THE ART OF SIEGE WARFARE

AND MILITARY ARCHITECTURE FROM THE CLASSICAL WORLD TO THE MIDDLE AGES

Edited by

Michael Eisenberg & Rabei Khamisy

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Scientific Editorial

DENYS PRINGLE, WERNER ECK AND ADRIAN BOAS

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Introduction

Michael Eisenberg and Rabei Khamisy

The art of siege warfare and military architecture, that is to say poliorcetics in its widest sense, was always a part of Greek, and later Latin, historiography. The size and strength of the protective walls of the *polis* were just as vital for its security and the pride of its citizens as the heroic acts of its warriors in life and death on the battlefield. In the Classical period, the growing importance of cities as centres of culture, power and stability intensified the race in poliorcetics – fortifications became more complex, while new and more ingenious ways of overcoming them were invented. In the Classical period, the main expense of the public treasury on towns and cities was devoted to military defences and temples. Until Imperial times, urban fortifications represented an expression of military prestige and political power, besides defining the civic and religious boundary of every city. During the Imperial times, the focus shifted from city walls to strengthening the military units and organizing their deployment along the borders of the Empire. The Pax Romana brought an unfamiliar phenomenon – unfortified city foundations; however, the peace was neither global nor everlasting. By the 4th century CE, unfortified cities found it necessary to build walls. This military focus continued through the Byzantine and Early Islamic periods, when many cities, finding it impossible to maintain the size of their earlier fortifications, were forced to abandon them in favour of smaller urban citadels, sometimes located on the site of an earlier acropolis. The harsh military reality of the Early Middle Ages brought a new wave of investment and innovation in the military architecture of cities and citadels. The development of larger siege weapons and machines after about half a millennium of technological stagnation forced townsfolk to apply new techniques to the design of their urban defences, some of them relearned from surviving classical texts. The new city walls had to be built not only to withstand newly developed stone-throwing engines, rams, mining techniques and incendiary devices such as Greek fire, but also to incorporate strategies designed to keep would-be attackers as far as possible from the main walls themselves.

Five main stages characterize the development of poliorcetics from the Classical period to the Late Middle Ages:

1. Before 398 BCE: period before the invention of siege machinery and projectiles.
2. 398 BCE to Late Roman: the development of siege machinery, including mobile siege towers (*helepoleis*), battering rams, torsion artillery and new urban military architecture.
3. Late Roman to Early Medieval: period of stagnation in the development of sieging and projectile machinery.
4. Early to Late Medieval: development of new heavy projectiles and sophisticated siege techniques, together with political and demographic changes that forced rebuilding of fortifications.
5. Late Medieval: the invention and adaptation of gunpowder, the beginning of a new era in military development.

At first glance, the long chronological spectrum of this book, from the Classical period to the Late Middle Ages, may seem too broad a period to permit the development of a consistent methodology and terminology, yet this is exactly the supposed barrier that we, the editors, wish to show is largely imaginary. This idea was born during a spontaneous debate that we had about terminology. While our research specialisms relate respectively to the classical and medieval worlds, we realized, and agreed, that although some of the terminology used in and applied to the different periods was

different, the concepts and arguments employed by scholars investigating them have mutual ground. This idea became the thread running through the conference that we organized in Haifa, Israel, in February 2017. We wished to combine presentations and debates between scholars working on the study of poliorcetics in two historical periods that are usually treated separately. The conference, titled *The Art of Siege Warfare and Military Architecture from the Classical World to the Middle Ages: An International Conference for the Study of Poliorcetics, Military Historiography and the Archaeology of Battlefields*, gathered some of the field's leading experts as well as emerging scholars, who all contributed to the fruitful discussions, and not less importantly, to the friendly atmosphere.

The success of the conference convinced us to present our idea in a book, which joins the other recent summaries on various aspects of military fortifications. In the sphere of the Classical World these are the two volumes published by Oxbow Books in 2016: *Ancient Fortifications: A Compendium of Theory and Practice*, Vol. 1, edited by S. Müth, P. Schneider, M. Schnelle and P. De Staebler; and *Focus on Fortification: New Research on Fortifications in the Ancient Mediterranean and the Near East*, Vol. 2, edited by R. Frederiksen, S. Müth, P. Schneider and M. Schnelle. For the Middle Ages, we would point to *Burgen und Städte der Kreuzzugszeit* (Castles and Cities of the Crusader Period), edited by M. Piana (Michael Imhof Verlag: Petersberg 2008). The present volume consists of 23 articles that deal with military architecture, siege warfare and battlefields from the Classical period to the Late Middle Ages. This composition of articles is exceptional in terms of periods considered and the topics included.

We wish to thank the three members of the volume's scientific committee: Prof. Werner Eck, Prof. Adrian Boas and Prof. Denys Pringle. All articles passed double-blind peer-reviews, and we wish to warmly thank the reviewers for their effort and valuable suggestions. We are grateful to the Oxbow Books team for their assistance in finalizing the project.

The walls of cities, in their magnitude, design and geometry, were representations of power, stability and wealth. Above all, they symbolized order and safety. The glamour of city walls or citadels as romantic ruins ignites our imagination and lures our soul. We hope that the present volume represents the passion of scholars to lure the soul of the reader, while opening us all to the common ground in poliorcetics of the Classical World and the Middle Ages.

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The Early 5th-Century BCE Fort of Larisa East (Aeolis) as Part of a Multi-Centred Defence System

Ilgın Külekçi and Turgut Saner

Larisa is located near modern Buruncuk, 40 km north of Izmir (ancient Smyrna), close to the Aegean coast of Asia Minor.[1] It overlooks the fertile Hermos (Gediz) Plain along the eponymous river, which bridges the ancient region of Aeolis with inland Lydia. Its occupation goes back to the Neolithic period, and the Bronze Age is also represented by some wall fragments and small finds. However, most of the visible remains found on site at Larisa date between the 6th and 4th centuries BCE. That means that a considerable part of this city's lifetime was under Persian rule in Anatolia. Larisa was a prosperous stronghold due to its advantageous location, and it mostly remained loyal to the Great King of Persia. The city consists of two core settlements on the two hills of the Buruncuk ridge – 'Larisa East' and 'Larisa West' – and their surrounding area (Fig. 1.1).

The architectural remains reveal that Larisa West was the residence area of the ruling class. Its southern slopes surrounded by city walls define the main city area where the urban elite lived, whereas the steep northern slope was also reserved as a city area furnished with a theatre and fortification walls. An extensive necropolis with miniature tumuli and outer fortifications in the north-east complete this representative compound. The rulers manifested their power with the construction of monumental edifices such as fortification walls, temples, buildings for convivial meetings and larger tumuli in the necropolis. The urban elite followed the same path, living in the city area partially arranged in a regular system, having tumulus graves with elaborate masonry, and most probably contributed to the stately meetings in the rulers' area. On the top of the higher hill on the east, a fort and a smaller settlement area represent a military spot with the dwellings for what appear to be soldiers and farmers.

The history of the fieldwork in Larisa goes back to the beginning of the 20th century. The first excavation in 1902 by Lennart Kjellberg (Uppsala) and Johannes Boehlau (Kassel) was followed by three further campaigns in 1932, 1933 and 1934. The results were published in three 'Larisa am Hermos' volumes on architecture, architectural terracottas and small finds.[2] Fieldwork was limited to the excavation of the acropolis, with minor soundings in the necropolis, at the 4th-century city walls, and trial trenches in the city area. The survey of the eastern hill only covered the documentation of the fort with a brief plan and section,[3] whereas the settlement area remained unexplored. From 2010 onwards an architectural survey, under the supervision of Prof. Turgut Saner (ITU), focuses on the settlement and architectural remains in many different aspects ranging from topographical matters to building elements and construction details.[4] By investigating the two settlement cores within their immediate peripheries, an overall layout of Larisa begins to emerge.

Considering the topographical and chronological aspects, Larisa's defence infrastructure draws a multi-levelled picture. According to the archaeological evidence, the acropolis circuit in Larisa West was built at the beginning of the 5th century BCE. The urban fortifications were also constructed in the same period, as is identified by the poor remains of the same Lesbian masonry. The entire undertaking can be considered within the frame of the loyal attitude of Larisa towards the Persians during the course of the Ionian Revolt that took place against the Persian rule in the early 490s. After the de-fortification of the city by the Athenians towards the end of the 5th century BCE, the walls were rebuilt in the 4th century BCE following more or less the same course. Within this undertaking, the acropolis grounds were enlarged

Fig. 1.1: Larisa (Buruncuk), greater settlement layout.

and strengthened with bulwarks, whereas a northern defence and a *diateichisma*, which defines an outer ward, were added. The entire western defence works were also solidified – probably in the 4th century BCE – by the construction of an outer wall (Boehlau and Schefold 1940, 51).

The Fort

The fort in Larisa East, which is the actual focus of this contribution, completes the organization of the defence system of Classical Larisa. The eastern fort crowns the topmost part of a 180 m-high rocky hill about 1.5 km distant from Larisa West, *i.e.* the main city (Fig. 1.2). The fort overlooks a small settlement, which takes up the natural terraces below (Fig. 1.3).

Following the topographical configuration, the fort was given a triangular shape. Its surrounding curtain walls are about 1.7–1.8 m thick. The eastern and southern walls are approximately 80 m long, whereas the northern flank measures about 100 m. The structure does not feature towers. Nevertheless, the north-eastern and south-eastern edges are designed with recesses and corners, so as to form tower-like projections. Two cross-walls divide the triangular interior area into three parts, the lower and biggest area revealing a large, circular cistern and other building remains. Close to the north wall, there is a small structure built with Lesbian masonry. The long cross-wall with its roughly hewn blocks attached to this small building is obviously a later addition. Three gates can be identified; one in the east, one in the north and one in the south.

In order to date the fort in Larisa East accurately, three basic criteria can be analysed. These factors increase the likelihood of an initial construction as contemporary with the early 5th-century BCE acropolis circuit of the western settlement. First, the Lesbian masonry of both edifices reveals fine workmanship, with traces of drafted edges on the block surfaces and deep hollows caused by masons' blows with a pick. The pick marks cover the surface of the blocks homogenously, however, the depth of single holes is different; some remain close to the surface, yet some reach even deeper than the intended smooth surface of the block. As for the second criterion, the constructional features of both walls, namely those of eastern and western forts, are also exactly the same. According to this practice, first, a solid rock-bed was chosen to provide foundation, and it was additionally supported with foundation blocks.

Fig. 1.2: Larisa East seen from south-east.

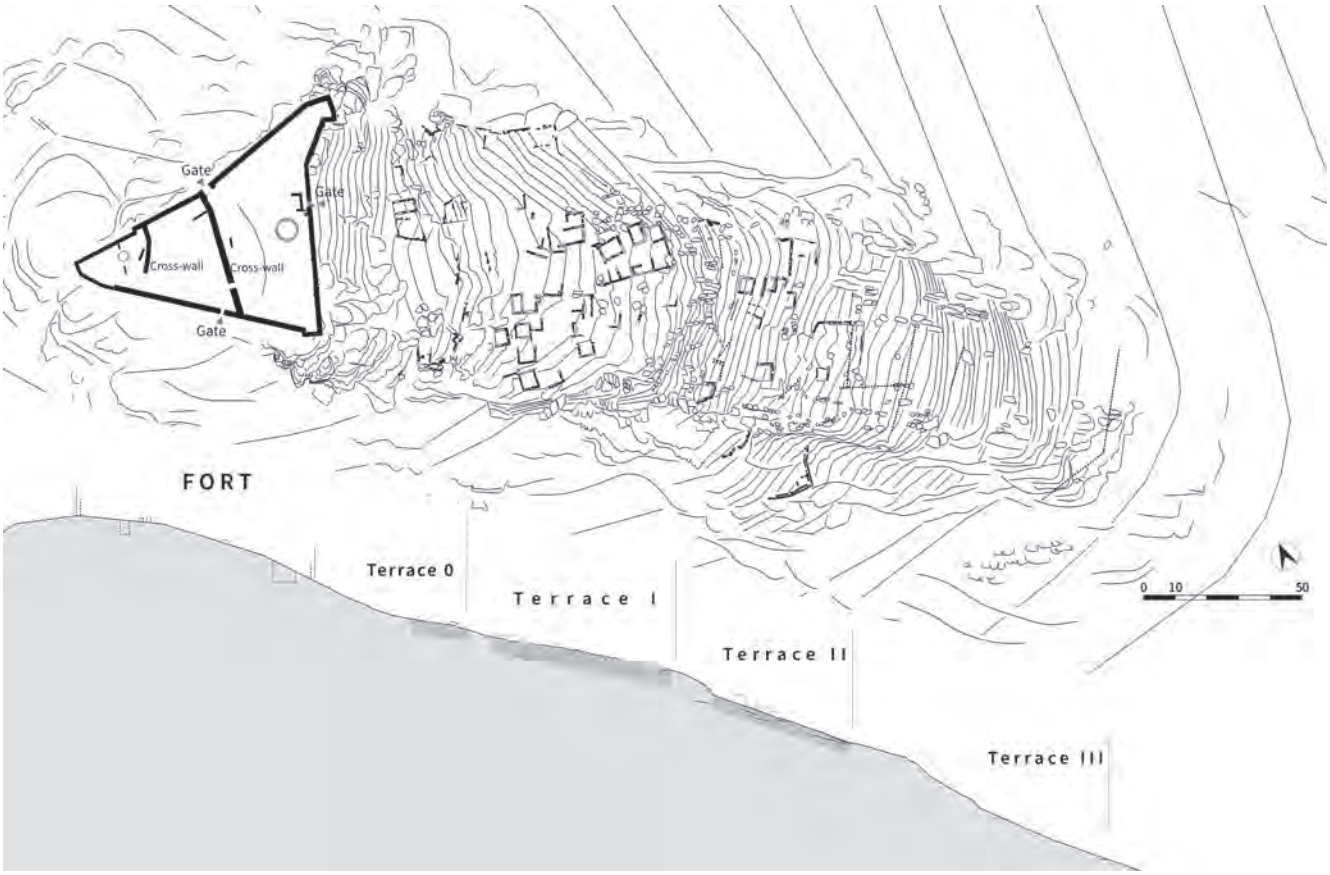

Fig. 1.3: Plan and section of Larisa East.

Upon it comes a *toichobat* (the stone layer of a building following the foundations where the visible parts of the walls rest – ὁ τοιχοβάτης), which is slightly recessed. The surface of *toichobat* blocks are sometimes finely worked and sometimes only roughly hewn. The *toichobat* layer carried the rising wall, which was again placed some centimetres receded (Fig. 1.4). The above-mentioned Lesbian masonry with deep pick marks refers to the rising wall base. The rest of the wall base was most probably constructed using mud-bricks, as stated in the 20th-century excavation reports of Larisa. And finally the stone extraction methods are also common considering the eastern fort and the acropolis walls of the western settlement. According to the observations on site, blocks were split from natural rocks by opening a series of wedge-holes. Their numerous remains can still be seen on rock surfaces and on the extracted blocks used in the masonry of the eastern and western forts. These constructional and technical aspects together confirm the suggestion that the fort in Larisa East was constructed at the beginning of the 5th century BCE, as part of the same construction initiative as the western acropolis.

This comparison allows us to perceive the sophisticated defence architecture in Larisa at the beginning of the 5th century BCE as a centrally organized undertaking. It can be attributed to the same authority who ruled in Larisa and consolidated its existence with representational attitudes as mentioned above. The eastern fort appears to have provided the western settlement with a shelter in case of threat; it was obviously in use also during the course of the 4th century BCE. The principal evidence is the addition of rectangular masonry at certain sectors close to the peak of the hill. The enlargement of the rulers' residence in the west by means of new wall sectors with rectangular masonry also points towards the central authority in Larisa that claimed control in the 4th century BCE.

Fig. 1.4: Larisa East, eastern wall of the fort showing bed-rock, recessed toichobat*, and the uppermost layer of wall base.*

The multi-foci constellation of Larisa's early 5th century BCE defence must have developed due to the special topographical conditions of the mountain ridge of Larisa. The furthest south-western edge of the ridge was seemingly preferred as a place of residence because of its remarkable setting for rulers' self-manifestation and cult places, and the elite citizens' dwelling. However, its location could only partially serve for defence purposes.

The same can be said about the acropolis. Its defence had to be designed more solidly than that of the eastern fort, because the altitude of the so-called acropolis in the west, with its palaces, is lower, and its plateau-like topography was more vulnerable. This explains why the circuit wall in the west is much stronger compared to the eastern fort. The thickness of the curtain walls is about 2.5–2.6 m and the structure is furnished with eight towers. The fort in Larisa East, on the other hand, is integrated with the edges of steep rock faces. These were occasionally bonded together to provide a base for the actual walls atop them. Thus, Karl Schefold's explanation in the 20th-century Larisa research publication that 'the fort in the east must have functioned as the natural acropolis of Larisa' finds its reflection in this monocratically organized constellation of the forts (Boehlau and Schefold 1940, 116).

The Settlement Area

Below the eastern wall of the fort, the south-eastern extension of the hill designates the eastern settlement area. Extending down through the plain, big masses of rocks and sudden topographical changes limit further expansion for dwelling. The architectural remains cover an area of roughly 1.7 ha (Figs 1.3 and 1.5) with a width of 75 m and a length of 250 m. Following the descending natural topography of the terraces, the settlement area with dwellings was founded on four parallel sections (Terrace 0–3), thus revealing a multipartite organization.

The first part (Terrace 0) immediately below the fort is a rocky area including big masses of rocks supporting the eastern projections of the fort. Especially on the south and north of the terrace, large stone blocks are integrated with sharply declining rocks, and hence define the boundaries of the uppermost part of the settlement. The only closed space identified here is located on the centre of the terrace, a relatively plain area over the retaining walls, and covers an area of approximately 30 m^2 with walls 60 cm thick. Apart from this structure, the other walls of Terrace 0 are mostly retaining walls distinguished by the large sizes of their blocks, some exceeding 1 m.

Below Terrace 0, Terrace 1 offers the widest area of the hill, along with many wall remains defining clear spatial relationships. The settlement consists of simple rooms *c*.

Fig. 1.5: Settlement terraces seen from the fort.

25–30 m² in size, and of clustered spaces. The dwellings are arranged around rocky formations, taking advantage of the natural features in their arrangement. On the surface of the rocks, traces of wedge-holes can be identified for block extraction, a particular technique prevalent in the 5th and 4th centuries BCE in Larisa. The average thickness of the walls varies between 50 and 60 cm, however there are also some wall fragments over 75 cm thick. Along with the differences in masonry, the inner and outer faces of the walls can be identified, and closed spaces can be hypothetically drawn. As revealed by the general layout and varying wall thicknesses, this terrace was arranged considering the surrounding topography, and quite simple architectural arrangements have been created to adapt to the land. On the northernmost part of Terrace 1, an elaborately constructed wall on a continuous line of about 32 m differs from the rest of the same terrace's architecture. This wall with a thickness of around 85 cm starts from the dense rock clusters of Terrace 0 and its eastern extension – including minor fragments – reaches the lower terrace, so that it definitely borders the settlement on the north. Furthermore, some wall remains approaching the longer portion at right angles indicate that it was a well-defined construction with its own function, possibly related to defence purposes.

Terrace 2 lies around 8 m below the rocky ground of Terrace 1. The wall traces, which are scattered on different levels, are less evident and do not necessarily describe an entity. Terrace walls dominate this area, yet the presence of walls against the slope suggests further structures for dwelling units. It is also worth mentioning another lower terrace, the so-called 'Terrace 3', resting on even lower south-eastern slopes. This area can be considered as a similar continuation of the upper terraces, but with less recognizable wall courses.

Outside the settlement area, on the south-western slopes of the hill, ancient agricultural terraces were laid and an agricultural area furnished with quite large farm buildings – possibly related to production, storage or animal husbandry – extends throughout the flatter area between the two hills. The eastern settlement is topographically highlighted and characterized by massive rock clusters between the fort and the agricultural structures.

The boundaries of the entire settlement expansion were set naturally simply by filling the gaps between the rocks, without any sign of ambition for creating an enclosed fortification. Unlike the overall monumentality and the extent of the necropolis area of Larisa West,[5] in the east there are no traces of monumental buildings, nor a particular necropolis. On the other hand, the fortified urban area of Larisa West is clearly distinguished with its regular layout and monumental walls, along with other remains of domestic dwellings, revealing an elaborate undertaking. Almost all the wall fragments of the eastern settlement, with the exceptions of the fort, and the northern course on Terrace 1, are constructed from differently sized, roughly carved polygonal blocks. The only detectable distinction in terms of construction techniques is the wall thickness and the use of the rocks, which mainly designate inner or outer walls, terraced structures and the immediate use of stone carving within the dwelling area. The topographical limitations of the site might have imposed difficulties, such that an irregular settlement structure resulted from constructing compact houses in various orientations. This pattern aligns with the common spatial organization practice of housing units during the late Archaic and Classical periods, especially with those having similar rocky topography as in Caria.[6]

Taking into account their locations, the settlement and the fort of Larisa East constitute an organic unit. However, they are not supposed to have been functionally dependent on each other and cannot be regarded as isolated from the western settlement. A comparative analysis reveals that the topography-based planning of the eastern settlement rather indicates a secondary function. The contrast between the monumental dimensions of the fort and the modest capacity of the settlement attached to it shows the overarching function of this sophisticated defence work. Considered from a broader urban scale, the fort was basically a part of the entire defence system connected to Larisa West. Additionally, the size of the eastern settlement is only about one-fifth of the settlement area of Larisa West,[7] which again confirms that the eastern settlement had a subsidiary capacity. The immediate proximity to the agricultural area and the fort must be related to an internal hierarchy within the larger urban/social system. In other words, the inhabitants of the eastern settlement were organically related with the fort, but existed essentially in the service of the greater urban organization, of which Larisa West was the leading centre. They apparently lived below a fort, whose monumentality was far beyond

the needs of their day-to-day lives. Therefore, Larisa East can be considered as a domestic quarter providing shelter to the people who were responsible for logistics such as military organizations and agricultural activities. The fort and the nearby agricultural area, with well-designed buildings including the cultivation terraces, were operated by the non-elite residents dwelling here.

Topographically, the urban functions of Larisa were assembled around the two hills and organized separately, according to their internal dynamics, which complemented each other in a broader urban concept. The distinct types of residential quarters within Larisa West and East question a social hierarchy between the residents or a co-existence of different groups.[8]

The multi-foci urban layout on two hills should also be emphasized as a particular topographical feature. Generally, in ancient cities, not only one hill, but many hills or hilltops were used to create a settlement sphere. It was a common practice to have an acropolis situated on the top of the hill in a close vicinity, mostly on the immediate inclining slopes of the settlement. For instance, at Larisa West, a quasi-lower hilltop settlement, the higher hilltop at a distance of 2 km, seems to have been chosen as an 'acropolis'. Contrasting single hilltop settlements, the urban entity comprises two hills with lower habitation areas. Similar topographical layouts including two hills can be seen in nearby Myrina[9] and Tisna[10] in Aeolis, although their urban functionality could not be confirmed as of yet. Old Smyrna can also be referenced as a similar case, having two forts, situated on the closest hilltops above the necropolis area[11] and possibly functioned as signalling stations.[12] On the other hand, two hilltop settlements, Palaigargara[13] and Kebrene[14] in the Troad, might be mentioned as settlements with multiple cores around two or more hills, but also are surrounded by city walls. The two hills of Larisa are not linked to each other with further walls, most probably because of the practical reasons for agriculture in relation to the Hermos Plain, the necropolis outside the walls, and the difference in social integrity. They should have been shaped following the needs of the internal organization, but indeed were strategically planned regarding the regional dynamics, especially during the turbulent years of western Anatolia between the 6th and 4th centuries BCE.

All in all, the absolute power prevailing in Larisa in the 5th and 4th centuries BCE – loyal to the Persians – was apparently capable of creating a multi-centred stronghold, fitted with a representational acropolis, an urban area below, and a well-fortified 'true' acropolis to protect its own endurance, the city and its farmland.

Acknowledgements

All illustrations are credited to Larisa Architectural Survey Archive.

Notes

1 For the discussions on the identification of the ruin field near Buruncuk as Larisa, see Heinle 2015, 52.

2 20th-century Larisa publications in three volumes came out in the turbulent years of 1940 and 1942. Yet they still provide researchers with a wide range of finds, their interpretation and what is basically a relative chronology: Boehlau and Schefold 1940 (I); Åkerström and Kjellberg 1940 (II); Boehlau and Schefold 1942 (III).

3 For the description of the fort in Larisa am Hermos publications, see Boehlau and Schefold 1940, 113–116, Taf. 39.

4 The ITU survey started in 2010 with permission of the Turkish Ministry of Culture and Tourism – General Directory of Cultural Assets and Museums, and with financial support of ITU (Project nos. 37267 and 33992). Besides the program and works on the field, a brief mention of studies of ITU students at masters and doctoral level that help complete a solid picture of Larisa will provide an idea on the foci of the present research scope. For a brief overview of the ongoing studies see Saner 2018, 14–32.

5 For an overall presentation of the necropolis, see Saner and Külekçi 2017, 45–83.

6 Carian examples including Alazeytin and Ören Avlusu are traced in detail by Radt 1970. A similar topography and domestic arrangements are also found at Herakleia on Latmos (Peschlow 1985).

7 The urban area of Larisa West covers around 10 ha, including both southern and northern areas.

8 Schefold also briefly mentions the possible co-existence of two different settlement areas as part of the discussion on the settlement history: 'so später Larisa erobert, so konnte das Kale ja ruhig weiterbestehen, in seinem Schutz konnte sich auch eine Ansiedelung bilden, und Larisa wurde auf diese Weise zu einer Art Doppelstadt' (Boehlau and Schefold 1940, 116).

9 The ruins of Myrina are dispersed on the two hills, Kalabasar (Kato) and Apar (Apano) Tepe, however the urban entity of the city is not known. For a topographical map of Myrina, see Pottier and Reinach 1888, pl. 1. For a description of the topography, see Reinach and Pottier 1882, 197–209.

10 Although the research in Tisna has recently restarted, it is not possible to identify the contemporaneity of the two hills. Conze reports both as a Greek city transforming over time (Conze 1910, 8). For the topographical maps of Tisna see Erdan 2019, figs 2, 3, 6, and Conze 1910, Taf. 2.

11 The two forts, Küçük Kale ('die kleine Festung/Vorfestung') on the north-east, and Büyük Kale ('die grosse Festung') on the north-west, and another watchtower ('Warte') on a third hill are described in detail in Miltner and Miltner 1932, 125–188.

12 The exact function of the forts in relation to the main city's defences is not clear. Küçük Kale could not be dated, however Büyük Kale is dated to the 4th century BCE and was considered a stronghold as well as a garrison post (Nicholls 1958–9, 134–135, Cook, Nicholls and Pyle 1998, 181). The forts are also analysed as part of a much larger defence system with broader roadways and forts in Doğer and Gezgin 1998, 20–21.

13 The two hills of Palaigargara are supposed to bear two acropoleis representing two social communities; and the area

between the hills is suggested to represent the lower city, which is also separated into two parts with a *diateichisma*, however, no architectural traces have been found (Stupperich 1995, 139–160; Polat 2010, 460–489).

14 Kebrene is composed of two hills and a surrounding area. Their function is under debate: in contrast to the idea that the higher hill (Fuğla Tepe) has functioned as a fort/watchtower, more reliable sources propose that it was the second acropolis with public buildings and included in the larger city walls (Cook 1973, 327–344; Polat 2010, 460–489).

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2

The Layout of a Late Classical Fortress in Eastern Sicily: The Military Outpost on Monte Turcisi (CT)

Melanie Jonasch and Claudia Winterstein

The 4th century BCE is renowned for major innovations in the field of military tactics, technique and architecture throughout the Greek world. Several of those developments can be traced back to the island of Sicily, where the bitter experience of the Carthaginian and Athenian interventions in the late 5th century shaped Greek military strategy and landscape for the following centuries.[1]

One phenomenon to be observed in this chronological, spatial and conceptual context is the creation of new lines of defence outside the main settlements and the increasing focus on the control of the territory as a coherent entity to defend.[2] The first tangible proof of this shift in focus is the construction of an elaborated defence system on the Epipolai plateau near Syracuse.[3] After the nearly catastrophic siege of Syracuse by the Athenians in 414/13 BCE, Dionysius I expanded the city's line of defence towards the countryside in order to prevent a possible repetition of the events (Diod. 14.18). With the construction of Castle Euryalos at the westernmost tip of the long walls of Epipolai, he also added a military fortress that reflects the latest developments in poliorcetics, including sophisticated offensive strategies in case of sieges. Another measure to ensure territorial integrity, successfully tested already by the Deinomenids, was the strategic positioning of loyal, paid military forces in cities all around the eastern part of the island (Pope 2014; 2020; Harris 2020). In the time of Dionysius I, this involved, for example, the establishment of Campanian mercenaries in Katane (Diod. Sic. 14.15.3), the granting of city and territory of Leontinoi to soldiers of fortune in revolt (Diod. Sic. 14.78.2), and the replacement of the Sikel inhabitants of Tauromenion with Dionysius' most deserving combatants (Diod. Sic. 14.96.4). The foundation of new cities in convenient positions, such as Tyndaris and Adranon, can also be seen in the context of the tyrant's territorial policy, as is true for his military expeditions against various Greek and Sikel cities in the area of interest in the eastern part of the island (Diod. Sic. 14.14–15) (Nuss 2011).

A less well-known component of territorial control was a series of military outposts, not specifically mentioned in the written sources, but sometimes conserved in the archaeological record. By military outpost, we do not refer to fortified hilltop settlements, which can be found all over the Sicilian landscape from the Archaic period onwards and might well have housed men for military service, as well as a civilian population with its accompanying infrastructure.[4] Instead, we mean installations outside the main cities with a purely military purpose, where garrisons for the control and immediate defence of territorial integrity were stationed (Lawrence 1979, 172–184; Fachard 2012, 242–244; 2016, 216–220). Those places are generally characterized by a defensible position, a fortification system, a limited surface and the absence of private housing and production facilities. In Sicily, only a few sites meet these conditions, though further research on the subject will doubtlessly extend the data situation, which until now is rather poor. As one example in the area of interest, we can point to the 4th-century fortified site at Rocchicella di Mineo, on top of the famous sanctuary of the Palikoi, which was recently investigated and interpreted as a *phrourion* under the authority of Dionysius I (Pope 2014; 2020). Another promising candidate for a detached military installation is a possible tower building in Erbe Bianche, a local district of Misterbianco near Catania. It is likely part of a so far unknown fortification system dating to the 4th century BCE, but has not yet been subject to thorough investigation (Branciforti 2005; Brancato *et al.* 2020). Much more visible, but still fairly unknown, is a small fortress on a hill named Monte Turcisi in the province of Catania, approximately 35 km to the west of the region's

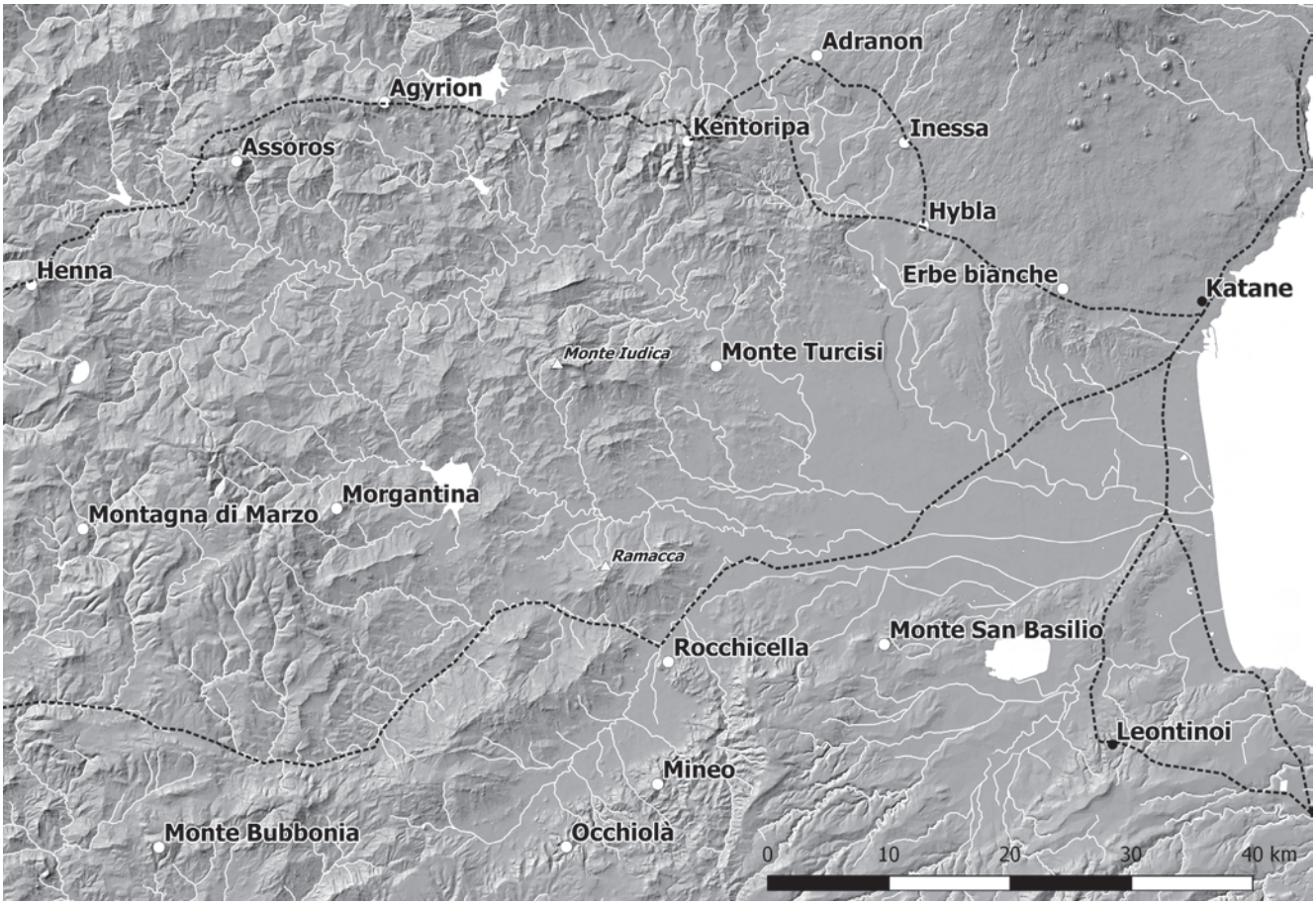

Fig. 2.1: The wider region around the plain of Catania during the 4th and 3rd century BCE. The Archaic settlements mentioned in the text are indicated in smaller fonts.

capital. Systematic investigation of the site was carried out in 2016, 2017 and 2019, the results of which shall be presented here in part.[5]

Monte Turcisi marks the transition between the alluvial plain of Catania in the south and the foothills of the Erean Mountains in the north (Fig. 2.1). It reaches a modest elevation of 303 m, but provides a perfect view overlooking the fertile plain and its access points. There is, in fact, a theoretical visual connection with all previously mentioned outposts, as well as with Adranon, Kentoripa, the fortified settlement of Monte San Basilio, and even with Mineo in the Hyblaean Mountains.[6]

The roughly east–west oriented mountain consists of a long, flat ridge, with a maximum altitude of *c.* 270 m, and a cone-shaped summit-plateau, with a limited ground area of approximately 3100 m² (Figs 2.2 and 2.3). Steep slopes surround the summit in the east, west and north. The southern flank is particularly well protected by outcropping rock plates, which appear in several locations on the mountain and served as a quarry for the construction of the Greek fort and its inner parts.

The summit-plateau today is dominated by the ruins of a 17th-century hermitage with a small church and several outbuildings (a short history of the hermitage is given in: Cucuzza 2008, 123–125). In many parts, the modern complex makes use of the structures of the Greek period, which are still in surprisingly good shape despite multiple natural disasters in the area and more than two millennia of human intervention. The fortification walls on three sides of the plateau are fairly well-preserved even to a height of more than 4 m in some places. The study of the archaeological material from the surface and from several test pits shows that the fort was occupied during the 4th and 3rd centuries BCE.[7]

A careful examination of the architecture supports the dating of the fortress to the 4th century BCE and suggests, at present, a construction date during the reign of Dionysius I.

The Fortification Wall

The fortress on the summit-plateau of Monte Turcisi is the result of thorough planning and optimal use and integration of the local natural conditions (Jonasch 2020b). Together

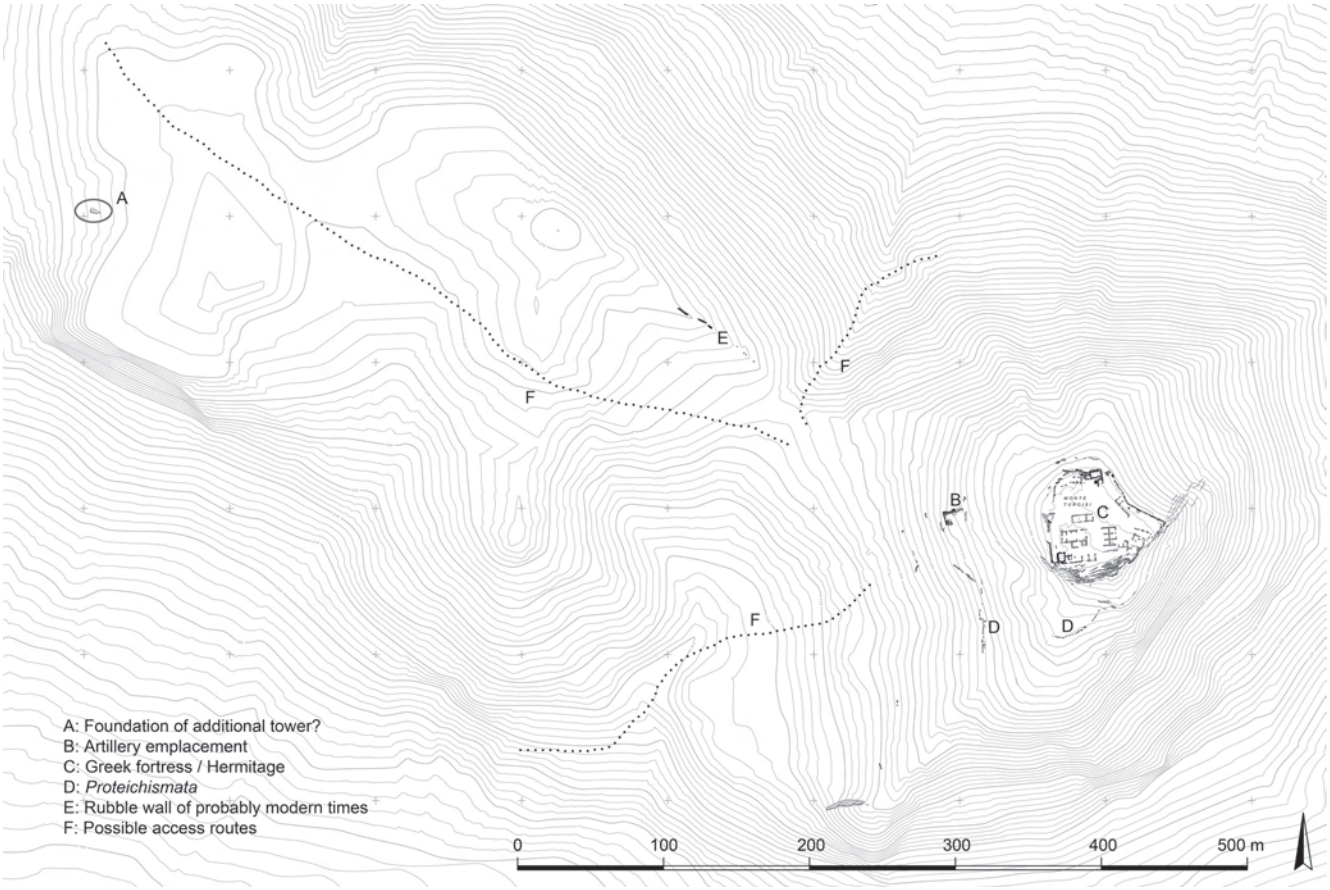

Fig. 2.2: Site plan of Monte Turcisi with major building structures and access routes.

with the rocky cliff in the south, the fortification walls form a complete circuit enclosing and protecting the installations on the plateau (Fig. 2.3). The walls are built at the spot where the natural ground turns from steep slopes into the relatively flat surface of the summit-plateau. Thus, they follow rather precisely the contour lines – on the western and northern flanks at an altitude of approximately 293 m, on the eastern flank at an altitude of around 291 m; that is, the terrain predetermines the shape and the size of the fortress. The main gateway is situated at the north-eastern edge of the fortification and is flanked on its western side by an oblong rectangular structure, a tower with an interior space of about 20 m². As a considerable part of the fortification wall's western flank is missing due to landslide and modern destruction, we cannot exclude the possibility that the fortress was originally equipped with another tower or secondary gate. In fact, a recess at the bottom of an ashlar block situated in the middle of the wall's western flank attests to the former presence of a lap joint that connected two blocks at right angles to each other, thus suggesting the position of a projecting structure, possibly a sawtooth part of the wall, or a second tower and/or postern (for an image of the described situation, see Jonasch, Winterstein and Ferlito 2019, fig. 7 and Jonasch 2020b, 208 fig. 6).

The fortification walls are built of ashlar masonry whose blocks are quarried from the local limestone bedrock making use of the specific quality of the material's natural stratification. In fact, each layer represents a separate unit which ruptures from the neighbouring ones in a natural process, thus forming parallel stone slabs of varying thickness stacked one above the other (Jonasch and Winterstein 2016, fig. 8). Two main types of ashlars were extracted from these natural slabs retaining their dimensions, one type with a height of about 55 cm, and a flat type with a height of about 25 cm. The top and bottom surfaces of the ashlars are not dressed, and instead the quite even, naturally fractured surface of the geological layer is directly used. By contrast, the vertical faces of the ashlars are dressed, usually quite roughly. Only the outer faces of the blocks that form the walls' exterior surface on the west and north sides, as well as the tower, are comparatively smooth and homogeneous. Neither drafted margins nor pulvinated panels appear in the masonry of the fortification walls and the tower.

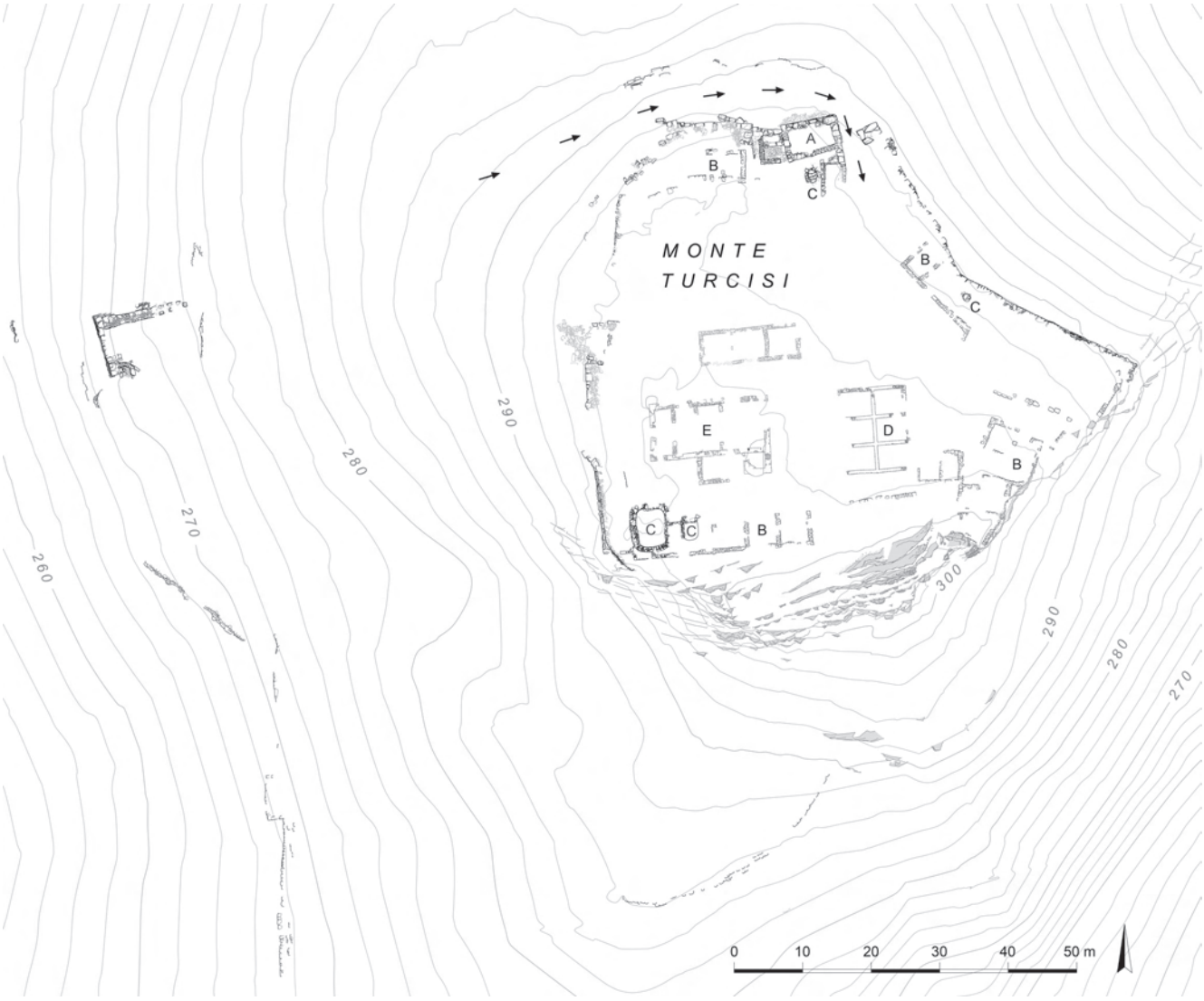

Fig. 2.3: Plan of the fortress on the upper plateau: A = Tower at the northern gate, B = Barrack-like buildings, C = Cisterns, D = Modern dormitory, E = Church. Arrows indicate the best possible access route to the northern gate (State of documentation: 2018).

The lower section of the fortification walls is comprised of a single-shell construction serving as a retaining wall for the specific ground surface of the interior parts of the fortress. Almost all the masonry rising above this lower part is lost today, but the tower and adjacent curtain wall reveal that it was built as a double-shell construction with two faces of differing course heights on the outside and on the inside: whereas the outside face is an extension of the retaining wall below and consists of large ashlars, the inside face is constructed of small blocks and rubble. There are no bondstones passing the thickness of the wall to connect the two faces.

Deserving special attention are the wall's outside faces on the eastern side of the fortress, on the western and northern side, and on the tower, since they show entirely different fabrics of their masonry. Coarse ashlars irregular in size and shape, along with staggered horizontal joints, characterize the eastern flank of the fortification wall. The western and northern flanks, however, are composed of regular ashlars, predominantly stretchers, of almost uniform height, thus generating isodomic masonry (images of the described walls can be found in Jonasch and Winterstein 2016, figs 18, 23 and 24 and Jonasch, Winterstein and Ferlito 2019, figs 6 and 7). In some places, it is directly built on the levelled bedrock, while in others, as can be seen at the wall's south-western end, several projecting layers of flat ashlars create a wall base that levels the uneven bedrock surface, and at the same time give the wall base a rough character. The tower is built on the levelled surface of a prominent oblique slab of natural bedrock (Jonasch 2020b, fig. 4; Jonasch, Winterstein and

Ferlito 2019, fig. 8). Its masonry stands out due to the huge blocks forming a course of orthostates, which accentuates the north-eastern corner of the tower, and accordingly, the gateway. In addition, the courses of the tower's outside face differ in height and feature some single headers, but without any systematic distribution of these. The presence of a few headers scattered in the walls of the tower does not allow an interpretation of their layout as 'masonry chains'.[8] On the contrary, the fortification walls of Monte Turcisi – with rough, irregular inner faces of the blocks to bind the whole mass of the wall together and the prevalent absence of headers – do not show any evidence of *emplekton* masonry that is so common in the Hellenistic period not only in Greece, but also in Sicily and the western colonies (for a profound characterization of Greek *emplekton* masonry in dry-stone construction, see Tomlinson 1961, 139–140). The masonry characteristics of the fortification walls suggest that their construction preceded the Hellenistic period.

We should not conclude that the differences in the style of masonry on the various flanks of the fortification indicate different building periods. In fact, they are simply responses to varying structural needs on the eastern and on the western/northern sides of the hilltop fortress. The steep terrain in the east ensured that approach and attack on the fort could not succeed from this side of the mountain. Therefore, the eastern flank of the fortification wall was only perceived from the distance, without the risk of direct enemy action. Instead, anyone wishing to approach the fortress had to climb the western slope from the above-mentioned flat ridge while having a constant view of the monumental western flank of the fortification wall with its regular-coursed ashlar masonry made of large rough blocks. These characteristics ensured that the wall gave the impression of strength and impregnability, which was intimidating and a deterrent for potential assailants. Following the curtain wall towards the gateway, this impression was enhanced by the imposing orthostate walls of the tower. Altogether, it becomes apparent that the choice of masonry for the different flanks of the fortification walls was based on carefully creating visual impressions and shaping external perceptions.

It is not only considerations in terms of aesthetic and prestigious aspects, however, that influenced the construction of the fortification walls, but also practical ones. As mentioned, the manufacture of the ashlars skilfully took into account the natural preconditions of the material, and in doing so, created highly economical workmanship. Furthermore, the fabric of the rising masonry with two different, unconnected faces is rather simple. We can therefore hypothesize that the construction of the fortification walls could be carried out in a relatively short time and by non-specialized workmen. Since the simple execution of the fortification walls does not undermine their defensive capacity, however, the fortress on the summit-plateau of Monte Turcisi is a fine example of how to optimize both the natural setting and effective design in fortifications.

This is all the more evident when we reflect on the strategic measures used to keep enemy forces away from the walls and from invading the fortress. As the terrain on the western side of the mountain is also rather steep, it left only limited to no easily accessible ground immediately outside the fortification walls. Consequently, these were hard to approach by potential assailants, and it was especially difficult – if not impossible – for any war machinery to be brought to bear on the walls. Danger of direct assault came only from foot-soldiers. When these climbed the western slope and approached the fortification wall, they had to turn left to the direction of the gateway (Fig. 2.3). Here, the passable ground narrows, so the attackers are forced to walk directly beneath the base of the fortification wall, thus exposing their unshielded right flanks. They could be attacked by defenders positioned on a wall-walk, which, in fact, was found during the excavation in the area of the elongated tower. If they made it this far, attackers had to turn sharply to the right, still under fire from the tower, to continue to the gateway, which is slightly set back behind the tower. Thus, the layout consistently followed the golden rules of fortress design prevalent at the time and written down by later authors, such as Philo of Byzantium and Vitruvius.[9]

The fortress has a simple overlap gateway, which merely consists of an opening 2.75 m wide between the tower and the eastern flank of the fortification wall (for a comprehensive summary on the design and development of fortification gates, see Adam 1992). Facing recesses at the outer end of the overlapping wall stretches offer evidence of the once inward-opening gate leaf. A simple ashlar structure attached to the southern edge of the tower channelled the direction of movement within the gate and prevented a direct invasion of the tower by intruders.

The Outer Line of Defence

Strategic planning of the outpost included the slopes and possible paths of access to the upper plateau. As mentioned above, the most suitable way to approach the fort from the lower plateau was the western hillside. In order to get to the starting point, one could ascend the mountain from the north or south, or could arrive via the lower ridge from the north-west (Fig. 2.2). It was therefore necessary to secure the western slope with a preceding line of defence to avoid direct attacks on the fort. The architectural survey of the slopes has revealed several such installations (Figs 2.2 and 2.3).

