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Urban systems in the Roman Near East: historical and functional dimensions of urbanism in Roman Syria, Mesopotamia, Palestine and Arabia

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Introduction

The aims of this book are twofold. As a first step, an attempt will be made to achieve a comprehensive reconstruction of the urban system, or systems, of the Roman Near East, comprising the six Roman provinces of Syria Coele, Syria Phoenice, Syria Palaestina, Osroene, Mesopotamia and Arabia. Chronologically the focus will be on the second and early third centuries C.E.

As a second step the regional and sub-regional urban patterns which can be discerned in each of these provinces will be analysed from a variety of angles. At the most basic level, we will be guided by the seemingly simple question as to why the regional urban systems of the Roman Near East looked the way they did. Why, for instance, did some provinces have a relatively small number of large cities, whereas other provinces were characterised by a dense pattern of relatively small cities? Can most of these contrasts be explained as reflecting the operation of geographical factors, or were regional urban patterns also shaped by historical 'path dependencies', created by political decisions taken long before the arrival of Roman armies?

At the same time, regional urban patterns will be examined from the perspective of economic integration. This term can be understood in multiple ways. In most publications written by economic historians it refers to an increase in the intensity of movements of goods, services and capital among various countries or regions, although permanent or temporary migrations of workers are also discussed under this heading.¹ The most obvious way of studying this type of economic integration is to look for archaeological or literary evidence of goods being carried from one area to another. An important weakness of these approaches is that they shed little light on movements of low-value perishable commodities such as grain.

Levels of economic integration can, however, also be studied by looking at regional urban patterns. In an essay on the political economy of the Roman empire, the Cambridge ancient historian Keith Hopkins observed that Syrian Antioch maintained or even expanded its

¹ Willem M. Jongman, 'The Benefits of Market Integration: Five Centuries of Prosperity in Roman Italy', in *The Economic Integration of Roman Italy*, ed. Tymon C. A. De Haas and Gijs W. Tol (Brill, 2017), 15–27, https://doi.org/10.1163/9789004345027_003; Gary M. Feinman, 'Roman Economic Practice across Time and Space: An Outside Perspective', in *The Economic Integration of Roman Italy: Rural Communities in a Globalizing World*, ed. Tymon C. A. De Haas and Gijs W. Tol, 2017; Keith Hopkins, 'Taxes and Trade in the Roman Empire (200 BC-AD 400)', *The Journal of Roman Studies* 70 (1980): 101–25; Keith Hopkins, '10 Rome, Taxes, Rents and Trade', in *The Ancient Economy*, ed. Walter Scheidel and Sitta von Reden (Edinburgh University Press, 2002), 190–230, <https://doi.org/10.1515/9781474472326-016>; Paul Halstead, 'Traditional and Ancient Rural Economy in Mediterranean Europe: Plus Ça Change?', in *The Ancient Economy*, ed. Sitta von Reden and Walter Scheidel (New York: Routledge, 2002), 53–70; And see the contributions in L. de Ligt and Laurens Ernst editor Tacoma, *Migration and Mobility in the Early Roman Empire*, Studies in Global Social History ; v. 23 (Leiden: Brill, 2016).

population size after it had ceased to be one of the capitals of the Seleucid empire, without free food distributions as seen in Rome. In his view the only possible explanation for this is that income from taxation was replaced by income from manufacture and trade.² A massive urban population depending on income from trade and manufacture to acquire food, presupposes a high level of economic integration.

This theory raises a number of questions. How many people lived in Syrian Antioch during the second and early third centuries C.E.? How large was the city's administrative territory? Can we be certain that Antioch's population could not be sustained by the food crops grown in its administrative and economic hinterland? And is there any literary or archaeological evidence to suggest that Antioch was structurally dependent on grain or other food items imported from the territories of neighbouring cities or perhaps even from more distant areas?

Another way of getting to grips with levels of economic integration between various parts of the Roman empire is to study the development of port cities. Did port cities expand following the establishment of Roman rule, and did port cities expand faster than inland cities?

Finally, there is a large body of scholarly literature dealing with causal connections between regional or national urban hierarchical structures and levels and modes of economic integration. It has, for instance, been claimed that urban systems in which the size of a city which occupies a particular 'rank' in the urban hierarchy is inversely proportional to that rank (a distribution commonly known as Zipf's law), reflect the existence of a perfectly integrated (market) economy.³ Can such theories be fruitfully applied to the cities of the Roman Near East during the second and third centuries C.E.?

It is also possible to examine economic integration using a bottom-up perspective, that is, by looking at the extent to which various segments of the population of the Roman empire participated in a market economy. Again, an obvious way of examining this type of economic integration is to collect evidence of non-local goods finding their way to rural communities or to individual rural households, on the assumption that most of these goods were acquired in the market. Essentially, a very remote village with non-local goods is a good indicator for the depth of market integration. Yet here too the study of urban systems has the potential of making a significant contribution. After reconstructing the urban system of a particular region, we may attribute 'marketing zones' to each of the cities or towns of this region and examine the degree

² Keith Hopkins, 'The Political Economy of the Roman Empire*', in *Sociological Studies in Roman History*, ed. Christopher Kelly, Cambridge Classical Studies (Cambridge: Cambridge University Press, 2017), 517, <https://doi.org/10.1017/CBO9781139093552.015>.

³ Steven Brakman et al., 'The Return of Zipf: Towards a Further Understanding of the Rank-Size Distribution', *Journal of Regional Science* 39, no. 1 (1999): 183–213, <https://doi.org/10.1111/1467-9787.00129>.

of 'spatial coverage' attained by such urban market centres. As will presently see, this alternative approach to the problem of economic integration is closely associated with a flexible approach to 'urban-ness', in which the economic functions performed by settlements are more important than distinctions between their specific juridical or administrative statuses.

Defining cities

The terms 'city' and 'urbanism' should be considered place- and time-dependent. Attempts to find a definition for 'urban' that encompasses everything from Bronze Age tell sites and Greek *poleis* to Angkor, Teotihuacan and modern-day Mumbai cannot be expected to produce meaningful results. In a recent article, Bisserka Gaydarska and others even call the usefulness of 'city' as an analytical concept into question.⁴ Gaydarska is essentially right in pointing out that the terms 'urban' and 'city' are value-laden, inconsistently used or defined and subject to a pick-and-mix approach.⁵ Pragmatism, however, is unavoidable to go beyond catch-all definitions, as these do not fit the purpose of studying settlement patterns within a limited region and timeframe.

In this book, multiple criteria will be used to distinguish 'cities' or 'towns' from other types of settlements. The most important of these are administrative or juridical status, the economic functions performed by settlements for the population of the surrounding districts, occupational diversity and settlement size. In practice, settlements which qualify as 'cities' or 'towns' according to one of these criteria also meet some or all of the other criteria, but this is not always the case.⁶ If we were to map all settlements qualifying as 'urban' based on administrative status, economic function or population size, our maps would certainly overlap, but they would not be identical.

Settlements that lack indicators of self-governance as described below or are explicitly known to have been subordinate to a city, but still appear to perform a central role of some sort, will be described in this thesis as 'non-urban central places'.⁷

⁴ Bisserka Gaydarska, 'The City Is Dead! Long Live the City!', *Norwegian Archaeological Review* 49, no. 1 (2 January 2016): 40–57, <https://doi.org/10.1080/00293652.2016.1164749>; Axel Christophersen, 'The City Is Alive – Still! Comment on Bisserka Gaydarska, "The City Is Dead! Long Live the City!"', *Norwegian Archaeological Review* 49, no. 1 (2 January 2016): 58–61, <https://doi.org/10.1080/00293652.2016.1167119>.

⁵ Gaydarska, 'The City Is Dead! Long Live the City!', 54.

⁶ City and town are actually both understood here as self-governing settlements, but with towns understood as the smaller settlements between them.

⁷ With central place understood as the overarching, abstract definition of human settlements as places performing (economic) services for a surrounding area. See for central place theory in general: Walter Christaller, *Die Zentralen Orte in Süddeutschland: Eine Ökonomisch-Geographische Untersuchung Über Die Gesetzmäßigkeit Der Verbreitung Und Entwicklung Der Siedlungen Mit Städtischen Funktionen*, Repographischer Nachdruck der 1. Auflage, Jena 1933 (Darmstadt: Wissenschaftliche Buchgesellschaft,

Juridical and administrative criteria

In many historical societies we find hierarchical settlement systems in which a relatively small number of political centres controlled administrative territories which were dotted by a much larger number of 'subordinate settlements' and by isolated farms. In the Roman imperial period most administrative tasks, including tax collection, were carried out by town-based magistrates and administrators, whose authority extended throughout the administrative territories belonging to particular cities. This is, essentially, what we consider to be a self-governing city. In many of the western parts of the Roman Empire, there is comparatively good evidence for the officially granted, juridical status of such settlements (essentially *municipia* and *coloniae*).⁸ However, for the Roman Near East in many cases we lack such solid evidence of the official juridical status. Surprisingly little use of official Roman statuses can be found in the local, Greek, inscriptions. Only cities with colonial status advertised this proudly. And Pliny apparently used non-official, and at times older, sources.⁹ In *The Cities of the Eastern Roman Provinces*, A.H.M. Jones nevertheless managed to identify most of the self-governing communities in this region.¹⁰ This boils down, essentially, to the following types of indicators:

- (a) An explicitly known official status from literary, epigraphic or numismatic sources. As stated, usually a *colonia*.
- (b) the known presence of urban officials, a city council, etc. Thus we find for instance inscriptions mentioning the *boule*, *bouleutai*, *agoranomoi*, etc.
- (c) Attestation of specific 'Greek' rights or privileges. Several places, for instance, advertised their *asylia* or their status of *metropolis*.
- (d) Municipal coinage. In the East the minting of local coinages continued well into the Roman period. The privilege to do so is a good indicator that the settlement was officially recognized as a city.
- (e) A mention in the later Roman bishoprics lists. A settlement having sent a bishop to one of the councils suggests that by that time, the settlement had become a city. If there are

1968); *Die räumliche Ordnung der Wirtschaft Eine Untersuchung über Standort, Wirtschaftsgebiete u. internat. Handel* (Jena: Fischer, 1940); Masahisa Fujita, Paul Krugman, and Tomoya Mori, 'On the Evolution of Hierarchical Urban Systems', *European Economic Review* 43, no. 2 (15 February 1999): 209–51, [https://doi.org/10.1016/S0014-2921\(98\)00066-X](https://doi.org/10.1016/S0014-2921(98)00066-X); John Bintliff, 'Going to Market in Antiquity', in *Stuttgarter Kolloquium Zur Historischen Geographie Des Altertums 7 1999: Zu Wasser Und Zu Land. Verkehrswege in Der Antiken Welt*, by Eckart Olshausen and Holger Sonnabend (Stuttgart, 2002), 209–50.

