M. Waelkens, 2009, “What happened after the 7<sup>th</sup> century AD? A different perspective on post-Roman rural Anatolia,” in T. Vorderstrasse and J. Roodenberg (eds.), *Archaeology of the Countryside in Medieval Anatolia*, Phians 113 (Leiden) 177-90.

<sup>7</sup> B. Frier, 2000, “Demography,” in A. K. Bowman, P. Garnsey, and D. Rathbone (eds.), *The Cambridge Ancient History XI. The High Empire, A.D. 70-192* (Cambridge) 787-816, at 813, 814, 814 table 6.

of the population were farmers and pastoralists whose products were fundamental to their own subsistence, to the supply of cities near and far, and to the economy of the empire in general.<sup>8</sup> Rome and, to a lesser degree, Constantinople were cities of exceptional size and density; second-tier cities of a few hundred thousand such as Alexandria and Antioch were barely more common. Most cities numbered around 10-15,000 people, including those who shifted residence between city and countryside according to vocation, season, or whim.<sup>9</sup> Due to its longer urban tradition, the eastern Mediterranean had a slightly higher proportion of cities to rural settlements than the west, but here too most people lived in the countryside.

Changes during the course of late antiquity in the eastern Mediterranean resulted in major differences in settlement organization by end of the seventh century. The evidence for contraction and partial abandonment of urban sites combined with the drop in absolute rural site numbers suggests that the population did not simply move from cities to the countryside, or from the countryside into cities. Nor does it appear that vast numbers of people flocked to the relatively small number of cities that retained some vital urban function – with the exception of Constantinople, which must always have offered various incentives for immigration. But even the largest cities were smaller than they had been. The upshot of all this is that, overall, a smaller proportion of the population now lived in cities compared to the preceding centuries. For many people – remember, even in the second century 75-90% of the empire’s population lived in the countryside – this change would not have been felt directly (and in any case, it unfolded over many generations). But the indirect effects of lower settlement density, as well as lower population levels (see below), must have been enormous: fewer people had access to markets

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<sup>8</sup> For the rural producing population, see R. Van Dam, 2011, “Bishops and clerics during the fourth century: Numbers and their implications,” in J. Leemans, P. Van Nuffelen, S. W. J. Keough, and C. Nicolay (eds.), *Episcopal Elections in Late Antiquity*, *Arbeiten zur Kirchengeschichte*, Band 119 (Berlin) 217-42, 229, 229-30 n. 26 with references.

<sup>9</sup> Frier, 2000, “Demography,” 813.

and therefore the ability to buy, sell, or exchange goods and commodities; to services requiring skilled labor such as pottery production, blacksmithing, and construction; and to potential marriage partners and social contacts.

The other major change in settlement organization was the virtual disappearance of single-household settlements, or what are usually understood to be single-family farmsteads. This trend is most evident around Kyaneai and Sagalassos, and perhaps in the Amuq valley and the region around Aphrodisias as well. This means that people were more likely to live in villages or hamlets than in cities or single-family farmsteads. The result of these two changes was a greater homogeneity in settlement organization, since the top and bottom of the imperial-period settlement hierarchy of city-village-hamlet-farmstead had been restricted (in the case of towns) or largely wiped away (farmsteads). The existence of other, less permanent settlement types, such as seasonal camps for (semi-)nomadic pastoralists, is nearly impossible to sense with the antennae of regional survey.

In summary, the survey evidence indicates that rural occupation decreased at the same time that many cities contracted and became partially abandoned. City and countryside, then, suffered together. People did not simply move out of cities into the countryside; if that had been the case, we would not see such a dramatic drop in rural site numbers, which themselves remained small, on the order of villages and hamlets. The new settlement pattern that arose from these changes was based primarily on villages. A smaller proportion of the population now lived in cities; and, in striking contrast to the high imperial period, almost no one resided in single-family farmsteads. The existence of other types of settlements, such as temporary or seasonal camps, remains a very real but untested possibility. It is likely that we remain unaware of some degree of occupation after the seventh/eighth century because we still cannot recognize all the

coarse and plain wares used by people living at this time. But the fact that such wares now predominate – or constitute fully – the ceramic assemblages characteristic of occupation during this period is itself telling. What it might reveal about changes in inhabitants' standards of living and about the reconfiguration of networks of production and exchange will be discussed in the section on economic changes below.

## **A.ii. Population**

Inferences about changes in population levels over time are based on the settlement dynamics suggested by survey data in combination with assumptions about the demographic effects of the plague. The estimate made by B. Frier for the population of the Roman empire in 164 CE of around 60 million people, noted above, includes around 23 million living in the Greek east.<sup>10</sup> Taking this figure as a starting point, R. Van Dam suggests that in 400 CE the total population was somewhere around 50 million, perhaps a little less, and thus assuming the same rate of decline, the population of the east may have been almost 19 million, including 7.5 million in Asia Minor and almost 4 million in greater Syria.<sup>11</sup> Van Dam believes the population declined between 164 and 400 CE due to the rapid effects of the Antonine plague in combination with slower decline of the third century caused by “political instability in frontier regions, frequent military campaigns, and the outbreak of another plague.”<sup>12</sup> The survey evidence suggests that any such decline did not continue past the mid-fourth century in the regions of Asia Minor and northwest Syria reviewed here. Instead, it would have represented a relatively small dip in the

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<sup>10</sup> Frier, 2000, “Demography,” 814, 814 table 6.

<sup>11</sup> Van Dam, 2011, “Bishops and clerics during the fourth century,” 227-28, using an 18.6% decline rate from the 164 CE estimates of total and regional population of Frier, 2000, “Demography,” 814 table 6. I have rounded up Van Dam’s estimates of 18.8 million for the Greek east and 3.9 million for greater Syria.

<sup>12</sup> Van Dam, 2011, “Bishops and clerics during the fourth century,” 227.

general trajectory of population increase from the high imperial period through late antiquity up to the seventh century. After the mid-fourth century, we should imagine the population of Asia Minor and greater Syria once again growing, perhaps at the conservative annual rate of 0.15% used by Frier for the population of the empire between 14 and 164 CE.<sup>13</sup> Left unchecked, the population of these regions should have doubled by 800 CE. The sharp seventh/eighth-century drop in rural settlement indicated by survey (and in urban occupation, indicated by excavation) demonstrates that this was not at all the case. Something steered this population trajectory wildly off course. That something was likely a combination of factors, one of them being the plague of 541/42 followed by two centuries of recurring pestilence. D. Stathakopoulos suggests that an outbreak of plague among what seems to have been the large population of the eastern Mediterranean in the sixth century would have caused very high mortality rates, resulting in rapid and short-term population decline.<sup>14</sup> It is likely that long-term decline was caused not by plague alone, but by plague in concert with ceaseless military campaigns, earthquakes, famine, and perhaps a series of climatic phenomena, though the evidence for these is less secure (see Chapter 2).

Mortality rates must have varied, because the plague hit different regions at different times and with varying severity. Stathakopoulos estimates 20% of the population of Constantinople died when first wave of plague hit the city in 542, knocking the population down from perhaps 350-400,000 to somewhere around 280-320,000.<sup>15</sup> In other cities and areas,

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<sup>13</sup> Frier, 2000, "Demography," 813, who explains that an annual of 0.15% would double the population every 4.6 centuries.

<sup>14</sup> See Chapter 2. D. Stathakopoulos, 2004, *Famine and Pestilence in the Late Roman and Early Byzantine Empire, A Systematic Survey of Subsistence Crises and Epidemics*, Birmingham Byzantine and Ottoman Monographs 9 (Aldershot) 167.

<sup>15</sup> Stathakopoulos, 2004, *Famine and Pestilence*, 139-42. Population estimates of sixth-century Constantinople before the plague come from C. Mango, 1985, *Le développement urbain de Constantinople (IVe-VIIe siècles)* (Paris) 51 (300-400,000 in 450 CE); C. Morrisson and J.-P. Sodini, 2002, "The sixth-century economy," in A. E. Laiou (ed.), *The Economic History of Byzantium: From the Seventh through the Fifteenth Century*, vol. 1

especially rural ones, this rate may have been much lower. Frier suggests a 10% mortality rate for the total population of the empire after the Antonine plague.<sup>16</sup> The outbreaks of plague that appeared every ten to fifteen years during the two centuries after 541 did not hit every region, but even if only half of them struck Asia Minor and northwest Syria and caused an immediate 10-20% drop in population each time, the annual growth rate of 0.15% suggested above would have done little to counter the resulting demographic decline, which was no doubt exacerbated by the negative, indirect effects of plague on birth rates.

Demographic estimates for antiquity are notoriously difficult to make, and no doubt there are reasonable objections to the numbers and parameters for population change offered here. The settlement evidence obtained from survey, however, provides solid footing for the reconstruction of a slowly growing late antique population rapidly cut down in the sixth and seventh centuries. The population of Asia Minor and northwest Syria was not wiped out entirely, and inhabitants of some regions such as central Anatolia may have remained relatively unaffected. But in most towns, the population must have dipped below the threshold level required to maintain the kind of dense urban social and physical environments that had been commonplace in the preceding centuries.

### **A.iii. Environmental conditions and subsistence strategies**

Like the decline in settlement and population, the abandonment of arboriculture seen in pollen records across Asia Minor – a phenomenon in this geographical area that defines the end of the

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(Washington, DC) 171-217, at 174 (400,000 or a bit more in the sixth century); and A. H. M. Jones, 1964, *The Later Roman Empire, 284-602: A Social, Economic and Administrative Survey* (Oxford) 698 (600,000 in the sixth century).

<sup>16</sup> Frier, 2000, "Demography," 815-16.

Beyşehir Occupation (BO) Phase – seems to be a true signal of change, occurring at different times and to varying degrees in different places, but striking in its overall regularity. In general it corresponds in time to the end of the period of climatic amelioration known as the Roman Climatic Optimum and the start of a period of increasing aridity and lower temperatures commonly referred to as the Early Medieval Cold Period, and some have chosen to link the two trends causally. But given the very obvious negative effect that population decline and the contraction of surplus agricultural production would have had on arboriculture (especially olive and grapevine) and on intensive crop production in general, pinpointing climate change as the ultimate cause seems overly deterministic. The evidence in favor of those other factors as the cause is actually stronger. This is because the reconstructions that most successfully demonstrate a deterioration in climatic conditions around the seventh century are based on data from across not only the eastern Mediterranean but from Europe as well – compelling in aggregate, but giving little to no indication of the effects these perceived changes may have had within any one region or location. That is, climate change as the main cause of social decline at the end of antiquity has compelling explanatory power on the supra-regional scale, but it breaks down and cannot be confirmed when applied at smaller scales.

The issue of landscape degradation, namely deforestation and erosion, suffers from the opposite problem as an explanatory factor. Its existence may be proven for a specific location or even region, but there is no evidence for widespread destruction of the landscape on a scale large enough to make it a likely agent of social decline or collapse. Furthermore, even when the occurrence of a local erosion event is incontrovertible, its timing and therefore relationship to human activity is usually too imprecise to link the two in a cause-and-effect relationship. In almost every region included in this study where relevant research was carried out, there was

evidence of erosion at some point in the Roman or late Roman period, and it is reasonable to connect these events to intensive – and unsustainable if mismanaged or neglected – land use practices, often in concert with climate-related changes such as an increase in the severity and frequency of rainstorms. In some cases, this kind of human-induced landscape degradation, made worse by natural events or trends, altered the landscape in dramatic ways – the formation of a permanent lake and marshlands in the Amuq valley, for example – that may have forced local communities to change their behaviors. But such localized events, which did not occur in every place at this time, cannot explain the large-scale social changes that characterize the end of antiquity.

A more satisfactory explanation for the sharp decline in arboriculture and intensive agriculture is population decline and its knock-on effects: fewer people to work the land, and less demand to keep doing so at a scale and level of intensity that no longer brought rewards. Put another way, the end of the BO Phase was the aggregate result of similar cost-benefit analyses made singly across Asia Minor in response to challenges and unpredictability that affected the empire – and the wider eastern Mediterranean – universally. It increasingly made more sense to more people to move away from intensive agriculture toward a greater balance of agropastoralist strategies, which in some places may have even tipped into a greater reliance on pastoralism. Relevant data are not widely available, but where they are, such as at Sagalassos and Gordion, they indicate that during the Roman imperial period inhabitants engaged in an intensive and high-risk agricultural system that prioritized the production of high yields of wheat at the expense of other, less valuable but also less risky grains (such drought-resistant barley) and the herding of cattle, a valuable but expensive animal, over more resilient sheep and goats. The same datasets show a reverse in the early Byzantine period to less risky strategies: an increase in

the proportion of barley to wheat, and of sheep/goat to cattle remains. Viewed in a longer-term perspective, in many cases these changes actually reflect a return to the lower-risk strategies employed before the Roman period. That is, it is the high-risk strategy of the Roman period that is anomalous – just as is the unusual ubiquity and density of urban settlements and population in general that made these risks worth taking.

To the extent that communities and entire regions shifted away from intensive agriculture toward transhumant or semi-transhumant pastoralism, survey may fail to retrieve a significant proportion of the evidence for continued human occupation in a landscape, since such seasonal or otherwise semi-permanent occupation leaves many fewer physical remains. We may not be “seeing” the true extent of occupation after the seventh century, and therefore may be underestimating the size of the population. But if so, this would still mark a major change in livelihoods, diet, and lifestyle. P. Arthur has recently suggested a connection between the use of open casseroles and the predominance of goat/sheep in diet, on the one hand, versus closed cooking pots and cattle/pig, on the other, based on correlations between traditional ceramic assemblages and meat sources in regions across the Mediterranean and Europe.<sup>17</sup> This is a compelling idea, but it is not borne out across the board: at Sagalassos, for example, the increase in the proportion of closed cooking pots to open casseroles in later antiquity happens at the same time as an increase in proportion of sheep/goats to cattle remains. What else might the pottery evidence be able to tell us?

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<sup>17</sup> P. Arthur, 2007, “Pots and boundaries. On cultural and economic areas between late antiquity and the early middle ages,” in M. Bonifay and J.-C. Tréglia (eds.), *LRCW 2: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*, vol. 2, BAR Int. Ser. 1662 (Oxford) 15-27.

#### **A.iv. Standard of living and quality of life**

The growing predominance of food preparation vessels over table wares, and the disappearance of fine red slip wares altogether, suggests changing diet and/or dining practices. It is difficult to be more specific, or to say with certainty whether these trends were the result of a voluntary change in taste, or an involuntary lack of access to previously available wares. The latter seems more likely, but since this lack of access is assumed on the basis of the pottery finds themselves, we run the risk of entering into a circular argument. Intended or not, these changes in pottery assemblages beginning in the seventh century corroborate the other broad patterns of change discussed above. Viewed together, these pieces of evidence suggest that, except perhaps for the very wealthy elite, the standard of living after the seventh century was lower than it had been in the preceding centuries. Since it is nearly impossible to quantify standard of living in this case, using it may be anachronistic, but as an impressionistic conceptual device it works well, especially in association with the kinds of broad patterns of change I have sought to identify. Indications of a lower standard of living include a decline in wealth; limited or severed access to the full range of commodities, goods, and services that had been available in previous centuries; and a decline in the (creature) comforts that had characterized life in the Roman empire, such as high-quality pottery, roof tiles, and substantial housing, in both city and countryside.<sup>18</sup> Notable in this context are the widespread increases in the proportion of local and regional wares over interregional (imported) wares, coarse/plain over fine wares, cooking over table wares, and handmade over wheel-made wares. Since fewer people now lived in cities, many of the advantages of urban life were available to fewer people; these included not only material benefits

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<sup>18</sup> For these materials as indices of comfort, see B. Ward-Perkins, 2005, *The Fall of Rome and the End of Civilization* (Oxford) 87-122.

but also access to information regarding economic opportunities, to wider social connections, and to other features of urban living the benefits of which cannot easily be quantified, such as entertainment and intellectual pursuits. These less tangible aspects of life are better understood as part of one's quality of life than standard of living, and proclaiming that their absence led to a lower quality of life will be seen by many as an unsupportable value judgment. I wish not to judge but to describe, and also to highlight the less obvious effects of the broad patterns of change that mark the end of antiquity. More-restricted communication and access to information about economic opportunities is, I think, one of these, and is related to the greater insecurity and apprehension about the future that many people must have felt in the face of the war, invasion, and outbreaks of plague they experienced firsthand or knew had occurred elsewhere.

Life expectancy in antiquity was low, and mortality rates very high. Using Model West, level 3, as a life table for the high empire, B. Frier provides a general indication of these rates: life expectancy at birth is 25 years for females and 22.9 years for males; those who manage to survive to age 5 have an increased life expectancy of up to 35-40 years, and so on.<sup>19</sup> Of course, individuals might live much longer, into their 70s or 80s. In terms of fertility rates, the average woman who reached menopause probably bore at least 5-6 children; most women started bearing children in their mid-teens. Fertility could be controlled by various forms of contraception and by abortion in the form of ingested drugs; infanticide and exposure were also not unheard of. Mortality rates were very high. Annual death rates were probably in the range of about 40 per 1,000 for women, 44 per 1,000 for men. More than half of all deaths were of children under 10 years of age.

Frier highlights what he sees as the main reasons for high mortality: (1) poor nutrition, primarily a result of the low level of real wages (as well as occasional food shortages); (2) poor

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<sup>19</sup> Frier, 2000, "Demography," for this and the information on fertility and mortality that follows.

sanitary conditions, particularly regarding the disposal of human waste and garbage; (3) urbanism in general, which facilitated the spread and severity of infectious disease; and (4) the inability or unwillingness of the state to mitigate the effects of such disease.<sup>20</sup> All these factors were arguably more of a problem in later antiquity than during the high empire, with the exception of urbanism. The fact that fewer people now lived in cities, which themselves were probably less densely populated, could have had a dampening effect on mortality. But any such decrease would have been overwhelmed by the myriad and more obvious factors working to increase mortality, especially the recurring outbreaks of plague, military campaigns, and invasions. Furthermore, the ill health of mothers afflicted by plague and poor nutrition would have lowered birth rates, and the death and dislocation of plague would have meant fewer potential reproductive partners in the first place.<sup>21</sup> Lower birth rates may also have resulted from peasants' desire to restrict family size (see below). Finally, migration, deportation, and resettlement would have upset communities and been an additional cause of population stagnation or decline.

These factors have been discussed here and not in the section on population above because their salience lies in the impression they, together with all the changes noted above, provide of the end of antiquity as time of disruption and unpredictability.

#### **A.v. Production and exchange**

In Chapter 3, I began to draw connections between a number of economic issues or factors as a way to start thinking about how the various indices of change explored in this study –

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<sup>20</sup> Frier, 2000, "Demography," 793.

<sup>21</sup> For the effects of plague on fertility, see Stathakopoulos, 2004, *Famine and Pestilence*, 161.

population, settlement, environmental conditions and subsistence strategies, standard of life and quality of life, and production and exchange – are interwoven and interdependent. These economic issues included the ancient economy as an overarching system for the production and movement of goods, people, money, and ideas; the role of the state versus private commerce as a motor of exchange; agricultural production, including the possibility of surplus production for export (especially olive oil and wine); cycles of expansion into and the abandonment of marginal land; the importance of pottery as a proxy for production, exchange, and standard of living in general; and the relationship between agricultural production and exchange, on the one hand, and economic prosperity and population growth, on the other. Given the evidence presented in the preceding chapters, what connections can be drawn among these issues? In what ways has using economic activity as a starting point helped us understand the broad patterns of change that together characterize the end of antiquity?

### ***Connections***

The survey results investigated here support the conjectured correlation between population growth, settlement expansion, production of oil and/or wine, and rural economic prosperity. In this context, rural economic prosperity is understood as some surplus amount of money, goods, or commodities that enabled rural inhabitants to hire/barter skilled masons to build houses and communal buildings such as churches, to import materials such as ceramic fine wares from overseas production centers, and in some cases, to obtain precious objects such as silver liturgical items. As discussed above, settlement and population continued to grow during the fourth to sixth centuries as part of a gradual trajectory of growth extending from the imperial period, though this continued expansion did not occur in every one of the regions surveyed.

Evidence for oil and wine production can be found in practically every region, both those that experienced late antique growth, and those that did not. The problem then is to determine the relationship between settlement and population growth, on the one hand, and oil and/or wine production, on the other. A region can prosper for any number of reasons: as a supplier of some essential natural resource, a pilgrimage site, a military headquarters, or a vital entrepôt. The presence of pressing equipment scattered across a prosperous region is not itself proof that whatever was pressed was the source of that prosperity.

In many regions, such as the territory around Sagalassos, the presence of press installations must be considered simply the accoutrement of normal Graeco-Roman life, and their ubiquity merely a symptom of the vast quantities and wide range of uses to which oil and wine were put as part of that lifestyle. That is, the local rural population produced oil primarily for local consumption in both city and countryside, and we should not interpret the installations as evidence of surplus production for export. In other cases, however, the provision of multiple presses within the same village or even the same building complex – creating a oil or wine “factory,” as it were – may indicate production on a greater scale, not only for local but also for regional or even interregional distribution and consumption. Examples of this scale of production can be found in the villages of the Limestone Hills in northwest Syria, for example, and in at least one rural settlement near Kyaneai.

But even in those latter cases, it is difficult to estimate local production versus local demand, and thereby determine whether a specific area produced oil or wine in excess of local needs. One factor that helps clinch the argument in favor of intentional surplus production for export is the presence of local amphora kilns. On the basis of evidence presented in Chapters 3 to 5, it seems likely that the production of Late Roman Amphora 1 (LRA 1) was concentrated in

Cilicia and eastern coastal Isauria (later superseded by Cyprus), and that we should look not to the villages of the Limestone Massif in northwest Syria but rather to those of Cilicia and Isauria to find the main producers of the wine (and oil) carried in this widely distributed amphora type.<sup>22</sup> In contrast, oil and wine production in the villages of the Limestone Massif may have been limited to meeting the local and regional demands of nearby urban centers, especially Antioch, one of the largest cities in the empire, as well as the army stationed along the eastern frontier. The densely settled and large populations of northwest Syria provided a degree of local and regional demand that must have far exceeded that in Cilicia and Isauria. In other words, agricultural producers in northwest Syria enjoyed the close proximity of large local and regional markets, while the major markets of agricultural products from Cilicia and Isauria were interregional and involved long-distance, overseas shipping in LRA 1. The insistence on surplus production for specifically *overseas* export in the Limestone Massif therefore seems unwarranted, as does the argument for olive or grape monoculture to the exclusion of the cultivation of other crops and the raising of animals. The inhabitants of these villages likely met their subsistence needs with a mixed agropastoralist strategy supplemented by additional income from the sale of surplus, rather than relied solely on the production of surplus for exchange and the importation of basic foodstuffs.<sup>23</sup>

The regions of southern Asia Minor and northwest Syria explored in this study were integrated into networks of exchange at all scales. Previously revealed only through excavated finds, these networks are now better understood as a result of survey data, including not only pottery but also the material remains of agricultural production and rural occupation. Rural

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<sup>22</sup> P. Reynolds, 2005, "Levantine amphorae from Cilicia to Gaza: A typology and analysis of regional production trends from the 1st to 6th centuries," in J. M. Gurt i Esparraguera, J. Buxeda i Garrigós, and M. A. Cau Ontiveros (eds.), *LRCW I: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry* (Oxford) 563-612, at 566, 577-78. See Chapter 3.

<sup>23</sup> See the discussion in Chapter 4.

producers were engaged primarily with their own subsistence needs but also provided essential commodities such as oil and wine to meet local, regional, and interregional demand. In Chapter 3 I highlighted two networks in which our geographical area of interest was integrated in late antiquity and the early Byzantine period, because they provide a key to understanding many of the broad patterns of change at the end of antiquity outlined above. These two networks, discussed in greater detail below, operated at different scales and also via different primary mechanisms or incentives: the fiscal system and private commerce. In order to use these networks of exchange – and their fates after the seventh century – as a key to understanding the broader changes of later antiquity, we have to look more closely at the balance of fiscal versus commercial roles in fueling each, in order to gauge what would happen to these networks should either mechanism break down.

Both in Chapter 3 and throughout the discussions of the survey and palaeoenvironmental data that form the heart of this dissertation, I argued that after the state-subsidized supply chain began to fracture in the later sixth century, and finally broke in the seventh, commercial exchange survived intact, operating mainly on local and regional scales, but also interregionally. The seventh-century rupture of the fiscal system was due primarily to the loss of territory in the Balkans and the Levant; the end of the free grain supply in Constantinople after 618 CE; and the establishment of the theme system (see **fig. 1.4**), as a result of which the army was now stationed and supplied regionally.<sup>24</sup> The state system as a source of demand and capital investment was unparalleled, so much so that many scholars have considered it the main motor of exchange in the late antique economy, and of overseas, interregional exchange of goods and commodities in bulk, in particular. Furthermore, the argument goes, private commerce never operated on a scale great enough to promote the growth of the kind of large-scale production centers or “vastes

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<sup>24</sup> C. Wickham, 2005, *Framing the Early Middle Ages: Europe and the Mediterranean 400-800* (Oxford) 126-27.

zones d'agriculture spéculative"<sup>25</sup> seen, for instance, in southern Asia Minor and northwest Syria. Following this line of reasoning, the weakening of the state and the rupture of the fiscal system would have caused a breakdown of private commerce as well.<sup>26</sup> But the evidence presented in this dissertation suggests that this was not the case; instead, commercial activity survived, and what is more, it was precisely those communities that had depended more on networks of exchange driven by commerce rather than those fueled primarily by the fiscal system, that were able to survive the challenges of the sixth and seventh century more successfully. Some explanation of these two mechanisms of exchange, and how they were interrelated, may help justify this conclusion.

### ***Mechanisms of exchange: The state annona system and private commerce***

The relationship between the state redistribution system and private commerce was complex. In many ways, the state system facilitated and encouraged commercial exchange, especially on the interregional scale. Legal regulations and financial incentives were established to encourage private shippers to transport the *annona* in a system that would otherwise have had little economic appeal because of the lower freight rate offered by the state.<sup>27</sup> In return for fulfilling their obligations to the state, these shippers in the state service (*navicularii*) enjoyed tax privileges, avoided service on town councils, and were allowed to transport and sell non-*annona* goods customs-free; this latter incentive effectively meant that the state subsidized some private

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<sup>25</sup> J. Durliat, 1998, "Les conditions du commerce au VI<sup>e</sup> siècle," in R. Hodges and W. Bowden (eds.), *The Sixth Century: Production, Distribution, and Demand* (Leiden) 89-117, quote at 117. See also idem, 1990, *De la ville antique à la ville byzantine: le problème des subsistances* (Rome).

<sup>26</sup> Durliat, 1990, *De la ville antique à la ville byzantine*, 585-605; see Wickham, 2005, *Framing the Early Middle Ages*, 633, 791-92, for a revised version of this argument. See also J. Haldon, 2000, "Production, distribution and demand in the Byzantine world, c. 660-840," in I. L. Hansen and C. Wickham (eds.), *The Long Eighth Century: Production, Distribution and Demand* (Leiden) 225-64.

<sup>27</sup> The following information on incentives for *navicularii* and their effects is from M. McCormick, 2001, *Origins of the European Economy: Communications and Commerce A.D. 300-900* (Cambridge) 87-91.

commerce. Furthermore, the state provided a significant chunk of the capital required for shipping by demanding that the provinces supply timber for building the ships of the *navicularii*.<sup>28</sup> As M. McCormick concludes in his comprehensive analysis of shipping in the late antique Mediterranean, this system “reduced transport costs substantially by decreasing capital outlays for the ships in at least some cases, by diminishing risk and guaranteeing predictable business rhythms, routes, and rates (albeit lower ones) aboard ships loaded with state supplies, on which private merchandise might literally have traveled piggyback and duty-free.”<sup>29</sup>

Presumably, the state could have bought (in cash) products required in excess of tax requirements. Conversely, products the state received in surplus of *annona* requirements could have been sold to private shippers.<sup>30</sup> J.-M. Carrié has argued that “the large amount of fiscal grain which was sold from the imperial public property to private traders or to the *navicularii*” was an essential part of the supply of the “free food market” in Rome and Constantinople, which was also supplied by private producers: thus an originally state-owned foodstuff made its way into the commercial market in bulk.<sup>31</sup> Presumably this could have been the case for other main foodstuffs, such as oil and wine. Carrié further downplays the role of the *annona*, and the state in general, by demonstrating that the recipients of the *annona* in Rome and Constantinople constituted only a “minority of the population,” and noting that “the other large cities in the Mediterranean world mainly depended on imported staples” made available in the “urban free

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<sup>28</sup> *Codex Theodosianus* 13, 5 14, 1; T. Mommsen and P. Krueger (eds.), 1990 (reprint), *Theodosiani libri XVI cum constitutionibus Sirmondinis et leges novellae ad Theodosianum pertinentes* (Berlin). Reference from McCormick, 2001, *Origins of the European Economy*, 88 n. 23.

<sup>29</sup> McCormick, 2001, *Origins of the European Economy*, 90.

<sup>30</sup> A possibility posed, e.g., by O. Karagiorgou, 2001, “LR2: A container for the military *annona* on the Danubian border?” in S. Kingsley and M. Decker (eds.), *Economy and Exchange in the East Mediterranean during Late Antiquity* (Oxford) 129-66, at 155.

<sup>31</sup> J.-M. Carrié, 2012, “Were late Roman and Byzantine economies market economies? A comparative look at historiography,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 13-26, at 20; citing idem, 2003, “L’institution annonaire de la première à la deuxième Rome: continuité et innovation,” in B. Marin and C. Virlouvet (eds.), *Nourrir les cités du bassin méditerranéen. Antiquité – temps modernes* (Paris) 153-211, at 177.

market of foodstuffs,” supplied by large private estates “directed to produce the largest possible agricultural surplus.”<sup>32</sup> McCormick envisions a system that gave so many advantages to *navicularii* over non-subsidized private shippers that the latter were restricted to markets not covered by the *annona* fleet, such as local and regional networks, or long-distance routes not used by the state shippers.<sup>33</sup> Two important points to take away from this discussion are, one, the *annona* system enabled or promoted some private commerce, but two, private commerce – both local and longer-distance – could also operate independently of this system.

A good illustration of this complex relationship is provided by the situation of North Africa before and after the Vandal conquest of the fifth century, which serves as a useful case study for thinking about similar dynamics at work in the eastern Mediterranean during late antiquity and the early Byzantine period. In this case H. Elton favors a model of mutually exclusivity, whereby “free-market” distribution could flourish only in exchange networks not dominated by state-subsidized movement of the *annona*.<sup>34</sup> As evidence for this double model of distribution, he notes how early-fifth-century deposits in Italy and Carthage show exchange between the two of both pottery and goods in amphorae, but little LRA 1; in contrast, LRA 1 is abundant in southern Gaul and Spain. This scenario “was presumably the result of the state-supported transport of the *annona* which allowed goods from Africa to be imported at lower transport costs” than goods from the east.<sup>35</sup> The situation changed beginning in the 440s, after the Vandal conquest of Africa disrupted the *annona* system, as seen in an increase in LRA 1

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<sup>32</sup> Carrié, 2012, “Were late Roman and Byzantine economies market economies?” 20.

<sup>33</sup> McCormick, 2001, *Origins of the European Economy*, 90.

<sup>34</sup> H. Elton, 2005, “The economy of southern Asia Minor and LR1 Amphorae,” in J. M. Gurt i Esparraguera, J. Buxeda i Garrigós, and M. A. Cau Ontiveros (eds.), *LRCW I: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry* (Oxford) 691-95, at 693. For other discussions of the relationship between the Vandal conquest of North Africa, the *annona* system, and private commerce, see, e.g., Wickham, 2005, *Framing the Early Middle Ages*, 711-12; McCormick, 2001, *Origins of the European Economy*, 100-1; C. Panella, 1993, “Merci e scambi nel Mediterraneo tardoantico,” in A. Carandini, L. Cracco Ruggini, and A. Giardina (eds.), *Storia di Roma 3. L’età tardoantica. II. I luoghi e le culture* (Turin) 613-97, at 641-44.

<sup>35</sup> Elton, 2005, “The economy of southern Asia Minor and LR1 Amphorae,” 693.

finds in Italy and Africa, perhaps resulting from the cessation of state subsidization, such that “eastern merchants could now compete as effectively in Italy and Africa as they did in Spain and Gaul.”<sup>36</sup>

This new emphasis on private enterprise after the Vandal conquest as seen in the increase in LRA 1 imports is complemented by additional evidence in North Africa: at the same time, some amphora manufacture and bottling of olive oil started to take place directly at inland rural estates where the oil was produced, rather than at exporting harbors, where before the Vandal conquest it seems to have taken place exclusively.<sup>37</sup> This kind of evidence has encouraged an abandonment of the historiographical tradition that economic decline in North Africa coincided with the Vandal conquest in favor of a framework of economic prosperity, with continued production and exchange.<sup>38</sup> Thus the shift of bottling activity to rural estates might be related to the cut-off of the *annona* resulting from the Vandal conquest, allowing “the possible development of a productive system more focussed on the private sector of the economy.”<sup>39</sup> In any case, we know African products were still exported overseas after the breakdown of the state system in the west: fifth-century African amphorae, fine ware, and lamps have been found neatly stacked in an excavated warehouse in Classe, Italy, which was destroyed by fire around 500, when North Africa was controlled by the Vandals, and Ravenna by Odoacer and Theoderic.<sup>40</sup>

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<sup>36</sup> Elton, 2005, “The economy of southern Asia Minor and LR1 Amphorae,” 693. See also C. Abadie-Reynal, 2010, “Les échanges interrégionaux de céramiques en Méditerranée orientale entre le IV<sup>e</sup> et le VIII<sup>e</sup> s.” in E. Kislinger, J. Koder, and A. Külzer (eds.), *Handelsgüter und Verkehrswege: Aspekte der Warenversorgung im östlichen Mittelmeerraum (4. bis 15. Jahrhundert)* (Vienna) 25-44, at 29.

<sup>37</sup> Panella, 1993, “Merci e scambi nel Mediterraneo tardoantico,” 642-43.

<sup>38</sup> Panella, 1993, “Merci e scambi nel Mediterraneo tardoantico,” 643-644, 643 n. 123.

<sup>39</sup> A. Leone and D. Mattingly, 2004, “Vandal, Byzantine and Arab rural landscapes in North Africa,” in N. Christie (ed.), *Landscapes of Change: Rural Evolutions in Late Antiquity and the Early Middle Ages* (Burlington, VT) 135-62, at 155.

<sup>40</sup> M. McCormick, 2012, “Movement and markets in the first millennium: Information, containers, and shipwrecks,” in C. Morrisson (ed.), *Trade and Markets in Byzantium* (Washington, DC) 51-98, at 66-67, with references for the excavations of Magazzino no. 17 at Classe. McCormick also suggests that the appearance of fifth-century shipwrecks on the southeastern coast of Sicily likely indicates the movement of oil and grain from North Africa to

African pottery and, more unusually, African coins of both the Vandal dynasty and the time of Justinian have been excavated from the shops lining the Street of the Monuments in Scythopolis (Bet Shean), which were destroyed in a fire around 540 CE.<sup>41</sup> This perspective on North Africa during the Vandal occupation provides a useful way of thinking about the eastern Mediterranean in general during late antiquity and throughout the more poorly understood seventh and eighth centuries: in particular, the fact that private commerce alone could drive exchange, even at an interregional scale, and even when state mechanisms were not involved.

Just as state-driven shipping and private commerce should be seen as intertwined, so should interregional and regional exchange networks. As C. Abadie-Reynal has pointed out, such interweaving of long-distance and regional trade would be particularly expected in the east because of its urban density and the long development of its regional trade networks.<sup>42</sup> Obviously the state played a major role in fueling the movement of goods on a massive scale and across vast distances, but private commerce was also an important motor of exchange. Notwithstanding the roles of the state and the church in driving the movement of goods, was this an “*économie fondamentalement marchande*,” as J.-P. Sodini has put it?<sup>43</sup>

In order for rural producers to exhibit the kind of prosperity seen in many areas of southern Asia Minor and northwest Syria, they must have received cash in return for some of the surplus agricultural commodities they produced.<sup>44</sup> That is, they did not produce commodities

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Constantinople and the east, partly for the *annona*; that some number of these wrecks can be dated to the Vandal period demonstrates the movement of African goods in a commercial, not state-run, market (86, 86 fig. 3.13).

<sup>41</sup> Y. Tsafir, 2009, “Trade, workshops and shops in Bet Shean / Scythopolis, 4<sup>th</sup>–8<sup>th</sup> centuries,” in M. Mundell Mango (ed.), 2009, *Byzantine Trade, 4th–12th Centuries: The Archaeology of Local, Regional and International Exchange* (Farnham) 61-82, at 72.

<sup>42</sup> Abadie-Reynal, 2010, “Les échanges interrégionaux de céramiques,” 34.

<sup>43</sup> J.-P. Sodini, 2000, “Production et échanges dans le monde protobyzantin (IVe – VIIe s.): le cas de la céramique,” in K. Belke, F. Hild, J. Koder, and P. Soustal (eds.), *Byzanz als Raum: Zu Methoden und Inhalten der historischen Geographie des östlichen Mittelmeerraumes, Tabula Imperii Byzantini 7* (Vienna) 181-208, at 196.

<sup>44</sup> Karagiorgou, 2001, “LR2: A container for the military *annona* on the Danubian border?” 150; S. Mitchell, 2005, “Olive cultivation in the economy of Roman Asia Minor,” in S. Mitchell and C. Katsari (eds.), *Patterns in the*

simply in fulfillment of tax demands or as rent to landlords. Overseas demand for a region's products and the long-distance movement of these products to satisfy it brought these regions "cash and spending power" and promoted specialized production therein, seen most clearly in the development of marginal land.<sup>45</sup> But such cash could also have come from the sale of products on local and regional commercial markets. The key point to make here is that such rural prosperity was possible only by selling products for cash, rather than giving them to the state as tax in kind for distribution through the *annona*. Recent research, both archaeological and textual, suggests that peasant-farmers in the Roman and early Byzantine world were not as cash-strapped and destitute as some perspectives would have them.<sup>46</sup>

Overall, we can view the late antique economy as balanced between the state and the market as simultaneous and mutually reinforcing mechanisms driving the exchange of goods and commodities at multiple scales. Certainly it was the fiscal system that drove the long-distance exchange of goods and foodstuffs in bulk, and thus played a role in making possible all the attendant commercial markets spawned from such massive movement. Accordingly, the state is seen as bolstering commercial exchange by stimulating production, as in northwest Syria and Cilicia; facilitating distribution, by, for example, subsidizing shippers; and guaranteeing demand – that is, producers did not have to worry about changes in taste in a commercial consumer

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*Economy of Roman Asia Minor* (Swansea) 83-113, at 99; B. Ward-Perkins, 2000, "Specialized production and exchange," in A. Cameron, B. Ward-Perkins, and M. Whitby (eds.), *The Cambridge Ancient History XIV. Late Antiquity: Empire and Successors, A.D. 425-600* (Cambridge) 346-91, at 373-76, who concludes that it was the near east's "ability to sell its products overseas, sometimes over very long distances" (374), that made possible the rural prosperity enjoyed by the region in the fifth and sixth centuries.

<sup>45</sup> Ward-Perkins, 2000, "Specialized production and exchange," 374, describing the situation across the near east in general. His point is that overseas demand, rather than local and regional, was necessary to drive these trends. Decker (2009, *Tilling the Hateful Earth*, 245), too, insists that it was commerce, not the state *annona*, that drove oil and wine production in the region.

<sup>46</sup> M. Ghisleni, E. Vaccaro, and K. Bowes, 2011, "Excavating the Roman peasant I: Excavations at Pievina (GR)," *Papers of the British School at Rome* 79: 96-145, at 139; S. A. Kingsley, 2003, "Late antique trade: Research methodologies & field practices," in L. Lavan and W. Bowden (eds.), *Theory and Practice in Late Antique Archaeology*, *Late Antique Archaeology* 1 (Leiden) 113-38, at 115-19; J. Banaji, 2001, *Agrarian Change in Late Antiquity: Gold, Labour, and Aristocratic Dominance* (Oxford).

market.<sup>47</sup> The state played a major role but was not the sole driver of exchange; commercial markets were important especially for local and regional exchange. Given this interdependence, it is all the more striking that amphorae (such as LRA 1) and fine wares (such as CRS) continued to be produced and distributed after the fiscal system began to break down in the later sixth century and finally ruptured in the seventh, since it means that exchange at all scales, including interregional, was able to survive *despite* no longer being subsidized by the state. These two dynamics of exchange were not so interdependent that the decline of the state system shut down commerce completely. Instead, commercial exchange operating primarily on local and regional scales remained vital: that is, it grew in importance relative to the longer-distance, state-driven networks that had been a defining feature of the Roman world system. In addition, it laid the foundation for new restricted patterns of exchange in the eighth and ninth centuries.

### ***Two networks of exchange***

This outcome is better demonstrated by taking a closer look at the two networks of exchange highlighted in this study, especially at the divergence in their fates after 700. One is the interregional network operating between the fourth and mid-seventh century defined primarily by the movement of wine (and oil) produced in Cilicia/Isauria and Cyprus carried in LRA 1 through the Aegean and to Constantinople and the lower Danube, as well as to other regions of the eastern Mediterranean and Egypt. We can conclude on the basis of the numerous LRA 1 kiln sites along coastal Cilicia, Isauria, and Cyprus (see **fig. 3.10**), the simultaneous expansion in local rural settlement and evidence for oil and wine production, and the wide and heavy

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<sup>47</sup> This particular articulation into three mechanisms is made by S. T. Loseby, 2007, "The ceramic evidence and the transformation of the Roman world," in M. Bonifay and J.-C. Tréglia (eds.), *LRCW 2: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*, BAR Int. Ser. 1662 (Oxford) 1-14, at 8.

distribution of LRA 1, that these products circulated on an interregional network of exchange. Given the far-flung distribution of these products in LRA 1, including to places well within the purview of the eastern empire but also to places such as Britain and Vandal North Africa well beyond it, we can also conclude that the interregional exchange of LRA 1 must have been driven both by the state fiscal system and by private commerce (see **fig. 3.8**). In some branches of this network, such as the one serving Vandal North Africa in the fifth century, the primary mechanism was private commerce. In others, such as the branch extending up to the lower Danube, the main motor must have been the state fiscal system in the form of the military *annona*.

In the eastern Mediterranean, however, the heart of this overarching network operated as a blend between the state system and private commerce, but with the state system as primary impetus. A major artery was the movement of wine and oil in LRA 1 from Cilicia/Isauria (and later Cyprus) up to Constantinople and the lower Danube. T. Lewit has suggested that Phocaea served as an entrepôt between this route and that of Egyptian grain, thereby explaining why Phocaean Red Slip (PRS, or Late Roman C) ware is found in Constantinople, Egypt, southern Anatolia, and the Levant, as well as why both PRS and LRA 1 are prevalent in Constantinople and Egypt (**fig. 9.1**).<sup>48</sup> That is, PRS piggy-backed on these *annona* shipments, in both directions. The dynamics of this proposed network were driven primarily by the state redistribution system of oil, wine, and grain, but at the same time this network supplied commercial markets not only with PRS (and other goods), but also with foodstuffs in excess of fiscal requirements. In the

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<sup>48</sup> T. Lewit, 2011, "Dynamics of fineware production and trade: The puzzle of supra-regional exporters," *Journal of Roman Archaeology* 24: 313-32, at 326.

sixth century, or perhaps as early as the late fifth, Cyprus began producing LRA 1 as well and became part of this network.<sup>49</sup>

The other network prominent in the fourth to mid-seventh century that I have highlighted throughout this study involves the production and distribution of CRS. This network qualifies as interregional according to the definitions presented in Chapter 3, but CRS was never produced or distributed at the large scale of PRS, remaining instead relatively circumscribed with the eastern Mediterranean, and showing up primarily in southern Asia Minor, the Levant, and Cyprus (see **fig. 3.12a-b**). I therefore categorize this network as regional rather than interregional. The only confirmed CRS kilns have recently been discovered at Gebiz near Pednelissos in southern Pisidia, but other production centers must have existed as well, both in southern Asia Minor as well as on Cyprus, where it was originally thought to have been made.<sup>50</sup>

In contrast to the LRA 1 network described above, the network on which CRS circulated may have been driven primarily (or solely) by commercial demand, with little or no state involvement (though it would have benefited indirectly from the actions of the state through, for example, the subsidizing of *navicularii* and the maintenance of port infrastructure). This suggestion is strengthened by the observation that it was not CRS but PRS that seems to have profited from the *annona* shipments that crisscrossed the eastern Mediterranean and beyond. Unlike PRS, CRS never achieved long-distance dominance by piggy-backing directly on the *annona* shipments of southeast Anatolian oil and wine, but its production and distribution could have benefited from these state-driven movements anyway. Shippers of *annona* commodities returning from Constantinople (and elsewhere) – including the Cilician shippers of wine (and

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<sup>49</sup> Reynolds, 2005, “Levantine amphorae from Cilicia to Gaza,” 577.

<sup>50</sup> M. Jackson, M. Zelle, L. Vandeput, and V. Köse, 2012, “Primary evidence for Late Roman D Ware production in southern Asia Minor: A challenge to ‘Cypriot Red Slip Ware’,” *Anatolian Studies* 62: 89-114.

oil?) noted in the “Tariff of Abydos”<sup>51</sup> – could have picked up not only PRS in Phocaea, but also CRS in southern Asia Minor and Cyprus as they made their way back to the Levant and Egypt, selling both fine wares at the numerous stops they made along the way. This may partly explain why the scale of distribution of CRS is so limited compared to that of PRS, with which it could not compete outside the region circumscribed by southern Asia Minor, Cyprus, and the Levant (and, less so, Egypt). This pattern of regional cabotage (or “coastal lugging”)<sup>52</sup> would explain the limited distribution of CRS to areas that could be reached by short overseas hops, or in some cases, by overland transport (see **fig. 9.1**). More indirectly, the co-occurrence of CRS production in regions where LRA 1 and oil/wine were also produced – namely, southern Asia Minor and Cyprus – suggests they may have been interdependent. Waste from olive pressing would have provided valuable fuel for the firing of this fine ware.<sup>53</sup> In this case, state demand for local oil would have fueled simultaneous local production of both LRA 1 and CRS.

No doubt this oil and wine was in demand not only by the state but also by local and regional commercial markets. CRS could have piggy-backed and served as ballast for all kinds of regionally circumscribed commercial shipments of commodities and goods (oil, wine, timber, leather, etc.) demanded by the numerous local and regional markets within the eastern Mediterranean alone. The funerary inscriptions from Corycus discussed in Chapter 5 provide poignant testimony to the pride such shippers took in their commercial endeavors. The important role played by Cilician/Isaurian shippers in both kinds of exchange – state-driven and commercial, which in many ways operated not separately but interdependently – is demonstrated

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<sup>51</sup> J. Durliat and A. Guillou, 1984, “Le tarif d’Abydos (vers 492),” *Bulletin de correspondance hellénique* 108: 581-98. See Chapter 5.

<sup>52</sup> Panella, 1993, “Merci e scambi nel Mediterraneo tardoantico,” 663 (quote), 654-80; McCormick, 2001, *Origins of the European Economy*, 102 n. 81, 103 n. 83, who calls it “coastal lugging.”

<sup>53</sup> Lewit, 2011, “Dynamics of fineware production and trade,” 319-22, on the use of olive waste for producing African and Phocaeen Red Slip ware.

by the special privilege they received probably as transporters of the *annona*, which nevertheless did not prevent them from engaging in a range of local craft industries, including the production and trade of food commodities and goods, including textiles, leather items, and metal implements.<sup>54</sup> Insight into the richness and variety made possible by these networks of exchange is provided by the “Anazarbus Tariff,” a sixth-century customs inscriptions recording taxes on items brought into the city; among other items, it lists plant cuttings, garum, garlic, salt, carob, saffron, silk, camel-hair rope, tin, and lead.<sup>55</sup> The likelihood that the production and distribution network of CRS was driven primarily by local and regional demand and fulfilled by private commerce helps explain why, in contrast to the varied distribution of PRS, most CRS has been found in a much smaller number of places, primarily Cyprus and the (southern) Levant, followed by southern Asia Minor.