At an altitude of around 267 m, a 23 m-long wall controls the southern part of the western hillside with a tower-like structure, measuring 2.4 × 6.5 m, protruding at its northern end. It can be assumed that the wall continued in a northward direction, but only a small part of it could be documented at a distance of 15 m from the protrusion. The

state of preservation of these walls is rather poor: only two to a maximum of five layers of different sized ashlars have survived the eroding terrain. Like the lateral walls of the fortification, they were built into the uphill terrain, but we must imagine a rising wall of a reasonable height, which protected the defenders against enemy fire and allowed the launching of missiles against attackers. The southern flank of the upper plateau was also protected by an outwork sitting on a promontory underneath the outcropping bedrock. It reinforced the natural defences and allowed the safe positioning of soldiers on this side of the mountain in case of attack. The possible postern in the western fortification wall mentioned above would have allowed the defenders to reach these outworks easily without having to use the main gate.

Finally, in the centre of the western slope is a particularly well-preserved building with its lowest portion situated at an altitude of 269 m. Once again, the free-standing structure is built against the ascending slope and can, in all likelihood, be interpreted as a protected emplacement for larger defensive weapons (Jonasch and Winterstein 2016, fig. 5; Jonasch, Winterstein and Ferlito 2019, fig. 10, 11, 18 and 19). It measures approximately 8.2 × 13 m and consists of four right-angled walls with its presumed access from the east. The longitudinal walls are 1.38 m thick, whereas the western wall with a thickness of 2.12 m meets the requirements imposed by the structure's orientation, which exposed it to attacks, perhaps carried out with machinery situated on the lower plateau. Consequently, the rear wall has a lower width with only 0.95 m. These walls surround a platform, which is 5.45 m wide and 9.84 m long.

The local limestone again served as construction material, but it seems as if the builders made an effort to assemble the best and most homogeneous quality available. The masonry of the walls is remarkably elaborate, a construction with a rubble core and regular-coursed ashlar facings. On the inside, the ashlars are small in size and have pointed outer faces while the ashlars on the outside are much larger with all their faces carefully cut. The stepped base has two courses, each 45 cm high. Their outer faces with drafted margins and pulvinated panels give the building a sturdy impression. The wall's superstructure is formed of isodomic courses with a height of 34.5 cm. It consists predominantly of stretchers of different length. Just as was the case for the fortification walls on the hilltop, the platform features only a few headers mixed within the fabric. The outer faces of the ashlars are elaborately finished. In some parts, the smoothed surface exhibits tool marks of a fine-toothed chisel, and the edges of the ashlars are bevelled in an extremely accurate way. The careful fitting of this masonry is remarkable and is unique within the defensive system of Monte Turcisi.

Based on the location, design and dimensions of the building, some assumptions can be made concerning its function in the context of the fort and in a possible battle scenario. Unlike the long walls further south, the isolated structure with its great depth and massive wall thickness was unsuitable for the deployment of a larger number of soldiers with light weaponry, such as bow and arrow or hand-thrown stones. Instead, it was customized for the application of a larger catapult, preferably for the shooting of heavy stones at approaching units. The fortification of the upper plateau did not thus far reveal any good reason to reconstruct artillery emplacement in the walls or tower(s). This might be due to the state of preservation of the wall circuit, but may also be explained by the probable construction date of the fortress in the beginning of the 4th century BCE, when catapult technology was still in its infancy.[10] The recent research on Castle Euryalos clearly shows how military architecture was modified over time and constantly adapted to the most recent developments in weapons technology (Beste and Mertens 2015, 289–294). The same can be postulated for the fortress on Monte Turcisi, where the large platform reflects an advanced stage of siege warfare at – or after – the end of the 4th century BCE. The above-mentioned divergences in building technique, size, and quality between the main fort and the central outwork also fit well with a scenario of different construction periods and firmly demonstrate the development in Hellenistic siege and fortification techniques.

The dimensions of the central outwork theoretically permitted the positioning of a torsion catapult for stones with a calibre of up to one talent.[11] It is, however, more plausible to imagine a *palintonos* for a stone weight of 30 *minae*, having a stock length of 5.8 m and a width of 3.8 m as standard equipment of the outwork, since it allowed a rotation of at least 40° and therefore a relatively broad field of fire (Fig. 2.4).[12] The excavation of 2019 did reveal a rough stone preparation for a floor level at an altitude of 270 m. The floor itself was possibly made of wood and rammed earth. The campaign of 2019 also produced the rear wall of the structure with a preserved height at 273.25 m. The rising walls, seen from the inside of the structure, must therefore have been equal to or higher than 3 m (if we hypothesize *c*. 25 cm of floor covering). As the front wall is preserved only in its lower parts (max. 1.9 m), the design of the rising wall remains unclear. Therefore, we currently have no reason to reconstruct anything other than a simple platform with an open deck, maybe equipped with crenellations. As demonstrated by the hypothetical reconstruction, a torsion-catapult for a stone weight of 30 *minae* would have been easily able to surpass a height of 3 m with a launch angle of 20° (Fig. 2.5).[13] The massive walls would have offered ideal protection for the machine and its operators, but would have required an associated observation point to assist with targeting the enemy positions.

Indeed, Philo of Byzantium recommends placing larger artillery below ground level, in order to provide shelter for the operators.[14] On the other hand, he also emphasizes the necessity of small launch angles should the enemy venture

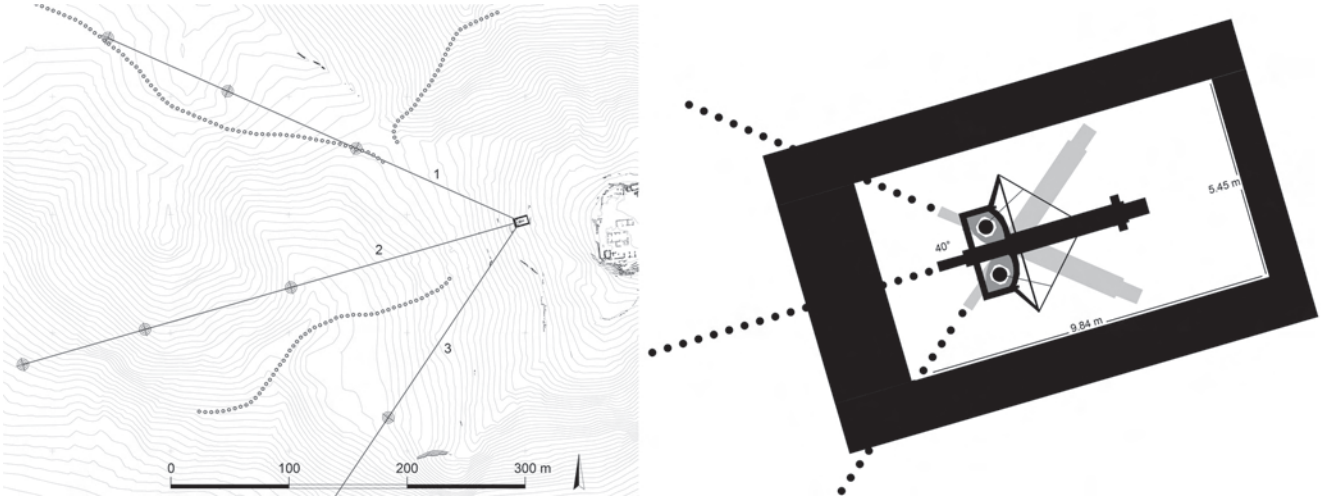

Fig. 2.4: Schematic drawing of the artillery emplacement (top view) and possible field of fire with a 30 minae *caliber* palintonos.

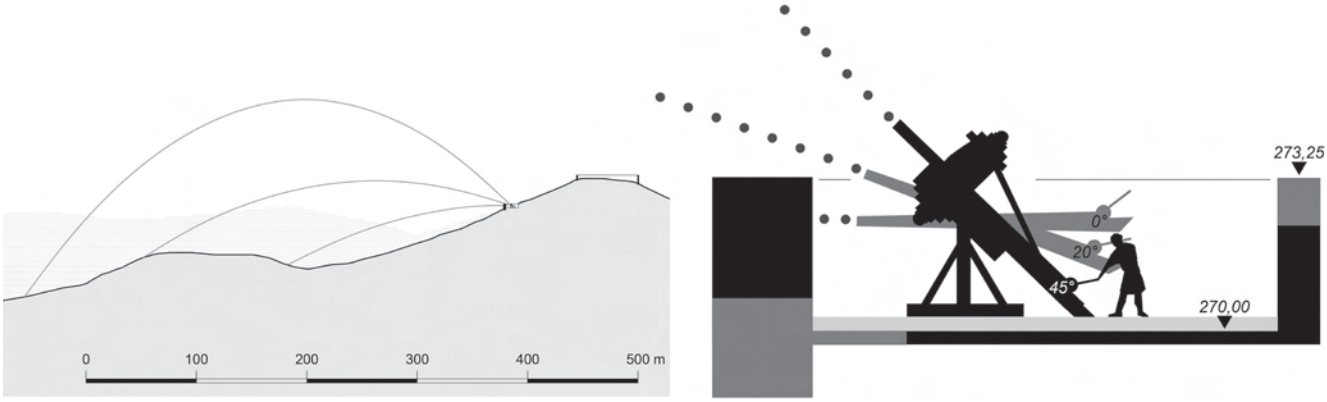

Fig. 2.5: Schematic drawing of the artillery emplacement (side view) and possible range of fire with a 30 minae *caliber* palintonos.

closer (for a discussion of shooting distances and the right positioning of catapults see Marsden 1969, 116–118 and Baatz 1994). Since the terrain beneath the artillery emplacement on Monte Turcisi has a gradient of approximately 45%, it would have been necessary to employ a negative launch angle to strike a closer target, a manoeuvre certainly impossible to execute with a catapult of this size. Therefore, we can eliminate here any possible scenarios of shooting at close range. As a matter of fact, the platform seems to have been specifically developed to prevent military units and machines from reaching the lower plateau as a vantage point for a direct attack on the fort (Fig. 2.4).

The Inner Life of the Fortress

The structural shape within the fortress is still unclear. The subsequent use and restoration of the Greek walls by the inhabitants of the modern era complicate the identification of the original building structure. There is no consistent use of mortar or tiles that would facilitate the distinction of antique and modern walls. Easily recognizable, however, are the church and an outbuilding with six single rooms, probably used as accommodations (Fig. 2.3). During the last season, another elongated building to the north of the church also revealed itself as a modern addition. As well as the so-called dormitory, this building is not taking advantage of possible predecessor structures as foundation, but is simply built on pressed dirt (Jonasch, Winterstein and Ferlito 2019). For the church, this has yet to be verified.

In addition to the prominent modern buildings in the centre of the plateau, several minor structures are recognizable on the surface. They probably date to the last phase of the Greek occupation with modifications and adjustments executed by the modern inhabitants. In the north and east, rows of small, single rooms are arranged alongside the fortification walls. In the south-west, a similar construction leans against the outcropping bedrock. Finally, in the south-eastern corner, a series of single rooms with different orientations adapt perfectly to the rising edge of the bedrock. All these buildings are built of dry rubble walls with

widths between 50 and 70 cm. The rooms are of different sizes, but most often offer a depth of around 4 m so as to accommodate a minimum of four people. Although there is no coherent typology to the interior design of a Greek fortress, the prevalence of single rooms, sometimes organized in rows, corresponds with the observations of military installations in other parts of the Greek world (McCredie 1966, esp. 22 and 53; Lawrence 1979, 176–178; Coulton 1996). A good example from Sicily are the 4th-century BCE military barracks from Monte Desusino in the region of Gela (Panvini 2003, 110–115).

A test trench within the modern dormitory revealed a complex stratigraphy consisting of a series of construction phases between antiquity and modern times. The buildings of the Greek fortress seem to have been destroyed, levelled and reconstructed at least twice between the mid-4th and mid-3rd century BCE (Jonasch, Winterstein and Ferlito 2019). Possible building phases earlier than this are still to be investigated. The structures modified by the modern inhabitants and visible today seem to be the remains of a final stage of the military outpost's occupation in the course of the 3rd century BCE.

Another key feature of any military fortress is the water supply. In the event of siege, it was indispensable to store enough water inside the facility. For this purpose, the fortress on Monte Turcisi offered four cisterns of remarkable size, although sources of fresh water can be found at the foot of the mountain (Fig. 2.3). Two of the cisterns were cut into the bedrock, probably in the shape of a bottle, and were covered with massive stone slabs (Jonasch and Winterstein 2016, 92 fig. 10. For the typology, see Bouffier 2014). They possess diameters of approximately 1.1 m and 1.4 m at their upper ends and are of unknown depth. Two further cisterns are integrated into the series of rooms in the south-western angle of the fortress (Jonasch and Winterstein 2016, 96 fig. 19). They are of rectangular shape with rounded corners and built from isodomic ashlars covered with a waterproof plaster. The larger measures approximately 5.6 m × 4.45 m and is unfilled to a depth of 1.8 m.[15] The smaller cistern has a size of 2.25 m × 3.35 m, but is filled up to its top with loose stones. During the time of the hermitage, both cisterns were covered with vaults of stone and mortar, but only the roofing of the smaller cistern has survived. In the Greek period, the covering was probably of stone slabs resting on the outer edges of the structure and some centre stone posts.[16]

Conclusion

The studies carried out thus far on the fortress on Monte Turcisi reveal a particularly sophisticated and rather well-preserved tool for controlling territorial integrity in the troubled time of the 4th and 3rd centuries BCE. Though it is currently not possible to identify the power responsible for the fort with absolute certainty, it stands to reason that the rulers of Syracuse established and controlled the position during the fort's lifetime. The only coin found on the site so far, which bears the signature of Hicetas, tyrant of Syracuse of the early 3rd century, supports this assumption (Jonasch, Winterstein and Ferlito 2019, fig. 18). The relatively high number of recovered amphorae deriving from the Bay of Naples and the Adriatic-Ionian area might also reflect the origin of the tyrants' military personnel, as well as the consequence of Syracusan expansionist policy to Magna Graecia and beyond.[17]

Though built with admirable economic efficiency of local stone and construction techniques customized to strategic essentials, the fortress on Monte Turcisi reflects meticulous planning and adaptation to the natural conditions, as well as a state-of-the-art fortification technique and poliorcetics. The multiple reconstructions of its interior and the obvious optimization of the outer defence line demonstrate the important role of this position throughout the centuries prior to the Roman conquest.

Notes

1 For the person of Dionysius I and developments in weapons technology under his leadership see Marsden 1969, 48–64; Caven 1990, 93–96; Rhill 2007, 31–37. On the 'Hellenistic military revolution' see Cuomo 2007, 41–76.

2 In the Archaic and early Classical period, military outposts in Sicily are attested by ancient written sources, as for example the strongholds of Phalaris mentioned by Diod. Sic. 19.108 in the context of the battle between Agathocles and the Carthaginians in 310 BCE. But until now archaeology has not yielded corresponding evidence. It is possible that those early military installations were ephemeral structures or that they are mere retrospective projections of later ancient authors, such as Diodorus, see Jonasch 2020a, 203–204. A critical discussion of the expansionist policy of Akragas can be found in Adornato 2012.

3 Recently published by Beste and Mertens 2015.

4 The most famous example for a civil settlement in a hilltop position with a potential military value is the Syracusan sub colony Kasmenai. For a discussion of the site with further bibliography see Jonasch 2020a, 189–196.

5 The project was a joint operation by the German Archaeological Institute, the Soprintendenza di Catania, and the Technical University of Berlin, co-financed by the Fritz Thyssen Foundation. Also involved was the University of Catania in the framework of a summer school in architectural surveying. For a first presentation of the site and the results of the architectural survey see Jonasch and Winterstein 2016. A preliminary report of the first excavation campaign in 2017 with an overview of the stratigraphy and the findings is published in Jonasch, Winterstein and Ferlito 2019. The present chapter represents the state of research as of 2018 with a few updates. The final publication is in preparation.

6 According to a visibility analysis from four different observer points on the upper plateau of Monte Turcisi, see Jonasch 2020a, 197 fig. 12.7. Visible to the naked eye are Kentoripa

and Adranon, both of which were under Syracusan influence for most of the 4th and 3rd centuries BCE, possibly also the tower at Erbe Bianche. It should be specified that during this time the neighbouring Archaic communities of Montagna di Ramacca and Monte Iudica had already been abandoned.

7 For a more detailed report see Jonasch, Winterstein and Ferlito 2019. Use of the area in a previous period is suggested by isolated finds of pottery of the advanced 5th century BCE. So far, there is no reason to believe in an Archaic predecessor settlement in this very location. The casual finding of 6th-century fine ware on the surface (see Procelli 1989) is not conclusive evidence for a permanent establishment for residential purposes. They might also originate from occasional frequentation, maybe in the context of ritual practices, performed at this crossway between two major hilltop settlements of indigenous origin (Montagna di Ramacca and Monte Iudica) and the closest Greek cities Katane and Leontinoi (see for comparison the study of extra-urban sanctuaries in Archaic Sicily by Veronese 2006). No stratigraphic argument can, however, be currently offered for any of these hypotheses. Further research is inevitably required to fully understand the history of Monte Turcisi through the ages.

8 According to Karlsson, these chains are a specific characteristic of masonry in Sicily in the mid-3rd century BCE, see Karlsson 1992, 70, 86–94.

9 In his treatise on sieges, Philo of Byzantium repeatedly refers to the vulnerability of the soldiers' unshielded right side as an important aspect to consider in the design of a fortification; see the comment in Whitehead 2016, 192 and Jonasch 2020b. Vitr. 1.5.2 also emphasizes the significance of getting the enemy to expose the unprotected right side and specifies that gates should not be placed in a straight line with the access path.

10 For a general discussion about the development of the catapult, see Marsden 1969, 48–64; Cuomo 2007, 41–76; Rhill 2007, 26–45; Campbell 2011. Marsden (1969, 43) and Rhill (2007, 86) argue for an introduction of the stone-throwing torsion catapult after 334 BCE. According to Campbell (2011, 680–682), there is, however, no firm basis for the application of torsion catapults before 306/5 BCE.

11 One talent corresponds to 26 kg.

12 We hypothesize the positioning of a stone and arrow throwing *palintonos*, since it seems to have been a popular all-purpose weapon for the defence of a besieged city, see Rhill 2007, 162. Furthermore, Ph. Bel. C67–71 recommends the 30-*mina* rock-projector as the most powerful weapon against war engines; see Whitehead 2016, 327. Thirty *minae* correspond to 13.1 kg. For the reconstructed sizes of *palintonoi* according to Philo, see Rhill 2006 and 2007, 290–291.

13 The field of fire and the trajectories shown in Figs 2.4 and 2.5 were calculated on the basis of a maximum firing range of 360 m (in accordance with Marsden 1969, 90–91) of a stone ball with 13.1 kg and an initial speed of 60 m/s. Gravity, but no air resistance, has been taken into account. Fig. 2.4 shows the possible field of fire of a *palintonos* for a shot weight of 30 *minae*, hypothesizing a straight line of fire (n°2) and a rotation of 40° to both sides (n°1 and 3). The potential points of impact of the stones, shot with vertical launch angles of 0°, 20° and 45°, are marked with target symbols on each line. In Fig. 2.5, the trajectories of a 30 *minae* caliber with vertical launch angles of 0°, 20° and 45° are simulated against the contour of the mountain. Similar calculations on the possible impact of defensive artillery can be found in Marsden 1969, 86–98, Bakhuizen 1992, 160–162 and Baatz 1994.

14 Ph. Bel. A32: 'Also, beneath the walls and the outworks artillery-emplacements are [to be] prepared, for artillery as large and as plentiful as possible: some at ground level, others below ground, with a view of having plenty of space and ensuring that the operatives are not wounded and, out of sight themselves, wound the opponents, and [in order that] when the enemy come close the catapulteers do not become unserviceable by being unable to lower their aim' (Whitehead 2016, 73). See also Jonasch 2020b.

15 The assumed storage capacity is around 60 m³.

16 Rectangular cisterns of similar dimensions are known from Syracuse and Selinunte, see Bouffier 2014, 184, 187. Just as was true of the large cistern on Monte Turcisi, they have a medium storage capacity of 40 to 60 m³.

17 For a first analysis of the pottery from Monte Turcisi, see Jonasch, Winterstein and Ferlito 2019. The role of Campanian mercenaries in Sicily is discussed in Père-Nogues 2006. Dionysius' expansion to the Adriatic Sea is summarized in Caven 1990, 149–153.

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3

Strategy Versus Representation? The Late Classical City Wall of Messene

Silke Müth

The late Classical city wall of Messene in the south-western Peloponnese[1] is one of the most prominent fortifications in Greece due to the excellent state of preservation of considerable parts, their monumental appearance, and the beautiful effectuation of their masonry, particularly at the famous Arcadian Gate. A closer look at this wall confirms that it represents a strong defensive construction, including sophisticated strategic planning and the newest developments in the art of fortification of its time, the second quarter of the 4th century BCE. Owing to the quick succession of new inventions in catapult technology, this century saw a particularly lively interplay between poliorcetics and fortification techniques. The builders of the walls of Messene therefore experimented with innovative features in towers, curtains and gates, and at the same time managed to follow a stringent economic plan.

Closer investigation, however, also reveals various details that deliberately and elaborately increased the wall's monumentality and decorative effect. These show-off features, partly even contradicting defensive reason, clearly indicate the strong representative content and symbolic value of this city wall. The present contribution is going to examine the apparent tension between strategic and symbolic aims in this monument in the very particular historical context of its construction, and will show that both worked together in protecting the newly-acquired independence of the *polis* of Messene.

Historical and Topographic Background

The ancient city of Messene was founded in the year 369 BCE as the new urban centre of Messenia in the south-west Peloponnese. This was achieved by the Theban general Epameinondas after he had inflicted the mighty blow on the Spartans in the battle of Leuktra in 371 BCE, and thereafter had demoted the Spartans even further by liberating Messenia from their yoke, under which they had been for around three and a half centuries (on the foundation of Messene see Paus. 4.14.5; 15.6; 26.5–27.7; Diod. Sic. 15.66.1–67.1; Plut. Ages. 34.1; Plut. Pel. 24.9–25.1. For more detail see Müth 2007, 14–17). Messene was laid out on the south-west slope of Mt Ithome, a mountain which bore a high symbolic value for the Messenians as an important stronghold in wars and revolts against Sparta; as the site of one of the oldest and most important Messenian sanctuaries; for the worship of Zeus Ithomatas, on its summit; and as the place of an old myth connected to Messenia's future liberation from Sparta (for more detailed information on the role of Mt Ithome see Müth 2007, 13–14). At the same time, this steep and rocky mountain was of highest strategic value (as to the geographic situation of Mt Ithome and Messene see Müth 2007, 9–10). Demetrios of Pharos, when advising Philip V of Macedon, called Mt Ithome and Akrocorinth the two horns of the bull Peloponnese that had to be held in order to keep it under control (Polyb. 7.11/12; Strabo 8.4.8).

According to the accounts of Pausanias (4.27.5–7), Messene was equipped with a city wall right from the time of its foundation, and on archaeological grounds, there is no reason to doubt this: the details of typology, construction and stonemasonry, the technical state of development (see below) as well as excavation material all point to the middle of the 4th century BCE as the time of its erection (Giese 2010; Müth 2010a; 2014; Schwertheim 2010). We cannot tell with certainty, however, how much time the building process actually took. Estimations by Jean-Claude Bessac (Bessac and Müth 2020) based on the analysis of the materials used and their quarries, the techniques of stone dressing and construction as well as attempts of quantifying

this monument suggest a building period of between one and three years.

Strategic Evaluation

The city wall of Messene is one of the best-preserved Greek fortifications, the ruins of which can still be seen from afar when approaching the city (Figs 3.1 and 3.2). It includes a ring wall around the summit of Mt Ithome, which in this way served as a stronghold in itself (Plate 3.1). From there, two wall lines branch off down two ridges in the north-west and south-east of Mt Ithome and encompass the lower town. The northern, western and eastern parts of the fortification run over the crests and ridges of hills, while most of the southern section is oriented along the northern side of a gorge. One can clearly observe that this trace was chosen on strategic grounds: it made ample use of natural features to enhance the defensive qualities of the wall and constituted the best defensible line that could be found in the terrain around the city. The total length of the circuit including the ring wall on Mt Ithome is 9150 m. This number comprises, however, around 1450 m of natural defences, where no built wall was necessary, so the length of the built fortifications is 7770 m. With this considerable length, the city wall of Messene belongs to the longest examples of its kind in Classical mainland Greece.[2] As a so-called *Geländemauer*, the wall also included fields for agricultural cultivation and could offer shelter for the inhabitants and livestock of surrounding settlements in times of war.[3] The total of the encircled area

Fig. 3.1: Messene. Northern part of the western fortifications, view from south (photo: S. Müth).

Fig. 3.2: Messene. The Arkadian Gate and towers T 46 and T 45 from the field side, seen from west (photo: S. Müth).

is *c*. 360 ha, of which only around 100 ha were built-up, which corresponds to 28%. The rest is represented by the steep slopes of Mt Ithome and by softer terrain suited for agricultural cultivation in the east and west of the city.[4]

Apart from making use of the natural defences of the terrain, the city wall of Messene also includes many other features that show that it was designed as a strong and highly defensive monument. As Pausanias already observed (4.31.5), the wall is built entirely of stone from bottom to top instead of having a mudbrick superstructure. It thus constituted one of the earliest examples of such walls, which were far more durable than mudbrick walls and did not need as much maintenance (Lawrence 1979, 35; Karlsson 1992, 75–76, 107; Cooper 2000). The curtain walls were constructed of two faces of blocks with a filling normally consisting of earth, stone chips and rubble. At some sections in the north-west, however, namely curtains K 7–8, K 8–9 (partly), K 9–10 (partly) and K 10–11,[5] the filling consists of roughly hewn, layered stone blocks, so the construction comes very close to solid stone masonry. On the slopes of Mt Ithome and in the north-western area the two wall faces are connected to their filling by the unworked inner faces of the blocks and by irregularly placed binders reaching deeper into it, while in the south-western and southern area, there are inner compartment walls connecting the two faces and bound to them by so-called masonry chains (Karlsson 1992, 73–74). In more endangered areas, the curtains were considerably wider and higher than at steeper and naturally better-protected sections. The highest curtains can be found between the Arcadian Gate and T 45, where they reached up to *c*. 8 m, including the parapet (Fig. 3.2), although it needs to be said that only the original heights of the north-western curtains and those around the Arcadian Gate can be determined. Meanwhile the largest widths of over 3 m are found in the southern sections (Giese and Müth 2016, 280–281). Large parts of the wall walk were somewhat lavishly paved with limestone slabs, either monolithic or a pair spanning the width of the curtain. Sometimes these slabs were connected to each other by clamps. The battlements were crenellated all around the circuit (Figs 3.1 and 3.3). At most sections – apart from the area around the Arcadian Gate – the crenellations also included traverses to stabilise the merlons.[6]

There are remains of 46 towers or other flanking structures[7] preserved in connection with the circuit, but their distribution pattern in the well-preserved sections as well as topographical and strategical considerations lead us to suspect that originally there must have been around 80. The distances between these accompanying structures vary flexibly between 26 and 160 m, depending on the characteristics and accessibility of the terrain and the proximity of posterns or gates. In this way it was made sure that also in steeper terrain where larger intervals were chosen, flanking fire could easily cover the whole length of the curtains, while in flatter and better-accessible terrain, the flanking fire would have been particularly intense.[8] The towers or other flanking structures normally have side lengths of 6–7 m and were mostly square apart from the two horseshoe-shaped towers T 6 and T 10 (Fig. 3.3).

Fig. 3.3: Messene. Tower T 10 seen from north (photo: S. Müth).

Towers normally consisted of a solid socle with an artillery chamber on top. There is only one flanking structure (T 5) where a chamber in the socle can be observed, but this might be due to the bad state of preservation of many of these structures. In particularly crucial areas or close to gates the towers were two-storeyed, as the preserved examples T 9, T 45 and T 46 (Fig. 3.2) show, in order to increase their defensive potential as well as the height and range of artillery. T 7 on the north-western corner of the circuit represents a special structure with a ground size of *c*. 6.4 × 13 m, *i.e.* double the size of a normal tower, and its city-side wall replaced by pillars (Giese 2010, 91–95). It probably housed a second storey on top, so its fire capacity could have been quadrupled. In this way it provided a most powerful protection of this pronounced north-western corner of the wall. There are more large buildings like this, found for instance in T 29, perhaps also in T 30, and in T 37 that was added later to the ring-wall on the summit of Mt Ithome (Giese and Müth 2016, 281–284, particularly types A7 and A11), but their poorer state of preservation

does not allow detailed reconstructions. In addition to this, jogs enhanced the defence particularly on the steep slopes of Mt Ithome.

The openings in the tower chambers show clear signs of experimenting with the newest developments in fortification technique. The invention of non-torsion catapults around 400 BCE by engineers of Dionysios I of Syracuse had soon afterwards also come to Greece, and gradually, these machines were developed to throw not only arrows, but also stones, which meant that they grew in size. Thus, hand-held weaponry was gradually substituted by stationary machines (Marsden 1969, 48–67; Garlan 1974, 155–278; Lawrence 1979, 39–52; McNicoll 1986). For their use, the mere loopholes of earlier towers grew obsolete and openings needed to be broadened in order to allow a wider shooting range. In the preserved towers in Messene, different hybrid forms between loopholes and windows can be observed in the lower artillery chambers: with inner widths between *c*. 45 and 115 cm they are clearly broader than loopholes, but still taper considerably towards the outside, where their width varies between *c*. 15 and 35 cm.[9] These openings reach over one or two courses in height and are either covered with a flat lintel (Figs 3.2 and 3.3), which is the most usual form within the preserved examples, or they show a pointed top (Fig. 3.1), which may also be observed in Messene quite often. Exceptionally, these artillery openings may also adopt the form of an ogive, of which only half an example is preserved in T 8. Forms of openings may vary even within a single tower, as is shown by T 6 featuring both openings with flat and pointed coverings. While artillery openings with flat coverings are common in first-generation artillery towers (Ober 1987), the pointed and ogive-shaped versions are rather unparalleled in Greece apart from comparable examples at Aetolian Chalkis (Dietz and Kolonas 2016, 244–247).[10] It is clear from this evidence that at the time the towers of Messene were built, a canonical form of such openings for stationary catapults had not yet been developed, at least not for the lower storeys, where more protection for

Fig. 3.4: Messene. The Arkadian Gate with the adjacent wall sector to the east (photo: S. Müth).

men and weaponry was needed than in upper storeys. These experiments thus illustrate the quest for the strategically best form of openings for both shooting and protection at the same time. In the upper storeys, of which we only have two sufficiently preserved examples in towers T 45 and T 46, things were easier: here, normal windows with sizes of roughly 70 × 80 cm were included, which were ideal for catapults, allowing a far wider range in breadth as well as in distance (Marsden 1969, 129–130; Lawrence 1979, 383; Ober 1987, 575–576). An experimental aspect, however, can also be found in this context: in tower T 46, the lower parts of these windows are cut into the block layer below, which is unparalleled in Greek defensive architecture (Lawrence 1979, 404; Ober 1987, 577).

The roofs of the Messenian towers, as far as we are able to reconstruct them, were generally not planned for defensive use: the two towers east of the Arcadian gate (T 45 and T 46) had gabled roofs (Fig. 3.4), and the single-pitch roofs of the north-western towers (Figs 3.1 and 3.3) with their inclination of 10–11° were not flat enough to offer good fighting platforms; moreover, their crenellations were too low (Haselberger 1979, 102–109).[11] This of course did not exclude the possibility of using them for fighting anyway in cases of emergency.

Altogether, the Messenian towers clearly fall into the category of 'early first-generation catapult towers' as Ober (1987) defined it, *i.e.* an early form of artillery towers belonging to the second quarter of the 4th century BCE, to which, as well as the Messenian towers, towers from the Boeotian fortifications of Siphae and Eleutherae and perhaps also the Attic fort at Phyle belong. The third quarter of the 4th century had already seen some further enhancements of this type, while the 'second-generation catapult towers' belong to the last quarter of the 4th and first quarter of the 3rd centuries BCE and were designed to counter – and house themselves – the torsion catapults developed under Philip II of Macedon by the means of increased dimensions, stronger walls, more storeys and larger windows (Ober 1987; 1992; see also McNicoll 1986, 309).

The gates of the city wall of Messene were well defended, too: the largest ones were the Arcadian Gate in the north (Fig. 3.4), the West Gate and the South Gate (Plate 3.1). The Arcadian Gate and the South Gate were designed as courtyard gates with two outer towers and lockable doors only at their inner sides, and as our excavation results[12] show it is very likely that the West Gate was of the same monumental type (Schwertheim 2010). In this way these gates could function as a trap, where penetrating enemies could be surrounded and fired at from the courtyard walls and the outer towers. Particularly the broad courtyard walls of the Arcadian Gate, merging with the rising terrain on both sides, allow ample space for placing defenders and even catapults.[13] As medium-sized gates, the South-West Gate was flanked by two towers, while the Laconian Gate in the east was designed as a tower gate, which housed the entrance in its ground floor.[14] The smaller North-West Gate was flanked by one tower (T 9), while the South-East Gate, which seems to have been a side-entrance, was protected by a widening of the adjacent curtain. In this way the level of defence of the various gates in Messene was adapted to their individual size and importance, but also the terrain seems to have played a role in the choice of design: the narrow pass that was chosen for the Laconian Gate, lying directly outside the saddle between Mt Ithome and the neighbouring Mt Eva (today's Ayios Vasilios) between near-vertically rising rocks to the south and a steep drop of terrain to the north, afforded a special solution that answered to these natural conditions and to the importance and defensive requirements of the gate as the only direct entrance from the wide Pamisos valley to the east at the same time. This type of tower gate, as it was for instance also chosen in comparably narrow situations in Theban Siphai (Schwandner 1977, 528–534) or in Hellenistic times in Pisidian Kremna and Pamphylian Sillyon (Laufer 2010, 179–180), was the ideal solution to meet these needs.[15]

Economic Planning

The features described up to now make it obvious that the city wall of Messene was designed as a strong and effective defensive construction. The heterogeneous elements of the fortification, however, like the mentioned differences in construction technique and typology of curtains and towers as well as the variety of artillery openings, indicate something beyond the striving for defensive strength: they show that various working teams with different backgrounds and experience must have been employed at the construction site, a sign for quite some haste in building this monument. This fortification must have been urgently needed for the defence of the city, which can easily be understood regarding the huge threat from Sparta's side after the foundation of Messene. Sparta was – quite naturally – not amused to have lost the most fertile part of its empire as well as a huge part of its cheap manpower in the form of helots, and was only too eager to win it all back as soon as possible (Luraghi 2008, 218; Müth 2014, 110).

Some striving for swiftness and economic planning may also be observed in the choice of material for the walls: the hard limestone of high quality that we can observe today in the well-preserved parts of the wall was only used in the northern and north-western parts of the circuit, where it also forms the rocky ground. In the south-west and south in contrast, a soft psammite,[16] which is a variety of arenite, was the material of choice (Fig. 3.5, bottom). It was easily accessible in quarries at a distance of *c.* 5 km south of Messene, and could be quarried and dressed considerably faster than limestone. On the other hand, it is not very durable and has withered away in most of its parts. In

Fig. 3.5: Messene. Limestone with hard inclusions used at the socle of T 24 (above) and psammite used in the curtain south of the West Gate (below) (photo: S. Müth).

the south-east, the locally genuine rough limestone with large inclusions of virtually unworkable quality served as a construction material (Fig. 3.5, top). This, in turn, did not allow for very neat block forms and joints, so the wall there has largely collapsed.[17] Thus, it is obvious that the Messenians did not take their time – or their money – to quarry good-quality material for all of their circuit, but always took the variety that was most efficiently available from the respective section. We already met other aspects of this economic planning in the flexible width and height of curtains and in the number of tower floors, all adapted to the degree of endangerment of the respective parts of the wall. In this way, a considerable amount of time and building materials could be saved. Time or money seem to have played an important role in this building, and in the particular situation of the city in the period immediately after its foundation it rather seems that time was the more crucial factor.

Representative and Symbolic Aspects

When taking a closer look at other details of the monument, however, some aspects come to light that cannot be connected to its defensive role in the first place, and are in stark contrast to economic planning. The water outlets on the southern side of the circuit, for instance, are all embellished with consoles beneath their lintels. We encounter further consoles at the city-side façade of the Arcadian Gate (Fig. 3.6), used here as mere decorative features without any practical function. Looking at the Arcadian Gate in general, the aesthetic forms of masonry and finishing, particularly of the inner courtyard (Fig. 3.4), are striking: carefully dressed orthostates at the bottom, above which a band of smoothed flat blocks is followed by isodomic ashlar masonry, decorated with offset rows of vertical grooves. This succession is repeated at the outer sides of the gate in a slightly rougher version. We do not know of any other gate of this period that shows a comparably decorative treatment. Moreover, Jürgen Giese (2010, 86–88; Schwertheim 2010, 98–99) discovered, in his architectural study of the gate, that it includes a number of refinements such as the slight upward tapering of gate openings and passage walls, which normally only important public or sacral buildings featured in this time.

The Arcadian and the South Gates possessed large double gateways of total widths of over 6 m at their city-sides, separated by a centre pier (Schwertheim 2010, 102–105). These double gateways would not have been motivated by practical necessities, as there was hardly that much traffic passing at the time that would have required a cart passage in each direction.[18] The double gateways rather seem to have been chosen because of their splendour and monumental effect – in defensive respects, however, they definitely represented a weak point because of their sheer size, which made them vulnerable, and because of the slender centre piers which did not provide solid abutments for the locking bars (Schwertheim 2010, 105). In this crucial point, the

Fig. 3.6: Messene. The city-side façade of the Arkadian Gate (photo: S. Müth).

builders obviously even accepted defensive disadvantages for the sake of monumentality, which is quite extraordinary.[19]

The flanking buildings feature decorative elements, too. The decoration with rows of offset vertical grooves we observed at the Arcadian Gate can, for instance, also be found on door lintels of several flanking buildings around the circuit, namely at T 4, T 11 (Fig. 3.1), T 22 and T 23. By this stylistic element, these diverse structures are linked together. Also, the aforementioned fact that the north-western towers were crenellated throughout without their roofs being designed as fighting platforms may be seen as a decorative feature. This aspect would nevertheless also strengthen the defensive qualities of the wall by protecting the towers to some degree from artillery fire (Haselberger 1979, 106–110) and by permitting the exceptional use of these roofs as fighting platforms in cases of emergency.

Another important representative feature is related to the masonry forms. These show, in general, many trapezoidal traits in the north-western section of the circuit and on the slopes of Mt Ithome, while mostly isodomic ashlar masonry can be observed around the Arcadian Gate, the adjacent part to the east and the southern parts of the circuit consisting of psammite. Jean-Claude Bessac found out that these masonry forms are directly connected to the quarrying characteristics of these materials (Müth 2010, 78–80; Bessac and Müth 2020).[20] The limestone variety used for the particularly heavily frequented area around the Arcadian Gate, which usually breaks in rectangular forms under quarrying, came from a systematically exploited quarry, probably located nearby at the inner side of the wall east of the gate, which is hidden by agricultural terraces today; so it can hardly be assumed that this material was deliberately chosen for a particularly regular construction of this heavily frequented area. In the north-western section of the circuit and on the summit of Mt Ithome, however, in the middle of predominantly trapezoidal sections, two exceptions of pure ashlar masonry can be observed: the flanking structures T 7 and T 38. Those were erected precisely at the highest points of the lower city wall and the wall on Mt Ithome respectively, which cannot be mere coincidence. The Messenians obviously wanted to emphasise these highest monuments of their circuit, which were also the best-visible ones, through particularly regular masonry.

All these deliberately aesthetic or monumental features show that this fortification was endowed with a significance that clearly exceeded its defensive character (Müth 2010, 82–83; 2014, 113–115).[21] Consequently, the question arises of what exactly was meant to be expressed by this monument, and by whom. The last part of the question seems easier to answer, if we believe the written sources that tell us that the Thebans, helped by the allied Arcadians and Argives, took care of the wall building (Paus. 4.27.5–7; indirectly also Diod. Sic. 15.66.1), and it is only natural to assume that the new Messenians themselves also helped with this as far as they could. These new Messenians came from various regions and backgrounds and obviously included different groups of people: newly liberated helots of Messenia; descendants of different waves of Messenian exiles who had emigrated to Italy, Sicily, North Africa or other parts of Greece throughout the wars and upheavals against Sparta; *perioikoi* living in the region; and finally anyone else who wanted to join was welcome (Paus. 4.26.5; 27.8; Diod. Sic. 15.66.1; Plut. Pel. 24.5; Plut. Ages. 34.1; Isocr. Archidamos 16–28).[22] Thus the new citizens of Messene formed quite a heterogeneous group.

Why did all these parties not only want to build an efficient defence, but also an aesthetic and representative monument? There are probably several reasons. The Thebans and their allies, who can be seen as the initiators of this project, certainly wanted to show their pride as liberators and founders of the city, and intended to erect for themselves a monument of their victory over the Spartans, who were thought to be invincible for so long. The new Messenians, however, urgently needed to strengthen their community and common identity, both for themselves and in the face of the other Greek states, which hotly debated Messene's right to exist until they finally accepted it in the peace treaty after the battle of Mantineia 362 BCE (Roebuck 1941, 41–43; Jehne 1994, 79–115; Grandjean 2003, 55. 65–67; Müth 2014, 110). And what would have been better suited for this purpose than a monumental and representative city wall visible from afar, which constituted a signal of unity, power and independence *par excellence*? In this way, the fortification of Messene served as a symbol of common identity, stability and independence of the community and its capability to defend these achievements – in short, as an argument for Messene's right to exist, quite literally set in stone. As such a mighty symbol the city wall was worth the extra effort to be given a monumental and representative form in order to make it not only practical, but also precious.

In this way, the monumental and representative features of the city wall of Messene did not contradict its strategic and defensive qualities, but together with them served as guarantors for the independence and permanent existence of the new city. So the conclusion of this article is that we are not facing a case of strategy *versus* representation here, but rather a case of strategy *through* representation. In the walls of Messene, defensive strategy and symbolic representation stood together and reinforced each other mutually for the defence of the city's right to exist – and successfully so, as Messene was able to persist and thrive for many centuries.[23]

Notes

1 I had the pleasure of studying this monument with a team of colleagues consisting of Jürgen Giese, Ute Schwertheim and Jean-Claude Bessac, in the frame of a project housed and supported by the Free University of Berlin in collaboration with the Technical University of Berlin from 2004 to 2008

(project directors: Friederike Fless, Wolfram Hoepfner and Dorothée Sack) thanks to the friendly cooperation of the director of the Greek excavations in Messene Petros Themelis and generous funding from the Gerda Henkel Foundation in Germany. The main publication is in progress.

2 The walls of Megalopolis are of comparable length, see Maher 2017, 236.

3 On the phenomenon of *Geländemauern* in Greece from Archaic to Hellenistic times see short overviews in Winter 1971, 111–114; Garlan 1974, 82; Frederiksen 2011, 90; Beste and Mertens 2015, 284–285.

4 On the limits of the built-up area and the size and location of the living quarters see Müth 2007, 263–265. The size of the terrain included by the city wall, however, has been corrected since, therefore the numbers given here differ from the older ones.

5 The numbering of the curtains refers to the numbering of the flanking structures, *e.g.* K 1–2 designates the curtain between T 1 and T 2.

6 Against the assumption of Ober (1987, 575) that the battlements were crenelated all around the circuit, Haselberger (1979, 102 with pl. 32,1) reconstructed a closed *epalxis* for the section around the Arcadian Gate. Our studies prove, however, that the battlements were crenellated there as well, although they did not contain traverses. A detailed study of the wall walks and battlements of Messene was conducted by Judith Ley in the frame of our project. On the traverses, see also Garlan 1974, 199; Lawrence 1979, 360–361, 423 and in more general terms Winter 1959, 186.

7 Flanking structures that are not preserved higher than wall-walk level are not called towers in this article, because they also could have been simple artillery platforms or in some cases only wall projections. The term 'flanking structures' is not meant in its narrower sense of structures providing flanking fire for the curtains here, although they mostly would have done, but in its wider sense of structures accompanying the curtains. See Giese *et al.* 2016, 44–49 in favour of a preferably non-construing and non-reconstructing terminology.

8 On the reach of early artillery see Marsden 1969, 12–15 and Baatz 1994, 138–140.

9 On these hybrid forms of openings, see also Marsden 1969, 127–129; Winter 1971, 173–175 and Lawrence 1979, 382, 403–404.

10 The only ogive opening in Chalkis is the western one of the two openings in the northern wall of Tower 1, described by Dietz and Kolonas (2016, 244) as 'arched', but not represented on their fig. 95, while the other openings are all pointed.

11 Although Kuhn (2008, 358 n. 136; 2017, 29–30 n. 189) opposes this view, his arguments against it can be refuted: the inclination of the single-pitch roofs cannot have been lower on the field side than on the city-side, as the holes for the purlin and the rafters clearly speak against this and show a continuous inclination, and the roof construction cannot have been flatter as reconstructed by Haselberger by avoiding tiling, because fragments of Laconian tiles in the interior of T 9 suggest tiled roofs for the north-western towers. Moreover, a roof only 15 cm thick, as Kuhn reconstructs it, would not have provided enough protection from missiles. So the crenellations over these roofs were indeed too low to offer good protection for fighters (the alleged height of the crenellations of 1.9 m above the rafter holes in T 11 given by Ober 1987, 582 and cited by Kuhn 2017, 30 n. 189 is not documented, as the battlements of the field side of T 11 are only rudimentarily preserved and seem to have been clearly lower, judging by the last preserved merlons of the flanks). Furthermore, the holes beneath the merlons do not imply an active defensive use of the roofs, as they would rather have been used for the installation of passive, permanent means of defense, for instance of means against the application of ladders by the enemy or of cushioning applications against enemy missiles, as Kuhn himself (2008) has suggested.

12 These excavations were supervised by Ute Schwertheim.

13 On the place of these monumental gates in the development of Greek courtyard gates in general see Schwertheim 2010.

14 We have earlier presented the Lakonian gate as probably flanked by two towers (Giese and Müth 2016, 280–281), while its identification as a tower gate is based on my more recent studies of the gate remains.

15 On tower gates in general, see Müth and Ruppe 2016, 239–240.

16 According to the specialist for stone quarrying and dressing in our project Jean-Claude Bessac, the psammite from Messene is a local variety of arenite that represents a polygenic micro-conglomerate with a clear predominance of limestone particles.

17 On these different types of material and their use see Bessac and Müth 2020.

18 Kuhn (2017, 48–49 n. 333) seems to assume a division into a pedestrian and a cart opening, but such a division is not at all usual at this period, and the preservation of wheel ruts only in the threshold (which might incidentally not be the original one) of the western opening of the Arkadian Gate does not provide any indication for his assumption, as the eastern threshold is not preserved at all. As the twin openings at the Arcadian Gate as well as at the South Gate have identical widths, it seems more likely that they were meant for incoming and outgoing traffic respectively.

19 Kuhn (2017, 48–49 n. 333) considers the idea that before the *Pax Romana* representative purposes could have outbalanced the safety requirements as unrealistic. The double gates at Messene can hardly, however, be attributed to any practical reason and have to be seen in connection with the other decorative and monumental features of this fortification, which clearly prove that representative aims played an important role in its construction (see below).

20 On the general determination of masonry forms by the geological conditions of the material see Bessac 2016, 132–134; on masonry forms and their backgrounds in general, see Bessac 2016; Brasse and Müth 2016.

21 On the representative and symbolic aspects of fortifications in general see Müth *et al.* 2016. On functions of fortifications in general see Müth 2016a for an overview and more in detail Jansen 2016 and Müth 2016b.

22 On this composition of the population of the new town, see Grandjean 2003, 56 and Müth 2010b, 138–140, while Luraghi 2008, 195, 220–230 contests the participation of Messenian exiles.

23 For a detailed success balance of the city wall of Messene, see Müth 2014, 115–118; for the history of Messene after the years of its foundation see Roebuck 1941; Grandjean 2003; and Müth 2007, 18–26.

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4

Apertures and Shutters at the Towers of Ancient Messene

Ioannis Nakas

The early Hellenistic fortifications of ancient Messene in the Peloponnese are some of the largest and most impressive in the Greek world. Thanks to their good state of preservation, several attributes of their construction have survived and can be studied in detail. This paper will deal with two of the best-preserved towers of Messene, the ones located north of the Arcadian gate, conventionally called towers L and M by Lawrence (1979) and named 40 and 41 or 17 and 18 respectively in recent years (Fig. 4.1).[1] Both towers were restored during the last two decades with the use of original material that was scattered around them (especially tower M/18/40, that preserved nearly all of its ancient blocks). The documentation of this material before its restoration gave the author a chance to inspect closely and study details of the stone blocks and especially the existence of four chases or through-holes that surrounded the apertures of these towers (Fig. 4.2).

The square northern towers of Messene have been well known since the 19th century (Blouet 1831, 37–41) and have been well documented and studied by various scholars (for an updated bibliography see Kuhn 2008 and Müth 2014), so we will only underline a few things about their construction and configuration here. They follow the more-or-less regular form of the square late Classical and Hellenistic towers of Greece and Asia Minor, as these are known from a series of examples like Siphai, Eleutherae, Aigosthena, Herakleia of Latmos, Ephesus, Samos (second circuit) and Iasos (Ober 1987; 1992). The towers consist of a rubble-filled base, a lower level, communicating through doors with the sentry-walk or *parodos* and an upper level with a wooden floor reached via a wooden staircase and covered by a gabled tiled roof (Fig. 4.3). The bottom level was equipped with four elongated loopholes (two at the front and one on each side), whereas the top level with six apertures, two facing the front and two on each side, splayed towards the inside. In comparison to the other parts of the Messene fortifications, the towers studied here are the only ones displaying this configuration, but it is very possible that other towers were similar, but have not survived in such a good state of preservation. The exact dating of the towers has been debated between scholars (Kirsten 1964, 906–910; Winter 1971, 111, n. 23) but they were most probably built along with the rest of the fortifications in the third quarter of the 4th century BCE (Müth 2014, 6–11). Their configuration indicates that they were some of the earliest towers that were constructed to accommodate catapults (Fig. 4.3; Ober 1987, 574–577).