⁸ P. H. A. Houten, 'Civitates Hispaniae: Urbanisation on the Iberian Peninsula during the High Empire' (2018).

⁹ A. H. M. Jones, *The Cities of the Eastern Roman Provinces*, 2nd ed.. (Oxford: The Clarendon Press, 1971), 262.

¹⁰ A. H. M. Jones, 'The Cities of the Roman Empire', in *The Roman Economy: Studies in Ancient Economic and Administrative History*, ed. P. A. Brunt (Oxford: Blackwell, 1974), 1–34.

other indicators that the settlement was already of prominence in the period under study, this is a strong hint of urban status.

(f) A mention in Pliny's list, in addition to at least one of the other indicators.

In addition, in most parts of the empire, economic and social elites preferred to live in the settlements performing these administrative functions. Against this background it is not surprising that the self-governing cities of the Roman empire tended to have a wider array of public buildings and a larger number of elite dwellings than those settlements which were 'secondary' or 'subordinate' from an administrative point of view. Of course it is always possible to find exceptions. In an often-quoted passage, Pausanias observes that the Greek *polis* of Panopeus did not have any of the buildings normally associated with 'urban' life, despite being the administrative centre of an 'urban' territory.¹¹ The explanation is that in earlier periods many undistinguished Greek settlements had been distinct self-organised political wholes despite low ratings in size and urban infrastructure cf. Kirsten's (1956) term 'Dorfstadt'. During the Roman Imperial period, the government's desire to delegate the tasks of day-to-day administration to local communities led to the bestowal of 'urban' status on small settlements, which never took off in terms of monumental architecture or other criteria normally applied to urban settlements. While such exceptions are both numerous and important, they do not contradict the indisputable fact that, during the period covered by this book, investment in public buildings and elite dwellings was heavily concentrated in settlements of superior juridical status.

In this thesis, buildings are grouped as follows: baths and water provision (including aqueducts and nymphaea), commercial buildings (including commercial ports, storage facilities, colonnaded streets, *agorai* and market buildings), elite buildings (elite residences, palaces, elite graves), entertainment (theatres, hippodromes, *odeia* and the like), military buildings (city walls, gates, forts, permanent bases, military ports), religious buildings (temples, sanctuaries, shrines), and finally 'status buildings', most importantly decorative arches including *tetrapylai*.

Of course, the functions of some buildings will have transcended these categories. *Agorai*, here placed here under economic structures, are well known to have had important functions as places of assembly for civic and religious purposes. Note that one finds far fewer *agorai* in the cities of the Roman Near East than in Greece and Asia Minor. Similarly, small theatres are at times identified as *odeia*, intended for music or recitations, or as *bouleuteria*: the place of

¹¹ Paus., trans. W. H. S. Jones and M. A. Ormerod (Cambridge, MA: Harvard University Press, 1918), 10.4.1; The idea that the presence of public buildings was one of the hallmarks of 'urban-ness' has deep historical roots, but became more prominent in writings of the first two centuries CE. Lomas in Helen Parkins, *Roman Urbanism : Beyond The Consumer City*, 1st ed. (Hoboken: Taylor and Francis, 1997), 24.

assembly for the city council. And while only triumphal arches and *tetrapylai* are assigned to the category of ‘status buildings’, essentially all buildings set up on a grand scale were meant to display urban wealth and status, be it a lavishly decorated nymphaeum (a simple well would function just as well as a water source) or an amphitheatre (one could also watch a fight in a regular theatre, or even in an open field for that matter). Other buildings simply transcend these categories because they incorporated multiple building types in a single complex. Take for instance the Petra ‘Great Temple’, which may very well have been a palace or banqueting hall, and was altered in the late first or early second century to include a small theatre-like building as well.¹²

There can be no objective ‘minimum set’ of buildings that should be present in order to consider a settlement a city. We can count the total number of public buildings and the variety of building types, but we should note that a well-excavated minor town will always offer far more than a major city buried under modern habitation. Thus, we have on the one hand Hippos (also known as Sussita), a small, 8.6 hectare Decapolitan city not far from the Sea of Galilee, with numerous ‘urban’ buildings, including a colonnaded street and a decorative gate, and on the other, there is Laodicea ad Mare, for which there are suggestions, based on the layout of the city in the 1930s, that the old town stretched over 170 hectares, up to perhaps 220 hectares; but for the rest of its built environment we are dependent on a handful of literary references giving us a smaller and less varied building profile than Hippos.¹³ Therefore, such numerical information should be seen as an indicator, hinting at an urban status and differences in settlement complexity, but firmly within its specific context.

Functional approaches to ‘urban-ness’

In the Roman Near East, some types of ‘urban’ buildings are found exclusively in settlements which are known to have been self-governing cities. Examples include colonnaded streets, city walls and decorative arches. Other types of public buildings, such as temples, have also been detected in settlements which were ‘subordinate’ from a juridical and administrative point of view. Up to a point, the spatial distribution of temples confirms the importance of the distinction between self-governing cities and subordinate settlements. In terms of scale, none of the sanctuaries which have been found outside self-governing cities match the huge temples of

¹² Stephan G. Schmid, ‘Foucault and the Nabataeans - or What Space Has to Do with It’, in *Men on the Rocks: The Formation of Nabataean Petra*, ed. Michel Mouton and Stephan G. Schmid, Supplement to the Bulletin of Nabataean Studies 1 (Berlin: Logos Verlag, 2013), 261–65.

¹³ Jean Sauvaget, R. P. R. Mousterde, and R. P. B. Mousterde, ‘Le Plan de Laodicée-Sur-Mer’, *Bulletin d'études Orientales* 4 (1934): 81–116. Even more so, Edessa and Akko stand out as cities with very little information on their built environment, while being major cities in this period.

Heliopolis or Jerusalem; and in terms of numbers of sanctuaries, not a single subordinate agglomeration was a match for the city of Gaza, which counted no fewer than eight temples at the end of the fourth century.¹⁴ Nonetheless the presence of at least certain types of public buildings in settlements which were not self-governing cities highlights an important drawback of approaches based on juridical distinctions.

A close examination of the various economic functions performed by settlements belonging to different juridical categories also suggests that the dichotomy between self-governing cities and secondary or subordinate agglomerations does not do justice to the complexity of the settlement systems of past societies. In a series of important publications dealing with the 'small towns' of early-modern Europe, Peter Clark has shown that in various regions even settlements with fewer than 500 inhabitants often housed up to twenty non-agricultural occupations.¹⁵ In the field of Roman archaeology the past 50 years have seen a huge upsurge in publications dealing with the 'small towns' of Roman Britain.¹⁶ Simultaneously, French archaeologists have drawn attention to the crucial importance of 'secondary agglomerations' as centres of production and trade in Roman Gaul.¹⁷ In recent years this type of research has been extended to other parts of the empire where self-governing cities were thinly spread, such as parts of Roman North Italy.¹⁸

In the case of Roman Syria, Palestine, Arabia and North Mesopotamia, research into the secondary agglomerations of the Roman Imperial period is still in its infancy, making it difficult to achieve a functional understanding of the regional urban systems of this vast region. The main exceptions are the Decapolis of western Jordan and the vast territory of Antioch-on-the-Orontes.

¹⁴ *Vita Porph.*, trans. G.F. Hill (Oxford, 1913).

¹⁵ Peter Clark, *Small Towns in Early Modern Europe*, Themes in International Urban History (Cambridge: Cambridge University Press, 1995).

¹⁶ Malcolm Todd, 'The Small Towns of Roman Britain', *Britannia* 1 (1970): 114–30; Richard Reece, 'Town and Country: The End of Roman Britain', *World Archaeology* 12, no. 1 (1980): 77–92; Barry C. Burnham and John Stewart Wachter, *The Small Towns of Roman Britain* (Univ of California Press, 1990); Alexander Smith et al., *The Rural Settlement of Roman Britain* (Society for the Promotion of Roman Studies London, 2016).

¹⁷ See for instance Patrick Le Roux, 'Vicus et Castellum en Lusitanie sous l'empire', 1993 1992, <https://gredos.usal.es/handle/10366/73272>; Michel Tarpin, 'Vici et agglomérations secondaires : quelques faux problèmes / Vici and secondary agglomerations : some non-issues', *Supplément à la Revue archéologique du centre de la France* 42, no. 1 (2012): 177–82; Florian Baret, 'Les Agglomérations "Secondaires" Gallo-Romaines Dans Le Massif Central : (Cités Des Arvernes, Vellaves, Gabales, Rutenes, Cadurques et Lémovices), 1er Siècle Avant J.-C. - Ve Siècle Après J.-C.' (These de doctorat, Clermont-Ferrand 2, 2015), <https://www.theses.fr/2015CLF20003>; For an up to date discussion, see Frida Pellegrino, 'The Urbanization of the North-Western Provinces of the Roman Empire: A Juridical and Functional Approach to Town Life in Roman Gaul, Germania Inferior and Britain' (Ph.D., Leiden, Leiden University, 2018).