Playing an important role in the state *annona* system, of course, did not *a priori* exclude a community or region from integration into local and regional exchange networks that were just as, or perhaps even more, vital to maintaining the diversity of daily economic life. In contrast to the LRA 1 network described above, the CRS network may have been primarily driven by commercial demand, while still taking advantage of opportunities provided indirectly by the existence of the state redistribution system.

### ***Changes after the mid-seventh century***

During the course of the seventh century, the fates of these two networks diverged. These contrasting trajectories are revealed by pottery that traveled on them. During the seventh

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<sup>54</sup> See Chapter 5 for discussion and additional references. On the special privileges as documented in the “Abydos Tariff,” see above. On crafts and trades indicated by the funerary inscriptions of Corycus and elsewhere: G. Varinlioglu, 2011, “Trade, crafts, and agricultural production in town and countryside in southeastern Isauria,” in O. Dally and C. Ratté (eds.), *Archaeology and the Cities of Asia Minor in Late Antiquity* (Ann Arbor, MI) 173-88.

<sup>55</sup> G. Dagron and D. Feissel, 1987, *Inscriptions de Cilicie* (Paris) 171-85.

century, fine (red slip) table wares began to disappear: first PRS (interregional), then CRS (regional), which held on longer, through the eighth and maybe into the ninth, but it too eventually ceased. The center of LRA 1 production seems to have moved from Cilicia/Isauria to Cyprus and then disappeared during the eighth century. Amphorae in general survived but in new shapes and restricted primarily to regional networks, though some were still transported over long distances (e.g., to the northern Adriatic and up the Po valley).<sup>56</sup>

This continued operation must have been fueled more by private commerce than state-driven transport of goods, since the loss of Egypt, North Africa, and the Levant from Byzantine control in the course of the seventh century ended state-subsidized shipments of *annona* goods from these places (most importantly, grain from Egypt). The withdrawal of state subsidy must have ruined many *navicularii*, and meant that private, non-subsidized shipping suddenly played a larger role overall in the movement of goods.<sup>57</sup> These private shippers could no longer rely on a shipping infrastructure maintained by the state (including, for example, harbor dredging, port installations, skilled labor and expertise),<sup>58</sup> but they still managed to move goods across long distances for a hundred years or more beyond the end of the seventh century.<sup>59</sup> The extended chronologies proposed for these late antique pottery types, of which CRS is the most important for the current discussion, is certainly exciting. It means that occupation of sites where the later forms of these wares are found should be extended as well, beyond the traditional cut-off date of 700 CE and through the eighth century. The extended chronology prolongs their lifespan by a

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<sup>56</sup> See Chapter 3 for discussion and references.

<sup>57</sup> McCormick, 2001, *Origins of the European Economy*, 111.

<sup>58</sup> McCormick, 2001, *Origins of the European Economy*, 90-91.

<sup>59</sup> See also Abadie-Reynal's observations supporting her conclusion that interregional commerce continued to be important through the seventh and in some cases into the eighth century. At this time products such as cooking vessels were now treated as objects of trade; "backwater" regions such as the coast of the Black Sea and Egypt began to prosper and export their products; the importance of Aegean products increased in the east; and African amphorae became prevalent in the region. Abadie-Reynal, 2010, "Les échanges interrégionaux de céramiques," 33.

century or so, over a period of time that significantly includes the Islamic conquest and contraction of the Byzantine state, in terms of both territory and economic vitality.

But these amphorae and red slipped wares did not survive forever; eventually they ceased to be produced and exchanged. By the later seventh and eighth century, a new assemblage appeared, characterized by cooking pots and coarse wares that demonstrate the maintenance of a network of exchange between southern (especially southwest) Asia Minor, Cyprus, and the Levant through the seventh, eighth, and ninth centuries, into the middle Byzantine period.<sup>60</sup> J. Poblome and others working at Sagalassos see these connections not as a “structural relationship” but “as part of some sort of regional *koinè*” or “early Byzantine morphological matrix.”<sup>61</sup> They argue that we should stop referring to it as “Cypriot” because it is a loose assemblage whose constituent parts are not the same everywhere, nor all from the same place, and which is currently “in desperate need of further definition based on evidence from more sites in southern Turkey and western Cyprus.”<sup>62</sup>

What is important is that, although the late antique pottery types of focus here (LRA 1, PRS, CRS) all shared the same fate of eventual disappearance, the networks by which they were exchanged did not: the interregional network shrank dramatically, but the regional one survived. This survival is presaged by the growing predominance and greater longevity of CRS relative to PRS and African Red Slip (ARS) ware during the seventh century. I argue that the production and distribution of the new regional *koinè* (to use Poblome et al.’s phrase) of coarse and cooking wares that appears in the late seventh century is patterned on the earlier CRS network: relatively

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<sup>60</sup> See Chapters 6 and 7.

<sup>61</sup> J. Poblome et al., 2010, “Sic transit gloria mundi. Does it really? Wasting seventh century AD Sagalassos (SW Turkey),” in S. Menchelli et al. (eds.), *LRCW 3: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry: Comparison between the Western and Eastern Mediterranean*, vol. 2, BAR Int. Ser. 2185 (Oxford) 791-801, at 793-94.

<sup>62</sup> Poblome et al., 2010, “Sic transit gloria mundi,” 794.

regionally circumscribed, but including both inland and longer-distance overseas routes, namely to Syria and Palestine. In other words, the post-seventh/eighth-century ceramic assemblage that replaces these pottery types in the regions under study includes new forms and fabrics representing new lifestyles, but the network of exchange responsible for the widespread appearance of this assemblage is the same as the pre-seventh-century CRS network. The circulation of CRS in the seventh and eighth centuries can therefore be seen as a bridge or transitional phase between the assemblages of red slip ware (ARS, PRS, and CRS) produced during late antiquity and the assemblages of cooking and coarse wares emblematic of the eighth and early ninth centuries. More to the point, this means that the primary network of exchange in operation in these regions in the eighth century as revealed by pottery was maintained by the legacy of late antique commercial exchange at the local and regional scale, dependent on non-fiscal dynamics. Interregional exchange continued to exist, but not as it had before. The maintenance of local and regional networks driven primarily by commercial markets meant that they became proportionally more important than they had been in previous centuries, even if they did not increase absolutely, nor exactly “pick up the slack” left by the contraction of the fiscal system.

In describing these changes I am calling attention to one specific example of a more general trend towards regionalism, fragmentation, and differentiation in the both settlement patterns and economic networks of exchange that is currently considered one of the most successful ways of understanding the changes that characterize the seventh century. The difference is one of relative importance: as long-distance, and primarily state-driven, bulk exchange contracted as a result of the shut-down of the fiscal system, local and regional networks remained intact, and thereby people came to depend on them – and the mechanism of

commerce that made them possible – even more than they had previously.<sup>63</sup> In pottery studies, this is demonstrated, as we have seen, by an increase in the proportion of local and regional wares over interregional (imported) wares, coarse/plain over fine wares, cooking over table wares, and handmade over wheel-made wares. Related changes may have included a greater reliance on cabotage over open-sea routes, and developments in ship gear that McCormick sees as indications of “merchants’ efforts to move away from state-regulated and -taxed markets in cities to more informal marketplaces, in settlements or on waterside landings” during the later Roman period and into the seventh century.<sup>64</sup>

What I have tried to do in the present study is determine whether, and how, this overall trend played out within southern Asia Minor and northwest Syria, and what the implications may be, and to do so using evidence from the countryside. One implication of the maintenance of the CRS network beyond the seventh century is that the Islamic conquest did not sever trade connections between the surviving Byzantine heartland and regions now under Islamic control, Syria and Palestine in particular, nor did it isolate Cyprus. The continuity of exchange between Byzantine and Islamic regions, even after the disappearance of CRS, was provided by the legacy of commercial exchange: beyond the state purview and not dependent on its designs or desires, commercial exchange on a regional (and local) scale relied instead on the personal connections of private individual and groups, on the maintenance of systems of communication, and on the memory and know-how of those agents concerning practices such as cabotage by which such shorter-distance trade had always been plied. The survival of these mechanisms of exchange

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<sup>63</sup> E.g., McCormick, 2001, *Origins of the European Economy*, 103; L. Lavan, 2001 “A brief comment,” in idem (ed.), *Recent Research in Late-Antique Urbanism*, *Journal of Roman Archaeology* Suppl. 42 (Portsmouth, RI) 243-45; Wickham, 2005, *Framing the Early Middle Ages*, 717; see also the papers in C. Morrisson (ed.), 2012, *Trade and Markets in Byzantium* (Washington, DC), including J. F. Haldon, “Commerce and exchange in the seventh and eighth centuries: Regional trade and the movement of goods” (99-122) and J. Koder, “Regional networks in Asia Minor during the middle Byzantine period, seventh–eleventh centuries: An approach” (147-75).

<sup>64</sup> McCormick, 2012, “Movement and markets,” 98.

provided the legwork for the middle Byzantine economic resurgence of the ninth century, on which more below.

The recognition of this development could probably have been made based on the evidence of urban excavations alone, but what survey has to offer is a means by which we can combine this with other changes that together provide a more comprehensive picture of life at the end of antiquity. Most important are those changes noted above concerning settlement organization and demography: namely, a greater homogeneity in settlement types, with the village primary among them, and general population decline, in both cities and the countryside. Each of these changes, significant on its own, is more meaningful when viewed in combination with the others. Smaller urban populations, in Constantinople but just as importantly in the hundreds of smaller towns across southern Asia Minor and northwest Syria (notably Antioch), translated into less demand for agricultural products. The state no longer distributed free grain in Constantinople after the early seventh century. A diminution of state and commercial demand would have encouraged farmers to scale production down to subsistence rather than surplus levels, further limiting the scale of commerce and the speed with which expansion could be achieved if demand returned. As has often been pointed out, the development of the theme system, as a result of which the army was now regionally stationed and supplied, would have dramatically accelerated the regionalization of exchange.

Some people must have benefited from these changes. The continuity of occupation in central Anatolia throughout the seventh to ninth century revealed by survey, for instance, means that communities could be affected in positive ways. C. Lightfoot has noted the expanding body of archaeological evidence for a continued robust economy and settlement infrastructure in this region at places such as Amorium, which, since they had always relied on regional instead of

longer-distance trade, were able to take the disarticulation of state networks in stride. Furthermore, he argues, this interior region played a vital role in supplying the army, whose needs and cash flow must have fueled a developed local economy, which in turn played an essential role in the survival and then revival of the empire.<sup>65</sup> But other communities, in regions without such opportunities, must have suffered.

### *Vulnerability and resilience*

To the extent that each of these two networks of exchange depended on state subsidy and investment, the communities of producers, transporters, and consumers who relied on it were vulnerable to the growing weakness of the Byzantine state and the shutdown of the fiscal system we know occurred during the seventh century, in large part as a result of the loss of population, territory, and money caused by defeat in war, on-going conflict, and recurring plague. These factors, as well as the arrival in some regions of new communities with different dietary requirements, led to a decrease in both fiscal and commercial demand for goods and agricultural commodities, and made their production and distribution more difficult, especially in bulk scales.

Communities survived insofar as they were able to decouple from the state system and invest their energies in commercial production and exchange. This scenario did not hold in every case: the Cilician farmers and herders who produced food and wool in the eighth century for the state officials headquartered at Seleucia ad Calycadnum, for instance, and for the army stationed along the nearby Syro-Anatolian frontier, remained firmly integrated into the state system, now contracted to within the regional scale of the theme. But as an overarching model for southern Asia Minor and northwest Syria at the end of antiquity, it is apparent that the continuation of commercial exchange, operating primarily via local and regional networks but

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<sup>65</sup> Lightfoot, 2012, "Business as usual?" 177, 182-83.

also interregionally, provided a safety net for most communities, making them resilient in the face of the disruptions of the seventh century. In this context, what does it mean to be “resilient”?

## **B. NEW STRATEGIES OF RESILIENCE**

During the course of the sixth and seventh centuries, late antique and early Byzantine society became dramatically less complex. This loss of complexity manifested itself in the changes outlined above. But along with this loss of complexity came greater resilience, or adaptive capacity. Although resilience is usually defined as the capacity of a system to absorb external disturbances so as to retain essential function, structures, processes, and feedbacks, it also signifies the capacity to take advantage of new opportunities. In other words, it is not just about robustness or the capacity to recover, but also to regenerate or re-organize into something different and new: “resilience provides adaptive capacity that allows for continuous development.”<sup>66</sup>

Society became less complex, but it did not wholly collapse. According to J. Tainter’s definition, there is only one cause of true social collapse: diminishing returns on investments in social complexity.<sup>67</sup> This ultimate cause is economic, and it is inherent in the structure of society. External shocks may also be present, such as natural disasters or invasions, but they are not the ultimate cause. Tainter identified the western Roman empire as an example of a society that collapsed, but made it clear that the Byzantine empire never did, according to his definition.

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<sup>66</sup> C. Folke, 2006, “Resilience: The emergence of a perspective for social-ecological systems analyses,” *Global Environmental Change* 16: 253-67, at 257, 259 (quote).

<sup>67</sup> J. A. Tainter, 1988, *The Collapse of Complex Societies* (Cambridge).

It is not possible to have collapse without a loss of complexity, but it *is* possible to have a loss of complexity without collapse.

The changes in settlement patterns, exchange networks, and subsistence strategies described above all demonstrate this loss of complexity. Diminished complexity allowed early Byzantine society the capacity to re-organize and adapt, and it did so precisely in ways that made it more resilient in the face of an unpredictable future. In other words, faced with the disruption and unpredictability, communities responded by making their lives more flexible, more adaptable. Obviously not all of these responses were voluntary, nor were people necessarily aware that they were making them. But in general it seems likely that, when faced with the kind of recurrent disruption and unpredictability caused by plague, invasion, economic hardship, and a potentially worsening climate, most people would try arrange their lives in such a way as to increase the possibility of maintaining as safe and successful an outcome as possible when the future is unknown and undesirable surprise is likely.<sup>68</sup> Faced with apprehension about the future, communities eschewed long-term investments in favor of risk-sensitive strategies that made them more resilient: they abandoned cities and farmsteads and organized themselves into communities at the scale of the village; moved away from intensive agriculture toward a more balanced agropastoral subsistence strategy, in some cases including a greater reliance on (semi-) transhumant pastoralism; maintained the vitality of local- and regional-scale exchange networks via commerce; used a greater proportion of locally made goods such as handmade pottery rather than depending on imports, which were not easily available; and, perhaps, intentionally restricted

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<sup>68</sup> This is essentially the definition of managing for resilience argued by B. H. Walker, C. S. Holling, S. R. Carpenter, and A. P. Kinzing, 2004, "Resilience, adaptability and transformability in social-ecological systems," *Ecology and Science* 9(2): 5; W. N. Adger, T. P. Hughes, C. Folke, S. R. Carpenter, and J. Rockström, 2005, "Social-ecological resilience to coastal disasters," *Science* 309: 1036-39, references from C. Folke, 2006, "Resilience: The emergence of a perspective for social-ecological systems analyses," *Global Environmental Change* 16: 253-67, at 254.

family size to limit the amount of food that had to be produced. These changes have all been described above except the last one, which refers to a suggestion made by C. Wickham that demographic decline in the seventh century may be the result of a response by peasant communities to a lack of taxation in accordance with the “peasant mode of production.”<sup>69</sup> That is, peasants would have abandoned marginal lands because cultivating them was not longer worth their effort and limited family size because they no longer needed to produce surplus to give up as tax or rent. In Wickham’s view, a shift to the peasant mode of production is demonstrated in many regions around the Mediterranean by the appearance of new handmade pottery types and a break-down of rural settlement hierarchies: exactly what we find in many of the regions discussed here.

All of these changes qualify as strategies that would increase self-sufficiency and sensitivity to risk, and thus to increase resilience. Developed from ecosystems studies in the 1960s and 1970s, the resilience perspective is rooted in the adaptive renewal cycle, a model describing ecosystems succession in four phases of development: “periods of exponential change (the exploitation or  $r$  phase), periods of growing stasis and rigidity (the conservation or  $K$  phase), periods of readjustments and collapse (the release or  $\Omega$  phase), and periods of re-organization and renewal (the  $\alpha$  phase).”<sup>70</sup> The resilience view recognizes that collapse (“creative destruction”) and re-organization are inevitable phases of development in a social-ecological system, because it resides in an unstable equilibrium and can flip between multiple states at any time. Thus it reflects behavior of a complex adaptive system, which resides in a critical or border state between predictable periodic behavior and unpredictable chaos.<sup>71</sup>

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<sup>69</sup> Wickham, 2005, *Framing the Early Middle Ages*, 536-39, 549-50.

<sup>70</sup> Folke, 2006, “Resilience,” 258. The adaptive renewal cycle of ecosystems was developed by C. S. Holling.

<sup>71</sup> P. Bak, 1996, *How Nature Works: The Science of Self-Organized Criticality* (New York) 30-31.

Individual adaptive renewal cycles may be nested in a hierarchy across time and space to create a heuristic model called panarchy (**fig. 9.2**).<sup>72</sup> The cycles operate simultaneously and at different scales: small-and-fast, intermediate, and large-and-slow. Dynamics understood as “revolt” and “remember” are ways in which these nested cycles interact across time and space: “revolt” dynamics usually occur from small to large scales, while “remember” dynamics occur from large to small.<sup>73</sup> Small-and-fast adaptive cycles may frequently go through the phases of collapse and re-organization, and may synchronize into a “revolt” that may spread up to the larger scale. In many cases, however, the “remember” dynamic imposed by large-and-slow cycles forces these small-and-fast levels back into the same or similar cycles, thereby stabilizing the system.<sup>74</sup>

This is a rather facile explanation of something more complicated, and its application to the situation in southern Asia Minor and northwest Syria in the seventh century is in many ways strained. Nevertheless, as a heuristic model it is fun to play with and useful in conceptualizing some of the dynamics I have sought to explain. With loss of complexity comes greater adaptability, and the possibility of renewal in new and unanticipated ways. The various short-term, local disturbances of later antiquity (outbreaks of plague, invasions, climate phenomena, etc.) can be imagined as small-scale disturbances that synchronized and exploded part-way up the system, causing the destruction of certain elements of society (long-distance exchange, hierarchical settlement patterns, etc.). But at the same time, the large-and-slow level remained largely intact, so that society was able eventually to regain much of its complexity, and when it did, those elements returned, some as they had been before, some altered in new ways.

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<sup>72</sup> L. H. Gunderson and C. S. Holling (eds.), 2002, *Panarchy: Understanding Transformations in Human and Natural Systems* (Washington, DC).

<sup>73</sup> This explanation is modified from Folke, 2006, “Resilience,” 258; C. L. Redman, 2005, “Resilience theory in archaeology” *American Anthropologist* 107(1): 70-77, at 73.

<sup>74</sup> Redman, 2005, “Resilience theory.”

The middle Byzantine economic and social revival of the ninth century can be seen as a return to complexity, and as evidence of the social resilience during the so-called dark ages of the seventh and eighth centuries. This resurgence was made possible by the maintenance of local and regional networks of communication and exchange, traditional agropastoral strategies, village settlement patterns, and a certain threshold level of population. Resurgence of human activity in the landscape is detected in pollen records from Sagalassos and lake Nar, the only record with adequately high resolution to “see” these changes. Anthropogenic indicators increase in the 10<sup>th</sup> century after a low point, but they are different from the Roman-period BO Phase that preceded this low point: olive cultivation and arboriculture in general is gone, cereals and indicators of pastoralism are present (see Chapters 6 and 7). After the last outbreak of plague in the 750 CE, the population was finally able to rebound.<sup>75</sup>

### **C. USEFULNESS OF METHODS**

One challenge of a synthetic study is the incompatibility of methods and results, which prevents the kind of statistical quantitative analyses that would normally be expected. It makes no sense, for example, to compare sherds counts from one project with sherd weights from another. The small sample sizes of pottery counts and site numbers retrieved by many surveys, and the small sampling fractions in many sampling designs, are also a problem. Our ability to recognize fully the occupation of late antiquity and the early Byzantine period through pottery identification remains low in comparison to other periods, but new developments in pottery studies are changing that situation dramatically.

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<sup>75</sup> Stathakopoulos, 2004, *Famine and Pestilence*, 169.

Recognizing pottery types and assemblages of the eighth and ninth centuries is especially difficult, but is essential if we wish to test for continuity and understand what this continued occupation looked like. In addition to form and fabric, identifying assemblage composition is a key to unlocking the lifestyles of those who used these wares.<sup>76</sup> In some cases, unrecognized pottery types collected through survey have later been identified and dated to this period after their excavation in stratigraphic contexts, usually within a pre-existing urban excavation project, as at Sagalassos. In general, less diagnosticity, in concert with a lower overall pottery supply, means that sherd counts for this period will be lower than expected, and may cause us to underrepresent such “dark age” occupation as there was.

We must be attentive to proxy data other than amphorae and fine wares, which relate primarily to interregional exchange, and instead look out for the kinds of materials that can provide (in)direct evidence of local and regional scales of production, distribution, and consumption, of both goods and commodities. In most cases, these materials will be cooking wares and coarse or semi-fine table wares. We must also be aware that amphorae and fine wares can only tell us part of the story: their disappearance does not necessarily signify the disappearance of long-distance trade, nor a break-down in the specific commodities they carried, since other types of perishable containers could also have been used. Being able to detect exchange networks in operation on local and regional scales is particularly important in our effort to try to understand the end of antiquity, because many of the ubiquitously exchanged and familiar wares on which the study of Graeco-Roman antiquity has relied are no longer produced. This cessation is itself significant, but it does not signify a complete shut-down of all levels of

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<sup>76</sup> For the assemblage approach in early Byzantine pottery studies in this region, see, e.g., R. Gabrieli, M. P. C. Jackson, and A. Kaldekkı, 2007, “Stumbling into the darkness: Trade and life in post-Roman Cyprus,” in M. Bonifay and J.-C. Tréglia (eds.), *LRCW 2: Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry*, vol. 2, BAR Int. Ser. 1662 (Oxford) 791-801.

exchange and communication. What continued to be produced beyond the end of CRS, for instance, or certain forms of amphorae, were wares with regional and local patterns of distribution and consumption. These, then, are some of the materials that will tell us what life was like at the end of antiquity. We also need to figure out how to “see” pastoral activity in the landscape more successfully.

In their introduction to *Recent Research on the Late Antique Countryside*, W. Bowden and L. Lavan note a growing pessimism among scholars about the usefulness of field survey and conclude that “survey will forever produce an incomplete and tentative picture that cannot replace that which is provided by excavation.”<sup>77</sup> Perhaps, but the reverse is also true. Survey, excavation, or any other method used to reconstruct a picture of ancient activity will always yield results that are somehow impressionistic or incomplete. In fact, Bowden and Lavan make this point not to disparage survey, but to emphasize that it should not be considered the *only* method appropriate for studying ancient life beyond city walls: excavation, they argue, is equally as important for understanding activities in the wider landscape, including population dynamics and interactions between humans and the environment.<sup>78</sup> Ideally, the two methods will be seen as complementary and will be conducted together whenever possible, so that excavation is carried out at a diverse array of rural sites, such as hamlets, farms, seasonal camps, stone quarries, and agricultural terraces. Survey should serve as a catalyst, not an obviator, of excavation in the countryside.

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<sup>77</sup> W. Bowden and L. Lavan, 2004, “The late antique countryside: An introduction,” in W. Bowden, L. Lavan, and C. Machado (eds.), *Recent Research on the Late Antique Countryside*, Late Antique Archaeology Series 2 (Leiden) xvii-xxvi, quote at xxiii.

<sup>78</sup> See, e.g., T. Lewit’s important study of excavated rural sites in seven regions of the western empire, as well as several hundred surveyed sites in Italy: 1991, *Agricultural Production in the Roman Economy, A.D. 200-400* (Oxford).

Survey can produce only a palimpsest of settlement within a landscape, visible at certain times and places, irrecoverable at others. And it operates with frustratingly low chronological resolution that prohibits the tracking of short-term settlement and demographic patterns. Excavation would not doubt remedy many of the problems that make our survey-generated picture of the countryside weak and useful only under condition of an array of caveats. For excavation to provide adequate material evidence for the full gamut of rural settlements, habitual activities, and more occasional events in the countryside, along with palaeoenvironmental remains, however, it would have to be conducted much more commonly than it is today. Where the desire to excavate is strong, money, labor, and politics may cast excavation of rural sites in a much less attractive light than bigger-bang-for-your-buck field survey.

Regional survey thus remains the most widely applied and best bet at getting a glimpse of ancient life outside of city centers. Perhaps the best we can do is forge ahead, aware of these limitations. Or perhaps archaeologists will heed the call made by some to resist the temptation to survey ever more territory, even more intensely, and with increasingly refined recovery methods, in favor of excavating particularly promising sites of ancient activity in the landscape. Forsaking survey entirely in favor of excavation, however, would bring the culmination of a trend of every-smaller, more-intensive projects that R. Blanton provocatively called “Mediterranean myopia.”<sup>79</sup> Certainly excavation of rural sites would be immensely advantageous to our understanding of the history of human settlement in the countryside beyond cities.

Until then, however, survey furnishes essential evidence for ancient activities conducted within these landscapes, especially in combination with palaeoenvironmental research. We need more of the latter. Even within a single valley, it is necessary to sample in multiple locations, since processes can vary dramatically even within a relatively circumscribed area. The problems

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<sup>79</sup> R. E. Blanton, 2001, “Mediterranean myopia,” *Antiquity* 75: 627-29.

posed by variation that goes undetected are compounded for regional and supra-regional scales of research. We also need to refine our understanding of the interactions between climate and human activity in driving landscape change, and of how these vectors of change are interrelated in complex ways. The incompatibility of much environmental data – especially in terms of chronological resolution – with archaeological and textual data means that it is usually difficult to determine causal relationships between trends detectable by scientists and events of interest to archaeologists and historians.

#### **D. CONCLUDING REMARKS**

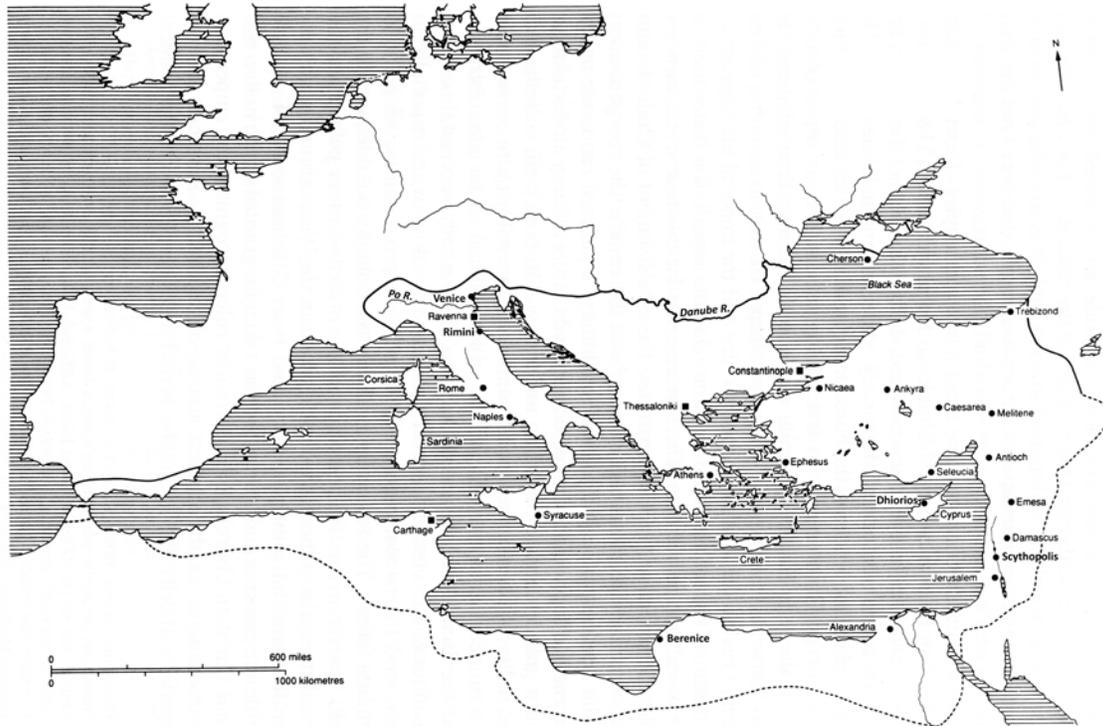
This study has used the relatively new methods of regional survey and palaeoenvironmental research to identify and contextualize the changes that mark the end of antiquity in southern Asia Minor and northwest Syria. In the sixth and seventh centuries, society became dramatically less complex, and life more difficult, for many people in these regions. Population declined, communities became less secure, and access to the full range of commodities, goods, and services enjoyed in earlier centuries became restricted or cut off completely. For most communities, this was a period of disruption and apprehension about an unpredictable future. They responded to these challenges in ways that made them more flexible and adaptive.

Many of the changes that mark the end of antiquity are striking in their sameness from region to region. They underscore the common behaviors of communities across the eastern Mediterranean accustomed to a shared material culture and lifestyle, and dependent on dynamic exchange and interaction. But in fact it is just as interesting to dislodge from this overarching narrative of resilience the rich array of locally specific storylines embedded within it.

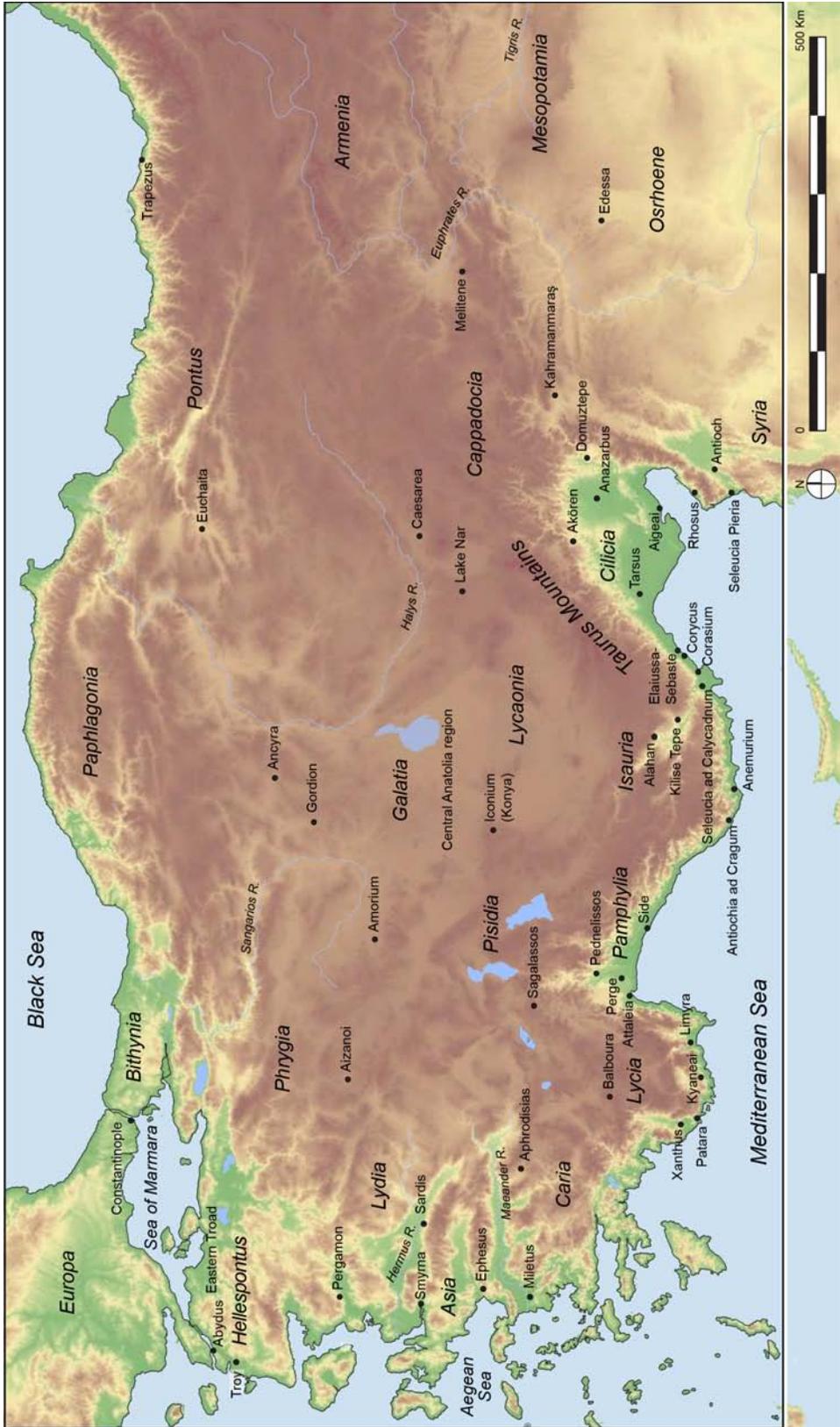
Communities living on the central Anatolian plateau, for example, seem to have avoided many of the hardships faced by those in Cilicia or Pisidia. This study will benefit immensely once it can be expanded to include other regions, such as western Asia Minor, where a long tradition of connectivity and complexity in the old urban centers of the coast stands in sharp contrast to the inland isolation and regionalism of the central plateau. At this local level, loss of complexity was not a given, nor were the effects of these challenges entirely predictable. My interest lies in combining the general trajectory of seventh-century disruption and unpredictability with locally specific responses to the numerous challenges that communities faced in this period.

The most important contribution of this study is how it has allowed us to see the long-term reactions of communities struggling to survive the challenges that result when a complex society loses some of that complexity: the village is preferred as the key social unit; commercial exchange and communication operating on local and regional scales remain the most vital; and more risk-sensitive choices are made concerning what to grow and eat and how many children to have. These are intentional responses to disruption that favor short- over long-term investment in the future, and in recognizing them we give agency to individuals and communities otherwise lost by the sweeping perspective of social collapse. These changes are the aggregate results of choices made by hundreds of thousands of individuals and families facing an uncertain future and hoping for the best of all possible outcomes.

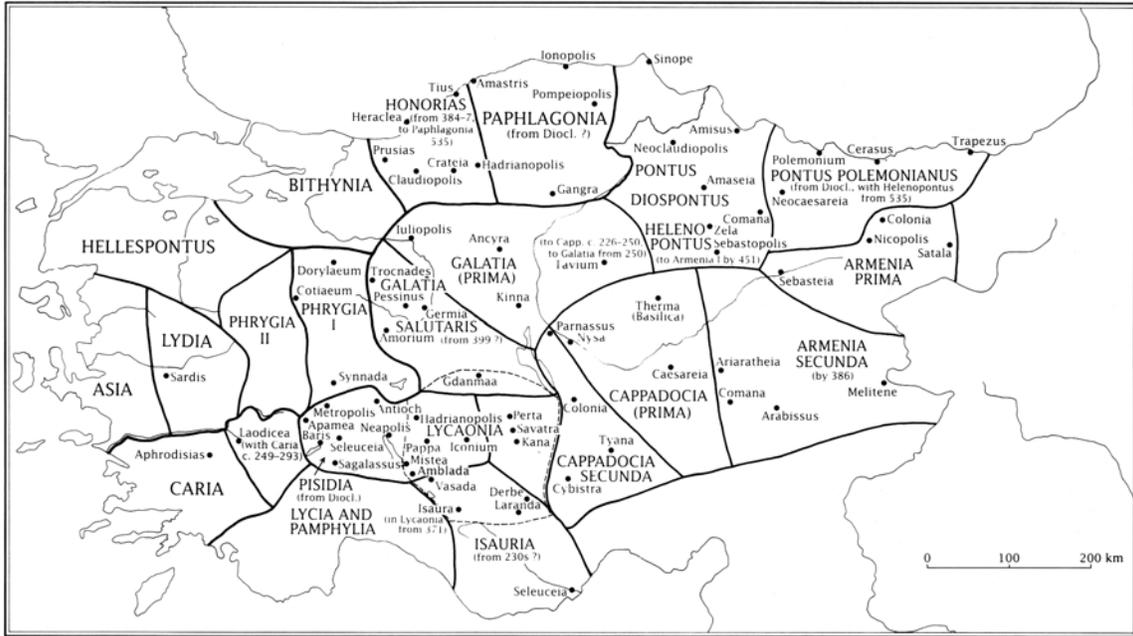
## FIGURES



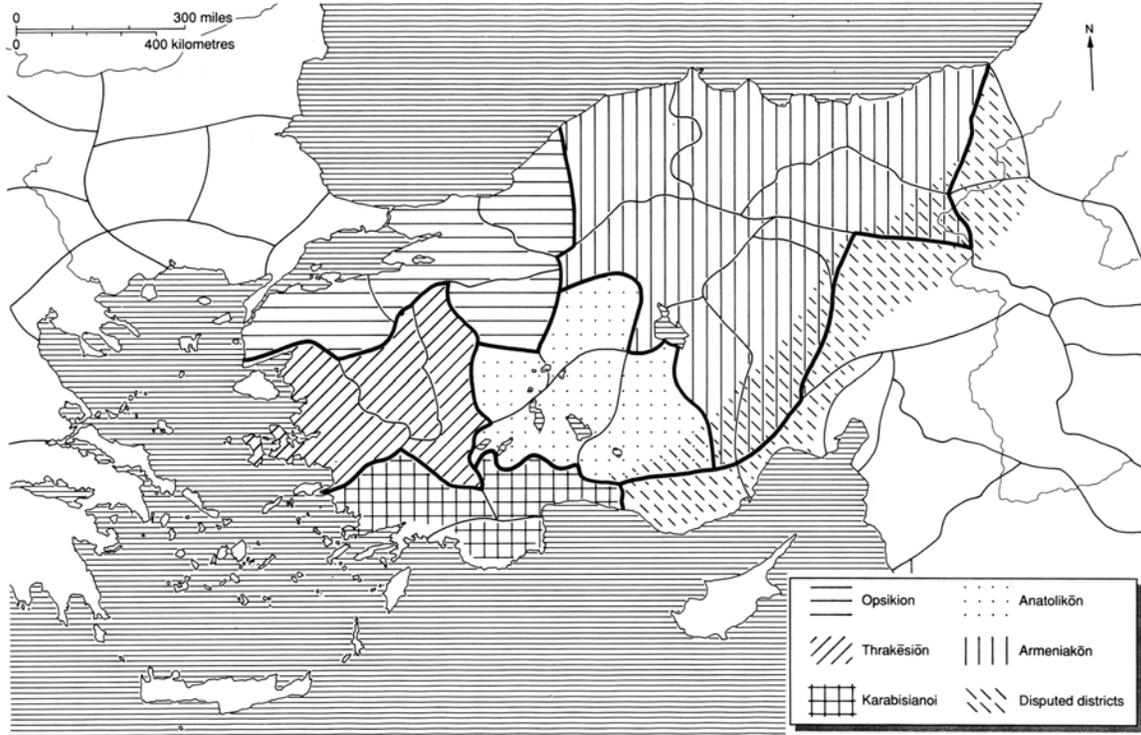
**Fig. 1.1.** Map of the Mediterranean and Europe showing main regions and sites outside of Asia Minor discussed in the dissertation. After Haldon 1990: 19 map 1 (modified).



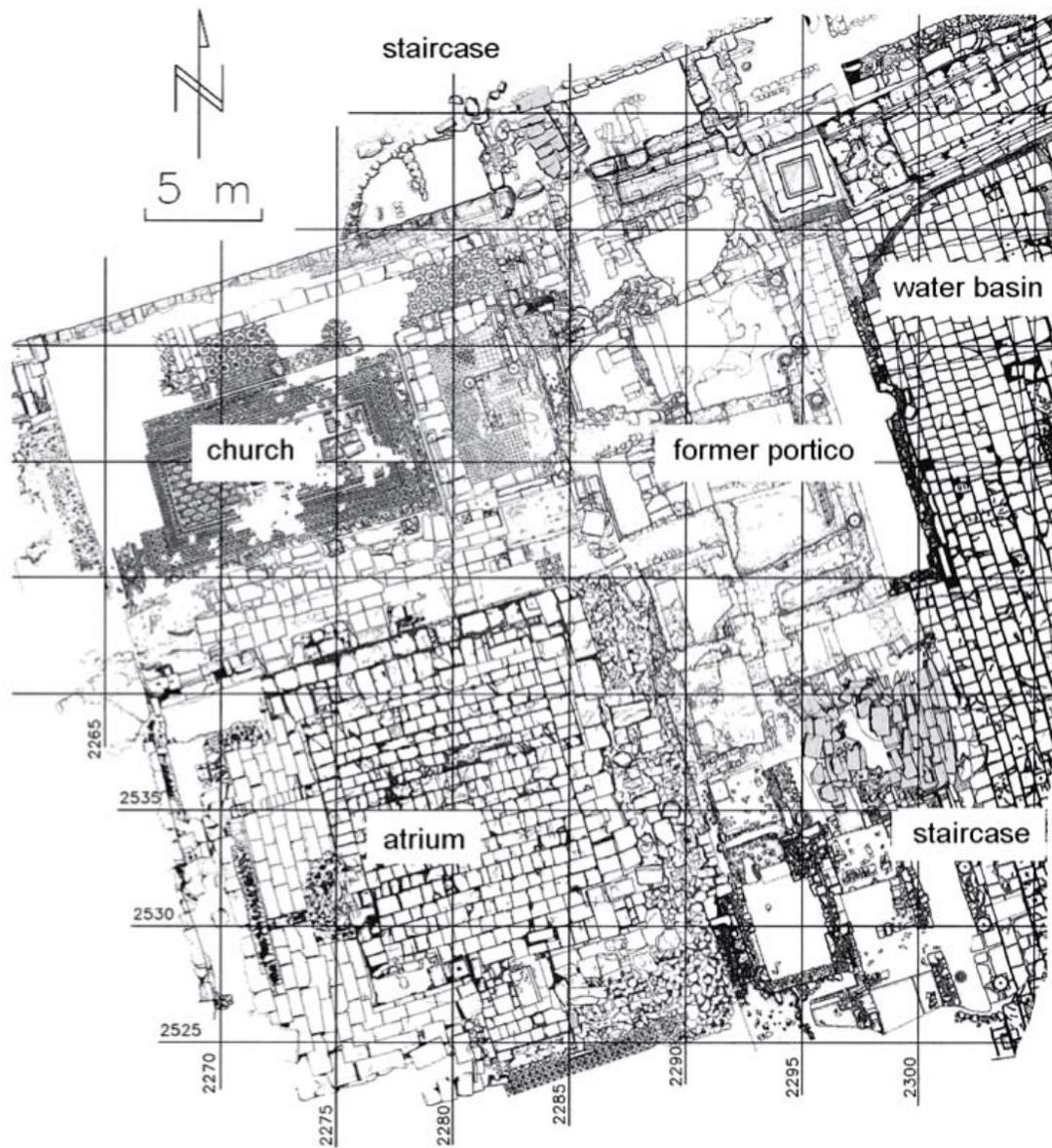
**Fig. 1.2.** Map of case studies in the dissertation, and other major sites. Courtesy C. Ratté (modified).



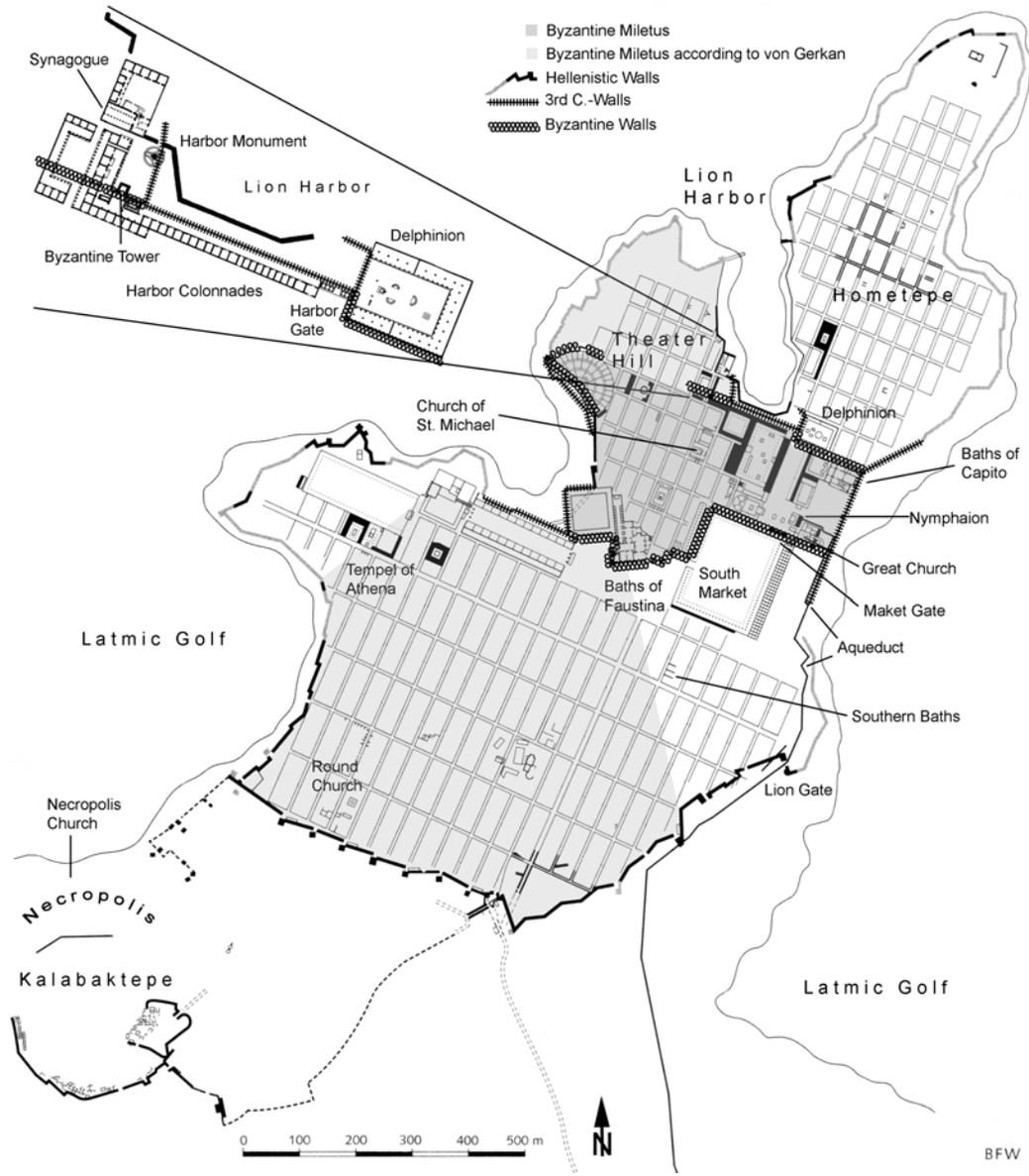
**Fig. 1.3.** The provinces of Asia Minor in late antiquity. After Mitchell 1993: 162 map 7.