The almost-square (59 × 62 cm) upper apertures of the Messene towers had four rectangular (*c*. 10 × 5 cm) through-holes or chases placed on each corner and aligned with each other perpendicularly and horizontally. The holes perfectly match the apertures' top and bottom, the bottom ones carved on the sill stone (Fig. 4.5A).[2]

The stone was dressed but not smoothed inside the chases and there were no traces of use, or the remains of any material like wood or metal. Similar chases are common in various fortifications of Greece and Asia Minor (Aetolian Chalkis, Dura, Heraklea by Latmus, Perga and Side, to name but a few; Kuhn 2008, 344–345, Abb. 2) and come both from towers as well as from curtain walls. They usually appear in pairs at the bottom of tower apertures or curtain wall crenellations, but occasionally (Messene, Perga) they also appear at their tops, when these are preserved. Their location close to the apertures relates them to the operation of shutters for the protection of the men and the catapults housed inside the towers during warfare. The need for the existence of shutters is also indicated by the apertures' small height above the tower's floor (92 cm), which would allow

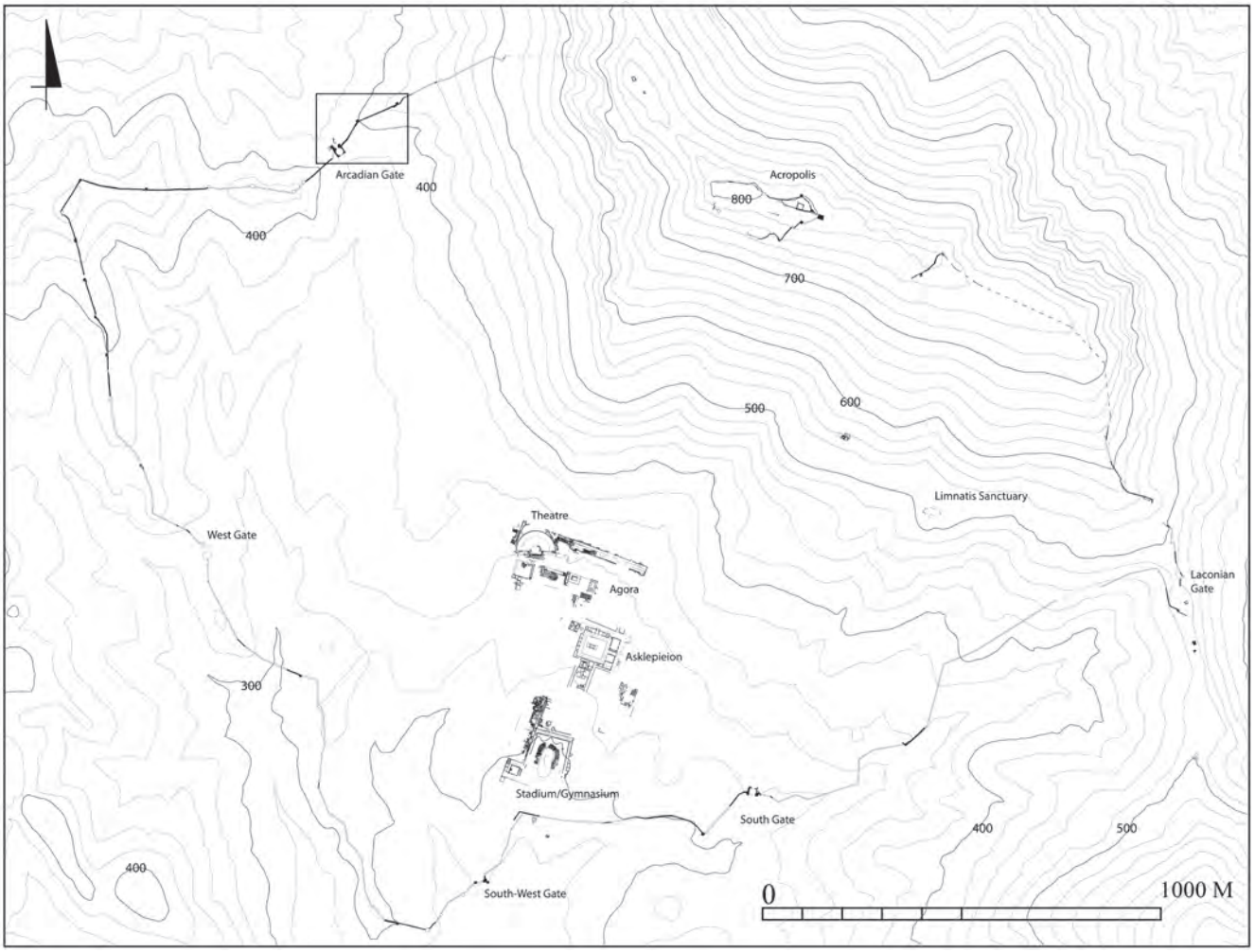

Fig. 4.1: General plan of Messene (the area under discussion is marked; drawing by the author).

the defenders to shoot arrows or stones from them easily, but they would also constantly expose them to enemy fire. Furthermore, they would offer some insulation to the towers' personnel during cold and windy months.

The use of shutters in antiquity is well documented. Philo of Byzantium mentions that the *thyrides* of towers had to be 'iron-clad on both sides', suggesting that they were door-like (I. 23–24), whereas an Athenian inscription of 307 BCE (M No. 11) specifies that the shutters must be built with boards held together by two cross-beams with five nails each, all covered by a protective coating. Krischen (1922, 25, 31, Abb. 18, 24) was the first to deal with the use of shutters in his study of the towers of Herakleia that preserved bottom chases. He suggested that these accommodated poles or beams that were pushed from the inside and opened the one-piece shutters hanging from the top of the apertures, allowing the defenders to fire towards the base of the tower without being exposed to enemy fire. Krischen only dealt with towers with bottom chases, however, and did not study the towers of Messene. Ober (1987, 576–577, fig. 8) interpreted the chases of the towers of Messene as supports for the metal bolts that secured the domestic-style apertures' hinges. Two problems arise, however, from this interpretation. The first is that no traces of any metal have been located inside these chases. The second is that this kind of aperture would have to be opened manually from the inside without any way of protecting the men who did it, whereas they had to remain open when archers or catapults fired, exposing the inside of the tower to constant enemy fire. A more plausible interpretation of the chases would be to support a single shutter from hinges at its bottom, allowing it to be opened and closed from the inside with the use of ropes and pulleys, as Ober suggested for the towers of Siphai and Eleutherai (Ober 1987, 579–580, figs 11, 16). Still, although in this way shutters could be operated from the inside with ropes suspended from the tower's

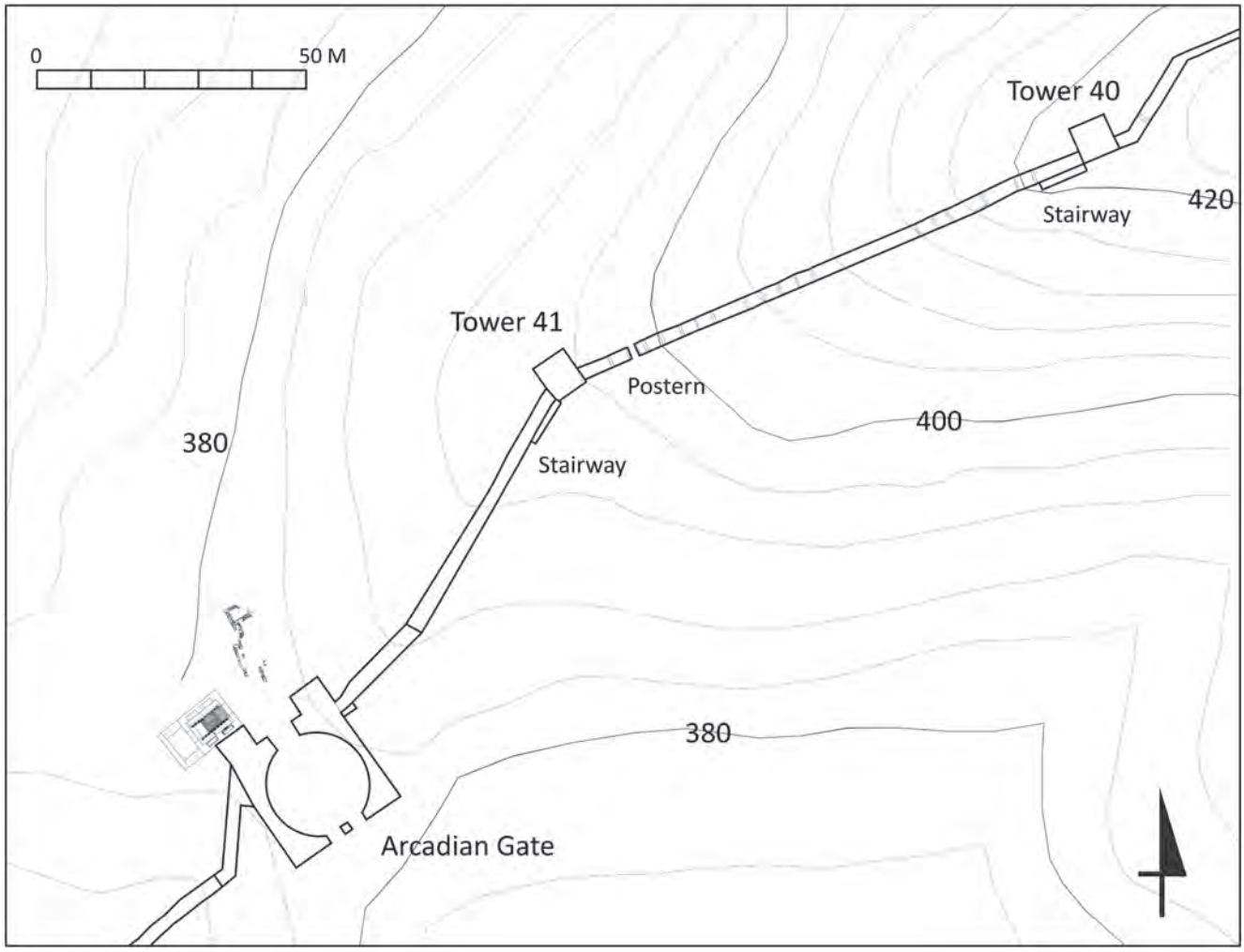

Fig. 4.2: A detail of the area north-east of the Arcadian Gate (drawing by the author).

ceiling, the lowered shutter would offer no protection from the incoming missiles and would also have to have been totally opened to allow for the defenders to fire at the base of the tower.

Recently, a very interesting theory was developed by Kuhn (2008), who, after meticulously analysing the archaeological remains and the ancient written sources, suggested that these chases did not support any shutter, but were there to house jib-like beams and small pulleys, with which protective material made of leather or net cushions filled with seaweed, moss, chaff or straw would be lifted and lowered to protect the towers from the impact of heavy catapult shots. Kuhn presented a convincing argument, incorporating the increasing use of artillery in the period during which the Messene towers were built. What Kuhn did not take into account, however, was some of the technicalities of such an interpretation. To begin with, the chases at Messene are very small and can support only relatively thin beams, which would also have to be grooved in order to accommodate ropes for the lifting of the cushion material. It is unlikely that 10 × 5 cm beams could support large and heavy wooden panels or leather cushions filled with various materials. Furthermore, even if cushion material was suspended from the chases of the Messene towers, it could protect only a small part of the tower, basically the area underneath the apertures, according to Kuhn's reconstruction (Kuhn 2008, Abb. 5).

I am proposing an alternative explanation of the caches of the Messenian towers (Figs 4.4–4.5). Taking into consideration that their size, form and placing is identical, they most likely served similar devices. Beyond protection, the defenders of the towers also needed to allow for ventilation of the inside of the tower but without exposing themselves to enemy fire that would usually come from below. Thus, the four chases could have housed sliding beams, supporting the four corners of a shutter. On each corner, the shutter would

Fig. 4.3: Tower M of Messene from the south (photograph by the author).

have been connected to the beams by an axis fitted into a sliding groove on the shutter. This configuration would allow the shutter to be pushed forward either from the bottom beams, when the defenders needed to fire towards the base of the tower (Fig. 4.5C), either from the top beams, which would allow ventilation and light to come in but maintain adequate protection from enemy fire (Fig. 4.5D). A complication of this idea would be the weight of the shutter. Shutters had to be strong enough to withstand arrows and small catapult bolts and must have been coated with fireproof materials. This would make the shutter heavy and difficult to suspend and operate by the four small beams. An alternative would have been the use of leather instead, which would be much lighter and fireproof, although its ability to withstand heavier catapult arrows and darts would be lower (Figs 4.5 and 4.6).

The chases of the Messenian towers show no traces of any use. Is it possible that they were never equipped with shutters or any other protective devices, although they were built for this purpose. Historical sources clearly mention that the city was unsuccessfully attacked twice, in 301 BCE by Demetrius Poliorcetes (Plut. *Demetr*. 33.2–3) and in 214/3 BCE by Philip V (Paus. 4.29.2). Both attacks were not prolonged sieges but swift assaults, the first one including some fighting around the walls and the use of catapults (at least arrow-firing ones) and the second involving the enemies entering the city from an unguarded part of the walls on the slopes of Mt Ithome before being annihilated by the garrison and the inhabitants.

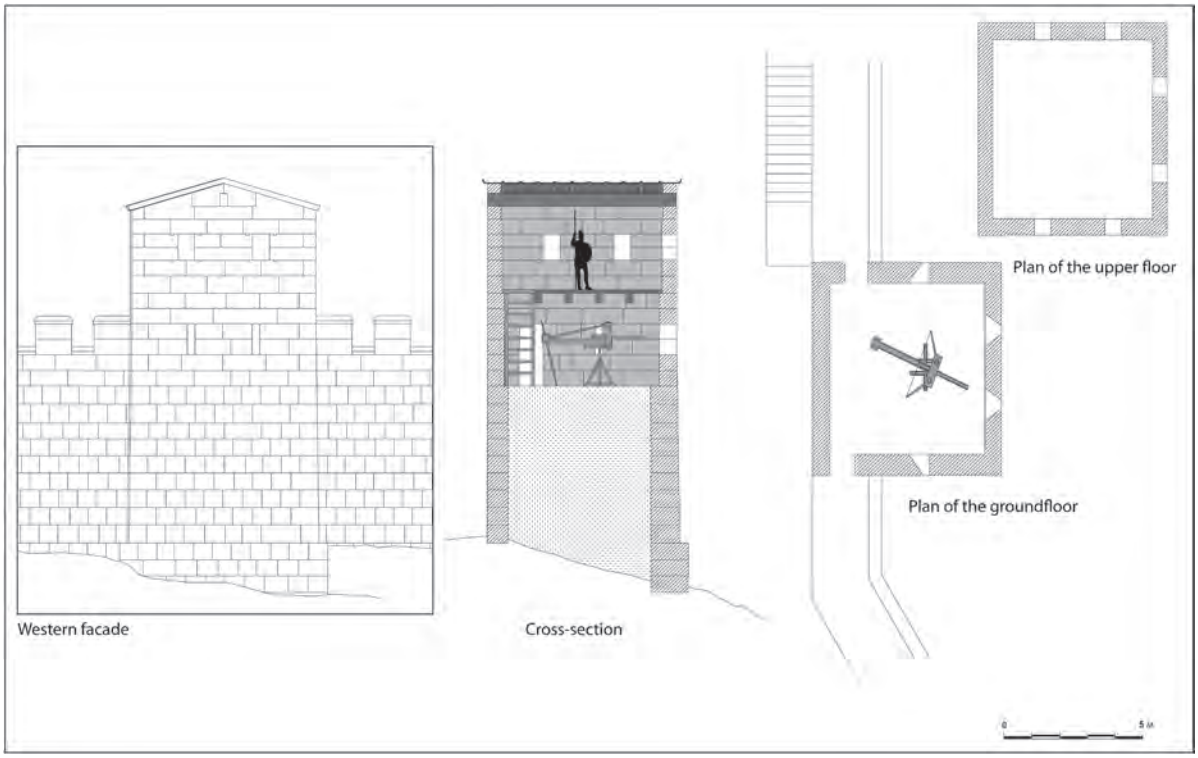

Fig. 4.4: Reconstructed plan of Tower M (drawing by the author).

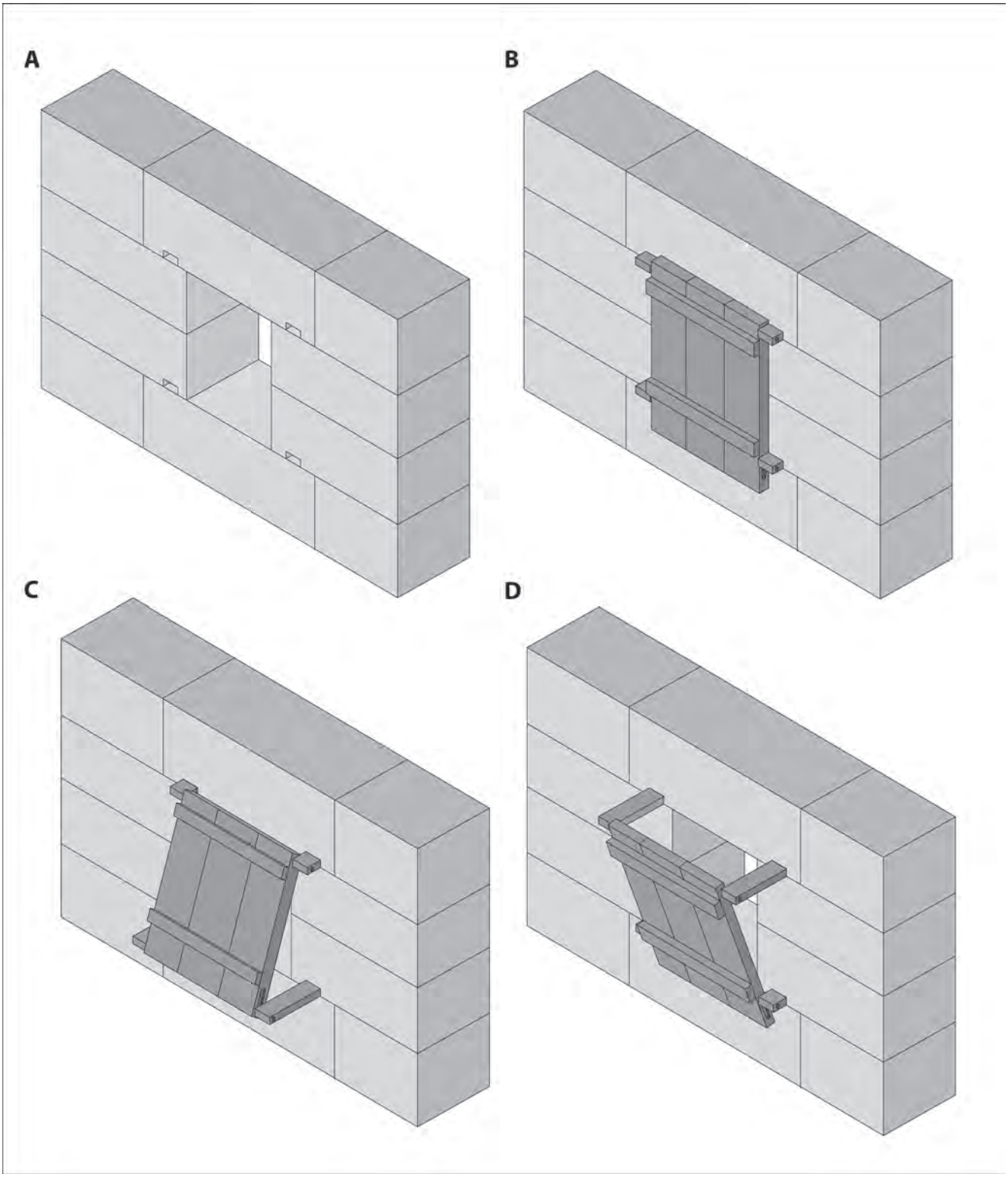

Fig. 4.5: Suggested reconstruction of the apertures of Tower M of Messene (drawing by the author). A: the aperture without any form of shutter; B: the aperture with the shutter totally closed; C: the aperture with the shutter open at the bottom; D: the aperture with the shutter open at the top.

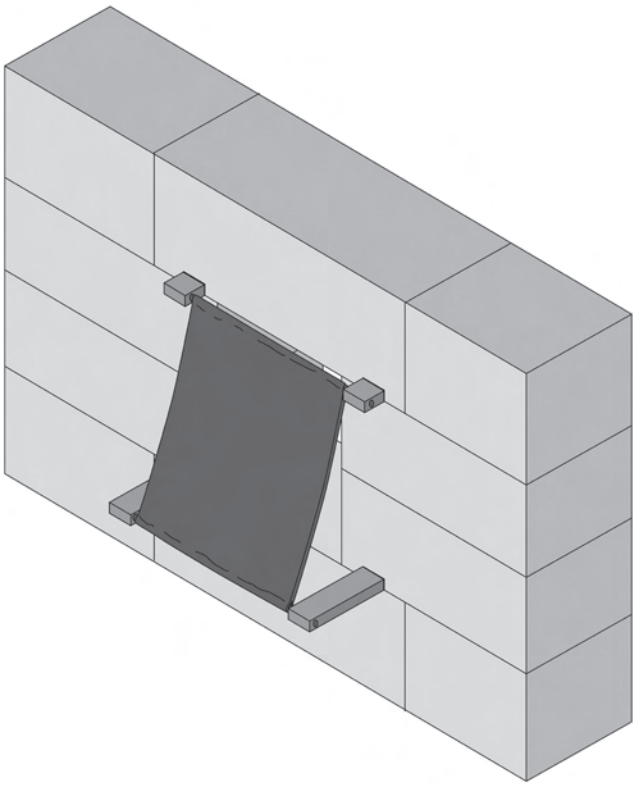

Fig. 4.6: Suggested reconstruction of the shutters of Tower M of Messene with the use of a leather shutter (drawing by the author).

Towers were never attacked by siege machinery, as the lack of any repairs and good preservation shows, whereas various posterns do not appear to have ever been equipped with doors (Müth 2014, 116). The logistics of outfitting and maintaining the towers must have been a very important factor in the life of the fortifications of Messene. The installation of shutters of any kind for all the towers of the very extended wall circuit of Messene would have been costly, whereas the shutters would also require constant maintenance and replacement. Thus, although the towers and all the fortifications of Messene were definitely built according to practical needs and could be successfully used as a defensive circuit, their sheer extent and logistics related to it must have hindered their military use. In any case, there is still a lot to be learned from the continuing and future research at ancient Messene, both on the fortifications as well as in the rest of the great ancient city, and this will shed more light into the operation and history of this unique complex of city fortifications of ancient Greece.

Notes

1 I would like to warmly thank Prof. Petros Themelis for giving me the opportunity to work with the material from the towers of ancient Messene and allowing the study of them. I would also like to thank Dr Kleanthis Sidiropoulos for his assistance and feedback, especially concerning the restoration works, as well as Dr Silke Müth for her encouragement and very useful feedback on the fortifications of ancient Messene.

2 The apertures of Tower L (17/39) have a slightly different form, with its lower part extending into the bottom stone. Thus the lower through-holes are not aligned with its bottom.

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5

Interpreting the Greek Fortifications in Thrace in the 5th–2nd Century BCE: Conflicts or Collaborations?

Aliénor Rufin Solas

The impressive number of Thracian warriors has given rise to vibrant images in the Greek literature since the Homeric epic. In the Odyssey, the Cicones warriors sweeping from inland to Ismaros appear as numerous as leaves and flowers in the spring, while a cloud of locusts, in Aristophanes, represents an army of Thracians arriving as allies in Athens (Hom. *Od*. 9.51–52; Aristoph. *Ach*. 150). The numbers given in our sources are suspiciously rounded figures, and are sometimes presented by the ancient authors themselves as estimates, but they reflect at the very least the size of the Thracian armies. Thucydides reports a total of at least 150,000 men for the army of the Odrysian king Sitalkes during the Peloponnesian war, while Strabo estimates up to 15,000 cavalrymen and 200,000 foot warriors in Thrace (Thucydides 2.98.3, Strabo 7, fragment 47). This is a number which Strabo considers to be all the more impressive because after the Roman wars Thrace was in an extreme state of exhaustion.

Not only were the Thracians numerous, they also, as Herodotus reported, held war and plunder to be the most noble occupations (Hdt. 5.6). Their practice of plundering is also attested in many literary as well as epigraphic testimonies. This may have been a source of worry for the Greeks who settled on the Thracian coast, north of the Aegean Sea, in the Propontis area and west of the Pontic sea. In the Greek representations, the violent struggles described by the poet Archilochus against the Thracians he called 'dogs' (Archil. fragment 93aWest, v.6) during the installation of the Parians in Thasos and on the mainland opposite the island certainly echoed the violence of the plundering raids that the Greek cities of the Thracian coast suffered.

This picture explains why the defensive arrangements of the Greek foundations in Thrace have been unanimously interpreted in the light of the prejudice of a systematic hostility of the local populations towards the newcomers. The repeated construction and destruction of these walls in the course of their history has thus been interpreted as evidence of conflicts with the Thracians. The traditional interpretation of the warrior relationship between the Greeks and the Thracians, focusing on their conflicts, also fits perfectly into the European colonialist representations. Jones, for instance, in 1940, described the Greek cities in Ancient times as 'mere islets of civilization in a sea of barbarism' (Jones 1940, 27). This view of the Greek colonization echoes the European colonialism and its ideological justifications by Jules Ferry in France or Rudyard Kipling in England: spreading civilization in places of the world that were actually coveted by European states for financial and strategic reasons.

Even if the classical studies have been deeply renewed, especially since the post-colonial studies, the warrior relationship between the Greeks and the Thracians is still exclusively studied through the lens of conflicts. This paper aims to challenge this view. To that aim, it explores the warrior relations between the Greeks and the Thracians, focusing on what is held to be the most emblematic testimony of their conflictual relationships, the Greek fortifications in Thrace. By reassessing the literary sources on the subject, I will demonstrate that ententes and collaboration typified the warrior relations between Greeks and Thracians at least as much as conflicts.

Greek Colonisation: Fortifications as a Defence Against the Neighbouring Thracians?

The Greek defensive arrangements in Thrace, whether in their actual presence or their absence, have been interpreted through the alleged insecurity of the Greek cities in the

Barbaricum. However, some evidence linked to the Greek settlements in Thrace, starting from the 7th century BCE, invites a reopening of the discussion.

Settlements Without Defensive Walls

The archaeological testimonies show that some Greek settlements in Thrace would have remained without any defensive arrangement for a long time. This is most probably the case at Istros, on the North Pontic coast (in today's Romania). Alexandru Avram reports that the pre-colonial strata are missing in the territory of Istros and 'nothing suggests a military conflict: the territory's sites are not fortified, while even the city acquired a wall in the middle or even the end of the 6th century BCE, that is more than a century after the foundation of Istros' (Avram 2006, 63). Although the city of Istros had a late wall, it is the only Greek settlement on the Pontic west coast for which the archaeologists have dated a system of fortifications prior to the 5th century BCE. The absence, over a long period, of fortifications around the Greek foundations reinforces the impression of a peaceful coexistence with the native populations. But can we, *a contrario*, establish that the presence of such fortifications would systematically attest to conflicts with them?

The History of Wall Destruction

The destruction suffered by the Greek fortifications on the Thracian land has been interpreted as evidence of conflicts with local populations. This is reflected in M. Coja's interpretation of the five urbanistic programmes in Istros, from the first half of the 6th century BCE to Roman times, each being supposedly linked to destructive attacks coming from the *Barbaricum* (Coja 1986, 97, 415–416). The major destructions suffered by Istros have been attributed to Thracians in the neighbourhood, whose shattering attacks have appeared as normal vagaries in the existence of a city settled in a foreign and hostile environment, which is how the barbarian world has mostly been described in the historiography. This view may be linked with the way the Frenchman André Bonnard presented, in 1958, the fights led by the Parians in Thasos: 'They had to struggle against half-savage natives'.[1]

As far as Istros is concerned, however, the first destruction of the city walls was most probably connected with the campaigns of Darius against the Scythians toward the Danube, and the 4th-century BCE operations of Philip of Macedonia against the Scythians.[2] As for the city of Thasos, strongly fortified around 500 BCE, it suffered a number of attacks in the years and centuries that followed, but none is recorded to have been from the *Barbaricum* (Grandjean 2011).

Our written documentation certainly focuses on the conflicts between Greeks, so we have to admit that there is a documentary bias here; but the few written sources we have about the Thracian operations against Greek settlements make it possible to establish a typology for these attacks.

Typology of Thracian Attacks

The absence of fortifications has been linked to the absence of immediate Thracian neighbours (for instance, Coja 1986 about Istros). But, however isolated a Greek foundation in Thrace may have been, it cannot have been a permanent obstacle to the attacks of indigenous peoples, whose history shows a remarkable mobility when it came to enriching themselves by war and plunder. This is evidenced by a number of documented attacks suffered during the course of their history by the Greek cities settled in the region, and these raids of plunder were carried out over a very long distance by the Thracians.

Thrace was thus crossed from west to east by the Peonians, who threw themselves against Perinthus in the late Archaic period (Hdt. 5.1), and by the Bisaltae in a thrust against Cardia at an unknown date (Athenaios 12.19). So too, it was crossed from north to south by the Triballians against Abdera in 375 BCE (Diod. 15.36.1–4; Aen. Tact. 15.8–10; Scholia in Aristidem 172.7; 173.17). Significantly, the Abderitans were, on this occasion, supported militarily by their immediate Thracian neighbours, who later opportunistically chose to change camp to work with the powerful Triballians and share the booty with them, once the territory of the city had been ravaged. This episode shows, however, that good relations with the Thracian neighbours enabled military alliances and could offer Greek cities protection against attacks led by other groups. It also shows that alliances could be changed on criteria as pragmatic as financial interest, or any casus belli that allowed choosing the strongest side. These distant attacks appear in any case independent of the relations established between the Greek cities and their immediate Thracian neighbours.

Polybius' description of the dramatic situation of Byzantium, whose territory was regularly ravaged in the 3rd century by Thracian and Celtic warriors of the Kavaros Kingdom, led to the centre of this Celtic Kingdom being localised in the immediate vicinity of the city. However, the numismatic testimonies show it was much more distant at the time of these looting raids, leading the city to pay *dôra* (which means 'gifts' and were paid in gold coins). When this kingdom gained power and extended to the limit of the Byzantine territory, the city had to pay a *phoros*, a tribute, which was much bigger in size but implied a military protection against distant attacks led by other warrior peoples.[3]

To sum up, the attacks the Greek cities suffered in Thrace were mostly led over a long distance, when the cities sought military alliances with their immediate neighbours. These good relationships the Greeks had with their immediate neighbours were very necessary, first to establish themselves, especially because the first *apoikiai* comprised

very few men, and secondly for protection against the long distance looting raids led by other Thracian armies.

Greeks Fighting for Thracian Kings

Thracians Asking Greeks to Settle in Thrace as Colonists?

Herodotus' narrative on the Athenian colonization in Chersonese and the domination of the Philaids in this region has been considered to be mostly unreliable.[4] However, even if it is the only literary source on the subject, I do not see any grounded reasons to reject it. Herodotus relates the encounter – dated from the first part of the reign of Pisistratus at Athens, probably about 556/5 BCE – between Militades the Elder and a group of Thracian kings (*basileis*) of the Dolonkoi offering him the opportunity to establish himself in Chersonese as *oikistès* and *tyrannos*.

Yet this narrative surprises in many ways. First, it totally reverses the expected roles of both Greeks and natives in a Greek colonial foundation, since it is not the Greeks who question the Pythia in Delphi, who go to meet the local aristocracies, and who negotiate on the spot the conditions of a good cohabitation with the local population. In my opinion, this episode reveals the familiarity of the Dolonkoi with the Greek realities, not only because they came to consult the Pythia at Delphi at a critical moment in their history (we know about the popularity of the sanctuary in the 6th century BCE, even outside the Greek populations): in their actions, as in the terms of the agreement proposed to Miltiades, we can see their perfect understanding of the mechanisms and advantages of the installation of Greek cities in their territories.

Secondly, this narrative describes a form of warrior alliance between partners that historians used to see mainly as enemies. The Dolonkoi came to seek a man powerful enough to be the leader of all the Chersonese, and to protect their territory from looting incursions. It was a crucial issue, and worth the trip to Delphi and Athens. Moreover, the testimony of Xenophon, which relates the Thracian embassy from Chersonese to Sparta two centuries later, in 398 BCE, for very similar reasons, argues for the authenticity of the Herodotean account (Xen. *Hell.* 3, 2, 8 and 10). Herodotus explains the approach of the Dolonkoi by a serious conflict with the Apsinthoi and presents the military dimension only of the rule of Miltiades in the Thracian Chersonese. From the Thracian point of view, from the middle of the 6th century BCE onwards, military collaborations with the Greeks may have been sufficiently experienced in the context of colonization to appear as a model in which the Dolonkoi saw a possibility of salvation. This episode shows in any case that the use of the Greek armies, or at least a Greek commander, was already an option for Thracian chiefs in difficulty. Significantly, the first action of Militades was the construction of a wall protecting the Chersonese. Herodotus VI, 36, 2 and 37, 1 states: 'He first fortified the isthmus of Kardia's Chersonese in Paktye, so that the Apsinthoi could no longer harm them by invading their territory. The isthmus measures thirty-six stadiums … Having closed by a wall the entrance of the Chersonese and having repulsed the Apsinthoi in this way, Miltiade subsequently made war beginning with the Lampsakeoi'.

Such a work, as Isaac has pointed out (Isaac 1986, 165–168), cannot in itself be an effective protection against hordes of plunderers. Defending a wall of 36 stadia long represents a considerable challenge. Only the creation of new settlements at the entrance to the peninsula, particularly Kardia and Paktyé, at both ends of the wall, seem to have made it possible. It is therefore likely that the Dolonkoi were also looking for the protection of new settlers as a bulwark against their enemies. The episode related by Xenophon also offers from this point of view a close parallel with the history of Miltiades the Elder. In another historical context and with other protagonists (Spartans), Xenophon's account echoes the modalities of the settlement of Miltiades the Elder and the Athenians a century and a half earlier: the inhabitants of Chersonese, afflicted by the attacks of the neighbouring Thracians, solicited help by sending an embassy to Sparta. The mission was to get the city to send a man with an army that would build a new wall, arguing, as probably did the Dolonkoi in Athens, the extent and quality of the lands they would offer them. Once again, a defensive wall built and defended by colonist settlements was a guarantee of security for the peninsula.

The 'Region of the Fortresses' (τὰπὶ τειχῶν)

During the 4th century BCE, several Athenian *strategoi* are known to have served the Thracian kings, especially the Odrysian kings. There is Iphicrates, who served Kotys, but also Charidemos, allied with Kotys then Kersebleptes, Athenodoros, linked to the sons of the king Berisades, Simon and Bianor at the side of Amadokos (Dem. *Against Aristokrates* 10.11). There are also Alcibiades and a Spartan: Clearchos. Demosthenes, Polyaeno's stratagems and Xenophon's *Hellenica* are our main sources of information about these Greek *strategoi* in Thrace (see especially Xen. *Hell.* 4.8.34; Polyaenus 3.9.333; Dem. *Against Aristokrates* 165). They are all very elusive, but the scattered information leads us to locate their action in a very limited area, called the 'region of the fortresses' (τὰπὶ τειχῶν) by Demosthenes (Dem. *On the Embassy* 156), that we may locate in the mountainous area north of the Propontis Sea. It also appears that they were all warlords, commanding an army they recruited themselves among Greeks and Thracians. They fought against plundering native armies, were enriched by the booty of war, received payments from the Thracian kings but also, for some at least (such as Alcibiades), from the financial contribution of the Greek coastal cities to their military operations. They were also settled in Thrace for years, and did not live at the

court of the kings with whom they collaborated. The place where they settled, as well as their fighting areas, when they are specified, always refer to the same region on the coast of the Propontis. The situation of these warlords settled on the coast of the Propontis, such as Alcibiades, who possessed strongholds near Bisanthis, recalls very accurately the promises made by the king Seuthes to Xenophon in the *Anabasis* (7.2.38): 'He continually reminded him that once he reached the sea, he would give him Bisanthis, Ganos, and Neon-Teichos'. These latter places, as Xenophon points out in the following lines, were strongholds. They could well have been part of the 'region of the fortresses' (ταπὶ τειχῶν), mentioned by Demosthenes. These fortresses belonging to the Thracian kings but occupied by Greek armies were key places for the military collaboration between these partners.

Were these fortifications Greek or Thracian? The example of the defensive arrangements built in Chersonese first by the Athenians then by the Spartans shows that a Greek wall may actually have been a Thracian project. This may also have been the case in Pistiros, an *emporion* situated in inner Thrace, in the middle valley of Hebros, fortified in the 5th century BCE and hosting Greek traders (Chankowski 2001). The construction techniques in Pistiros recall those of Thasos fortifications, and the presence of Thasians in this *emporion* strongly suggests the participation of Greeks from this city in the construction (Chankowski 2001). But the place was ruled by a Thracian king, known by an inscription from the 4th century BCE (Chankowski and Domaradzka 1999).

The archaeological excavations around Pistiros revealed that the inhabitants did not take control of the *chôra* around the urban centre (Chankowski 2001): it shows its vocation was mainly mercantile. The same conclusion can be drawn about Istros and Callatis. Founded around 630 BCE, Istros took control of its *chôra* around 600 BCE, and its neighbour, Callatis, founded in the second half of the 6th century BCE, took control of hers at the beginning of the 4th, more than a century later (Avram 2006). This observation stresses the vital importance for these cities of cooperating with the local populations, not only for their safety, but also for their economic survival: there is no doubt that the relations between Greeks and Thracians were very profitable, whether in the form of warlike or commercial exchanges.

Seuthopolis

The alleged Macedonian conquest of Thrace by Philip II and Alexander the Great, mentioned in some literary sources (Dem. *Response to Philippe* 1; Arr. 1.25.2; Diod. 62.5; Curt. 10.1.43), is in contradiction with the extraordinary enrichment of the local aristocracies in the second part of the 4th century BCE and later (see Marazov 1998 and Kitov 2005), as the archaeological discoveries have revealed. Yet the gold and silver Macedonian coins circulating in Thrace at that time clearly shed light on the origin of this richness, while the scattered literary sources attest to warrior alliances established between the Macedonian and the Thracian kings (Rufin Solas 2014; forthcoming). These alliances may help especially in understanding the construction, in the first half of the 3rd century BCE, of a Hellenistic fortified city in the very centre of Thrace, in Seuthopolis.

Named after the Thracian king Seuthes, Seuthopolis, now under the waters of the Koprinka dam, featured a defensive wall enclosing a royal residence and constructions distributed around a network of streets following a Hippodamic plan, following the model of a royal Hellenistic fortified town (Dimitrov and Tchitchikova 1978). Emil Nankov presents it not only as 'a Hellenized Thracian city, with Greek-style housing, but also as a "petrified" military camp, following Macedonian inspiration' (Nankov 2008, 43–44). Contemporary with Lysimacheia (built in the last decade of the 4th century BCE) (Lichtenberger, Nieswandt and Salzmann 2015) and with the other royal towns built by the successors of Alexander, Seuthopolis shares with them many common characteristics from a defensive and urbanistic point of view (especially with Dion in Macedonia) (Nankov 2008). The documentary sources about Seuthes are very scarce. Nankov suggests an alliance with a contemporary Hellenistic king, linked to the events of the 3rd century BCE, to explain this Macedonian influence. But the way Seuthes was buried may be linked to the military collaboration between the Thracian chiefs and the Macedonian kings since Philip II. Arrian reports that Alexander the Great used to honour his generals with masonry tombs, bronze statues and gold crowns (Arr. 7.10.3–4). It is striking that the few material testimonies we have for Seuthes are precisely a masonry tomb (Kitov 2005) (presenting a strong Macedonian inspiration), a bronze head of the finest Greek style, probably originating from an equestrian statue, and among other precious metal objects contained in his tomb, a beautiful gold crown (Dimitrova 2015, 119–127). Everything about this invites us to see in Seuthes a Thracian chief integrated in the Macedonian armies, perhaps in the wake of Alexander in Asia. Whatever his actual status after the death of Alexander was, Seuthes appears as a Hellenised successor of Alexander the Great.

Conclusions

The study of these military collaborations, certainly little documented, has been neglected because of important assumptions in the modern scientific literature about the relations between the Greeks and their non-Greek neighbours. Simply the use of the term 'barbarians' to designate the Thracians led to their being associated too systematically with hostile and threatening neighbours. Yes, the Thracians and the Greeks fought, but were the relations between the Greek cities and kingdoms less warlike? The Thracian world had

this in common with the neighbouring Greek world in that it had no political unity and the wars also entailed alliances and collaborations.

The presence of monumental tombs attributed to Thracian dynasts in the immediate vicinity of Greek fortified sites, for example in Mesembria (Mintchev 2007, 84–85), Callatis (Tsetskhladze 1998), Odessos (Doncheva 2004) or Pistiros (Velkov 1942), puts beyond doubt the close relations between the native aristocracies and the Greeks. Whatever the Greek or Thracian origin of the construction of the fortified places occupied by Greeks or Thracians, they demonstrate an increasing interpenetration of these societies, especially through warlike exchanges.

Notes

1 'Ils avaient eu à lutter … contre les indigènes à demi sauvages', Bonnard 1958, XVI.

2 See also Angelescu 2018, linking the construction of Istros walls in Classical times to the inner political situation of the city.

3 Polyb. 4.45. See Rufin Solas 2016 on these two distinct forms of payment, *phoroi* and *dôra*.

4 Hdt. 6.33–36.1. See for instance Tsvetkova 2008, 288–289.

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6

‘Dig for Victory’! Competitive Fieldwork in Classical Siege Operations

Gwyn Davies

Introduction

Embattled British civilians in the Second World War, facing the threat of insidious strangulation via the U-Boat menace, were very familiar with the exhortation to ‘Dig for Victory’. The main objective of this initiative was to convince the population on the Home Front that it too was a vital player in the struggle against the Enemy and that its mobilization was as important as the contribution of the fighting personnel in the active theatres of war. This conscious co-option of civilians as part of the war effort was a key component of the psychological imperative to maintain morale in the face of heavy external pressure and was designed to bolster resistance and the will to victory. Such considerations were also material factors in the pursuit of siege operations in the ancient world.

In ancient sieges, the besieger sought both to assault the physical defences of the besieged and to erode confidence in his capacity to mount a successful resistance. To this end, it was essential that the defenders of besieged centres preserved their morale as much as the fabric of their walls and that exemplary displays of this will to resist served both to reinforce confidence internally and to weaken the resolve of the besieger (see Davies 2001 and Levithan 2013, chap. 2, for a discussion of the psychological aspects of siege operations). Although defenders might achieve such an objective via the expedient of aggressive sorties, such schemes were inherently risky enterprises that might result in disheartening defeat before the walls or worse still, the rapid pursuit of a retreating force within the circuit itself. Thus at Sparta in 196 BCE, King Nabis launched a furious attack as Ti. Quinctius Flamininus’ men were pitching camp but his troops were soundly defeated, encouraging the Romans to launch a rapid assault in *testudo* formation that broke into the city so that only the desperate expedient of firing their own houses saved the defenders from immediate defeat (Livy *Ab Urbe Condita* 34.39.9). Similarly, at Promona in Dalmatia in 34 BCE, the defenders mounted a sally in force before the Romans had completed their works of encirclement but were defeated in detail and the survivors were pursued so rapidly that the besiegers entered the city and seized it even if the citadel continued resistance for a few days more (App. *Ill*. 5.26). With such cautionary examples in mind, resolute defenders might still find it possible to mount an effective physical and psychological challenge to a besieging army by less dangerous expedients centred around the disruption of the preparations being made to prosecute its operations against the target. In other words, to impede, or defeat the efforts to advance siege works that might facilitate the isolation or seizure of the defended centre.

In the conventional sense, an assailant who had decided to mount a siege would either have to break the will to resist (either through starvation or by provoking dissension within the ranks of the defenders) or make approaches that would enable his assault forces to get through, over or under the enemy defences. These objectives would frequently involve the deployment of fieldworks designed to bring about the hermetic sealing of the target or to allow the enemy walls to be approached, overtopped or undermined. The construction of these siege elements demonstrated the intentions of the attacker and also served notice to the defenders of their impending fate. Disrupting such preparations was therefore not merely a matter of functional military expediency but also a matter of psychological release from the ratcheting sense of tension engendered by the progress of the besieger’s works. In this paper, I intend to examine how defenders might seek such relief by engaging the enemy in a display of competitive fieldwork, either to frustrate his designs or to weaken his resolve to continue with the reductive operation.

Mines and Countermines

Perhaps the most familiar type of engineered countermeasure adopted by defenders was the sinking of countermines designed to intercept enemy attempts to provide subterranean infiltration routes into the target or to bring about the collapse of part of the defensive enceinte. These devices, although comparatively rare in their actual incidence in the field, have attained considerable prominence as a result of the attention devoted to them by our classical sources. As such, these initiatives resemble a literary trope and their importance to the outcome of operations may only have been significant in a handful of cases. The eagerness with which our sources discuss such works is probably attributable to the way that they allow authors to highlight the technical ingenuity of either the besieger or the besieged, and permit the reproduction of colourful anecdotes and lurid details in narrating events.

A particular case point is the operation mounted by Fulvius against Ambracia in 189 BCE where we are given an exceptional amount of detail about the works undertaken by the Roman assailants and their Ambraciote enemies. Although Roman rams had shattered the walls, the besieged extemporized fresh defences and maintained their resistance from the ruins. Accordingly, the Roman consul decided, as a matter of some desperation, to attempt to drive a secret tunnel to overthrow an extant part of the city enceinte (Polyb. 21.28.3). This measure of last resort was betrayed when Fulvius took insufficient care to dispose of the spoil that revealed his concealed mine-heads to the watchful defenders. As the defenders had no precise information as to the angle at which the Roman mine was being driven, they excavated a trench inside their walls and placed thin brass sheets along the side facing the enemy so that the reverberation of the same gave away the approaching Roman gallery. Hastily, a countermine was driven at right angles from the trench and intercepted the Roman mine just in time, for the besiegers had already undercut the walls, which were only held in place by props awaiting firing (Polyb. 21.28.8–9). A furious battle broke out underground that resulted in both sides blocking their respective tunnels, although the Ambraciotes enjoyed the last laugh as they deployed a smoke-blowing device that forced the Roman miners out of the system altogether (Polyaenus *Strat*. 6.17; Polyb. 21.28.15–16). With all his initiatives defeated, Fulvius withdrew in consternation. The account provided by Appian of the countermines at Themiscyra in 72 BCE is even more preoccupied by incidental detail, where he narrates with some excitement how the defenders released bears, other wild animals and even swarms of bees into the galleries so as to discomfit the Roman engineers (App. *Mith*. 11.78).

We are fortunate, however, that the Persian siege of Dura-Europos in 256 CE has left us with fine evidence for the practice of both offensive and defensive mining (Comte du Mesnil 1936; James 2011). Here, the Persians excavated three separate tunnels, two of which were aimed at overthrowing sections of the defences with the third being intended as a 'mine of attack' (to use the excavator's terminology) to allow the infiltration of attackers inside the walls. Of particular interest is Tunnel One, which was aimed at the angle of a wall tower and its adjacent curtain although when the stacked combustibles were fired, the tower, contained by its internal and external batter, dropped 2.5 m vertically into the gallery, instead of collapsing outwards. The Roman defenders had detected the threat to their enceinte and managed to intercept Tunnel One with a countermine of their own, albeit that they were unable to prevent the Persians from firing their gallery. The corpses of 20 Roman soldiers were recovered from a narrow section of the mine, seemingly overcome by sulphur dioxide fumes emitted when the Sassanians set light to their pitch- and bitumen-covered props, but it is at least possible that this intervention had made the attackers light their charges prematurely, thus accounting for the failure to bring down the tower as intended.

Mines might also be dug by the defenders for purposes other than to directly oppose a besieger's mining efforts. We can see this at Jerusalem in 37 BCE where Antigonus' men were resourceful in mounting raids against the Romano-Herodian army in direct sorties and surreptitious attacks via underground galleries (Joseph. *BJ* 1.350) although the Roman engineers may have attempted to intercept these works if Josephus is indeed correct in claiming that fierce battles were fought underground. Here too may be the context for his remark that although the defenders 'were not inferior to the Romans in daring, they fell short of them in science' (*AJ* 14.474). At Cremna in Pisidia, during the Roman siege of 277–278 CE, the rebel leader Lydius attempted to draw out his provisions by demolishing property within the walls and planting crops on the resulting land and by resorting to the brutal if effective tactic of expelling 'the useless mouths'. However, more importantly for our purposes, he also dug a tunnel that ran out beyond the Roman camp and used it to smuggle food into the city until its existence was betrayed to the besiegers by a deserter (Zos. 1.69.3).

By such means, tunnelling operations undertaken by defenders might frustrate the plans of a besieging commander while also offering tangible benefits to both the morale and the capacity to resist of those under siege.

Combating Assault Ramps and Siege Mounds

In order to deploy breaching engines, provide cover for sappers or allow storming parties to access the wall top, an assailant would frequently have recourse to the use of assault ramps or siege mounds. I distinguish these two structures on functional grounds, even if our sources are much less

precise in their terminological exactitude. Accordingly, I would characterize an assault ramp as a structure raised to give the attacker's rams access to the enemy wall-base or to parallel the height of the defences to enable the passage of storming parties. On the other hand, a siege mound is a structure raised to parallel or overtop the height of the defences to allow oversight of the defenders and the advantageous deployment of artillery (see Davies 2006, chap. 6 for broader discussion of these structures). In this sense, a siege mound plays a more indirect role by facilitating assault preparations, although it is possible that, if the circumstances so dictated, a siege mound might be converted into an assault ramp at a later stage of the operation. Both assault ramps and siege mounds generally comprised either a wooden lattice-work or a dump-built structure with or without substantial wooden revetment and if defenders wished to disrupt the construction of these features they had two basic choices: either to sabotage the enemy works or to erect counterworks in opposition to them.

Direct attacks on the enemy ramps or mounds might include the use of missile fire to suppress the activity of the attacker's work parties or to set light to the timber elements through the use of incendiaries or, more dramatically, by the mounting of a sortie-in-force to wreck all that had been achieved up to that time. Certainly such expedients were common enough in ancient siege warfare, but as these tactics do not involve an engineering response, they will not be discussed further here. Instead, we will concentrate on those defensive countermeasures designed to upset the progress of ramp/mound construction that involved the deployment of labour and not mere force.

Undermining

The most commonplace engineered response to the progress of an enemy ramp was to seek to undermine it by surreptitious tunnelling. This involved sinking galleries inside the walled circuit and driving them underneath the enemy work so as to destabilize the structure from below. Perhaps the earliest (and certainly one of the best understood) of such defensive sapping can be seen at the site of Palaepaphos on Cyprus, which was subjected to a Persian attack in 498 BCE. Here, the Persian assault ramp was built over a substantial obstacle field comprising a counterscarp bank, a ditch and a berm before it reached the city wall, at which point it rose less than a metre above the ground surface (Fig. 6.1).

Whether this proved sufficient to bring the Persian siege towers into position or whether the ramp was never completed cannot be ascertained. That the latter remains a real possibility is suggested by the evidence for the prodigious energy expended by the defenders in the construction of saps driven under the ramp aiming for the point where the ramp crossed the filled-in city ditch (Maier 1967; 1968; 1969; 1973). These saps comprised four deep rock-cut tunnels and two shallower galleries extended through the matrix of the berm, which required reinforcement by a slatted timber roof held in place by mudbrick piles and wooden posts. The tunnels were up to 1.7 m wide and 2.3 m high and were illuminated by lamps placed in niches cut in the side walls. Water jugs left on the floor of the galleries suggest the effort involved for the miners in the sinking of these tunnels. The spoil from the excavation of these adits and the material removed from the core of the enemy ramp were dumped at the mouth of each of the tunnels where low revetment walls were provided to prevent debris from trickling back into the works. At the terminals of three of these galleries were large bronze cauldrons filled with carbonized wood and lime, and the areas of compacted and calcined lime that lay immediately above them suggests that the defenders fired the ramp from beneath. Even if such countermeasures did not cause the complete subsidence of the Persian ramp, at the very least such efforts would have delayed the launching of the final *coup de grâce*.

We also have considerable information about Sulla's difficult and time-consuming siege of the Piraeus against Mithridates' competent general Archelaus in 87–86 BCE, an operation made more complicated by the necessity of simultaneously besieging Athens separately held by the tyrant Aristion. Although many features of this siege deserve close attention, the aspect that is most relevant to this discussion concerns the attempts made to interdict the construction of Sulla's enormous assault ramp. After a major effort involving the alleged daily use of 10,000 pairs of mules to transport the debris of the Long Walls and scavenged timber from miles around to erect his *agger*, Sulla was able to deploy his engines and commence the pounding of the enemy wall (Plut. *Vit. Sull.* 12.2). However, the defenders had secretly extended several saps beneath the mound and had carried away sufficient earth to cause the sudden subsidence of the structure. Clearly, however, this was not a catastrophic failure of the entire assault ramp as Sulla was able to withdraw his engines while the damage was rectified and the structure was again made operational. In order to prevent further sabotage of this nature, Sulla's engineers sank a countermine that intersected the defenders' works, resulting in a furious underground struggle between the respective pioneers (App. *Mith.* 5.36). Eventually the assailants prevailed and Sulla's men were able to undermine a wide stretch of the city wall and bring it down by firing the charges stacked beneath its foundations.