¹⁸ Marco Maiuro, 'Northern Italy: Urbanization, Demography, Agrarian Output', in *Popolazione e Risorse Nell'Italia Del Nord Dalla Romanizzazione Ai Longobardi*, ed. Elio Lo Cascio and Marco Maiuro (Edipuglia, 2017), 116–24.

In an important survey of the villages of the Decapolis, MacAdam (1983) discussed the epigraphic evidence referring to occupations. Alongside farmers we encounter builders, a sculptor, two goldsmiths, two surgeons, a teacher and a tutor. Interestingly, many former members of urban city-councils (*bouleutai*) also lived in these villages, demonstrating that many members of the political and social elites of this particular region did not live in the central cities.¹⁹ The urban system of the Decapolis will be discussed in Chapter 2.

The only other area of the Roman Near East that provides sufficient evidence to allow an in-depth study of the spatial distribution of secondary settlement over a large area is the territory of Antioch. Between 1932 and 1938 large parts of the territory of this city were surveyed by Robert Braidwood and his team. In the 1950s Georges Tchalenko carried out an ambitious project aimed at mapping and interpreting the standing remains of the numerous villages of the Massif Calcaire in the eastern part of Antioch's administrative hinterland. Finally, large amounts of new information relating to the settlement patterns of the region were revealed by the Amuq Valley Regional Projects carried out by a large team of American, British and Turkish archaeologists in the 1990s. The regional settlement patterns that emerge from these high-quality publications will be discussed in Chapter 3.

Quantitative approaches to Roman urbanism

Besides juridical status and economic function, we are left with population size as the final major criterion to qualify a settlement as 'urban'. This element is also critical for defining regional urban hierarchies.

In an influential article published in 1938, the American sociologist Louis Wirth identified permanence, settlement size, population size and density and a heterogeneous demographic make-up as essential factors in making up a city²⁰, but he went on to emphasize that 'these criteria must be seen as relative to the general cultural context in which cities arise and exist and are sociologically relevant only in so far as they operate as conditional factors in social life.'²¹

In his ambitious monograph on the history of urbanism in the pre-modern and contemporary world, Paul Bairoch argued that the only criterion to measure 'urbanism' that is applicable to all cities in all periods is population size. He suggests that when dealing with pre-modern societies those settlements which had 5,000 or more inhabitants may reasonably be regarded as 'urban',

¹⁹ Henry Mac Adam, 'Epigraphy and Village Life in Southern Syria during the Roman and Early Byzantine Periods', *Berytus: Archaeological Studies*, no. 31 (1983): 103–16.

²⁰ Louis Wirth, 'Urbanism as a Way of Life', *American Journal of Sociology* 44, no. 1 (1938): 1–24.

²¹ Wirth, 6.

although he hastens to add that applying this threshold uncritically to pre-modern or early-modern societies is bound to result in a misleading view of ‘urbanism’ in many historical periods.²²

In a recent article Jose Lobo, Louis Bettencourt, Michael Smith and Scott Ortman define a city as ‘a network of social interaction embedded in space’.²³ This approach has the potential of becoming a valuable tool in comparing aggregate, average urbanism between different periods. Nonetheless some problems remain. If cities are essentially nodes in ‘networks of social interaction’, attempts to draw the boundaries of a particular city can easily be called into question, especially in the case of the huge metropolitan areas of the modern world. According to Marchetti and Pumain the ‘space around built-up infrastructure (homes, roads, workplaces, shops), which can be traversed within about a day’s movement effort’ may be regarded as representing the maximum size of a city.²⁴

Even in the Roman Imperial period it was not always easy to determine the external boundaries of particular cities. In the early first century AD the city of Rome consisted of a walled nucleus covering c. 426 hectares and numerous suburbs covering a much larger area. According to Dionysius of Halicarnassus (AT IV.13): “If anyone wishes to estimate the size of Rome by looking at these suburbs he will necessarily be misled for want of a definite clue by which to determine up to what point it is still the city and where it ceases to be the city; so closely is the city connected with the country, giving the beholder the impression of a city stretching out indefinitely.” In Roman Syria the city of Antioch also consisted of walled nucleus and extensive suburbs, making it difficult to establish the boundaries of the built-up area (Chapter 4). Many other cities of the Roman Near East were protected by town walls and did not have extensive suburbs. It is often assumed that the walled areas of these cities were entirely built up, but there is some evidence to suggest that this was not always the case. In the case of unwalled cities and towns the approximate extent of the built-up area can often be estimated with a reasonable degree of confidence, but in at least some cases the archaeological evidence is insufficient. In this context it must be remembered that archaeological research has often targeted the most important settlements, leaving us with relatively little information on smaller cities and towns.

²² Paul Bairoch, *Cities and Economic Development: From the Dawn of History to the Present* (University of Chicago Press, 1991), 217.

²³ Jose Lobo et al., ‘Settlement Scaling Theory: Bridging the Study of Ancient and Contemporary Urban Systems’, *Urban Studies* 57, no. 4 (2020): 5.

²⁴ C. Marchetti, ‘Anthropological Invariants in Travel Behavior’, *Technological Forecasting and Social Change* 47, no. 1 (September 1994): 75–88, [https://doi.org/10.1016/0040-1625\(94\)90041-8](https://doi.org/10.1016/0040-1625(94)90041-8); Denise Pumain, ‘Pour une théorie évolutive des villes’, *L'Espace géographique* 26, no. 2 (1997): 119–34, <https://doi.org/10.3406/spgeo.1997.1063>; Denise Pumain, ‘Settlement Systems in the Evolution’, *Geografiska Annaler. Series B, Human Geography* 82, no. 2 (2000): 73–87.

Another significant problem concerns the relationship between settlement size and the size of urban populations. Attempts to define cities using quantitative criteria tend to focus on demographic thresholds which have to be met in order for settlements to qualify as 'urban'. It is also possible to discern a general consensus that the thresholds for 'urban-ness' should be set lower for the cities of the distant past than for the contemporary world. However, the surviving written sources relating to the Roman empire contain very few clues which can be used as a basis for reliable urban population estimates. On his tombstone a soldier who died in the early first century C.E. reported that "I also on the order of Quirinius took the census at the *civitas* of Apamea with 117,000 people (or 'men?') of citizen status". The expression "people of citizen status" is usually taken as referring to the entire free population, including women and children. Regardless of the merits of this reading, the figure of 117,000 must refer to the number of "people of citizen status" living in the entire *civitas* rather than to the number of town-dwellers. Since the phrase "people of citizen status" does not cover non-citizens, slaves and nomads, the total population living in Apamea's administrative territory must have exceed 117,000 by a considerable margin. Archaeologically this piece of information can be compared to the size of the area enclosed by the city walls of Apamea which has been estimated as c. 250 hectares. If average urban population density stood at 200 inhabitants per hectare and if the total population was as high as 200,000, approximately one quarter of the population would have lived in the central city. This outcome does not look implausible, but it remains the case that the urban population density and the size of the total population of Apamea and its territory are entirely conjectural.²⁵ In any case we are dealing with a snapshot which need not be valid for the late second or early third century C.E., nor for other cities.

The lack of reliable population figures creates some further methodological difficulties. As noted at the beginning of this chapter, one of the aims of this book is to contribute to debates regarding levels of economic integration in the Roman empire by trying to establish if all, or most, cities within the research area could be sustained by the food supplied by their own administrative territories. Having reliable population estimates for the largest cities of the various regions would certainly facilitate the realisation of this aim. In the absence of such estimates, we will have to work with flexible estimates, obtained by combining estimates for the size of the built-up urban area with hypothetical urban population density figures. Similarly, it will be impossible for us to assess levels of economic integration by drawing rank-size graphs based on population figures. Instead, we will have to make do with rank-size graphs showing hierarchical relationships between cities with large built-up areas and smaller cities occupying a lower number of

²⁵ And, in light of what follows, these estimates are on the high side. In addition, we do not know if the entire space enclosed by the town walls was occupied by domestic and/or public buildings.

hectares. Since population densities are unlikely to have been uniform across the settlement spectrum, we can be certain that the hierarchical relationships revealed by our graphs are less than 100 per cent accurate. If reliable population figures were available, they would probably show urban population densities to have been higher in the largest cities. In other words, the urban hierarchies which existed in our research area were probably steeper than shown by our graphs. In the absence of detailed archaeological information about building densities, building heights and numbers of rooms per domestic unit, it will be difficult to obtain a more detailed picture of settlement hierarchies in the Roman Near East, and even a spectacular increase in the amount of information regarding urban dwellings or entire urban quarters will only reduce uncertainties without eliminating them.

Some observations in existing publications regarding the urban systems of the Roman Near East

The foundations for a comprehensive approach to urbanism in the Roman Near East were laid in A.H.M. Jones's pioneering study *The Cities of the Eastern Roman Provinces*, the first edition of which appeared in 1937. The Appendices concluding this superb monograph list 85 settlements which certainly had the juridical status of 'city' around 250 C.E. If three settlements which may have been promoted to city status before 250 C.E. are added to this list, this basic figure rises to 88.²⁶ If the ten central towns or villages of the toparchies of Syria Palaestina and Syria Phoenice are also accepted as 'cities', we end up with a total of 98 self-governing urban units in our research area. During the fifty years which followed the appearance of the second edition of this seminal study, in 1971, some of the identifications proposed by Jones have been challenged, and so have some of the dates at which he thought various settlements were promoted to urban status. It must, however, be emphasized that none of the revisions that have been proposed undermine Jones's overall reconstruction of the urban systems of the eastern provinces of the empire.