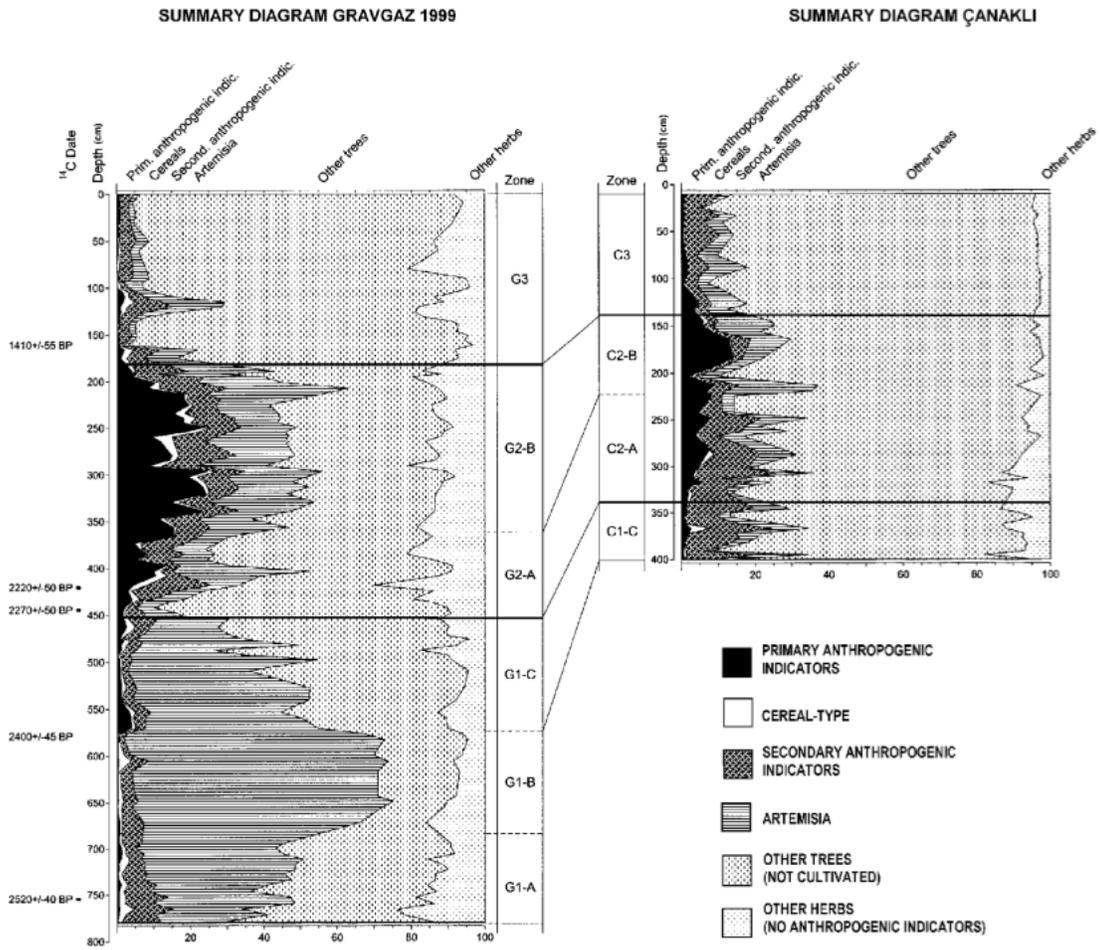
**Fig. 1.4.** Anatolian themes and late Roman provinces around 660 CE. After Haldon 1990: 230 map 7.



**Fig. 3.1.** Encroachment on and around the Upper Agora at Sagalassos. In the fifth century, a church with atrium was built in the courtyard of the former bouleuterion; (work)shops were installed in the western portico of the agora; and a water basin was constructed over the agora pavement. In the sixth century, the workshops were dismantled to make way for a staircase leading from the agora up to the church atrium. After Jacobs 2009: 239 fig. 6.



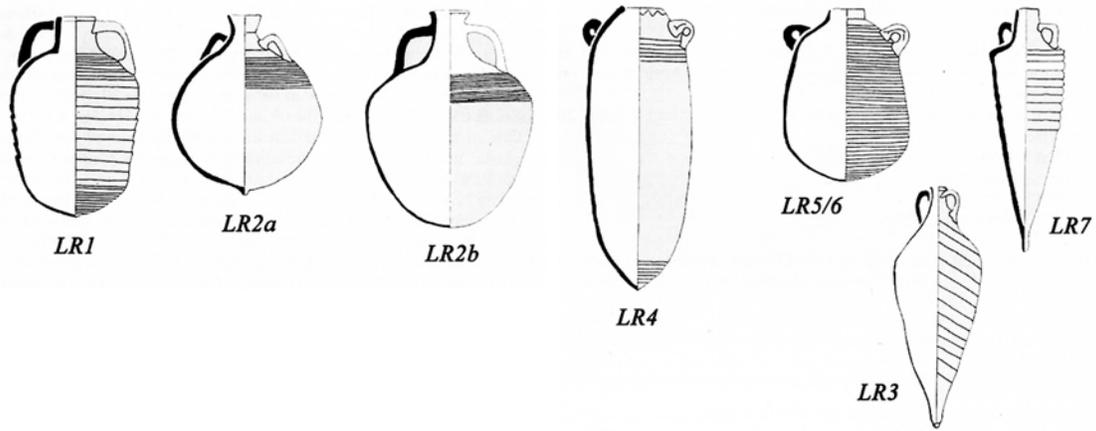
**Fig. 3.2.** Map of Miletus showing the reduced circuit of the Byzantine walls. After Niewöhner 2011: 104 fig. 1.



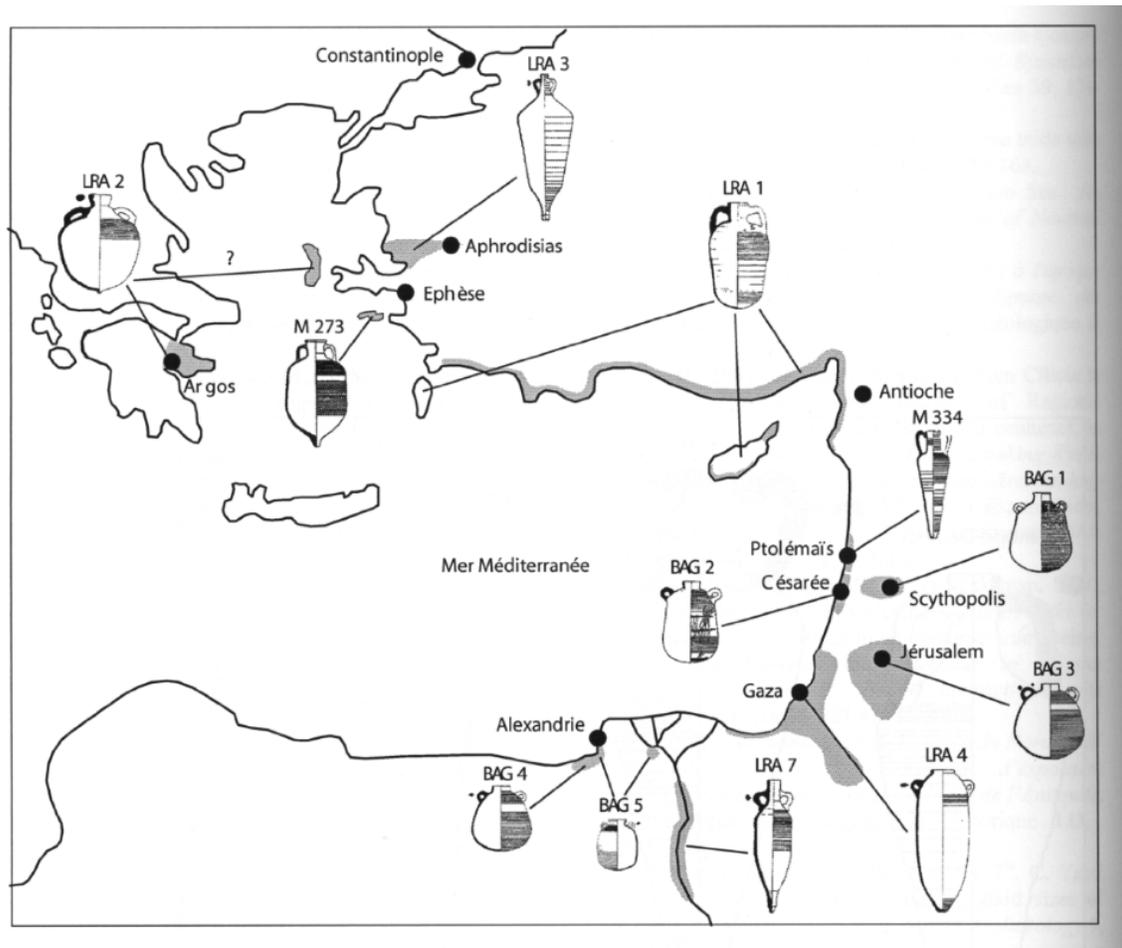
**Fig. 3.3.** Summary percentage pollen diagrams from two sediment cores in the region of Sagalassos with proportions of primary and secondary anthropogenic indicators indicative of the Beyşehir Occupation Phase. After Vermoere et al. 2002: 578 fig. 7.



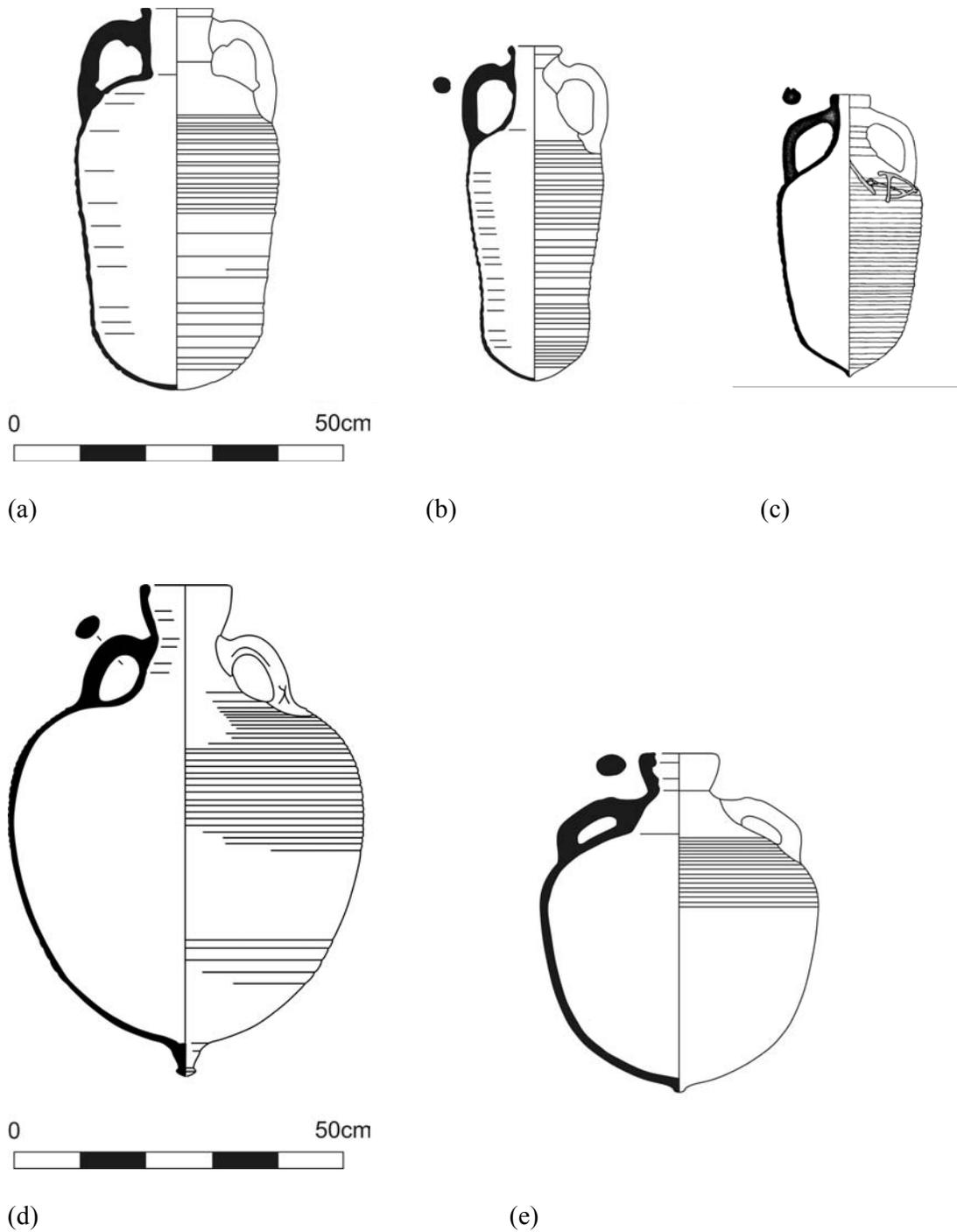
**Fig. 3.4.** Local, regional, and interregional scales of exchange. Map from Haldon 1990: 19 map 1 (modified).



**Fig. 3.5.** J. Riley's "standard package" of Late Roman amphora types, later fifth and sixth century. After Karagiorgou 2009: 42 fig. 4.2.



**Fig. 3.6.** A recent account of principal late antique and early Byzantine amphora types and their areas of production. After Pieri 2007: 618 fig. 2.



**Fig. 3.7a-e.** Selected forms of LRA 1 and LRA 2 (all drawings at 1:10 scale).

(a) LRA 1 from Carthage (Fulford and Peacock 1984).

(b) LRA 1 from Benghazi (Riley 1979).

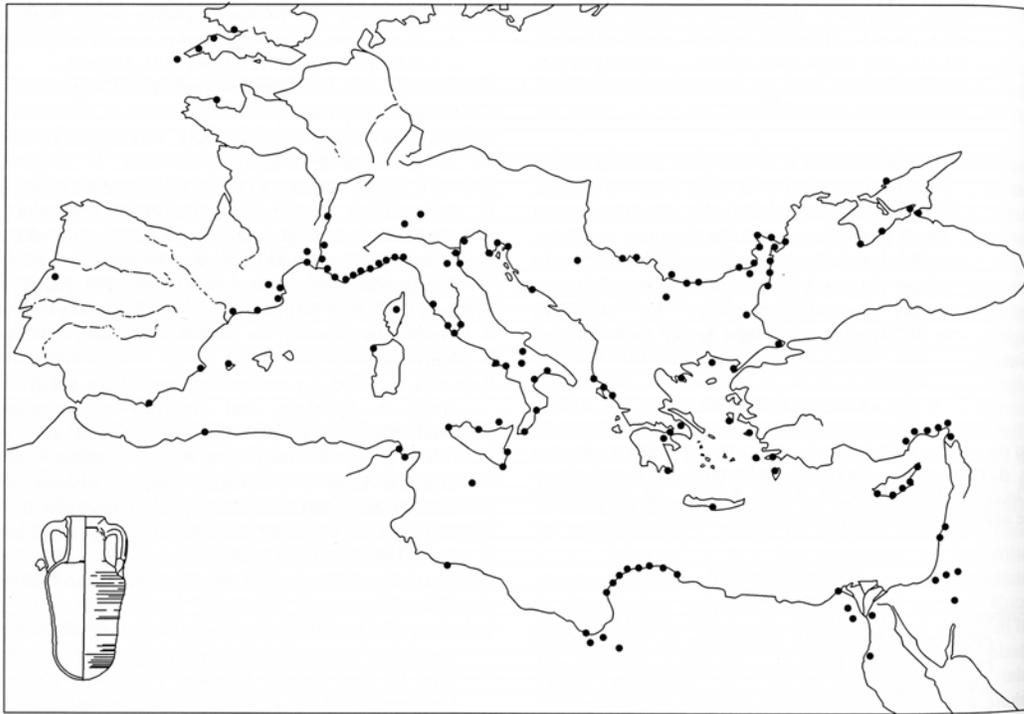
(c) LRA 1 from Kourion, Cyprus (Williams 1987).

(d) LRA 2 (R. Auriemma).

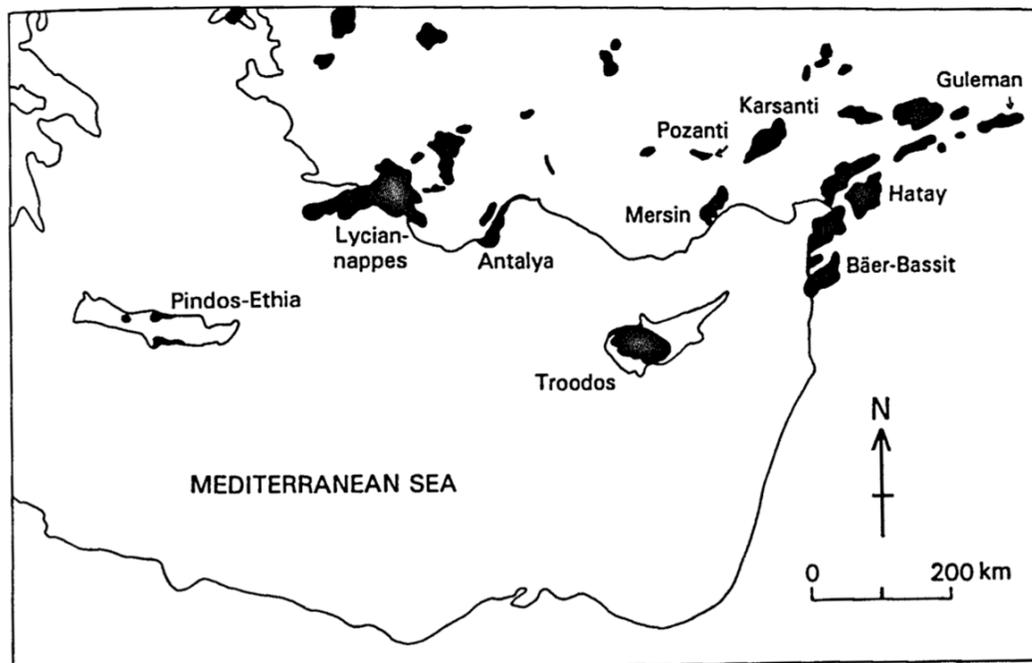
(e) LRA 2 (Böttger 1974).

All figures from <http://archaeologydataservice.ac.uk> except (c) after Williams 2005b: 159 fig.

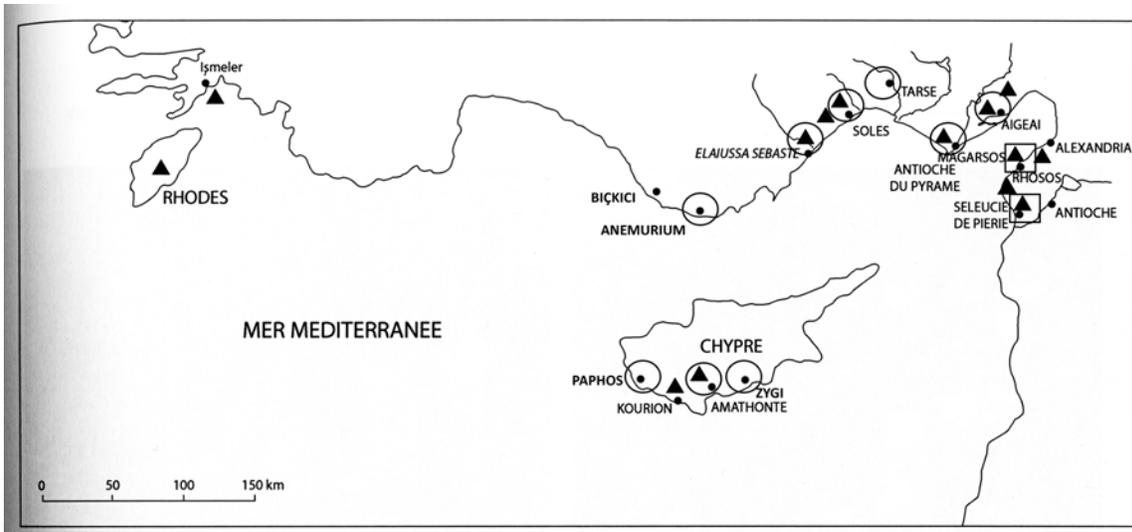
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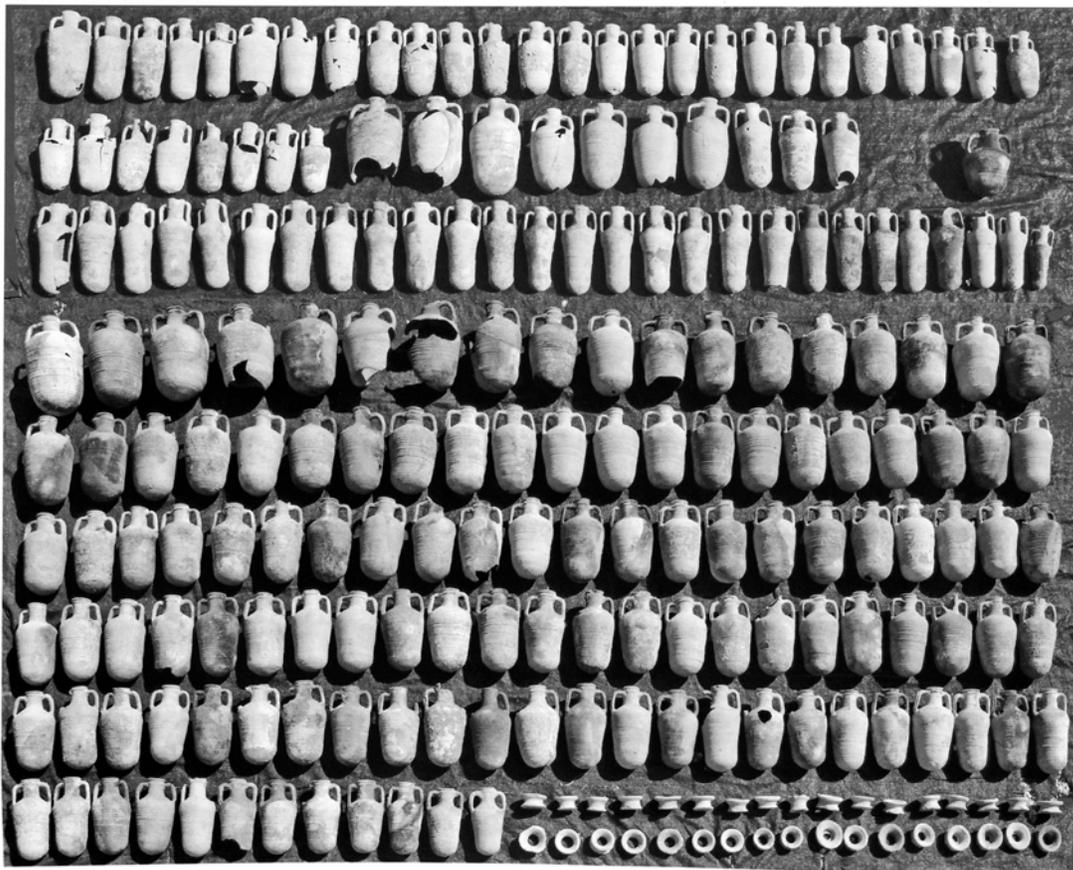
**Fig. 3.8.** Findspots of LRA 1. After Burragato et al. 2007: 696 fig. 1; with Rhosus/Seleucia (on border between Cilicia and Syria) added based on Reynolds 2005.



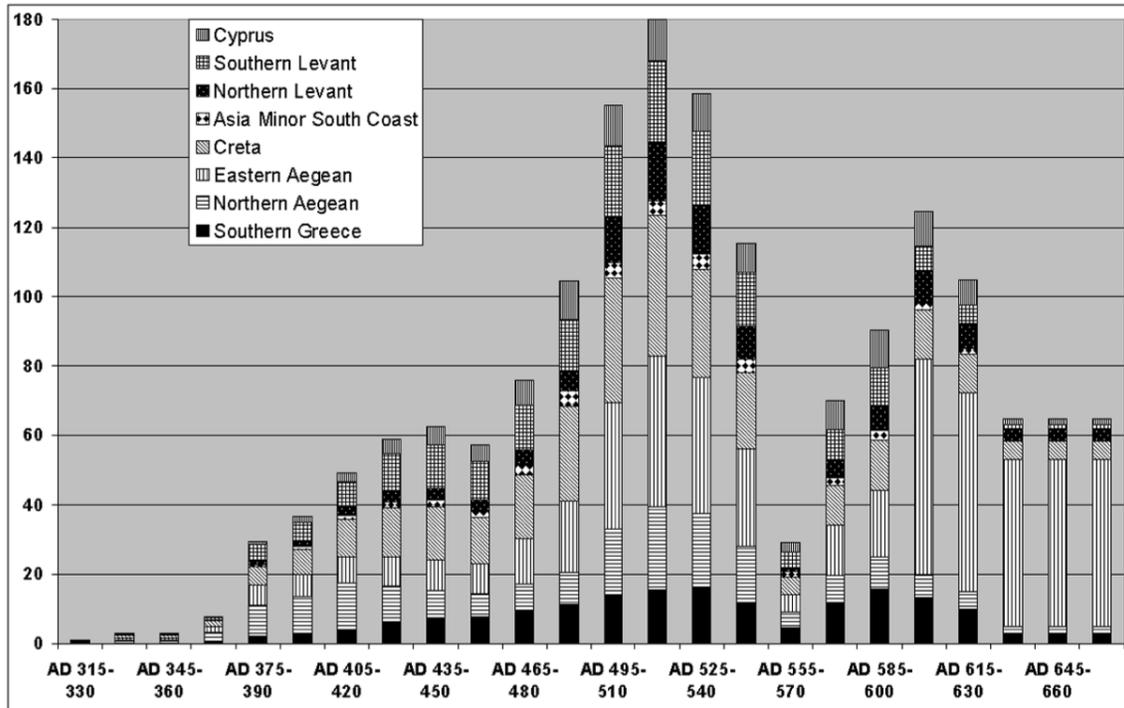
**Fig. 3.9.** Principal locations of geological formations (ophiolites) matching LRA 1 fabric. After Williams 2005b: 161 fig. 4.



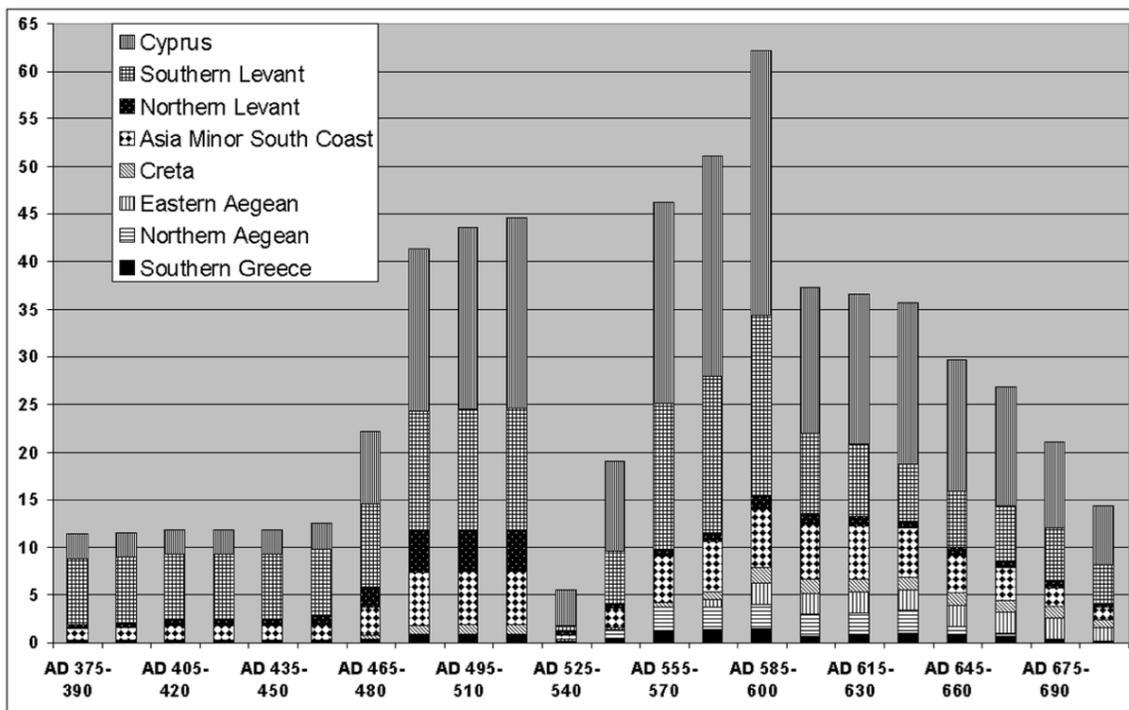
**Fig. 3.10.** Possible LRA 1 kiln sites recorded by J.-Y. Empeur and M. Picon (1989), as well as recently identified sites. Circles indicate definite kiln sites; squares indicate possible kiln sites. After Burragato et al. 2007: 697 fig. 4 (modified); Reynolds 2005; Demesticha and Michaelides 2001; Demesticha 2003.



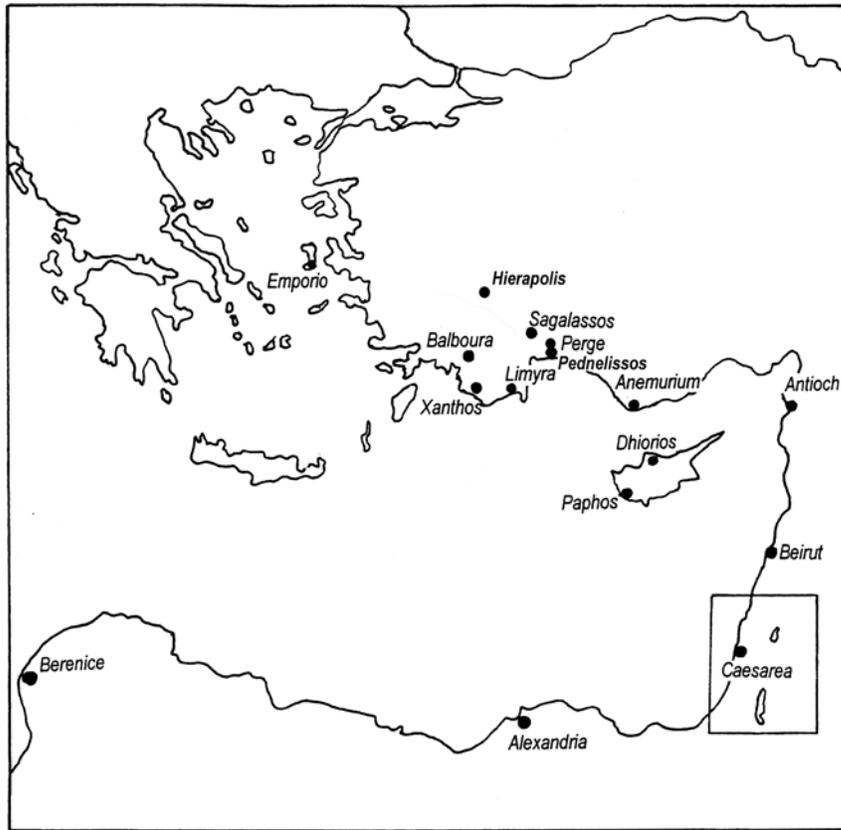
**Fig. 3.11.** LRA 1 wasters of the sixth to seventh century from the cistern near the kiln on the island at Elaiussa-Sebaste. After Ferrazzoli and Ricci 2013: 214 fig. 17.12.



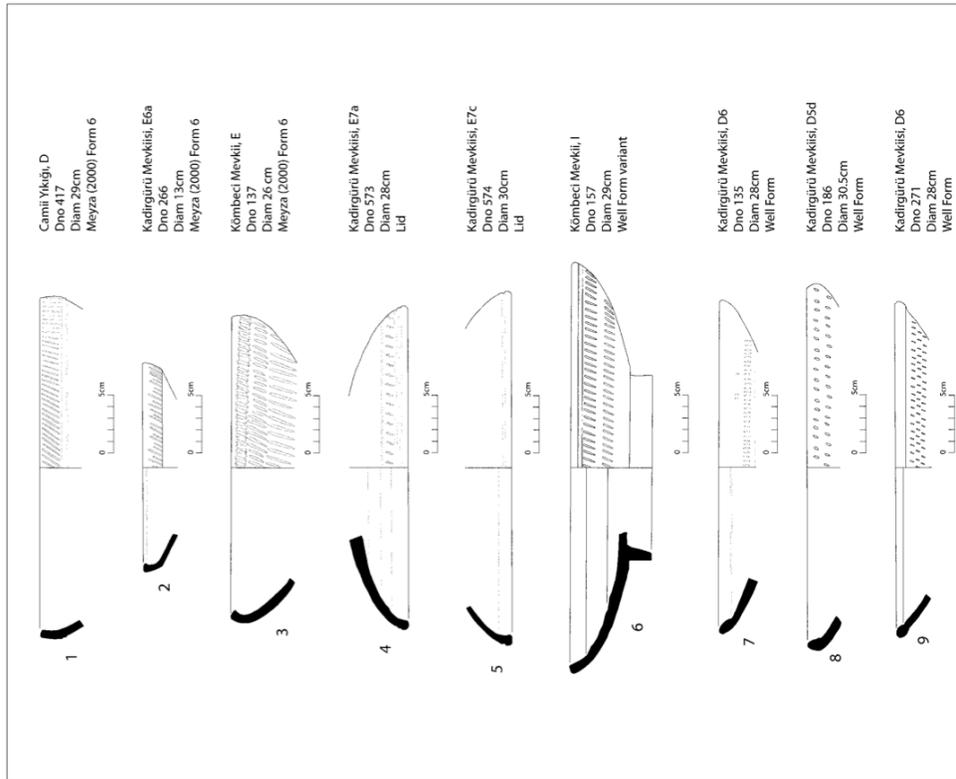
**Fig. 3.12a.** PRS distribution in the eastern Mediterranean by region (y-axis in absolute numbers; total sherds = 2,302). ICRATES Project, Katholieke Universiteit Leuven. After Bes and Poblome 2008: 510 fig. 3.



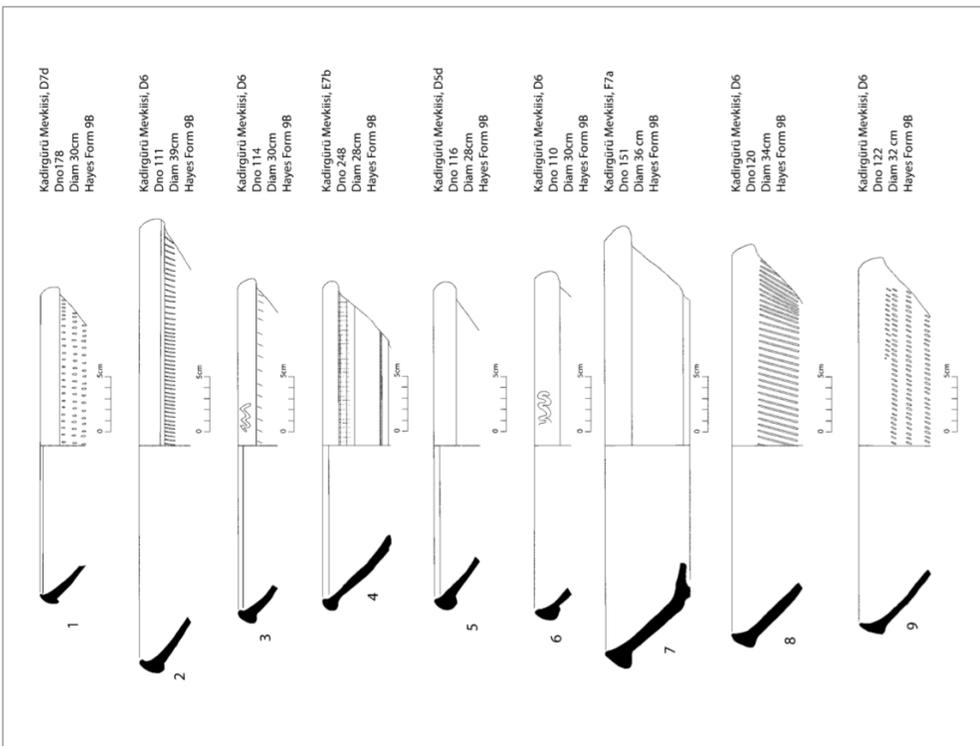
**Fig. 3.12b.** CRS distribution in the eastern Mediterranean by region (y-axis in absolute numbers; total sherds = 807). ICRATES Project, Katholieke Universiteit Leuven. After Bes and Poblome 2008: 511 fig. 4.



**Fig. 3.13.** Main findspots of the later forms of CRS (eighth century) discussed in the text. The box covers a high-density area of sites in Jordan and Palestine where CRS has been found. After Armstrong 2009: 172 fig. 11.3a, 173 fig. 11.3b (modified).

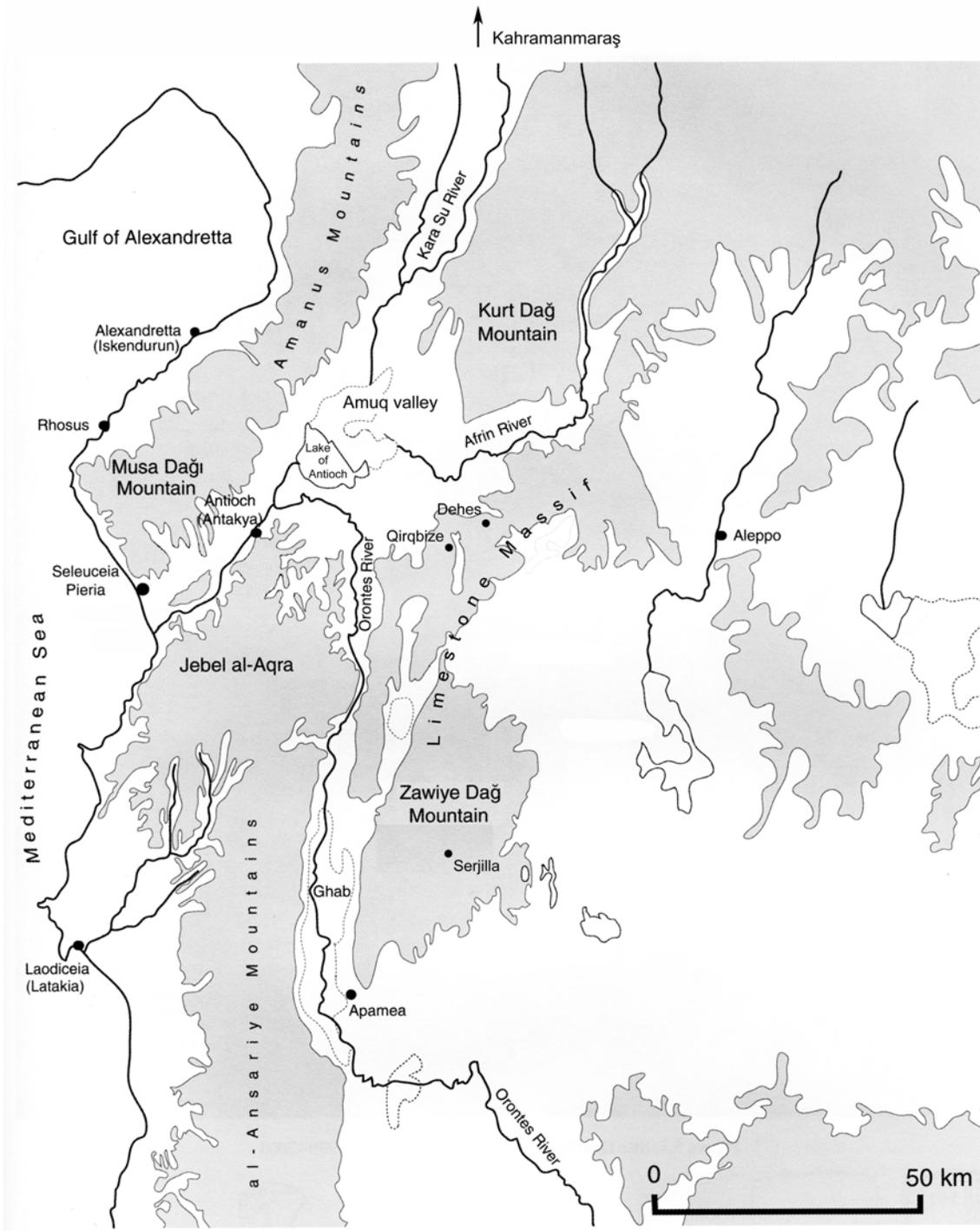


(b)

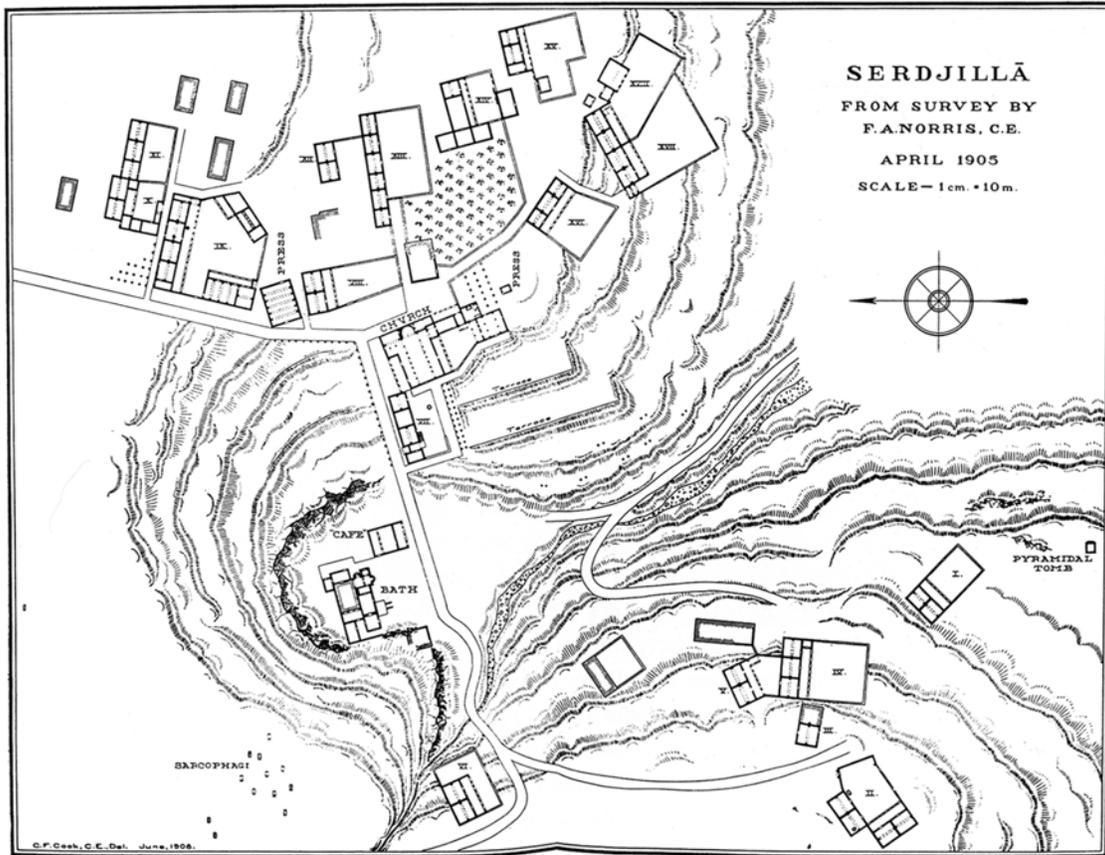


(a)

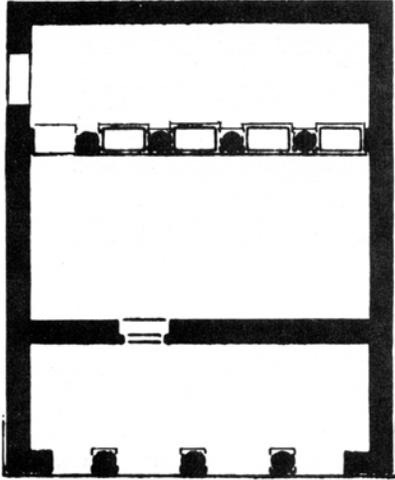
**Fig. 3.14a-b.** Examples of late forms of CRS from the kilns at Gebiz, southern Pisidia: (a) Hayes Form 9 and (b) Well Form (bottom four). After Jackson et al. 2012: 105 fig. 16, 107 fig. 18.



**Fig. 4.1.** Map of northwest Syria. After Yener 2005: 77 fig. 3.1 (modified).



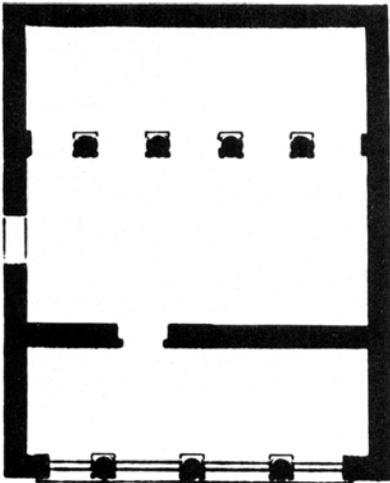
**Fig. 4.2.** Plan of Serjilla, one of the “Dead Cities” of the Limestone Massif, with church, andron (“café”), bath, and presses labeled; houses are numbered. Plan created by expedition of H. C. Butler; after Tate 1992: 219 fig. 249.



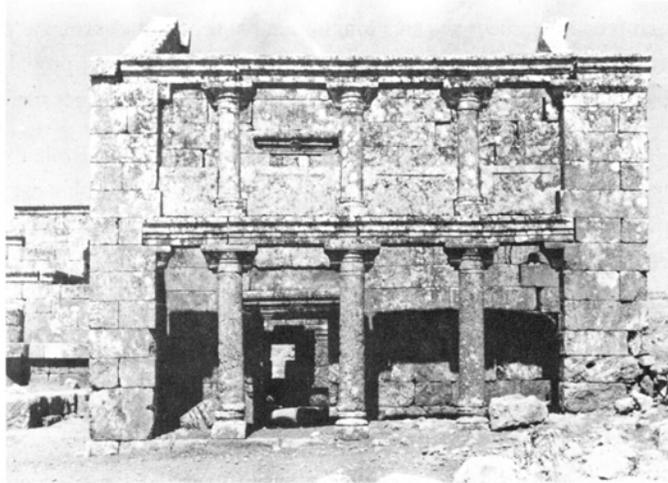
1) Plan du rez-de-chaussée.



3) Vue d'ensemble.



2) Plan de l'étage.



4) Façade principale.