During the siege of the un-named Gallic 'Stronghold of the Sotiates' by Caesar's legate Publius Crassus in 56 BCE, we are told that the Romans advanced penthouses and towers, which clearly involved the construction of an assault ramp as the defenders, being proficient copper miners, attempted to undermine the same (Caes. *BGall.*

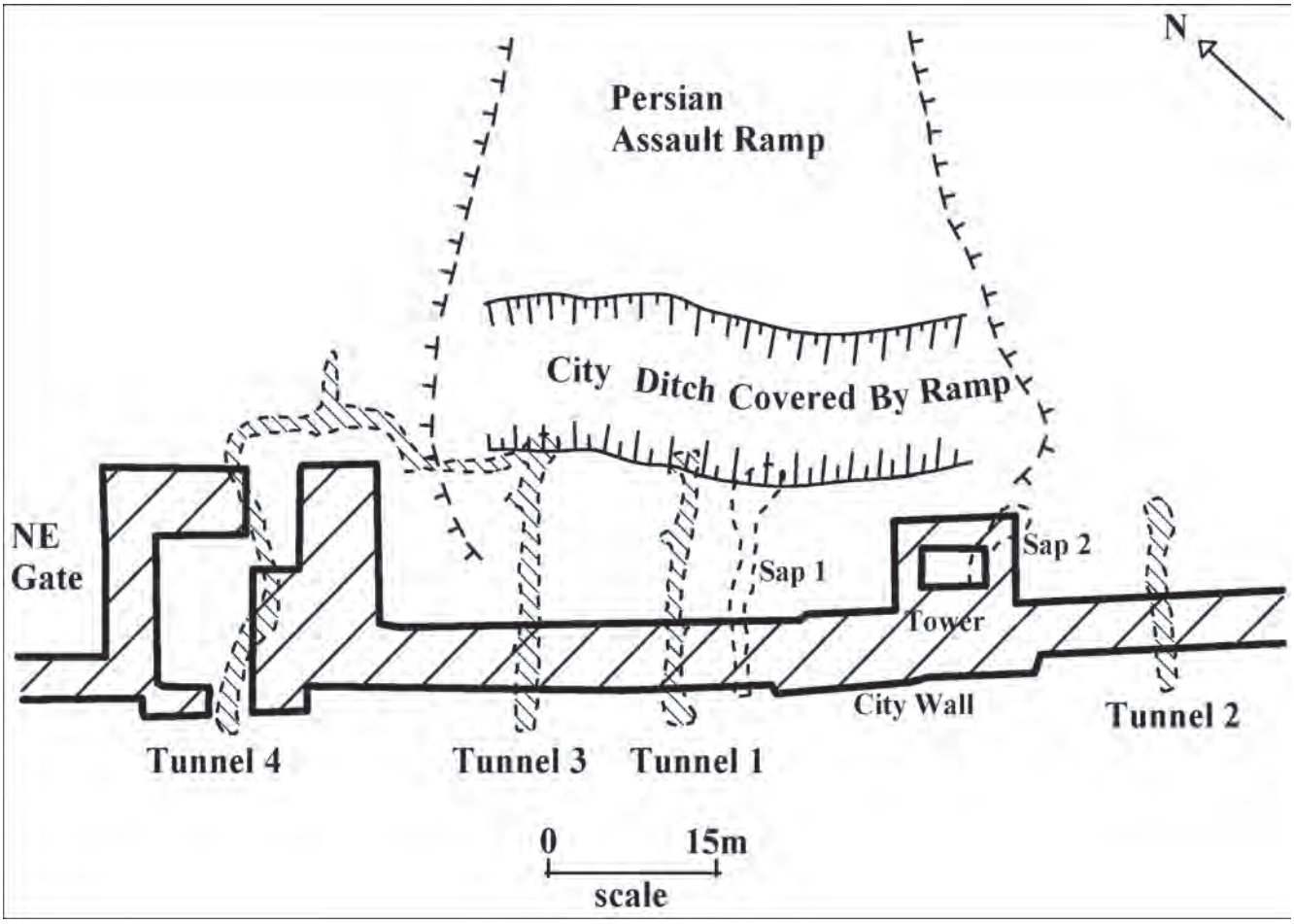

Fig. 6.1: The countermines, Palaepaphos (after Maier 2004, fig. 61).

3.21). However, the efficiency of the Roman troops prevented the enemy from gaining any advantage in this regard and the defenders conceded defeat within a few days. Although we do not know how Crassus defeated the attempts at undermining, whether his superior manpower allowed him to keep pace with any resulting subsidence or if he sank countermines, it is apparent that the failure of their efforts to sabotage the Roman preparations were sufficient to precipitate a collapse of morale amongst the defenders and impelled their early surrender.

In the course of Titus' siege of Jerusalem in 70 CE, when the Romans made their first attack against the Antonia fortress abutting the Temple precinct, they piled up two large ramps only 20 cubits apart (thus benefitting from mutual supporting fire). However, the Jewish defenders extended a mine from inside the Temple compound and created a firing chamber beneath the ramps, which they filled with bitumen-smeared timber. When this charge was lit, the mine collapsed, bringing down both ramps, and the resulting blaze consumed the crowning superstructures (Joseph. *BJ* 5.467–70). This dramatic success proved short-lived as when the Romans eventually resumed their attack by concentrating four separate ramps against the Antonia, the sudden collapse of the Antonia's wall was partly the result of its having been weakened by the earlier defensive mine (Joseph. *BJ* 6.28). Furthermore, as Roman troops mounted a surprise night attack on the new enemy defences, many of the defenders fled their positions and fell into the old mine gallery that lay across their path giving a further example of the danger of unanticipated consequences from the adoption of countermeasures (Joseph. *BJ* 6.71).

Counter-mounds

The second way that a defender might attempt to confront an assailant's mound or ramp was to respond in kind by raising the height of his defences or providing reinforcement to them by way of a counter-mound, directly opposite the point of attack. Seemingly, the simple expedient of raising the height of the town wall was sufficient for Vespasian to

reconsider his plans for the reduction of Iotapata in 67 CE. Here, as the Roman earthworks approached the level of his battlements, Josephus ordered the heightening of the town wall, his workers being covered by water-soaked ox-hides that were proof against incendiaries and cushioned the impact of heavier projectiles (Joseph. *BJ* 3.173–74). This work, combined with the mounting of sorties, led Vespasian to abandon his immediate plans for an assault. A similar effect to the heightening of the existing wall might be achieved by the raising of a counter-mound butting up against the inside of the urban enceinte. Such a structure would not only allow the defenders to mount their own catapults from which suppressive or counter-battery fire might be maintained, but the bulk of the counter-mound, if carefully built, might allow some further reinforcement to the defensive enceinte at the enemy's point of attack. Indeed, as a further advantage, the raising of a counter-mound in the lee of the fortress wall also meant that the construction crews would be less vulnerable to interdiction fire from the besiegers' artillery.

The earliest archaeological example of such a counter-mound can be seen at Lachish in Judaea, which was subjected to an Assyrian attack in 701 BCE. The archaeological evidence here is supplemented by the famous reliefs that were recovered from Sennacherib's palace at Nineveh, although the 'narrative' in the artistic depiction of the event is confused by the Assyrian predilection for superimposing chronologically distinct episodes in the same frame. The initial Assyrian attack saw the construction of a dump-built *agger* (Fig. 6.2) consolidated by a stone-and-mortar conglomerate cap about a metre thick that served to bind the structure of the ramp and enabled men and equipment to be moved into position (Ussishkin 1990, 65–66). The summit of the ramp was then consolidated by a further *terra rosa* crust to create a stable platform for the breaching engines (Ussishkin 1996, 18). However, the defenders responded to this threat by raising a counter-mound with additional fortifications along its crest and this obliged the Assyrians to extend their assault ramp so as to allow them to engage these supplementary defences (Ussishkin 1990, 69–71).

This second-phase ramp was built on top of the summit cap of the first phase and was markedly less proficient in

Fig. 6.2: The Assyrian assault ramp, Lachish.

its technique, offering a much narrower avenue of advance and with no sign of the original mortared lens that clothed the first ramp. Segment III of the relief (following Ussishkin 1982) may show this secondary feature as a truncated five-row track on the extreme right, which looks to consist of stone blockwork rather than the timber corduroys represented elsewhere and with infantrymen depicted to the fore supported by missile troops but with no sign of any advancing battering ram. This, combined with the desperate last ditch expedient of the defenders raining down chariot components on the assailants in Segment IV, may suggest that the second-phase ramp was a relatively crude device designed to overcome the defenders' rapidly extemporized counter-mound.

At Cremna in Pisidia, the impressive Roman siege mound (Fig. 6.3) that was designed to wrest artillery superiority at the point of attack (and to cover the sapping details that moved in against the wall base), was opposed by another counter-mound, abutting the inner face of the curtain between two of the wall towers. This defensive response sought to deny the besiegers any overlook beyond the wall, and presumably acted as the base for counter battery fire, although the massive damage inflicted to the wall facing in this area (as well as to a nearby outwork) suggests that the besiegers quickly established their artillery dominance (Fig. 6.4). The counter-mound, may, however, have served a further useful role in preventing the wholesale collapse of the defensive enceinte once its core had been exposed by relentless bombardment. The addition of a narrower, second storey 'cap' to the initial Roman siege mound (Mitchell *et al.* 1995, 180) seems likely to have been intended as an explicit reaction to the raising of this counter-mound.

Even if the counter-mound at Cremna may have buttressed the defences of the city, a similar structure raised during the siege of Amida in 359 CE, shows how an excess of enthusiasm and energy applied to such ends might actually prove disastrous for the defender. Here, after a lengthy resistance that had seen various Sassanian approaches defeated, the Romans had reacted to the erection of Persian siege mounds by raising a counter-mound of their own by dumping huge quantities of earth against the inside of the urban circuit, a work of considerable effort and toil (Amm. Marc. 19.8.1–2). However, this industry proved their undoing as the weight of the resulting structure, no doubt crowned by a panoply of engines and fortifications, caused

Fig. 6.3: The Roman siege mound, Cremna.

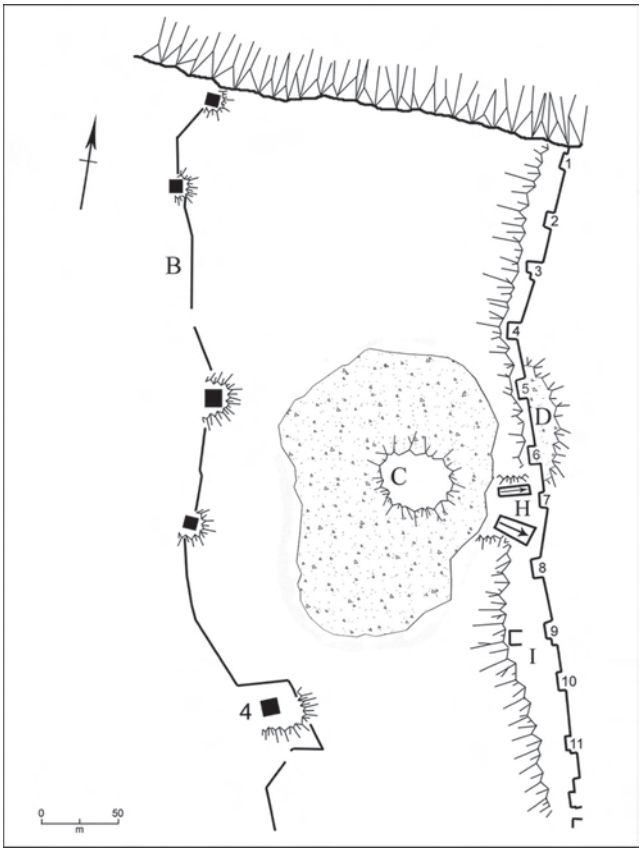

Fig. 6.4: The Roman siege works and counter-mound, Cremna, (B) contravallation, (C) siege mound, (D) counter-mound, (H) possible assault platforms, (I) forward defensive position, (4) Roman artillery bastion in front of Turret 4 (after Davies 2006, fig. 44).

the collapse of the town wall and the filling up of the gap between the Persian works and the defences. Not only did this provide the besiegers with a ready-made avenue of assault, but the confusion and the casualties in the Roman ranks made further sustained resistance impossible.

Defeating Circumvallation

The final category of siege structure that the defender might seek to counter by active construction of his own is the work of contiguous encirclement or circumvallation built by the besieger to isolate the target from supply/reinforcement and to prevent the exfiltration of enemy forces. Although the interruption of such schemes is more generally attempted via sortie, on rare occasions the defenders might prevent their isolation via the expedient of driving a counter-wall across the line of the hostile works or to force the besieger to build his circumvallation a long way from the walls. This had the joint advantage of making artillery bombardment less profitable and to overextend the assailant’s army by forcing the construction of works with a much greater circumference.

At Syracuse, in the siege of 415–413 BCE, the Athenians set out with the objective of blockading the target into submission and had taken the precaution of embarking ‘bakers, stonemasons, carpenters and all tools for wall-building’ in their invasion transports (Thuc. 6.44.1). These methodical preparations were reinforced by the construction of a fortified camp at Labdalum to serve as a magazine and as the place for the manufacture of ‘bricks, iron and whatever else was needful’ for their intended circumvallatory scheme (Thuc. 6.88.6). The Athenians then advanced across the Epipolae Heights and built an advanced base at Syce from which they started extending a wall to the north, their screening cavalry driving off an attempt by the Syracusans to interdict these works (Fig. 6.5). Simultaneously, the besiegers gathered together material for a second branch heading south from Syce and deposited piles of stone and wood to demarcate the line to be followed as far as the Great Harbour (Thuc. 6.99.1). In response, the Syracusans threw up a stone and wooden counter-wall crowned by wooden towers at right angles across the planned route of the southern branch which the Athenians did not seek to prevent as they concentrated on their northern spur (Thuc. 6.99.3, 6.100.1). Eventually a surprise attack led to the seizure and demolition of the Syracusan cross-wall, many elements of which were then recycled within the Athenian works. A second cross-wall, this time with a flanking ditch, was now advanced by the defenders further to the south, and a furious attack was launched against the fort at Syce. Again these efforts were defeated, but the defenders’ concentration on the southern branch now persuaded the Athenians to reinforce this sector and while they were so employed, a Lacedaemonian relief force managed to cross the incomplete northern line and to seize the depot at Labdalum. Using the prepositioned Athenian materials, the defenders now built a third cross-wall across the heights towards Labdalum and strengthened it with four forts, including one at its western terminus (Thuc. 7.4.1). This work, although assailed by the besiegers, prevented the hermetic isolation of Syracuse by preventing the completion of the work of encirclement that the Athenians had expended so much energy and resources in attempting.

At Corduba in 45 BCE, Caesar had encamped his army north of the Pompeian-held town and built a field-bridge across the Baetis to link him with a bridgehead camp he had established on the southern bank. He then extended a line of entrenchments running from this fort towards the permanent bridge across the river carrying the main road leading out from the city and heading to the south (Fig. 6.6). The Pompeian defenders, with equal engineering expertise, then set to work to drive their own fieldworks at right angles to the Caesarian approach to link their southern camp with the permanent bridge and thus guarantee communications with their troops inside the city (Caes. *BHisp.* 5). In the course of several sharp skirmishes, the Pompeians gained the upper

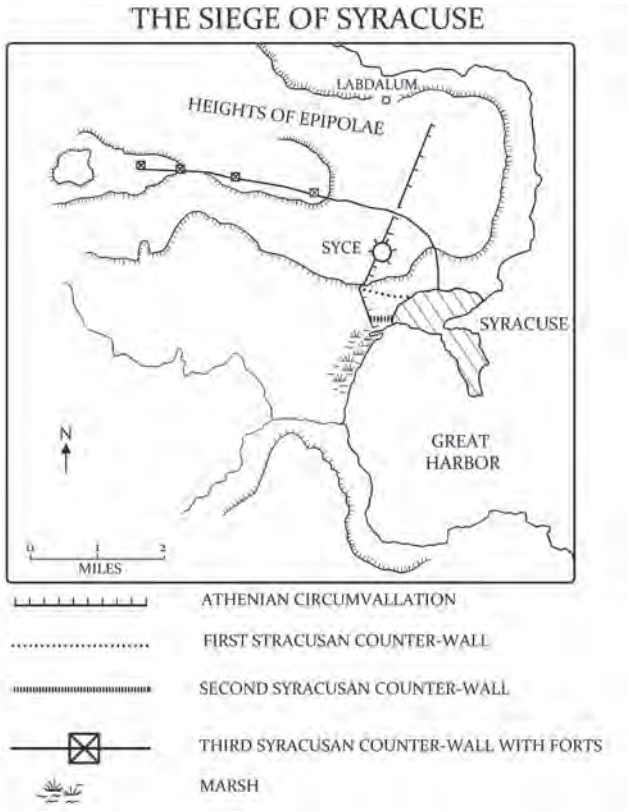

Fig. 6.5: The siege system and counter-works, Syracuse (after Treherne and Fullard 1963, fig. 3).

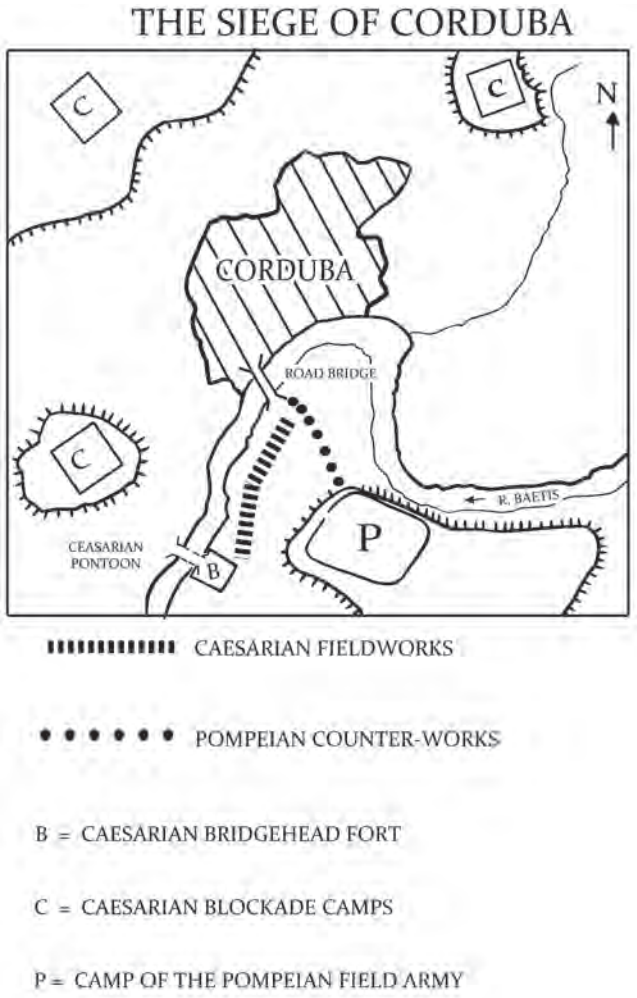

Fig. 6.6: The competing field works, Corduba (after Dodge 1995, 700).

hand and, unable to provoke a general battle, and with his design frustrated, Caesar raised the siege and marched away.

A third, successful example of the use of counter-walls can be seen at Dyrrachium in 48 BCE. Here, the Caesarian scheme was to pin the Pompeian army against the Adriatic coast and to sever its connection with its supply base. The plan was flawed from the start because Pompey had control of the sea (and could resupply at will), and had a much larger force to hand than his enemy. As soon as Caesar's intention to sever the land connection between Pompey's fortified fleet base and the city of Dyrrachium became clear, the would-be defender immediately undertook a vigorous programme of entrenchment himself (Caes. *BCiv*. 3.44). Accordingly, with competent Roman combat engineers readily available to both sides, a series of sharp engagements were fought as each party sought to seize and fortify prominent hill positions and to link the same with a continuous barrier (Plate 6.1). This can be seen as the ultimate expression of competitive fieldwork as the hostile lines snaked across the broken terrain of coastal hills until Caesar's men finally reached the sea to the south. However, this was only achieved at crippling cost with the Caesarian encirclement stretching over a distance of nearly 16 miles. The Pompeian works, following an 'inner' line, was shorter at some 14 miles and incorporated 24 forts. The real problem here was that Caesar, with a much smaller army, was now hopelessly overextended and heavy fighting at the southern extremity of the system saw the Pompeian troops victorious. Although a more youthful Pompey may have reacted by rolling up the entirety of the Caesarian position, his fateful pause allowed his overconfident adversary to evacuate his works and march off into the interior.

Two further examples show besieged Roman commanders attempting to use the engineering competence of their soldiers to pressure their assailants and to threaten their lines of circumvallation. At Praeneste in 82 BCE, the Younger Marius was trapped inside the walls by a Sullan army and a work of encirclement was put in hand. As the Sullan strategy was to force the surrender of the city by famine (and to entice successive relief armies to attempt to break the siege), this line of circumvallation was drawn up at some distance from the city walls. In response, the Younger

Marius occupied part of the intervening space and built a fortified camp of his own (App. *B Civ.* 1.10.90) where he gathered men and engines with the intention of forcing the besiegers' line. Presumably this plan was frustrated by the failure of any relieving force to evade Sulla's field army with the result that no coordinated attack could be launched against the besiegers, obliging Marius to withdraw once more on the city. Somewhat similarly, at the prolonged siege of Perusia (41–40 BCE), Lucius Antonius, surrounded by three hostile armies and preparing for the arrival of relief forces, chose to confront his enemies by marching out and building an advanced fortified line at the base of the hill on which the city stood (App. *B.Civ*. 5. 4.33). There, he was well-positioned to launch an assault against the hostile line of encirclement that extended over a distance of 56 stades. Octavian's response was to strengthen his circumvallation scheme by raising the height of his ramparts and raising 1,500 towers on them at an interval of 60 Roman feet enabling him to repel the furious attacks that an increasingly desperate Lucius launched when it became clear that no external assistance would be forthcoming.

Although in neither of these two latter cases were the fieldworks raised by the defenders of any material benefit in the long term, that the besieged had the confidence to confront the enemy in such a way could have countered the malaise of passivity so injurious to their continuing will to resist.

Conclusions

As I have tried to show, the expenditure of labour and energy in the construction of engineered countermeasures offered the defender the possibility of staving off, or at least delaying, an attacker's approach to his walls. Such efforts might engender solid psychological benefits as well as actual military advantage as the besieged busied themselves in activities that refuted the morale-sapping impact of being helpless observers to the enemy's spatial encroachment. The efficacy of the countermeasures depended in part on the skills available to the defenders, the raw materials at their disposal and their strength when compared to the number of assailants that they faced. Although the construction of counterworks might sometimes produce unintended consequences (as at Amida), such initiatives were usually much less dangerous than attempting a sortie-in-force. Furthermore, the prospect of eroding the besieger's will to prosecute his operation to its grim conclusion by offering evidence of a determined intention to resist to the end, would have offered a tempting rationale for engaging in an overt display of competitive engineering. 'Digging for victory', therefore, could provide both a practical response to a difficult military situation and the right medicine for strengthening the morale of hard-pressed defenders.

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7

Fortifying a Buffer Region: The City Walls in Triphylia, Greece

Elke Richter

Introduction[1]

Triphylia, the 'land of the three tribes', is a lesser-known part of the Peloponnesus, but sources from as far back as Antiquity inform us about this historic region in the western part of the island (Fig. 7.1). The rivers Alpheios and Neda formed the northern and southern borders and the Ionic Sea defined an even stronger natural border to the west. The eastern border, meanwhile, cannot be identified exactly, but it must have been west of the cities of Phigalia und Alipheira, which were already a part of Arcadia. Triphylia nowadays consists of the coastal plain in the west that in ancient times was a large lagoon. A mountain range, the Lapithos, runs from the coast to the east, dividing Triphylia into a northern part with a gentle and hilly topography and a southern part which is quite mountainous, with fertile plains in between.

At the end of the 5th century BCE, the area simply went by the name of 'Hleia' with a particular Triphylian designation emerging only after 400 BCE. It continued its formation as a geographic concept and entity until 350 BCE and remained unaltered during Classical and Hellenistic times (Nielsen 1997, 133–144). Triphylia was a buffer land between the hegemonic powers of Elis to the north, Sparta to the south und Arcadia to the east, whose predominance changed over time. These shifts of power had effects on Triphylia's fortifications during the course of two centuries with the dominating power of each period very likely to have left its marks.

5th Century

In the 6th and 5th centuries BCE, Elis expanded from its heartland of the 'Hollow Elis' in the north of the Peloponnesus towards the south. In the middle of the 5th century BCE, Elis managed to bring the areas around the Lapithos mountains under its control reaching even further south, in order to strengthen its role as the new hegemonic power in the region. This put into question the supremacy of Sparta within the Peloponnesian League. In order to prevent an Elean invasion of its realms, Sparta went as far as to send military support to the Triphylian *polis* of Lepreon when the latter was attacked. During the course of the last quarter of the 5th century, Sparta started to act in an increasingly aggressive way, laying claims on the autonomy of the *poleis* that were Elian dependents. This provoked the outbreak of an open conflict, which is known as the Spartan-Elean War, which took place in 402–400 BCE (Capreedy 2008, 495–502).

Platiana: Phase 1 and 2

During the intensification of the latent conflict in the late 5th century, the first fortifications in Platiana, a site named after the nearby modern-day village, can be detected. According to recent studies, the site can be identified as the historic Typaneai (Heiden 2020, 22–24). Platiana is situated in the eastern foothills of the Lapithos on top of a prominent, long and narrow mountain ridge, offering, from 630 m above sea level, a perfect view into the northern and southern valley and to the Ionic Sea (Fig. 7.2).

Important for the fortifications of the 5th century BCE are the three upper plateaus: the so-called Acropolis, Theater and Cistern Plateaus, the formation of which has been at least partially helped by mankind. At the eastern edge of the Acropolis Plateau, the earliest remains of Platiana's fortification system can be found (phase 1A). Here, Tower 17 with a ground-floor chamber is situated, from which an approximately 1 m thick, double-shell wall runs almost 7 m towards the north (Fig. 7.3), at which point it bends to

the west, and after another 1.5 m or so, irregularities in the masonry bond indicate restoration works.[2] On its southern side, Tower 17 is connected to a wall that runs towards the south and includes a postern.

Unfortunately, the connection to the other curtains remains unclear. In order to better understand this complex, a closer look at Tower 17 reveals that the wall supporting the entrance to the tower chamber is, at *c*. 0.6 m, only half as thick as the rest, which is quite uncommon for a curtain wall that normally runs through the tower with the same thickness. This considerably thinner wall must be interpreted as an internal wall, whereas Tower 17 and the adjacent curtain walls were external walls. Another wall situated 3.5 m further to the west may well be the missing external wall at the western side. Although its northern and southern ends are not preserved, its material, construction with two shells, width and direction match the other external walls perfectly. Furthermore, it aligns with the border of a cistern carved into the bedrock that was positioned parallel to the walls of the tower and the adjacent curtains, although the plateau would have offered plenty of space for a different orientation. Thus, the cistern with a capacity of 150 m³ could be interpreted as an integral element of the arrangement.

When trying to reconstruct the site, an isolated, 17 m long and 3.4 m wide building with a tower protruding to the east comes up as a likely element. The building could have been easily spanned with a mono-pitched roof collecting water for the cistern. The building was accessible from the east through the postern south of Tower 17. A second entrance might have existed in the western wall. The tower itself was probably multi-storeyed, merely for the purpose of being able to look across the roof of the building.

Regarding the rest of the plateau, 0.95–1.2 m thick walls can be detected at several different spots and suggest that it was surrounded in a later phase (1B) by an enceinte without offsets or towers.[3] It is likely that the isolated building of phase 1A was integrated into the new circuit and remained in use. A postern on the western part rendered the Acropolis Plateau traversable in the east–western direction.

A similar arrangement is found on the Cistern Plateau and will be called phase 2A. An enceinte with one or two shell walls without filling and a width of around 0.8 m is traceable at the eastern and southern rim. The so-called Stele Gate at the north-western corner shows that this wall was once

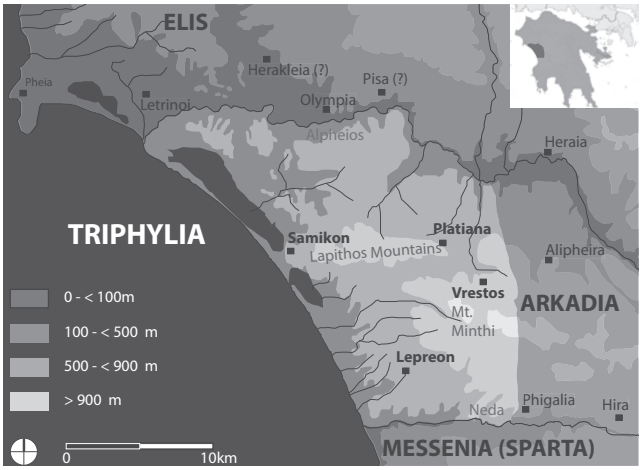

Fig. 7.1: Map of Triphylia (Elke Richter).

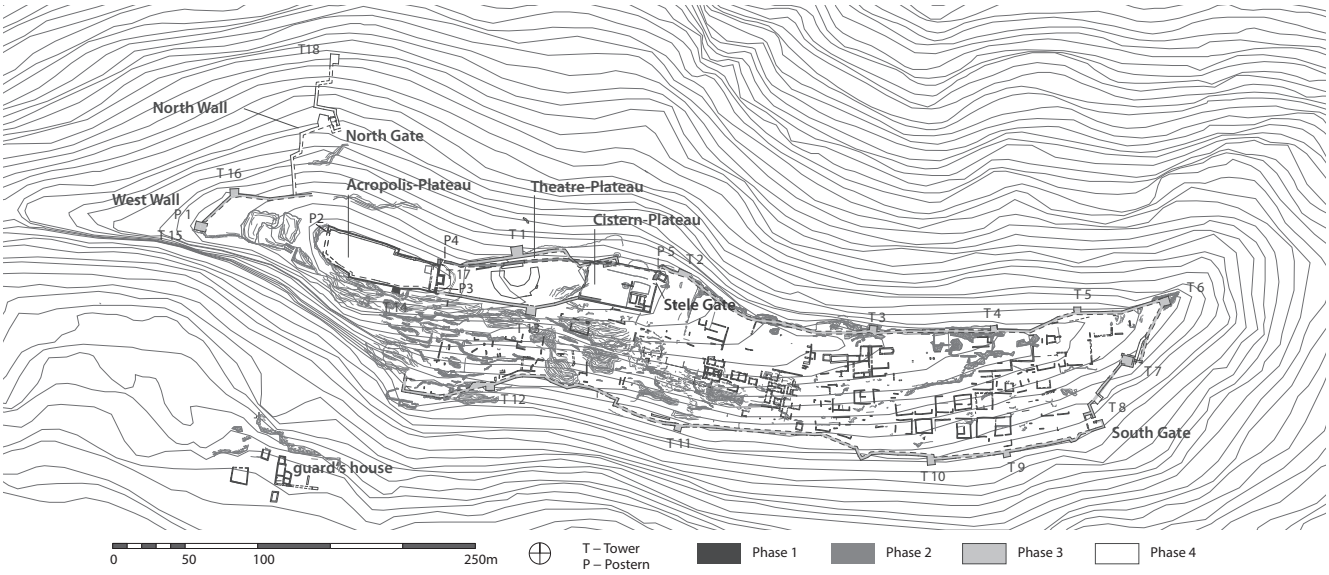

Fig. 7.2: Building phases of Platiana (Elke Richter).

Fig. 7.3: Tower-building of phase 1A (Elke Richter).

a border between an intra-muros and an extra-muros area. In this phase, it consisted of an axial gate with a flanking tower protruding to the east, meaning that the intra-muros area must have been situated to the west.[4] On the plateau, a second cistern existed, which had also been carved into the bedrock and had triple the reservoir capacity of the cistern at the Acropolis Plateau. This can be taken as evidence for the increased need for water storage and an intensified use of the plateau.

Both of the small fortified plateaus in Platiana may be interpreted as military bases, as only a few permanent buildings were located there. The detached houses such as the one on the Acropolis Plateau were probably multifunctional and could be used, for example, as a guard post, a storehouse or as accommodation facilities. This base made it possible to man this strategically important point for some time or even permanently, and survey the surroundings from Arcadia to the Ionic sea. The erection of outposts and border fortifications is generally understood to have happened in relation to the Peloponnesian War at the end of the 5th century, when warfare had changed into a year-round enterprise without a cease-fire period during harvest time. This required permanent manned outposts and forts with a perfect overview of strategically important areas, in order to secure the areas in question (Winter 1971a, 42–45, 161, 305–306). As examples might be named the forts at the Attic-Boetian border, or the Spartan forts. Considering the forts of Platiana as dating from the second half of the 5th century BCE is an assumption supported by the slimness of the curtain walls. As the walls in phase 1A, 1B and 2A barely differ in thickness, the different building projects were probably undertaken within a minimal timespan. It is not clear where the area of influence of Elis and Sparta in the second half of the 5th century ended. Both parties might have been interested in erecting a military post at the mountain ridge of Platiana. Successive or even alternating use of the site by the antagonising war parties or their local vassals might also explain the fact that there were at least three building phases.

First Half of the 4th Century

Elis was defeated in 400 BCE, marking the end of the Spartan-Elean War, with Elis subsequently having to emancipate its tributaries. Following this, the Triphylian *poleis* organised under the umbrella of the so-called Triphylian League with a collective administration, a tax system and shared armed forces (Ruggerie 2004, 140). The character of the Triphylian League remains vague and is a controversial issue. Ruggeri emphasises that the Triphylian League was a collective state, as the federal institutions constricted the individual rights of the single *polis*. In contrast, Siewert assumes the Triphylian League to be a Spartan creation and vassal, as Sparta freed the Triphylian *poleis* from Elean influence, uniting them to a somehow consistent entity that vanished after Sparta's defeat at Leuctra (Siewert 1985, 7–12). That would mean that the Triphylian League was dependent on Sparta's support. Nielsen disagrees on the grounds that it remains unclear if and when the Triphylian League dissolved. After Sparta's defeat at Leuctra in 371 BCE, Triphylia's position was of course considerably weakened and it joined the Arcadian League in 369 BCE. It is unclear for how long Triphylia remained in the Arcadian League. Nevertheless, Triphylia underwent a process of integration into Arcadia during this period. With Arcadia defining itself along ethnic lines, the Triphylians 'arcadianised' in order to be able to belong to this ethnically defined group. This included linguistic aspects as well as the introduction of the eponymous 'Triphylos', the

ancestors of the Triphylians and the son of Arcas, the hero of Arcadia (Nielsen 1997, 145–147).

Numerous building activities related to the Triphylian fortifications can be expected as a result of these fundamental political changes. Not only the protecting power Sparta, but also, from 369 BCE onwards, the Arcadians as well as the local inhabitants must have been concerned about controlling and securing the 'freed' or allied territory. However, it is only at two sites that the erection of city walls can be dated back to the first half of the 4th century.

Vrestos

The city wall of Vrestos, named after the present-day nearby village, was probably built at the start of the 4th century BCE (Fig. 7.4). The site most probably belonged to Triphylia, as it was situated to the west of the river Acheron (called Makarounas today) marking the border with Arcadia. It must have been a highly strategic position, being the easternmost city in the direction of Arcadia with a view from the eastern flank far into the mountainous landscape of Arcadia and even to the city of Alipheira. Furthermore, from the northern flank, there was intervisibility with Platiana, and the place flanked the eastern side of Mount Minthe, which for cultic reasons was highly important to Triphylia (Heiden 2020, 27).

The site itself is situated on a hill with a steep, rocky gradient on the western side and an almost gentle eastern slope. The city wall is located here, consisting of eight towers situated along a line just about parallel to the slope. The curtain wall has disappeared as a result of looting or disintegration. All towers have been built using local limestone in pseudoisodomic trapezoidal or ashlar masonry with one or two shells and no filling. The homogeneity of the layout and the building technique indicates that all towers were built during the same phase.

The almost quadratic towers have a comparatively small size of 20 to 50 sqm. With only the socles preserved, it cannot be determined whether tower chambers on the ground floor existed. Nevertheless, the towers did not offer enough space for any war engines bigger than hand-held crossbows. As the towers are set at an almost constant interval of *c*. 60 m, the used arms must have had a considerably short range of 60 m or less. Otherwise, it would have been possible to flank the curtains with towers positioned at larger distances.[5] Both features give a hint as to which period the fortification of Vrestos can be dated back. On the one hand, the existence of towers at regular intervals suggests construction at the end of the 5th century BCE, when defenders needed to repel the application of rams and undermining (Winter 1971a, 156). The short distances on the other hand were designed for conventional arms such as bows, slings or early catapults such as *gastraphetes* (Marsden 1969, 11–16, 86; Ober 1987, 570; Ley 2008, 252–255), and make construction in the second half of the 4th century most unlikely.

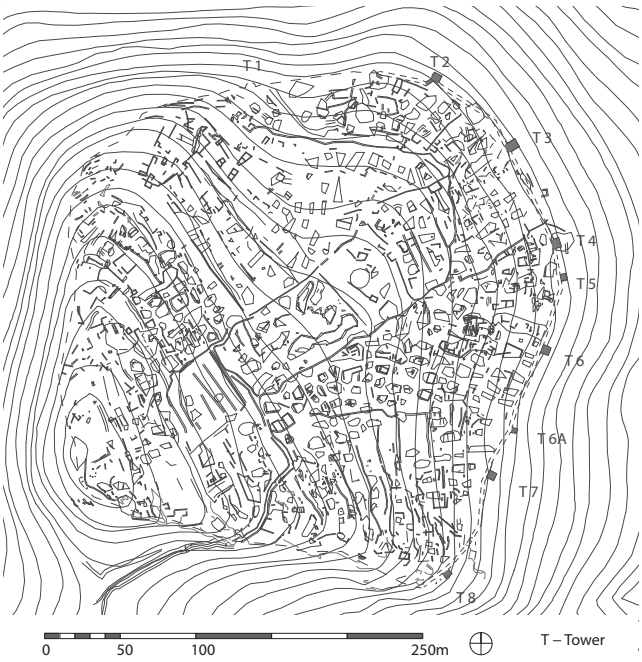

Fig. 7.4: Map of Vrestos.

Towers 3, 6 and 7 were constructed as isolated rectangles inserted into the curtain. These independent structures had the advantage that the towers would not necessarily be damaged, should the curtain collapse due to undermining, the use of rams or artillery attacks. For Triphylia, this was an exceptional construction. Almost the same building technique was used at the Hellenistic Tower 15 at Samos (Kienast 1978, 75–78). Generally, separating towers and curtains was not done before the late 5th century and was only established by the middle of the 4th century. Also, the overall design of the city wall in Vrestos with its fixed defence lines, beyond which the defenders withdrew in case of an attack or a siege, is based on a passive and observant strategy of defence and fits into the late 5th and early 4th century BCE. Furthermore, the eastern flank in Vrestos would have offered ideal conditions for siege machines. As nobody would knowingly have exposed the settlement to this dangerous threat, the long-distance catapults and siege machines of the second half of the 4th century cannot have been in use at the time, when the city wall was erected.

The fortification of Vrestos had a special connection to the site of Platiana. Tower 2 in the north-east of the circuit was built with an irregular ground plan in order to shift the tower to the only position where intervisibility with Platiana was possible, in a linear distance of slightly more than 5 km. It might be reasonably assumed that this arrangement was made to ensure a communication between allies, and thus dating the city wall to the time of the Triphylian League at the beginning of the 4th century BCE seems to be more logical.

Platiana: Phase 3

During Platiana's phase 3, a 1100 m long circuit was erected, isolating an area of almost 5 ha on which a settlement developed (see Fig. 7.2). The circuit started at the eastern end of the cistern plateau. On this steep northern slope, only detached curtain sections and towers separated by rocky parts as a natural defence have been preserved. From Tower 6 at the easternmost point, the city wall runs across the southern slope and continues without interruption to the scree slope in the west. Additionally, the so-called Western Wall was built, protecting a rocky plateau to the west and underneath the Acropolis Plateau.

The curtains were made of local limestone and constructed in the lower parts as terrace walls with a double outer shell and a rubble backfill. Only in the few preserved parts can evidence be traced for the fact that the upper parts were constructed as double shells with rubble filling. The average width is just below 2 m and therefore thicker than the enclosures of phases 1 and 2.[6]

The towers are preserved only as filled socles. At the northern slope, the towers are, at around 25 sqm, as small as in Vrestos. However, at the southern flank, these small towers alternate with medium-sized ones (approx. 40 sqm) at regular distances between 40 and 80 m. Posterns as indicators for an offensive, a Hellenistic defence strategy, exist only in very few cases, for example at the Western Wall. A ground-floor chamber can be found only at Tower 7, with an above-average surface area of 70 sqm and flanking the tangential Southern Gate, which was the new main entrance to the walled city from the south. The present state results from a phase of building repairs, during which reinforcements and alterations were introduced, possibly after a partial destruction. As the low quality of the surface finishing and the connecting elements show, it might have been measurements undertaken under time pressure, possibly under danger of attack. The original layout of the gate can be reconstructed as a tangential single courtyard gate with a lockable opening to the field side and a flanking tower south of the opening. Additionally, Tower 7 secured the gate on the other side. The tower asymmetrically protrudes as a semi-reverse tower from the curtain. Traces of indentations reveal that its purpose was probably to support the defence of the curtains rather than for an active attack (McNicoll 1997, 53). The ground-floor chamber of approximately 45 sqm had 1 m thick double-shelled walls without filling. Another noticeable feature is the highly smoothed, pseudoisodomic ashlar masonry with very few trapezoidal blocks. Using the same local limestone as in all the other parts of the enceinte, the choice of masonry and the surface finishing meant that a much higher effort had been applied than at the rest of the circuit. The elaborate construction of the tower walls must be seen in relation to the tower's function as part of the Southern Gate complex. Its purpose was to secure the entrance area on the field-facing side, as well as the representational appearance of the entrance situation.

The thickness of the curtains points to the erection of the city wall before the common use of *oxybeles* in the middle of the 4th century BCE, when the width of the curtains increased up to 2.5 m and more (Rihll 2007, 136). Since only Tower 7 had a ground-floor chamber, the construction before their systematic use from the middle of the 4th century onwards seems plausible. As the tower walls were slightly thicker than those of the early artillery towers, however, this indicates a possible erection after the invention of torsion catapults in the last third of the 4th century (Ober 1987, 598). Also, the design of the Southern Gate is – in the regional context – quite similar to the South-Western Gate of Gyphtokastro/Eleutherai (*c.* 370 BCE) or the Westgate in Plataiai (after 335 BCE) (Adam 1981, 70; Konecny 2005, 284–285). Although the hints for dating are scarce, the city wall may date from the first half or the middle of the 4th century BCE. This assumption is supported by findings of an extensive survey discovering surface findings from the early 4th century BCE onwards and a main activity of human settlement around 300 BCE (Heiden 2020, 24).

The walled area of Platiana was quite small, mainly because the settlement area was reduced by many rocky parts. Judging by the size of the enclosed area, the construction of the long city wall must have been a relatively difficult logistical and financial task for such a small community.[7] It can be presumed that neither the funding of the project nor the provision of skilled workers was undertaken by the local inhabitants. Even Meyer interpreted the city wall of Platiana as 'initiated by a major power' (1957, 34) and associated it with the Elean control over Triphylia after 245 BCE. If it is correct to date the city wall of phase 3 to more than a hundred years earlier, Platiana or the whole of Triphylia would have had a strong ally in the Arcadian League, which it joined in 369 BCE. In the Arcadian *poleis*, expertise in erecting city walls definitely existed. Furthermore, Arcadia itself had a strong interest in securing the east–west connection between the Arcadian inland and the Ionic Sea that was running through Triphylia and the valley north of Platiana. When Matern emphasises the importance of the Alpheios Valley as a connection between the hinterland and the Ionic Sea, the same must be said about the Valley north of Platiana (2014, 63).

Late 4th Century

Unfortunately, very little is known about Triphylia's history after it joined the Arcadian League. In 245 BCE, Triphylia was again becoming dependent on Elis and in 219/18 BCE, Philipp V conquered the area in question and handed over the Triphylian *poleis* to the Achaean League in 199 BCE, to which they belonged until the dissolution of the league in 146 BCE.

Samikon

During the late 4th century and the first half of the 3rd century – the period about which we have the least historical information – the most impressive city wall of Samikon was built (Fig. 7.5). The site is situated on the westernmost spur of the Lapithos, almost reaching out to the Ionian Sea. In Antiquity, the city of Samikon overlooked two lagoons and the coastal plain in the north. The city walls surround a triangular area, which reaches its highest point in the south-east at Tower 4, and probably sported an unfortified steep slope in the north. Although highly individual solutions were realised in relation to the towers and curtains at the western and southern flank in order to meet defensive requirements, the construction overall is homogenous and all elements are bonding. This leads us to the conclusion that the city wall – in parts preserved as a structure of 4 m or more in height – was erected during one phase.[8]

In all parts, the towers are spaced at more or less regular intervals that were chosen depending on the surrounding topography. In the areas with only gently inclined or even almost flat terrain, the towers are positioned at very short intervals of only 15–35 m, whereas at the steep slopes of the eastern side, the distances are considerably larger. In comparison to Vrestos and Platiana, the towers in Samikon are much larger and offer up to 100 sqm of ground area. Housing larger war engines was therefore possible at these sites. At least three towers had ground-floor chambers, which in two cases had level access on the city side and in one case only from the wall-walk on the upper floor.[9]

The chamber walls range from 0.8 to 1.2 m in thickness and are thus much thicker than the early artillery towers. The latter were considered unable to withstand *lithoboloi* (torsion stone-throwers) that came into use in the 330s (Marsden 1969, 43) and are thus considered to date from before that point in time. Tower walls over 1 m deep, however, are considered to have been built after the 330s (Lawrence 1979, 222; Ober 1987, 596–597). For example, towers in Gorítsa (dated 330 BCE) or in Samos (dated around 310–290 BCE) show perfect parallels to the ones in Samikon (Kienast 1978, 97; Bakhuizen 1992, 118). In addition, a *proteichisma* can be found beneath Tower 4, which is the largest tower situated on the highest point of the city. At the bottom, a kind of parapet had been installed, consisting of the carved-off rock to which a wall had been added. Thereby, a completely protected platform at the base of the tower had been created as an additional defence opportunity in the blind corner of the tower. *Proteichismata* are usually considered to date from Macedonian times at the earliest, their purpose being to stop attackers at a far distance from the actual city wall and to prevent the city wall being damaged by siege machines and torsion catapults (Winter 1971a, 283–285). Also, the indented trace at the southern flank, where the terrain is almost flat and

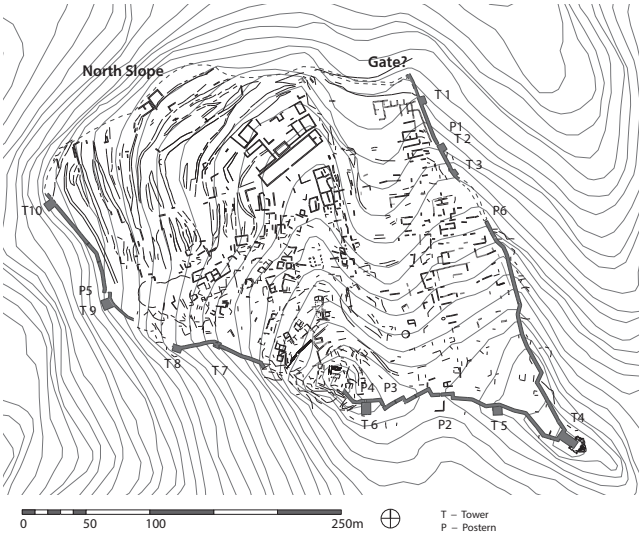

Fig. 7.5: Map of Samikon.

easily accessible, was dated by Winter to between 335 and 260 BCE (Winter 1971b, 423–424). Taking all the evidence into consideration leads to the assumption that the city wall was built in the last decades of the 4th century BCE at the earliest.

Platiana: Phase 4

A fourth building phase can be seen in Platiana. The Northern Wall was added to the city wall as it is not directly connected to the Western Wall of phase 3 (see Fig. 7.2). The Northern Wall starts perpendicular to the Western Wall, runs down the slope to the north with three deviations, and ends at Tower 18. In earlier research, the Northern Wall was interpreted as part of a city wall that enclosed an area of the northern slope (Meyer 1957, 30). Despite intensive searching in that area, no remains of buildings could be found. It seems plausible that the Northern Wall ended at Tower 18, because the gradient increases significantly at exactly this point. It becomes almost inaccessible, whereas in the part isolated by the Northern Wall the slope is still walkable.

All parts of the wall are interconnected and have carefully constructed corners. The actual depth of the curtain cannot be identified. The complete inner shell has vanished, but it was at least 2 m thick. The Northern Gate, which is positioned in the Northern Wall, is designed as an L-shaped tangential gate with an inner courtyard and a flanking tower. On the field side, a 20 m long bent corridor leads around the tower to the courtyard, which was not visible when entering the corridor. The walls of the corridor and the tower change direction slightly in order to give all inner corners an angle of 90 degrees. This provided the defenders with the perfect angle for shooting without the whole gate having to follow a strict rectangular layout. In addition, the elaborate design of the gate is revealed by the position of the tower

that forced the attackers to expose their unshielded right side to the defenders and by the thicker courtyard walls, which might have offered platforms for the defenders while shooting into the courtyard. All features of the Northern Gate can be compared to other L- or Z-shaped gates that were updates of the simple tangential gates and applied in the course of advanced weaponry in the 4th century BCE (Winter 1971a, 223).

The whole arrangement of the Northern Wall can be seen as a *hypoteichisma*. In contrast to *proteichismata,* which were positioned parallel to the main curtain and common parts of Hellenistic fortifications, *hypoteichismata* ran perpendicular to the main curtains. In the nearby Arcadian Phigalia, two walls perpendicular to the rampart are interpreted as *hypoteichismata* and dated to the second quarter of the 4th century BCE (Cooper and Myers 1981, 128–133). As in Platiana, the north-western *hypoteichisma* in Phigalia ended in a tower-like structure bordering a steep gradient. The Northern Wall in Platiana definitely provided new possibilities for surveillance beyond the view provided by the city wall and offered an additional defence line. These were necessary when the range and the destructiveness of torsion catapults increased by the end of the 4th century BCE. Further removed defence lines were supposed to keep attackers away from the actual city wall and date mostly from the end of the 4th or 3rd centuries BCE. In addition, the indented trace applied to the Northern Wall is not seen to occur before 350 BCE (Winter 1971b, 423–424). Both features imply the erection of the Northern Wall no earlier than the end of the 4th century BCE.

Summary

As the presented fortifications show, during the existence of the Triphylian League shortly after 400 BCE, it is clear that there were more than the single building phase that was assumed at the start of the project. The fortification system developed over 150 years from the late 5th until the late 4th or 3rd centuries BCE. Triphylia, during this period, served as a buffer region for the dominating powers of Elis, Arcadia and Sparta, which had to secure their borders against the neighbouring powers and keep those as far as possible from their heartlands. The shifts of power affected the fortification landscape in a more or less direct way. Though the intentions for building activities may have been individual, securing the area, the infrastructure and the settlements were the aims they had in common. The fortifications were built or enlarged according to new developments in war techniques and the remains bear witness to the eventful time in this less-studied part of the Peloponnesus.