In his 1937 monograph Jones made some acute observations about the relative importance of the urban centres of particular provinces. Thus Caesarea, Eleutheropolis, Neapolis, Gaza and Ascalon are singled out as the most important cities of the late-Roman province of Palaestina I,²⁷ whereas Emmaus-Nicopolis is described as small.²⁸ Jones did not, however, make any attempt, to estimate the sizes of the walled areas, or the inhabited quarters, of the self-governing cities of

²⁶ Maurice Sartre, *D'Alexandre à Zénobie : Histoire Du Levant Antique : IVe Siècle Avant J.-C.-IIIe Siècle Après J.-C* (Paris: Fayard, 2001), 167 suggests that Elusa, Mapsis and Birosaba (all in the province of Arabia) might have been promoted to city status in the second century CE. .

²⁷ Jones, *The Cities of the Eastern Roman Provinces*, 279.

²⁸ Jones, *The Cities of the Eastern Roman Provinces*.

the Roman Near East. The first scholar to attempt such a quantitative approach seems to have been Josiah Cox Russell. In an article which appeared in 1958, he provides estimates for the size of the walled or built-up areas of eleven important cities of Roman Syria, including Antioch, Apamea, Tyre, Sidon and Jerusalem.²⁹ While some of Russell's figures are wildly inaccurate, such as the estimate of 1,750-2,100 hectares for the area enclosed by the walls of Antioch-on-the-Orontes, most of his estimates are at least of the right order of magnitude. On any view, his attempt to put some flesh on vague assertions regarding the importance of various cities of the Roman empire can only be described as ground-breaking.

During the 65 years which have passed since the publication of Russell's survey, our understanding of the quantitative aspects of urbanism in the eastern provinces of the Roman empire has been hugely advanced as a result of countless archaeological campaigns carried out in Syria, Lebanon, Israel, Jordan and Iraq. Since estimates for the sizes of many Roman cities which were situated within this vast area have been published in large numbers of excavation reports or articles dealing with individual cities, it is by no means easy to obtain a synthetic view of urbanism in the Roman Near East. In the case of Roman Palestine, the Israeli archaeologist Magen Broshi provided estimates for six cities or towns which were located in the Negev and 26 further cities which were situated in the modern state of Israel, the Gaza strip or on the West Bank.³⁰ His main chronological focus was the late Roman and early Byzantine period, and not all of the 32 cities and towns covered by his survey were autonomous urban units in the mid-third century C.E., but that does not detract from the immense value of this ambitious overview.

Fewer attempts have been made to collect area estimates for the Roman cities of present-day Lebanon, Syria and northern Iraq. Grainger (1990) surveyed some of the evidence for the size of towns in Syria founded by the Seleucid kings, but did not always trace the expansion of towns in later times. Some further data are found in Maurice Sartre's book on the Roman Near East (Sartre 2005) and in Getzel Cohen's book on the Hellenistic settlements in Syria, the Red Sea Basin and North Africa (Cohen 2006).

In a recent monograph on the urban geography of the Roman empire, Jack Hanson has tried to achieve a comprehensive reconstruction of urbanism in the Roman Near East by combining Broshi's estimates with those of Cohen.³¹ The most important novelty of his discussion is the inclusion of lists of public buildings. Unfortunately, Hanson's decision to rely on existing

²⁹ J. C. Russell, 'Late Ancient and Medieval Population', *Transactions of the American Philosophical Society* 48, no. 3 (1958): 82, <https://doi.org/10.2307/1005708>.

³⁰ Magen Broshi, 'The Population of Western Palestine in the Roman-Byzantine Period', *Bulletin of the American Schools of Oriental Research*, no. 236 (1 October 1979): 1-10.

³¹ Between them, Broshi and Cohen provide estimates for 46 cities of the Roman Near East, corresponding to about half of the total number of official cities. J. W. Hanson, *An Urban Geography of the Roman World, 100 BC to AD 300* (Oxford, United Kingdom: Archaeopress, 2016).

synthetic studies rather than on publications dealing with individual cities means that some of his estimates take no account of recent discoveries. For example, Hanson's estimate for the size of the area occupied by Roman Jerusalem is 186 hectares (Hanson 2016, 774). This figure recalls Avi-Yonah's estimate of 180 hectares for the size of the area enclosed by the 'Third Wall' of early-imperial Jerusalem (Avi-Yonah, 'The third and second walls of Jerusalem', p. 121). There are, however, two problems with this high figure. The first of these is that Avi-Yonah's estimate depends on the identification of the 'Third Wall' with the so-called Sukenik-Mayer wall. In a recent article Ronny Reich has argued that the 'Third Wall' coincided with the northern section of the Ottoman wall (Reich, 'A note on the population size of Jerusalem in the Second Temple Period,' RB 121-122 (2014), 298-305). If this revisionist view is accepted, the city of Jerusalem would have covered no more than 103.5 hectares in the first half of the first century C.E. More importantly, however, Hanson fails to provide a separate estimate for the period following the establishment of the Roman colony of Aelia Capitolina by Hadrian. According to the most recent estimates, the size of the area occupied by Aelia Capitolina did not exceed 75 hectares. This area included the areas occupied by the Temple Mount (14 hectares) and the camp of the Tenth Legion. It follows from these figures that Aelia Capitolina was a modestly-sized city.

The lesson to be learned is that the only way to arrive at a more or less reliable reconstruction of the quantitative dimensions of urbanism in the provinces of Osrhoene, Coele Syria, Syria Phoenice, Syria Palaestina and Arabia is to go through as many publications as possible, dealing with each individual city of our vast research area, including all publications which have appeared after the publication of Broshi's and Cohen's surveys.

Defining the study area

Cities can only exist where natural conditions allow it, or where people have had the possibility to ameliorate these conditions. In large parts of the Roman Empire, the environment posed relatively few hindrances to the existence of urban communities, with sufficient access to buildable space, cultivable land and/or other sources of food, drinking water and building materials. In the Near East, however, such environmental factors have always played a more limiting role in the viability of cities. After a general outline of the geography of the Near East, the focus in this section will shift to the agricultural potential of the region, and therefore to



Figure 1 Study area

water resources, the most critical environmental factor in this area.³² As such, this section will give a brief overview of the core areas of the region that could support urban communities, before turning to the marginal zones where cities existed only with the aid of specific coping strategies, or not at all.

The study area (Figure 1) encompasses those parts of what is generally called the Middle East that were or had been under Roman control throughout the second and third centuries C.E., not including the Roman provinces of Egypt, Asia Minor (more or less covering the Anatolian Plateau) and Commagene, the area between the south-eastern Taurus range (Güneydoğu Toroslar) and the Euphrates River. In the southwest, the study region ends with the Sinai desert, up to the Suez Gulf and the eastern edge of the Nile Delta. The north-eastern limit of the region is formed by the Amanos Mountains (Nur Dağları) and the Euphrates River at the height of Zeugma. South of Greater Armenia, despite Trajan's campaigns, there was no lasting Roman influence beyond the Tigris. Between the rivers the Roman sphere of influence only extended over the Jazīrah, the northern part of Mesopotamia, after the campaigns by Lucius Verus. This thesis follows the provincial organisation under the Severans in the late second century and early third century, including Osrhoene. Hence, Syria is divided into Syria Coele and Syria Phoenice. Judea was known as Syria Palaestina from 135 C.E. onwards.

In the southeast, the extent of Roman influence is less clear, as is more often the case with desert frontiers. While it appears that a Roman military base was established as far into the Red Sea as the Farasan Islands, given the focus on urban-like settlements,³³ this study takes Hegra (Madā'in Šāliḥ in the Ḥijāz) as its south-eastern boundary.

³² Eugen Wirth, *Syrien: eine geographische Landeskunde*, Wissenschaftliche Länderkunden ; Bd. 4/5. 820826057 (Darmstadt: Wissenschaftliche Buchgesellschaft, 1971), 88–93.

³³ Michael Alexander Speidel, 'Ausserhalb des Reiches? Zu neuen lateinischen Inschriften aus Saudi-Arabien und zur Ausdehnung der römischen Herrschaft am Roten Meer', in *Heer und Herrschaft im Römischen Reich der Hohen Kaiserzeit*, ed. Michael Alexander Speidel (Stuttgart, 2009), 633–49; Michael Alexander Speidel, 'Almaqah in Rom? Epigraphisches zu den römisch-sabäischen Beziehungen in der Hohen Kaiserzeit', *Zeitschrift für Papyrologie und Epigraphik* 194 (2015): 241–58.