**Fig. 4.3.** The andron in Serjilla. After Tate 1992: 74 fig. 113.

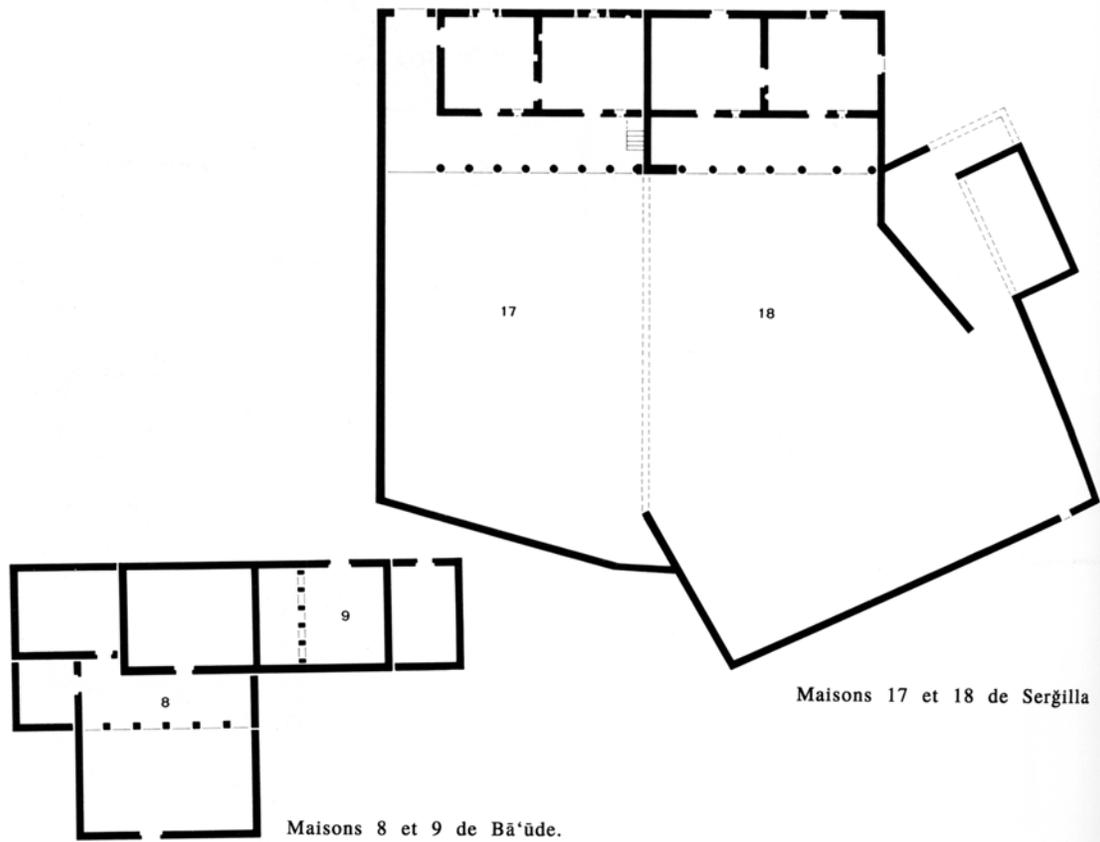


14

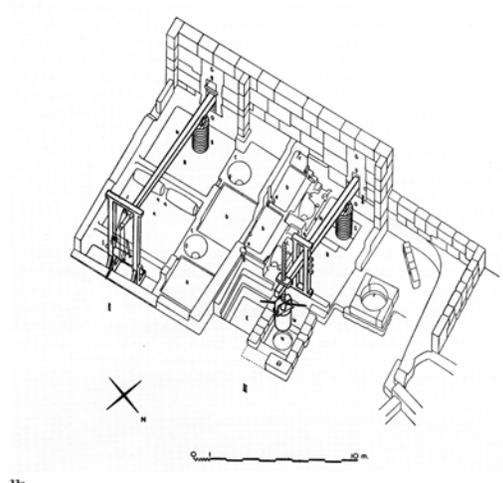


15

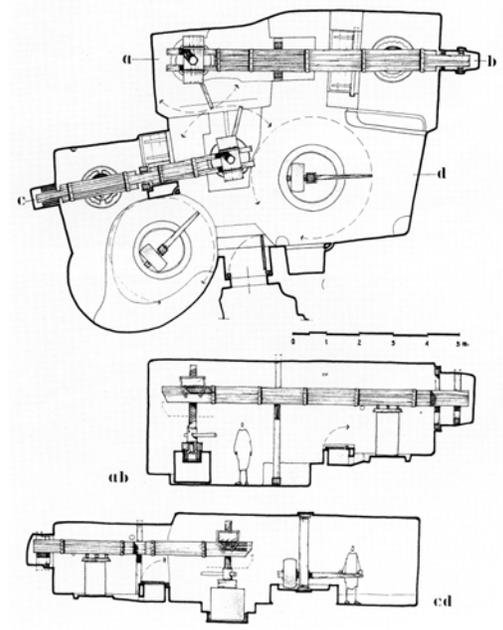
**Fig. 4.4.** House façades at Kaukanaya and Deir Sim'an. After Strube 1996: 11 figs. 14-15.



**Fig. 4.5.** “Regular” house plans. After Tate 1992: 60 fig. 90 (modified).



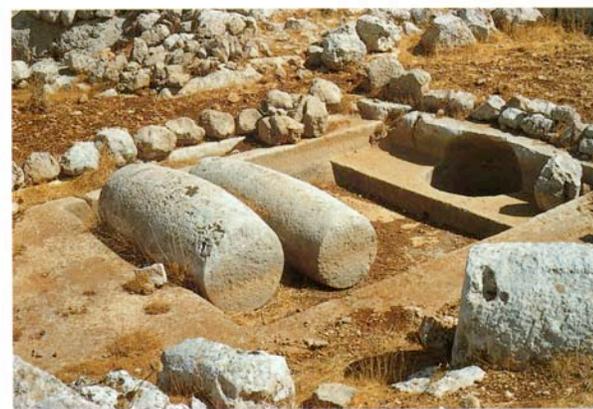
33a



(a)



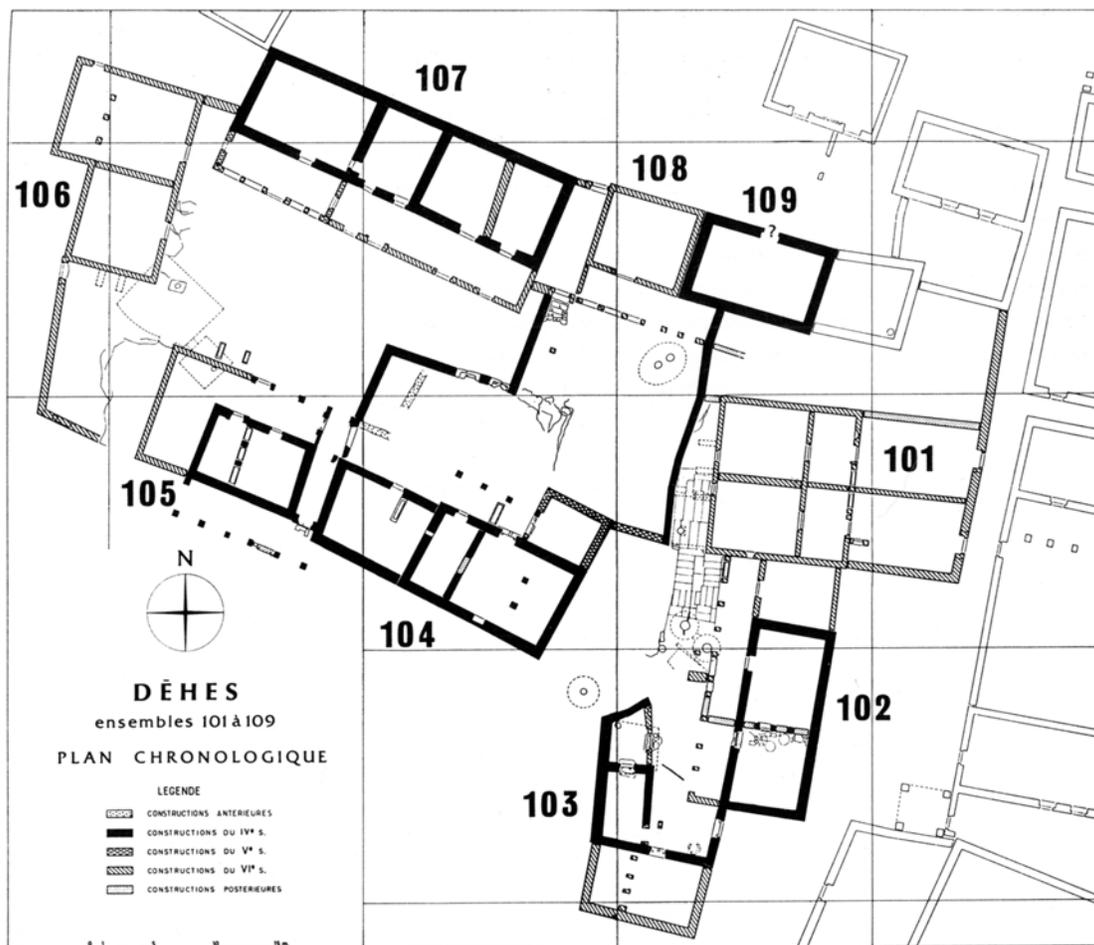
31



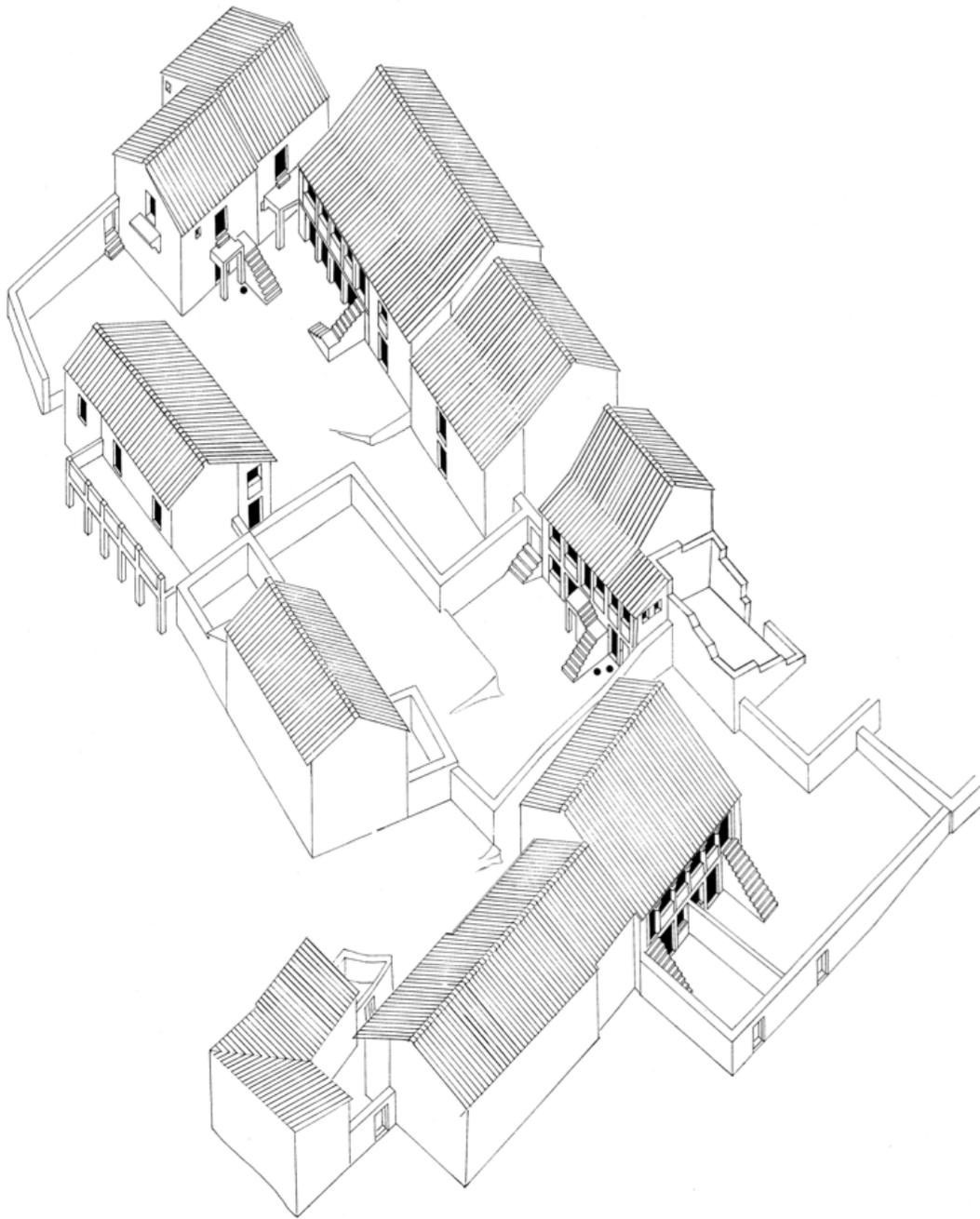
32

(b)

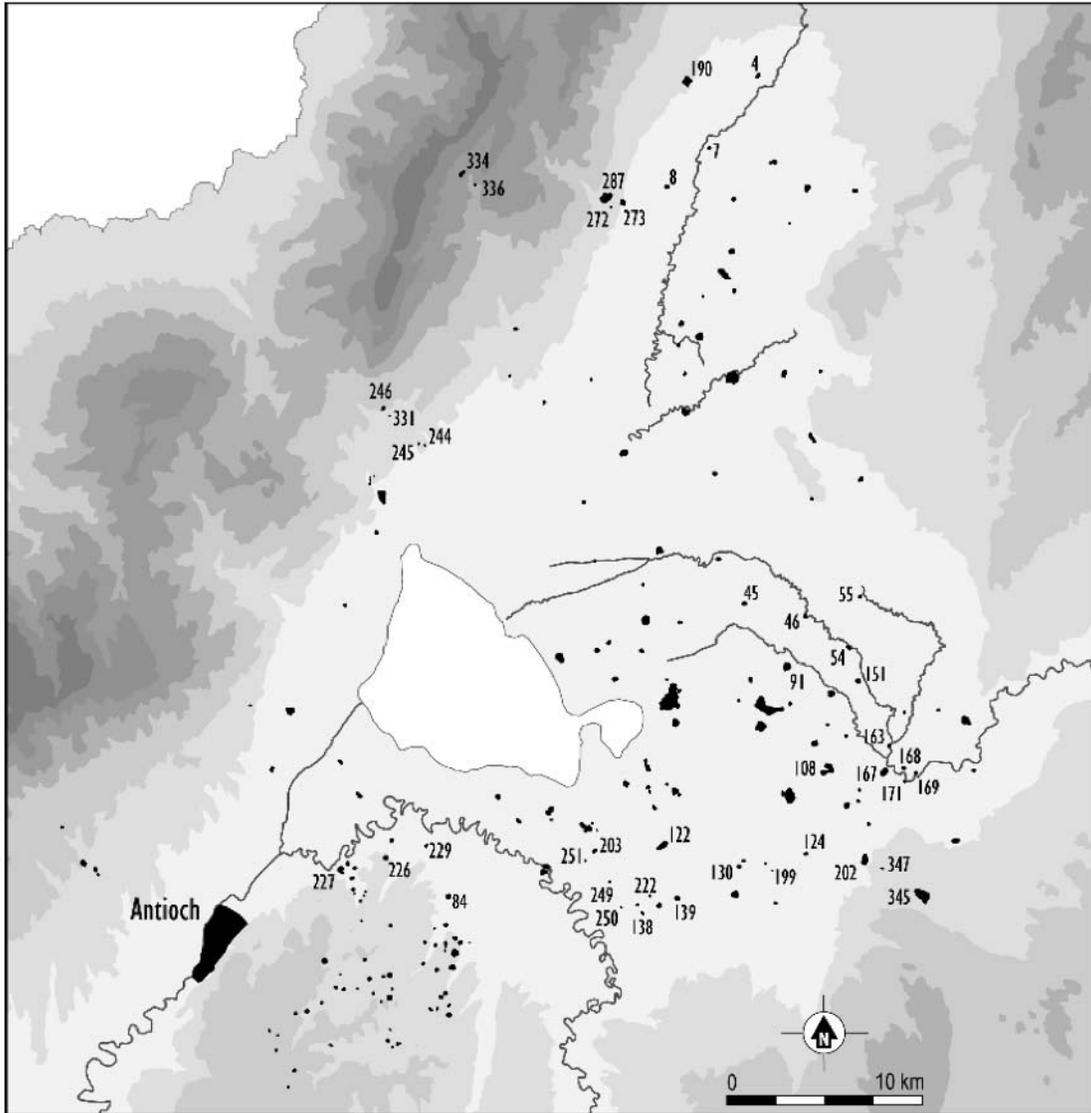
**Fig. 4.6a-b.** (a) Presses at Behyo and Kafr Nabo. After Strube 1996: 20 figs. 33a-33b.  
 (b) Presses at Behyo. After Strube 1996: 19 figs. 31-32.



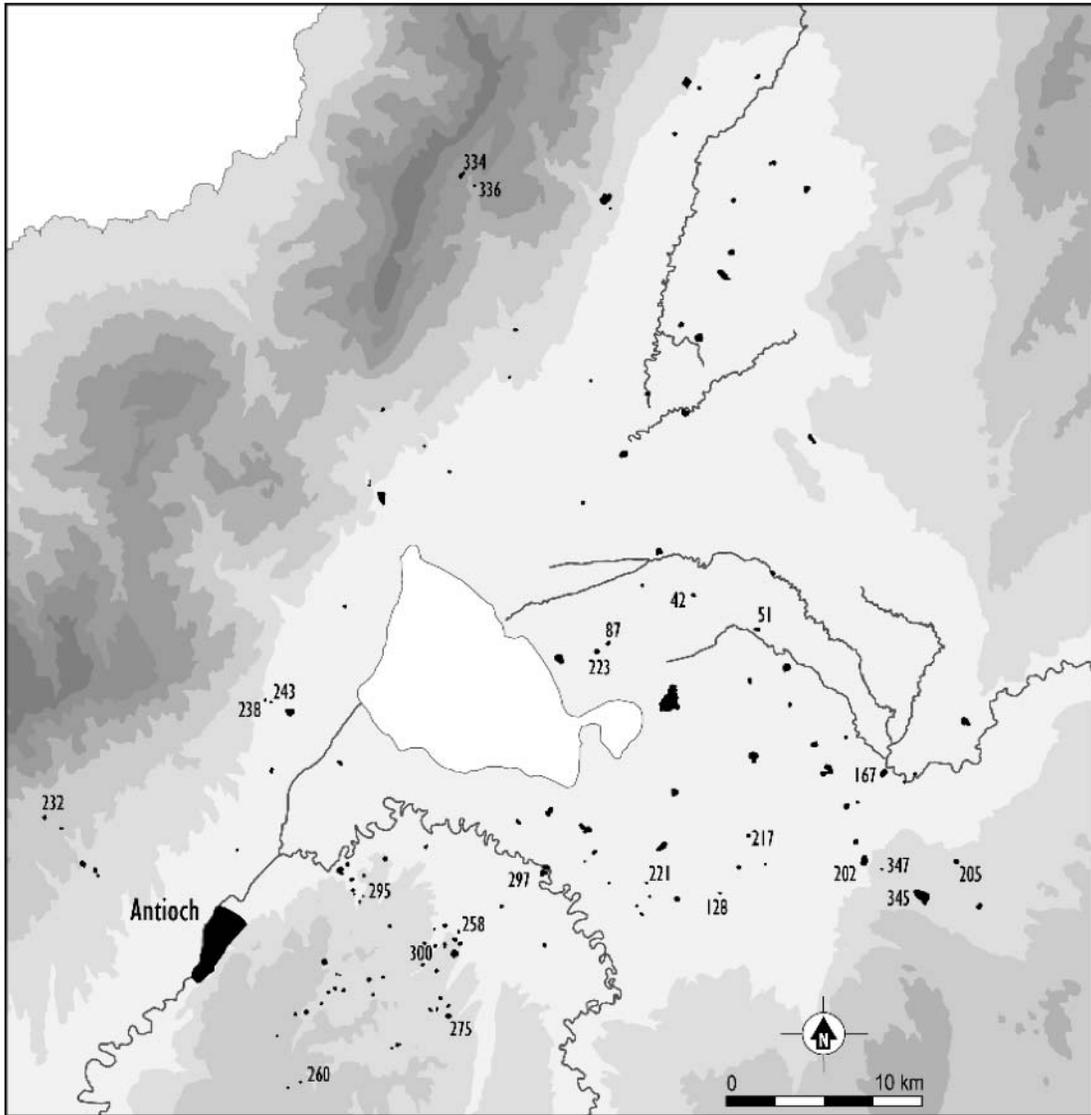
**Fig. 4.7a.** Plan of excavated houses at Dehes. After Sodini et al. 1980: 13 fig. 6.



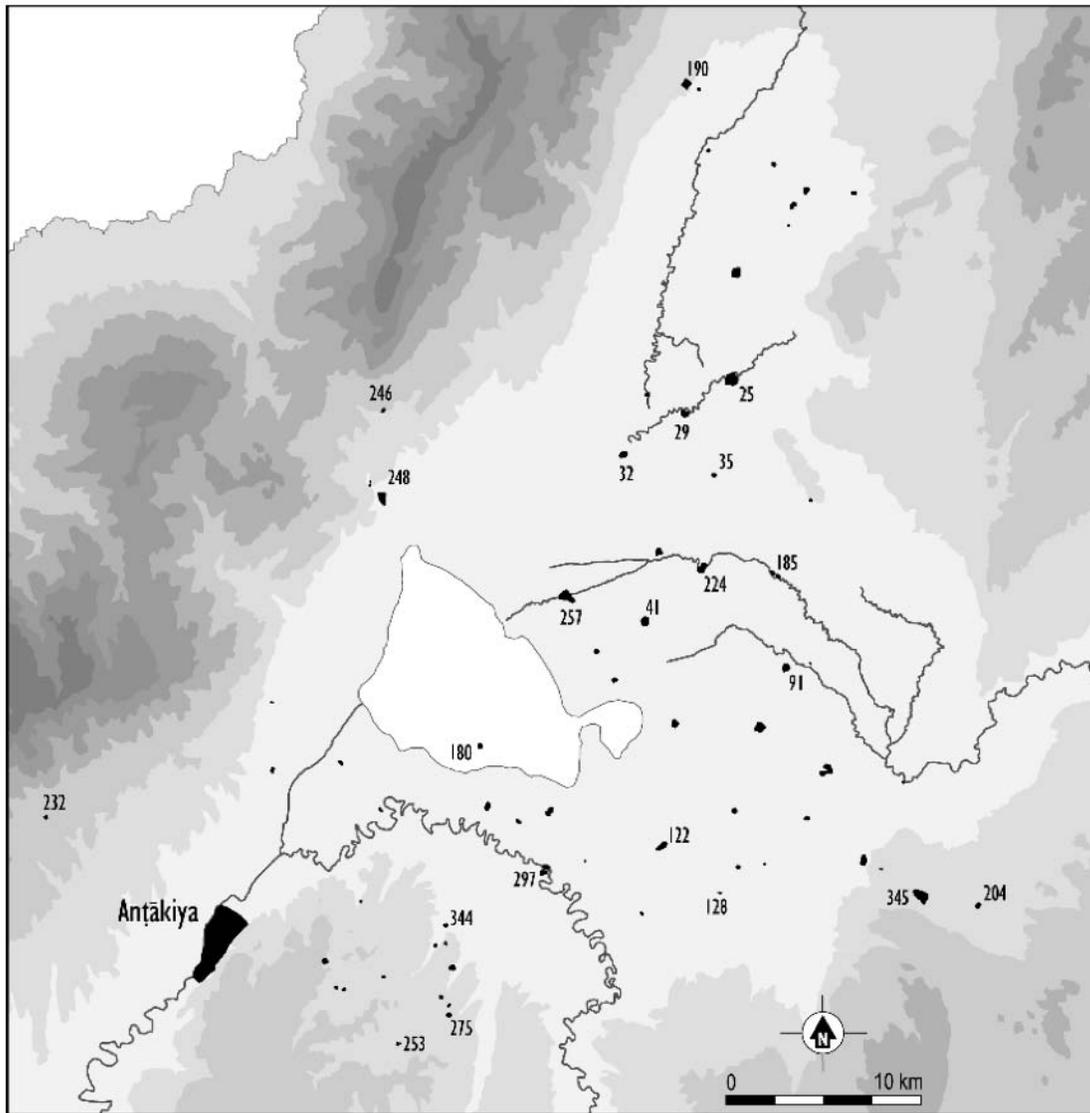
**Fig. 4.7b.** Reconstruction of excavated houses at Dehes. After Sodini et al. 1980: 181 fig. 243.



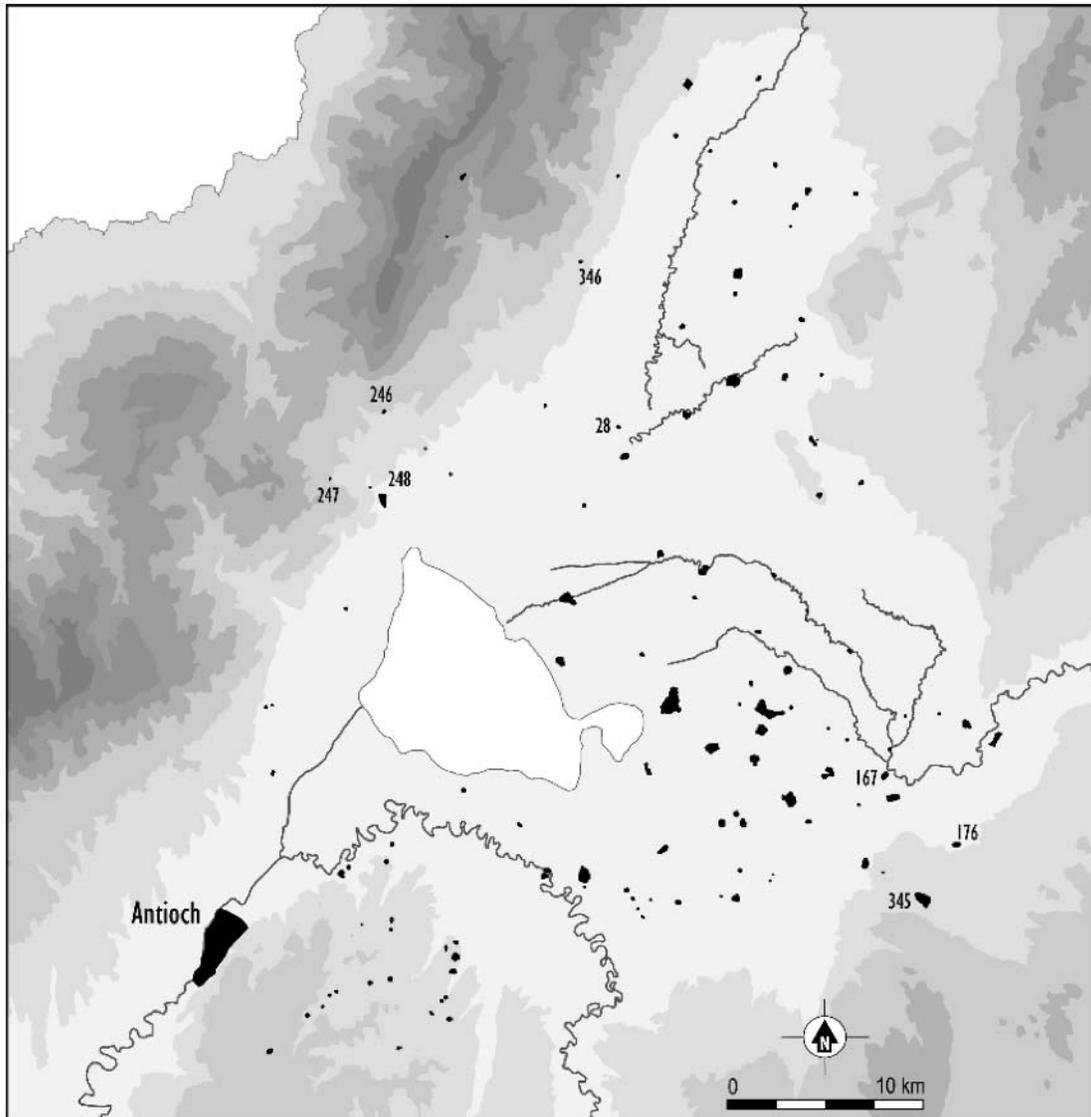
**Fig. 4.8a.** Amuq valley survey region, showing sites with evidence for occupation in the Roman period. After Gerritsen et al. 2008: 306 fig. 11.



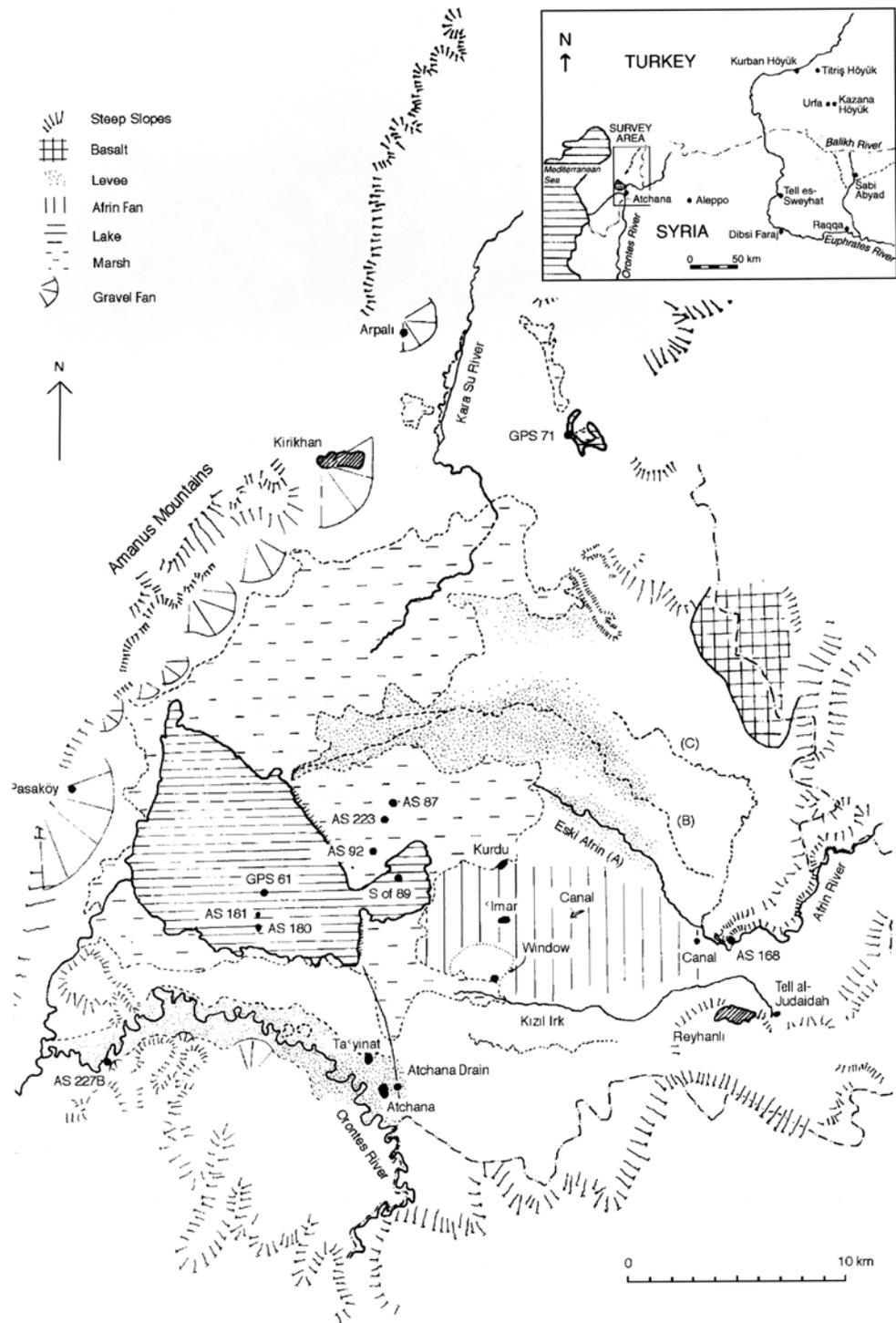
**Fig. 4.8b.** Amuq valley survey region, showing sites with evidence for occupation in the late Roman period. After Gerritsen et al. 2008: 308 fig. 13.



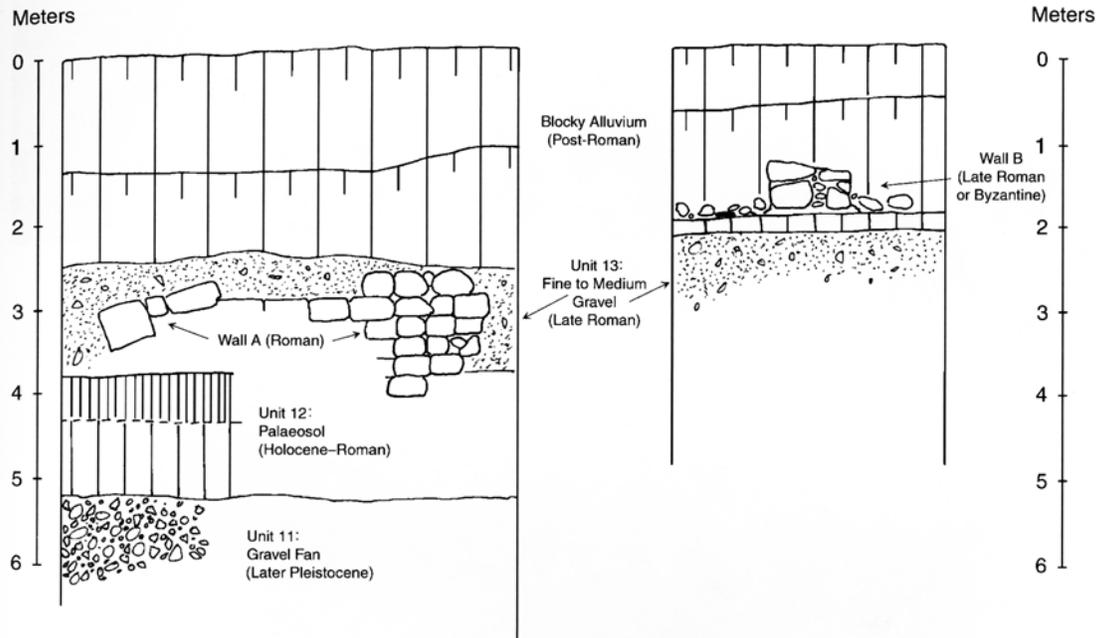
**Fig. 4.8c.** Amuq valley survey region, showing sites with evidence for occupation in the early Islamic period. After Gerritsen et al. 2008: 310 fig. 15.



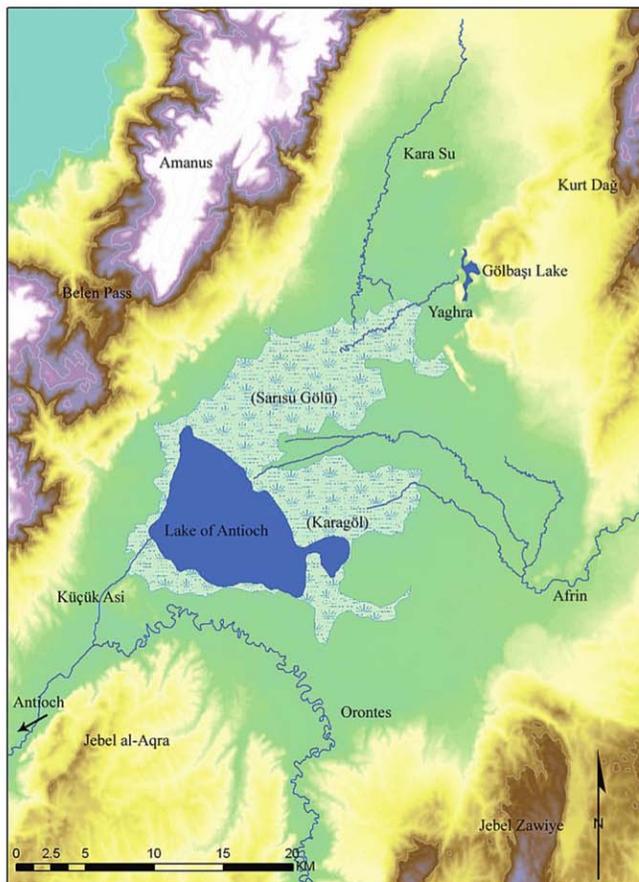
**Fig. 4.8d.** Amuq valley survey region, showing sites with evidence for occupation in the middle Islamic period. After Gerritsen et al. 2008: 312 fig. 17.



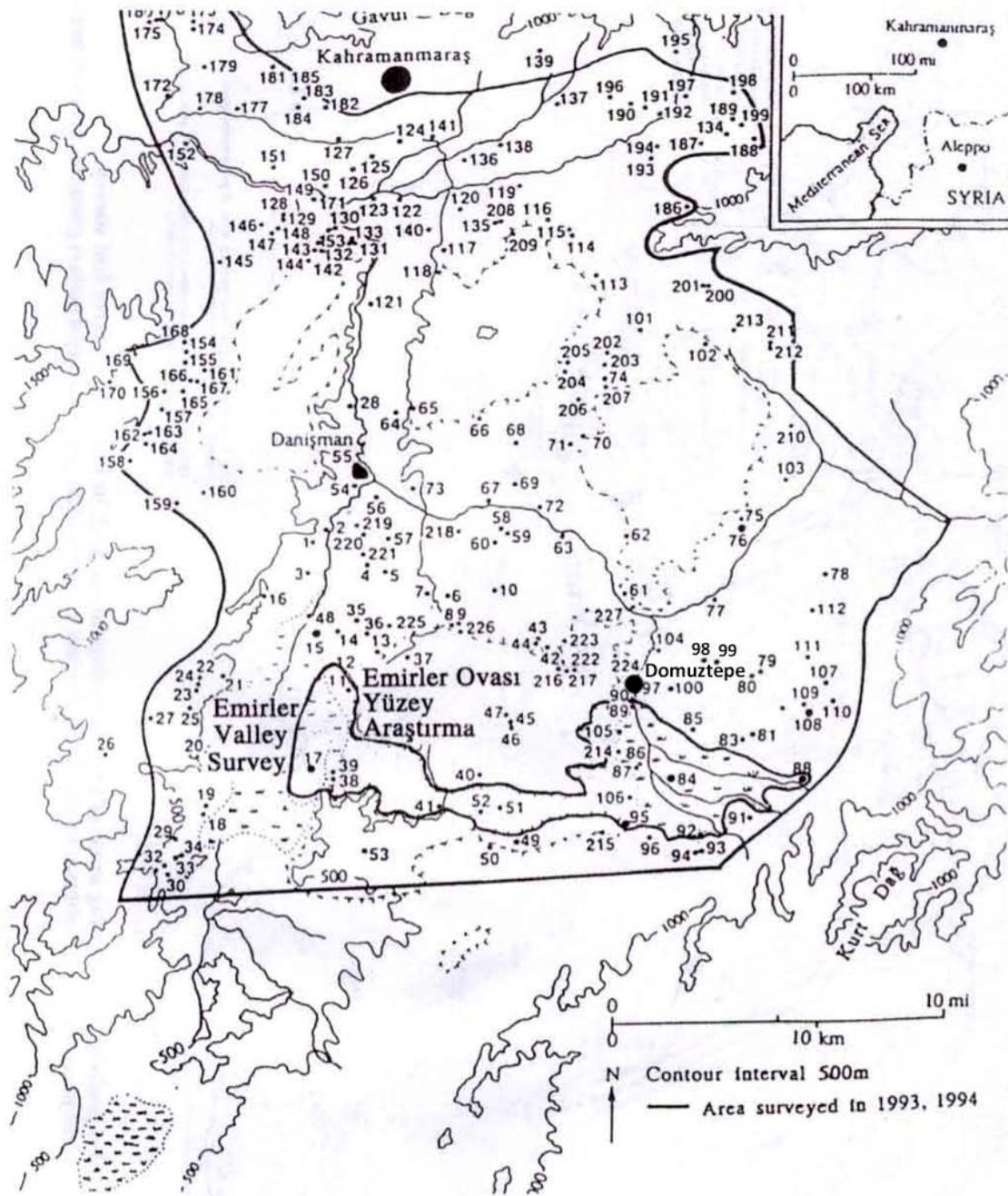
**Fig. 4.9.** Geomorphological map of Amuq valley, with sedimentary units and coring locations. After Yener 2005: 50 fig. 2.4.



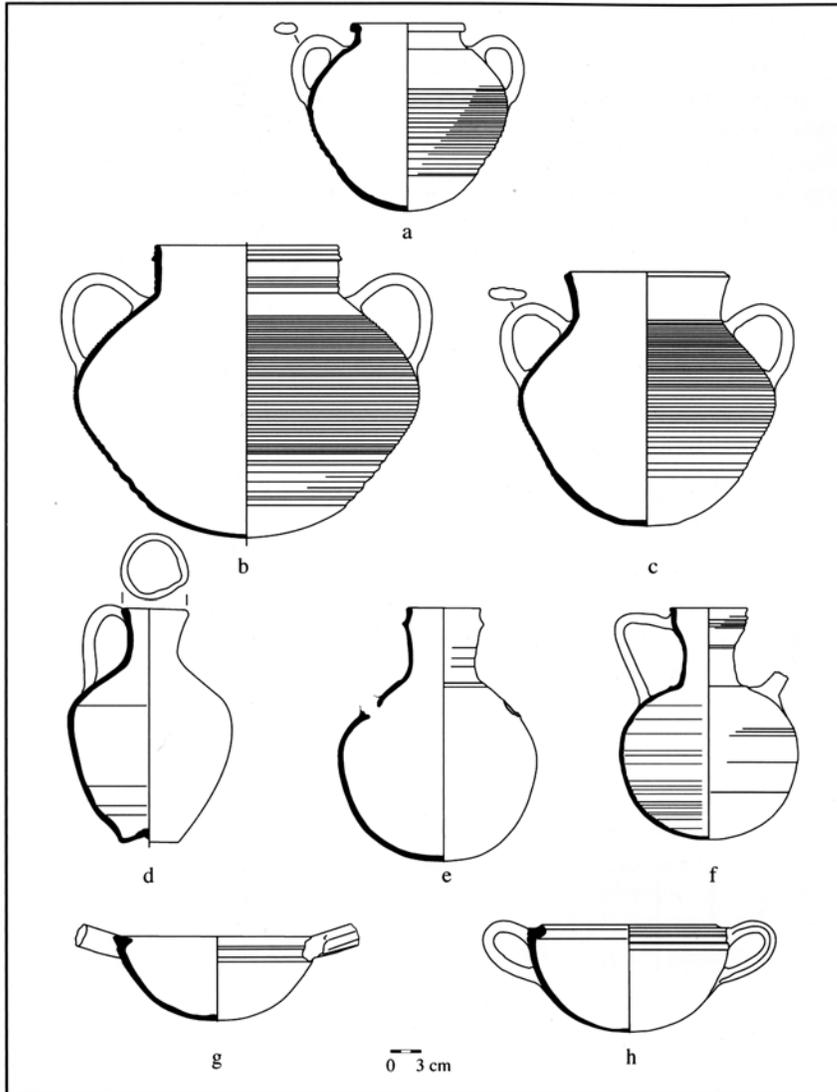
**Fig. 4.10.** Sedimentary sequences from Amuq valley, with archaeological remains. After Yener 2005: 51 fig. 2.5.



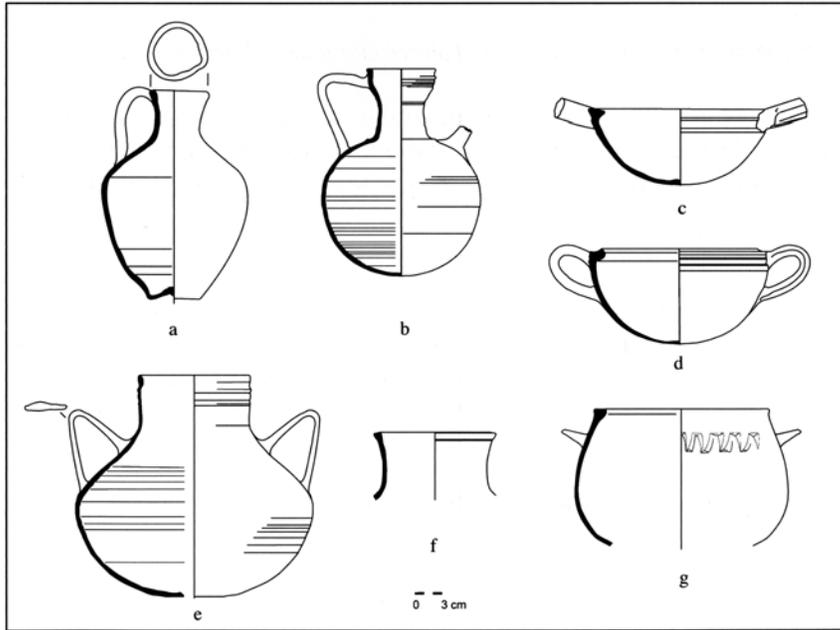
**Fig. 4.11.** Topography of the Amuq valley in antiquity. After Eger 2011: 66 fig. 3.



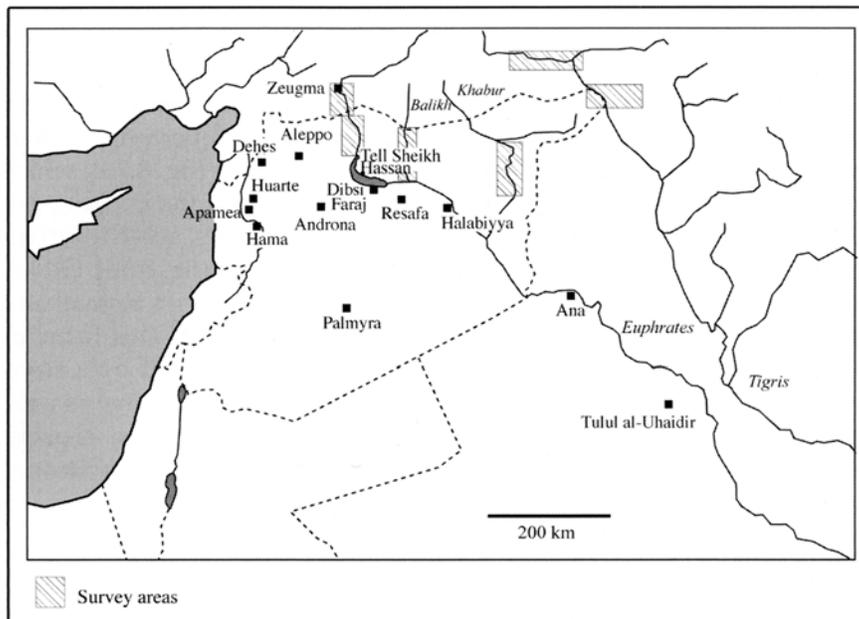
**Fig. 4.12.** Kahramanmaraş plain survey region with all sites numbered. After Carter et al. 1998: 575 fig. 1 (modified).



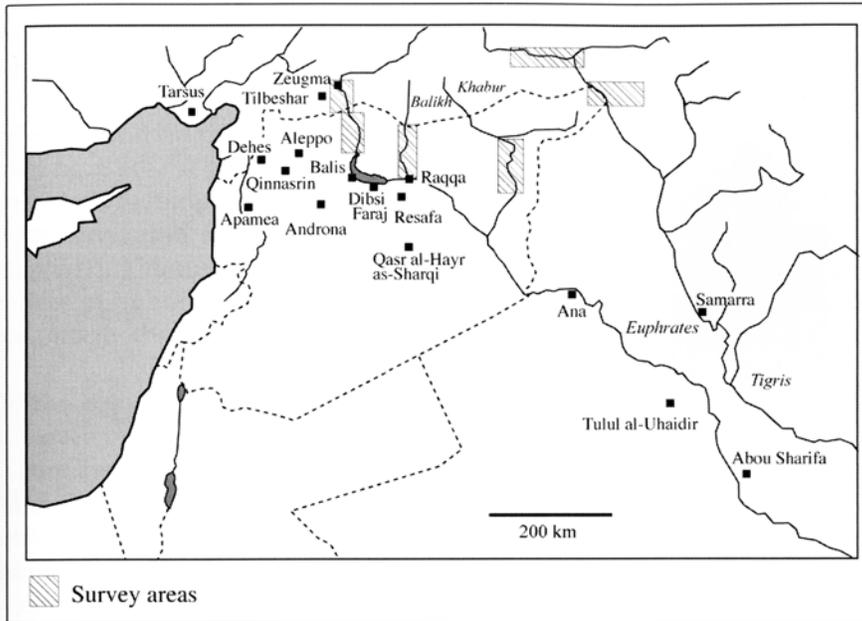
**Fig. 4.13a.** Brittle Ware cooking ware of the Byzantine period (fourth to seventh century).  
 After Vokaer 2009: 129 fig. 8.5.