Notes

1 The study on the fortifications of the ancient sites of Platiana, Samikon and Vrestos was undertaken as a subproject of the project 'The Antique topography of human settlements in Triphylia' conducted as a cooperation between the German Archaeological Institute – Brach Athens (Dr Joachim Heiden) and RheinMain University (Prof. Dr Corinna Rohn). It was the aim of the overall project to analyse the development of the settlements in the region with a specific focus on the early Hellenistic period, when Triphylia formed a more or less independent state, the so-called Triphylian League.

2 The drafted edge in the north-eastern corner shows clearly that the wall was erected before the enceinte of the adjoining Theatre Plateau.

3 Even later, in phase 1C, the enceinte was reinforced at several points or even entirely.

4 With the southern jamb of the opening not preserved, its width is not detectable. Unfortunately, the course of the remaining enceinte in the west is not traceable any more. Later, in phase 2B, the enceinte of phase 2A was reinforced with an additional shell of up to 2.5 m deep.

5 Only Towers 4 and 5 are located at a very short distance of 17.5 m from each other. It may be possible that Tower 5 was inserted into the circuit at a later stage. Considering this, the distance between Tower 4 and 6 of 65 m would have fitted into the scheme.

6 The thickness of the curtain varies from around 1.7 m at the southern flank to 1.9 m at the northern flank. Meyer even measured 2.2 m at some points (1957, 25, 29).

7 For the financing and organisation of the erecting of city walls see Maier 1961. Should Catlin be correct by estimating the average ground area of a walled city at 10–20 ha (2002, 163), Platiana would have been considerably smaller. Following Hansen's calculation method based on the size of the settlement area, Platiana would have had approximately 450–600 inhabitants within the walled area excluding the chora (2006, 35–63).

8 Bisbee interpreted the change from polygonal to trapezoidal masonry and from the use of smaller to larger stones as proof of two construction phases for the city wall of Samikon (Bisbee 1937, 525–538), which never has been questioned. Looking at the building itself, it is not possible to detect more than one construction phase.

9 Also, in Gyphtokastro, which has been dated to the last third of the 4th century BCE, the chambers of towers 2–4 were accessible from the ground level of the city side. Winter 1971a, 162.

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8

Excavating the Hellenistic Fortification of Vergina, Northern Greece

Vassiliki G. Stamatopoulou

Introduction

The Aristotle University of Thessaloniki has been engaged in systematic excavations at Vergina since 1938. However, they were not the first to dig at the site, as investigation of the ancient city was inaugurated by a French mission under the archaeologist L. Heuzey and the architect H. Daumet in 1861, when the region still belonged to the Ottoman state. Among the ruins of the city which he drew up on a topographic plan, H. Daumet included the meagre surface remains of the fortifications, which were visible at one point on the forested hillside.[1]

Systematic excavations on the acropolis and wall of Vergina began in 1981 and are still in progress. They have brought to light a fortification dating to the age of Cassander with both semi-circular and rectangular towers, in addition to yielding a large number of portable finds revealing the city's history and its residents' daily life. Vergina's city wall is considered the most significant find in this ancient city after the discovery of the famous intact Macedonian tombs excavated under the Great Tumulus by M. Andronikos. Furthermore, one section of this city wall forms the best-preserved example of Greek military architecture in Macedonia. The discovery of this circuit wall further assisted in identifying the exact perimeter and the dimensions of the city it protected.[2]

The ancient city occupies the slope and foot of a hill extending just north of the Pierian Mountains range, and facing north. The site is characterized by extremely steep elevations. The fortification runs around the entire city perimeter, with a city wall of about 3.3 km in length, of which about 2.5 km have been uncovered to date. Most of the remaining city wall appears to have been destroyed due to erosion and soil slippage. Other parts of the city wall have been lost due to plundering of its ashlars.

Since much of the fortification enclosure is situated today within a steep wooded area, its excavation presents particular features and difficulties. The lack of a road and consequently, the daily ascent on foot of the excavation team via a mountain trail, the use of pack animals for the transport of equipment and finds, in addition to the danger posed by snakes, scorpions, wild boars and wolves are the chief difficulties encountered by the fieldwork team on the acropolis. In the lowland area, on the other hand, the excavation is extremely extensive and encounters enormous amounts of fill (up to 6.5 m from today's surface level in the lowland section), with limited funding.

Both on the acropolis and in the lowland part of the fortification the excavation relied on a large number of very laborious test trenches dug by hand, by which the course of the wall was gradually identified. The Vergina Wall Project is carried out by The Aristotle University of Thessaloniki and provides excavation training for the archaeology students of its Department of Archaeology.[3]

The Course of the Wall Circuit

The route of the wall takes defensive advantage of the natural terrain (Plate 8.1). Its mountainous section coincides with the hydrocritical line. On the west it follows the brow of the steep slope of the gorge formed by the city's western torrent, called the 'Stream of Paliopanagia'. In the lowland section, on the east, we found that the wall line took defensive advantage of a torrent which once flowed there, but in the 2nd century BCE its course was shifted about 200 m further west (inside the ancient settlement), following a severe flash flood that destroyed part of the city and the necropolis that extends over the level immediately below it (Plate 8.1).[4]

On the north, the course of the wall also appears to have followed a tributary of the western torrent, which in the north-west corner of the city must have curved to meet the other torrent in the north-east.

The acropolis, at the southernmost end of the settlement, a site with apparent defensive qualities, is not formed by its own circuit. Essentially, the southern end of the city's circuit wall, divided by a transverse wall, creates a triangular plan for the acropolis of 5.2 km^2 (Plate 8.1). A gate for communication between the city and the acropolis was excavated in the transverse wall. Today the acropolis lies in a wooded area extending above the monumental building complex conventionally called 'the palace' as its only confirmed use to date is the housing of grand banquets (symposia). The site of the acropolis is naturally fortified and enjoys a panoptical viewshed over a wide part of the surrounding territory towards the north and east, as well as visual contact with the entire ancient Bottiaea and the cities of Beroia, Naousa and Edessa, in addition to Pella and Thessaloniki.

Thus, the outline of the settlement which results from the route of the wall is an irregular polygon (Plate 8.1) with a maximum width (east–west) of 660 m and maximum length (north–south) of 1330 m. The total measured area for the city is 0.768 km^2 or 189.97 acres. No indication for any type of external defences has been discovered so far.

Building Materials and Masonry Styles

The city wall of Vergina was constructed of a mudbrick superstructure, built on a stone base to prevent it from absorbing humidity from the ground. Both local limestone and porous were employed for the construction of the stone base. The depth to which the foundation extends varies, depending on the ground composition and proximity to crucial fortification features such as towers and gates. The upper part of the foundation, the euthynteria on which the stone base for the mudbrick wall was built, extends beyond the face of the wall by 0.05–0.2 m.

The stone base consists of two parallel faces with stone fill between them. The construction material for this base is local limestone and porous ashlar blocks in varying proportions; the intervening fill, which is highly compact and structured, consists of local unfinished stones of relatively small size bound with clay. The stone base is the only preserved part from this wall; the mudbricks have been destroyed and their material is now scattered over the excavated site of the fortification.

The masonry styles vary greatly from one section to another. On the towers and at the points of junction of the curtain walls and towers on the faces of the stone base porous ashlar blocks were primarily used along with a smaller quantity of local stones (Fig. 8.1).

In addition, a greater percentage of ashlar blocks was used on the outer face of the curtain walls in relation to those on the inner face, where smaller local stones predominate. In general terms, there is a greater percentage of porous ashlar blocks in the lowland plains section of the fortification in relation to the sloping uphill area. These blocks are cut in various sizes with a length ranging between 0.55 and 1.85 m, the most common being 0.75–0.95 m, and a height of 0.48 m.

The criterion for choosing between the two stone materials appears to have been the need to strengthen the outer faces against missiles launched by siege machines, with the generalized use of large ashlar blocks at key points such as the towers and gates on the one hand, and to facilitate construction of the semi-circular faces of the towers on the other. It is obvious that on the heights where greater elevation comprised a decisive advantage for the defenders, the construction did not need to be as massive as in the vulnerable sections extending to a lowland area. In addition, as the main gate of the city shows, another goal seems to have been to produce an imposing impression for this part of the fortification as a demonstration of power, showing particular care in the construction of the gate, the towers curtain walls flanking it, and the outer side of the lowland section of the eastern stretch through its entire length, while simultaneously keeping the construction costs under control. In contrast, on the wall's inner faces, including those which flank the main gate, the use of local small stones was much more extensive than on the outer faces.

The construction of porous ashlar blocks was arranged in successive courses with square or rectangular faces and nicely finished joints. In cases where the euthynteria formed

Fig. 8.1: Drawing of the face of a section of the curtain wall on the east stretch of the wall (drawn by the architects Dr Athanassios Nakasis and Dr Angelos Nakasis).

a step to follow the sloping terrain, the lower course also follows the ground level change stepwise, and is set at a lower level. The masonry construction thus shows uniformity and care, although the style itself does not belong to any of the known types.

The second masonry type, which consists of a combination of porous ashlars and roughly-worked local stones. It mostly has the form of insertion of small and medium-size local limestones or small pieces of porous stones at the position of an ashlar block. The local stones are normally roughly worked on their face and flattened on their contact surfaces. They are often set in short columns with abundant use of clay (Fig. 8.1).

Higher up on the slopes we find a third type of masonry with local stones that are considerably larger, better-worked and better-joined, with clay as adhesive material (Fig. 8.2).

The implementation of a combination of materials and masonry types found in the fortification wall of Vergina is by no means unusual; on the contrary, it was fairly common in fortifications, at least during this period, when the masonry was as a rule not uniform throughout the fortification circuit. More specifically, in the fortification of Vergina, the extensive use of porous ashlars is localized on either side of the east gate and decreases dramatically from the third curtain wall north and south of it. From the fourth curtain walls counting from this gate and beyond them the use of local stones is predominant (Fig. 8.3).[5]

Due to its brick construction, the entire length of the wall was roofed. The tiles of this roof are found in layers of fragments, mostly on the inner side of the wall. The tiles were of the Lakonian type, and they include some with workshop stamps depicting various subjects such as the Macedonian shield or a goat with backward-facing horns and a long beard (Fig. 8.4) (Faklaris and Stamatopoulou 2010, 119 figs 13–14).

The Curtain Walls (Metapyrgia)

The curtain walls between the towers, which naturally make up the largest section of the fortifications, have a thickness of 2.2 to 2.9 m, a variation corresponding to the vulnerability of each section of the wall.

Fig. 8.2: Partial view of the wall on the wooded slope.

Fig. 8.3: General view of the inner face of the east stretch of the wall in the lowland area.

Fig. 8.4: Fragment of a roof tile form the fortification of Vergina carrying a workshop stamp with a goat head.

Their stone base is preserved to a maximum height of 1.9 m, which must have been the original maximum height. However, this too appears to have presented variations depending on the particular features at each point; at some, we have reason to believe that its original maximum height was no more than 0.9 m.

The curtain walls also accommodated the staircases leading up to the walkway (*peridromos*) and the towers.

The spacing of the towers and therefore the length of curtain walls was not uniform. Those extending into the lowland section on either side of the main gate were shorter, as there the arrangement of towers was denser for defence reasons. The length of the curtain walls in this section ranges from 33.8 to 39 m, with the majority having a length of between 34.2 and 35.6 m. In contrast, the length of the longest curtain wall on the slopes extends to 261 m.

About their final height one cannot be precise, since their mudbrick structure did not survive. However, variations in the width of the curtain walls appear to have corresponded to similar variations in height, which would logically have

been adapted to the specific requirements at each point along the wall.

The Towers

In the city wall of Vergina 17 towers have been excavated so far and it is estimated that there were approximately another 10, some of which are yet to be uncovered, while some others did not survive. The towers at Vergina belong to two types, rectangular and semi-circular in plan. The rectangular towers do not have a standard size, ranging from 6.4 × 7.4 (*c*. 47 m^2) to 5.5 × 4.7 m (*c*. 25.85 m^2). There is clear preference for rectangular towers on the higher ground, although the large ones are also found at lower points.[6]

Along the eastern stretch of the wall, which extends into the lowland area, only semi-circular towers were employed. Nine such towers have been excavated (Fig. 8.5). They have a standard size; a diameter of 6.3 m, and they project 3.15 m beyond the face of the curtain walls; on the inner side, they form a rectangular projection 1 m wide, apparently to enlarge their total area for accommodating defensive artillery (Fig. 8.6) (Marsden 1969, 43; Winter 1994, 34–37).[7]

All the towers, either rectangular or semi-circular, were built solidly to the level of the *parodos*, from which their interior was accessed and communication between curtain walls provided. At this level, interior rooms were created, arranged on two or three floors in the case of tall towers that guarded the main gate and other points of strategic significance.

The choice to construct semi-circular towers in the most heavily defended lowland section of the wall's east stretch was definitely due to the need to reinforce this section, which was the most vulnerable sector of the enceinte given the level ground that extended beyond it. Semi-circular towers could better withstand the volleys of siege machines, as they had no corners that could be damaged by enemy missiles. Furthermore, they provided builders the possibility of creating openings for the volleys from their own defence artillery at additional points to more effectively protect both their section of the plain as well as the neighbouring curtain walls which besiegers may have attempted to climb using ladders. In addition, due to their shape they facilitated the rotation and targeting of the defenders' own arrow-shooting machines.

On the slopes, the towers' locations and dimensions indicate that they were not intended to house heavy artillery. Since they projected both above and beyond the curtain walls and were situated uphill at commanding spots, they were rather intended to function mainly as watch towers.

Fig. 8.5: A semi-circular tower on the east stretch of the city wall.

The Gates and Posterns

The gates, crucial points in every fortification with contradictory functions – necessary in peacetime for the daily traffic to and from the city, but vulnerable to be attacked in wartime – were always accorded special attention by military architects. Along the circuit of Vergina, four outer gates and one inner gate (between the city and the acropolis) have been discovered. There is also evidence for the existence of several posterns, always set beside towers, such as a secondary gate with an opening of 1.7 m excavated on the west side of the circuit directly beside a rectangular tower.

The small number of posterns at Vergina is an indication of the number of defenders for which this fortification was designed. The posterns were used during sieges for the exit of groups of defenders, *i.e.* for the active defence of the city with the transfer of the action outside the wall, the main goal being to prevent enemy siege machines from drawing near the wall. According to McNicoll, the small number of posterns reflects planning for passive defence, in other words a fortification intended to function by confronting the enemy from within the walls and without the number of defenders that would correspond to the length of its circuit (McNicoll 1978, 405–420). Lack of manpower was a serious problem for Macedonia in this period.[8]

Four of the five gates that have been excavated to date are axial gates, where the entrance was set perpendicular to the wall. The gate on the south-east slope, which was visible in the woods during Heuzey's time, called 'Palioporta' (Plate 8.1), belongs to the tangential type. The road that passed through this gate continued to function as a mule road until the mid-20th century, and its threshold remained visible when the work on the excavation of this gate started in 1981. The axial gate leading to the acropolis had an entryway 3 m wide and was located near the centre of the acropolis' north wall.

The main gate of the city (Gate III) was located between the east and north-east stretch of the wall at the point where the wall curved (Plate 8.1). It occupied an area of *c*. 1000 m^2 and was a symmetrically designed complex built of ashlar masonry of good workmanship, characteristic of the Hellenistic period. It was guarded by two towers, their faces three-quarters of a circle in plan for effective protection

Fig. 8.6: View of a semi-circular tower on the east stretch of the city wall during excavation.

Fig. 8.7: General view of Gate III from the east looking into the ancient city.

of the area they had to cover, and it had two courtyards to trap attackers (5 × 7 m), two gateways 2.9 m wide, and two staircases in the adjacent curtain walls, which led to the towers and the *peridromos* (Fig. 8.7).

This is the best-preserved Hellenistic city wall gate in Macedonia. The determination of its position required two two-month excavation seasons and a large number of test trenches; another three seasons were needed to uncover it. The bend in the wall in this area towards the north-north-west indicated the presence and approximate location of a gate in this area (Fig. 8.8). Despite these indications, uncovering it proved extremely difficult given its complex form, large size and the disturbance caused by the plundering of part of its stonework, since at this point the fill was just over 1 m to the topmost preserved stone, making its porous construction material accessible for plunder. The topographic characteristics at the site of this gate, its robust and skilled construction, and the fact that it is flanked by the strongest pair of towers in the entire fortification declare that the main threat to the city was anticipated to come from this side of the plain. This was the side from which the city, as well as Upper Macedonia, communicated with the nearby ports at Methoni and Pydna south-east of Vergina.

Fig. 8.8: Drone view of the east and the north-east sections of the Vergina fortification in Belas field, with Gate III and the Stream of Andras in its present-day bed.

The discovery of these gates and posterns, though some remain to be revealed, tells us not only about the design of the wall but also provides valuable evidence about the city itself, since it establishes the starting-points of the roads that definitely passed through these gates. This

information is exceptionally significant for approaching the organization of a city like Vergina, which as excavation has shown did not have a Hippodamian plan. The main road that crossed through the city thus started from this gate, probably running east to west due to shifts in the site's altitudinal gradients – a considerable clue given that this was a carriage road. The remains of the core elements of city life, for example the agora, should be sought normally along the route of this road.

The Construction and Abandonment of the Wall

Stratified finds along these enormously long excavation trenches both within and outside the city wall, finds from its foundation beds, as well as its architectural features allow no doubt that the entire fortification circuit of Vergina was constructed in a single phase. It may be securely dated to the reign of Cassander and indeed after 305 BCE, as is attested by numismatic evidence including coins with the inscription 'King Cassander' (Βασιλέως Κασσάνδρου) discovered at the foundation level providing the *terminus post quem* for its construction (Faklaris and Stamatopoulou 2010, 120). It thus belongs historically to an exceptionally flourishing period of fortification architecture for Macedonia, when Cassander invested some of the enormous wealth of the royal treasury he inherited from Alexander the Great's campaign through Asia in organizing the kingdom to secure his territories, chiefly against Demetrius Poliorcetes, who was the most significant threat to Cassander's power between 307 and 302 BCE, the precise period to which our finds date the construction of this wall.

The construction of the city wall of Vergina belongs to an extensive building programme encompassing major urban projects aimed at securing the kingdom that Cassander had ruthlessly seized, with a focus on building fortifications in a significant number of cities mainly in Central Macedonia. It appears that the fortification of Vergina is part of a wider network of newly fortified cities and did not function in isolation. During this period, a number of neighbouring cities were fortified including Edessa (Chrysostomou 2014, 447), Dion (Stefanidou-Tiveriou 1998, 136) and Beroia (Petsas 1961/1962, 218; Brocas-Deflassieux 1999, 35), and at least part of the fortifications of Pella were rebuilt (Misailidou-Despotidou 1986, 70; Chrysostomou 2003, 452). At the same time Cassander founded and fortified Thessaloniki.[9] He also fortified the city at Vergina, which occupied a strategic location on the road connecting the harbours of Pydna and Methoni with the heart of his kingdom and Upper Macedonia. In addition, the ancient city at Vergina guarded the passage to the south, *i.e.* the Pierian Mountains and Mount Olympus. Moreover, the location of Vergina south of the Haliakmon River (the largest river with its source in Macedonia) made it more exposed and in need of a strong fortification. Haliakmon was a major natural defence line or a natural obstacle for any enemy military movement towards the heart of the kingdom lying north of its bed and protected by it for the greater part of the year. Vergina did not enjoy this protection. On the other hand, its location made Vergina suitable for functioning as an advance guard for the interior of the kingdom, making its effective fortification a necessity. From a ruler's point of view, it was also significant that the city's re-design and fortification would keep its population on his side and not going over to his opponent. In summary, reinforcement of territorial control and proclamation of power was the motivation to construct this fortification, as is mostly the case.

The excavation finds date the abandonment of the military use of the wall of Vergina to around the mid-2nd century BCE. During the same period, the city suffered a general destruction, as excavation at many points has demonstrated (Faklaris and Stamatopoulou 2013, 176). A period of abandonment probably followed this destruction, but life soon returned to the settlement, though it was of a very different nature. Characteristics of this new phase included mainly workshop activity and a marked decline in the living standards and financial means of residents, who dwelt in makeshift housing created by making use of the materials from buildings that lay in ruins or were abandoned. Roughly built installations developed against the inner face of the east city wall at Belas field and on the acropolis, while contemporary humble interventions to pre-existing private and public buildings have also been noted in other excavation sectors.[10] The city was transformed into a regional workshop centre, housed in hotchpotch fashion in buildings that took advantage of the ruins of the Hellenistic city, including of the wall, its largest and strongest structure (Faklaris and Stamatopoulou 2013, 173–180).

During this period, around the mid-2nd century BCE, excavation has shown that there was a major natural disaster that struck most of the eastern stretch of the wall. It came from the torrent that originally bounded the city on the east and carried down an enormous volume of debris from the hills in a severe flash flood (Faklaris and Stamatopoulou 2012, 157–166).

Total destruction of large sections of the wall came around the beginning of the 1st century BCE in a second, exceptionally severe, descent of the same torrent that re-shaped the landscape. Even greater deposits of sand and gravel accumulated on the wall in a level 4.5 m thick, causing the imposing Cassandrian wall to disappear under the earth. The volume of debris that covered this particular section of the wall and the gently-sloping plain was so great that it caused a displacement of the stream's course about 200 m further west, *i.e.* inside the ancient city about where the stream called Stream of Andreas still flows today (Fig. 8.8).

Consequently, there remained no surface indications to attest to the presence of a wall or other antiquities in this section of the ancient city, which until 1987 was believed to lie considerably outside its limits. But beneath these deposits, this stretch of the wall remained protected for millennia from further damage and human intervention, and although this made the task of uncovering it extremely laborious and costly, it offered us the best-preserved section of Hellenistic fortifications in Macedonia.

Afterword

The length of the trenches that were opened, excavated, and whose stratigraphy has to date been established in order to uncover the two faces of the wall, approaches 5.5 km, with a width of between 1 and 7 m and a depth that reaches 6.5 m below today's ground level. To this must be added the excavation of the acropolis, an area exceeding 5000 m^2 (*c.* 1.24 acres), which proceeds in parallel to that of the dig of the wall. Thus, we have a particularly extensive and challenging excavation, which with limited means is successfully revealing one of the most important monuments in Hellenistic Macedonia. The fortification of Vergina tells the story of key moments in the history of the city that are reflected in it and is expected to make an important contribution to the study of Early Hellenistic developments in town planning and defence architecture, especially when combined with the study of other fortifications in neighbouring cities, which all evidence shows were erected at the same time. Much remains to be done and the excavation team is working on the completion of the excavation, the study and publication, the restoration work, as well as the opening of certain sections of the Vergina city wall to visitors.

Notes

1 For Heuzey's topographic plan see Heuzey and Daumet 1876, plan G.

2 This city is widely identified in the bibliography as Aegae, the first capital of the Macedonians before it was moved to Pella. However, not everyone agrees with this view and with no epigraphical proof the discussion remains open. See Faklaris 1994, 609–616.

3 For a summary of the excavations, see Stamatopoulou 2017, 208–211, 570–571.

4 For the activity of the torrent in the area around the east wall, see Faklaris and Stamatopoulou, 2010, 113–115; 2012, 157–166.

5 For the most carefully-finished masonry on the gates and towers, intended to impress attackers, see Lawrence 1979, 235; Winter 1972, 84. For another such case, see *e.g.* Saner 1994, 282.

6 Rectangular towers are the most common and were widely used in Greek fortifications even after semi-circular towers made their appearance. See Winter 1972, 193.

7 Nothing survived above the solid base of these towers and as the mudbrick superstructure is missing only assumptions can be made for the upper-storey wall thickness or for the size and number of their projectile apertures.

8 For the dramatic decline of the population of Macedonia in the Early Hellenistic period see among many others Davies 1984, 264–269; Adams 2006, 36; Chaniotis 2011, 122–141.

9 For the Hellenistic fortification of Thessaloniki, see Velenis 1998, 19–26.

10 For the workshops on the acropolis, see esp. Faklaris 1997, 193–200.

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9

The Hellenistic Fortification of Seleukeia Gadara (Umm Qays): Form, Function and Origin of the Military Architecture at the Southern Edge of the Seleucid Empire

Brita Jansen

Introduction

Gadara, the modern Umm Qays, is situated in the very north of Jordan, just opposite the Golan Heights. The Hellenistic settlement lies on the eastern angle of a triangular plateau above, which rises about 35 m. At this point, the northern Yarmouk valley and the southern Wadi al-ʿArab are close to each other, so that the ridge giving access to the plateau from the Jordanian highland becomes narrow and easy to defend. Far-reaching visual relationships in all directions justified the strategic importance, while the fertile plateau formed a secure basis for life.

The fortifications of Gadara have been investigated by the German Archaeological Institute.[1] Important sections of the previously almost completely buried building could be uncovered by archaeological excavations, which allow a relatively reliable dating. Other parts were exposed with bulldozers so that now the complete southern flank can be studied.

In this contribution, first a short introduction to the history is given, followed by a presentation of the known architectural elements. Its military function will be analysed and all information will be compiled about the development during a siege which the site suffered.

Finally the origins of the concepts of military architecture will be discussed, and how they were transferred within the Seleucid Empire.

History

Polybius (Hist. V 71.3) reports the capture of Gadara in 218 BCE. According to him, the former Ptolemaic settlement, which he describes as 'outstandingly strong', is said to have surrendered after the siege works were positioned. However, a Ptolemaic fortification is not known at the site. It may be identified as the fortress at Tall Ziraʿa, south of Gadara in Wadi al-ʿArab, which has mighty Bronze and Iron Age walls and was possibly the predecessor settlement of Gadara (Djikstra 2005). Antiochos III needed a second attempt to finally bring the region under his control with the Battle of Paneion in 200 BCE (Polyb. Fragm. XVI 39). Following the stratigraphy, the construction of the fortification was initiated shortly after and finished before the middle of the 2nd century BC at the latest.

Alexander Jannaeus' military campaigns put the fortification to a hard test; from the written sources we know that he laid siege to Gadara at the beginning of the 1st century BCE. After 10 months he was able to conquer the settlement (Ios. Ant. Iud. XIII 356). But shortly afterwards he had to leave the captured territories in the Transjordan again, due to a defeat against Obodas I (for more details about the historical background, see Mittmann 2006, 28–36).

A building block with an inscription dating from 85/84 BCE documents a restoration of the fortification (Wörrle 2000; Mittmann 2006). Most likely it was to serve the late Seleucid ruler Antiochos XII as a base in his war against Hasmoneans and Nabataeans (Jansen 2020, 48–50). But only a year later he lost against the Nabateans, and Alexander Jannaeus was able to reconquer the region after 83 BCE. In this context Gadara was destroyed a second time.

Pompey, who took over the region in 64 BCE, is said to have rebuilt the city, but to what extent is not known. From 30 BCE to his death in 4 BCE Gadara was under the control of Herod, and it then became the responsibility of the governor of the province of Syria, like the neighbouring town of Antiochia Hippos (more details in Weber 2002, 67–79).

The Jewish uprisings probably mainly affected the chora of Gadara. Possibly as part of the post-war administrative reorganization, the Decapolis was founded as a federation

of Greek cities. As part of the league, Gadara experienced periods of economic and cultural prosperity, which were reflected in numerous new monumental buildings and the expansion of the city area far to the west.

Form

The city plan of Gadara reflects this development. The Hellenistic fortification covered only a small part of the later settlement. The walls surrounded the hilltop, an area of 4 to 5 ha only, whereas the Roman city covered an area of about 30 ha (Fig. 9.1). While the western and northern flanks were covered by the Roman city expansion, the course of the eastern and southern flanks remained the same over the centuries and can still be largely traced.

The southern flank is exposed over the whole length of 235 m (Plate 9.1). Its main feature is an indented trace with gates in the two offsets, each protected by a pentagonal tower. The angles are marked by rectangular towers. From the eastern flank only the northern ending with another rectangular tower is known.

Thus, until now, three rectangular towers are known with a side length between 10 and 15 m. The largest one is the north-eastern tower, which is also the only one with an internal cross wall. The pentagonal towers of the southern wall measure about 8 by 12 m.

The walls of the towers are made of isodomic or pseudoisodomic masonry with layers of headers alternating with layers of stretchers. The kind of masonry is dependent on the thickness of the wall: the thinner walls of the pentagonal towers are made of isodomic masonry (Plate 9.2a and Fig. 9.2), the slightly thicker walls of the rectangular towers of pseudoisodomic masonry (Plate 9.2b).

In the offsets next to the pentagonal towers and to the north-eastern tower, there are gates inserted. Another gate opens through the curtain on the other side of the north-eastern tower. The width of the gates is between 1.8 and 2.6 m, the height between 2.5 and 3.4 m. So the dimensions of the gates are moderate and we are not aware of anything like a ‘main gate’.

From the gates next to the north-eastern tower we know that they were spanned by segmental arches. The

Fig. 9.1: Gadara. Reconstruction of the Seleucid fortification (based on the topographical plan by Buehrig/Hartl-Reiter, 2012).

Fig. 9.2: Tower 3, from the east.

doorway itself was covered by a segmental vault. Due to the discovery of two basalt-stones with bronze pivots in the western gate, we know that the gates were closed with double-winged doors. The recess for a bar in the northern jamb of the same gate proves that the doors could be locked with a beam.

The curtains are about 2.2 m thick, with a protruding foundation. While this foundation is built up with alternating layers of headers and layers of stretchers, the upper part has headers and stretchers alternating regularly in every layer (Fig. 9.3c). Only here the masonry is not solid, but consists of compartments filled with small stones and earth.[2] This type of masonry is also known from Hellenistic fortifications in central Syria (Balandier 2008; Jansen 2020, 145–147).

Function

The distance between the towers lies between 56 and 67 m, so that the intervals could easily be protected from the towers. The curtain walls themselves do not show any loopholes so that they could only be defended from a parapet walk, which nevertheless is not known at any place.

For the rectangular towers only one slit is known in the north-eastern tower. The wall is 1.7 m thick at this height and the slit was directed to the gate next to the tower (gate 4). It can be assumed that the rectangular towers had two levels with loopholes and one more with windows.

The pentagonal towers are in a much better state of preservation so that we also know that there existed two levels with loopholes, one with smaller openings of 57 cm in height, and an upper storey with larger slits of 159 cm (Fig. 9.2). It can be assumed that the smaller slits were used for standing archers and the larger slits for small torsion-bolt shooters (according to the categorization of Ober 1992, 161–162). There are hints that a third storey existed, which most probably disposed of windows for catapults.

The form of the pentagonal towers was regarded as being especially sturdy and it aimed to increase the field of fire. The diagram by Marsden (1969, fig. 11) shows the advantages: enemies approaching the neighbouring curtains could easily be caught in crossfire. The disadvantage lies in the blind spot in front of the tower, but this effect was alleviated by the fact that stone bullets would be diverted by the oblique front walls.

From the floor area we can conclude that the towers could host, beside archers, torsion-bolt shooters and small stone throwers. The north-eastern tower with a slightly bigger ground area could have hosted medium stone throwers. These conclusions from the floor areas can be compared with the stone projectiles found during the excavation. Altogether 47 bullets were found. Sixteen of them were found in front of the southern flank. Most were made of limestone and flattened on both sides. This indicates that they were thrown by slingshots. At least one sling stone was found in a layer under the first destruction layer so that it can be assumed that it was thrown by a soldier of Alexander Jannaeus during the siege in the beginning of the 1st century BCE.

The biggest concentration of stone bullets was found around the north-eastern tower. These were all made of basalt and had a spherical form. Most probably they were intended to be used for catapults. From the weight we can conclude that they were aimed to be efficient against persons or catapults. The only bullet that presumably would have had some impact on a wall was found on the plateau north of the north-eastern tower, which was later converted into a temple area. Since the tower was not big enough to host a catapult able to launch a bullet of this size, it can be assumed that it could have been used by the attackers.

From all this we can conclude that the attackers used slingshots. There is some possibility that a bigger catapult was also used with the aim of damaging the northern flank of the fortification. The defenders in the towers most probably mainly made use of torsion-bolt shooters and small torsion-stone throwers, beside the traditional archers. This shows that the weaponry was targeted at serving mostly for antipersonnel defence.

Another element of the military function were posterns that could be used for sallies against the enemy in front of the wall. There was a postern in the side wall of each of the two pentagonal towers. Leaving the fortification through these narrow openings the defenders could re-enter through the neighbouring gate. Obviously in Gadara these posterns did not fulfil their task for a long time because

they were carefully blocked with masonry, most likely not too long after their construction. This might indicate that the commander did not dispose of the sufficient number of soldiers to realise the active strategy of defence at which sally ports aim.

The fortification is just one part of the precautions taken for an attack. Having in mind the likely risk of being besieged, it was necessary to store enough food and water. For Gadara we can only venture a guess concerning the water supply. All over the fortified hilltop there was a multitude of cisterns cut into the rock.[3] Of course it is difficult to date these structures, but we can assume that at least most of them go back to Hellenistic times. Their capacity is estimated as being sufficient to provide water for about 2,200 inhabitants through one year. So at least in this concern, Flavius Josephus' report is realistic: that the inhabitants of Gadara were able to resist a siege for 10 months before it was taken by Alexander Jannaeus.

Large rubble layers testify to the destructions caused during this capture. But the fortification was not totally devastated after this. The western pentagonal tower was heightened again shortly after the destruction, as was stated in the inscription.

But also in the lower parts of the wall indications of repairs were found. East of the western pentagonal tower is a stretch of some metres where the ashlars of the curtain wall were cut back to insert slim slabs of limestone (Hoffmann 2000, 199). Obviously the curtain was damaged, and the inserted slabs were supposed to give the wall the image of an unspoiled construction. The traces of damage that can still be seen on one ashlar as small round moulds might have been caused by a drill.

While this was an action taken after the capture, another transformation of the original construction might be part of countermeasures taken during the siege: at three towers we uncovered walls constructed from inside the city against the towers (Fig. 9.3). The entrances to the towers were left open but narrowed. From the ceramic finds it is probable that these constructions can be associated with the time of Alexander Jannaeus. So it would at least be possible that they were part of countermeasures taken by the defenders.

From the literary descriptions we know that fortifications continually underwent repairs and improvements during the course of a siege. Aineias Taktikos (Ain. Takt. XXXII.12) recommends: 'Before the wall either collapses or is dug through build a counter-wall at the same time; if you cannot thwart them in any other way'. Diodoros (Diod. 17.24–27) tells that when Halicarnassus was besieged by Alexander, 'others erected secondary walls behind those which crumbled, heavier by far in construction than the preceding'.

But the modification of the wall does not have to be a reaction to real damage; it could equally be a measure of precaution. Flavius Josephus (bell. Iud 3.7.10) tells about the town Jotapata that was besieged by Vespasian. The Romans built a dam and when the defenders saw this dam coming closer to the wall, they decided to heighten it. Additionally they constructed towers and parapets. It is in this sense that I would like to interpret the modifications in Gadara. The walls of the towers are in the upper layers only half as thick as the curtain walls. It is quite logical that at a certain point the besieged feared for the protectiveness of the towers and undertook a safety precaution: if the enemies were to take the tower, then they would be deterred from entering the city through the tower.

Origin

Finally, the question should be addressed of how the knowledge about poliorcetics and military architecture was imparted in the huge Hellenistic kingdoms. We know only few ancient writers who deal with military architecture. Maybe the most eminent is Philon of Byzantium. He probably wrote his 'Poliorcetica' about 240 BCE. Many researchers tried to find reflections of Philon's recommendations in the fortifications from his time onwards.

One good example might be the outstanding form of pentagonal towers which was particularly advised by Philon (Phil. VII.I.3.44). Despite this recommendation only a few examples are to be found. I could compile 14 fortifications with pentagonal towers beside Gadara, ignoring examples from late antique times.[4]

But how can we figure out if the architects of these fortifications really followed Philon's advice? Philon describes at what points of a fortification polygonal towers are especially recommended. But he gives no detailed description of their precise form.

Only in one paragraph (Phil. VII.I.61) he writes: 'In front of the quadrangular towers it is necessary to build forward others in continuation that are triangular and solid, in the shape of equilateral triangle'. This model, called model C here, is only followed in two towers in the Iberian town of Tivissa in northern Spain. Recent investigations suggest that the triangle at the front did not reach the same height as the quadrangle (Moret 2009, 4–7). It was filled solidly and most probably served as a buttress against battering rams in front of a quadrangular tower.

All the other pentagonal towers, of which the ground plan is published in sufficient scale, can be assigned to two different models. The design of model A is based on a regular hexagon, omitting the corner next to the curtain. Towers of this form are found in Samos and Labraunda. The ground plan of the two pentagonal towers in Gadara can be identified as a square with a right-angled, isosceles triangle in front, here called model B. This form is also found in many other places (Akraiphia, Hyllarima, Alabanda, Oinoanda, Patara), which shows that model B was the most widely used.

Fig. 9.3: Tower 1, West wall with secondary wall.

A look at the distribution map reveals an interesting concentration of similar constructions in the area of Lycia and Caria. A single example was identified in Akraiphia in Boeotia, which like Gadara follows the basic design very closely. None of the fortifications in Asia Minor and Greece have been dated by stratigraphy. Based on historic or constructional reasons dating to late Classical or Hellenistic times have been proposed.

After seeing the great analogy with the better-dated towers in Gadara, a model for the distribution of this form can be proposed. It is known that the fortification of Gadara was initiated by Antiochos III or his immediate successor. Also, the regions in south-western Asia Minor were under Seleucid control after the Third Syrian War, until Antiochos had to release them after the treaty of Apamea in 188 BCE. And Boeotia also belonged to the territory of Antiochos III, even if only for a short time in 192/191 BCE.

Given that we assume that the construction of the fortification at Gadara was initiated shortly after the Seleucid

dominion in Boeotia, Caria and Lycia, it is most probable that the design of all these fortifications followed the same building code. These instructions must have been in the hands of the military architects of Antiochos III and his successors, and they must have contained a detailed description of the design of the towers, probably accompanied by drawings.

The question arises whether Philon could be the author of these instructions. The only description of the precise form mentioned in his treatise refers to model C, which is actually the exception to the rule in Hellenistic times. The cross-check shall be made: it is known that in late Roman time the military architects came back to the poliorcetic treatises from Hellenistic authors (see *e.g.* Hoxha 2001; Groh 2012). Investigations on late Roman and Byzantine fortifications show many reflections of the recommendations of Philon. Also, pentagonal towers came into vogue again. But the form of these towers is a lot more diverse than in Hellenistic times. While the Hellenistic towers either have an angle of 120° or of 90° in the front, the angle of the late Roman and Byzantine towers fluctuates between 55° and 106°.[5] This indicates that the books of Philon are not precise concerning the layout of the towers, and it indicates that his treatises were not, or at least not solely, the basis for the layout of the towers in Western Asia Minor and in Gadara.

As shown before, the descriptions in this manual concerning the layout of the towers must have been very precise. But it can be stated that these instructions obviously only referred to the ground plan and that the construction workers on site were free to choose the adequate building technique. This explains for example that the towers of Oinoanda in Lycia and of Gadara in Koile Syria are very similar in design but differ in the kind of masonry.

Similar things can be observed for the gates: the secondary gate of Doura Europos and the gates in Gadara show exactly the same ground plan, but the one in Doura Europos was spanned by a semi-circular arch (Abdul-Massih 1997), whereas the gates in Gadara were covered by segmental arches.

This shows that there must have been manuals, which were in the hands of the military architects travelling with the armies, and this is responsible for the spread of forms over long distances. But there were always local or regional elements that were dependent on the material on site and the deployed construction workers.

Notes

1 The excavations at the city wall were conducted from 1992 to 2006, until 2000 under the direction of A. Hoffmann, from 2001 onwards directed by C. Buehrig. The fortification was investigated in the frame of a dissertation (Jansen 2020). Preliminary results in Hoffmann 2000; Hoffmann and Buehrig 2013; Jansen 2016.

2 It should be noted that the masonry of the tower was continued in the area of the curtain wall immediately adjacent to the tower (front in the photo).

3 The cisterns were examined by P. Keilholz, on whose work the following explanations are based (Keilholz 2007).

4 Greece: Akraiphia, Samos, Kos; Turkey: Alabanda, Labraunda, Orak Kale, Hyllarima, Harpassos, Oinoanda, Patara; Italy: Paestum; Syria: Doura Europos; Pakistan: Taxila; Spain: Tivissa. For more detailed informations: Jansen 2020, 147–157.

5 *E.g.* Dyrrachion (94°), Nessebar (106°), Aquileia (85°), Tauchira-Tocra (90°), Resafa (80°), Verona (100°), Rom (84°), Drastar (95°), Markova Mehana (55°) after the compilation in Groh 2012, 86 figs 12, 15 and 16.

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10

The Siege Wall at Mudayna as-Saliya in Central Jordan

Chang-Ho Ji and Chaim Ben-David

A siege is the military encirclement of a city, fortress or troops, in an attempt to win a war or battle by wearing down the defenders to the point of collapse by continuous pressure or harassment. It was widely in use in the Levant over long periods of time from the Iron Age to the Middle Ages, and is best known by the sieges of Lachish by the Assyrians (701 BCE), Jerusalem by the Neo-Babylonians (587/586 BCE), Damascus by the Crusades (1148 CE) and Acre by the Mamluks (1291 CE). The Roman armies also adopted the same strategy when they put down the Jewish rebels in Jerusalem (70 CE), Machaerus (71 CE) and Masada (72/74 CE) during the Jewish-Roman War (66–74 CE).

The common practice of siege operation was to wait for the surrender of the enemies inside the defensive line after the attackers had encircled a target city or stronghold with their armies (Campbell and Hook 2005). To end a siege quickly, a variety of siege engines were used by the besieging forces, such as ladders, battering rams, siege hooks, catapults and siege towers. Besides these tools and engines, the besiegers often built a line of earthwork or a stone wall around the fortification, facing towards an enemy city or fortress. Siege warfare had obvious advantages. The besieged could only sneak out by cutting across the lines so that they would have to fight even to send out a message for assistance. No reinforcement such as relief armies could enter; no new supplies could come into the besieged location.

In the southern Levant, archaeological remains of the circumvallation of walls are not commonly found, despite the long practice of siege warfare in the region. The best-known examples are found at Masada (Richmond 1962) and Machaerus (Strobel 1974) (see below). Further examples are present at several Hasmonean-Herodian desert fortresses, such as Hyrcania (Meshel 1984a), Dok (Meshel 1984b) and Alexandrium (Meshel 1989). The present paper pertains to the discovery of a new siege wall near the site called Mudayna as-Saliya in central Jordan, and discusses its possible date and historical context. It is a welcome addition to our short list of siege walls from the late Hellenistic and early Roman periods.

Mudayna as-Saliya

Mudayna as-Saliya is a fortress site located on a promontory at the junction of Wadi Saliya and Wadi Saida, *c*. 35 km south-east of Machaerus and *c*. 60 km south of Amman (Fig. 10.1).

The two wadis constitute the eastern upstream of Wadi Mujib. The site was visited in the past by Musil (1907, 328–30), Abel (1938, 351), and Glueck (1934, 36). This site was published by Miller (1989) and Ben David (2017) as one of six ruins in the region east of the Dead Sea, locally called by the name of Khirbat al-Mudayna. The systematic survey of Mudayna as-Saliya was undertaken by the Dhiban Plateau Survey Project team (Ji and Lee 1998; Ji 2020), which substantiated the existence of Iron II, Hellenistic–early Roman and Nabatean evidence at the site.

At Mudayna as-Saliya, the remains of ancient buildings spread across the top of the mound, *c*. 70 m (north–south) by 150 m (east–west), which is almost completely cut off from the mainland plateau, with steep sides all around except for a narrow land bridge on the eastern side (Fig. 10.2).

The survey team identified building complexes on the northern and eastern sides of the site apart from a possible city gate on the north-western fortification wall. At the acropolis there is a stone pile, possibly the remains of a raised platform or masonry building constructed of roughly cut rectangular blocks of stone. At the western sector of the site, some building remains are additionally noted, but the layout or nature of these buildings is difficult to discern

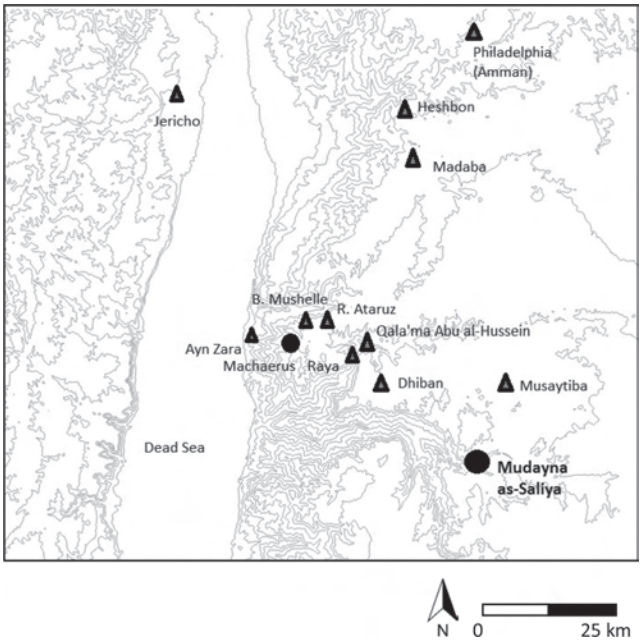

Fig. 10.1: Map of the Mudayna as-Saliya region.

because of their poor state of preservation. One peculiar feature of Mudayna as-Saliya is a small stepped pool that is identified as a Jewish ritual bath. Equally noticeable is the finding of a water harvesting system composed of open reservoirs, underground cisterns and an aqueduct that connected the cisterns and the rocky hills on the east where run-off water was collected.

Mudayna as-Saliya has many affinities with the Hasmonean desert fortresses, particularly Machaerus. The ceramic finds from the surface also point to the period of the 1st century BCE–1st century CE as the probable date of the main fortification on the site. This evidence led the survey team to suggest Alexander Jannaeus as the founder of the fortress (Ji 2020). The Nabatean occupation of the site for the early Roman period is also clear, given the strong representation of Nabatean vessels mostly dated to the 1st century CE.

The fortress was probably built at Mudayna as-Saliya mainly for the control of the Desert Highway, a key trade, communication and military route for the Nabateans. The location of the site is strategic enough to influence the

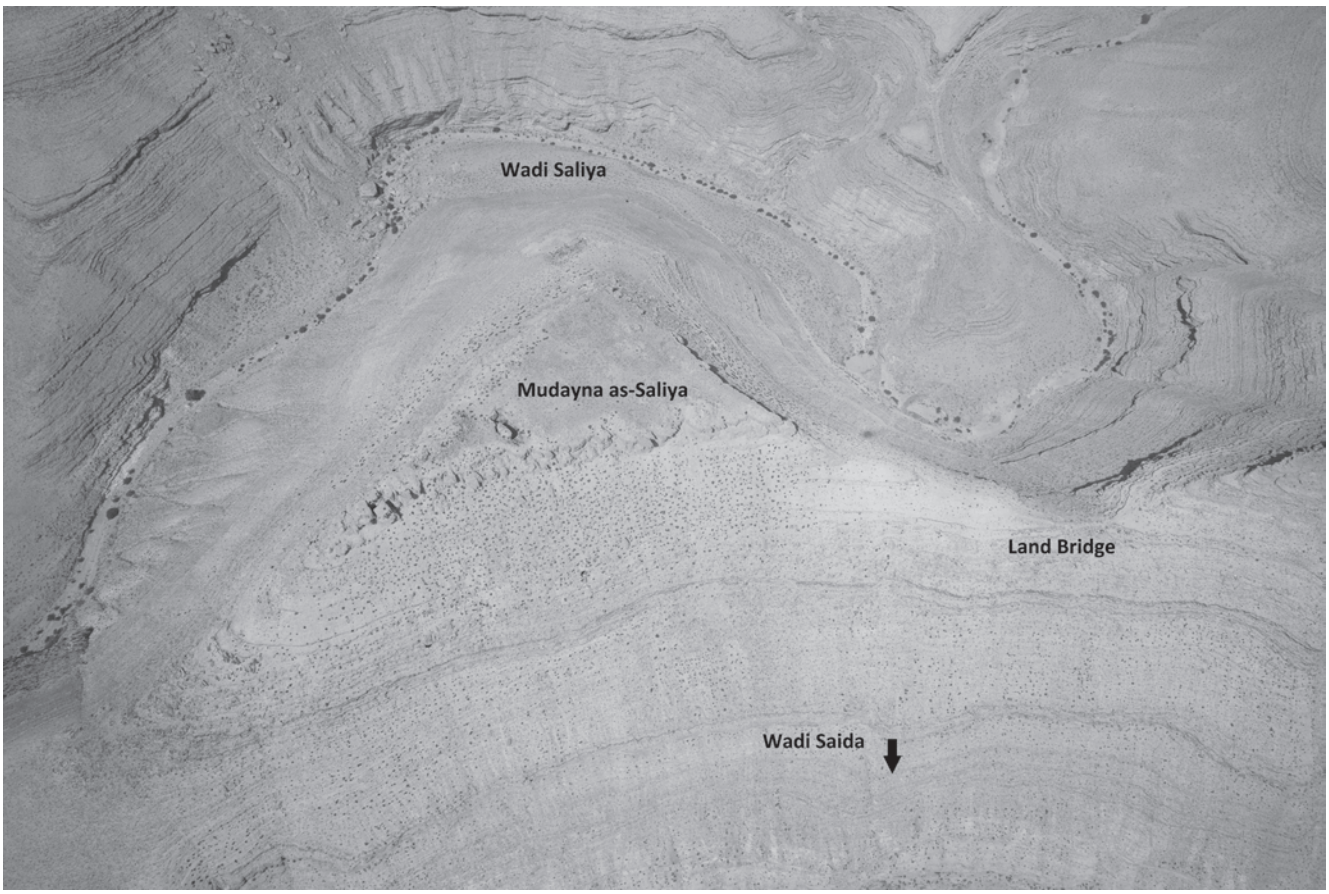

Fig. 10.2: Mudayna as-Saliya (top north; courtesy of APAAME _20151013_REB0572; photographer Rebecca Repper).

proprietorship of the Dhiban Plateau and Madaba Plains as well. From this point of view, the fortification of Mudayna as-Saliya would have been a pivotal step in the direction of Hasmonean aspiration for economic, military and territorial hegemony in Transjordan. This was also equally true for the Nabateans who had to secure the trade and communication route that connected Petra, Philadelphia, Decapolis and Damascus.

Mudayna Siege Wall

The siege wall of Mudayna as-Saliya is located on the slope of the southern bank of Wadi Saida (Figs 10.3–10.5). From the bottom of the wadi, *c*. 350 m south-east of Mudayna as-Saliya, the wall climbs up the steep slope of the Wadi Saida in an oblique direction for roughly 70 m, forming the lower section of the siege wall, where a 90° turn leads to a straight wall extending 230 m to the west. The wall then reaches a small dry stream that flows only seasonally. Here, the wall turns to the south and goes upward along the watercourse for nearly 180 m with an elevation gain of roughly 30 m. This middle section wall is 1.3 m thick with three rows of stones and 2 m high with eight courses of stone bricks. The walls of the lower section were thicker than the middle section wall but lower in terms of height, measuring 1.5–1.7 m thick and 70–80 cm high. The wall then makes an almost 100° turn to the west and stretches about 200 m in a rather slanting way toward the top of the wadi bank. The walls of this upper section are 1.5 m thick and 70 cm high. The siege wall disappears once it reaches the top of the slope.