Physical geography

The area under study is a complex region covering several continental plate boundaries. A very marked feature of the region is the Levant Rift (or Dead Sea Fault) system between the African and Arabian Plates, continuing from the Red Sea Rift in the south. The most distinct results of this are the Dead Sea and the Jordan Rift Valley, with the lowest point at 790 m below sea level in the Dead Sea basin.³⁴ The southern part of the Levantine Rift also includes the Eilat (or 'Aqaba) and 'Araba rifts and the Beit She'an, Kinneret and Hula basins.³⁵ Continuing up to the Eastern Anatolian Fault – which divides the Anatolian Plate from the African and Arabian Plates – the Levant Rift also includes the Lebanese Splay Fault and the El Gharb-Kara Su Rift in the north, also known as the Orontes or El Ghab Rift.³⁶

The rift valleys and basins are flanked by a series of mountainous features (Figure 3 and Figure 4): the Judean highlands west of the Dead Sea, and on the eastern side the Northern and Southern Jordan Highlands and the Ḥawrān, including the Golan

Heights and the Jebel Arab or Jebel ed-Druze. Along the El Gharb Rift lie the Syrian Coastal

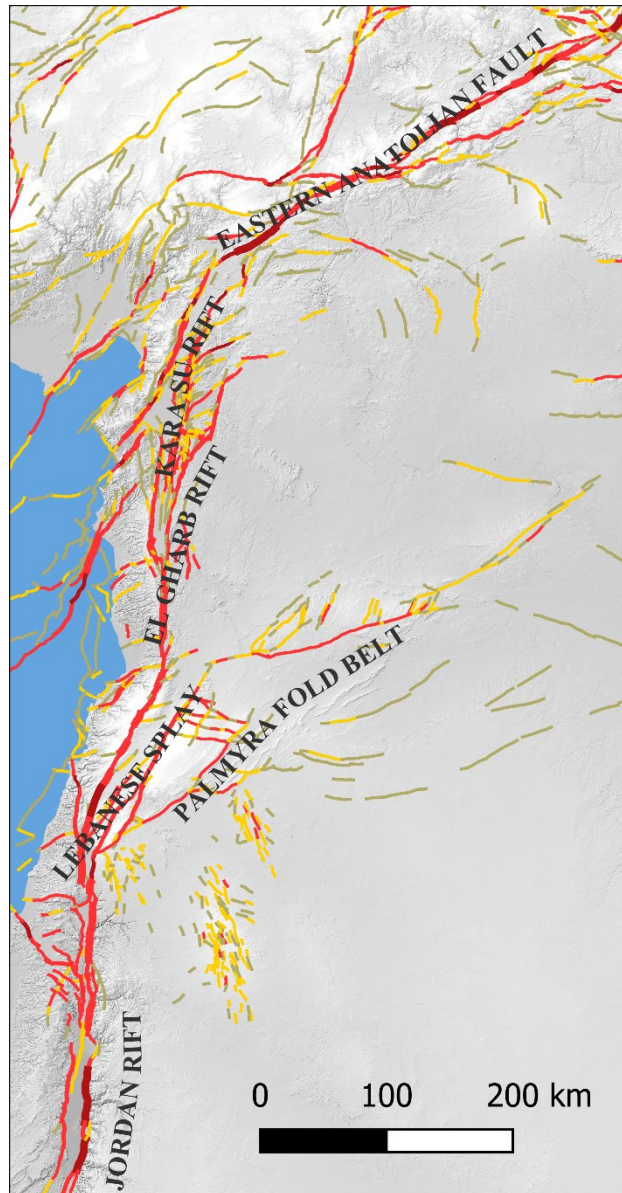


Figure 2 Main structural elements along the Levant Rift system (after Mart, Ryan and Lunina 2005)

³⁴ Peter Beaumont, Gerald H. Blake, and John Malcolm Wagstaff, *The Middle East : A Geographical Study* (London etc: Wiley, 1976), 407; Yossi Mart, William B. F. Ryan, and Oxana V. Lunina, 'Review of the Tectonics of the Levant Rift System: The Structural Significance of Oblique Continental Breakup', *Tectonophysics* 395, no. 3–4 (20 January 2005): 213, <https://doi.org/10.1016/j.tecto.2004.09.007>.

³⁵ Mart, Ryan, and Lunina, 'Review of the Tectonics of the Levant Rift System', 213–15.

³⁶ Mart, Ryan, and Lunina, 213.

Mountain Range, in antiquity known as Bargylus³⁷ (also known as Ansariyeh or Jibāl an-Nuṣayriyah) and on the opposite side the mountains of the Limestone Massif, including Jabal az-Zāwiya and the Ḥārim mountains: al ‘Alā, al Waṣṭānī, Dwēli and Bārīshā.³⁸ It becomes somewhat more complicated around the Amik Basin (the plain of Antioch or ‘Amuq plain) where the El Gharb Rift meets the Kara Su Rift, running from the Antakya-. Here the Jabal al-‘Aqra’ (Mount Saphon or Casius) lies in the south between the Antakya-Samandag Corridor and the El Gharb Rift. The Kürd Dağı and Jabal Sem‘ān lie to the east, and the aforementioned Amanos Mountains (Nur Dağları) lie to the west, continuing along the Kara Su valley up to the Eastern Anatolian Fault.³⁹ In the middle, the faults of the Lebanese Splay form the Lebanon and Anti-Lebanon Mountains, with several valleys in between, the largest being the Beqaa valley.⁴⁰ East of this, running northeast from Jabal Qāsiyūn at Damascus, the Palmyra Fold Belt forms the Palmyredes Chain (or ‘third Kalamun ridge’).⁴¹ From Laodicea south to Acco, only a relatively narrow coastal strip lies between the Mediterranean and the highlands on the western flank of the Rift Valley.

As these are active faults, the region experiences a high level of seismic activity.⁴² Severe earthquakes have been known throughout human history in the region, and in a number of cases the destruction and subsequent abandonment of settlements has been linked to seismic events.⁴³ A particularly destructive earthquake took place during the study period, apparently destroying large parts of the cities of northern Syria, including Antioch and Apamea. Another heavy earthquake hit in 363 C.E., with several more following.⁴⁴

³⁷ Richard J. A. Talbert, *Barrington Atlas of the Greek and Roman World. Map-by-Map Directory* (Princeton, NJ etc: Princeton University Press, 2000), 1044.

³⁸ Mart, Ryan, and Lunina, ‘Review of the Tectonics of the Levant Rift System’, 215; Carlos E. Cordova, *Millennial Landscape Change in Jordan: Geoarchaeology and Cultural Ecology* (University of Arizona Press, 2007), 63–64.

³⁹ Margreet L. Steiner and Ann E. Killebrew, *The Oxford Handbook of the Archaeology of the Levant: C. 8000-332 BCE* (OUP Oxford, 2014), 11–12; Volkan Karabacak and Erhan Altunel, ‘Evolution of the Northern Dead Sea Fault Zone in Southern Turkey’, *Journal of Geodynamics*, SI : Tethyan Evolution and Active Tectonics in Anatolia dedicated in honour of Prof. Dr. Ali Koçyiğit’s retirement, 65 (April 2013): 284–86, <https://doi.org/10.1016/j.jog.2012.04.012>.

⁴⁰ Mart, Ryan, and Lunina, ‘Review of the Tectonics of the Levant Rift System’, 221–22.

⁴¹ Kenneth Mason and J. W. Crowfoot, *Syria : April 1943*, Geographical Handbook Series ; B.R. 513 852813198 (Oxford: Naval Intelligence Division, 1943), 23–25.

⁴² Beaumont, Blake, and Wagstaff, *The Middle East*, 25–26.

⁴³ M. R. Sbeinati, R. Darawchah, and M. Mouty, ‘The Historical Earthquakes of Syria: An Analysis of Large and Moderate Earthquakes from 1365 BC to 1900 AD’, *Annals of Geophysics*, 2005; Mustapha Meghraoui et al., ‘Evidence for 830 Years of Seismic Quiescence from Palaeoseismology, Archaeoseismology and Historical Seismicity along the Dead Sea Fault in Syria’, *Earth and Planetary Science Letters* 210, no. 1–2 (15 May 2003): 35–52, [https://doi.org/10.1016/S0012-821X\(03\)00144-4](https://doi.org/10.1016/S0012-821X(03)00144-4).

⁴⁴ Kenneth W. Russell, ‘The Earthquake Chronology of Palestine and Northwest Arabia from the 2nd Through the Mid-8th Century A. D.’, *Bulletin of the American Schools of Oriental Research*, no. 260 (1985): 37–59, <https://doi.org/10.2307/1356863>; Sbeinati, Darawchah, and Mouty, ‘The Historical Earthquakes of Syria: An Analysis of Large and Moderate Earthquakes from 1365 BC to 1900 AD’.

There are relatively few perennial rivers in the Near East (Figure 3 and Figure 4). Their value for the region lies not just in their being a source of fresh water, but also in their function as communication pathways. While only very few Near Eastern rivers are navigable, their valleys often function as routes for communication and troop movement overland. Of these rivers, the three best known are the Euphrates, Tigris and Jordan. Both Euphrates and Tigris originate in north-eastern Turkey, flowing separately through the plains to the southeast before merging as



Figure 3 Rivers and mountain ranges Northern Levant

the Shatt al-Arab and emptying into the Persian Gulf. The land in between the rivers is known as Mesopotamia. On the western bank of the Euphrates, the only perennial tributary of this river is the Sajur, flowing from the surroundings of Gaziantep. On the eastern bank, in the Jazīrah, the two tributaries are the Balikh and the al-Khābūr (Balissus and Chaboras).⁴⁵ A large number of wadis – intermittent seasonal streams – cross the Jazīrah and empty either into the major rivers as well, or, like the Wadi Tharthar and Wadi Ajij originating in the Sinjar mountains, empty into salt depressions.⁴⁶

The Euphrates is only navigable downstream. The Shatt al-Arab and the Tigris are navigable up to Baghdad, but between Baghdad and Mosul only between December and May with boats of limited draught. The rest of the year this part, as well as the rest of the river beyond Mosul throughout the whole year, is only navigable downstream in rafts, with the upper stretch being particularly difficult to navigate.⁴⁷



Figure 4 Geography southern Levant

⁴⁵ Mason and Crowfoot, *Syria*, 34–35.

⁴⁶ Kenneth Mason, *Iraq and the Persian Gulf*, Geographical Handbook Series 852813198 (London: Naval Intelligence Division, 1944), 77–78, 81.

⁴⁷ Mason and Crowfoot, *Syria*, 36; Mason, *Iraq and the Persian Gulf*, 41, 559.



Figure 5 Detail of Chrysorroas and Eleutheros

To the west, the Nahr ed Dahab (generally identified as the ancient Dardas) runs south from Turkey to empty in the Sabkhat al-Jabbūl salt lake, as do several wadis. Further west the Quwayq (or Queiq, in antiquity the Belus) rises in the Kürd Dağı and runs south, east of the Jabal Sem‘ān and past ancient Chalcis and Aleppo, to drain in the Madkh (Möfti Göl) salt marshes. Like the Jabbūl Lake, these were used in antiquity for salt extraction.⁴⁸

⁴⁸ Mason and Crowfoot, *Syria*, 25, 49; Kevin Butcher, *Roman Syria and the Near East* (J. Paul Getty Museum, 2004), 179.