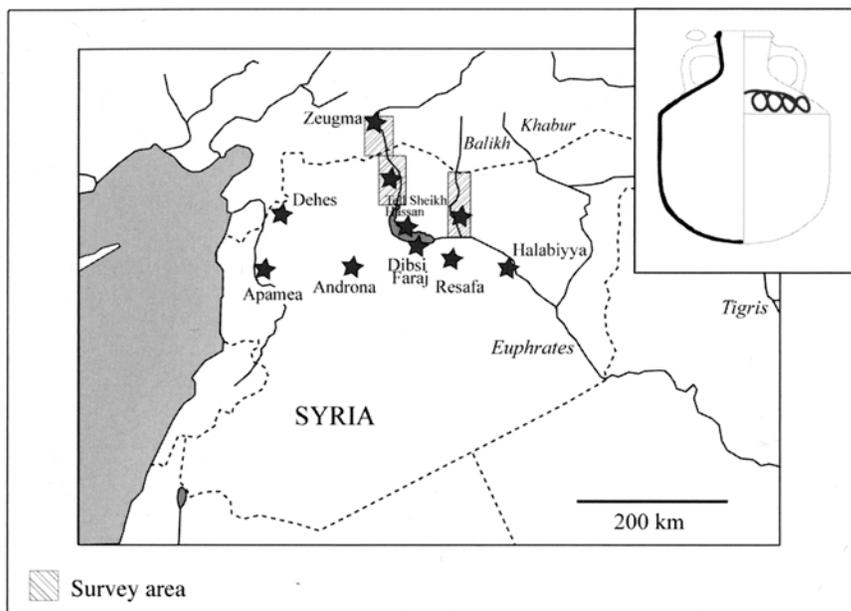
**Fig. 4.13b.** Brittle Ware cooking ware of the Umayyad period (mid-seventh to mid-eighth century). After Vokaer 2009: 130 fig. 8.7.



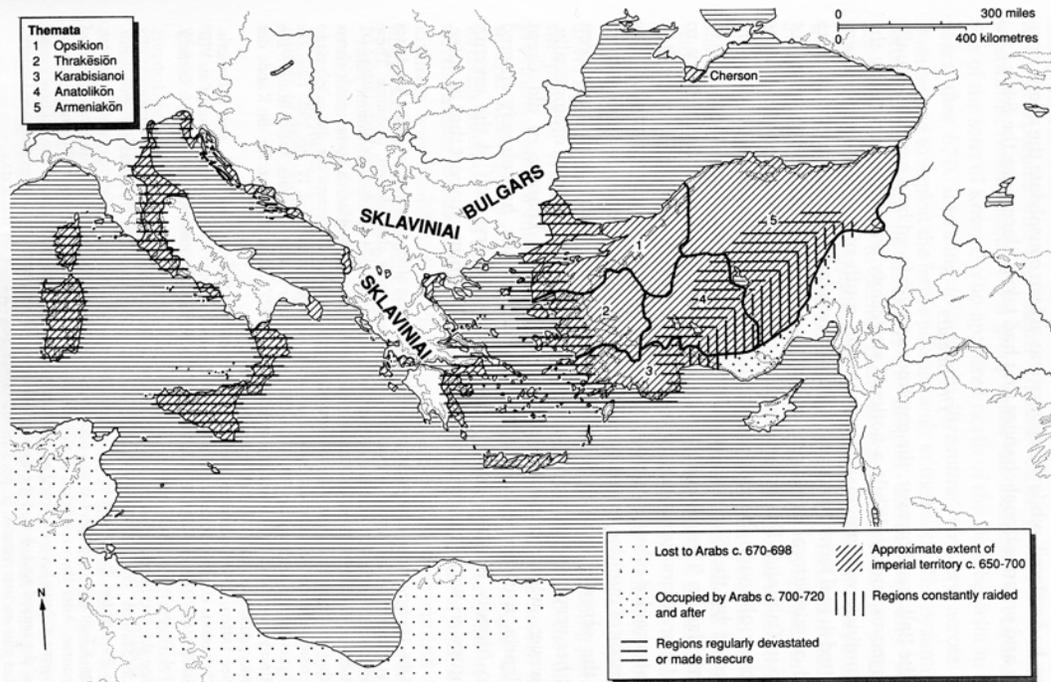
**Fig. 4.14a.** Brittle Ware distribution in the Byzantine period (fourth to mid-seventh century). After Vokaer 2009: 132 fig. 8.8.



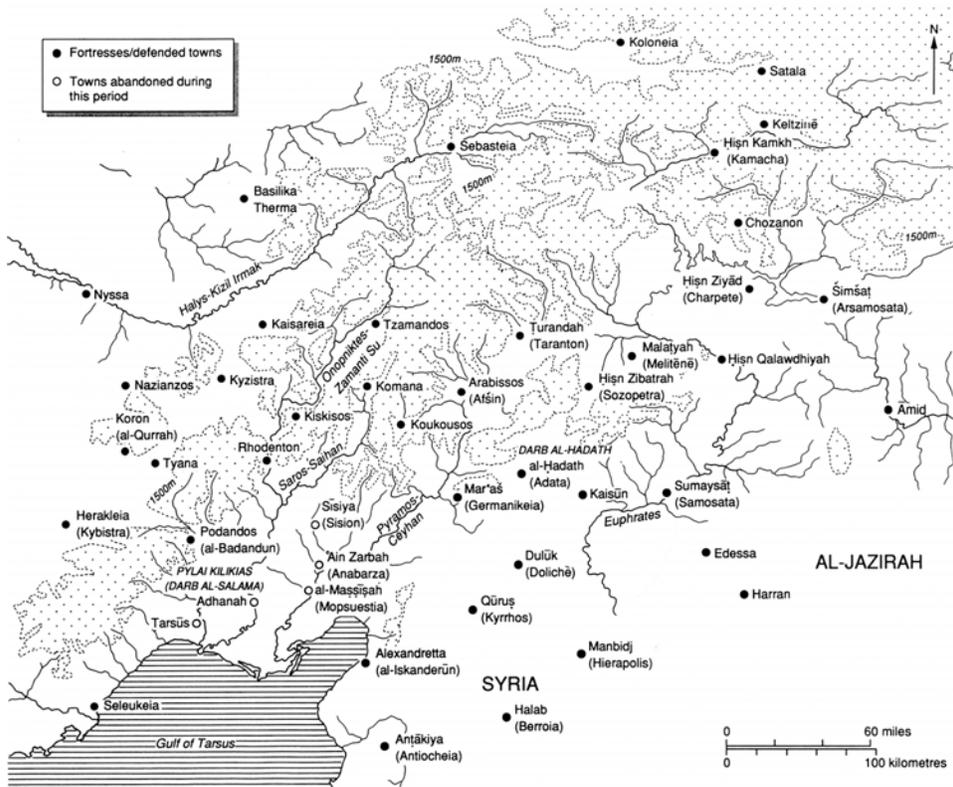
**Fig. 4.14b.** Brittle Ware distribution in the Umayyad and Abbasid period (mid-seventh to tenth century). After Vokaer 2009: 133 fig. 8.9.



**Fig. 4.15.** "Northern Syrian" or "carinated" amphora distribution. After Vokaer 2009: 134 fig. 8.10.



**Fig. 5.1a.** The Byzantine empire in 650-700 CE and the development of the Syro-Anatolian frontier. After Haldon 1990: 65 map 3.



**Fig. 5.1b.** The Syro-Anatolian frontier zone in the seventh and eighth centuries. After Haldon 1990: 106 map 5.



**Fig. 5.2a.** Akören II, topographical model. After Wulf-Rheidt 2011: 191 fig. 2.

# Akören II

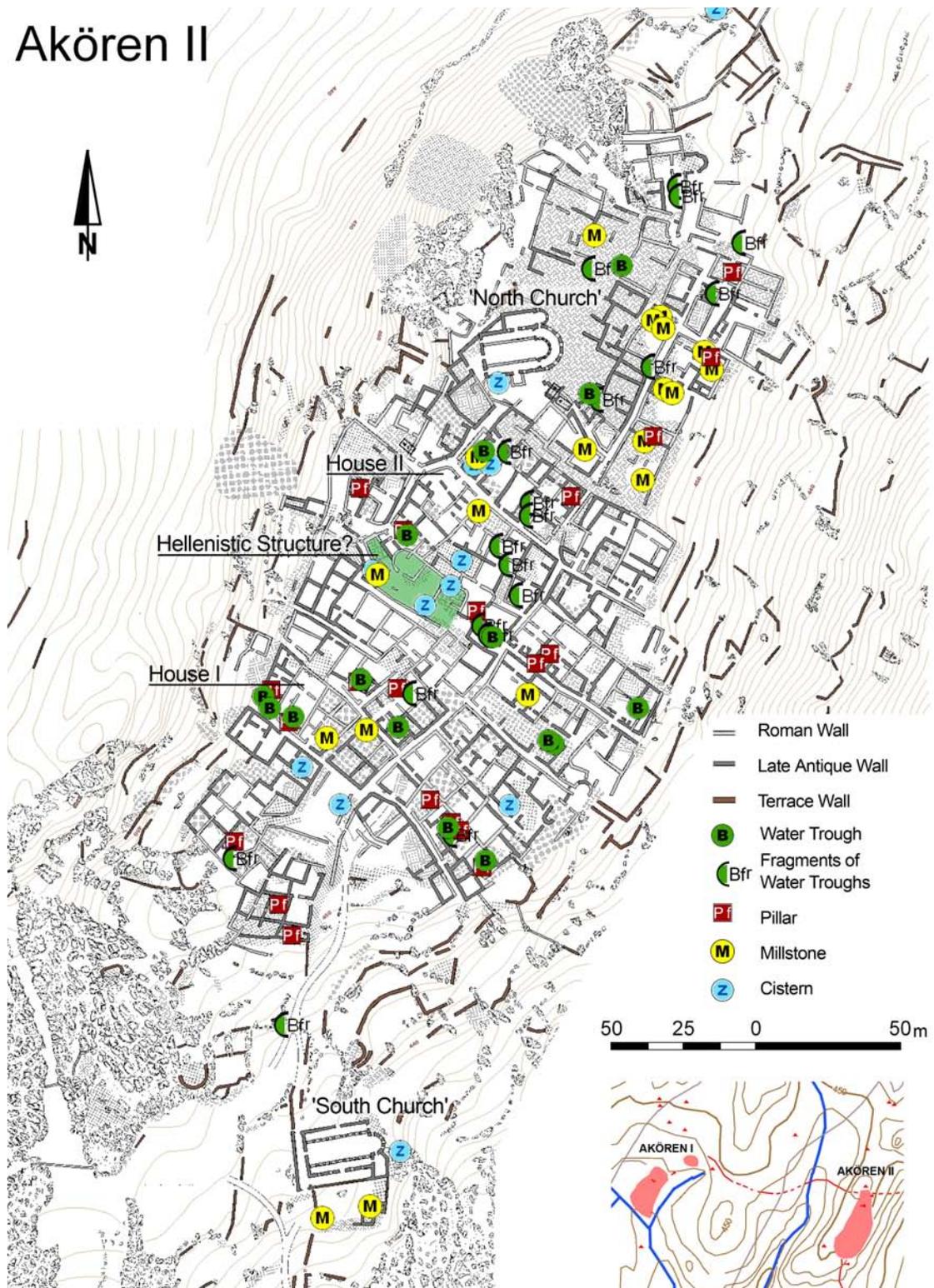
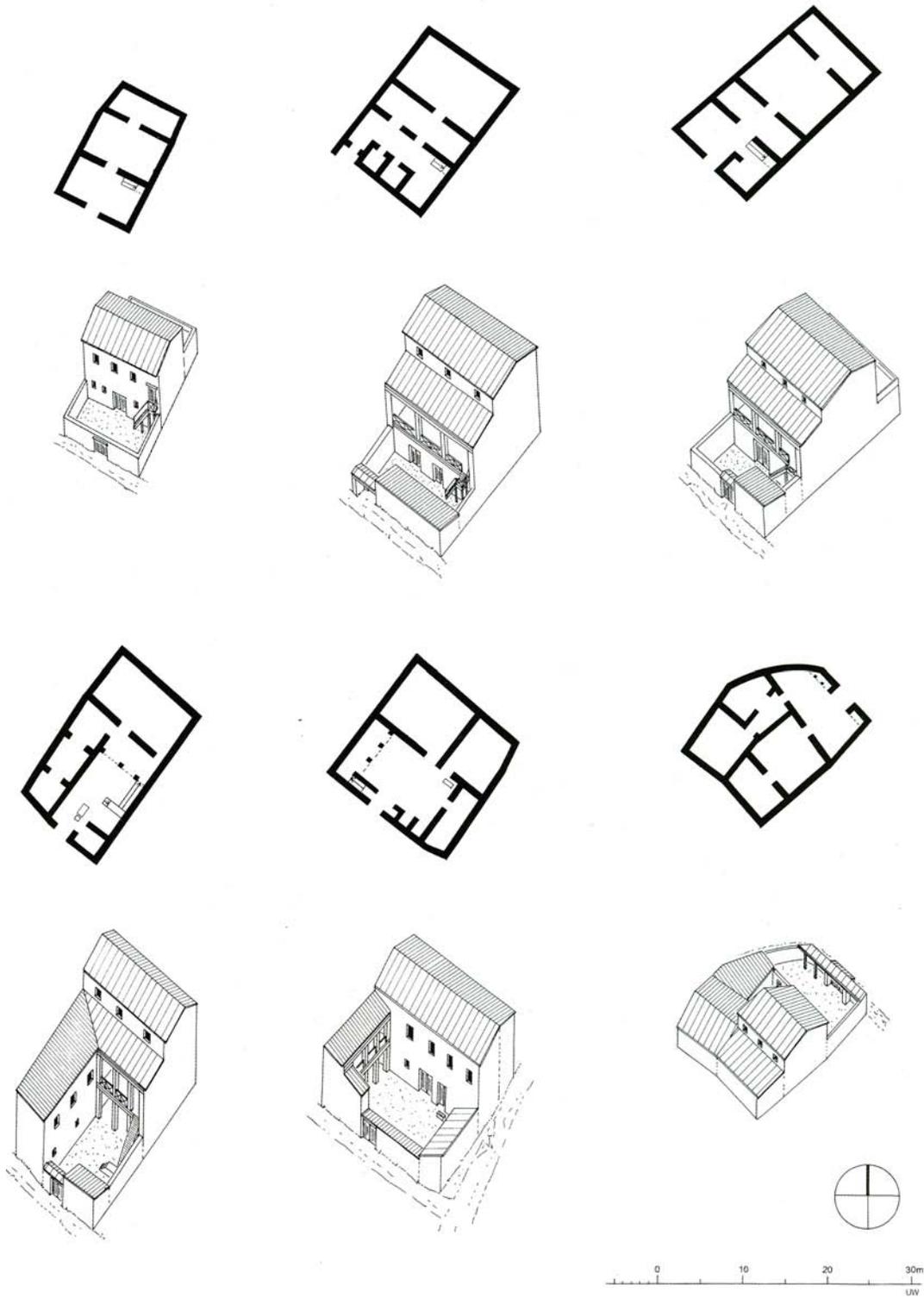


Fig. 5.2b. Akören II, topographical map. After Wulf-Rheidt 2011: 192 fig. 3.



**Fig. 5.3.** House types of the late antique period at Akören I and II. After Wulf-Rheidt 2011: 196 fig. 7.

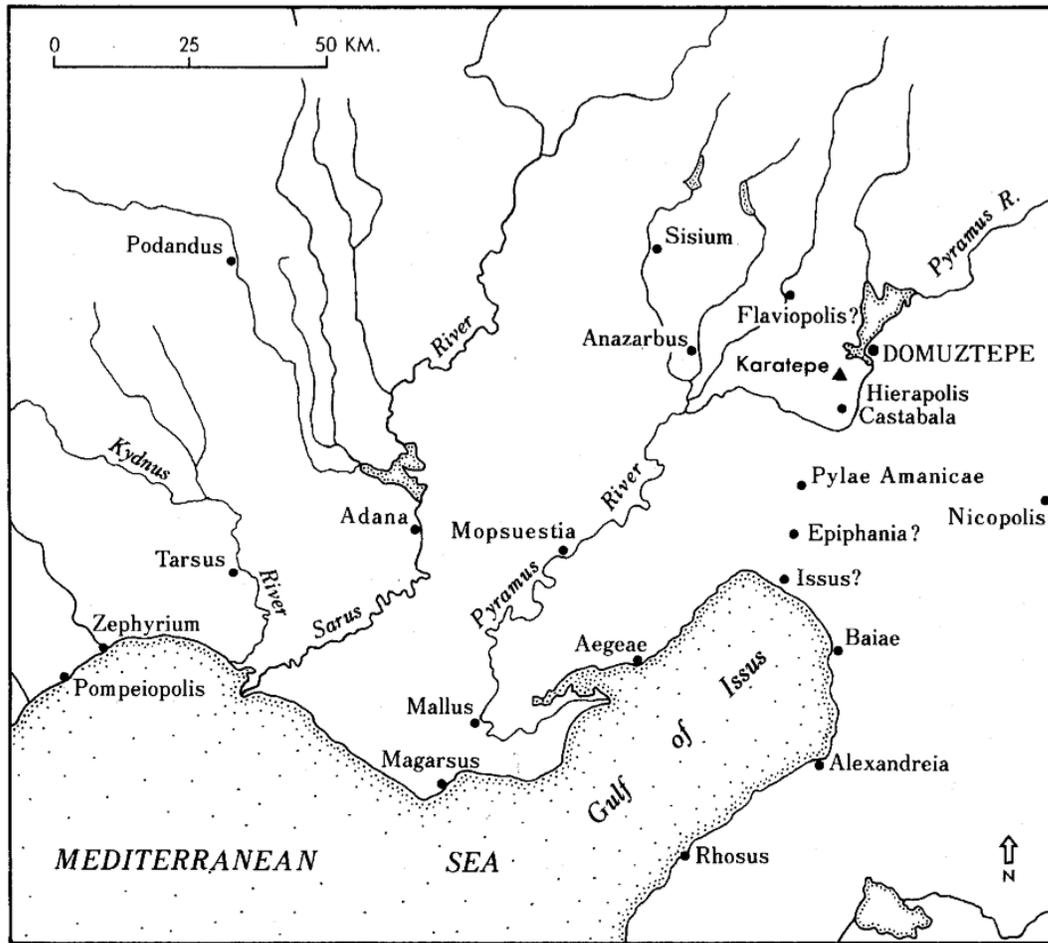


Fig. 5.4. Map of Cilicia II (Flat Cilicia). After Rossiter and Freed 1991: 146 fig.1.

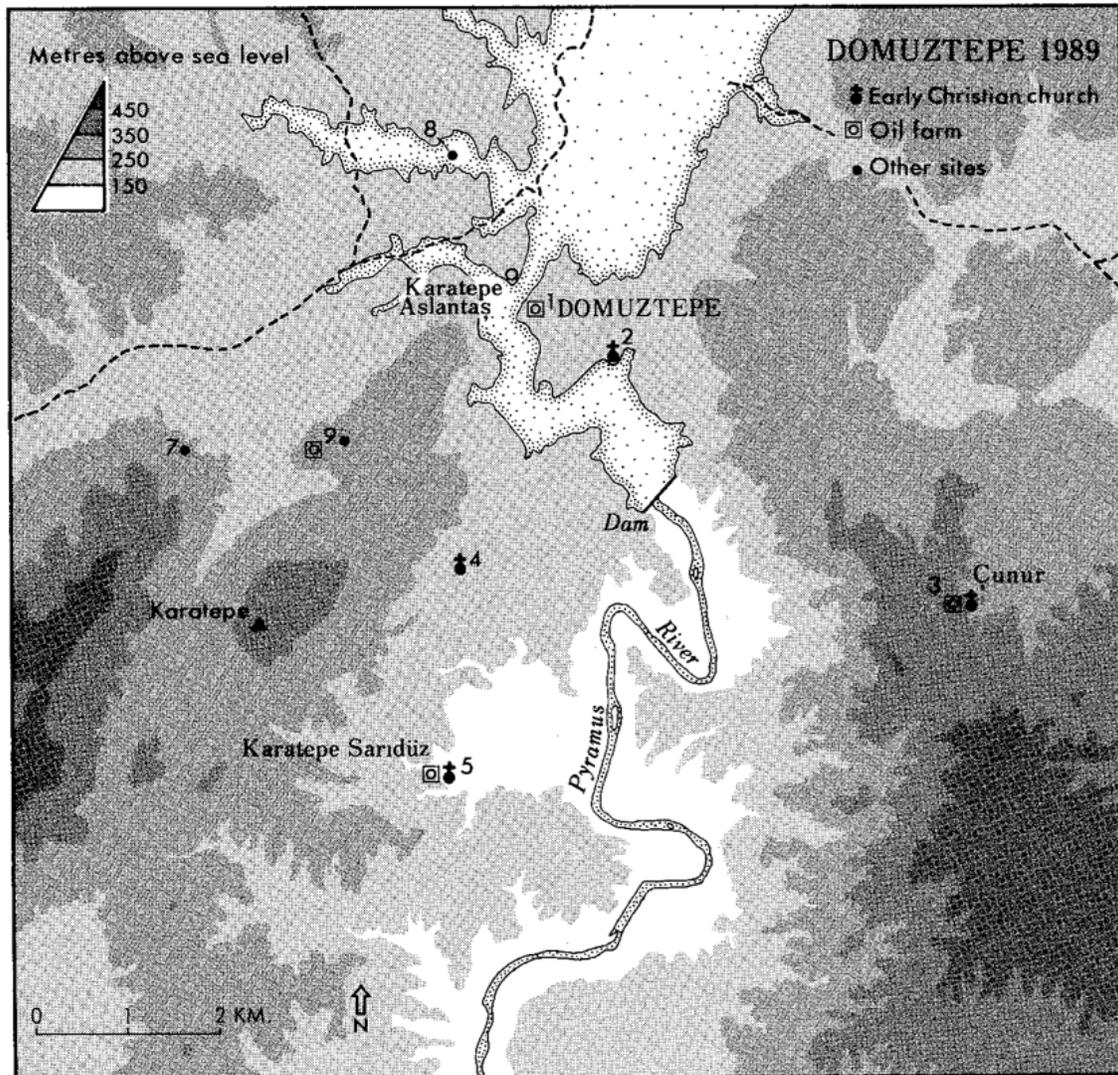
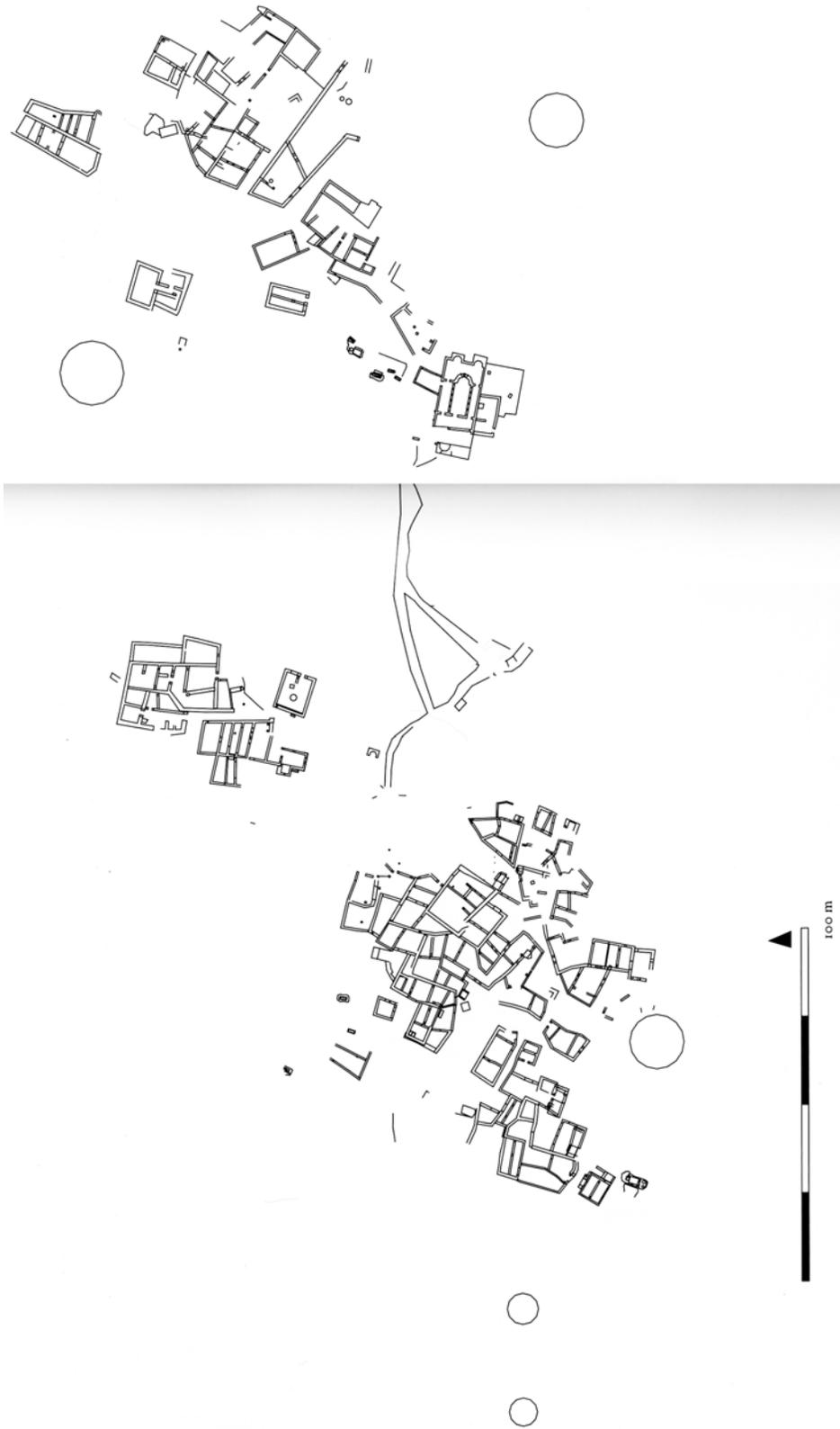


Fig. 5.5. Domuztepe survey region. After Rossiter and Freed 1991: 168 fig. 9.





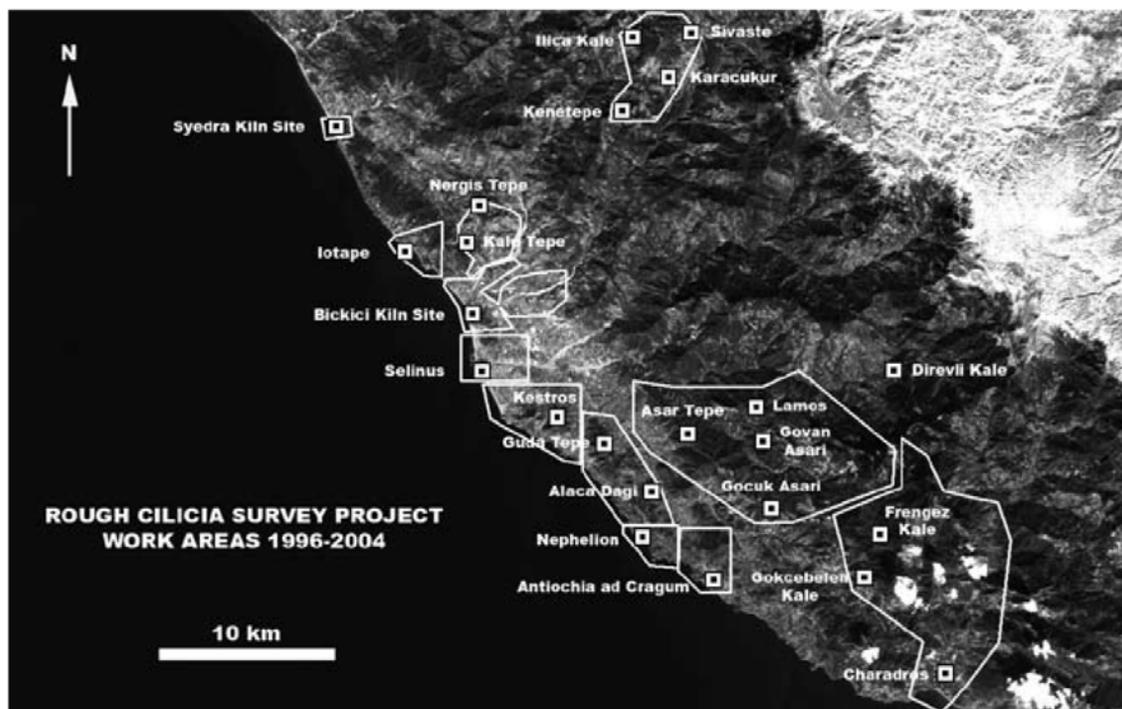
**Fig. 5.7.** Işıkkale, settlement plan. After Varinlioğlu 2007: 302-3 fig. 6.



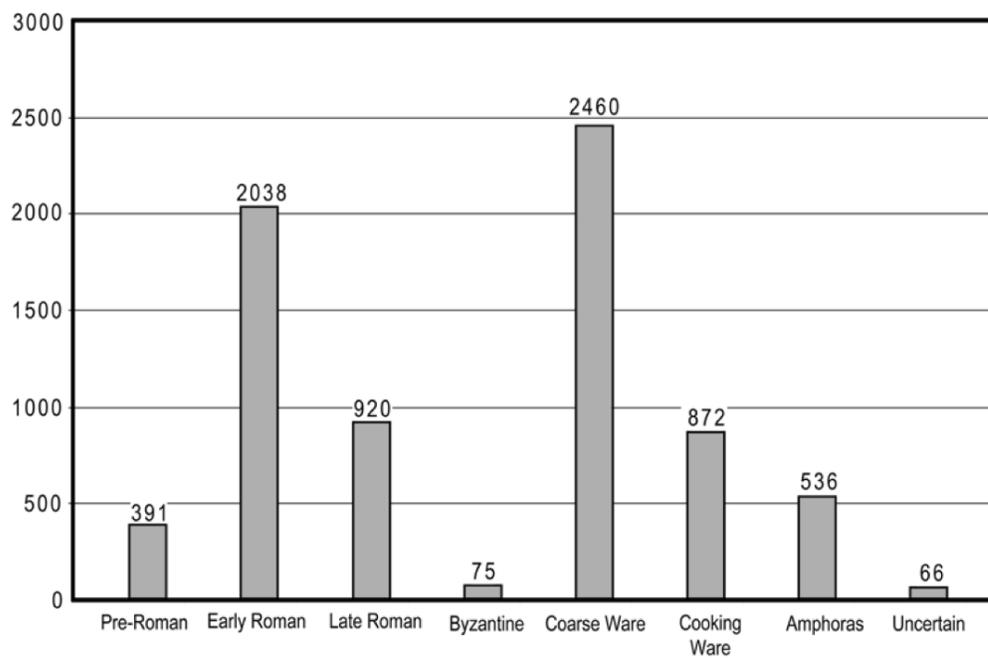
**Fig. 5.8a.** Lever and weights press at Işıkkale. After Varinlioğlu 2011: 181 fig. 3



**Fig. 5.8b.** Threshing floor at Işıkkale. After Varinlioğlu 2007: 305 fig. 10.

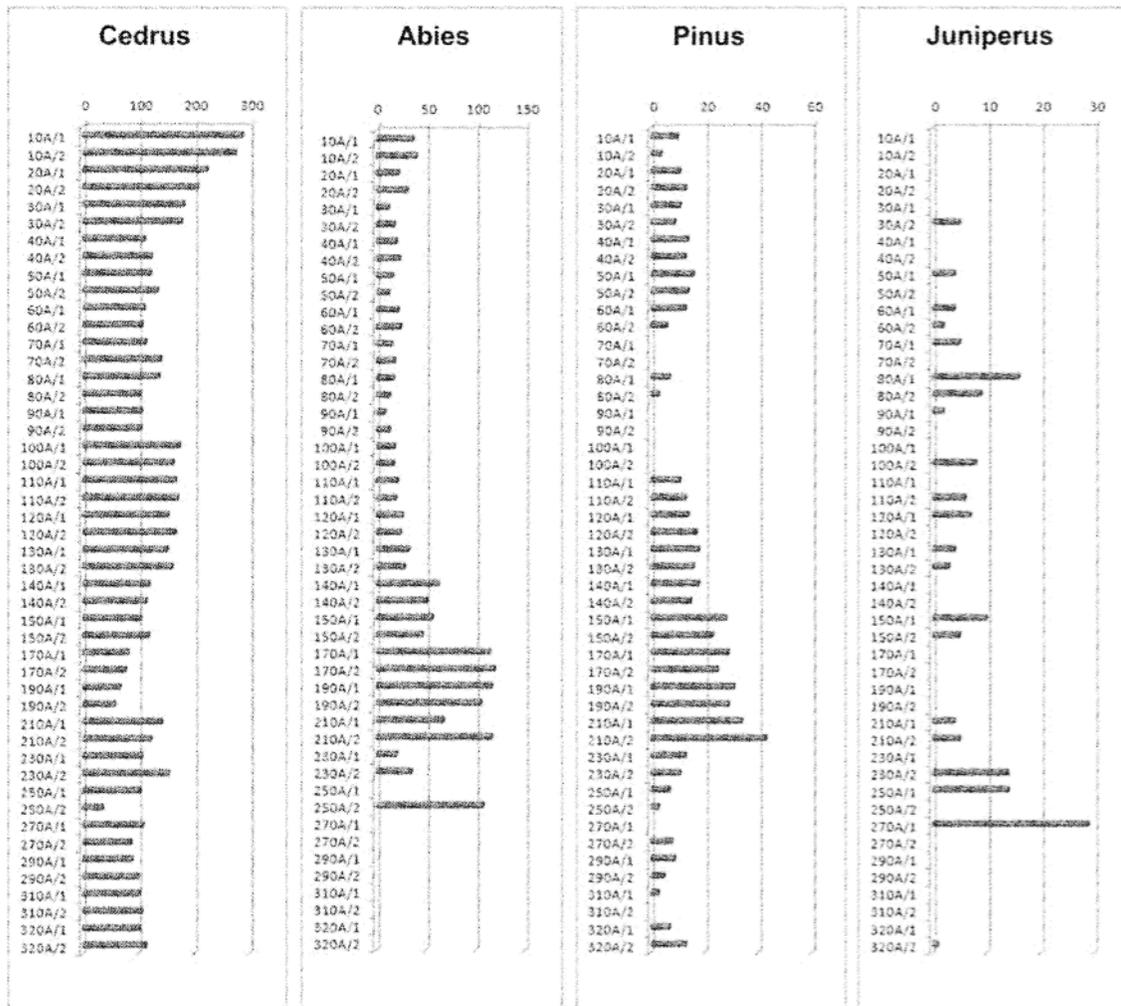


**Fig. 5.9.** Western Rough Cilicia survey region. After Rauh et al. 2009: 256 fig. 2.



**Fig. 5.10.** Preliminary sherd counts of the Rough Cilicia Survey (1996-2004) (total number of sherds processed = 7,313.) After Rauh et al 2009: 262 table 2.

### RCSP 2011 Trench 8 pollen counts



**Fig. 5.11.** Pollen counts from trench 8 on the Taşeli Plateau, Rough Cilicia, revealing cycles of cedar depletion and regrowth. After Akkemik et al. 2012: 402 fig. 5.

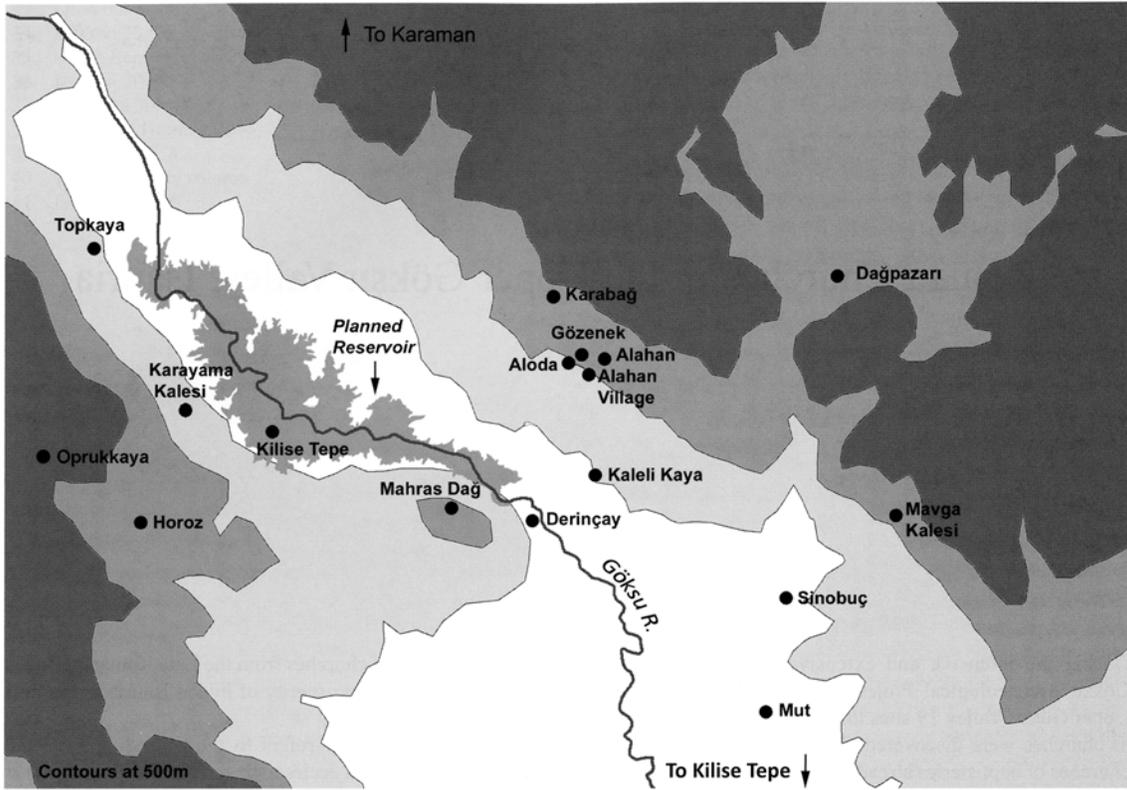


Fig. 5.12. Upper Göksu valley survey region. After Elton 2013: 234 fig. 19.1 (modified).

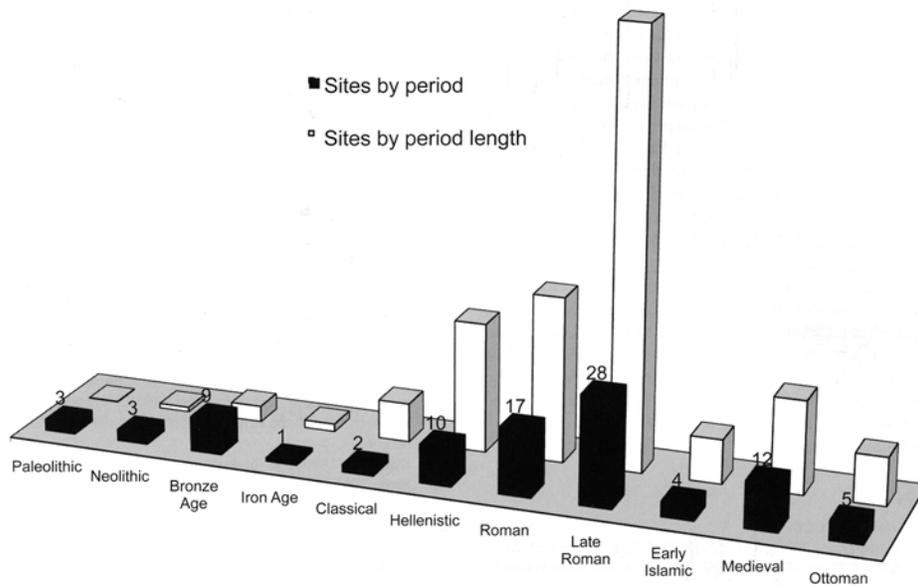
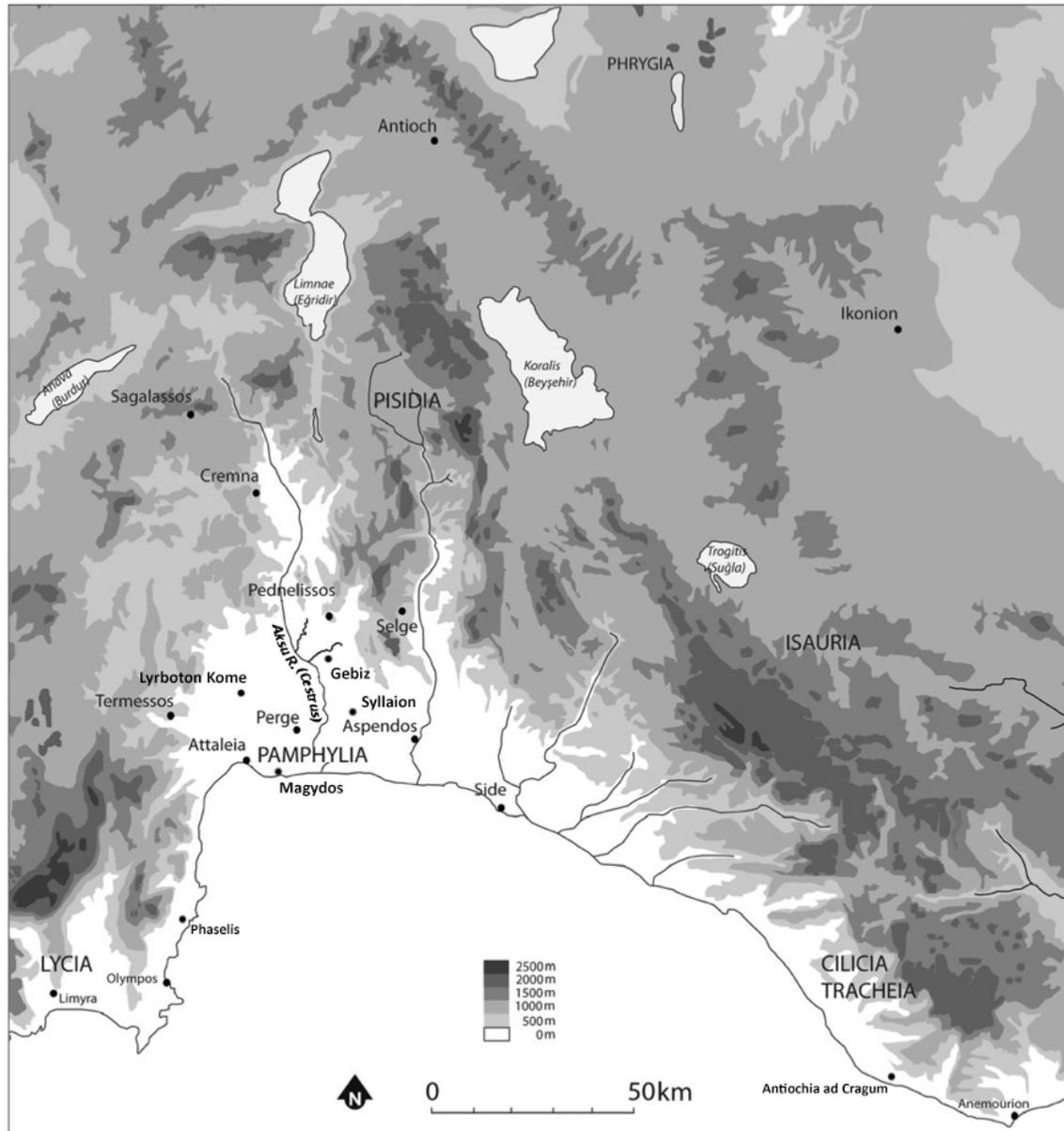


Fig. 5.13. Graph of sites by period in the Upper Göksu valley survey region. After Elton 2013: 245 fig. 19.12.



**Fig. 6.1.** Map of Pamphylia and Pisidia. After Jackson et al. 2012: 92 fig. 1 (modified).

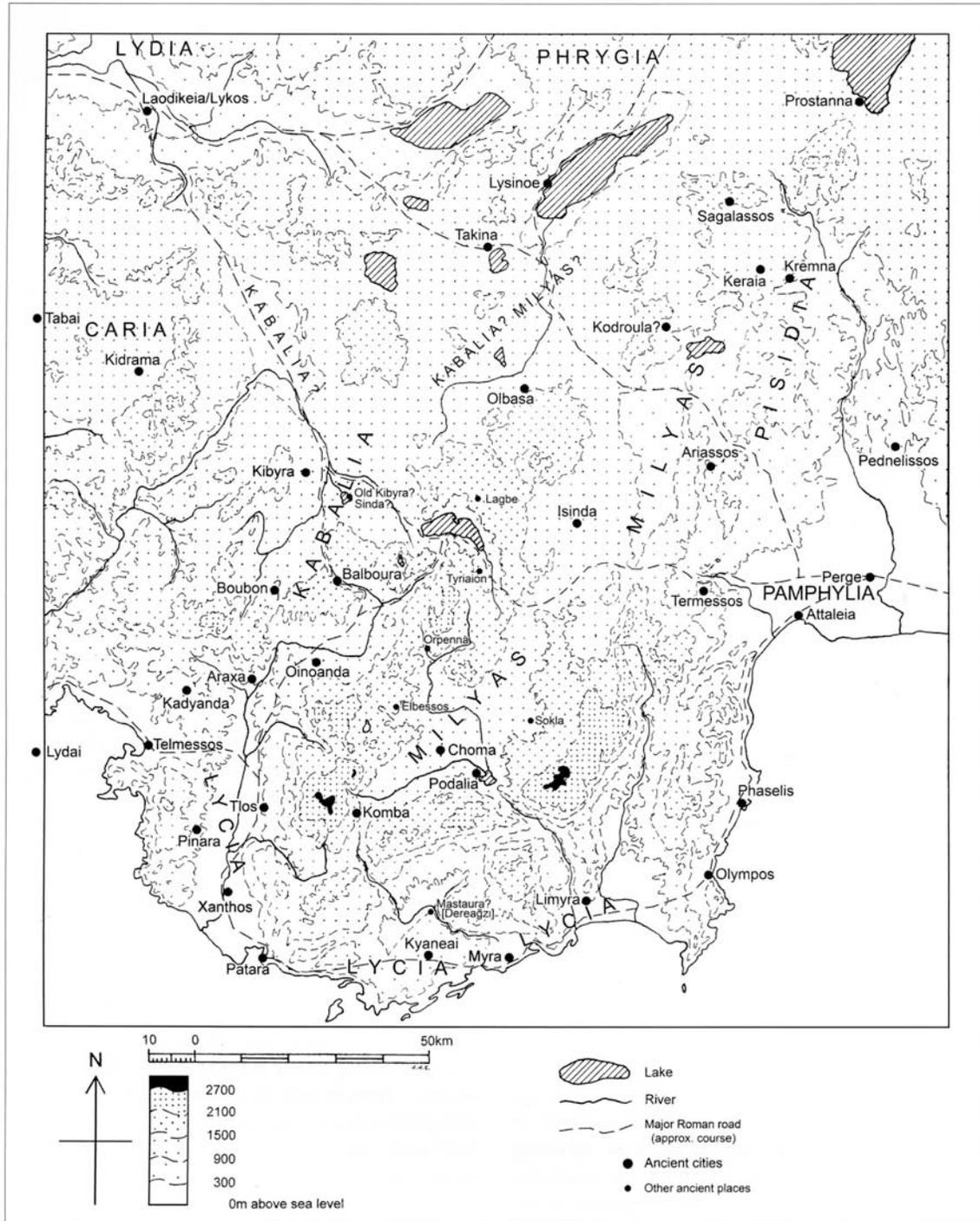
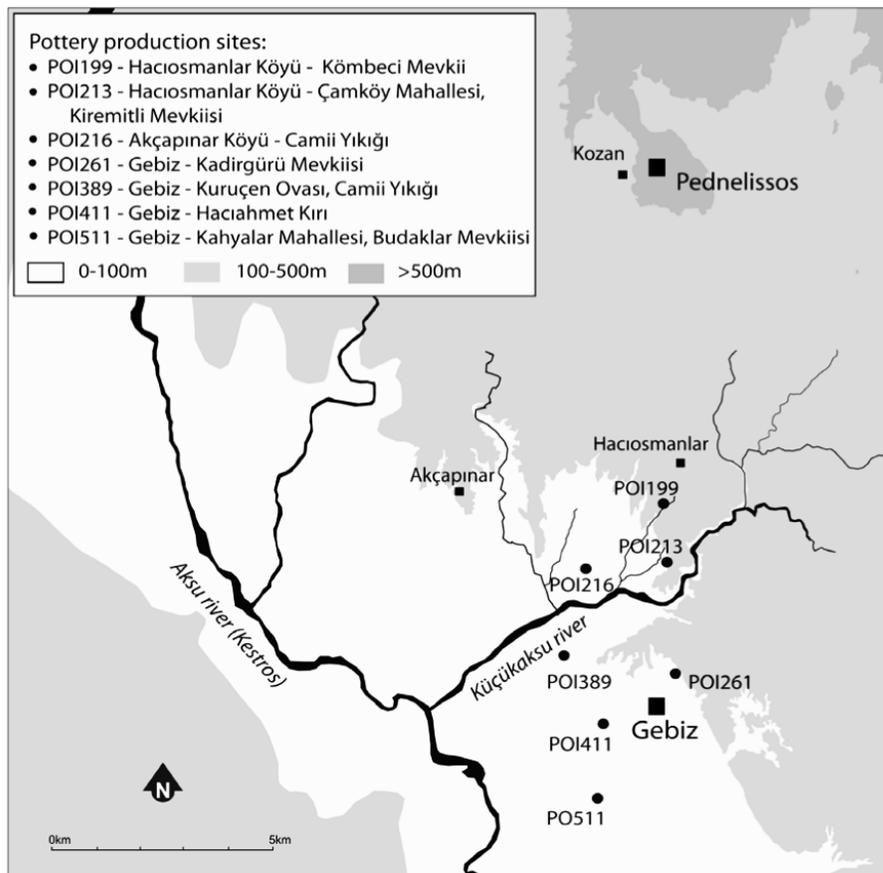


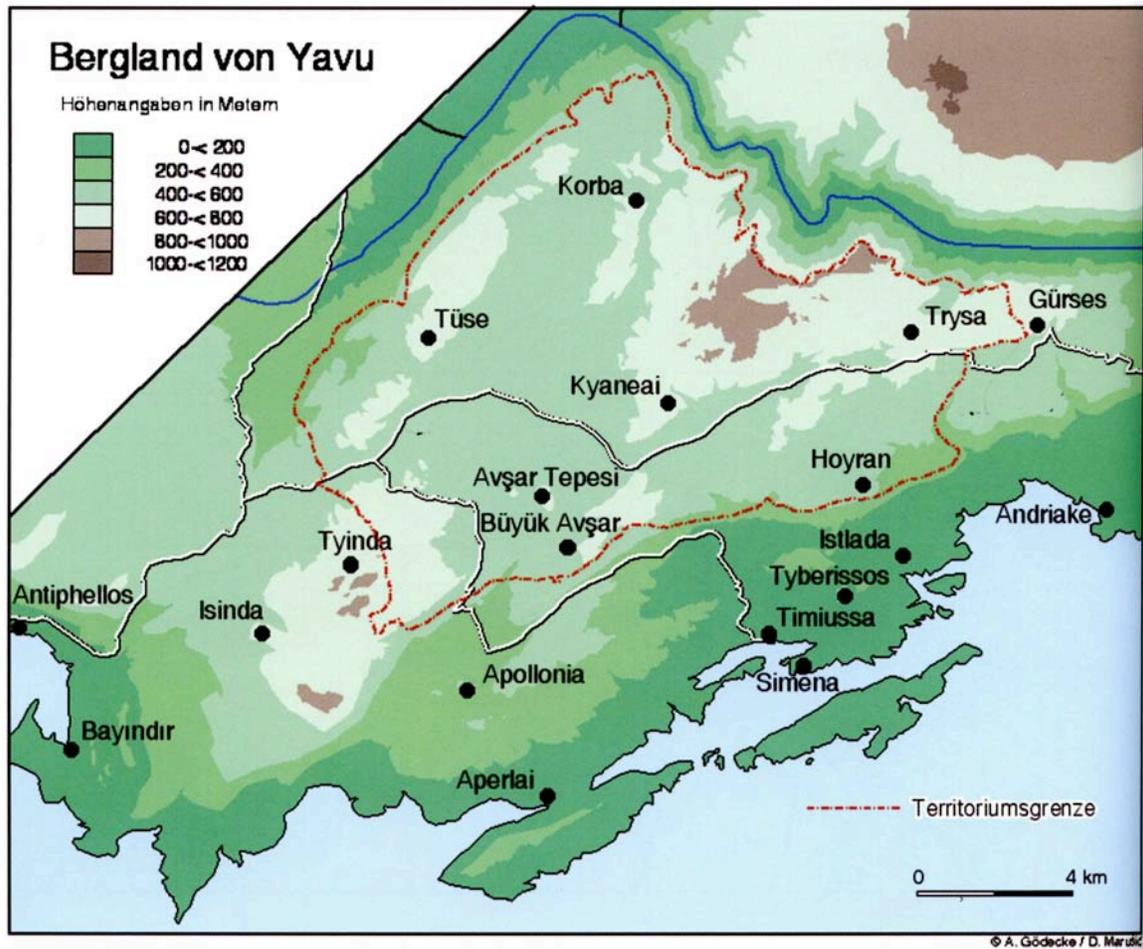
Fig. 6.2. Map of western Taurus region. After Coulton 2012: I, 62 fig. 4.1.