Approximately 400 m east of the lower section of the siege wall is another line of circumvallation wall. It is somewhat parallel to the initial section of the lower wall in terms of dimension and orientation. This wall ascends the steep slope slantwise for about 80 m and ends abruptly, roughly at the midpoint between the brow and the bottom of the valley. No additional remains of the siege wall are visible on this part of the slope. Apart from the wall lines, the survey team detected the linear heaps of stones on the upper part of

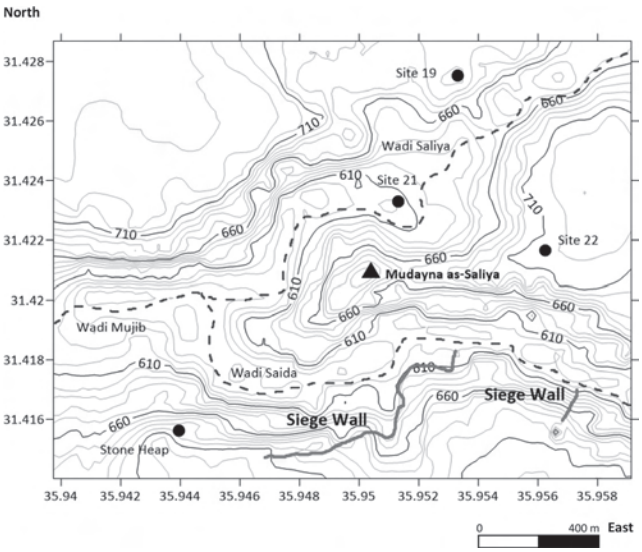

Fig. 10.3: Contour map of the siege wall and Mudayna as-Saliya area.

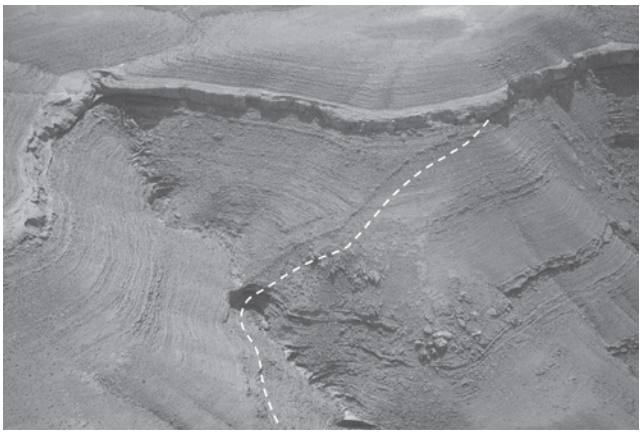

Fig. 10.4: Aerial photo of the Mudayna siege wall, upper section (top south; courtesy of APAAME _20151013_REB0576; photographer Rebecca Repper).

Fig. 10.5: Close view of the Mudayna as-Saliya siege wall remains (view south-west).

the slope roughly 700 m south-west of Mudayna as-Saliya, the possible relics of siege walls or buildings associated with the circumvallation wall. They could not determine the exact nature of this stone heap because of erosion and its poor condition.

For a construction method, the siege wall at Mudayna as-Saliya was constructed from local stones and boulders without any mortar to bind them together. It consisted of two rows of medium- to large-sized stones placed along the boundary, and the voids between the facing stones were packed with smaller stones. Flat capstones are missing, but the builders placed larger stones on top of the wall to prevent its breaking apart. The walls are wide enough for guards to patrol on the top, keeping an eye on the besieged inside Mudayna as-Saliya.

The siege fortification normally included towers and military camps. For example, there are multiple towers lined along the stretches of the Masada and Machaerus circumvallation walls with several rectangular camps laid down around the walls, which served as bases and garrison points for the Roman troops (Richmond 1962; Strobel 1974). The Mudayna case seems to lack such built-in towers along the siege walls. Yet the Dhiban Plateau survey team found some watchtowers and camp sites potentially associated with the siege wall. They are Survey Sites 19, 21 and 22, all in the close vicinity of Mudayna as-Saliya. Survey Site 22 is likely to have been a camp site because of the location and architectural remains, while the other two sites perhaps functioned as watchtowers that prevented the besieged from escaping or getting out to seek help from outside.

In detail, Survey Site 22 is located on the promontory immediately east of the land bridge that connects the site and Mudayna as-Saliya. It provides a perfect vantage point to observe inside Mudayna as-Saliya. On this site, the survey team documented about 20 circular building remains with one rectangular edifice, with those being scattered over a flat land about 30 m north to south and 100 m east to west. The buildings average 4.2 × 4.8 m in size, and their walls are one course wide. Approximately 50 m north of the site is a large barrack-like building without interior rooms, which is linked with Survey Site 22. At this site, the survey team collected 43 undiagnostic sherds, the majority seemingly being fragments of late Hellenistic–early Roman pots.

Survey Site 21 pertains to a small rocky island-like hill at the mouth of Wadi Saliya, *c*. 300 m north-east of Mudayna as-Saliya. The highest point of this hill is 620 m above sea level, approximately 90 m lower than Mudayna as-Saliya, but it serves as an excellent lookout point that could post sentinels to prevent possible escape from Mudayna as-Saliya. This site includes two structures built on top of the limestone bedrock. The better preserved of the two is a round structure, most certainly a watchtower, with walls three to five rows wide. The structure measures 2.3 m in diameter. Approximately 30 m south of this watchtower is a small rectangular building measuring 5.3 m by 7 m, which perhaps provided guards with accommodation. Roughly 500 m north of Survey Site 21 is Survey Site 19, another watchtower situated at the southern edge of a promontory overlooking Mudayna as-Saliya. The watchtower at this site was built solidly, as its wall measures about 90 cm thick. The inner diameter of the structure is about 4 m and is currently preserved up to 40 cm. A few classical-period body sherds were collected from this site that looked similar to the sherds from Mudayna as-Saliya.

The Mudayna siege wall differs in shape from the circumvallation walls at Masada and Machaerus. These sites were completely encircled by the walls, whereas Mudayna has straight-line blockage walls only on the southern bank of Wadi Saida. The archaeological survey failed to identify walls on the northern banks of Wadi Saliya. This fact may suggest that the siege wall was left incomplete as the war came to an end promptly before the wall was completed. Another possibility is that the wall was finished as planned, whereas the northern bank and eastern ridge were blocked with watchtowers and army camps instead of siege walls.

The Mudayna wall is reminiscent of the one at Qeren Naftali (Aviam 2004). The siege remains at Qeren Naftali include two long, perpendicular walls on the steep rocky slopes east and south of the site, while its northern and western directions were secured by military camps. Likewise, it is possible that the siege wall at Mudayna was not designed to encircle the fortress in its entirety. The long stretch of siege wall along Wadi Saida may posit that the direction of any possible escape of the besieged would have been east and south. In this perspective, the presence of a second siege wall east of the main wall is worthy of attention. This wall looks to be an outer wall built to keep back relief forces, which implies that the besieged may have been expecting the help of fellow armies from the east. It is likely that the attacking army began their assault from the west of Mudayna as-Saliya, because its western slope is less steep than the other three sides of the mound. It was the most suitable direction from which to attack the site.

Siege Walls in the Southern Levant

As was noted earlier, siege warfare was in use for a long time in the Levant. Yet it was the Hellenistic period that witnessed the evolution of siege warfare, with the invention of catapults and ballista (Van Wees 2004). Alexander's conquest of Asia (334–323 BCE) was largely indebted to his success in siege warfare. During this period, however, most sieges were carried out without constructing circumvallation ramparts and ditches. For instance, the Greek armies besieged the cities of Ephesus, Heracleia, Dura, Priene, Erythrae, Colophon and Cnidus, yet they did not encircle the cities with walls for siege, and neither did they build

straight-line blockage walls in the vicinity of these cities (McNicoll 1997, 46–105).

Circumvallation was largely a Roman innovation, which began to be used in the 3rd century BCE (Davies 2005). The Romans, in the siege of Capua in 212–211 BCE, surrounded the city with a double ring of ditches and ramparts, one ring facing inward to contain the besieged defenders and the other facing out to fend off the threat of Carthaginian forces. After that, the Romans increased the use of circumvallation in capturing a territory. Another prominent example is the siege of the Gauls at Alesia (52 BCE), where Roman military engineers encircled the Gallic garrison with two lines of defence facing both in and out (Goldsworthy 2002). Each circumvallation line was comprised of two ditches, a field of stimuli, short buried stakes and iron spikes, a trench with sharpened branches, and a rampart topped with towers and palisades.

As was mentioned earlier, the Romans adopted the siege strategy to defeat the armed insurgents at Masada and Machaerus, erecting circumvallation walls with stones that were available from the area, rather than with soil and wood. The work of digging ditches was probably left out because of rocky soil and deep gorges between the cities and the circumvallation walls. The siege wall around Machaerus, dated to 71 CE, is well documented (Strobel 1974; Voros 2013, fig. 67; 2015, 498–502). This siege wall is about 3.5 km long and almost completely encircles Machaerus, being comprised of a ramp, multiple towers and camp buildings built along the circumvallation wall. Around the same time, the Roman legion laid siege to Masada, surrounding the site with a circumvallation wall and constructing a siege ramp against the western face of the fort (Richmond 1962; Yadin 1966; Campbell 1988). Also, during the Jewish-Roman War, the Romans laid siege to Jerusalem, Gamla and Yodfat. The Romans built siege ramps against these cities, but it is uncertain whether or not they built circumvallation walls around them for sieges (Aviam 2002; 2007; Schafer 2003; Syon 2004).

As at Masada and Machaerus, there are several desert fortresses that contain archaeological evidence of siege warfare, even though there has been more limited investigation of these siege walls than there has been of those conducted at Masada and Machaerus. As presented in Table 10.1, an investigation of Hyrcania reports the remains of a siege wall that is 2.7 km long (Meshel 1984a). This circumvallation is a 'double enclosure' made up of inner and outer walls that run side by side around Hyrcania. Likewise, Alexandrium contains the remains of two walls with a total length of 3 km and 1.3 km for the inner and outer wall lines, respectively (Meshel 1989). Dok is another desert fortress that preserves the evidence of siege warfare, which includes a siege wall that runs about 600 m (Meshel 1984b). As stated, the Qeren Naftali circumvallation is comprised of two long, perpendicular 2.2 km walls (Aviam 2004). These sites aside, the siege walls have been located in the vicinity of Narbata (Zertal 1995) and Betar (Ussishkin 1993) as well.

These circumvallation walls all reportedly consist of outer and inner stone walls, between which smaller field stones were placed. As was indicated above, the same type of 'double drywall' also typifies the Mudayna siege wall, which may indicate that it was the common or standard method of siege wall construction in the southern Levant during the period under consideration. The circumvallation walls at the desert fortresses are measured at 1–2 m high

Table 10.1: Archaeological remains of siege walls in Israel and Jordan.

Site	*Width (m)*	*Height (m)*	*Length (m)*	*Structures along the Wall*	*Suggested date*	*Reference*
M. Saliya				No	57 or 31/20 BCE	
Inner line	1.3–1.7	0.7–2	670			
Outer line	1.5–1.7	1	80			
Dok	1.1–1.2	1.5	600	Yes?	135 BCE	Meshel 1984b
Alexandrium				Yes	57 BCE	Meshel 1989
Inner line	2.2–2.9	1	3000			
Outer line	1.2–1.7	1	1300			
Qeren Naftali	0.8–1.1	1.6	2200	No	39 BCE	Aviam 2004
Hyrcania	2– 2.2 (1.1–1.4 on the slopes)	2	2700	Yes	31 BC	Meshel 1984a
Narbata	2.1–2.2	2	1375	Yes	66 CE	Zertal 1995
Machaerus	1.8–2	1–1.2	3500	Yes	71 CE	Strobel 1974
Masada	2.2	2.2	3500	Yes	72 CE	Richmond 1962
Betar	?	?	4000	?	135 CE	Ussishkin 1993

and 1–3 m thick. In other words, they were rather solidly constructed.

In the southern Levant, the period from the beginning of the Hasmonean kingdom to the Jewish revolts against the Roman Empire was a politically volatile period of change and constant war. Besides archaeological evidence, there are many historical accounts of cities being sacked during the period, which shows that siege warfare was indeed prevalent during the Hasmonean-Herodian period (Kasher 1990, 116–170). Around 129 BCE, John Hyrcanus I held a siege against Madaba that lasted six months and gave him control of the north-western section of the Madaba Plains (*War* 1.2.6; *Ant.* 13.9.1). In 103–100 BCE, Ptolemais and Gaza were sacked by Alexander Jannaeus during his campaign against the Mediterranean ports (*War* 1.4.8; *Ant.* 13.12.2–4; 13.13.3). The city of Gerasa surrendered to Alexander Jannaeus when the king imposed a siege on the city using a triple dike. This event took place soon after the encirclement of Pella by Alexander Jannaeus. The king is likely to have utilized siege warfare in the wars against other cities such as Gedara, Amathus, Gamala, Dium, Golan and Seleucia, although Josephus gives no details about the military tactics used against these places (*Ant.* 13.13.3; 13.15.3).

Siege warfare was adopted by King Herod and the Nabateans as well. We learn from Josephus that Herod laid siege to the Nabateans during his war at Philadelphia (*War* 1.19.5–6; *Ant.* 15.5.4–5). The Nabateans themselves also used siege warfare; in 67 BCE, Aretas III laid siege to the city of Jerusalem for several months, even if he had to lift the siege prematurely because of pressure from Marcus Scaurus, the deputy of the Roman general Pompey (*Ant.* 14.2.1). Interestingly, five years later, King Aretas III was besieged by Scaurus who marched to Petra and forced him to become a vassal of the Roman Empire after exacting a bribe of 300 talents of silver (*Ant.* 14.5.1).

Historical Context

It is difficult to date the siege wall of Mudayna as-Saliya. As has been said before, the sherds from the site indicate that it was deserted or destroyed three times: in the Iron II, late Hellenistic, and early Roman periods. There is no archaeological evidence supporting the use of a circumvallation wall in Iron II. It is thus reasonable to attribute the siege wall to the late Hellenistic–early Roman period. This dating may engender several different hypotheses as to who built the siege wall: (1) Alexander Jannaeus against the Nabateans; (2) the Romans against the Hasmoneans; (3) Herod against the Hasmoneans; (4) Herod against the Nabateans; (5) the Nabateans against the Jews; (6) the Romans against Jewish insurgents. Which of these accounts is the correct one? Unfortunately, there is a lack of direct historical and archaeological evidence that can help us in this matter. Accordingly, we attempt to answer the question here by applying available data against each hypothesis in an attempt to disprove as many theories as possible, and then proposing probable explanations at the end.

To begin with the first hypothesis, the chances that Alexander Jannaeus erected the wall are slim for two reasons. First, the evidence for the Nabatean presence at the site before Alexander Jannaeus is scant, if not absent. The survey produced 26 pieces of painted Nabatean ware from the surface. They all belong to the Phase III Nabatean painted vessels (*c*. 20–100 CE) except for one sherd that may pertain to Phase I (*c*. 100–50 BCE) (Schmid 2007; Ji 2009a). The survey also produced many fragments of late Hellenistic vessels, but most of them had a rather long life span covering the 2nd century BCE to the 1st century BCE, which makes it difficult to confirm the Nabatean occupation of the site prior to the reign of Alexander Jannaeus. Second, even if that is the case, the site is most likely to have been a squatter settlement or a small rural village that engaged in animal husbandry and dry farming. Siege warfare was an expensive and time-consuming operation that also required considerable construction skills. Hence, a siege occurs only when attackers attempt to capture a stronghold or fortified city that cannot easily be taken by a swift assault. In the case of a squatter settlement, there would be no sense in setting up a siege wall that is usually a strategy for a prolonged war against a strong fortification.

This stance also holds for the possibility of the Nabateans against the Jews (H5). For the Nabateans, there is little textual evidence supporting the suggestion that a siege was a common military strategy of theirs. In the days of Obodas I, for instance, the Nabateans ambushed, rather than laid siege to, the Hasmonean force of Alexander Jannaeus, taking possession of Gilead or the Golan (93 BCE; *War* 1.9.4; *Ant.* 13.13.5). One exception is Aretas III's siege of Jerusalem that lasted for several months (*War* 1.9.8; *Ant.* 14.2.1). Coele-Syria together with its capital Damascus came under the control of the Nabatean state during the period of Aretas III. Despite these victories, however, the offensive power of the Nabatean forces was overall relatively small, and their military operation was characterized by rapidity, ambush and archery rather than siege (Taylor 2001, 30–38; Avi-Yonah 2002, 78). Also, the Nabateans defeated the enemies by hiding in harsh terrains like deserts and mountains and waging a guerrilla warfare until their enemies surrendered for lack of water. There is a dearth of textual sources that address the siege warfare of the Nabatean armies, except for the discussions of the Jerusalem siege.

The likelihood that the Romans built the Mudayna wall to subjugate Jewish rebels during the Jewish-Roman War (H6) seems to be weak as well. Kasher (1988, 153–154) is probably correct on the point that Herod's defensive line against the Nabateans and their allies in the Decapolis was drawn along the fortresses and fortified villages west of Madaba and Philadelphia, connecting Machaerus, Tyros,

Gedor, Zia and Amathus. Mudayna as-Saliya was far outside of the borders of the Herodian kingdom. In other words, the border of the Jewish Paraea in the 1st century CE was rather clearly defined along the line of Machaerus, Wadi as-Sir, and the central Jordan Valley (Ji 2009b). The Dhiban Plateau was under the control of the Nabateans, which lasted to the end of the 1st century CE (Ji and Lee 2007; Ji 2009a). This region was full of Nabatean cities, settlements and villages, and Mudayna as-Saliya was situated deep in the south-eastern corner of the Dhiban Plateau. These facts make it very difficult for us to think that during the Jewish-Roman War, the insurgents left the Paraea and came to Mudayna as-Saliya in the Nabatean territory to conduct a war against the Romans.

The Herod-Nabatean Hypothesis

Next, King Herod is to be considered as a possibility, conducting a siege against the Nabateans (H4). Herod, like the Hasmonean rulers, was interested in expanding his territory to the east, as is demonstrated by his placement of veterans at Heshbon, who built a military fortress there (*Ant.* 15.8.5). It is possible that this settlement project was aimed at strengthening the frontier security as part of a larger military campaign in Transjordan (Sauer 1973, 53–54). Josephus also describes Herod's war against Philadelphia and his victory over the Nabateans (*War* 1.19.5–6; *Ant*. 15.5.4–5). Nevertheless, Herod could not incorporate central Transjordan into his territory beyond Heshbon because the Romans had started to organize the Decapolis and imposed a cooling of the relationship between Herod and the Nabateans (Kasher 1988, 156). Moreover, the Nabateans were a *de facto* vassal state of the Roman Empire and had maintained a moderate relationship with it since the days of Aretas III (*c*. 62 BCE). Obodas III (30–9 BCE) was particularly differential to the Roman policy. Herod even had to collaborate with him in sending troops to Aelius Gallus, the governor of Egypt (26–25 BCE). In short, for the *Pax Romana*, little territory appears to have changed hands between Herod and the Nabateans. It is doubtful that a siege war for territorial expansion by Herod against the Nabateans at Mudayna as-Saliya broke out in such circumstances.

In this context, we may consider the link between the Mudayna siege wall and the aforementioned Philadelphia war. That is, in this assumption, Herod did more than leading his troops to Philadelphia to win the war against the Nabateans. With the beginning of the war, Herod could have been concerned about potential assistance from the south. The Nabateans could have stationed armies at sites like Musaytiba and Mudayna as-Saliya in the Dhiban Plateau, two forts strategically located near the Desert Highway (cf. Ji and Lee 1998 on Musaytiba). It would then come as no surprise that for King Herod, the fortress at these sites needed to be captured or at least contained to block the movement of supplies and relief forces along the desert route. If such is the case, the Mudayna wall can be connected with Herod's war against Philadelphia, and the date would be around 31 BCE (cf. Mitchel 1992, 66).

One could go one step further to connect Mudayna as-Saliya with a military fortress that appears in the account of the Philadelphia war. According to Josephus, King Herod crossed the Jordan River and encamped in the neighbourhood of Philadelphia (*War* 1.19.5–6; Ant. 15.5.4–5). Herod next ordered his army to take over an important fortress between the Nabatean front line and his troops. A battle broke out, and the fortress became the possession of King Herod. The king then laid siege to the enemy who sheltered behind the defensive line. Herod succeeded in gaining control over the water sources in the vicinity, in order to defeat the besieged by thirst. Josephus does not mention the name of the fortification that the Nabateans held before the war. Kasher (1988, 148) suggests a general location for the battle south of Philadelphia and east of Heshbon. In such a case, there is a probability that Mudayna as-Saliya was the unnamed fort. This view is worthy of consideration, but not without a caveat. Geographically, Mudayna as-Saliya is *c*. 60 km south of modern Amman, not in the vicinity of Philadelphia. The reference to the fortress would make better sense as somewhere near the headwaters of Wadi Zarqa, since Josephus hints at the presence of a water spring in the battlefield.

Much the same can be said about the battle at the fort of Raepta. In Josephus' view (*Ant.* 16.9.2–3), another clash between Herod and the Nabataeans occurred around 20 BCE, in which Herod raided a place named Raepta. It was a fortress site occupied by brigands that harried and plundered towns and villages in the territory of King Herod. The brigand group was composed of about 1,000 armed individuals from Trachonitis, northern Gilead, who found refuge at Raepta in the land of the Nabateans. Abel (1952, 389) and Kasher (1988, 164) identify the place with Qal'at ar-Rabad, north-west of Ajlun in northern Jordan. Starcky (1955, 95) suggests the fortress lies somewhere within the region of Philadelphia. Shatzman (1991, 296), however, contends that Raepta should be in the Nabataean territory, not in the area of the Decapolis. Sagiv (2003, 44) agrees with Shatzman, suggesting it might be found in southern Moab.

Our view is that Raepta might be identified with Mudayna as-Saliya. It is in the Dhiban Plateau that was part of the northern Nabataea. Further, Josephus (*Ant.* 14.9.2) remarks that it is located at a distance of a few marching days from Herod's territory. Mudayna as-Saliya is situated 35 km and 70 km south-east of Machaerus and Jericho, respectively, a distance that may require three to four days' march for a large contingent of armed forces. Its location is also geographically suitable for launching forays to the Paraea and northern Transjordan (cf. Kasher 1988, 164). Lastly, it is a stronghold on an isolated hilltop

with abundant water, a condition that should be highly appreciated by a bandit group that had to be ever alert against the policing forces.

That being said, the Mudayna siege wall would be logically attributed to King Herod, it being erected during his strike on the fortress of Raepta. To be fair, however, we must admit one modest problem. Josephus implies a swift manoeuvre and the triumph of King Herod at Raepta by stating, '[Herod] led his army into Arabia, covering a seven day's march in three days. After reaching the fortress … he captured them [the brigands] all in one attack, and demolished the place (*Ant.* 14.9.2).' The king seems not only to have moved with speed to the fortress, but also ordered his army to take over the place soon after their arrival there. In all likelihood, the win was easy and swift as well, because the attack was completed all in one attempt. There may be not much room in Josephus' account for insisting on attrition warfare such as building siege walls and army camps around the fortress.

The Roman-Hasmonean Hypothesis

Lastly, we turn to two remaining hypotheses: that the Hasmoneans were besieged by the Romans (H2) or King Herod (H3). It was noted above that Mudayna as-Saliya was most likely constructed by Alexander Jannaeus and remained in the hands of the Hasmoneans at least until the death of the king. One question that we need to ask is whether or not the Hasmoneans lived in the fortress through the Hasmonean civil war period. One possibility is that the site was handed over to the Nabateans when Hyrcanus II ceded 12 cities in Moab to Aretas III (*Ant.* 14.1.4). However, equally likely is that Mudayna as-Saliya was not part of the territorial deal and continued to exist as Hasmonean until it was besieged by the Romans or King Herod. There is a tangible conundrum in the case of Herod (H3), however. We have very little historical basis for Herod's war with the Hasmoneans in the region of the Dhiban Plateau. Herod's military operation against them took place in Galilee and west of the Jordan Valley. To give instances, Herodian examples of siege walls against Hasmonean rebels are found in Hyrcania (Meshel 1984a) and Qeren Naftali (Aviam 2004, 64–67). This caveat leads us to the last hypothesis, which relates the Mudayna siege wall to the strife between the Romans and Hasmoneans.

According to Meshel (1989), the circumvallation at Alexandrium was laid by the Romans to capture the Hasmonean rebels led by Aristobulus II and his sons who took refuge at the fortress. The citadel was razed to the ground by the Roman forces (*War* 1.8.5; *Ant.* 14.5.2–4). In sequence, Machaerus was besieged and dismantled by Gabinius in 57 BCE when the rebels fled to the site in their final resistance to the Romans (*War* 1.8.6; *Ant.* 14.6.1). We suppose that the Mudayna siege wall may be considered in the same historical context.

Josephus (*War* 1.8.6) states: '[Aristobulus II] retreated towards Machaerus … The Romans pursued and an engagement took place. Aristobulus and his men for long held their ground, fighting valiantly, but were ultimately overpowered by the Romans. Five thousand fell; about two thousand took refuge on a hill; Aristobulus and the remaining thousand cut their way through the Roman lines and flung themselves into Machaerus.' That is, the rebel and Roman forces initially contested somewhere other than Machaerus. The rebel forces lost the battle. The Romans set up an offensive, if not a siege, against the insurgents, which was broken through by the assault of Aristobulus forces who took refuge in Machaerus. Here, we are particularly interested in one phrase: two thousand of the rebels separated from Aristobulus II and fled to 'a hill' for security. In our view, the hill would mean a fortress or garrison on a mound rather than just a natural hill without a proper defence mechanism.

The fortress may be found somewhere north or east of Machaerus, because Aristobulus II was retreating from Alexandrium. We can think of a couple of places like Rujm Ataruz (Ji 2016) and Boz al-Mushelle (Ji 2019). Yet, both sites are too small to accommodate 2,000 soldiers and are not necessarily poised on a high hill, which prompts us to search for another site in the south. Qala'ma Abu al-Hussein and Tall ar-Raya may be suitable. Both sites are located in the valley of Sayl Haydan and contain late Hellenistic–early Roman evidence (Ji and Lee 2000). The problem with these two sites is the potential absence of large cisterns or reservoirs inside the fortresses that could provide water to a large number of rebels. This qualification may then take us to Mudayna as-Saliya. It is a high fortified mound in the greater region of Machaerus, one that could be easily defended. It also had enough water to support a large number of rebels for months. Provided that Mudayna as-Saliya is a potential candidate to which the rebels fled following the defeat, the siege wall may connote that the Roman forces chased down the rebels to Mudayna as-Saliya as in the case of Machaerus, and laid siege to them with a circumvallation wall around the site.

Conclusion

Mudayna as-Saliya is a fortress site positioned on a steep island-like hilltop in the middle of eastern Wadi Mujib. The survey of the site has revealed traces of human habitation from Iron II through the late Hellenistic–early Roman periods with its zenith in the late Hellenistic and early Roman eras. The mound was occupied and fortified for military rather than residential purposes, given its isolation and the non-hospitable topography of the site. The review of related data points to Alexander Jannaeus as the potential builder of the citadel at the site, which had changed hands to the Nabateans in the early Roman period.

At the time of the survey of Mudayna as-Saliya, the project team identified two long lines of walls on the southern bank of Wadi Saida, which turned out to be the remains of ancient siege walls clearly related to the history of Mudayna as-Saliya. The discovery surprised us because scholars have long believed that there were no circumvallation walls in the Transjordan other than the one built by the Roman forces at Machaerus (cf. Voros 2017). With that considered, we examined the relevant historical and archaeological sources for the date and historical background of the Mudayna wall. Two scenarios stand out as being reasonable, even though at this point, it is precarious to choose one over the other due to limited archaeological data. The available evidence seems to suggest the revolt of Aristobulus II against the Romans as one probable historical context of the war that entailed the construction of a siege wall at the site. Equally feasible is the scenario that King Herod set up the wall either during his war against Philadelphia to subdue the Nabateans at the site, or roughly a decade later to conquer the brigands from Trachonitis who were plundering his territory under the protection of the Nabatean state. Actual proof of the proposed interpretations should, of course, await future excavations of Mudayna as-Saliya and the siege wall.

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11

The Development and Function of the East Gate in Side, Pamphylia

Ute Lohner-Urban

Preview

Along the south coast of Turkey in the ancient region of Pamphylia there are numerous elaborated fortifications with so called 'courtyard gates' ('Hoftore'), which were all dated by several scholars to the Hellenistic period (Fig. 11.1). The best known of these gates are the so called 'Hellenistic South-Gate' in Perge (Peschlow 2008, 971–987; Martini 2016, 220–231) and the 'Main Gate' in Side (Mansel 1956, 70–74; Gliwitzky 2010, 128–130). A good example of a Pamphylian courtyard gate is the small western gate in Sillyon, situated close to Perge. Since 2011 archaeological research and excavations have been underway at the eastern city gate – a further 'courtyard gate', the 'East Gate' of Side.

The East Gate of Side is part of an elaborate fortification system consisting of a seawall, and a well-preserved land wall (Grebien 2018, 369–380) with two entrances in the north-east (Main Gate) and the east (East Gate) (Fig. 11.2). The East Gate lies in the south-eastern section of the ancient city in an area that is covered by sand dunes up to 10 m high, which complicates the knowledge of the topographical situation in this part of the town; because of this, the surrounding area of the gate cannot be clearly defined.

Although the gate was recognized during the course of the expedition by Karl Lanckoroński (Lanckoroński 1890, 125–152) in the 19th century, it was first excavated between 1964 and 1966 by Arif Müfid Mansel (Mansel 1968, 239–279). He assumed that almost the entire building must be Hellenistic. Mansel justified his dating with the discovery of 11 slabs of a weapon frieze (Mansel 1968, 262–279 fig. 34–47), and of a slab with an inscription in the Sidetic language (Nollé 1993, 8; 2001, 634–639;), which are now exhibited at the Archaeological Museum in Side. As a consequence of this theory Mansel concluded that the slabs were installed on the building complex during the first building phase, but there is no evidence for this theory. Furthermore, the stones might be part of a podium of a monumental grave (Polito 1998, 86–88). Mansel assumed that the motive for the installation of the slabs on the gate and the erection of the whole fortification system was the Treaty of Apameia in 188 BCE (Mansel 1968, 273–274; Nollé 1993, 67). The slabs were found on the terrace of the actual gate (A, B and C), on a Late Antique mosaic floor in the upper storey, where they were probably being prepared for reuse on the gate structure (Mansel 1968, 247 fig. 10). The dating of the East Gate to the Hellenistic period and the assessment of the whole construction have been adopted in the scholarly literature after Mansel, and the whole fortification system of the town has been considered as a *locus classicus* for the Hellenistic period (Winter 1971, 191; Nollé 1993, 8; McNicoll 1997, 147–148; Gliwitzky 2010, 123–131).

Research in Side

In cooperation with the Archaeological Department of the Anadolu Üniversitesi Eskişehir, the Institute of Archaeology of the University of Graz has undertaken archaeological investigations at the East Gate and the so-called 'land wall' in Side since 2011 (Lohner-Urban 2013; 2014; 2016, 195–202; 2017, 100–107; Lohner-Urban and Scherrer 2016, 232–243).

Based on the standard publications on fortifications, the well-preserved East Gate must be the prototype of a (middle to late) Hellenistic complex (Fig. 11.3). The excavations made inside and outside the gate complex did not reveal any features dated to Hellenistic times. After the thorough examination of the findings, the earliest building period is dated to the 1st century CE rather than to the Hellenistic period. The results of the recent excavations at the land wall of Side close to the Main Gate indicated that the land wall must be dated to the end of the 1st century CE. In consideration of the features of the East Gate – and as a consequence of the results of the recent excavations at the

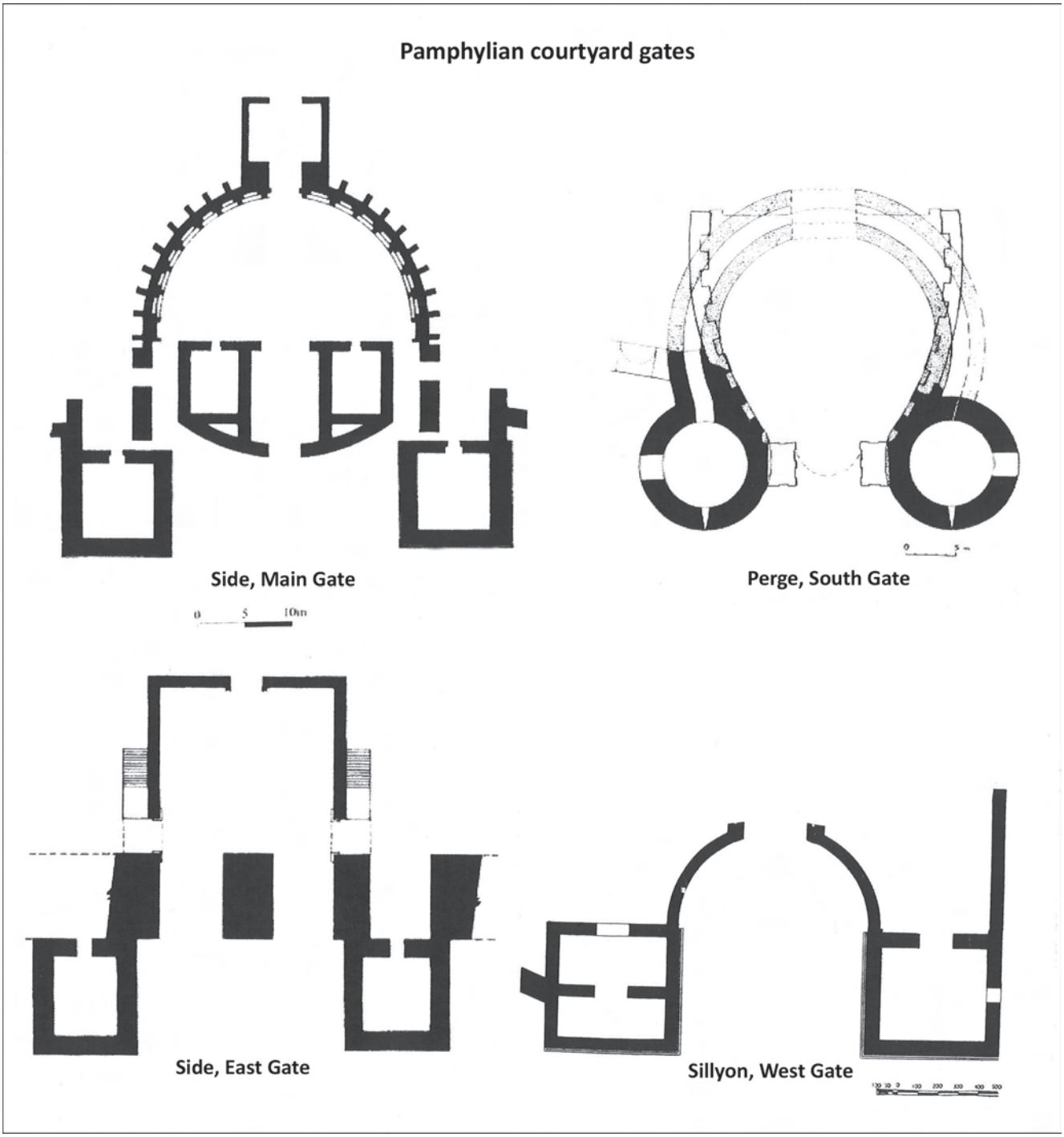

Fig. 11.1: Plans of the Pamphylian courtyard-gates (after McNicoll 1997, fig. 35; Lauter 1972, fig. 7).

land wall – this part of the fortification system of Side has to be dated to the end of the 1st century CE, which raises new questions regarding the assessment of the complex as a whole. From the historical point of view, for the Augustan period as well as for the 1st century CE, epigraphical or literary sources are fairly rare for Pamphylia; but from the archaeological point of view, due to the excavation results and the architectural research on the buildings, an expansion of the cities of Perge, Side and Aspendos was documented. (Mansel 1963; Nollé 1993; Hellenkemper and Hild 2004; Alanyalı 2011, 100–112; 2013, 121–133; 2014, 94–108; 2015, 114–130).

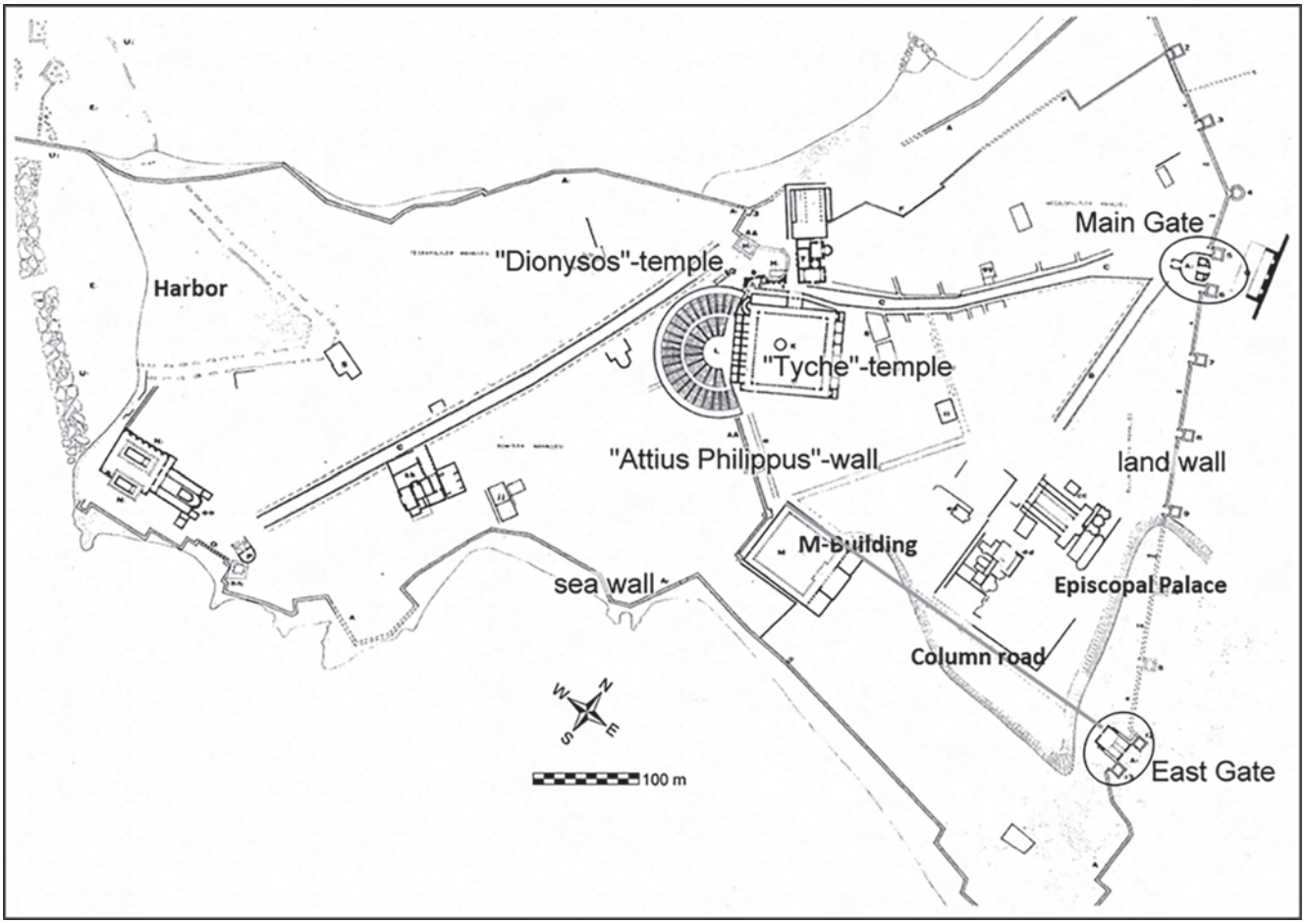

Fig. 11.2: Map of the ancient site of Side (edited by U. Lohner-Urban).

The Structure of the East Gate of Side

The entire gate complex of the East Gate covers an area of *c*. 30 m to 20 m. Like most of the buildings in Side, the gate complex is basically built with isodomic header and stretcher masonry. It was rebuilt several times up to the 6th century.

The actual gate (Fig. 6.4A) consists of two vaulted entrances (A and C, 6.7 m wide and 8.8 m deep), which lead into a rectangular courtyard, 18.5 m wide and 17 m deep. Between the main entrances A and C a small room (B) is situated. From the courtyard a vaulted passage (E and F) leads to each flank and to a gate at the rear 3.5 m wide (west gate). The walls of the quadrangle are provided with walks that are reached by flights of stairs rising parallel to each flank. In a later phase the two entrances (A and C) were closed by a wall. This wall is well preserved in Gate C, where a 2.3 m wide and 4.9 m tall door with a small Christogram is preserved. Over the entrance complex (A, B and C) a terrace extended, which might be the ground floor of an upper storey – a mosaic floor was found in the southern corner (Mansel 1978, 61–66 fig. 54). On the outside of the northern and southern courtyard wall two staircases lead to the rampart or to this terrace. The gate complex is flanked by two towers, tower 11, 10.4 m wide and 11.5 m deep and tower 12, 11.8 m wide and 12 m deep.

From the courtyard three passages lead into the city: the western passage (3.5 m wide) is constructed in the central axis of the courtyard and opens onto the road to the so-called M-building (Fig. 11.3). On each side the gate is decorated with pilasters (1.15 m wide). The character of the two other passages (E and F) of the courtyard is completely different to that of the western gate (Fig. 11.5). They show a width of 3.6 m and a depth of 3.8 m, with a well-preserved barrel-vault consisting of masonry of fine limestone. On each side of the passage the barrel-vaults are finished by an arch, which is structured by three fascia and which rests on simple curved capitals, which are situated on pilasters. The two passages (E and F) were closed off by a wall at a later period.

Fig. 11.3: The East Gate of Side from the west with the western passage and the courtyard (University of Graz).

The walls of the courtyard show narrow loopholes (0.5 m high and 0.2 m wide), which have a decorative function, because they can only be seen inside the courtyard and are constructed as a kind of 'niche'. Inside the courtyard on the top of the southern wall a small section of Doric entablature can be seen. It is located in situ over passage F (Fig. 11.5).

The Building Phases of the East Gate

The stratigraphical report (Lohner-Urban 2016, 195–202) of the excavations allows – according to the recent state of research – an appropriate interpretation of the building history and the building phases of the gate.

First Building Phase

The court with its three passages located on the west, the north and the south, and both of the towers (only the lower masonry of tower 1 belongs to the first building phase) were built during the first phase, which can be dated to the 1st century CE (Fig. 11.4B). Concerning the construction of the main entrance, we can exclude an 'open' courtyard gate. It can already be stated that the wall structures under the later so-called 'Room B' belong to the first phase of the gate. From the 1st century CE to the 4th century CE no further rebuilding work is documented.

Second Building Phase

During the end of the 4th century CE massive conversion work at the gate was documented by the excavation report. Subsequently, the running level was heightened by almost 2 m. In the second building phase the whole main entrance area with the vaults of Gate A and C, the Room B and the upper floor (over entrance A, Room B and entrance C) was newly erected (Fig. 11.4C). Outside the gate complex the level of the street leading to the city (M building) also had to be raised, and as a consequence of this the entire pavement was renewed. The street to the city centre was equipped with columns and led from the western passage of the gate to the city centre. Between the slabs of the pavement a representative amount of coins was found, which can be dated to the 4th/5th century CE. In the debris overlaying the pavement two capitals and fragments of columns of the late 2nd century CE came to light. Inside the courtyard only a few parts of a pavement have been found, which also belonged to the rebuilding phase of the second building phase.

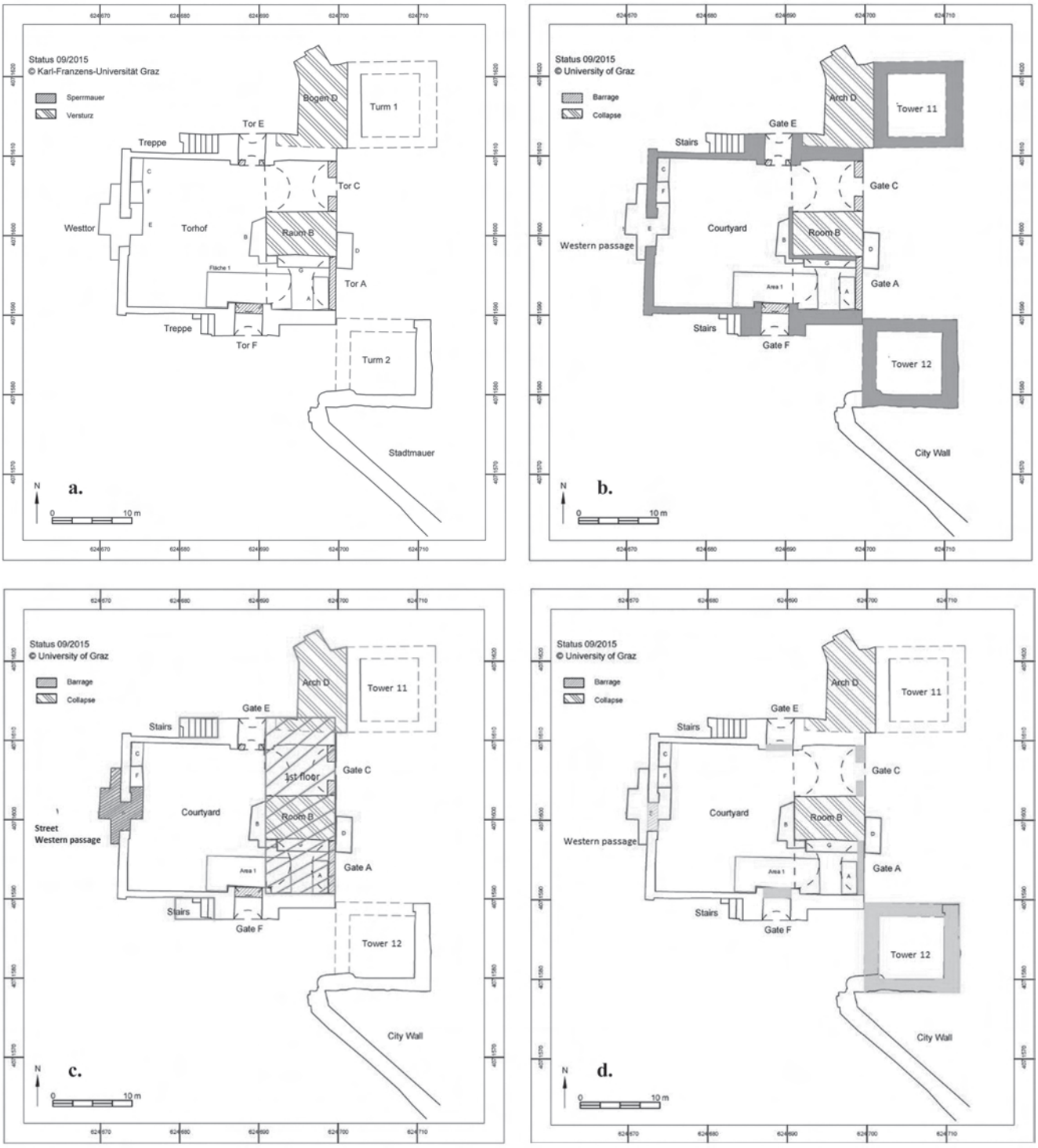

Fig. 11.4: Plan of the East Gate of Side with Sondages and different building phases (University of Graz).

Third Building Phase

During the first half of the 6th century CE a further heightening of the running-level of 0.6–0.7 m can be attested by the excavation report, which is connected with a rebuilding phase and a reutilization of the whole gate complex can be determined. Narrow walls made of rubble with mortar document small room-systems inside the courtyard of the gate. There are also slabs made of limestone, which served as foundations for wooden constructions along the courtyard walls and which can be interpreted as simple roofed shops

Fig. 11.5: Southern wall of the courtyard with passage F of East Gate, Side (University of Graz).

or *tabernae*. During this building phase the main entrances A and C were closed by walls, while only a small door made through passing still possible (Fig. 11.4D). On the upper floor over the main entrances A and C a mosaic floor surrounded by small walls was erected, which is also distinct evidence for a reutilization of the entire gate complex. The third building phase can be clearly dated to the first half of the 6th to the 1st half of the 7th century CE due to the large amount of dated pottery (LRD ware).

The Architectural Equipment of the East Gate

The entrance structure of Gate A and C, which have been rebuilt at the 4th to 5th century CE, shows several parallels in Italy itself (Brands 1988, 16–29). The architectural equipment of the gate is poorly preserved. Sculptures or decorative building elements are missing. Beneath the blocks, elements of different architectural zones could be identified, such as the Doric frieze and the Ionic cornice found in the courtyard, various elements of door jambs and fragments of the weapon frieze (Mansel 1968, 262–279; 1978, fig. 61–66). The stones are mostly made of light coarse conglomerate, which differs considerably from the coarse conglomerate of the ashlar of the wall. Most of the blocks belonged to an entablature. Whether the reconstruction of a Doric frieze with an Ionic cornice is possible for the upper boundary of the courtyard, when geison and sima are made of the same block (height: 0.35 m), must be investigated further. Frequently in Lycia and Pamphylia, triglyph friezes had appeared on public buildings since early Imperial times. This can be compared to triglyph blocks seen at the Agora of Side and in nearby Lyrbe/Seleicia or Perge, but also at Xanthos in Lycia and Sagalassos in Pisidia. Most of the blocks at the East Gate show mason marks, also placed on the front, which indicate that they were reused at the gate complex.

The ‘Courtyard Gates’ of Pamphylia

The East Gate of Side is based on the type of the axial ‘courtyard gate’ as it is known from several gates in Western Asia Minor and the Greek homeland, mainly from the Classical to the Hellenistic period. At any rate, it is remarkable to have gates with two flanked towers and a representative courtyard agglomerate in the region of Pamphylia during the (early to middle) Roman period (Martini 2016, 220–231).

In Perge a well-fortified wall of the Classical period has been investigated around the Acropolis hill, which

documents the earliest fortification system in Pamphylia (Martini and Eschbach 2017, 142). During the course of the 1st century BCE the expansion of the town in the plain area has been planned with an orthogonal grid of streets and a new fortification wall with an elaborated courtyard gate, the 'Hellenistic South Gate' (Martini 2016, 220–231). The fortification wall consists of a parallel running an eastern and western course ('straight line' course after McNicolls 1997, 148–156), which follows the orthogonal grid of the new town. As the curtains of the fortification wall in the southern part are missing, the 'Hellenstic South Gate' marks a detached building (Martini 2016, 226 fig. 6). The 'Hellenistic South Gate' does not show an axial position to the grid of the new planned city and to the curtains of the new erected fortification wall, but the gate is connected to a road, which does not follow the orthogonal scheme of the new town, but runs directly to the sanctuary of Artemis Pergaia on the Acropolis and to the harbour of Magydos. Wolfram Martini could demonstrate that there was never a curtain on the southern wall, which was never connected to the gate (Martini 2016, 226 fig. 6). For the 'Hellenistic South Gate' with the two round towers and a circular courtyard (Fig. 11.1) Martini suggested a dating to the Augustan period (Martini 2016, 229), while the curtains of the western and eastern part of the fortification are dated to the high Imperial and Byzantine period (Martini 2016, 223). During the 2nd century the 'Hellenistic South Gate' was rebuilt in a magnificent manner. The circular courtyard of the 1st phase (Fig. 11.1) was replaced with an ellipsoid courtyard, which opens widely to the town. The fortification wall of Perge can be compared to Side: there are two kinds of curtains – the arched type and the corbelled type, which are very similar to the land wall of Side. It seems that the 'Hellenistic South Gate' of Perge was constructed as a detached building during the Augustan period and it seems to be a 'prototype' regarding the courtyard gates in Pamphylia. Recent research on the Main Gate of Side (Fig. 11.1) also documented a detached building for its first building phase. To concretize the dating of the first building phase of the Main Gate, further investigations are necessary.