Flowing from the valley between the Lebanon and Anti-Lebanon, the Nahr al 'Āṣī, the ancient Orontes, runs northwards through the aforementioned northern stretch of the Levant Rift Valley to the plain of Antioch, where it is joined by the Kara Su and Afrin rivers (Labotas and Oinoparas) flowing in from the north. At that point, the river makes a bend towards the southwest, passing Antioch and emptying into the Mediterranean. In antiquity it was navigable at least up to Antioch, and quite probably further upstream as well, aided by canals dug in the Roman period.⁴⁹

The coastal plains from Laodicea all the way south to Azotos (Lakhish) have a large number of smaller rivers emptying into the Mediterranean, both perennial and seasonal, springing from the Bargylus and Lebanon ranges or the central highlands. Of these, the northern and southern al-Kebir rivers are of note, as their valleys form the main passageways around the Bargylus. The valley of the northern Nahr al-Kebir (ancient Chrysorroas, Figure 5) opens the route from Latakia to Aleppo, the southern Nahr al-Kebir (the Eleutheros) passes through the Homs Gap and opens the route from Tripoli to Homs; it runs through the largest coastal plain along the northern coast.⁵⁰ Next, the Nahr al-Liṭānī (ancient Litas)⁵¹ rises like the Orontes in the Beqaa valley close to Baalbek, and flows south towards Tyre.

The Jordan is the major river of the southern Levant, running south through the Jordan Rift Valley and emptying into the Dead Sea. It has several tributaries, the larger ones in the north being the Hasbani and Banias rivers, and further south the Zarqa (Iabakchos), rising near Philadelphia, and the Yarmuk (Hieromyces), fed by several wadis throughout the Hauran.⁵² Further south, the Wadi Mujib (Arnon) and Wadi Hasa cut through and divide the Jordan highlands to empty into the Dead Sea.

Of final note are the oases in the southeast. The Ghuta Oasis at Damascus is fed by the Barada, ancient Chrysoroas, and the A'waj (Pharphar), providing a fertile and well-watered agricultural area for this city.⁵³ The Al-Jafr and Azraq Oases lie in the centre of large drainage basins in the desert, and while the water provided by them may not have supported significant settlements, they were natural watering stops for travel through the region. The Azraq Oasis lay at the head of the Wadi Sirhan, the route towards the next great oasis to the southeast. It was apparently

⁴⁹ Jesse J. Casana, 'From Alalakh to Antioch: Settlement, Land Use, and Environmental Change in the Amuq Valley of Southern Turkey' (Ph.D., United States -- Illinois, The University of Chicago, 2003), 299.

⁵⁰ Mason and Crowfoot, *Syria*, 14–19, 63.

⁵¹ Talbert, *Barrington Atlas of the Greek and Roman World. Map-by-Map Directory*, 1064.

⁵² Talbert, 1062.

⁵³ Talbert, 1060, 1065; Butcher, *Roman Syria and the Near East*, 13.

considered of enough importance that under the Severans a permanent military fort was built at this oasis, connected by a road with the city of Bostra.⁵⁴

Rainfall (Figure 6)

Unless constantly and reliably provided with foodstuffs from more distant areas, cities can only exist where their own hinterland offers the necessary provisions. The ‘fertile crescent’ is an apt description of the limited zone in the Middle East where agriculture is possible, bordering the uncultivable steppes and deserts of the Arabian Plateau. As stated, water is the most limiting factor in the Near East. Rainfed cultivation of wheat requires a minimum of 250 mm of rainfall per year for the crops to survive, barley needs 200 mm, and olive tree cultivation 300 to 500 mm per year.⁵⁵ While there are considerable issues estimating the carrying capacity of a landscape based on crop yields⁵⁶, it is obvious that where there is no yield at all, no significant population can be sustained without outside influences.

Figure 6 shows the relevant isohyets of the mean annual rainfall over 50 years from 1950 to 2000 based on the WorldClim dataset.⁵⁷ Clearly, large parts of the region can be classified as arid zones, with rainfall below 150 mm per year. Moisture-laden western winds blow in from the Mediterranean, but a significant portion of their rains fall on the western slopes of the coastal ranges and the Lebanon and Anti-Lebanon mountains. The western areas thus receive considerable amounts of rain, with over 1000 mm per year in the northwest around Antioch. At some points, the contrast is very sharp: for instance, the Jordan Valley and the Dead Sea lie in the rain-shadow of the Judean highlands and see only very little precipitation.⁵⁸

⁵⁴ David Kennedy, *The Roman Army in Jordan*, 2nd rev. ed.. (London: Council for British Research in the Levant, 2004), 31, 35, 50, 56–78, 174.

⁵⁵ Cordova, *Millennial Landscape Change in Jordan*, 64–67; Wirth, *Syrien*, 92.

⁵⁶ As will be discussed in Chapter 3.

⁵⁷ See Robert J. Hijmans et al., ‘Very High Resolution Interpolated Climate Surfaces for Global Land Areas’, *International Journal of Climatology* 25, no. 15 (1 December 2005): 1965–78, <https://doi.org/10.1002/joc.1276>.

⁵⁸ Werner Nützel, *Einführung in die Geo-Archäologie des Vorderen Orients* (Wiesbaden: Reichert, 2004).

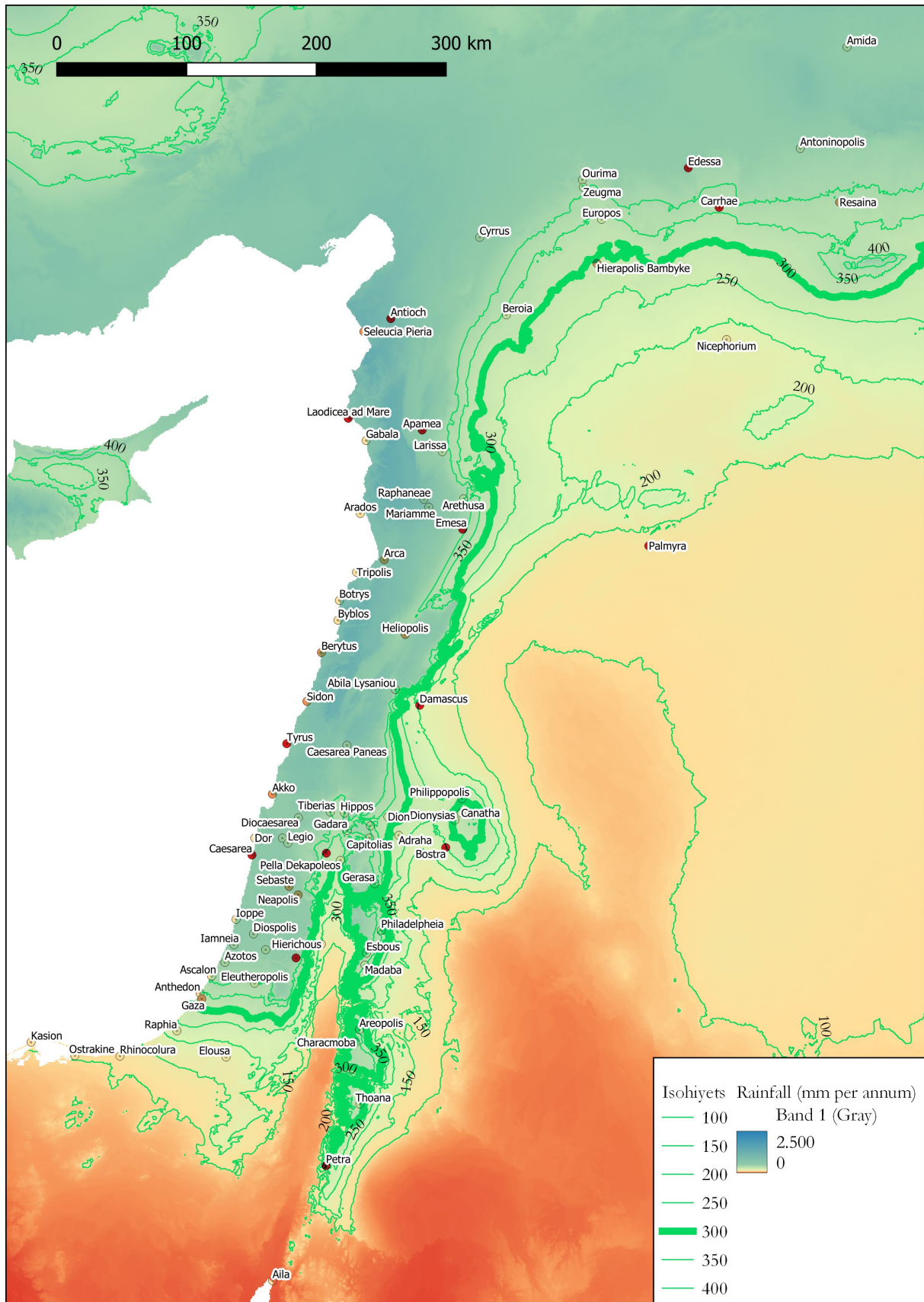


Figure 6 Rainfall in the Levant

However, several other factors come into play. Both in the wetter zone and in the drier eastern parts, over 70% of all precipitation is limited to the winter months, December to February. It is therefore also important to what degree the soil can retain water.⁵⁹ Secondly, high temperatures cause high levels of potential evapotranspiration, further exacerbating the already limited rainfall. Thirdly, the levels of rainfall are highly variable between different years, with the impact of inter-annual variation most pronounced in the drier areas, as the threshold of potential evaporation remains similar. As Wirth described for Syria, in the dry years of 1957 to 1961 the minimum rainfall border for wheat cultivation shifted significantly, coinciding more closely with the 400 mm long-term average isohyet. This dry period has been surpassed in duration as well as aridity in the recent drought from 1998 to 2012, described as the worst in the past 900 years.⁶⁰ In broad lines, the 400 mm isohyet gives the border of reliable rainfall for agriculture; beyond it lies what Nützel calls a 'theoretical no-man's land'.⁶¹ In practice, however, and this was indicated by Wirth as well, agriculture is also practiced in areas with as low a mean annual rainfall as 150 mm per annum, with various coping strategies for dry years.⁶² Looking at the Global Historical Climate Network (GHCN) data, at most weather stations deviation from the mean can be as much as 50% between 1950 and 2000.⁶³