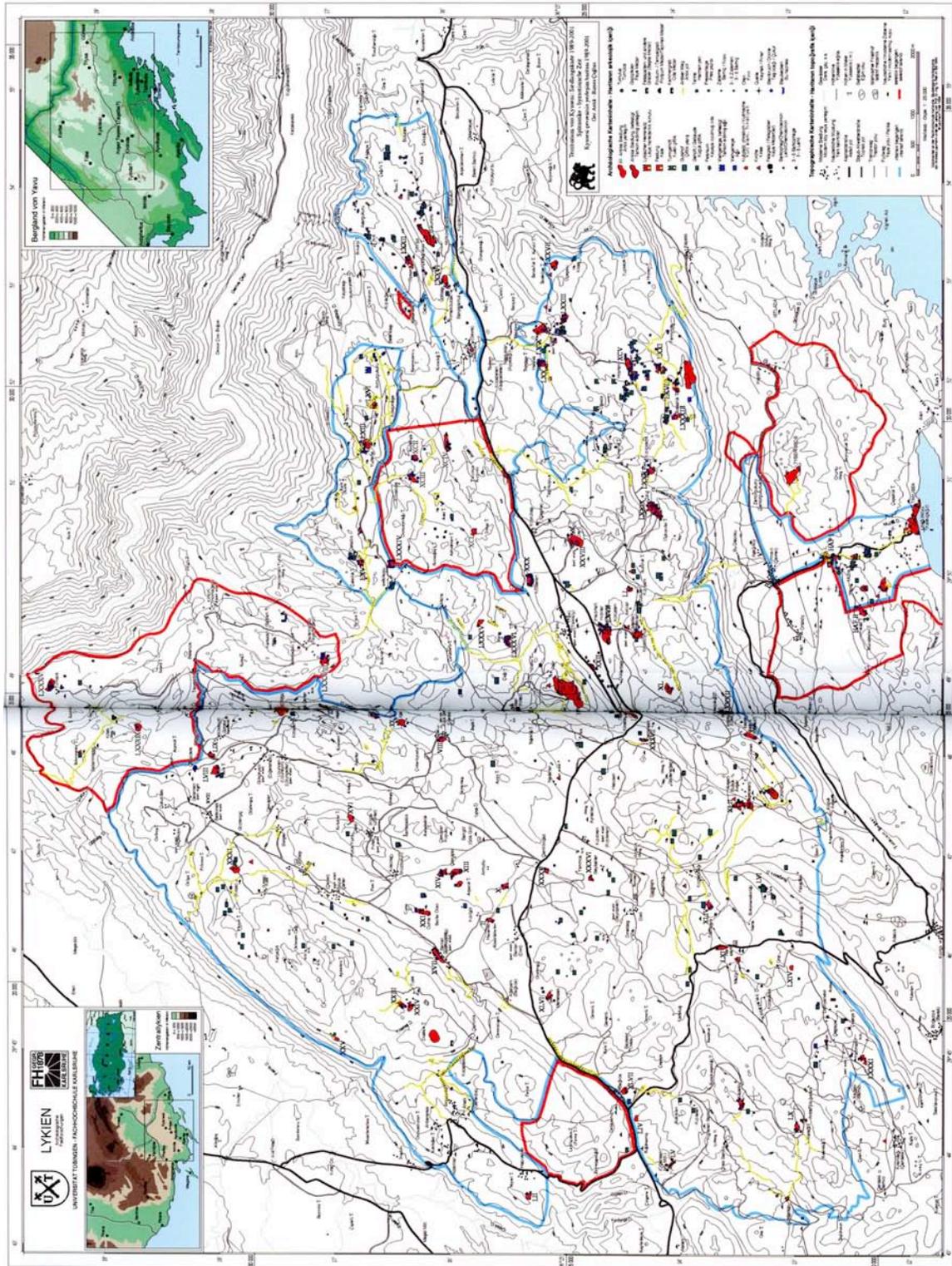
**Fig. 6.3.** The Pednelissos survey region, with recently discovered ceramic production sites labeled. After Jackson et al. 2012: 93 fig. 2.



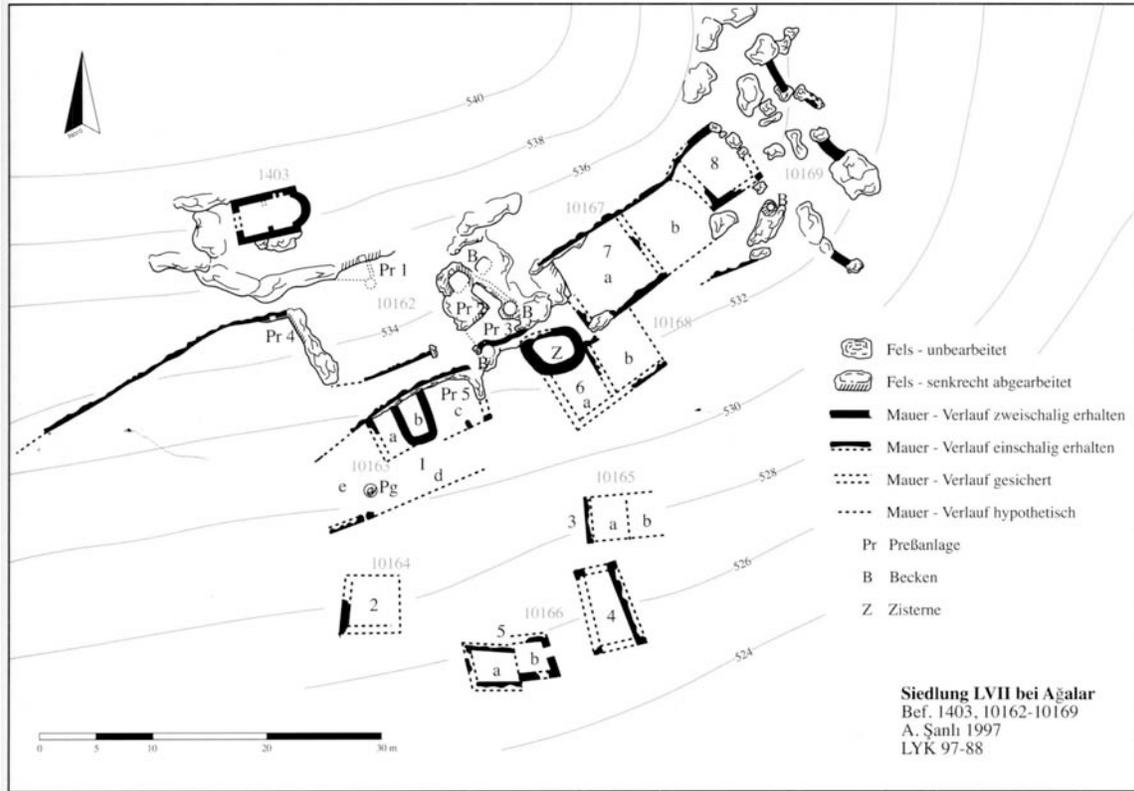
**Fig. 6.4.** CRS production waste revealed by a bulldozer at production site POI216 (see preceding figure) near Pednelissos/Gebiz, southern Pisidia. For examples of later forms of CRS found at these kilns, see **fig. 3.13a-b**. After Jackson et al. 2012: 94 fig. 3.



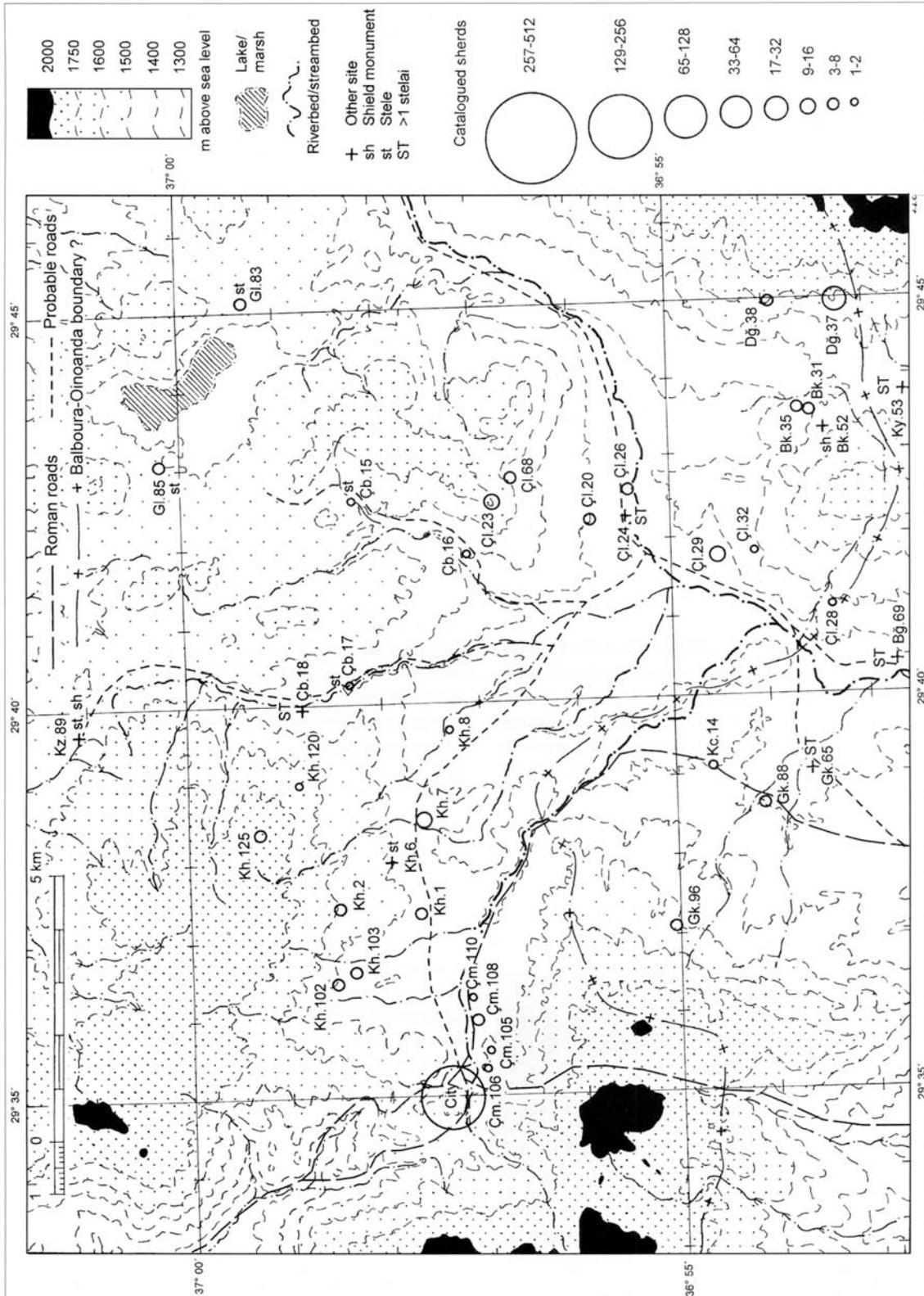
**Fig. 6.5a.** Kyaneai survey region, with major ancient settlements and territory boundary. After Kolb 2008: 260 fig. 6.



**Fig. 6.5b.** Kyaneai survey region, site map with late antique and early Byzantine period finds (fourth to fourteenth century CE). After Kolb 2008: 248-49 fig. 34.

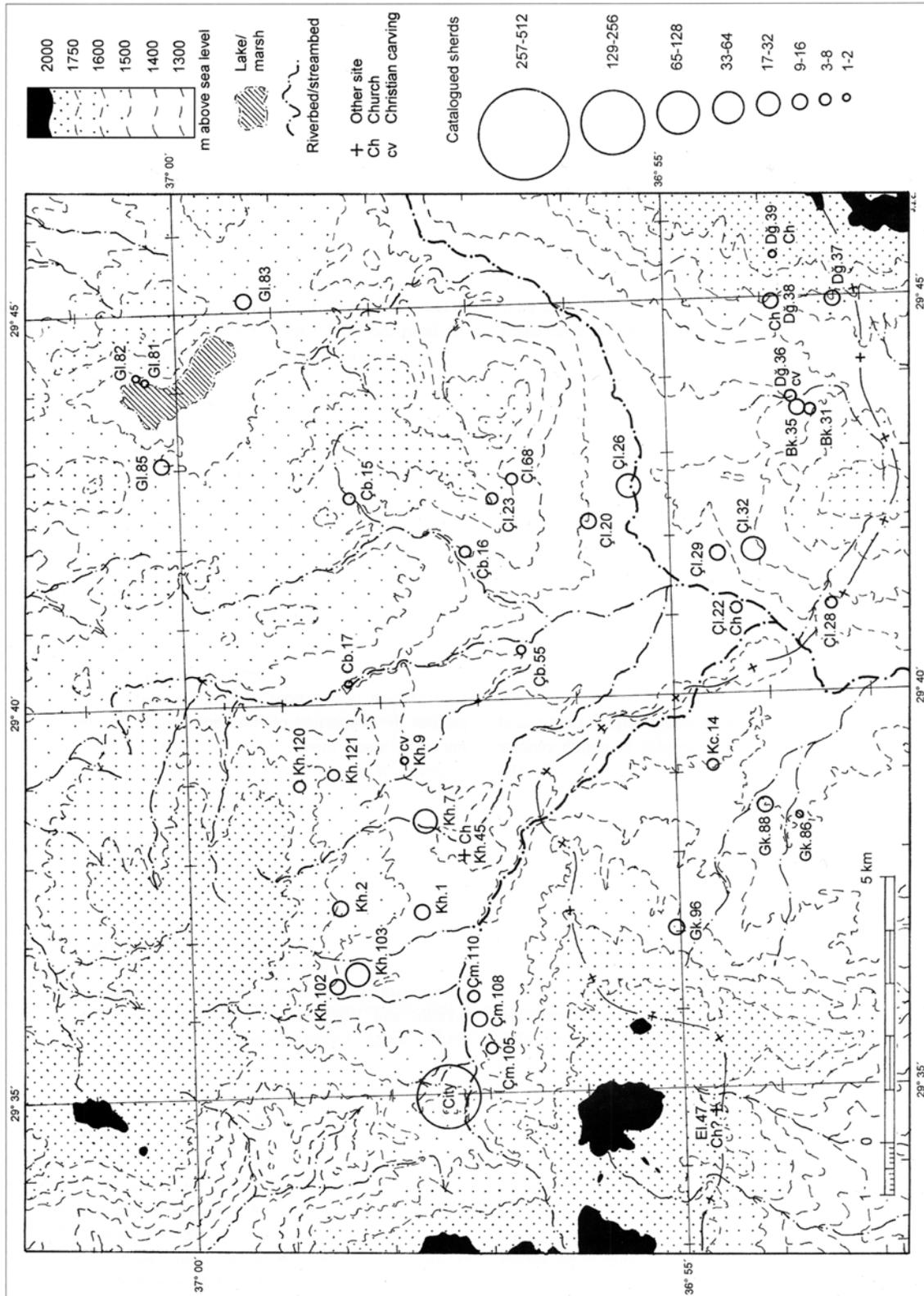


**Fig. 6.6.** Settlement LVII in the territory of Kyaneai, with evidence of multiple press installations. After Kolb 2008: 407 fig. 467.

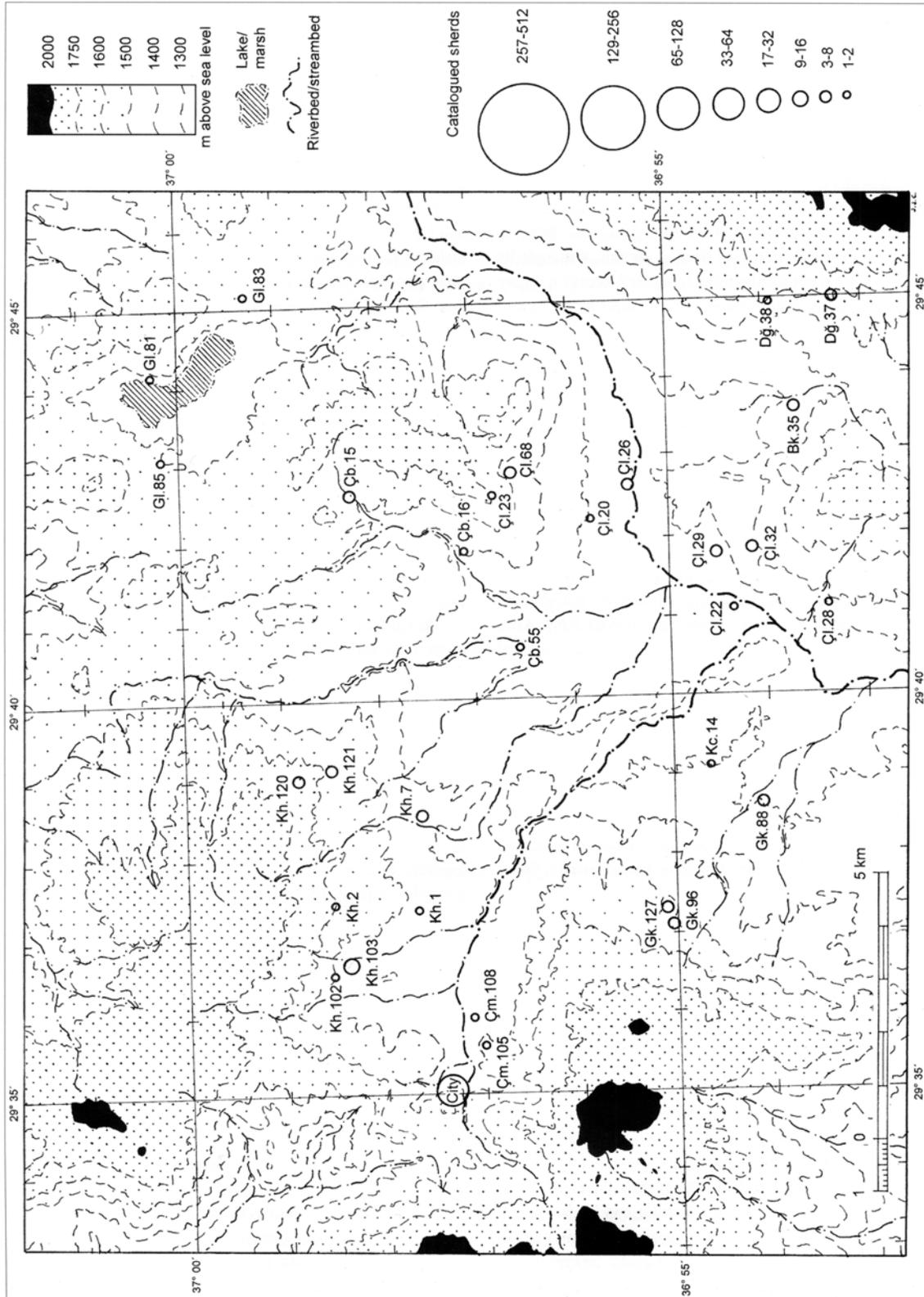


**Fig. 6.7a.** Balboura survey region, showing distribution of late Hellenistic and early Roman finds. After Coulton 2012: I, 94 fig. 4.1.

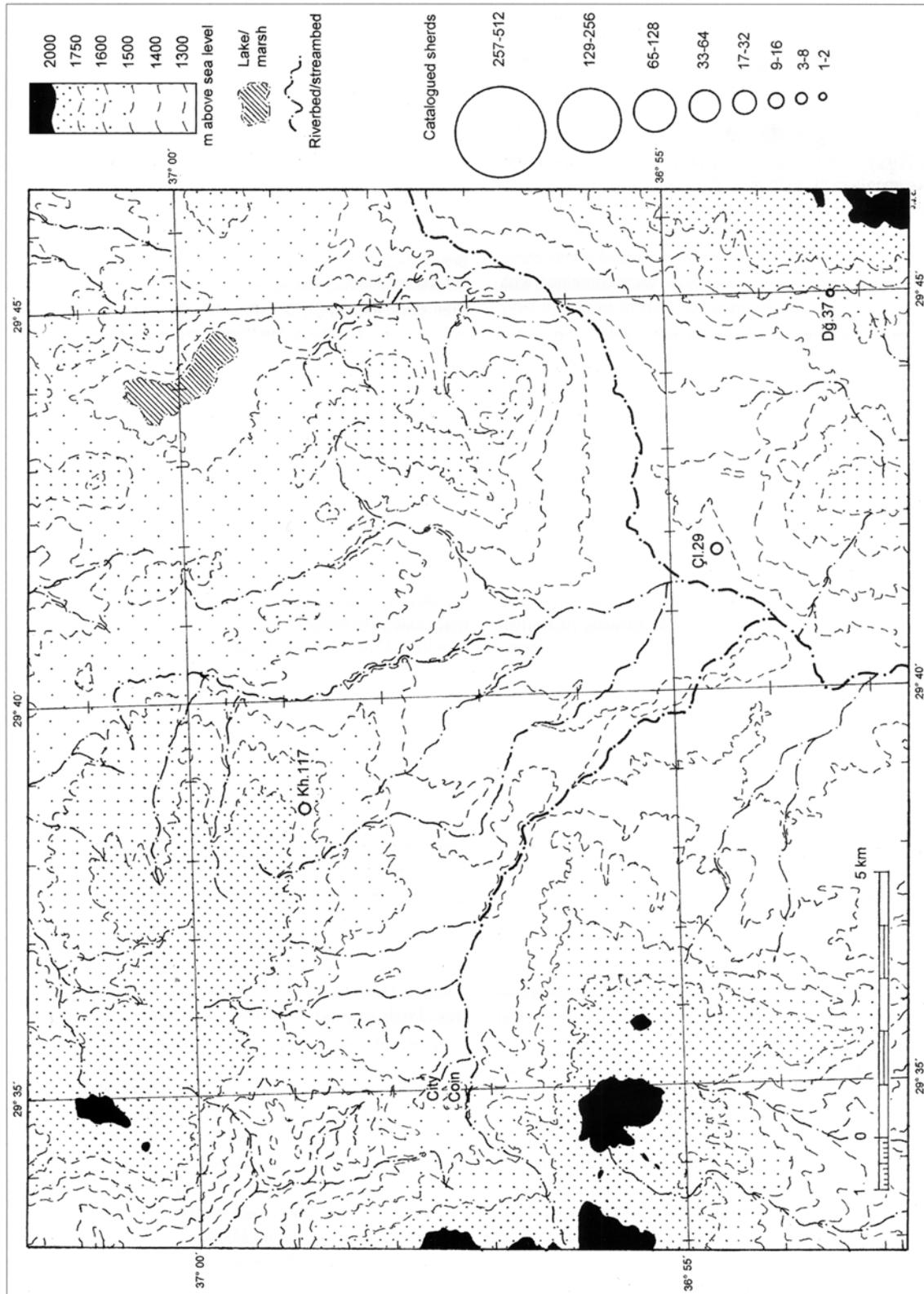




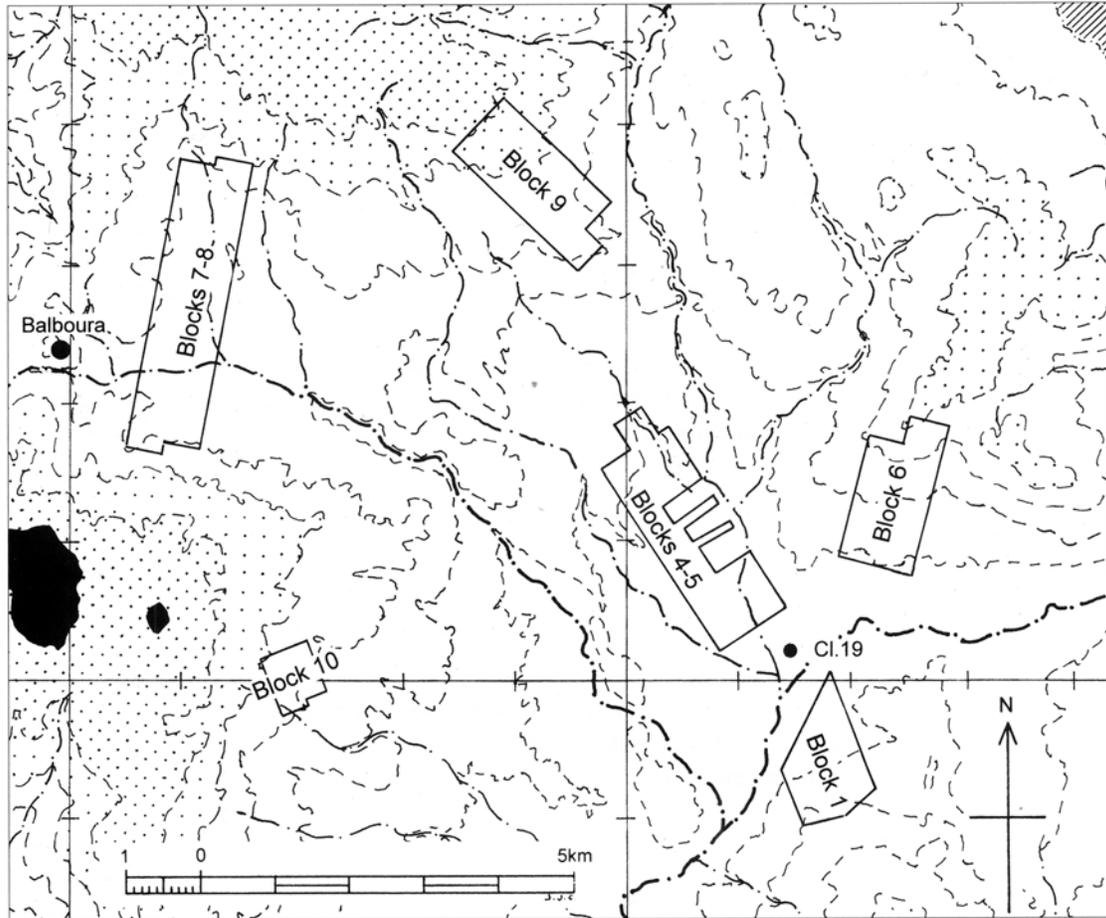
**Fig. 6.7c.** Balbura survey region, showing distribution of late Roman and early Byzantine finds. After Coulton 2012: I, 172 fig. 7.3.



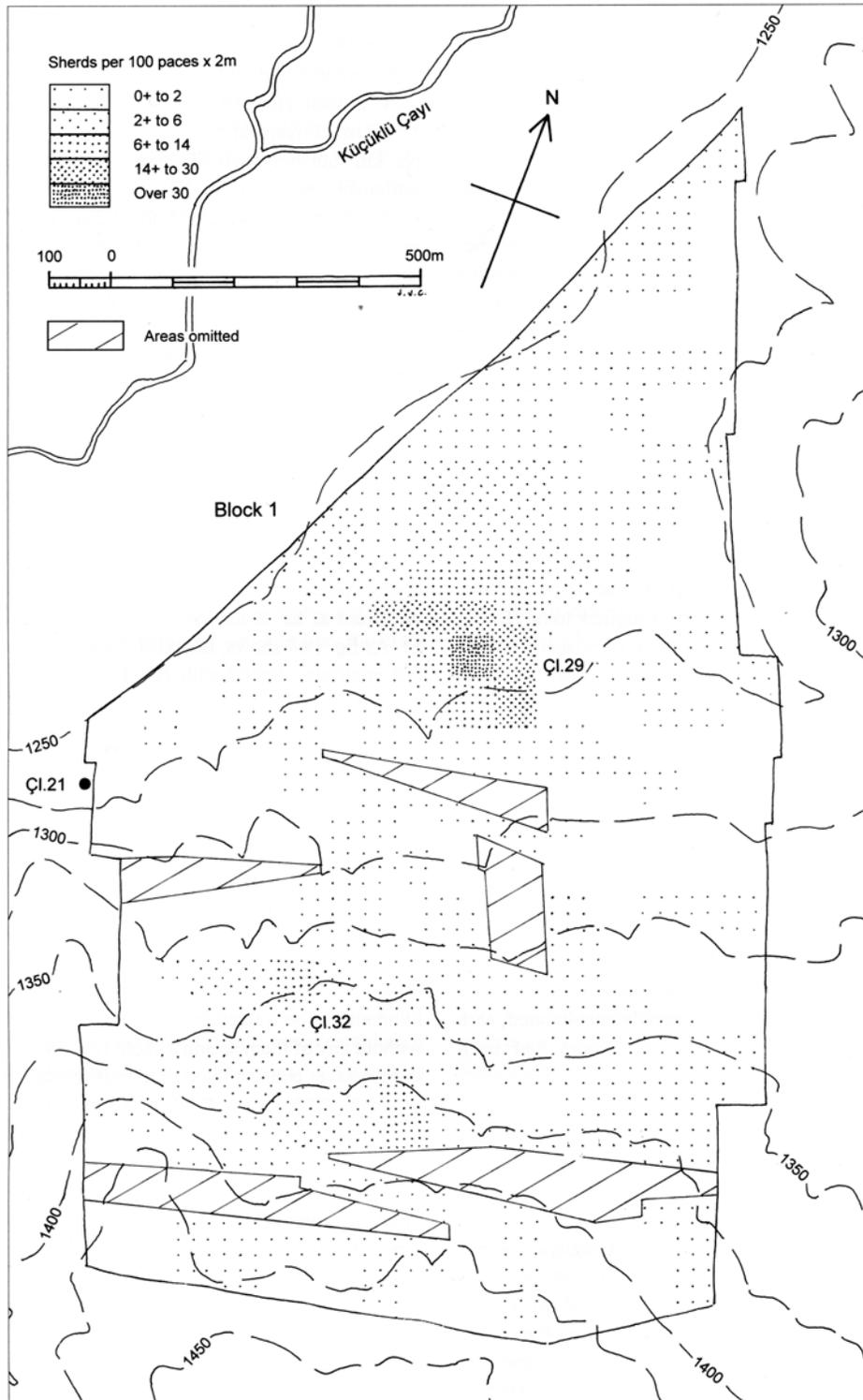
**Fig. 6.7d.** Balbura survey region, showing distribution of seventh- and eighth-century finds. After Coulton 2012: I, 173 fig. 7.4.



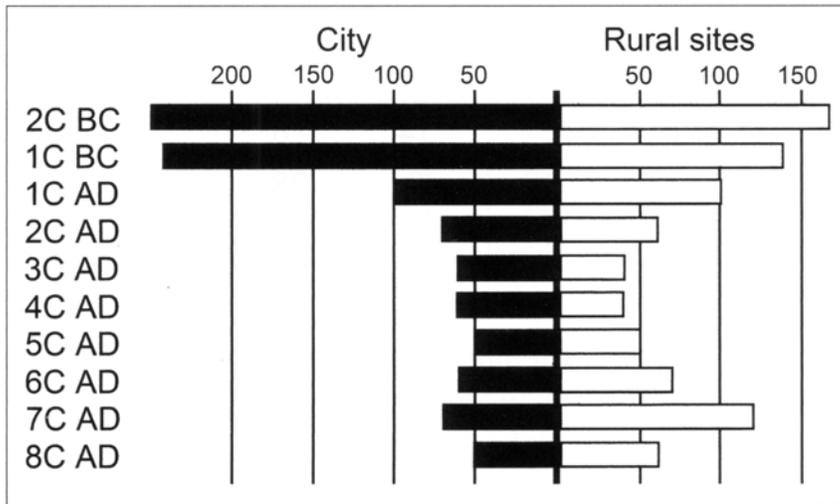
**Fig. 6.7e.** Balbura survey region, showing distribution of middle Byzantine finds. After Coulton 2012: I, 177 fig. 7.6.



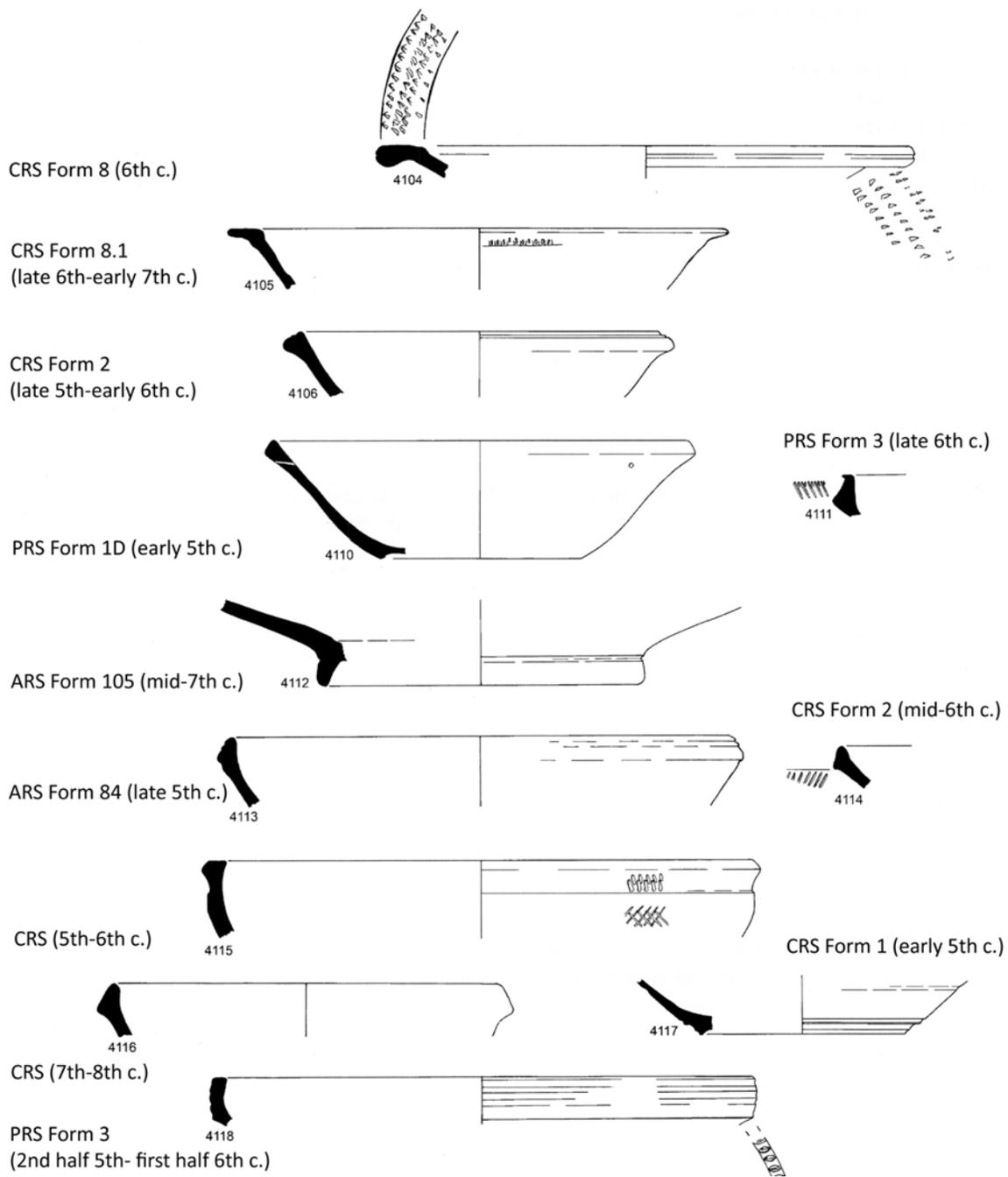
**Fig. 6.8a.** Transects in survey region covered by intensive field-walking. After Coulton 2012: II, 210 fig. 19.4.



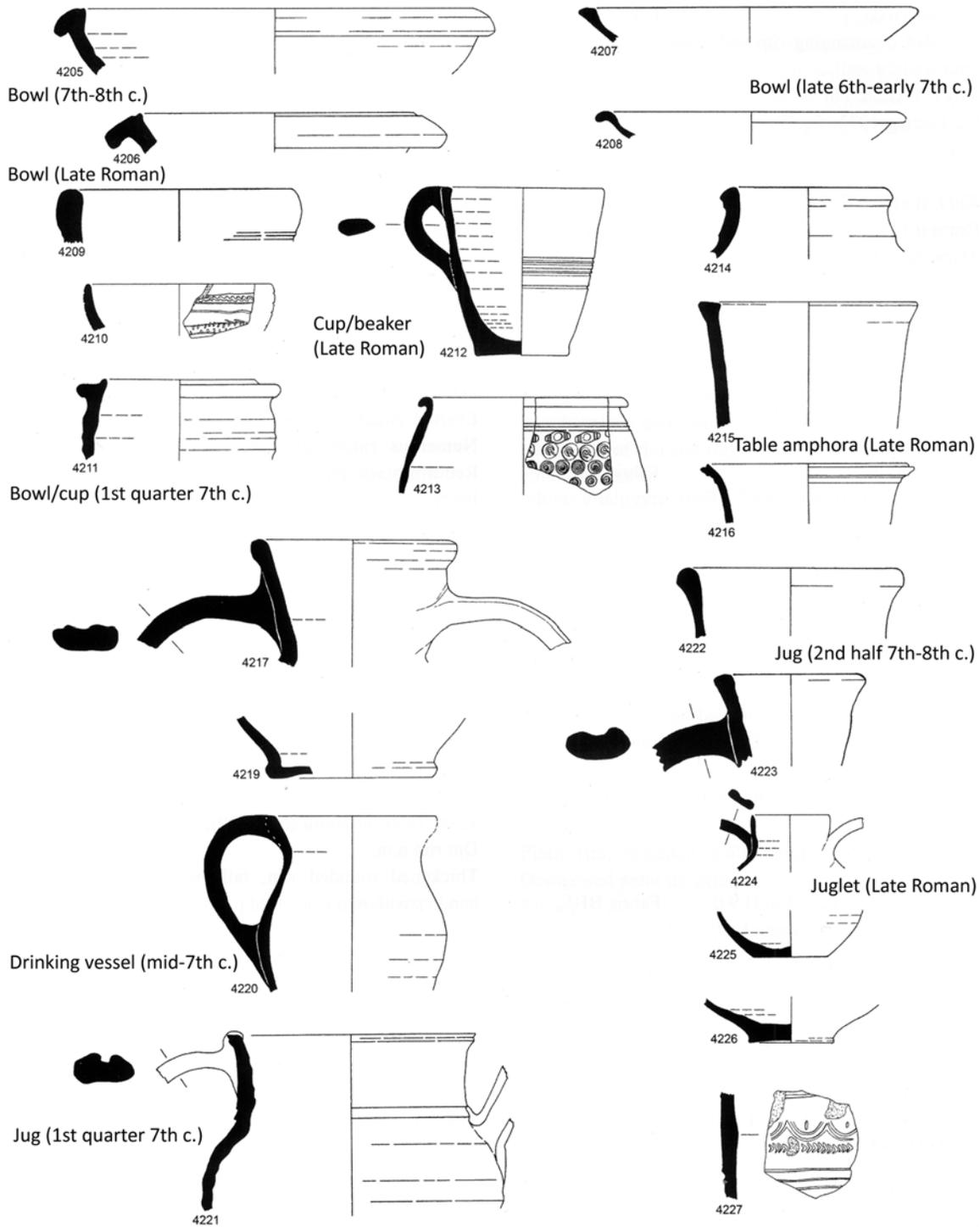
**Fig. 6.8b.** Example of sherd density map (block 1). After Coulton 2012: II, 214 fig. 19.5.



**Fig. 6.9.** Estimated sherd numbers per century, based on **table 6.2**, showing flip in pottery predominance from city to countryside beginning in the sixth century. After Coulton 2012: II, 240 fig. 19.14.



**Fig. 6.10.** Examples of PRS, ARS, and CRS (fine table wares) from the Balbura survey. After Armstrong (in Coulton) 2012: II, Catalogue A, 277 fig. A.13 (modified).



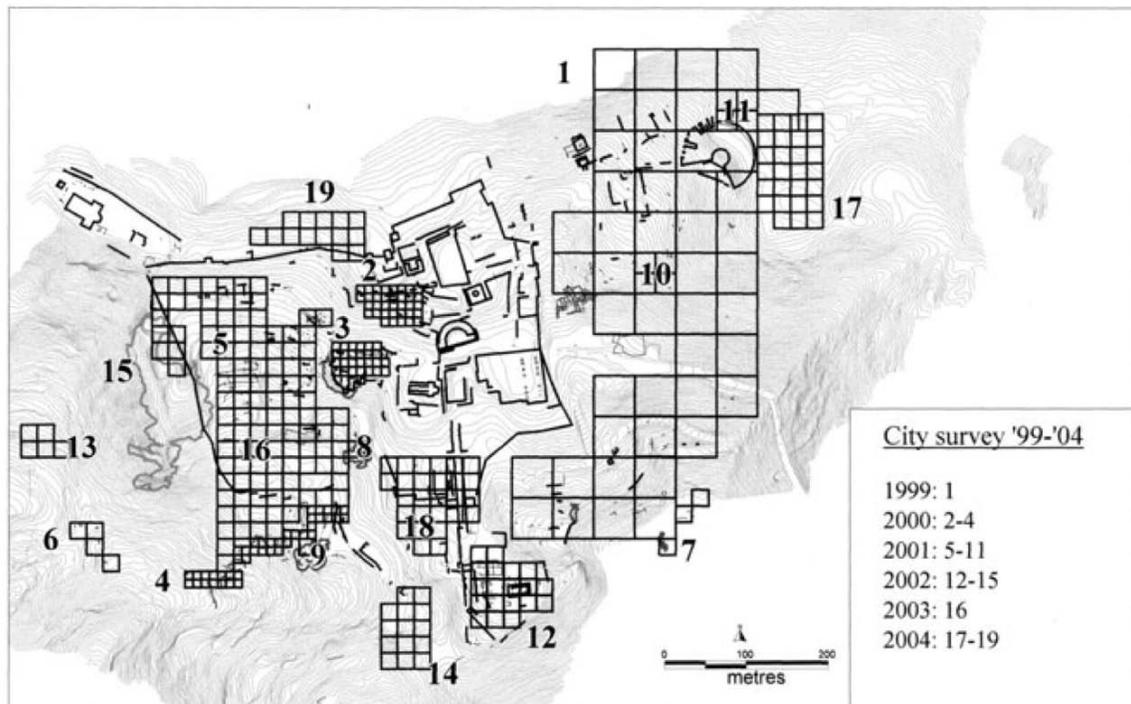
**Fig. 6.11.** Examples of late Roman and early Byzantine plain table wares from the Balboura survey. After Armstrong (in Coulton) 2012: II, Catalogue A, 283 fig. A.16 (modified).