In Sillyon – close to Side and Perge – the western gate documents a semi-circular courtyard flanked by two rectangular towers (Fig. 11.1). Close to the gate the curtain of the fortification wall is very well and highly preserved. The wall has also been dated to the Hellenistic period by several scholars, but after thorough examination by Eric Laufer, it can be stated that any poliorcetic idea is missing there and a dating to the Roman period is possible (Laufer 2010, 170–172).

Conclusion

The Pamphylian gates are always mentioned together with the axial gates of Western Asia Minor and especially the axial gates flanked by towers and backed by a courtyard of the Greek homeland of the Classical and Hellenistic period (Mansel 1968, 262). These examples include the Dipylon Gate; the Sacred Gate in Athens; the Isthmian Gate in Corinth; the South Gate of Stratos; Gate A in Mantineia; the Arcadian and South Gate in Messene; as well as the Myndas Gate in Halikarnassos or the Magnesian Gate of Ephesos. They all have in common the flanked towers and the axial conception of the courtyard. Similar constructions are also documented for gates in Italy during the Republican to Augustan period. There are also documented axial gates with flanked towers, which can be dated mostly to the Late Republic Period, such as the gates in Ostia or in Hispellum. But the Roman gates differ, because they are clearly aligned orthogonal to the grid of the inner city.

A decisive feature of the Greek gates of the Classical and Hellenistic period is that they form a substantial part of the fortification concepts, including the curtains, towers and parapets. The curtains and the parapets have to be constructed in a way to protect the gate, or better, the passages through the gate, while the courtyard served as an inner bailey, where the enemy could be attacked from the parapet of the courtyard walls and from the towers. Although there are many similarities concerning the systems, most differences result from the local topography.

These aspects of defence were attributed to the Pamphylian gates and walls by many scholars, and this led to the Hellenistic dating: the courtyards as an inner bailey, the towers as artillery towers, and also the parapets and arrow slits.

For the land wall of Side we can postulate the following (after Mansel 1963, 27–40; Grebien 2018, 369–380): although there are two parapets, staircases to the parapets, carefully arranged arrow slits and a representative amount of towers – all well-known features of fortification systems – on close examination, the features of the Sidetean land wall are not at all functional. The upper parapet is very narrow and the archer did not have the space to work with a bow and arrow because of the small arrow slits and the wrong angle. Also, the arrow slits of the towers have more or less a decorative function, and do not serve as defence. An interesting detail is found in the interrupted parapets: there are staircases leading to the parapets, but the parapet is interrupted before it links to the towers. This means that the curtain and the tower are not connected to a parapet. The inner side of the land wall looks very representative with its series of arches and seems to have been planned during the extension of the city of Side in the 1st to 2nd century CE.

At the East Gate at Side a military defence system can be excluded in the same way. The structure of the gate harks to a defensive monument of Hellenistic times with its towers, courtyard and arrow slits. The East Gate has always been considered from the aspect of defence dependent on

its Hellenistic dating. A new approach, resulting from the findings, addresses the gate from the viewpoint of a purely urbanistic, representative function (and not concerning the imminent enemy). The idea of the well-fortified strength of the Classical and Hellenistic time was played with, in that elements of defensive architecture were included, such as arrow slits – which were however not functional – and a courtyard, which might have been an inner bailey, yet from the outset was planned with three passages, which only made the city even more open to access.

In summary, the whole fortification system of Side can be seen as a representative border between the inside and outside, whereby the gate makes the only legal crossing of this border possible and can be seen as a kind of interface between the city and the countryside. The economic function is guaranteed by the increased volume of traffic. The construction of gates fell under the jurisdiction of the Roman city administration, thus it is a question of a public building in a public space.

A new importance was ascribed to the East Gate during the 5th century CE, when the Episcopal Palace was built or rebuilt. This is demonstrated in the massive rebuilding period at the East Gate and the connected street. During the 6th century CE a change in usage could be attested: the whole entrance was closed with walls, which made through traffic impossible. The gate lost its importance as a passage connected to a traffic system. Simple buildings were erected inside the courtyard and outside the gate, indicating private use. On the other hand, a part of the gate received representative elaboration, such as wall paintings on the vaulted ceilings of passage C, or a mosaic floor on the upper floor.

A clear process, from the gate as a public building connected to an urban structure, to a transformation into a possible fortress for the protection of the Episcopal Palace, can be assumed. The erection of the fortification system might not be seen in a defensive sense; in fact, it belongs to an overall building programme of the whole town of Side, which was realized up to the late 1st century CE and which is also attested in the whole city plan (Fig. 11.2).

The building history of the East Gate at Side shows a change of function during the 6th century CE, when private buildings were erected inside the courtyard and the passages. Essential in this regard was the closing of the passages with a wall built out of simple stone-mortar masonry. As a result of this intervention, the whole street became useless and the gate lost its function.

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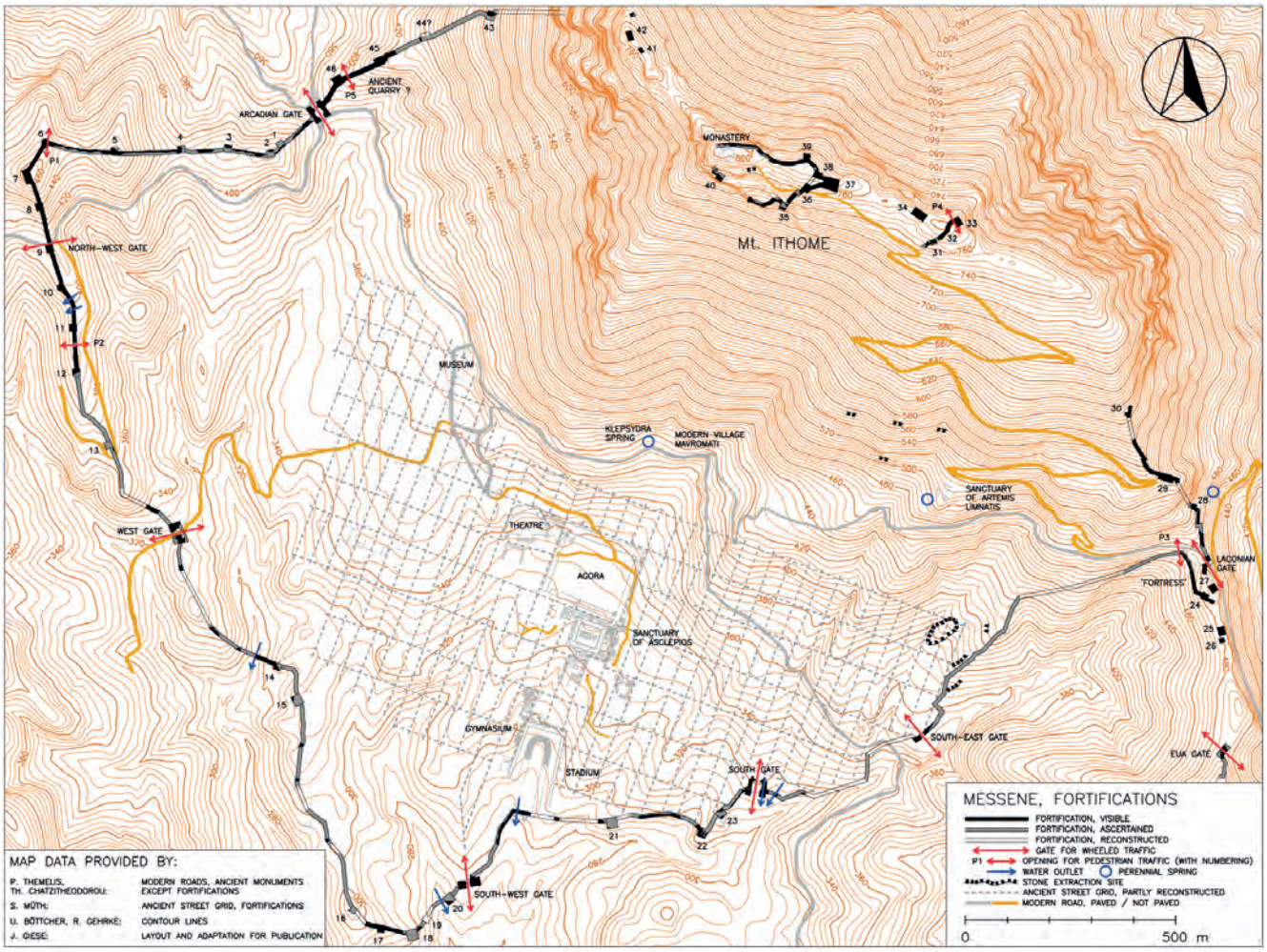


Plate 3.1: Messene. Plan including the wall line (ancient monuments: P. Themelis; street network and wall line: S. Müth; contour lines: U. Böttcher and R. Gehrke; adaption: J. Giese).

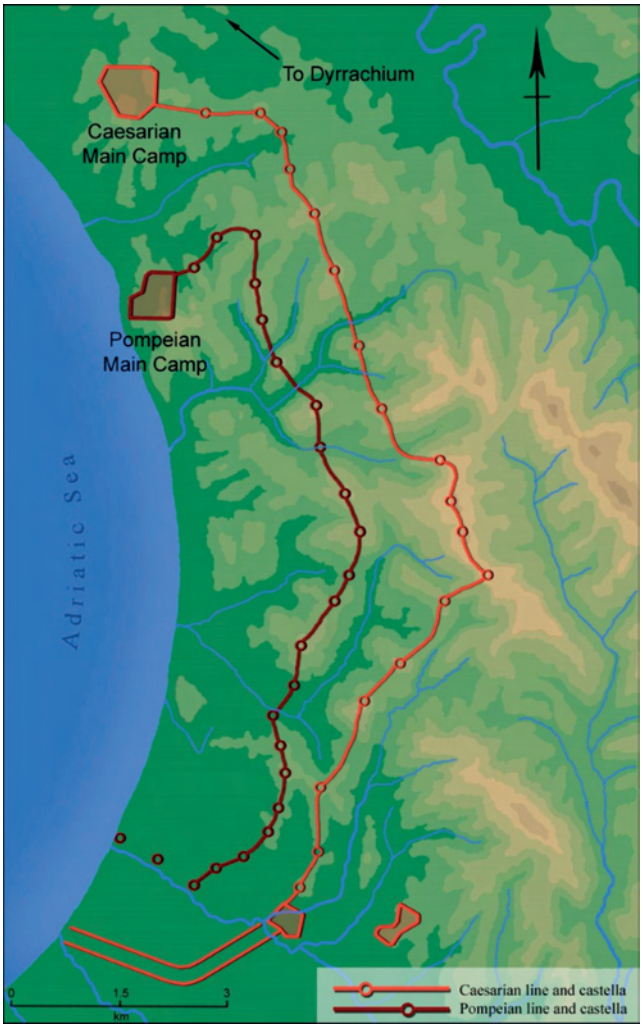


Plate 6.1: The Pompeian and Caesarian lines, Dyrrachium (after Davies 2006, plate 1).

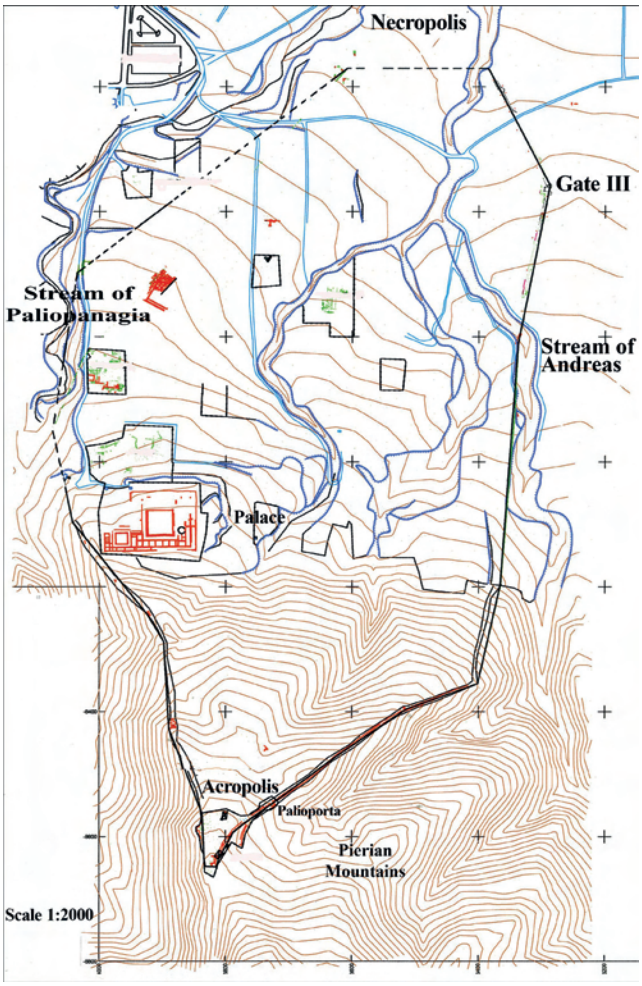


Plate 8.1: General topographic plan of the ancient city showing the route of the fortification enclosure (drawn by the topographers Giannis Gatzios and Sofia Gatziou).

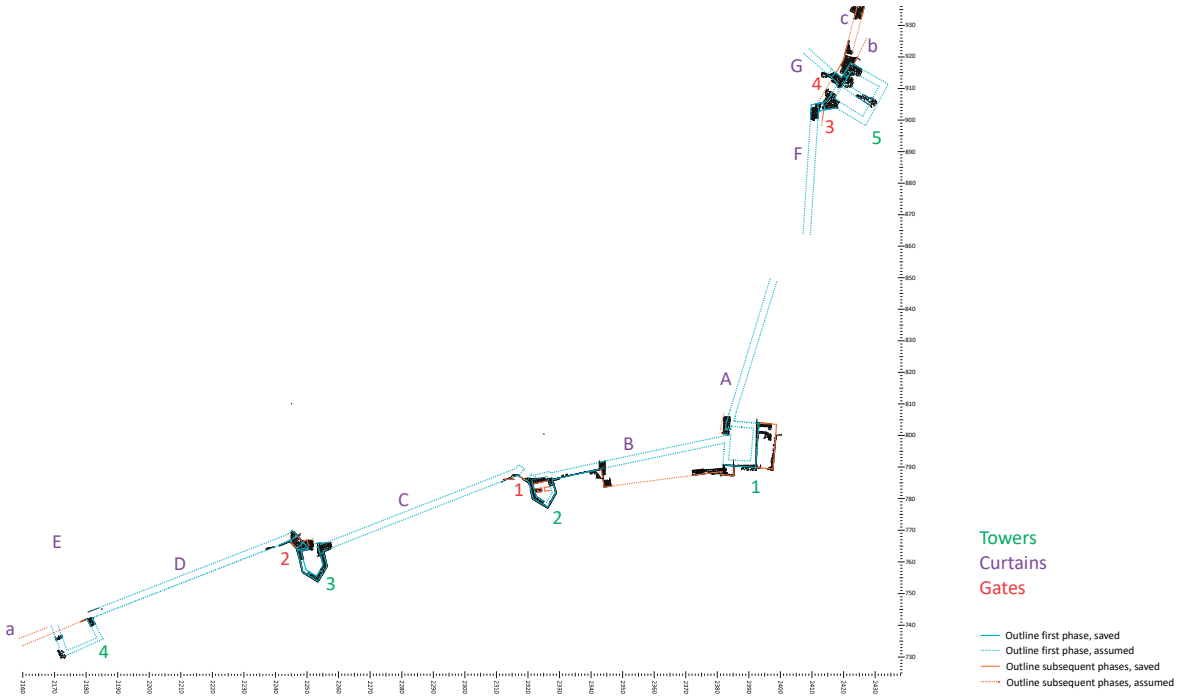


Plate 9.1: Southern and eastern flank with proposed reconstruction (scale 1:1000).

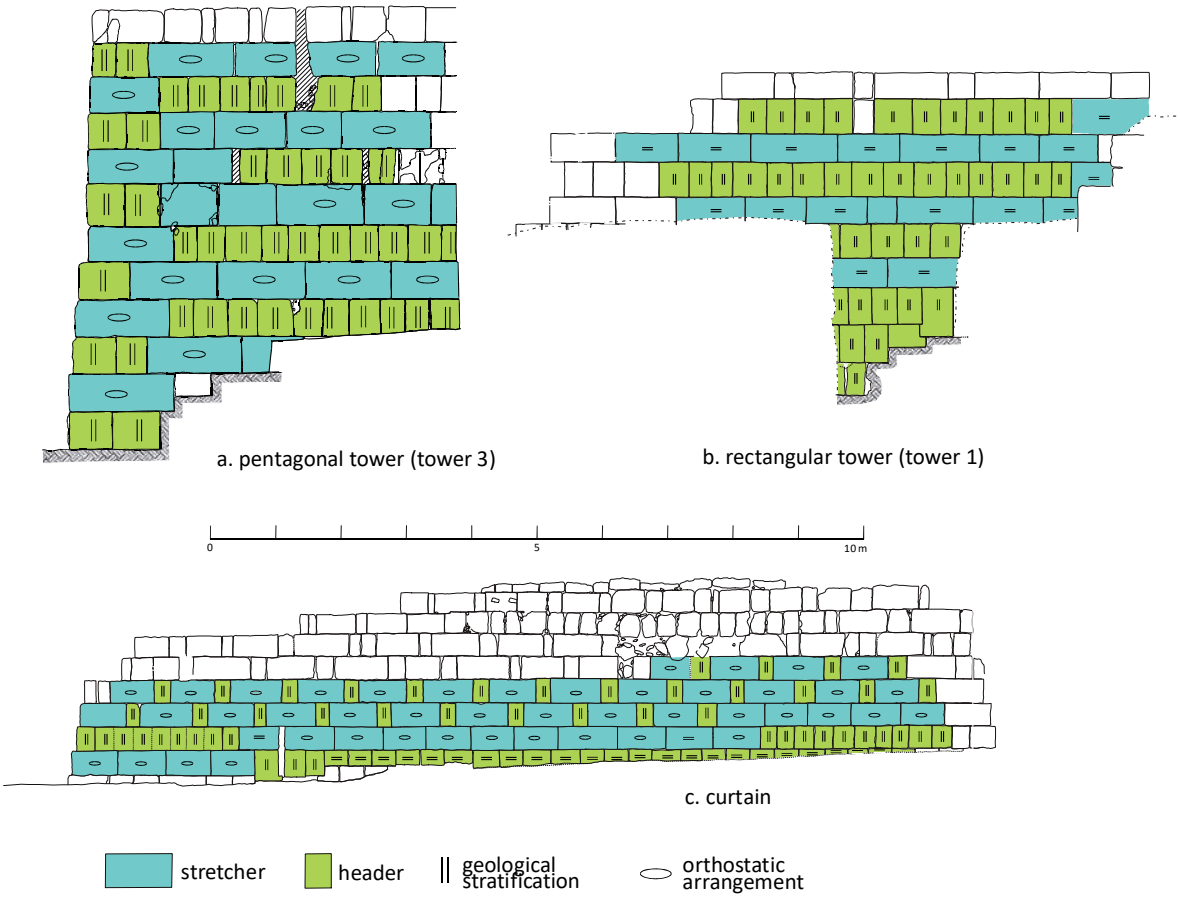


Plate 9.2: Masonry techniques.

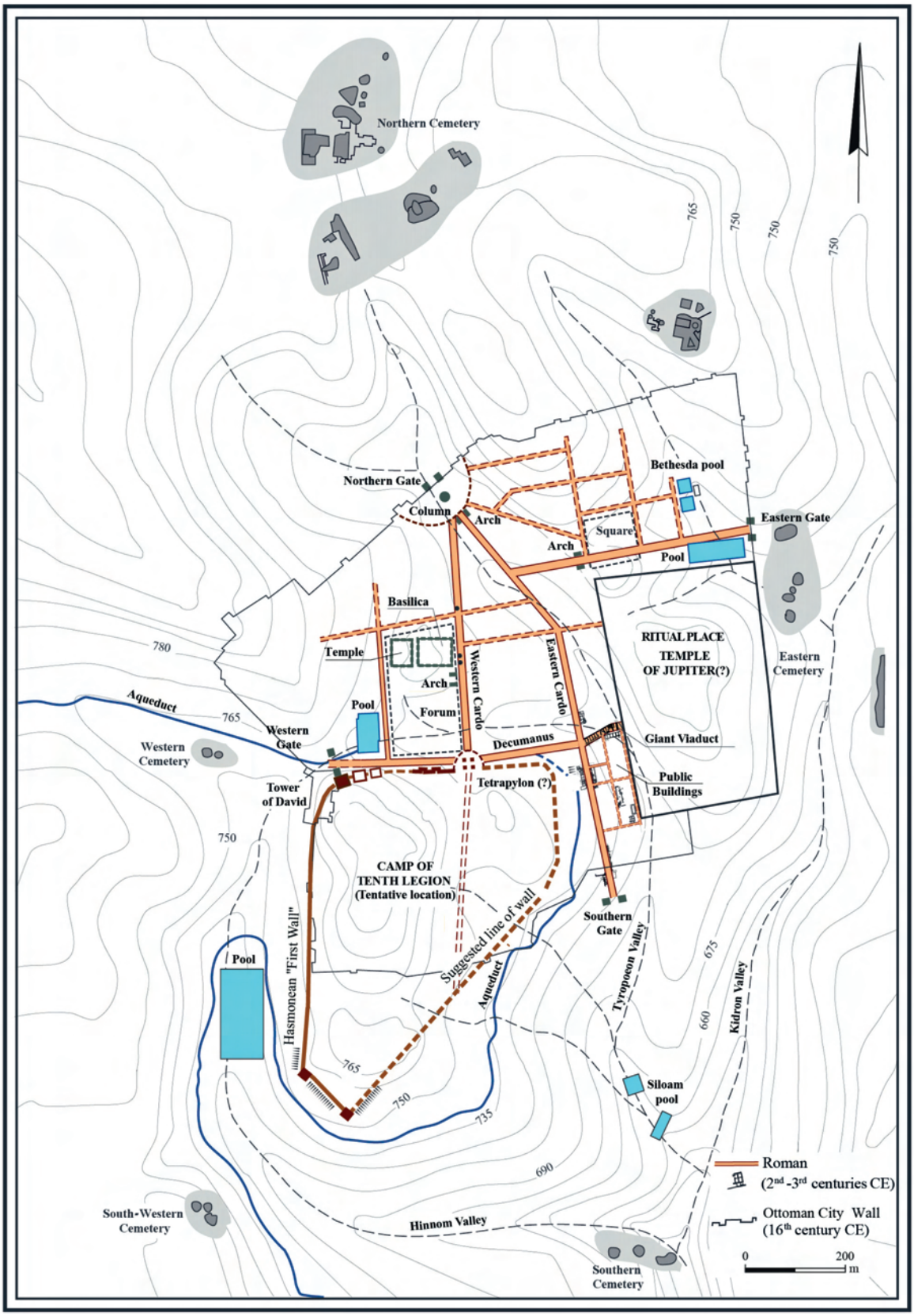


Plate 12.1: Plan of Aelia Capitolina in the Roman Period (2nd–3rd centuries). Reconstruction: Shlomit Weksler-Bdolah, Drawing: Natalya Zak. Courtesy of the Israel Antiquities Authority. After Weksler-Bdolah 2020, 59.

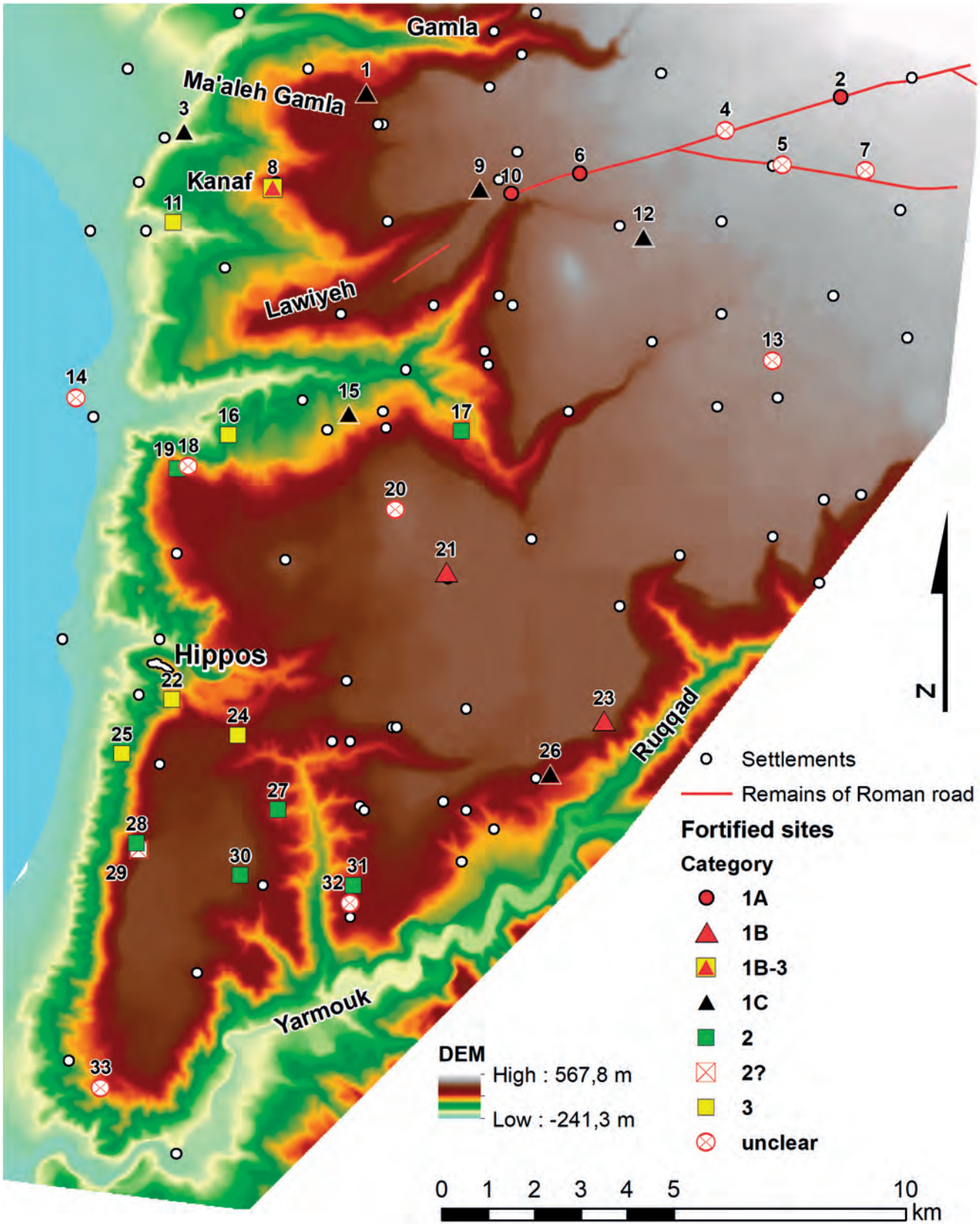


Plate 13.1: Map of the region with sites.

Plate 13.2: Examples of sites categories 1A–C and 2.

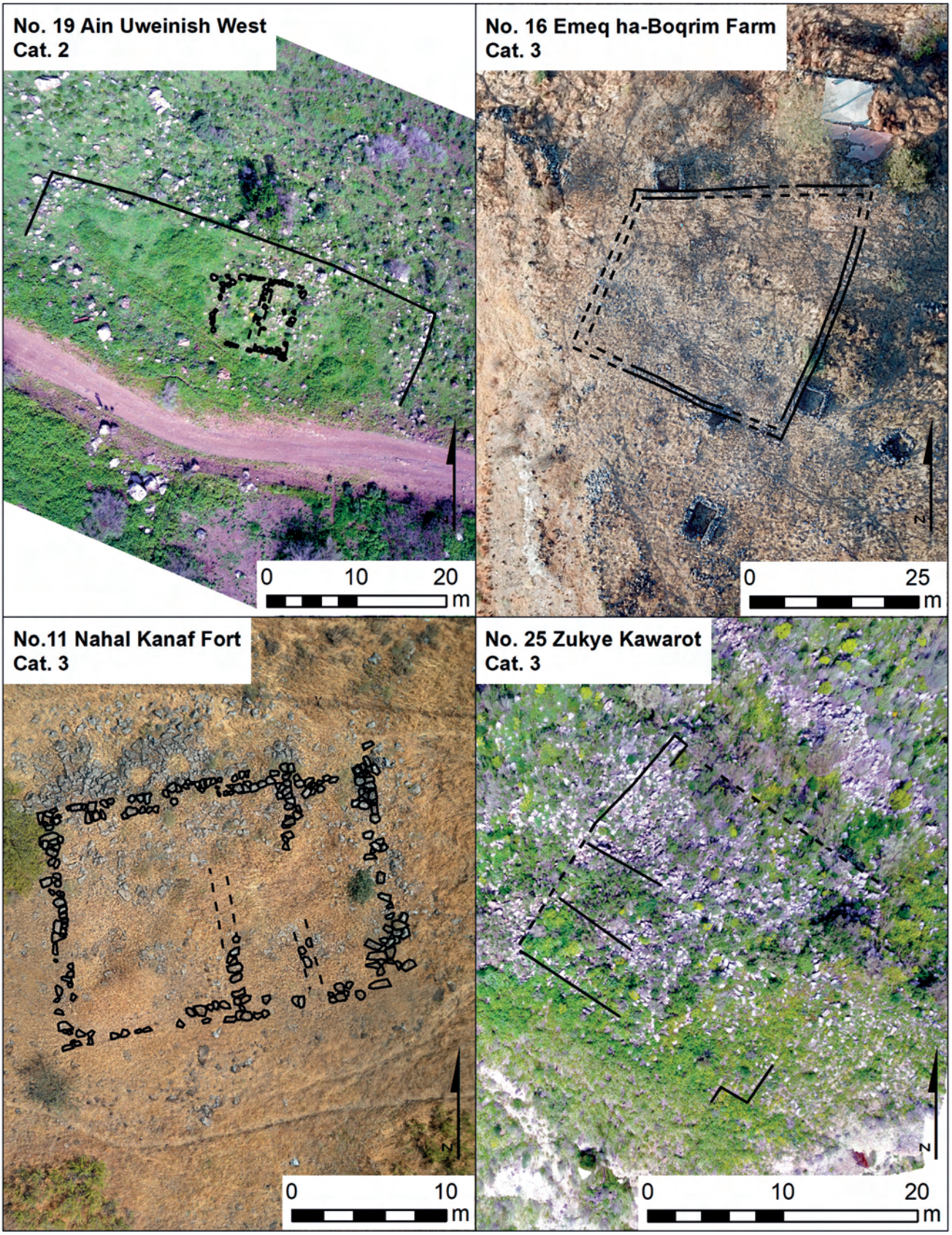


Plate 13.3: Examples of sites categories 2 and 3.

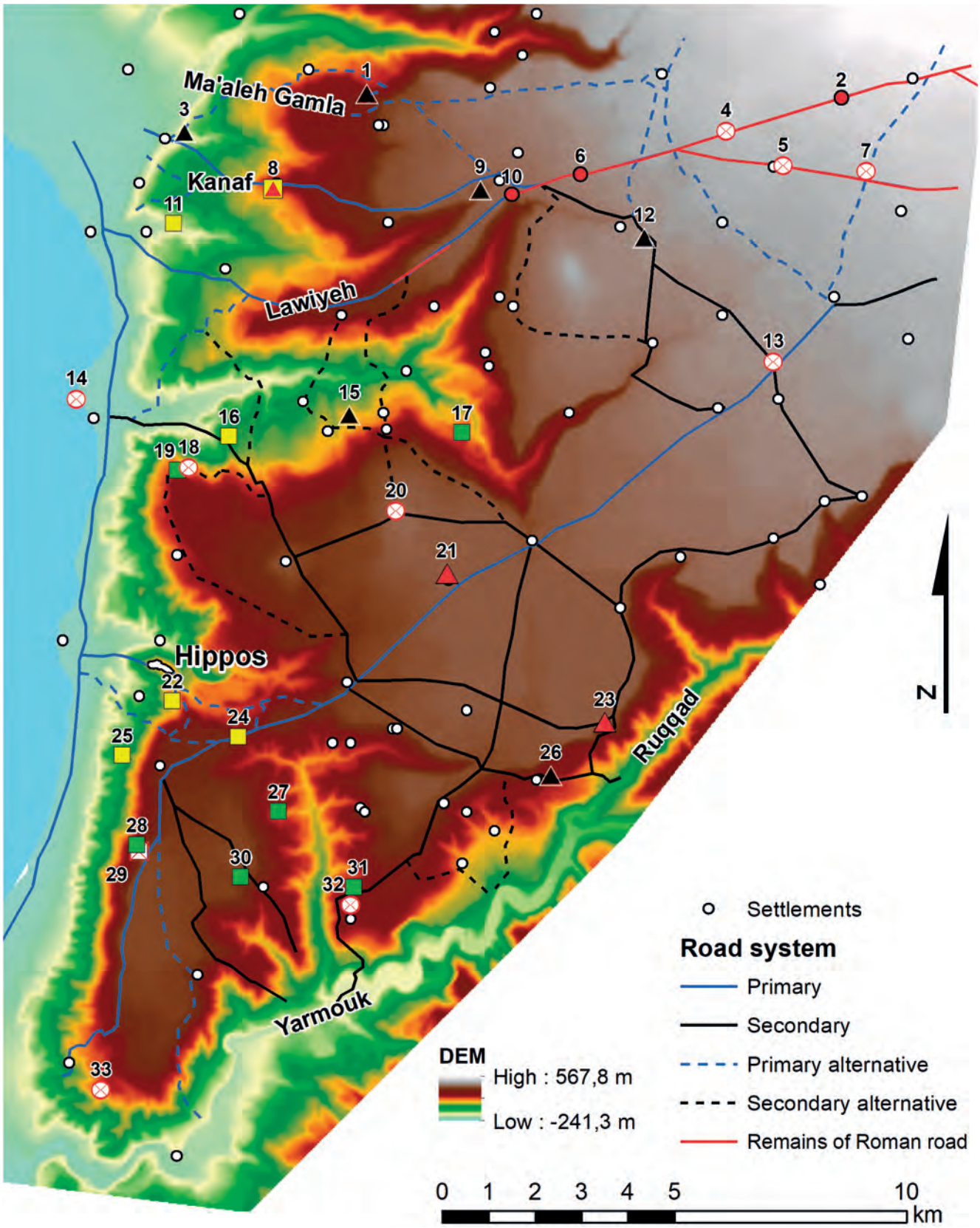


Plate 13.4: Proposed reconstruction of the road system in the region.

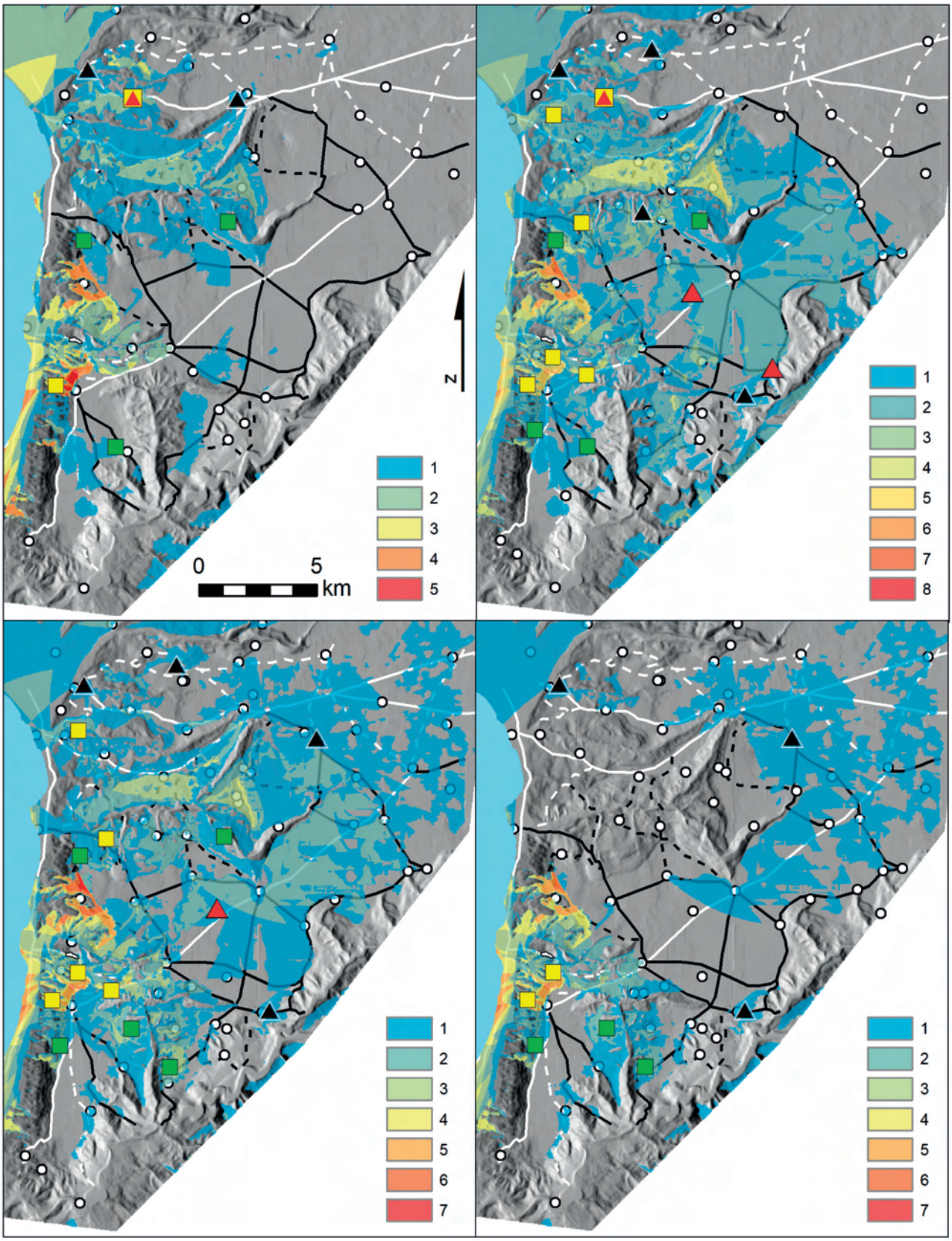


Plate 13.5: Cumulative viewsheds showing visibility frequency. Hellenistic period upper right, early Roman period upper left, later Roman period lower left, Byzantine period lower right.

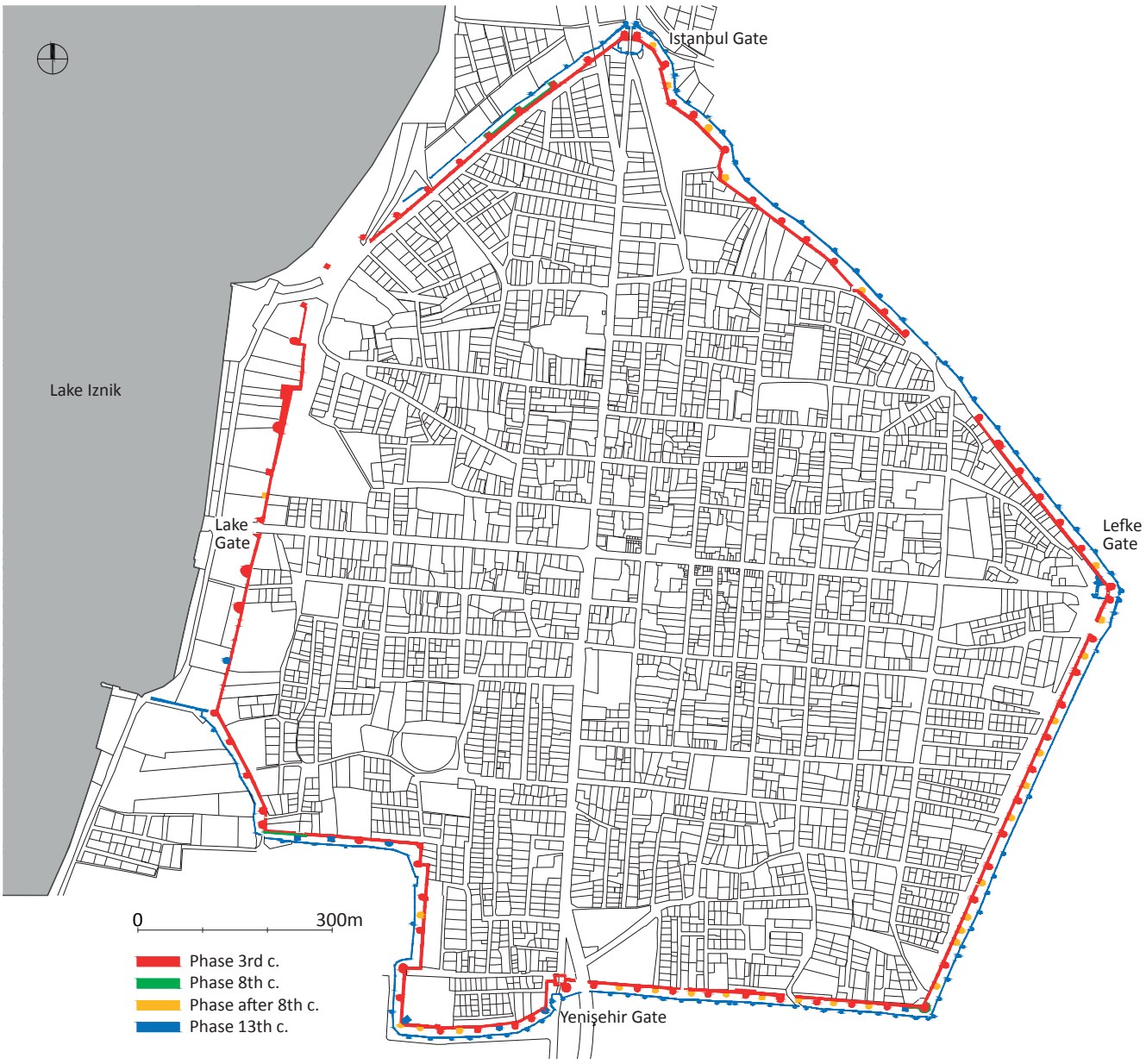
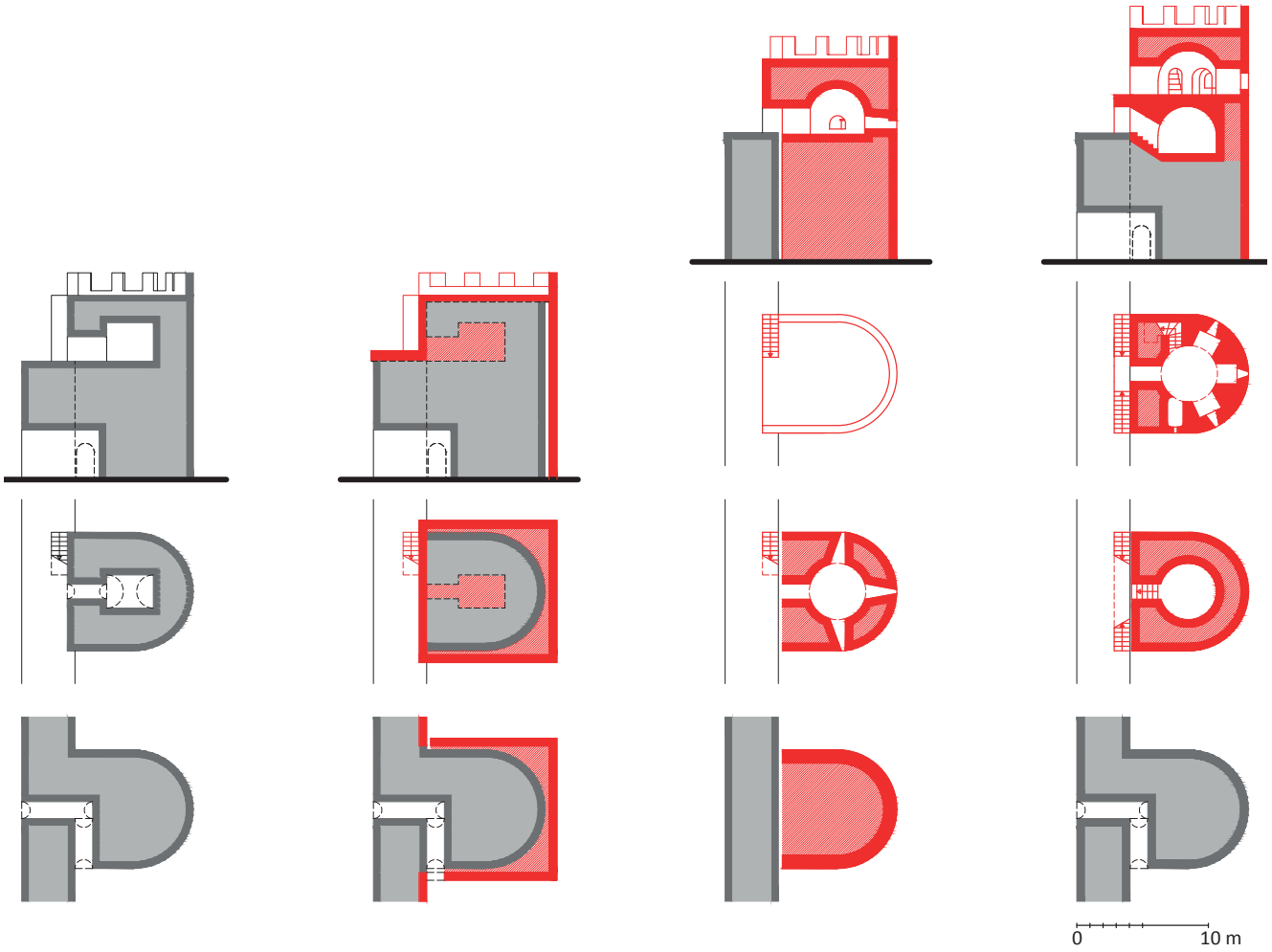


Plate 16.1: Plan of Nicaea and the fortifications with the construction phases.



a) Original towers of the 3rd century

b) Towers modified in the 8th century

c) Towers inserted after the 8th century

d) Towers modified after the 8th century

Plate 16.2: Schematic illustration of the towers in different construction phases.

Plate 16.3: Detail view of a sally port with cuttings for the bolting mechanisms.

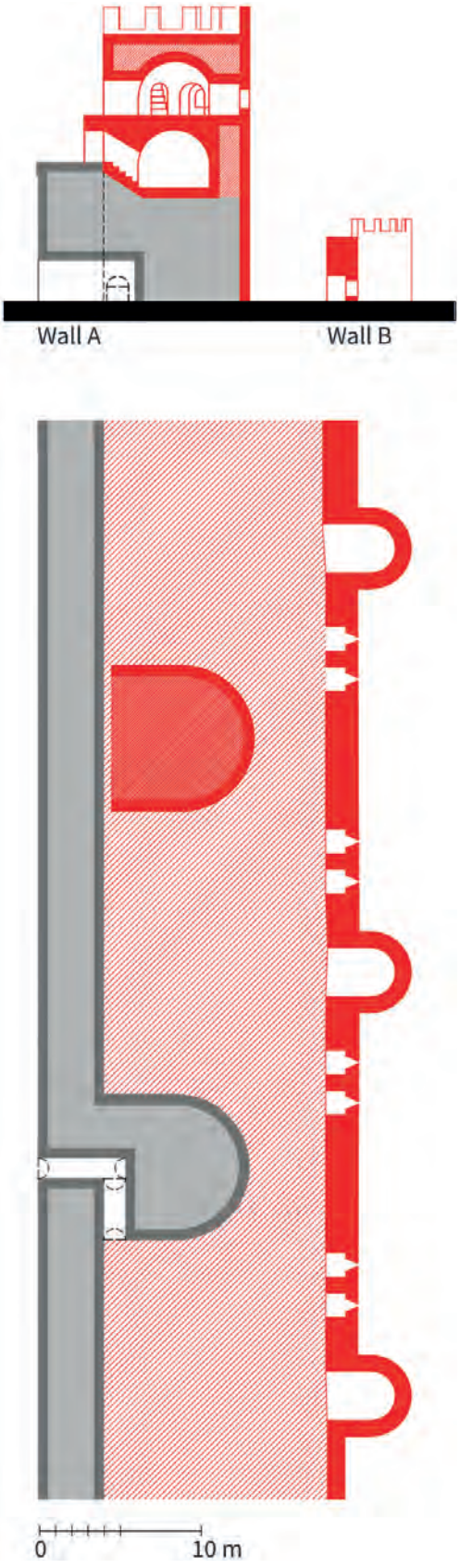


Plate 16.4: Schematic illustration of the wall after the 13th century.

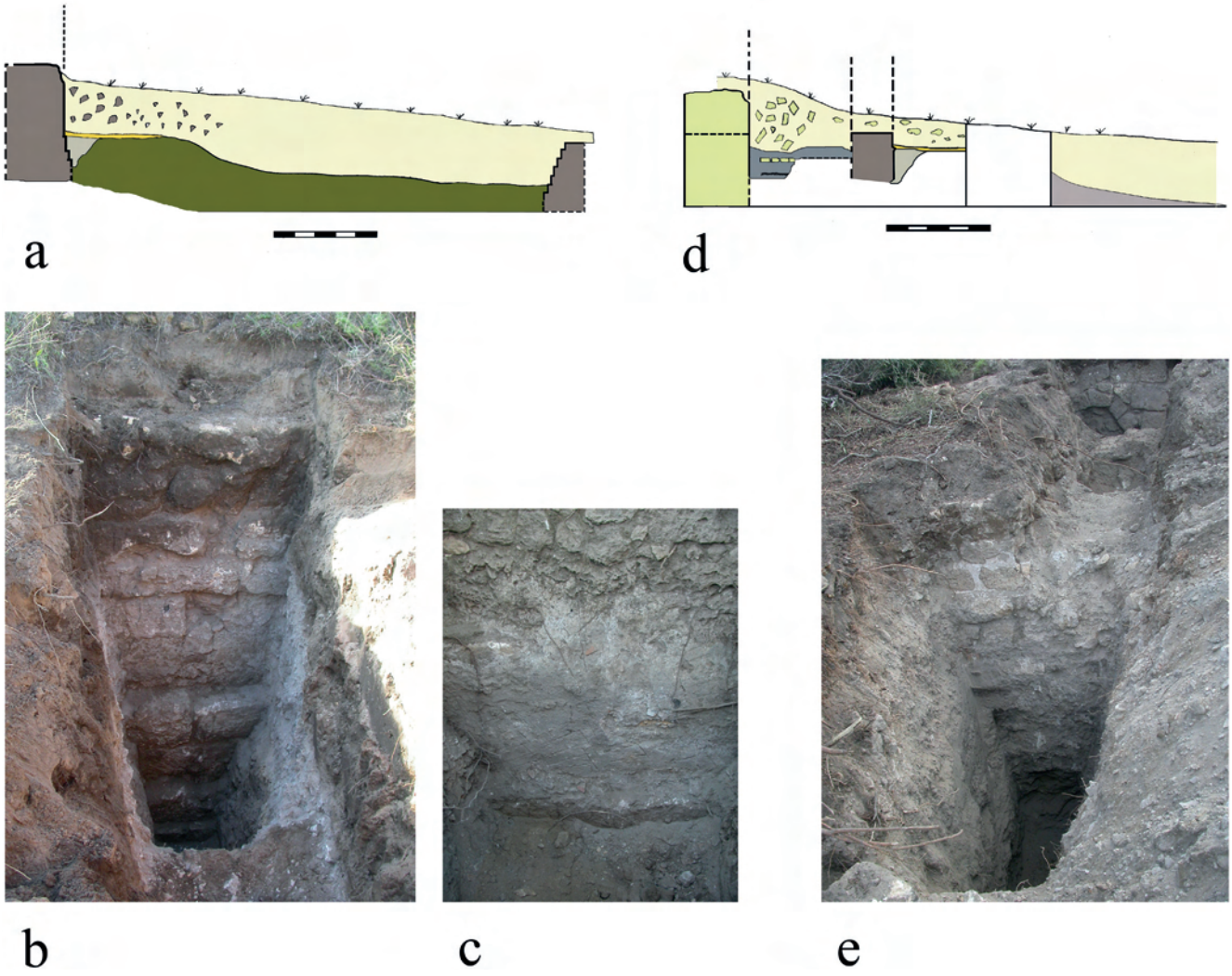


Plate 17.1: Late Antique fortifications – IAA 2005 probes, Caesarea Maritima.