Three main zones can be defined in the region. The first is the area with precipitation over 400 mm per annum, allowing for reliable agriculture even in dry years. This covers much of the zone west of the Rift Valley, north of Be'er Sheva. At the northern end of the Rift Valley, it stretches east along the Taurus towards Mesopotamia. In the Jezirah it covers the northern reaches of the Balikh and Khabur valleys. East of the Rift Valley, this includes the Limestone Plateaux in Syria, and the Transjordanian Mediterranean Belt, as Cordova calls it, essentially the northern highlands and highland plateaux of Jordan.⁶⁴

Second is the area with between 400 and 250 mm annual rainfall, where in periods of a positive water balance, rainfed agriculture can be practiced unaided, but measures must be taken to ensure a supply of food in dry years. This covers the southern Jordanian highlands, the Hauran or Decapolis region, and the middle reaches of the Khabur and Balikh valleys. More so than in the zone of reliable rainfall, settlements are bound to locations of alternative water sources.

⁵⁹ Nützel, 4; Wirth, *Syrien*, 118.

⁶⁰ Benjamin I Cook et al., 'Spatiotemporal Drought Variability in the Mediterranean over the Last 900 Years', *Journal of Geophysical Research: Atmospheres*, 2016, n/a-n/a, <https://doi.org/10.1002/2015JD023929>.

⁶¹ Nützel, *Einführung in die Geo-Archäologie des Vorderen Orients*, 4–7.

⁶² Wirth, *Syrien*, 93; See also Tony J. Wilkinson et al., 'The Structure and Dynamics of Dry-Farming States in Upper Mesopotamia [and Comments and Reply]', *Current Anthropology* 35, no. 5 (1994): especially 499–501.

⁶³ 'World Bank Climate Variability Tool', accessed 1 October 2022, http://iridl.ldeo.columbia.edu/maproom/Global/World_Bank/Climate_Variability/index.html.

⁶⁴ Cordova, *Millennial Landscape Change in Jordan*.

While catchment and storage of rainfall can be practiced throughout, floodwater diversion and wells or qanats obviously require the presence of wadis or accessible underground aquifers.

The third zone consists of areas receiving less than 250 mm rainfall, where at best, in particularly wet years, precipitation passes the evaporation threshold, if at all. In this zone agriculture is only practiced where other sources of water can be tapped. As is evident from Egypt and Mesopotamia, such areas can nonetheless be highly fertile, if there are large areas of alluvial soils. During the Roman period, the only larger settlements (over 20 hectares) west of the Euphrates that were situated in this zone were Damascus, Palmyra, Petra and Elousa (in the Negev), with a larger number of smaller settlements in their surroundings. In all these cases, these settlements coincide with the known use of irrigation by accessing groundwater through qanats or wells, runoff catchment, or, in the case of Damascus, the diversion of river water.⁶⁵ Widespread use of irrigation using river water was a practice mostly limited to Mesopotamia. In case of the Orontes, due to the depth of the valley, over large sections of its course this required water lifting devices. Evidence for such norias is mostly dated to the fourth century C.E. and later, although there may be some indications of earlier use.⁶⁶ The majority of the region consists, however, of arid to highly arid steppes and deserts, with steppe areas only used for grazing, if at all.⁶⁷

In all cases, slope and soil conditions are of course crucial to agriculture. Mountainous areas have both limited accessibility, as well as soils with limited fine material, or completely lack a topsoil and only show bare rock. As such, large parts of the northern Levant, while well-watered, provide only limited possibilities for cultivation because of the mountain ranges in this area, mentioned above. Good agricultural land is limited to the narrow coastal strip west of the coastal mountains and the Lebanon Range, and the Orontes and Beqaa valleys.⁶⁸ South of Tyre, slopes become less pronounced and the coastal plains wider, but the central highlands can nonetheless form significant obstacles for farming. At least, terracing is required.

The karstic landscape of the limestone massifs in the northeast is also less suited for agriculture. While widespread, the terra rossa soils here are thin, unploughable, of limited fertility and, as

⁶⁵ Jørgen Christian Meyer, 'City and Hinterland. Villages and Estates North of Palmyra. New Perspectives', *Studia Palmyrenskie*, no. XII (2013): 269–86; Dale R Lightfoot, 'Syrian Qanat Romani: History, Ecology, Abandonment', *Journal of Arid Environments* 33, no. 3 (1996): 321–36; Z. Kamash, 'Irrigation Technology, Society and Environment in the Roman Near East', *Journal of Arid Environments*, Ancient Agriculture in the Middle East, 86 (November 2012): 65–74, <https://doi.org/10.1016/j.jaridenv.2012.02.002>.

⁶⁶ Kamash, 'Irrigation Technology, Society and Environment in the Roman Near East', 69; Adriana de Miranda, 'Water Architecture in the Lands of Syria: The Water-Wheels' (Ph.D., School of Oriental and African Studies (University of London), 2006), 79, <http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.428585>.

⁶⁷ Cordova, *Millennial Landscape Change in Jordan*, 95.

⁶⁸ Mason and Crowfoot, *Syria*.

Wirth states, may require intensive labour to remove boulders before allowing cultivation.⁶⁹ These soils may have been more substantial in the Roman period, as Roman land use may have caused considerable soil degradation. The volcanic soils of the Hauran actually make it one of the more fertile parts of the region. But on the relatively younger lava flows of the Leja, almost no fine soils can be found that retain water and allow vegetation, except for small pockets of cultivable soil spread between the basaltic rock.⁷⁰

It appears that up to the Hellenistic period, outside of Mesopotamia most urban settlements were limited to the first zone, with Damascus, Jericho and Tadmor (Palmyra) as notable exceptions in the driest regions, and, within the second zone, several Bronze Age settlements in the Hauran.⁷¹ Of course, smaller sedentary occupation of the landscape was never limited to this zone, with for example small agro-pastoral settlements in southern Jordan.⁷² In the Hellenistic and Roman periods, it appears that settlements outside of the optimal zone increased in size and number, with an expansion of settlement into the Negev, Southern Jordan and the Hauran. The locally specific methods by which the agricultural frontier was pushed forwards will be discussed in the relevant chapters.

Historical background of Roman annexation

In the Hellenistic period, the Levant was split up between the Greek dynasties of the Ptolemies and the Seleucids. After the defeat of Antigonus in 301 B.C.E., Ptolemaic influence extended at first to northern Judea and Phoenicia, up to the Eleutheros (Nahr al-Kebir). Even though the allies fighting against Antigonus had granted Seleukos I full possession of the Levant, he did not take action against de facto Ptolemaic control in the south, thus adding only northern Syria and eastern Anatolia to the Seleucid territories. After the deaths of Ptolemy I and Seleukos I, a series of wars was fought between the kingdoms, for which details are not entirely clear. It appears that for a short time Ptolemy III managed to wrest parts of northern Syria from Seleucid control during the Third Syrian War (246-241 B.C.E.), a military campaign originally supporting the pretender in a Seleucid succession crisis. However, Ptolemy only managed to hold on to the northern coastal cities including Seleucia Pieria for two and a half decades, while the rest was

⁶⁹ Georges Tate, *Les campagnes de la Syrie du Nord du II^e au VII^e siècle : un exemple d'expansion démographique et économique à la fin de l'antiquité* (Paris: Librorientaliste PGeuthner, 1992), 195–201; Wirth, *Syrien*, 118.

⁷⁰ Wirth, *Syrien*, 118, 420.

⁷¹ Jérôme Rohmer, 'Late Hellenistic Settlements in Hawrân (Southern Syria). Survival of Proto-Historic Urbanism and Village Architecture in a Hellenized Context', *Bollettino Di Archeologia on Line* 1, no. Volume Speciale G / G5 / 2 (2010): 1–12.