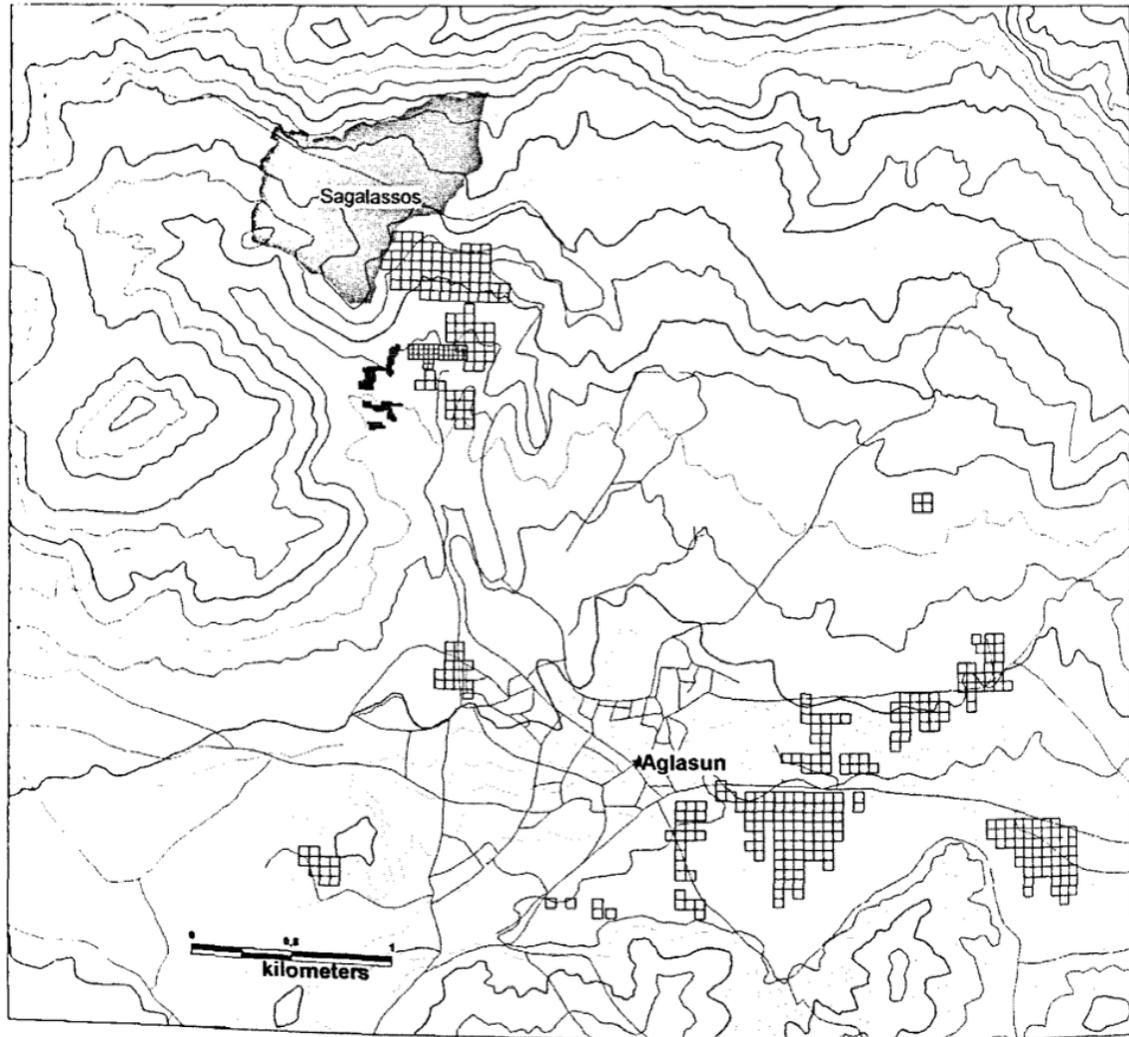
**Fig. 6.12.** Examples of late Roman and early Byzantine cooking pots from the Balboura survey comparable to pots from Xanthos and Dhiorios. After Armstrong (in Coulton) 2012: II, Catalogue A, 293 fig. A.21.



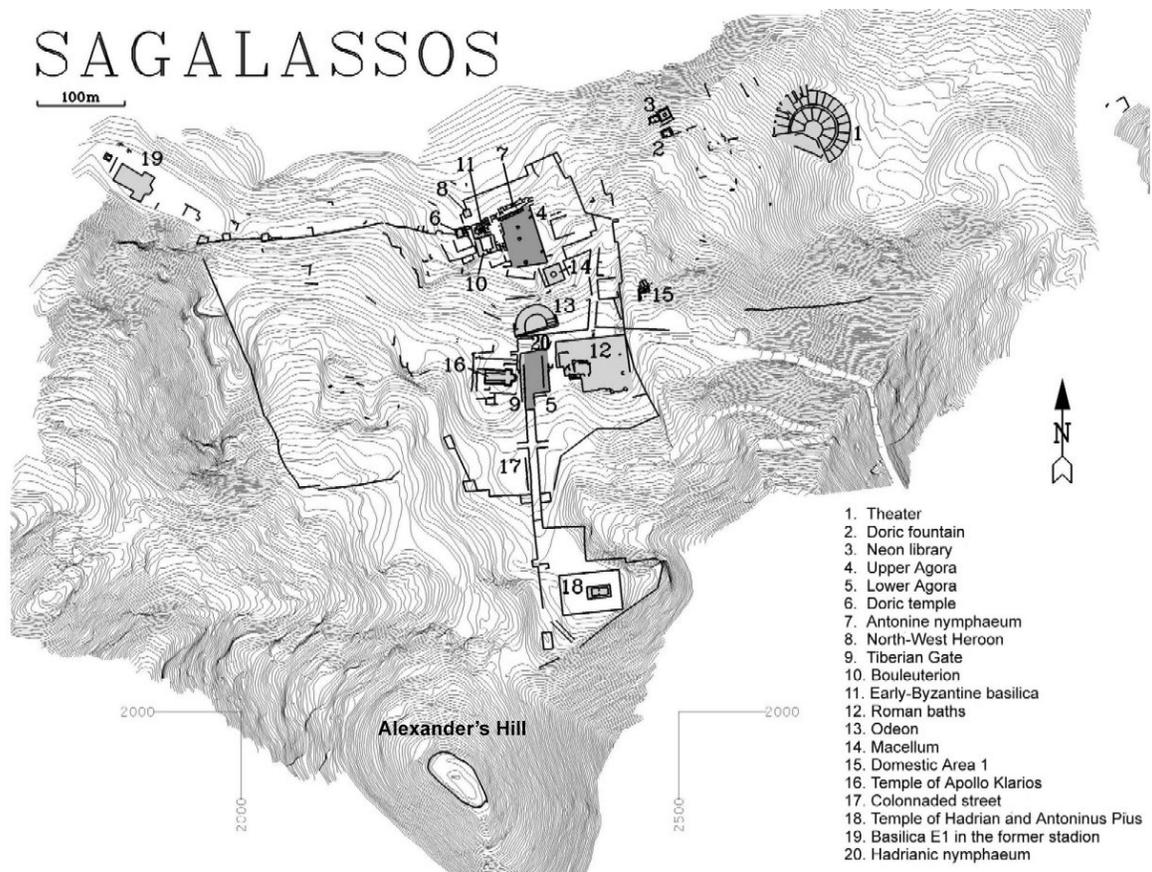
**Fig. 7.1.** Sagalassos territory and extensive survey region. The solid line indicates the boundary of the territory in the imperial period; the dotted line, the Hellenistic. Locations of pollen records discussed in the text are indicated by A = Ağlasun valley; B = Bereket basin; G = Gravgaz marsh. Locations of full-coverage intensive surveys in the territory are indicated by 1 = Bereket basin; 2 = western part of Bağsaray valley; in the Burdur plain, (3) on the western hillslopes of the valley and (4) along the Düğer Çayı and the Boz Çayı. After map from <http://www.sagalassos.be/node/1851> (modified).



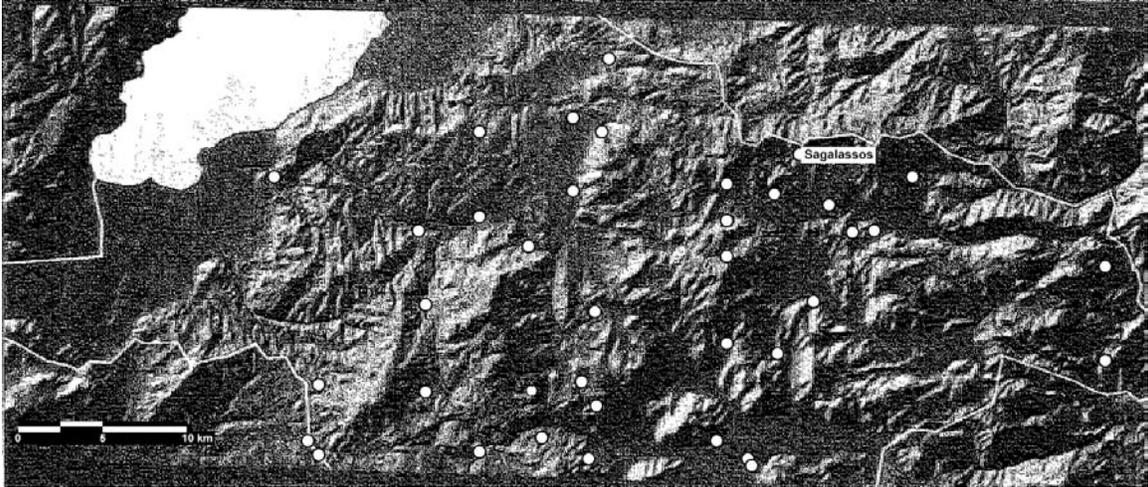
**Fig. 7.2.** Sagalassos, area of the city covered by intensive urban survey. After Martens 2005: 232 fig. 3.



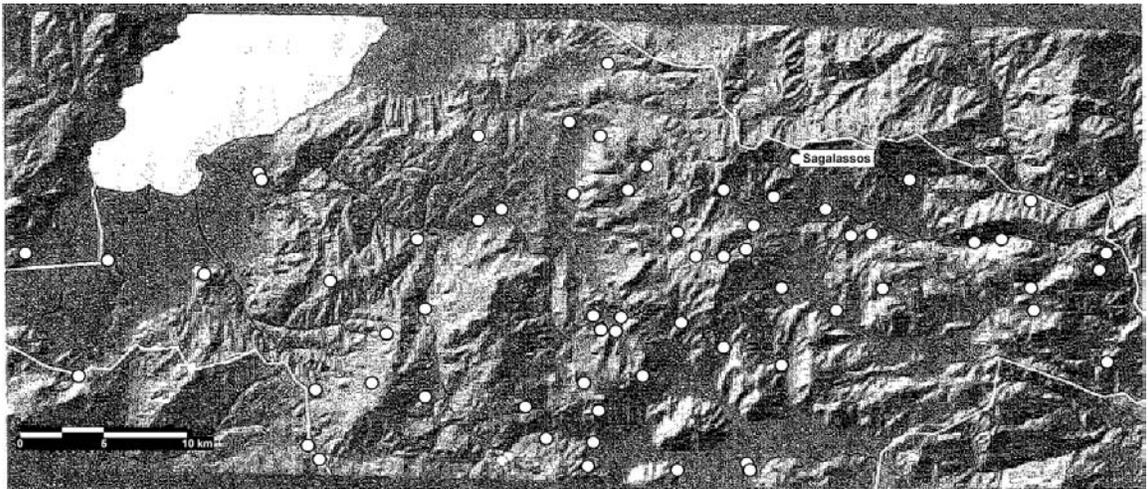
**Fig. 7.3.** Sagalassos, regions covered by suburban survey. After Vanhaverbeke et al. 2007: 622 fig. 7.



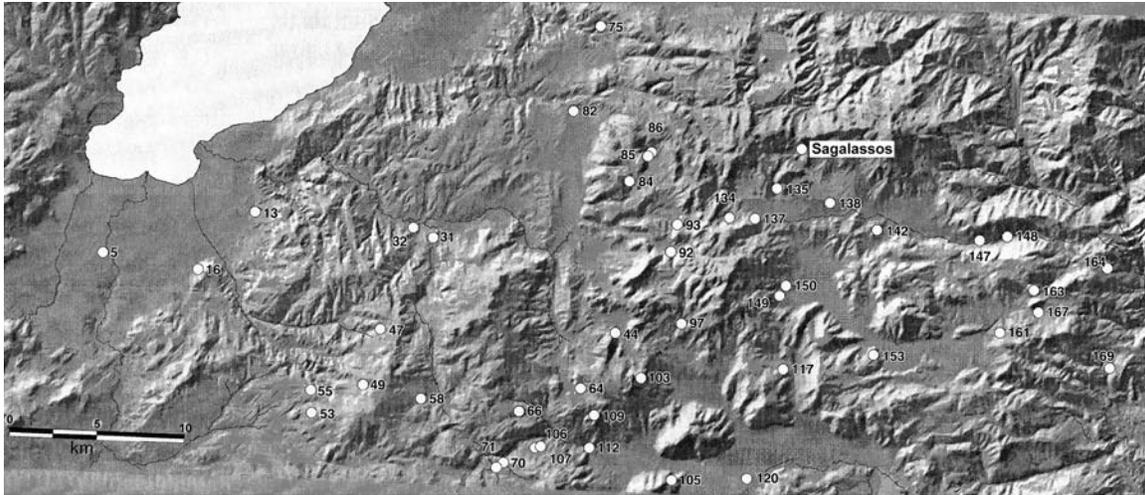
**Fig. 7.4.** Sagalassos, topographical city plan. From <http://www.une.edu.au>.



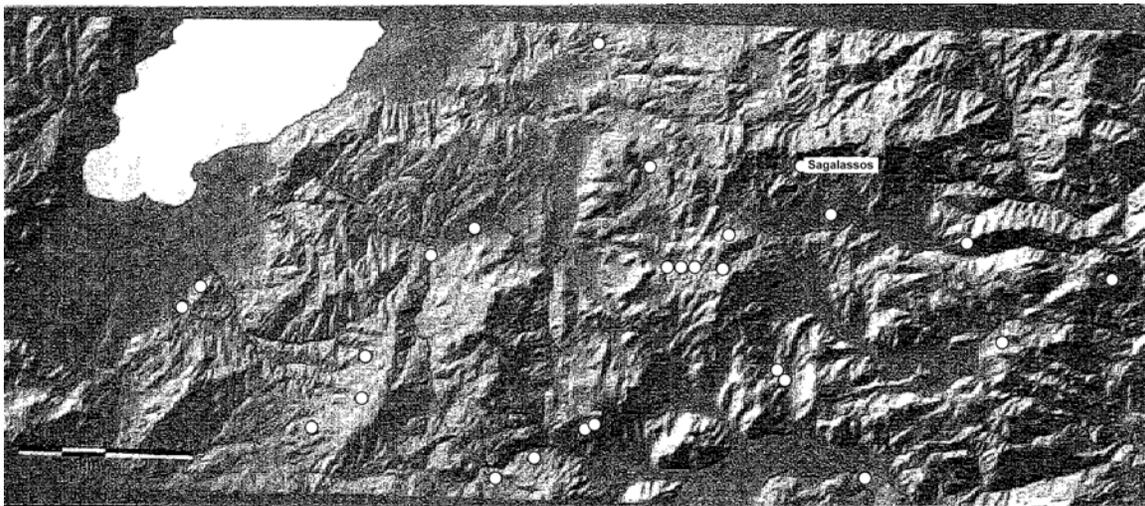
**Fig. 7.5a.** Sagalassos survey region, showing sites with evidence for occupation in the imperial period (first to third centuries CE). After Waelkens et al. 2006: 217 fig. 5.



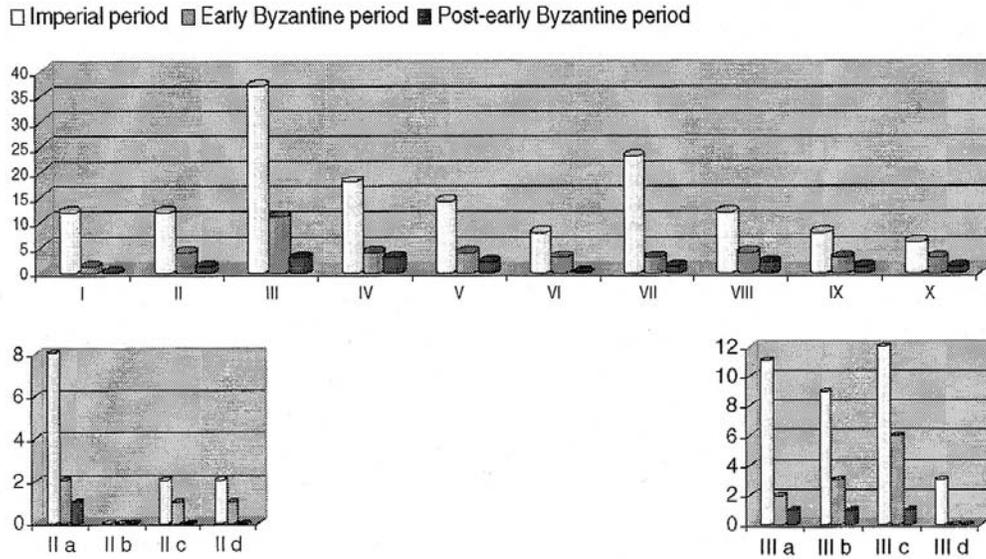
**Fig. 7.5b.** Sagalassos survey region, showing sites with evidence for occupation in the late imperial period (fourth to mid-fifth century). After Waelkens et al. 2006: 223 fig. 8.



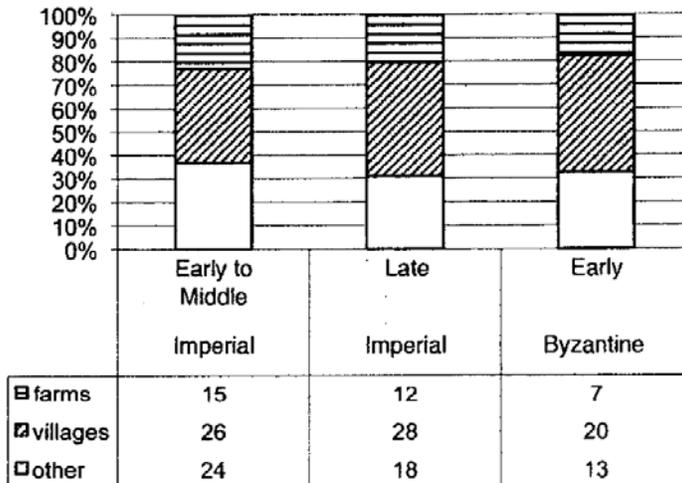
**Fig. 7.5c.** Sagalassos survey region, showing sites with evidence for occupation in the early Byzantine period (mid-fifth to mid-seventh century). After Vanhaverbeke and Waelkens 2003: fig. 123.



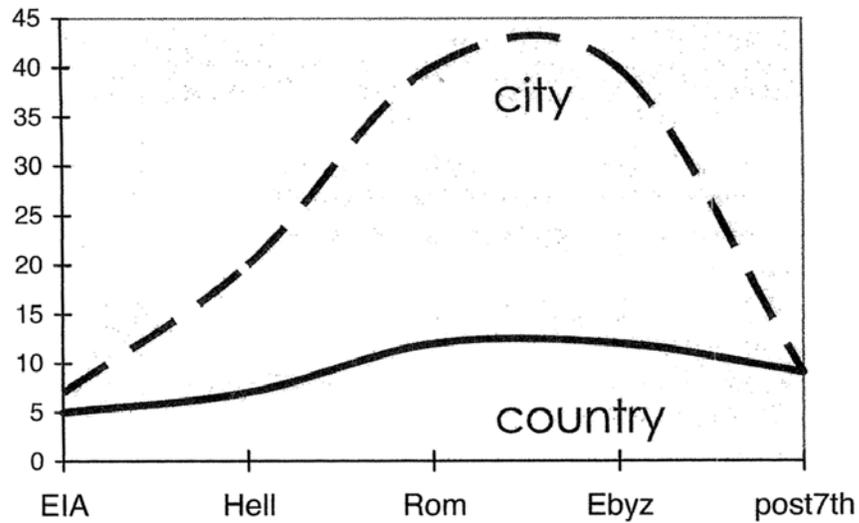
**Fig. 7.5d.** Sagalassos survey region, showing sites with evidence for occupation in the post-seventh century. After Waelkens 2006: 246 fig. 12.



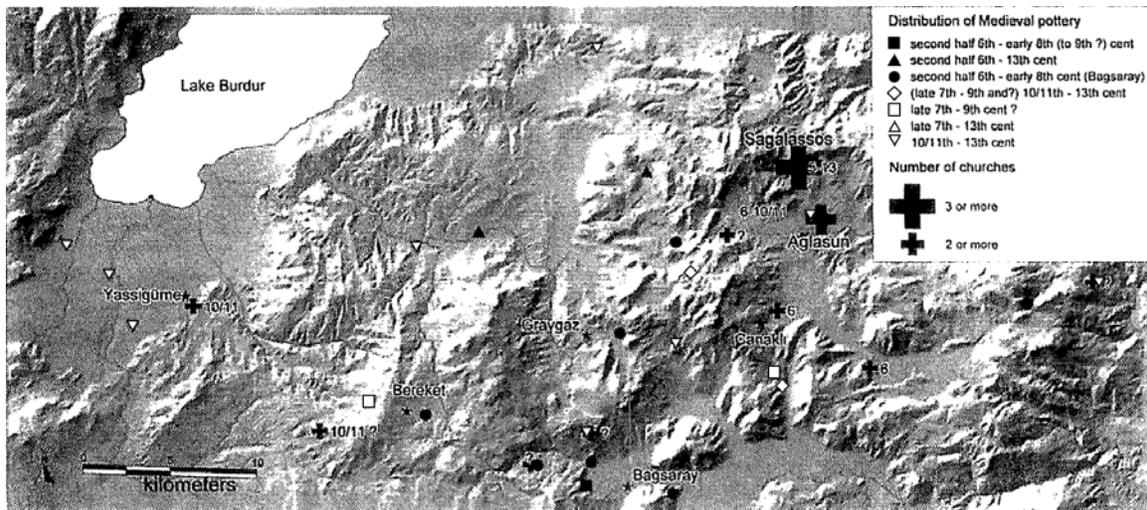
**Fig. 7.6.** Absolute site numbers in territory by time period: imperial (25 BCE to mid-fifth century CE), early Byzantine (mid-fifth to mid-seventh century), and post-early Byzantine (post-seventh century). After Vanhaverbeke and Waelkens 2003: graph 14.



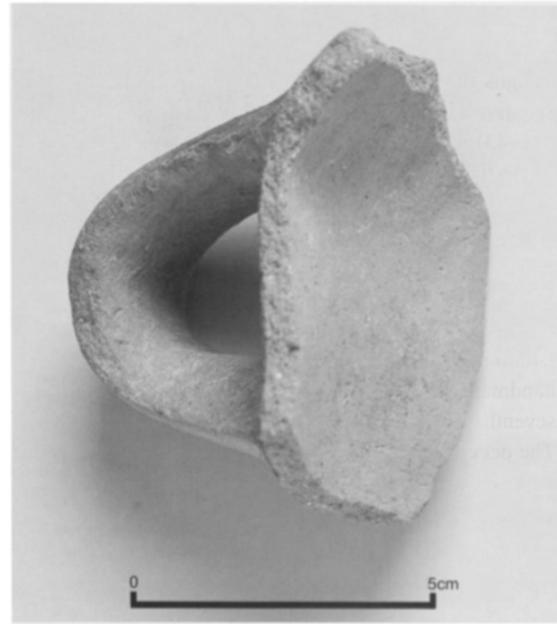
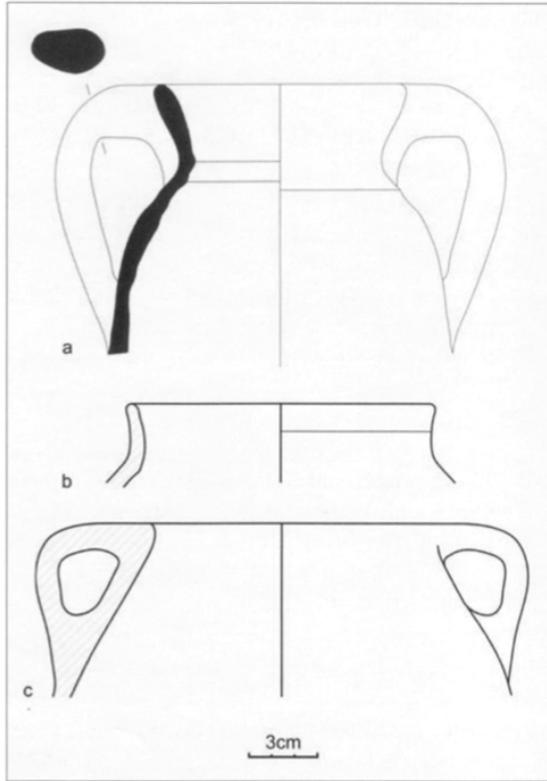
**Fig. 7.7.** Number of site types by time period, showing increase in the proportion of villages to farms from the late imperial to early Byzantine period. After Vanhaverbeke et al. 2011: 75 fig. 3.



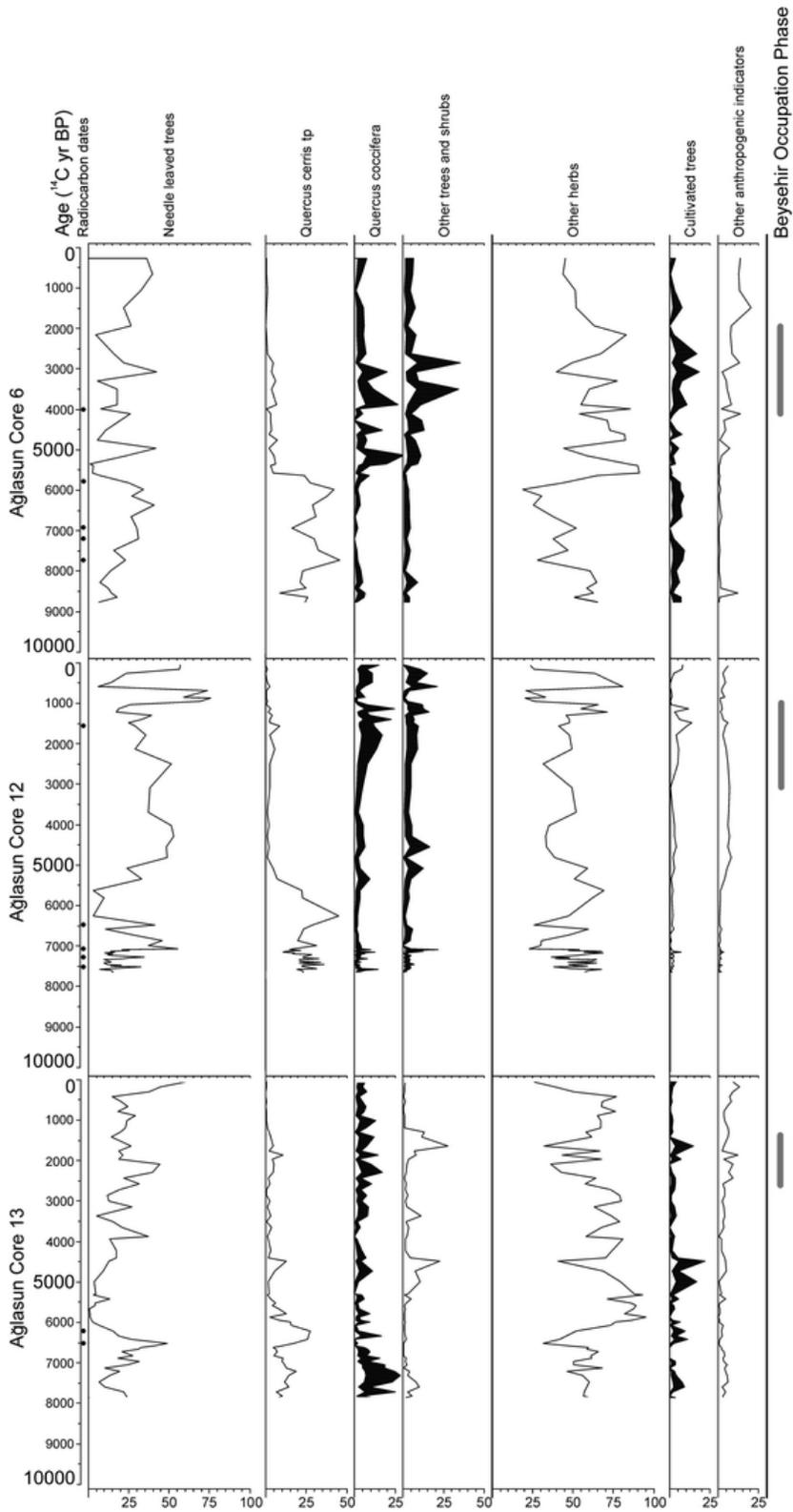
**Fig. 7.8.** Schematic representation of urban and rural trajectories. Numbers on y-axis are “relative indicators of density and monumentality of material remains.” After Vanhaverbeke et al. 2009: 187 fig. 5.



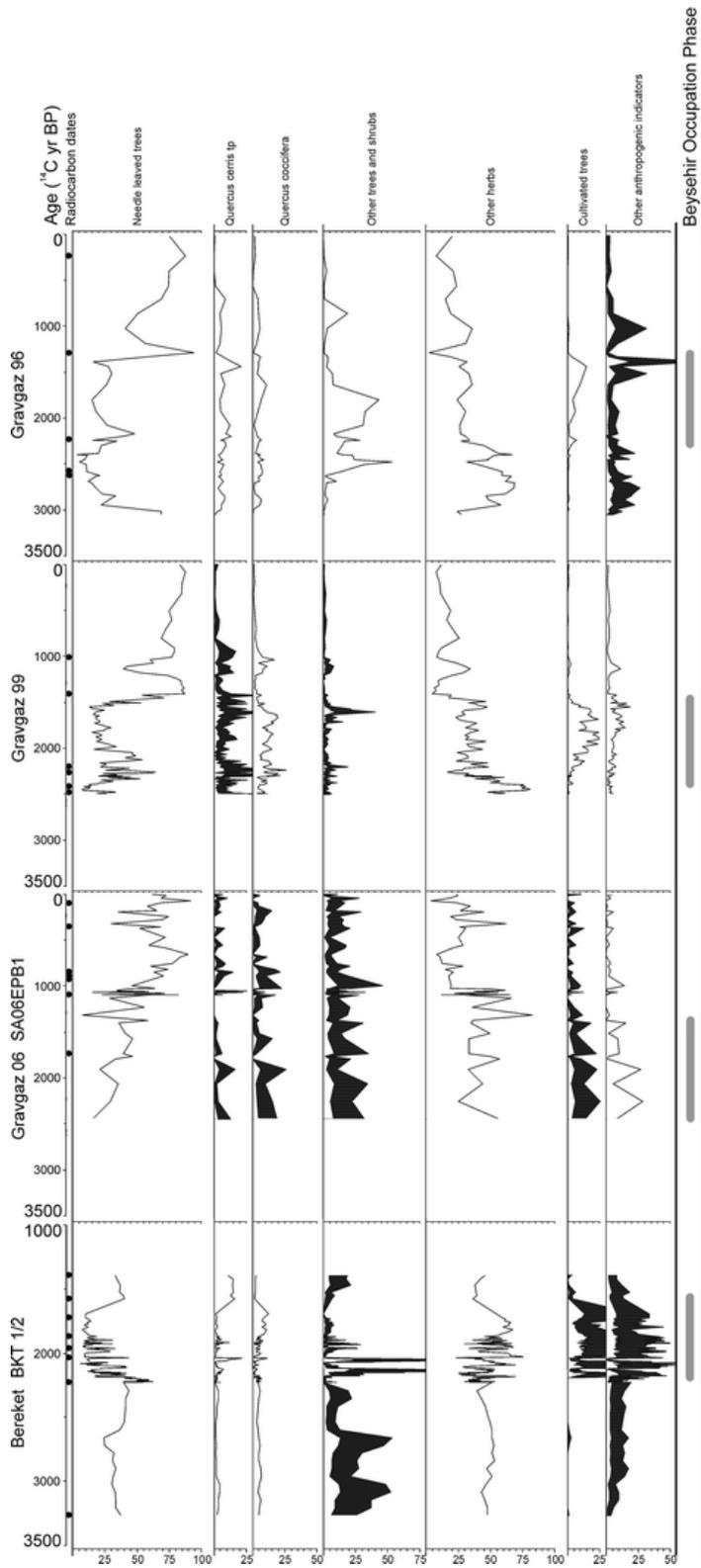
**Fig. 7.9.** Map: Distribution of medieval pottery and rural churches. After Vanhaverbeke et al. 2009: 180 fig. 2.



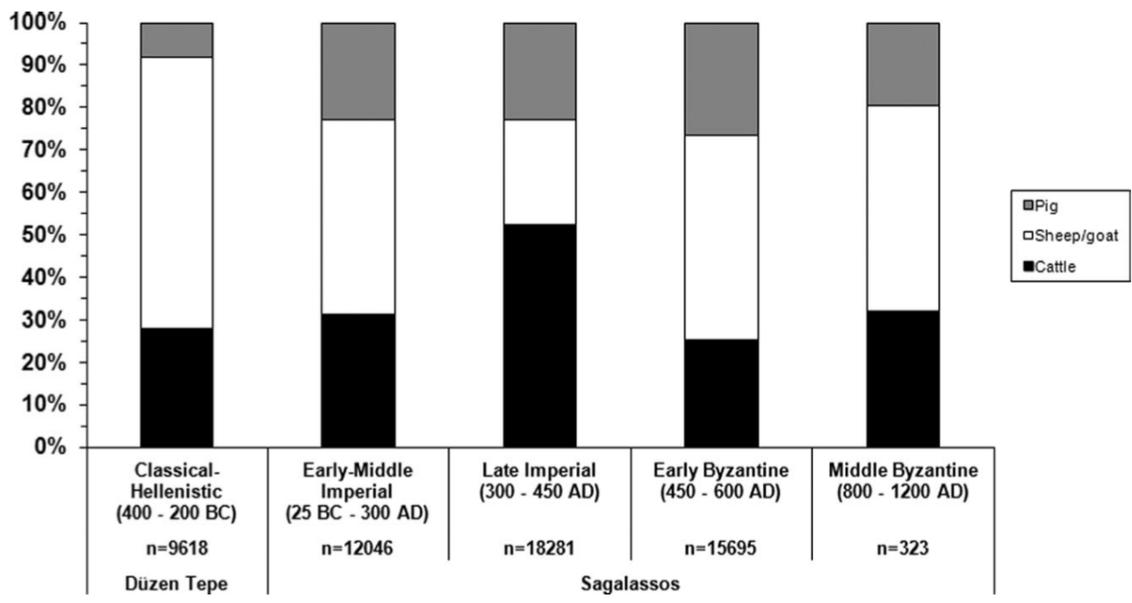
**Fig. 7.10.** Handmade non-kiln-fired cooking pots from Sagalassos. After Vionis et al. 2009: 152 figs. 3-4.



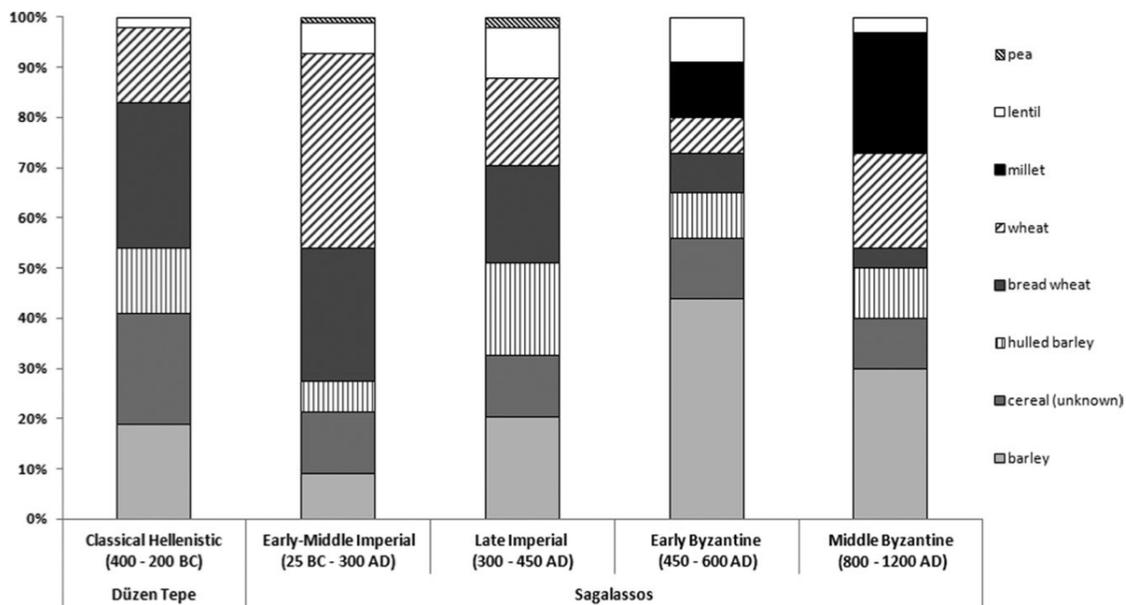
**Fig. 7.11.** Summary percentage pollen diagrams of records from Ağlasun. Each vertical grey bar (right) indicates the portion of the pollen diagram corresponding to the BO Phase. The black dots (left) indicate radiocarbon dates for the record. After Bakker et al. 2012a: 252 fig. 2.



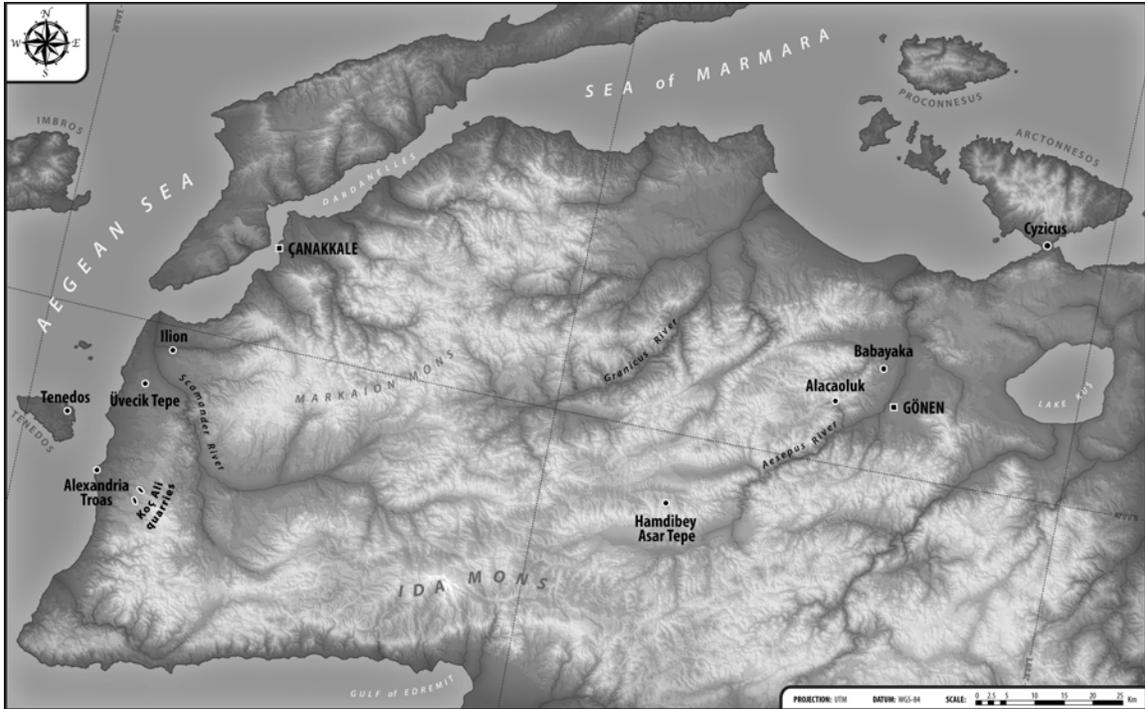
**Fig. 7.12.** Summary percentage pollen diagrams of records from Gravgav and Bereket. Each vertical grey bar (right) indicates the portion of the pollen diagram corresponding to the BO Phase. The black dots (left) indicate radiocarbon dates for the record. After Bakker et al. 2012a: 254 fig. 3.



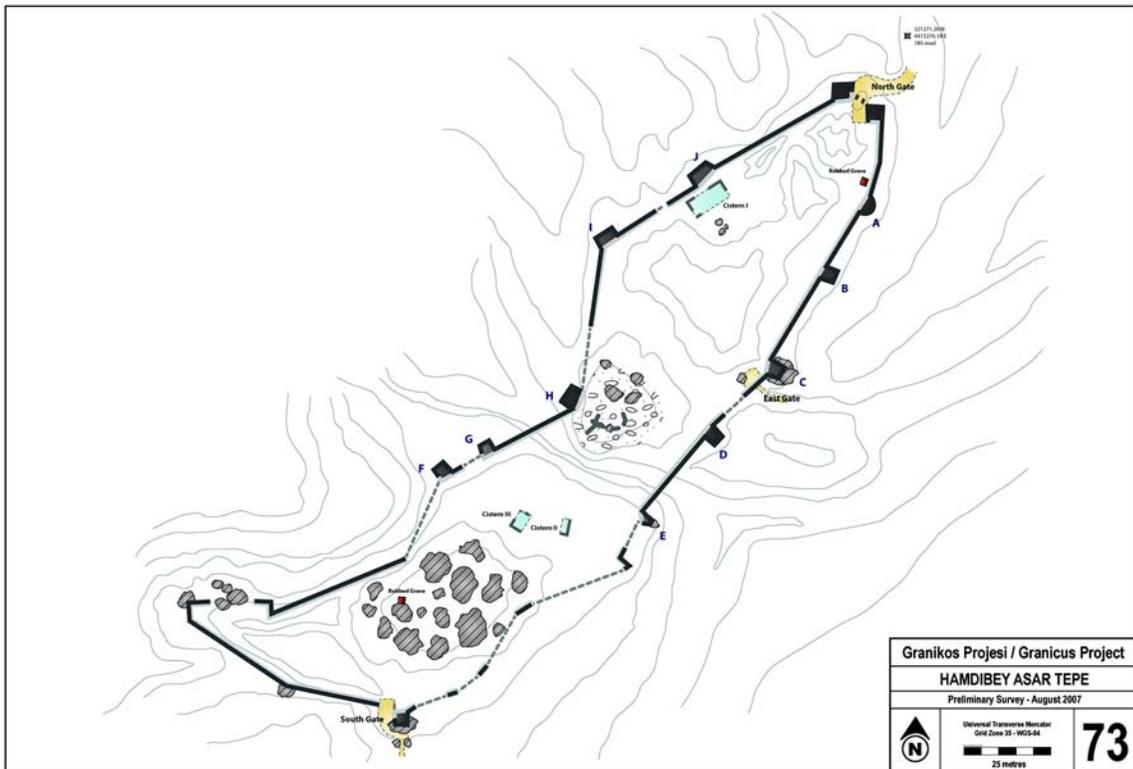
**Fig. 7.13.** Changes over time in the proportions of pig, sheep/goat, and cattle remains from excavations at Sagalassos. After Fuller et al. 2012: 160 fig. 3.



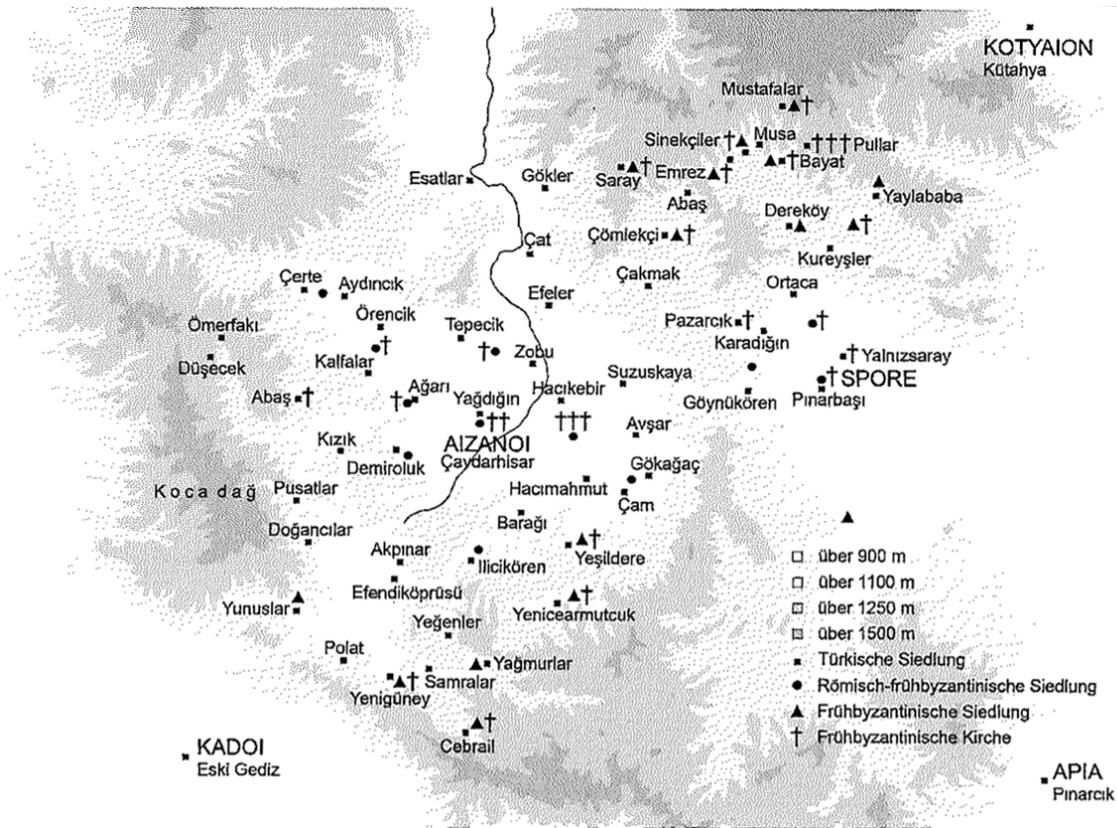
**Fig. 7.14.** Changes over time in the proportions of main staple crops from excavations at Düzen Tepe and Sagalassos based on archaeobotanical analysis of charred plant remains (percentage proportions) by machine flotation. After Fuller et al. 2012: fig. 5.



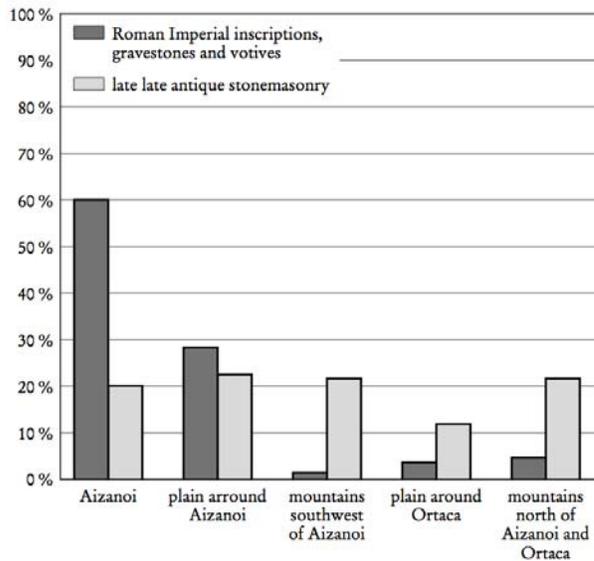
**Fig. 8.1.** Map of the eastern Troad. The Granicus River Valley Survey Project covers the area around and between the Granicus and Aesepus rivers. After Rose 2011: 152 fig. 1.