⁷² Kyle A. Knabb, Mohammad Najjar, and Thomas E. Levy, 'Characterizing the Rural Landscape during the Iron Age and Roman Period (ca. 1200 b.c.–a.d. 400): An Intensive Survey of Wadi al-Feidh, Southern Jordan', *Journal of Field Archaeology* 40, no. 3 (16 April 2015): 365–80, <https://doi.org/10.1179/2042458214Y.0000000004>.

quickly reconquered by Seleukos II. The Ptolemies were driven out of the Syrian territories permanently by the beginning of the second century B.C.E., at which point the Seleucid territory in the Levant extended to the borders of Egypt.⁷³

At this time, Rome started to play an increasingly influential role in the region. It had already interfered several times in the Seleucid-Ptolemaic conflicts, and in 192 B.C.E. engaged in open warfare with the Seleucids over Rome's interests in Greece and Asia Minor. After the Seleucid defeat at Magnesia, the Seleucids lost control of their Asian territory beyond the Taurus to Rome and had to pay large indemnity payments. From that point, the Roman Republic appears to have started interfering locally. For instance, it at least nominally supported the newly-forming Jewish kingdom emerging from the Maccabean revolt when signing the treaty mentioned in I Maccabees and by Josephus. Even so, it does not appear that the Republic acted upon this treaty, nor did it interfere with the other kingdoms emerging in the Seleucid sphere, such as Commagene and Nabatea. Mostly, Roman influence was diplomatic, playing a role in Seleucid dynastic disputes.⁷⁴

In the meantime, during the second and beginning of the first century B.C.E., the new kingdoms in the south expanded at the expense of the Seleucid empire. Despite some defeats against the Seleucids, in three decades of rule under John Hyrcanus, the Hasmonean state gained independence from the Seleucids and had expanded from Judaea proper, around Jerusalem, to include Samaria, many of the coastal cities, and Idumea, leading to conflict with the Nabateans. Shortly after, Alexander Jannaeus continued his expansion along the coast, further to the south, and into the Hauran, while quelling internal strife.⁷⁵ The Nabateans, who had probably already expanded their influence in the Negev during the third century B.C.E., spread further in the middle of the second century into the northern Transjordan and the Hauran. Attempts to expand into the Golan put them into further conflict with the Hasmoneans. In the east, the Parthians, who had already broken away from the Seleucid Empire in the preceding century, expanded westwards into Mesopotamia in the second century, which they controlled by 122 B.C.E., and only internal troubles and a succession crisis seem to have stopped a Parthian advance towards Commagene in 92.⁷⁶

As in most parts of the empire, actual Roman control in the Near East did not come instantly. It was only with the expansion of Pontus under Mithridates VI and the subsequent Roman reaction

⁷³ Sartre, *D'Alexandre à Zénobie*, 193–200.

⁷⁴ Warwick Ball, *Rome in the East: The Transformation of an Empire* (London etc: Routledge, 2000), 11–12, 47–49; Michael Avi-Yonah, *The Jews of Palestine: A Political History from the Bar Kokhba War to the Arab Conquest*, Blackwell's Classical Studies 821595792 (Oxford: Blackwell, 1976).

⁷⁵ Maurice Sartre, *The Middle East under Rome*, trans. Catherine Porter, Elizabeth Trapnell Rawlings, and Jeannine Routier-Pucci (Cambridge, MA: Belknap Pr. of Harvard University Pr., 2005), 12–16.

⁷⁶ Sartre, 16–26.

known as the Mithridatic Wars, that Syria for the first time saw Roman *caligae* on the ground. At first, in 83 B.C.E., Tigranes of Armenia, an ally of Mithridates, invaded Syria on the invitation of the inhabitants of Antioch. In the years before, he had already increased the size of his kingdom by conquering parts of Parthian Mesopotamia, making use of the Parthians' internal troubles. However, by 69, Tigranes had given refuge to his ally Mithridates VI, which gave Lucius Licinius Lucullus, commander of the Roman forces at that time, pretext to invade Armenia. As a result, Tigranes withdrew from Syria to defend his heartland. Lucullus had the last heir of the Seleucid dynasty reinstalled as a king in Syria, although he was certainly a client of Rome. Despite Rome's successes in Armenia, mutiny among the troops and political powerplay saw Lucullus replaced by Pompey, which gave Tigranes and Mithridates time to reclaim parts of their kingdoms. Pompey, however, drove Mithridates out of Pontus again, invaded Armenia and defeated Tigranes, but allowed him to keep his kingdom as a vassal to Rome.⁷⁷

At the same time, from 66 B.C.E., two legates of Pompey were sent to take care of piracy and banditry in Syria, and by 64 were joined by Pompey and his troops. His first action in Syria, however, was to go to Antioch, take care of the Seleucid situation and annex Syria as a province. The Seleucid ruler installed by Lucullus, Antiochos XIII, had already had to repress a rebellion, and even faced a pretender, although he probably died in a riot at Antioch. Antiochos XIII himself fled from Antioch to Sampsigeramos, the ruler of the Emesenes, when Pompey refused to recognise him as a client king and dismissed him. Sampsigeramos, however, had him killed, and unsurprisingly, like several other of the more powerful principalities in the region, the Emesenes were allowed to become one of the clients of Rome. Whatever Sampsigeramos' intentions, whether personal glory, securing order in the Mediterranean by extending Roman control, or a move related to Roman-Parthian relations, the annexation of Syria had begun.⁷⁸

But, while after the Mithridatic Wars a province was created in the north under direct Roman control – barring a few client kingdoms – Roman influence in the south relied to a greater degree on its client kings. In the south, Pompey's activities had caused several significant changes. While Pompey was creating the Syrian province in the north, the Hasmoneans were faced with a power struggle between the ruling high priest, Hyrcanos II, and his brother, Aristobolus II. The high priest was driven out of Jerusalem, but called Aretas III, the king of the Nabateans, into the conflict. Together they besieged Aristobolus in Jerusalem. Both sides sought Roman support from Pompey's legate, Scaurus, when he arrived at Jerusalem. When he judged in favour of Aristobolus, Aretas and his troops lifted the siege and retreated to Philadelphia, but were pursued and defeated by Aristobolus. In 63, Pompey arrived in Damascus, from where he

⁷⁷ Butcher, *Roman Syria and the Near East*, 20–23; Sartre, *The Middle East under Rome*, 27–30, 37–39.

⁷⁸ Sartre, *The Middle East under Rome*, 40; Butcher, *Roman Syria and the Near East*, 23.

intended to march against the Nabateans. However, presented by three Jewish delegations, one for each brother and one for the Pharisees opposing both sides, he decided that Hyrcanos would make the better client and marched on Jerusalem, taking several cities on the way from Aristobulos. Upon defeating him and his troops after a three months' siege of the temple, he confirmed Hyrcanos II as high priest, but did not give him the royal title.⁷⁹

Where the Hasmonean state had, with the conquests of Hyrcanos and Jannaeus, expanded greatly in most directions, incorporating many formerly independent cities, Pompey greatly reduced this territory, granting independence – as Roman clients – to the coastal cities, as well as a group of cities east of the Jordan, from that point known as the Decapolis. At the end of 63, Pompey left Syria, leaving Scaurus as a temporary governor until a replacement was assigned by the senate in 59 B.C.E.. Scaurus undertook a campaign against the Nabateans, but appears to have been paid off to leave, and from that point the Nabateans acted as an ally or client to Rome. In the next decades, Crassus undertook a failed campaign against the Parthians in 53 B.C.E., and was defeated and killed; subsequent Parthian campaigns against the Romans in 51 and 41 and 38 were unsuccessful. The decades following Pompey's annexation also saw the Levant drawn into the Roman civil wars, first when Pompey and Caesar and their supporters went head to head, and secondly, when Octavian and Antony fought out the final Republican war.⁸⁰

The civil wars were instrumental in deciding the fates of the cities and clients of the Republic in the east. For instance, Arados had already lost territory when siding against Caesar, and lost the rest of it when it opposed Antony. Other clients, such as the Emesenes, Nabateans and Itureans, having supported Caesar, retained their independence far longer. The Hasmonean state had already been reorganised by Gabinius into five districts governed by an assembly or *synedrion* (sanhedrin) at Jerusalem, Gadara, Amathus, Jericho and Diocaesarea, removing any remaining political power from the high priest. As a reward for military support, Caesar allowed Antipater the Idumaeen, who had been an advisor to Hyrcanos II, to administer the Hasmonean state, and his two sons, Phasael and Herod, became governors of Jerusalem and Galilee respectively. However, after the second Parthian campaign, Antigonus, the last Hasmonean, usurped the throne with help from the Parthians. In response, Herod, the son of Antipater, was proclaimed king by Antony, albeit of a kingdom he yet had to reconquer with Roman help. Upon defeat, Antigonus was led to Antioch and executed. As a result, the Hasmonean dynasty was replaced by the Herodians. Where Antony had seen fit to grant several southern cities to Cleopatra, among other grants of territory such as Cilicia and the Iturean state around Chalcis, the coastal cities were reverted to the Jewish state by Augustus. Furthermore, in order to counter banditry in the

⁷⁹ Ball, *Rome in the East*, 47–60; Sartre, *The Middle East under Rome*, 88–103.

⁸⁰ Sartre, *The Middle East under Rome*, 44–51.

Trachonitis, Augustus granted this region, as well as Auranitis and Batanea, to Herod, where Pompey had originally made the cities in the area independent.⁸¹

After Herod's death in 4 B.C.E., the kingdom was divided among his sons and sister, while Gaza, Gadara and Hippos were annexed into the Province of Syria. But within ten years, Archelaus, who ruled over Judaea, Samaria and Idumaea, was dismissed and exiled, upon which his lands became part of the Syrian province and were ruled by a legate at Caesarea from 6 C.E. onwards. Philip's tetrarchy was annexed upon his death by Tiberius, but was granted within a few years to Agrippa I, the grandson of Herod. Agrippa's belongings were increased first with the last other tetrarchy, that of Antipas, and then, by Claudius, also with the Roman-controlled Judean territories. When he died after only a few years, Roman control was reinstated. His son, Agrippa II, several years later inherited the kingdom of Chalcis from his uncle and again was granted the northern territories that had belonged to Philip and Lysanias. Upon his death at the end of the first century C.E. his lands were annexed as well, and with that the whole of the Jewish territory became controlled as a province directly by Rome.⁸²

From 106 C.E., the Nabatean kingdom was annexed as well. How this took place is not entirely clear. Contrary to expansion in other areas, it appears this was not advertised in Rome until several years after the fact. There are some hints that the city wall of Petra may have been constructed just before, rather than after 106, suggesting that this was not necessarily (expected to be) a peaceful process. It is clear, however, that after this point, several military positions in the south of Judea were abandoned, and the region no longer functioned as a border zone. The formerly Nabatean lands were then organised as the *provincia* Arabia, and the Roman annexation of the southern Levant was completed.⁸³

⁸¹ Sartre, 51–53; Butcher, *Roman Syria and the Near East*, 36–38.

⁸² Sartre, *The Middle East under Rome*, 93–101.

⁸³ Ball, *Rome in the East*, 60–64.