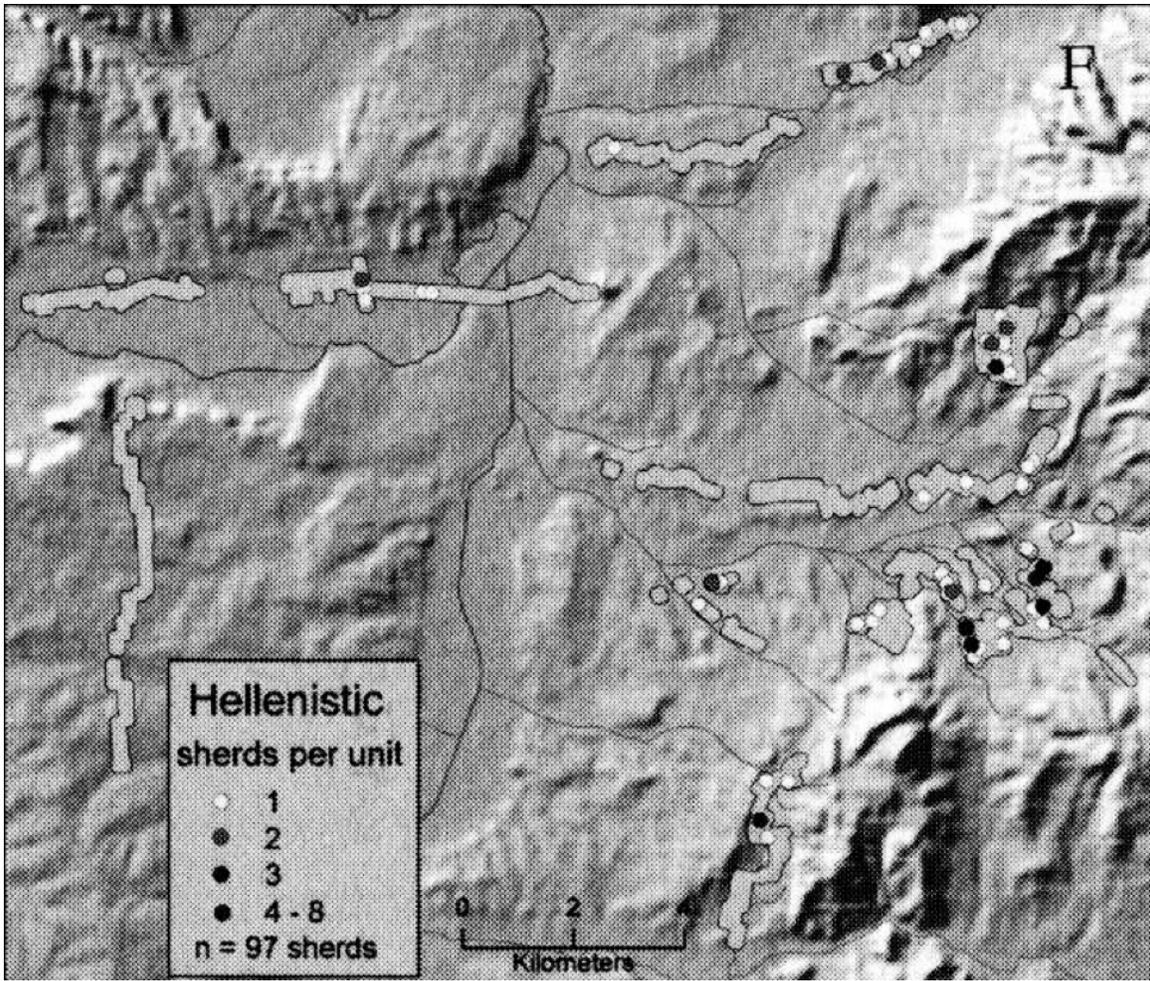
**Fig. 8.2.** Fortified citadel at Hamdibey Asartepe, eastern Troad. After Rose 2011: 170 fig. 19.



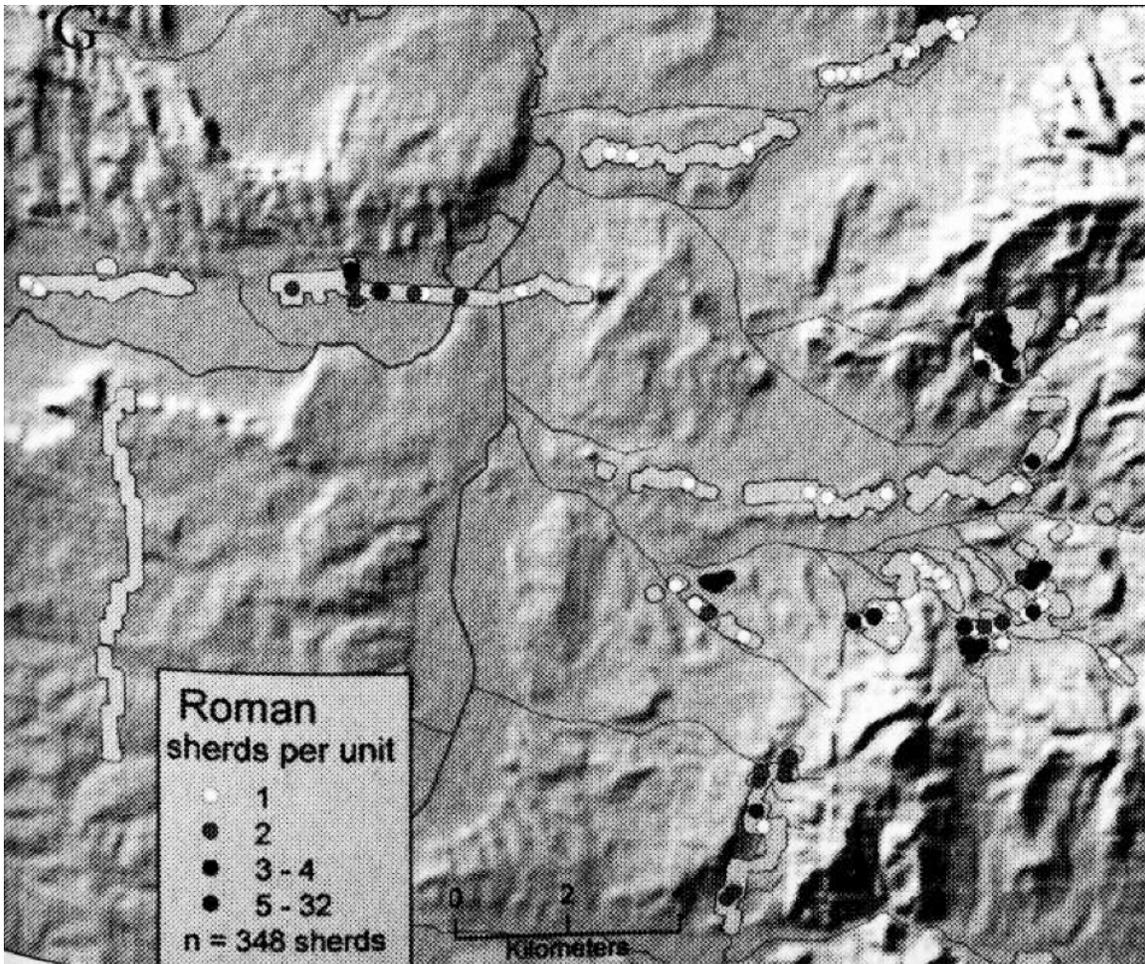
**Fig. 8.3.** Aizanoi survey region, showing evidence for occupation in the Roman and early Byzantine periods. After Niewöhner 2010: 147 fig. 146.



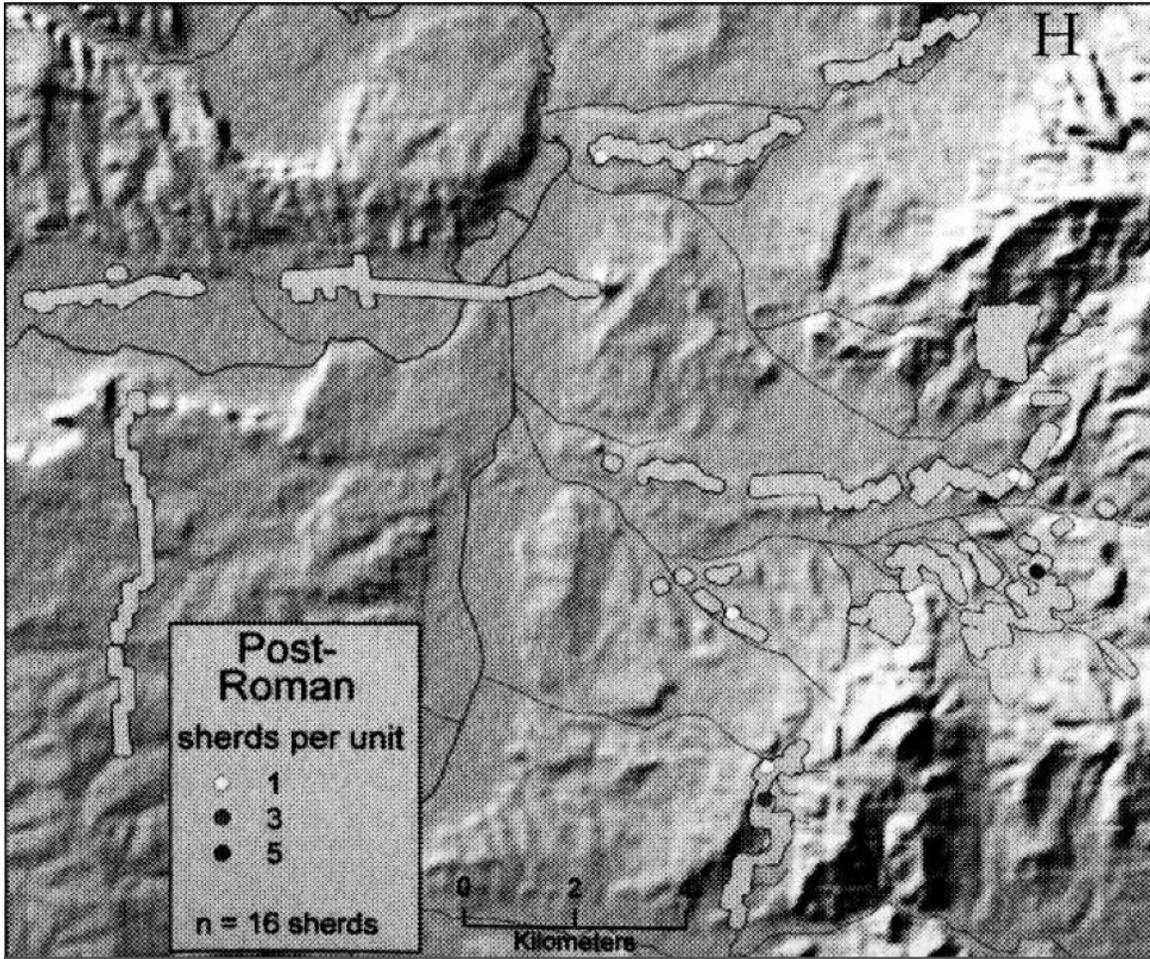
**Fig. 8.4.** Percentage proportions by sub-region of Roman imperial-period inscriptions (primarily from gravestones and votives) and fifth/sixth-century stonemasonry (architectural sculpture and liturgical furniture) recorded by the Aizanoi survey. After Niewöhner 2006: 246 fig. 2.



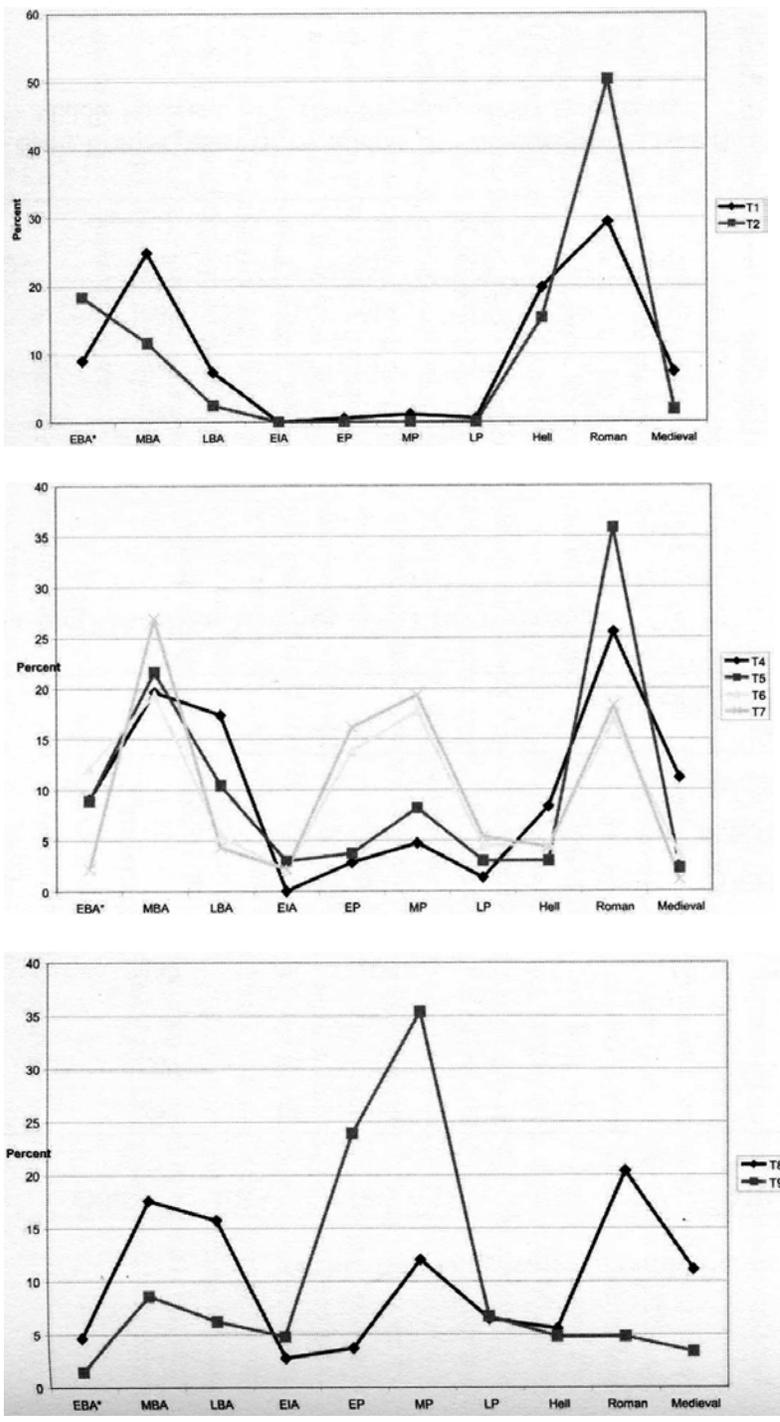
**Fig. 8.5a.** Gordion survey region, showing evidence for occupation in the Hellenistic period within surveyed transects (indicated in gray). After Kealhofer 2005: 143 fig. 11.4.



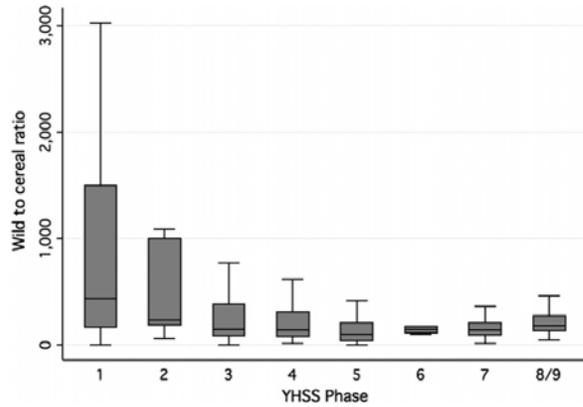
**Fig. 8.5b.** Gordion survey region, showing evidence for occupation in the Roman period within surveyed transects (indicated in gray). After Kealhofer 2005: 143 fig. 11.4.



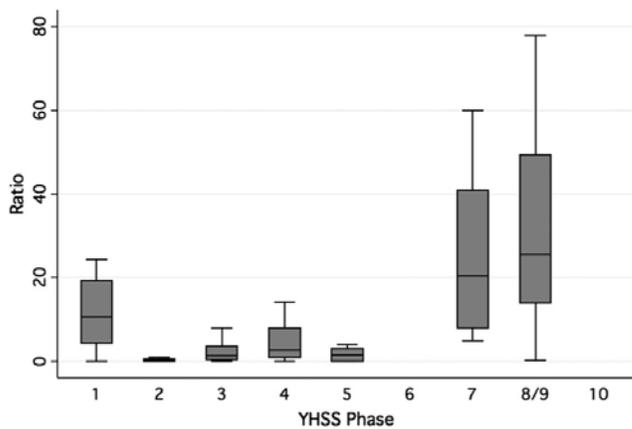
**Fig. 8.5c.** Gordion survey region, showing evidence for occupation in the post-Roman period within surveyed transects (indicated in gray). After Kealhofer 2005: 143 fig. 11.4.



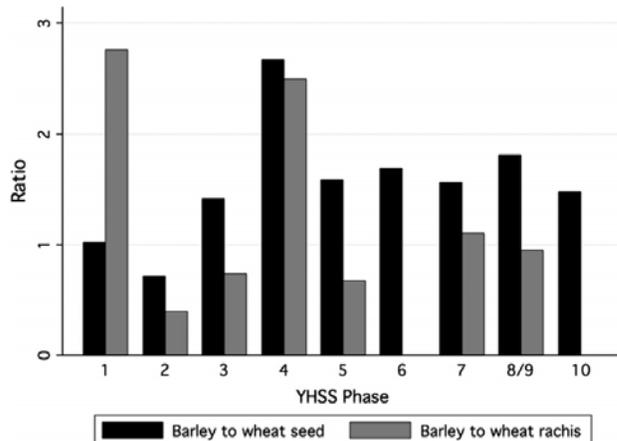
**Fig. 8.6.** Gordion survey, diagnostic sherd percentages per transect, by period. After Kealhofer 2005: 142 fig. 11.3.



**Fig. 8.7a.** Box plot of wild seed to cereal ratio by period (YHSS Phase 2 = Roman period; YHSS Phase 1 = medieval period). After Marston 2011: 200 fig. 6.



**Fig. 8.7b.** Box plot of healthy to overgrazed steppe ratio by period (YHSS Phase 2 = Roman period; YHSS Phase 1 = medieval period). After Marston 2011: 200 fig. 7.



**Fig. 8.8.** Mean ratios of barley to naked wheat, by seed weight and count of rachis fragments, at Gordion for each occupation phase (YHSS Phase 2 = Roman period; YHSS Phase 1 = medieval period). After Marston 2011: 199 fig 5.

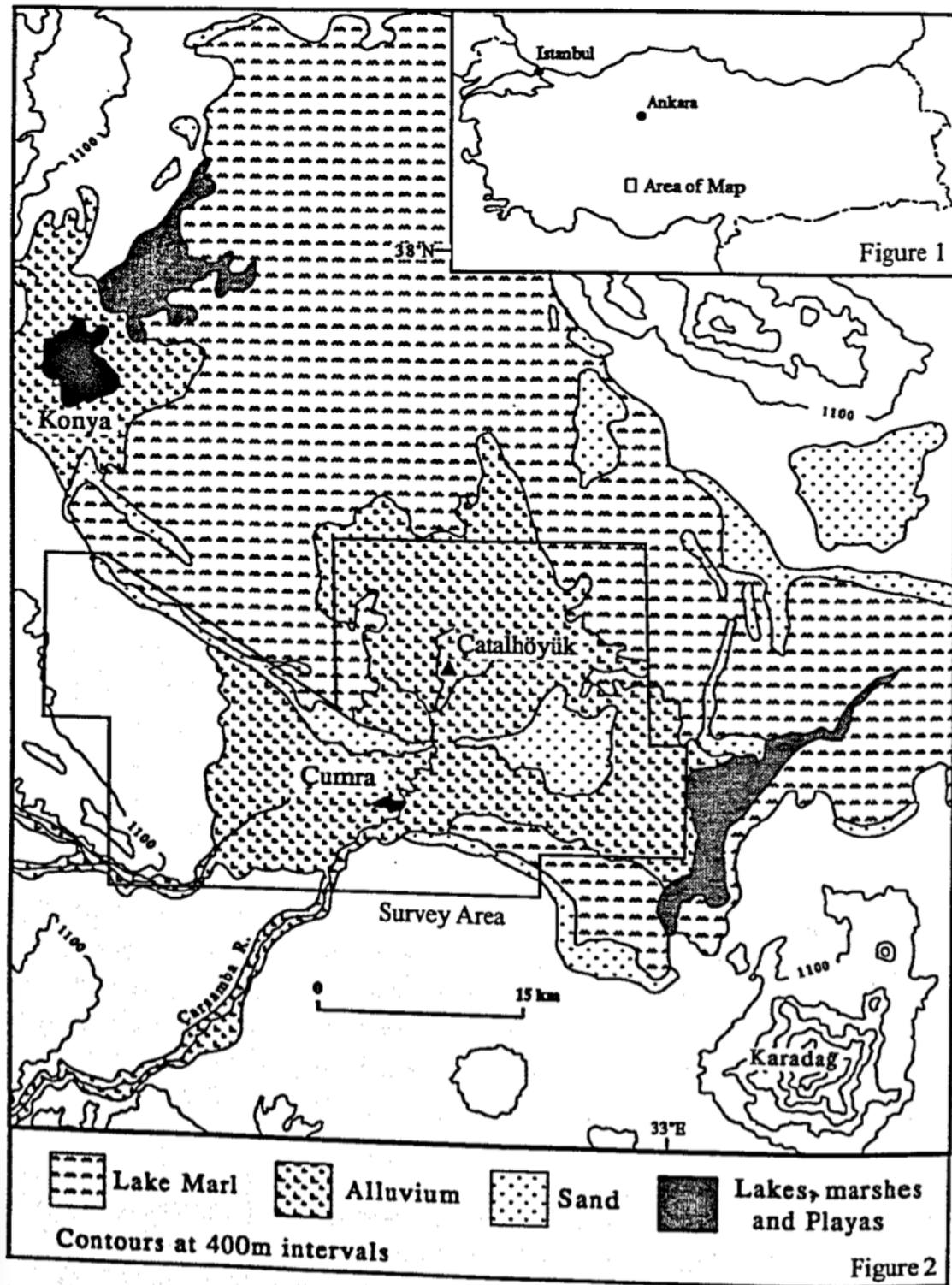
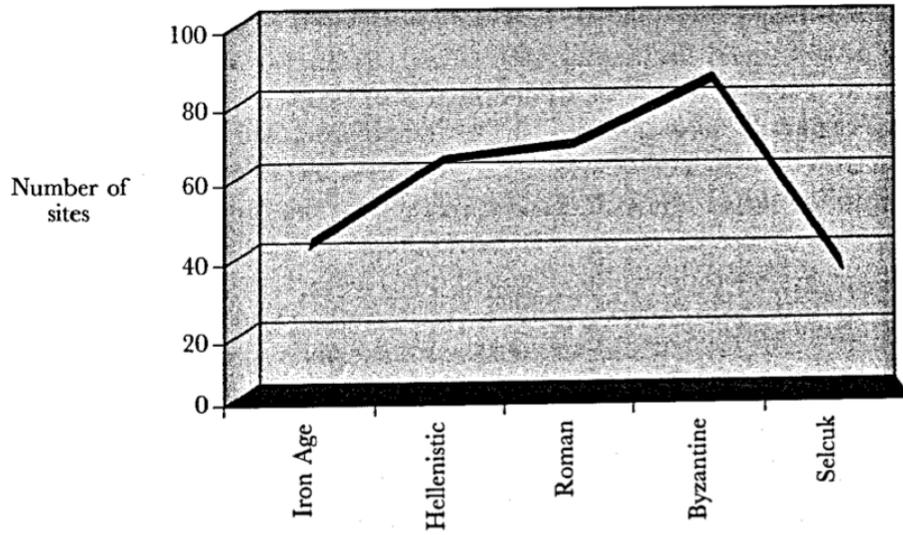
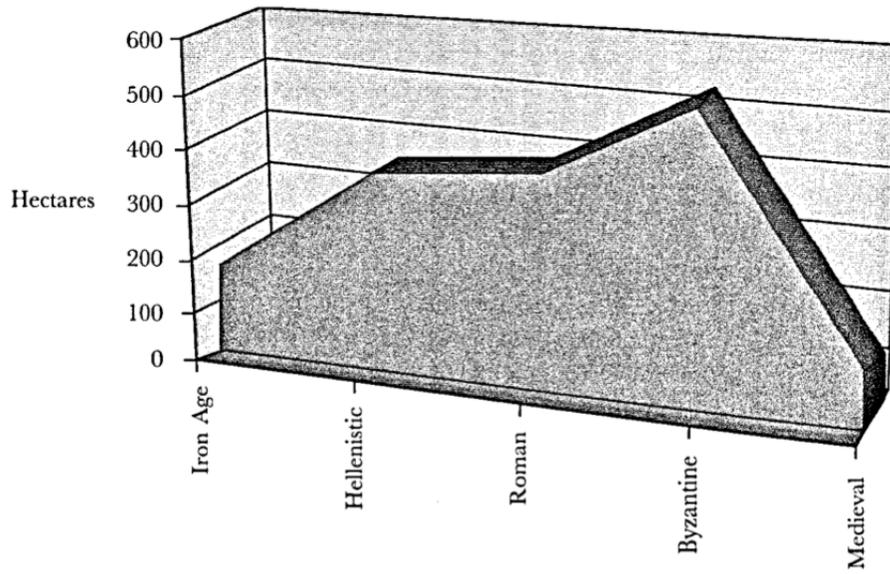


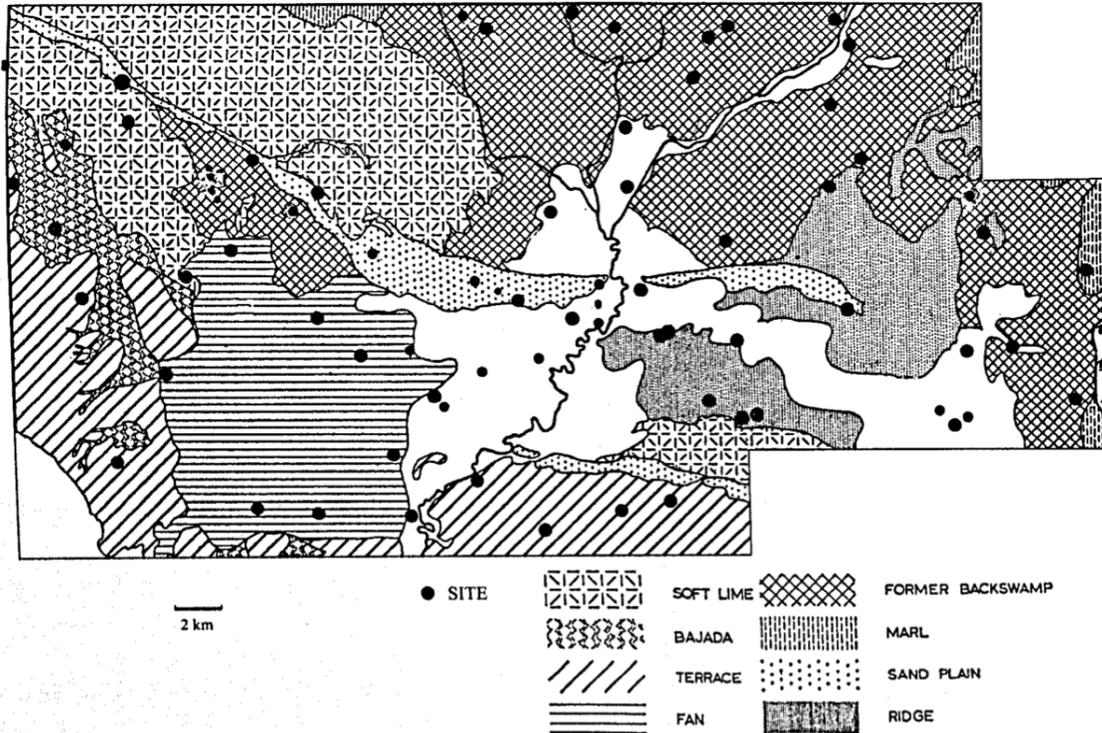
Fig. 8.9. Konya plain survey region. After Baird 2004: 222 fig. 2.



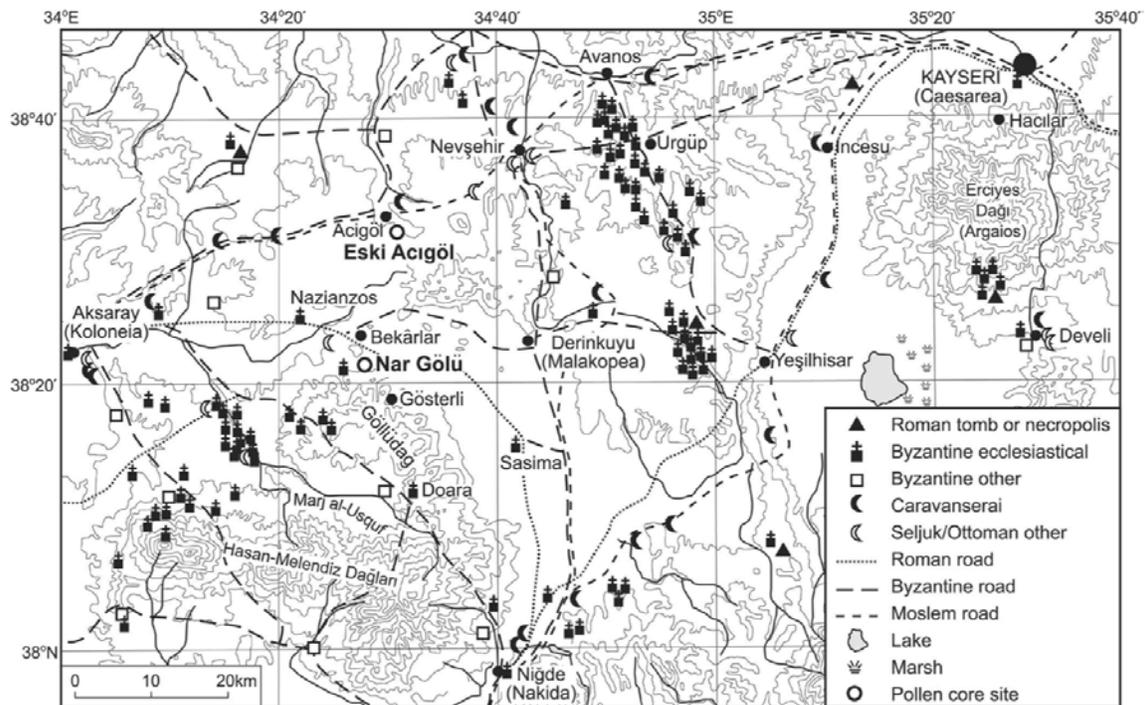
**Fig. 8.10.** Konya plain survey, number of sites by period. After Baird 2004: 225 fig. 3.



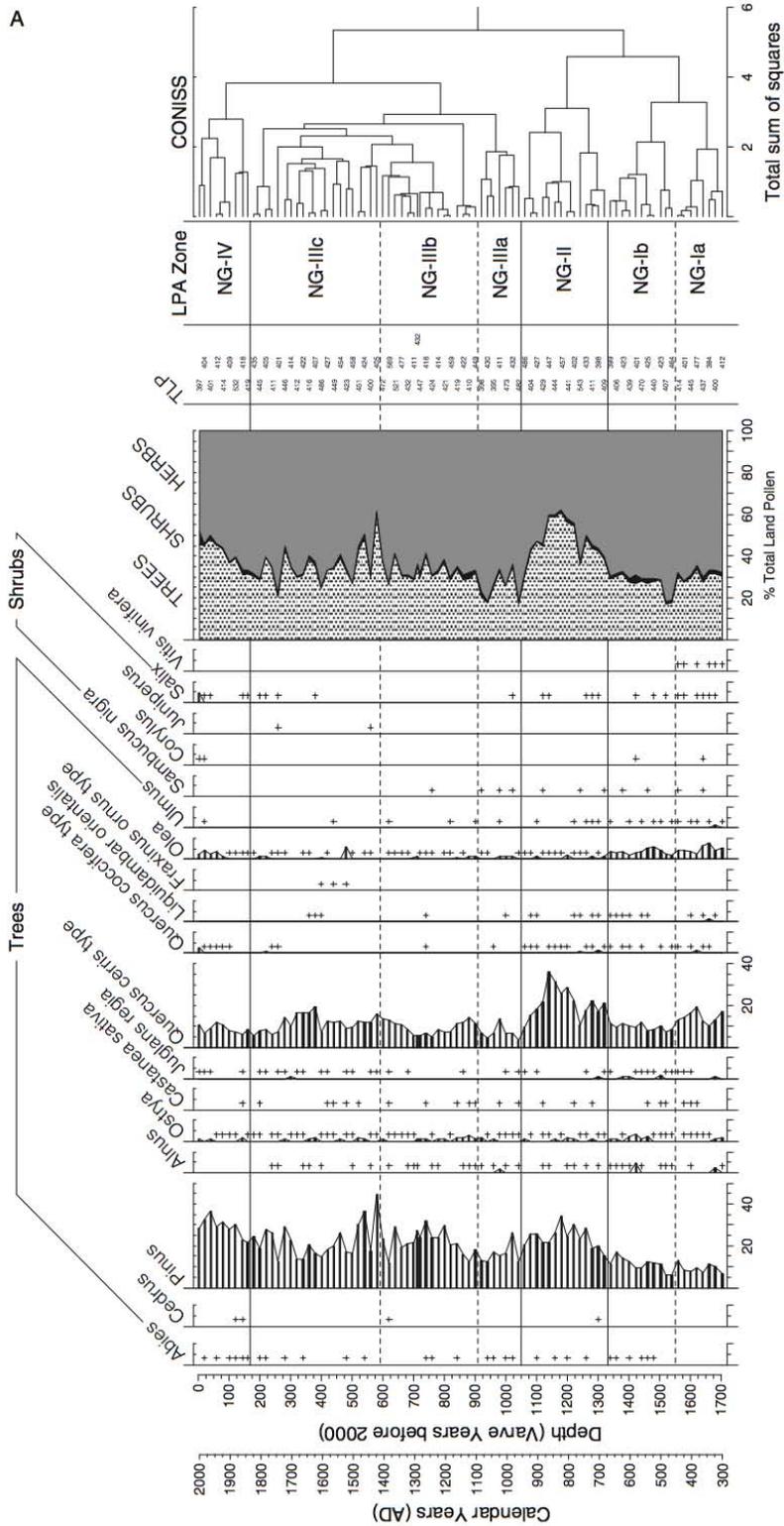
**Fig. 8.11.** Konya plain survey, aggregate site area by period. After Baird 2004: 232 fig. 4.



**Fig. 8.12.** Konya plain survey, early Byzantine site distribution in relation to soil types. After Baird 2004: 235 fig. 6.

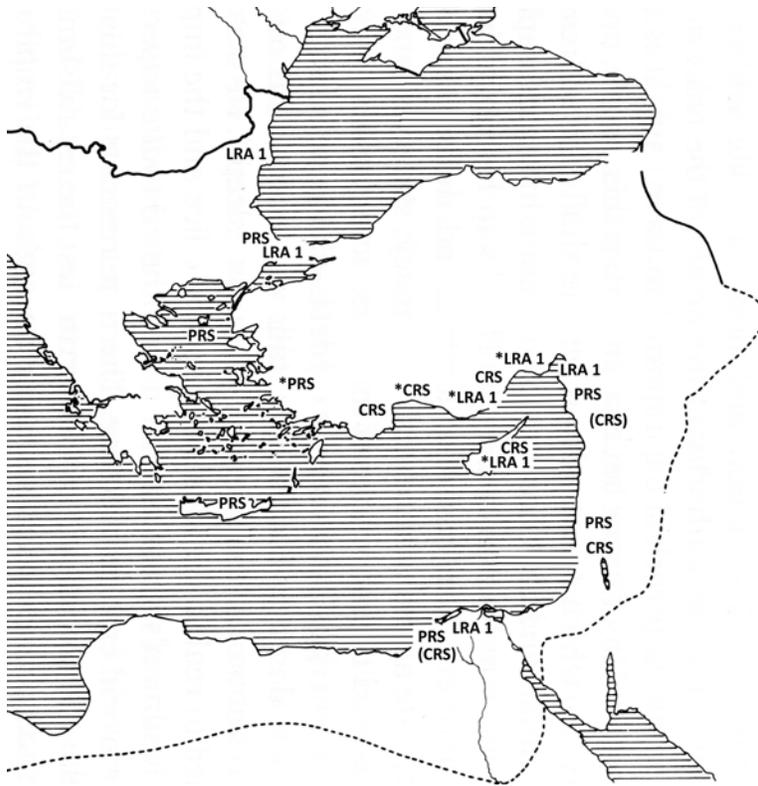


**Fig. 8.13.** Map of lake Nar region. After England et al. 2008: 1232 fig. 2.

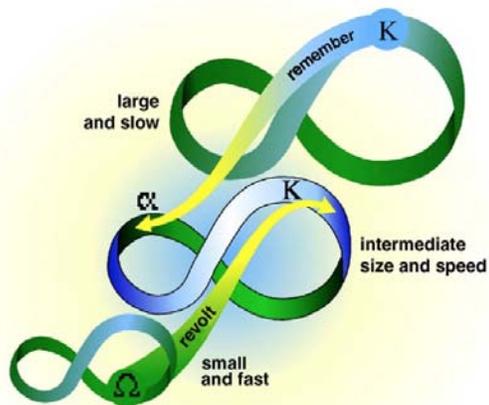


**Fig. 8.14a.** Percentage pollen diagram from lake Nar: trees and shrubs. Zone NG II corresponds to the “dark age” of 670-950 CE. + denotes rare or trace taxa (<1%). After England et al. 2008: 1234 fig. 3a.





**Fig. 9.1.** Map showing main production and consumption areas of LRA 1, CRS, and PRS discussed in the text. An asterisk indicates a confirmed production area. Parentheses indicate findspots of secondary importance.



**Fig. 9.2.** “Remember” and “revolt” cycles across different levels of the panarchy, a heuristic model of nested adaptive renewal cycles emphasizing cross-scale interplay. After Folke 2006: 258 fig. 1.

## TABLES

**Table 6.1.** Balboura survey. Problems with sample size: sherd numbers at rural sites from the fifth to eighth century. (Second to fourth century sherds provided for comparison: I = inscription; S= sarcophagus; V = votive relief.) After Coulton 2012: I, 170 table 7.1.

	2-4 C	5-6 C	6/7 C	7-8 C
<i>Start/restart</i>				
Çm.105 Gökmah Ridge Top	-	-	4	2
Çl.28 Eyüpkayası	-	-	1	3
Çl.22 Değirmenboğazı	1	-	1	5
Kh.9a Marmalı	-, I	-	-	2
Kh.120 Mekerı Mığar	4	-	3	3
Dğ.39 Bozkaya	-	-	-	1
<i>Flourish/continue</i>				
Kh.103 Kadra Press Weight Hill	5	5	4	14
Çl.26 Marmalı	5	8	4	8
Çl.32 Hamurdöken	24	8	4	10
Kh.7 Atoynağı	12	7	3	8
Çl.20 Yapı	12	8	1	8
Çm.108 Çamköy Granaries	6	9	1	4
Kh.102 Tokatlık	11	6	3	4
Dğ.37 Kale	9	6	1	4
Cl.29 Güzel Bey Mevki	15	3	4	4
Gk.88 Batlıca	7	3	1	5
Dğ.38 Aslan Mevki	7	4	2	3
Çb.15 Keten Pınar	1, V	2	1	4
Çl.23 İntaşı	3	3	2	2
Çl.68 Göller Mahalle	12	2	-	3
Gl.85 Çakırlaryaylası Settlement	7	2	4	3
Kh.2 Altınapa	3	9	-	2
Çb.16 Asar	2	1	2	1
Kh.1 Asar	1	5	3	5
Gk.96 Sarıçiçek-Beşiktaş	1	3	3	8
Gl.83 Yazır Göl South	-, V, S	2	4	2
Bk.35 Balıkboğazı West (a)	S	1	1	4
Bk.35 Balıkboğazı West (b)	1, S	1	1	3
Dğ.36 Balıkboğazı East	S	1	-	2
<i>Cease</i>				
Çb.15a Düden Mevki	3, S	-	-	-
Bk.31 Asar	4	1	-	-

**Table 6.2.** Balboura survey. Estimated number of sherds in each century, classified by use category and provenance (city or rural site) (C & R = city and rural sites). After Coulton 2012: II, 239 table 19.7.

<i>Date</i>	<i>Fine tableware</i>		<i>Plain tableware</i>		<i>Food prep.</i>		<i>Stor. &amp; trans.</i>		<i>Miscellaneous</i>		<i>Totals</i>		
	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>	<i>C &amp; R</i>
2C BC	124	48	75	102	22	17	22	9	10	1	253	175	428
1C BC	124	65	70	14	29	23	16	36	1	3	240	141	381
1C AD	69	49	7	24	21	25	0	1	2	3	100	101	201
2C AD	43	33	9	26	7	4	11	1	2	1	72	65	137
3C AD	28	14	7	15	5	4	15	1	2	1	57	35	92
4C AD	46	16	7	15	9	5	0	1	2	1	64	38	101
5C AD	29	12	14	15	6	19	3	2	0	0	51	47	98
6C AD	24	12	14	16	21	44	3	3	1	0	63	74	136
7C AD	13	12	9	28	38	61	9	19	1	0	69	119	187
8C AD	18	11	7	22	24	23	2	4	0	0	50	60	109
Total	518	272	219	277	182	225	81	77	21	10	1,019	855	1,870

**Table 6.3.** Balboura survey. Estimated percentages of sherds in each century belonging to each class (use category and provenance), showing increase in proportion of cooking ware to table ware in the sixth, seventh, and eighth centuries. After Coulton 2012: II, 240 table 19.9.

<i>Date</i>	<i>Fine tableware</i>		<i>Plain tableware</i>		<i>Food prep.</i>		<i>Stor. &amp; trans.</i>		<i>Miscellaneous</i>	
	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>	<i>City</i>	<i>Rural</i>
2C BC	29	11	18	24	5	4	5	2	2	0
1C BC	33	17	18	4	8	6	4	9	0	1
1C AD	34	24	3	12	10	12	0	0	1	1
2C AD	31	24	7	19	5	3	8	1	1	1
3C AD	30	15	8	16	5	4	16	1	2	1
4C AD	46	16	7	15	9	5	0	1	2	1
5C AD	30	12	14	15	6	19	3	2	0	0
6C AD	18	9	10	12	15	32	2	2	1	0
7C AD	7	6	5	15	20	33	5	10	1	0
8C AD	17	10	6	20	22	21	2	4	0	0

**Table 6.4.** Balboura survey. Fine table wares of the fourth to eighth century found at Balboura and at rural sites. For the city, X indicates presence; O indicates absence. For rural sites, the figures indicate the number of rural sites on which the ware was found. After Armstrong 2012: II, 59 table 12.8.

<i>In use</i>	<i>Phocaeen</i>		<i>African</i>		<i>CRS (Pednelissos)</i>	
	<i>City</i>	<i>Rural sites</i>	<i>City</i>	<i>Rural sites</i>	<i>City</i>	<i>Rural sites</i>
4th–5th C	X	0	O	0	X	0
5th–6th C	O	0	O	3	X	2
6th–7th C	X	0	O	0	X	7
7th–8th C	O	0	X	0	X	10

**Table 9.1.** Synthesis of select survey data, showing changes in occupation over time. Unless otherwise noted with an asterisk (\*), numbers denote site numbers occupied by period. All percentages are of the “total” listed for that project. Since some sites were occupied in more than one period, these percentages do not add up to 100%. Numbers in parentheses refer to century (e.g., 4-mid7 = fourth to mid-seventh century).

Region	Roman	Late Roman	Early Byzantine/ Islamic		Middle Byz/Isl	Total	Notes/Coverage
Amuq valley <sup>1</sup>	205 (72%) (1BCE-3CE)	136 def (47%) to 220 total possible (77%) (4-mid7)	67 def (23%) to 133 total possible (46%) (mid7-10)		44% (10-14)	287	900 km <sup>2</sup> extensive incl. 110 ha intensive uplands semi-intensive  Late Roman (def) = 136 (47%) Late Roman (def+indef) = 220 (77%) Early Islamic (def) = 67 (23%) Early Islamic (def+indef) = 133 (46%)
			25 (mid7- mid8)	42 (8-10)			
Kahramanmaraş plain <sup>2</sup>		88to143 = average 115 (45%) (definite and indefinite)  (4-mid7)	31 def (12%) to 60 total possible (24%) (mid7-10)			254	1,110 km <sup>2</sup> extensive incl. 5% intensive of 35 km <sup>2</sup>  Late Roman (def+indef) = 115 (45%) Early Islamic (def) = 31 (12%) Early Islamic (indef) = 29 Early Islamic (def+indef) = 60 (24%)
			12 (mid7- mid8)	19 (8-10)			
Domuztepe (Cilicia) <sup>3</sup>	4 (4/5)	7 (late5/ early6)	3 (late6/ early7)	0	3 (13)	9	25 km <sup>2</sup> extensive
Western Rough Cilicia <sup>4</sup> *sherds	60% (1-3)	27% (4-7)	0	2% (9-12)		3424 diag.	300 km <sup>2</sup> extensive 7313 total 3424 datable 2460 coarse ware 872 cooking ware

(continued on next page)

<sup>1</sup> Gerritsen et al. 2008: 260 (early Roman), 275 (middle Islamic); Eger 2008: 99 table 1 (late Roman and early Islamic).

<sup>2</sup> Eger 2008: 162-64, 164 table 9.

<sup>3</sup> Rossiter and Freed 1991: 172 table 3.

<sup>4</sup> Rauh et al. 2009: 262 table 2.

<i>(continued from above)</i>	Roman	Late Roman	Early Byzantine/ Islamic		Middle Byz/Isl	Total	Notes/Coverage
Göksu valley <sup>5</sup>	17	28 (3-7)	4 (early Islamic)	12 (11-15)	5 (Otto- man)		extensive some intensive
Kyaneai <sup>6</sup> *hamlets only	55	67-68 (4-mid6)	30-40 (mid6- 13/14)				136 km <sup>2</sup> incl. 106 km <sup>2</sup> “intensive” and 20 km <sup>2</sup> extensive
Balboursa <sup>7</sup>	42 / 72 (1-late3)		29 (5-8)	12-14 (8)			150 km <sup>2</sup> extensive incl. 12 km <sup>2</sup> intensive
Sagalassos <sup>8</sup>	65 (1-3)	58 (4-mid5)	40 (mid5- early7)	11? (late7- 9)	10? (10-13)		1800 km <sup>2</sup> extensive incl. 64% of 50 km <sup>2</sup> suburban intensive
Gordion <sup>9</sup>		15 (1-5)	8 (Byz)		5 (Otto- man)		1-2% of 360 km <sup>2</sup> intensive
Konya plain <sup>10</sup>	~ 65 (1-4)		~ 82 (5-7)		much < 82 (Seljuk)		1000 km <sup>2</sup> extensive incl. some intensive
Central Anatolia <sup>11</sup>			58 (4- mid7)	35 (7-11)			49 additional sites “uncertain”
Eastern Troad <sup>12</sup> *sherds	1% (3)	29% (5-6)	possibly a few sherds (7)		14% (12/13)		
Aphrodisias <sup>13</sup> *settlements (s) farmsteads (f) = total	s 12 (-17) f 14 (-23) = 26 (-40) (high imp)	s 8 (-12) f 12 (-19) = 20 (-31) (Late Roman)		s 4 f 1 (-2) = 5 (-6) (mid Byz)	s 9 f 8 = 17 (Islam)	s 19 f 23 = 42	600 km <sup>2</sup> extensive 0.5 km <sup>2</sup> intensive of 78 km <sup>2</sup> radiating transects definite (def+indef)

<sup>5</sup> Elton 2013: 245 fig. 19.12.

<sup>6</sup> Kolb 2008: 406-7, 415.

<sup>7</sup> Coulton 2012: I, 153-54 table 6.3, 170 table 7.1; Armstrong 2012: II, 79, 81.

<sup>8</sup> Vanhaverbeke et al. 2011: 75 fig. 3; Vanhaverbeke et al. 2009: 180-82.

<sup>9</sup> Kealhofer 2005: 146 table 11.2.

<sup>10</sup> Baird 2004: 225 fig. 3.

<sup>11</sup> Anderson 2008: 237.

<sup>12</sup> Rose 2011: 164.

<sup>13</sup> Ratté and De Staebler 2011: 131 table 1, 133 table 2.

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