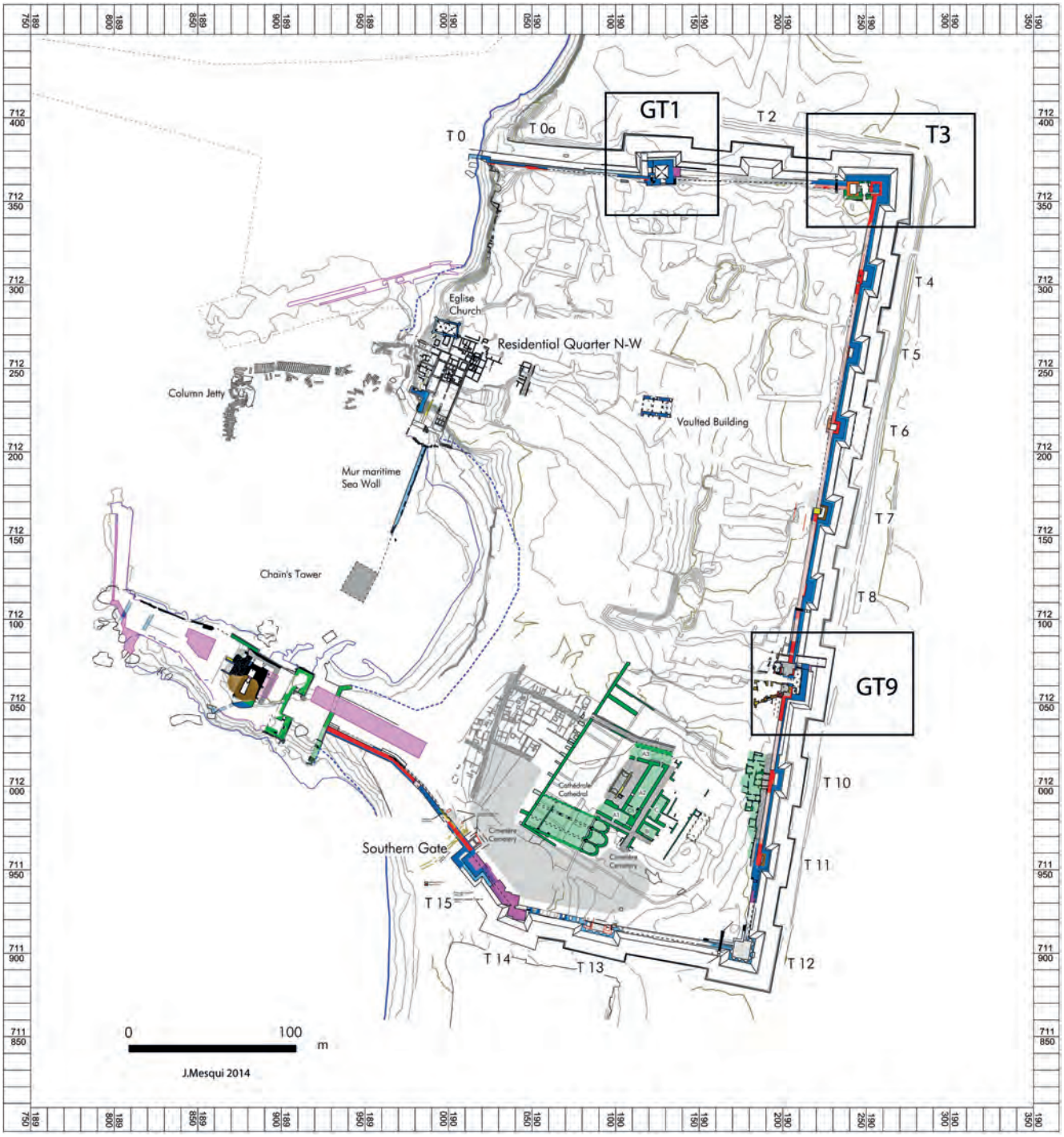


Plate 21.1: Plan of the outer fortifications of Caesarea Maritima. GT1, T3 and GT9 are indicated (after Mesqui 2014).

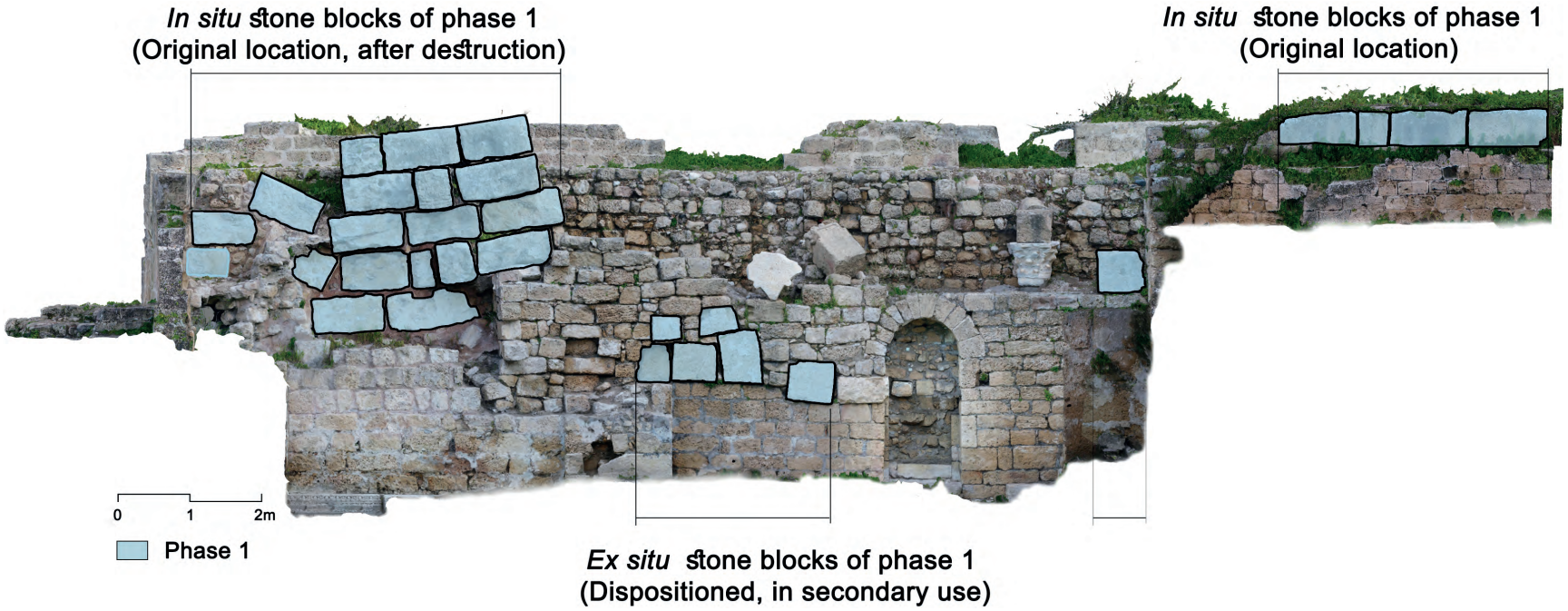


Plate 21.2: Stone blocks of phase A, the initial construction phase as seen on T3 south façade. Stretchers are considerably narrower than the blocks (David Zell, authors).

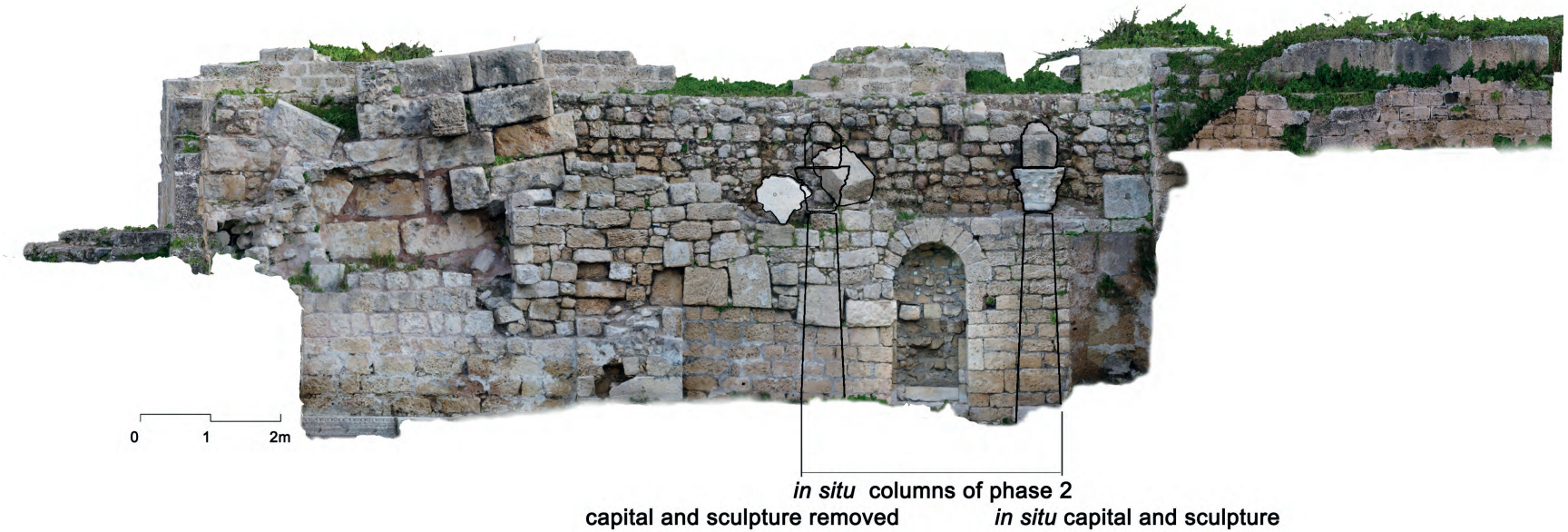


Plate 21.3: Phase B, remains of elements of phase B1 as seen on T3 south façade. Two columns embedded (now mostly hidden) in walls of phase B.

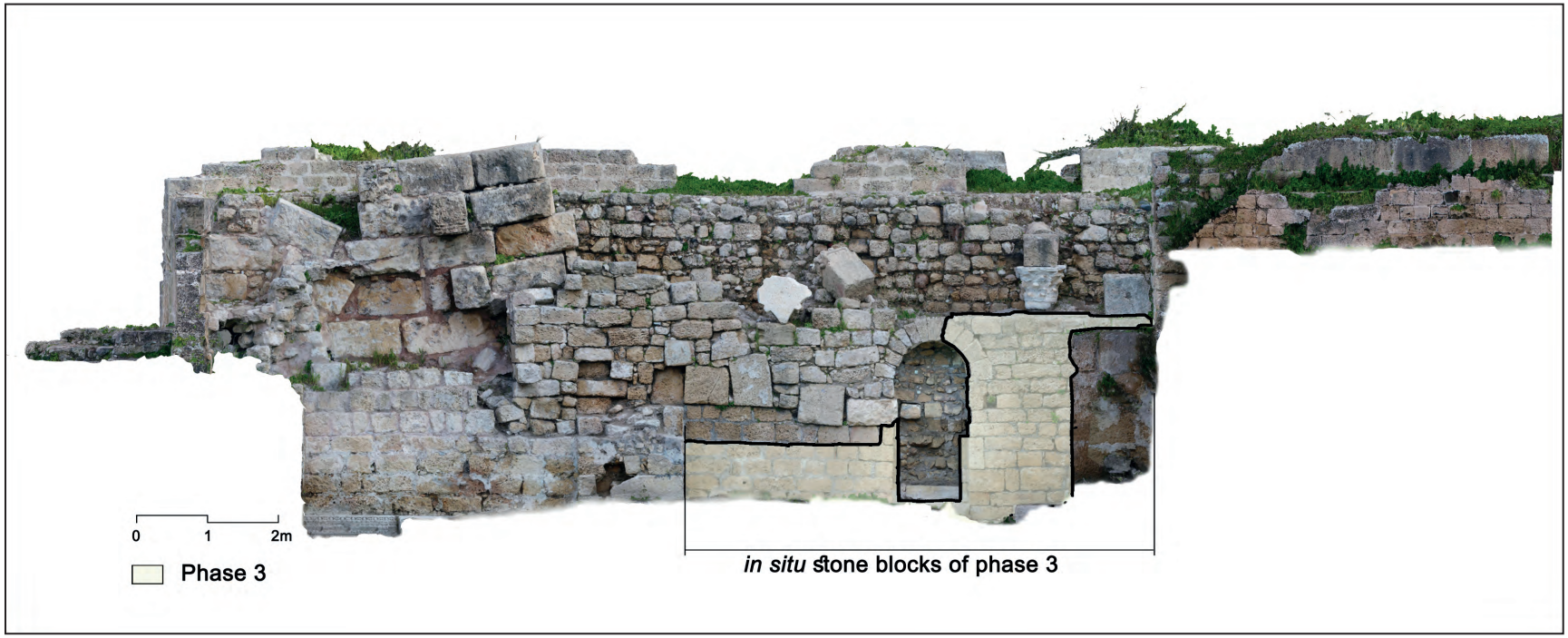


Plate 21.4: Phase B elements of phase B3 – the wall enclosing the space between the two structures.

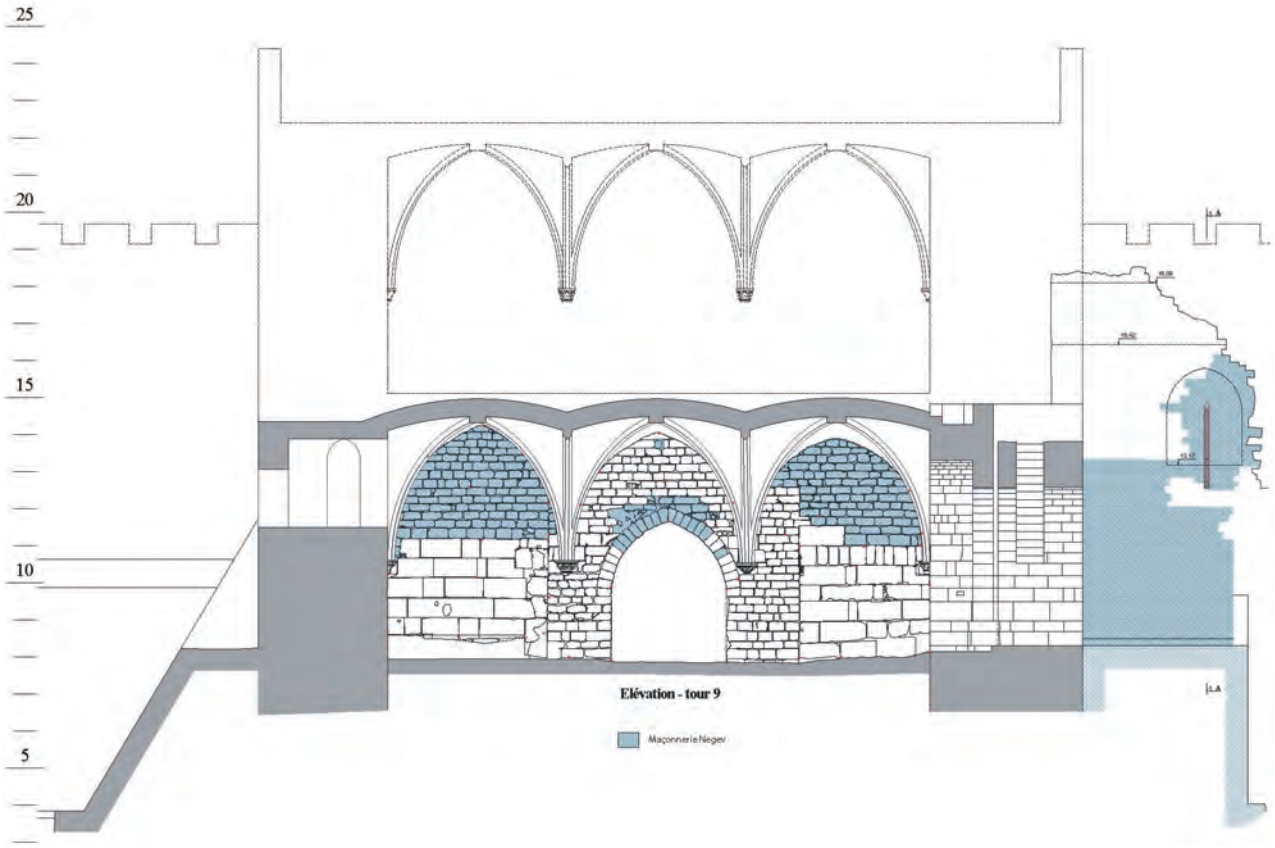


Plate 21.5: West inner façade of GT9. In light blue the first Frankish phase. Section after Mesqui 2014, ill. 509.

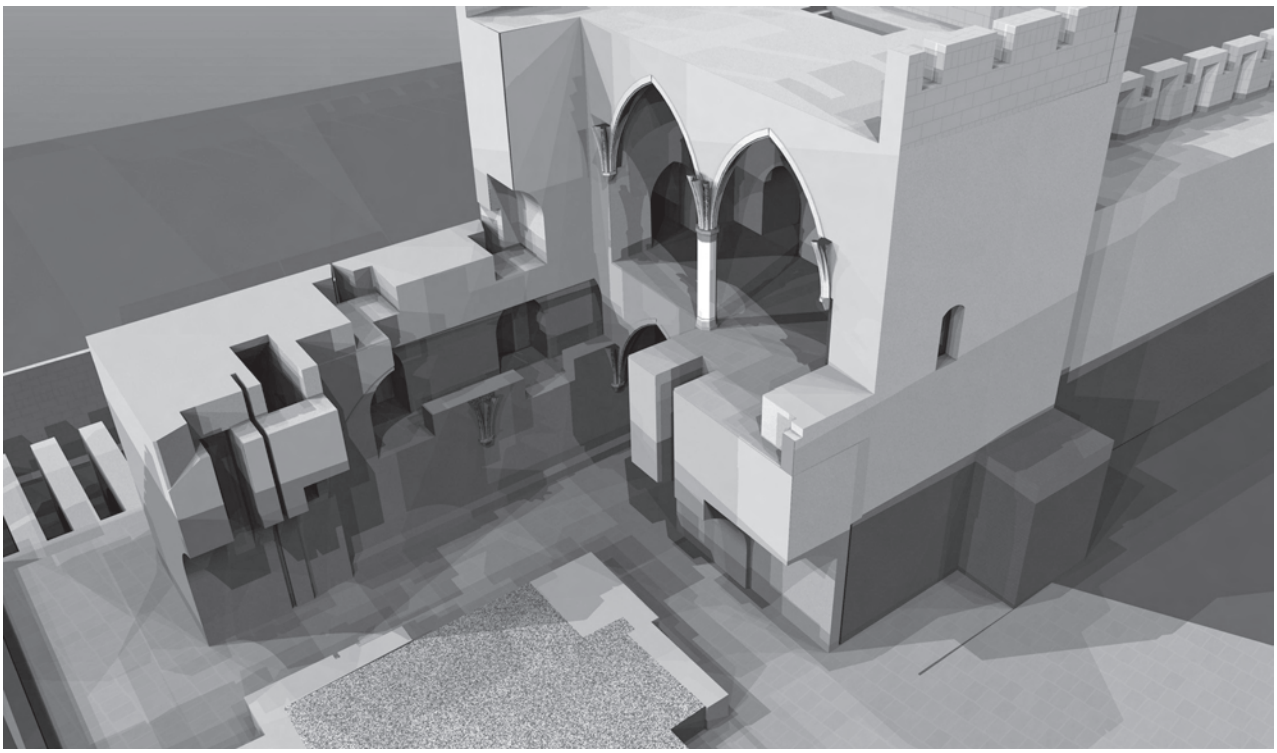


Plate 21.6: Reconstruction of GT9 upper level. The octagonal pier is placed on the west wall of GT9, enabling an increase in floor area of the upper floor.

Plate 22.1: Approach routes of the armies and the site of the battlefield according to A. Nadolski et al. and S. Ekdahl. Map in 'Welt online' for essay by B. Seewald of 09.07.2018.

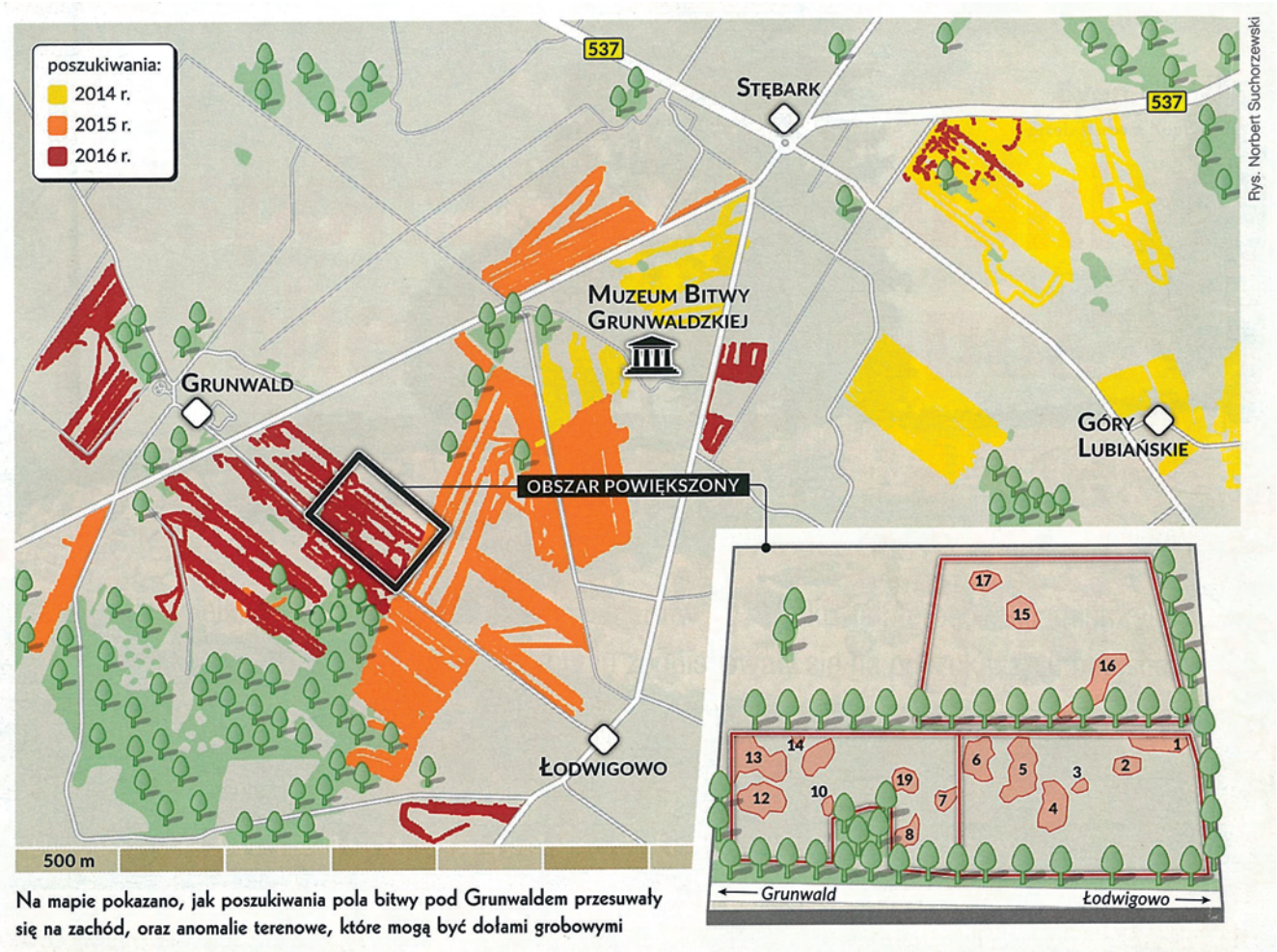


Plate 22.2: Anomalies (pits) found by the Lithuanian GPR team between Grunwald and Łodwigowo 2016. Map by Norbert Suchorzewski for essay by S. Ekdahl in Mówią wieki 2017, 7.

Plate 22.3: Exhibition in the Grunwald Museum of some finds from the survey 2017 (photo K. Kåsastul 2017).

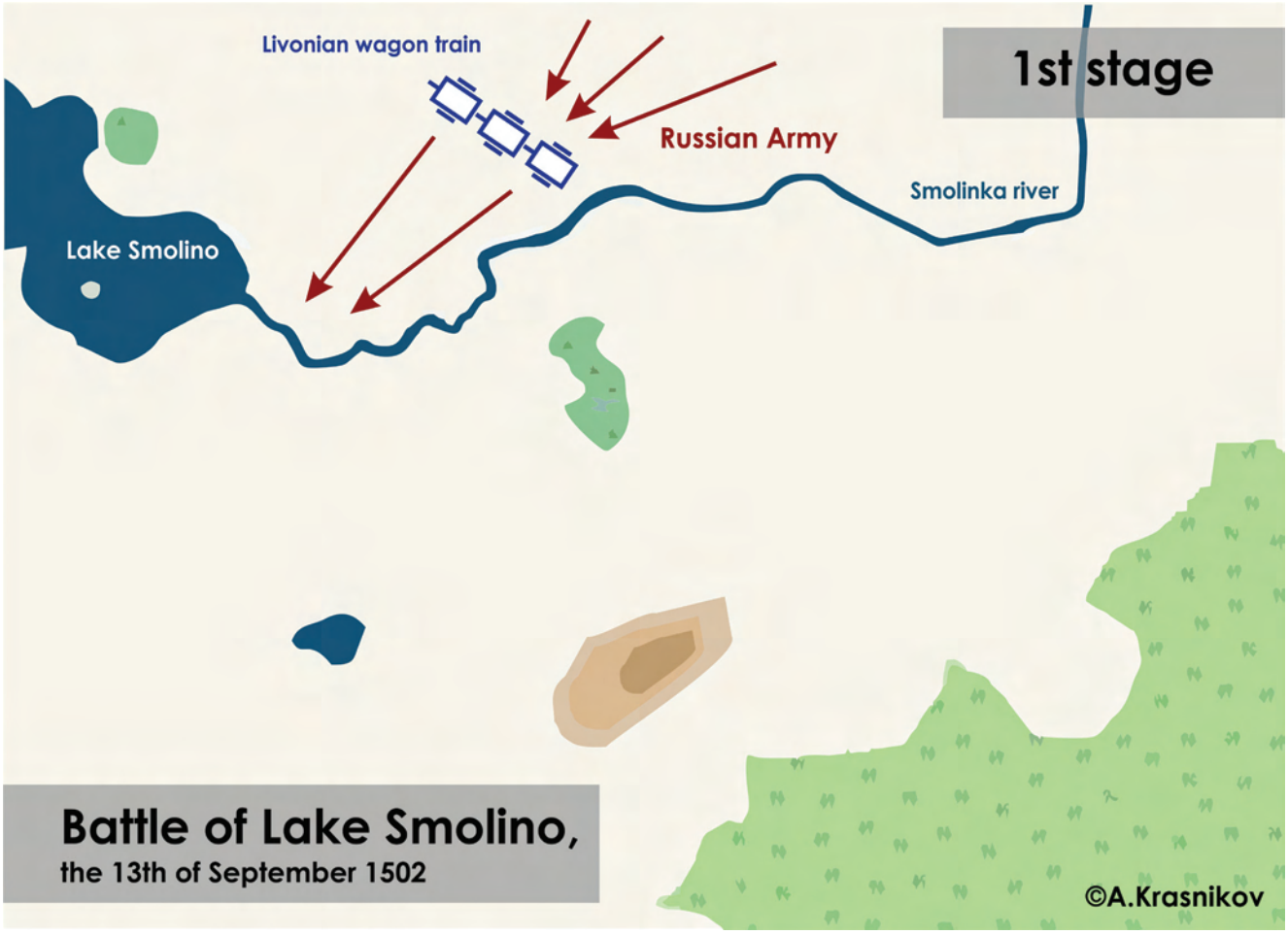


Plate 23.1: Battle of Lake Smolino, 1st stage.

Plate 23.2: Heavy Livonian cavalry.

Plate 23.3: German Mercenaries-Landsknechte.

Plate 23.4: Russian cavalry.

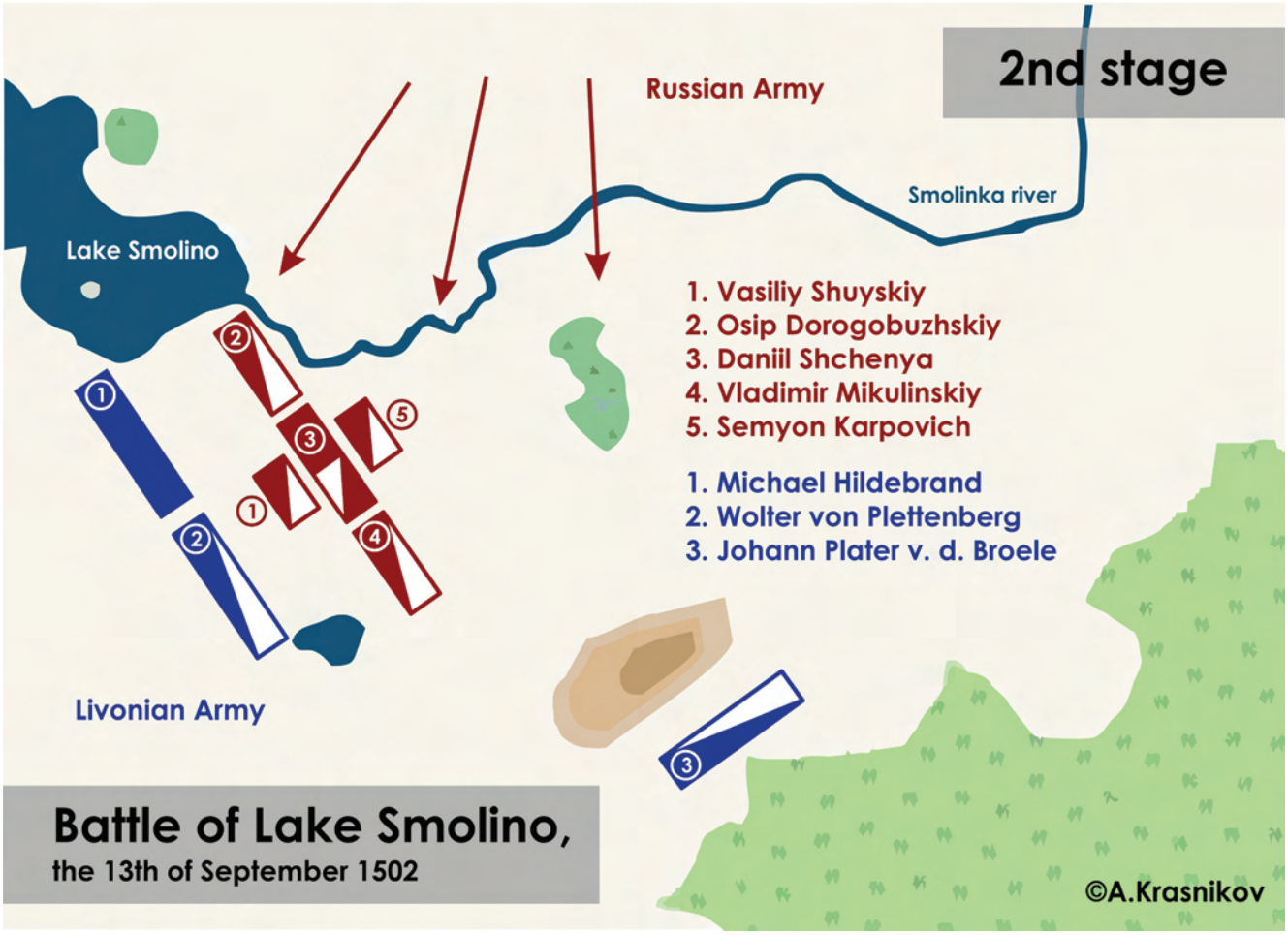


Plate 23.5: Battle of Lake Smolino, 2nd stage.

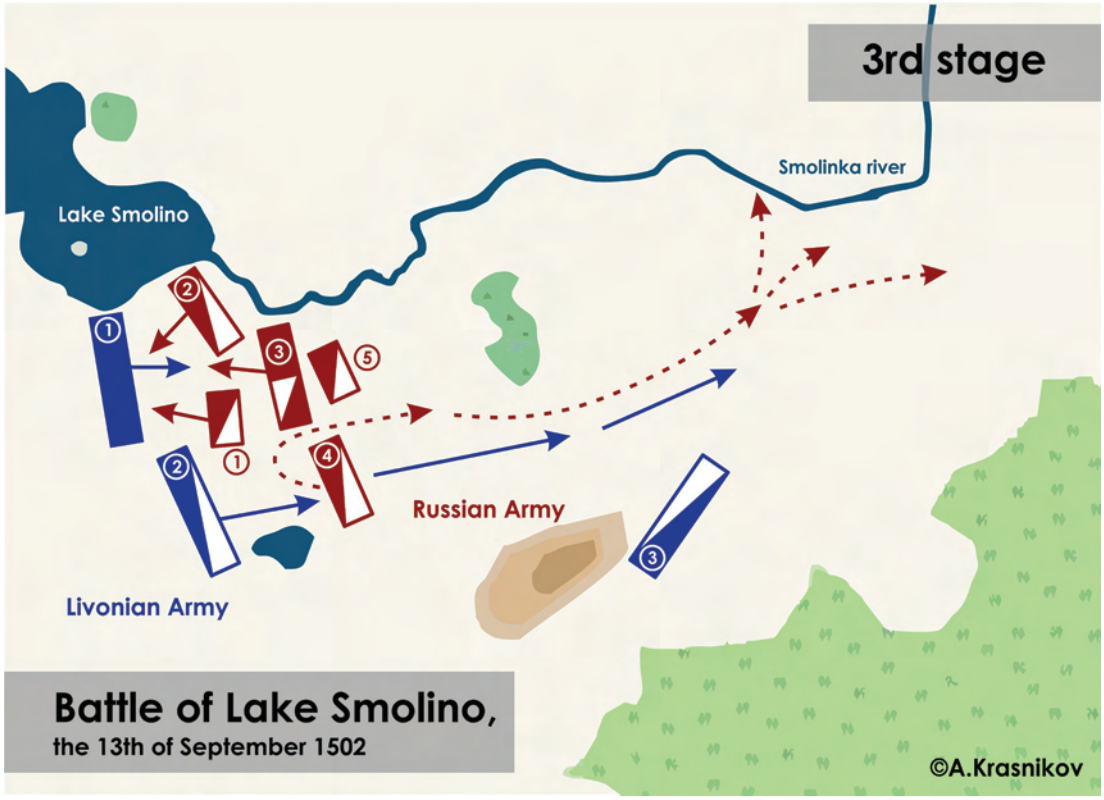


Plate 23.6: Battle of Lake Smolino, 3rd stage.

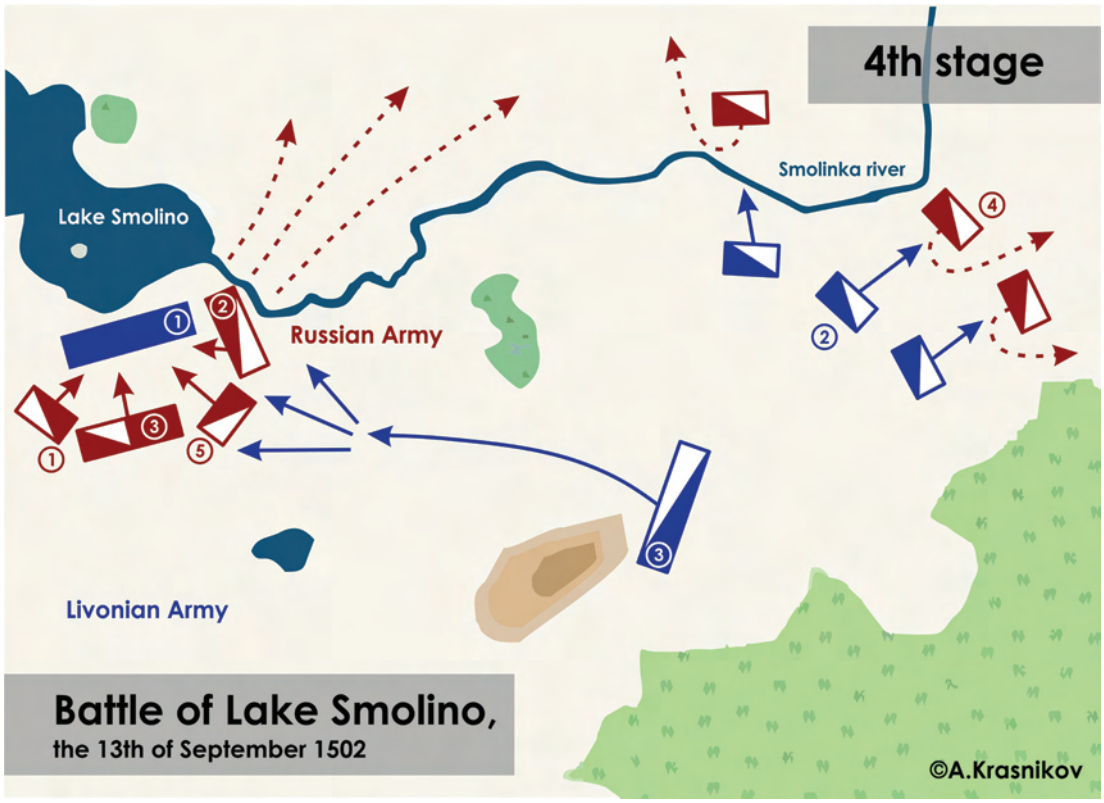


Plate 23.7: Battle of Lake Smolino, 4th stage.

12

The Starting Point of the Imperial Roads in Aelia Capitolina

Shlomit Weksler-Bdolah and Danit Levi

Introduction[1]

Six Imperial roads were paved in the Roman period, leading to and from Aelia Capitolina: north, to Neapolis (Nablus); east to Jericho; south to Hebron; south-west to Eleutheropolis (Beit Guvrin); west to Diospolis (Lod) via Emmaus; and north-west to Diospolis (Lod) via Beth Horon (Fig. 12.1).[2] Thirteen milestones discovered along their routes record Aelia Capitolina as their 'Starting Point' and the site of the initial point for measuring distances along these roads, and this is the focus of this short note.[3] Evidence from Caesarea, Scythopolis and Eleutheropolis indicate that there was a junction of several Imperial roads within these cities. The evidence seems to imply that public monuments within the cities, such as the *tetrapylon* in the case of Caesarea, provided the initial points for measuring distances along the roads (Roll 1983, 152). 'If this is the case', Roll added, 'the pillar appearing on the Madaba map within the city of Jerusalem may not be so enigmatic'. The pillar, as is well known, stood inside Damascus Gate, the northern city gate, and not in the centre of town. Avi-Yonah discussed the representation of Jerusalem in the Madaba mosaic (1953, 147; 1954, 52). He suggested that the column that stands in the centre of the oval square inside the northern gate was undoubtedly erected in honour of some pre-Constantian emperor and was crowned by his statue, as is known from several such columns at Constantinople. Moreover, it provided the initial point for measuring distances along the roads of Roman Jerusalem (Avi-Yonah 1953, 147). Following his suggestion, many scholars have identified the column inside Damascus Gate as the starting point of the Imperial roads in Jerusalem.

S. Gibson, however, measured the distance between Damascus Gate and the findspots of milestones marking the 3rd, 4th and 5th mile along the northern road leading from Jerusalem to Neapolis (Shekhem, Nablus), and suggested that the starting point was located further south from Damascus Gate – at the crossroads of the cardo and the decumanus streets inside the city, and not at the abovementioned column (Gibson 1995, 239). A different suggestion was offered by Reich and Billig, who found a second Flavian Milestone in their excavations near the Robinson Arch, near the south-west corner of the Temple Mount (the first Flavian milestone was discovered nearby, in excavations conducted by B. Mazar). They suggested that the starting point was located at the headquarters of the camp of the Tenth Roman Legion (Reich and Billig 2003, 246). They did not specify the location of this headquarters.

As is well known, the remains of the camp of the Tenth Legion in Jerusalem have not yet been identified with certainty. Nevertheless, most researchers (first author included) rely on the testimony of Flavius Josephus and the topography of Jerusalem, and propose identifying the camp in the area of the south-western hill – the Upper City of the Second Temple period (see Wilson 1905; Vincent and Abel 1914, planche 1; Geva 1984; Tsafrir 1999, 124–135, and references there; Weksler-Bdolah 2014; 2020, 19–42). Around 130 CE, The Hadrianic city of Aelia Capitolina, was founded adjacent to the camp, north and east of its borders. In the opinion of many, the Old City of Jerusalem, with its main thoroughfares, preserves, more or less, the layout of Aelia Capitolina and the military camp within it. Plate 12.1 presents the first author's reconstruction of the layout of the city of Aelia Capitolina and the camp of the Tenth Roman legion in the 2nd and 3rd centuries. The reconstruction is mainly based on archaeological finds, and on the layout of the Old City (for details see Weksler-Bdolah 2017a, b; 2020, 60–130).

Below, we shall propose identifying the 'starting point' in a site that functioned as the meeting place of the legionary

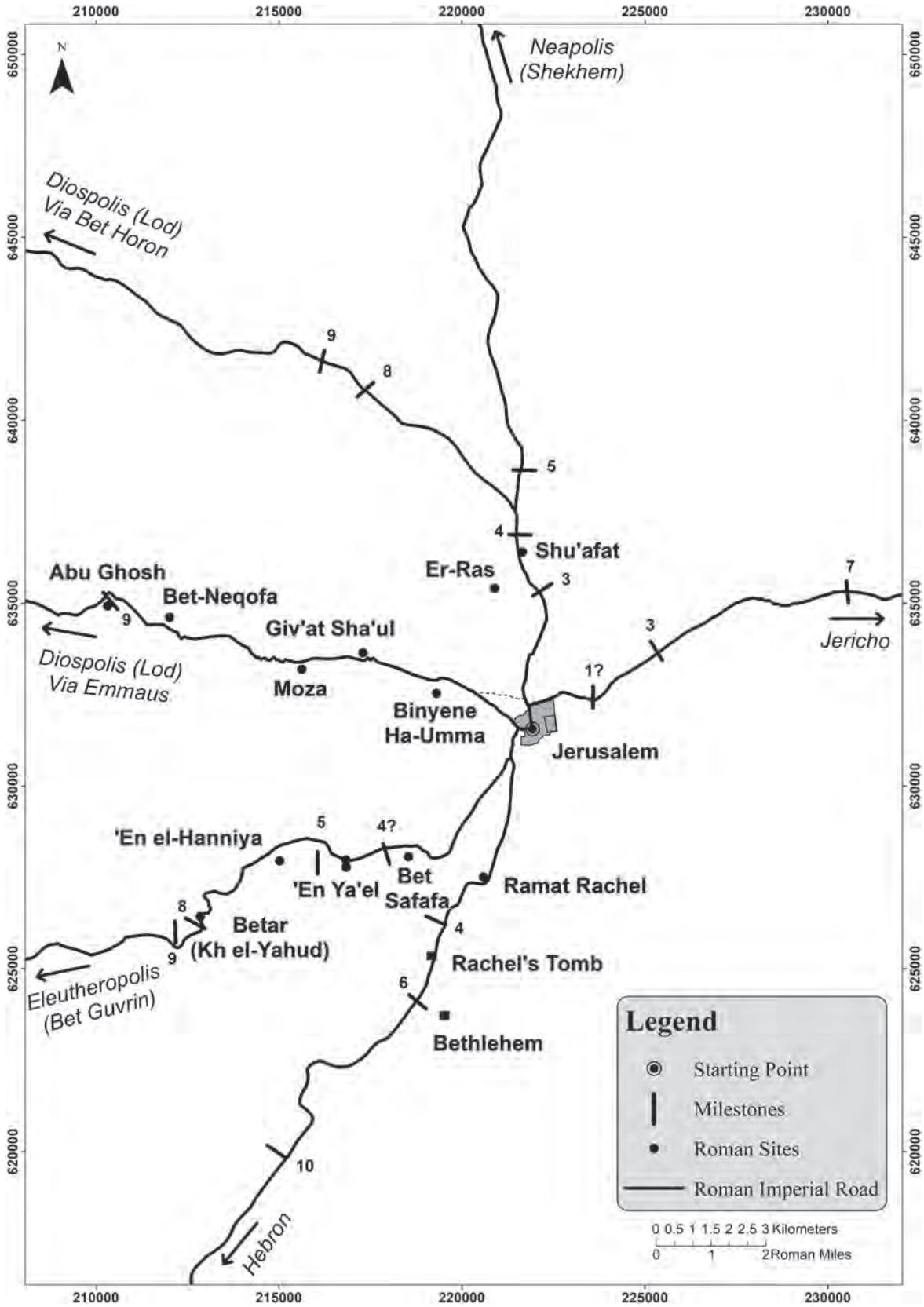


Fig. 12.1: Plan of the Imperial roads leading to Aelia Capitolina. Prepared by Danit Levi. Courtesy of the Israel Antiquities Authority. After Weksler-Bdolah 2020, 173.

Fig. 12.2: Café Bashourah hall, looking south, photographed by Shlomit Weksler-Bdolah, 2017.

camp and the city of Aelia Capitolina – that is, the northern gate of the military camp, which connected the *via principalis* – the main longitude road of the camp (Wilson 1905) with the *cardo maximus*, the main longitude road of the city (Vincent 1912, pl. 1). A possible site that we would suggest is worth considering is 'Café Bashourah', a square, café hall building (8 × 8 m) located in the centre of the Old City of Jerusalem today, near the intersection of David–the Chain Streets with Chabad–Jewish Quarter (HaYehudim) Streets. In the centre of the café's hall are four monolithic columns arranged in a square (4.5 × 4.5 m, Fig. 12.2) and it has been proposed in the past that they are the remnants of a monument, presumably a *tetrapylon*, that once adorned the intersection of the Roman city's main streets (Germer-Durand 1892; Tsafrir 1999, plan of Jerusalem in the 4th century). Alternatively, this monument possibly marked the 'Starting Point' of the roads leading to and from the military camp and the city of Aelia Capitolina (Weksler-Bdolah 2018; 2020, 28).

Interestingly, the café hall is located a few metres to the north-north-east of an arch (3.2 m wide, 4.5 m high), which is possibly part of a gate structure, that was incorporated in a wall, running from east to west (Wilson and Warren 1871, 274–286; Warren and Conder 1884, 234–235). Warren identified the gate as the Second Temple-period Gennath Gate mentioned by Josephus (Jos. *BJ* 5.145), but most researchers believe that the gate post-dates the Second Temple period and estimate the time of its construction as being Roman or Byzantine. Vincent assumed that it was a tower gate in the northern wall of the Tenth Legion camp at the time when the camp extended over the whole summit of the south-western hill, in 70–130 CE. He considered the structure of the gate and the Café Bashourah hall as belonging to one compound (25 × 15 m), which he named, in short, the Gate of Bashourah (Vincent and Abel 1914–1926, pl. 1; Vincent and Steve 1954, 54–56, fig. 17). Wilson, too, placed the northern gate of the reconstructed Tenth Legion's camp in this exact spot (Wilson 1905, 140), although the current arch was no earlier than the 5th or 6th century CE in his opinion (Wilson 1906, 136–137).[4]

In our opinion, as mentioned above, it is quite possible that the so called *tetrapylon*, in Café Bashourah, was indeed constructed from the outset in front of the camp's northern gate, marking the 'Starting Point' of the Imperial roads. However, the establishment of Aelia Capitolina adjacent to the military camp meant that the starting point was now situated in the centre of the city, the intersection point of the city's main thoroughfares.

Our suggestion to identify Café Bashourah as the starting point relies on archaeological finds that will be described in short below. In addition to the above-mentioned Flavian milestones, we rely on recent archaeological finds, which attest to the paving of roads in the area of Jerusalem, soon after 70 CE. The starting point of these roads was naturally associated with the military camp of the Tenth Legion, and not with the city of Aelia Capitolina that had not yet been founded at that time. Another reason for the identification of Café Bashurah as the starting point relies on the irregular layout of the main streets of the Old City, which intersect at this point. Distances that were measured between the point in question and milestones discovered along the routes of the Imperial roads in the vicinity of Jerusalem also support the proposal.

The Archaeological Remains

Paving of Roads in the Area of Jerusalem, Soon After 70 CE

Of the archaeological finds worth noting are two inscribed Flavian milestones that were found near the south-west corner of the Temple Mount and dated 72–79 CE. Both were reused in Early Islamic buildings and their original location is not known. One of the milestones was broken, and only part of its shaft remained (Gichon and Isaac 1974; Isaac 1999, 168–169), the other is almost wholly preserved (Reich and Billig 2003). Both stones carry an almost identical inscription that mentions the Flavian emperors Vespasian and Titus. In both inscriptions the name of the dedicator, a probable legate of the Tenth Legion, was intentionally erased, but the name of the legion (LEG X FR) is preserved. The inscription (on the better-preserved stone) ends with the sign I, representing the first mile away from the starting point in Jerusalem. The milestones indicate an Imperial involvement in the construction (or reconstruction) of roads in the area of Jerusalem as early as the 70s of the 1st century. It can be assumed that the work was done under the supervision of the Tenth Roman legion that at that time camped in Jerusalem.

In addition to the Flavian milestones that were set along an unknown Imperial road, another urban road was laid at the same time, on top of a viaduct. This viaduct, known as the 'Great Causeway', or the 'Giant Viaduct', was first described in the late 19th century (Wilson 1865, 28–29, pl. XII; 1880; Warren and Conder 1884, 193–209), and was recently partly excavated (Onn, Weksler-Bdolah and Bar-Nathan 2011; Onn and Weksler-Bdolah 2017). An analysis of the findings revealed it was constructed in two major phases, both postdating 70 CE. In the earlier phase, dated *c*. 70–130 CE, that is possibly before the foundation of Aelia Capitolina, a narrow arched bridge was constructed across the Tyropeon valley. It probably connected the south-western hill of Jerusalem – where the Tenth Legion presumably camped, with the then ruined, but nevertheless strategically important, site of the Temple Mount. Sometime later, in the days of Hadrian, or slightly later, the modest bridge was widened with another set of arches, and a wider street was paved on top of it. Flagstones of this street were unearthed in archaeological excavations along the Street of the Chain (Abu Ria 1991; Gershuni 1991; Kogan-Zehavi 1995), and the Roman street has been identified by many as a *decumanus* of Aelia Capitolina (Tsafrir 1999, 146; Kloner 2006).

Another road that may have existed prior to 130 CE is the northern road – leading to Neapolis. A second part of a monumental inscription, commissioned by the Legio X Fretensis to welcome Emperor Hadrian during his well-known visit to Judaea in 130 CE, was recently exposed *c*. 400 m north of Damascus Gate (Avner *et al.* 2014). The first part of the same inscription was exposed a century earlier, in the same area, by Clermont Ganneau (Cotton *et al.* 2012, 715). The inscription was probably set on a monumental arch, or some other monument that was erected along the Aelia Capitolina to Neapolis road, welcoming the emperor on his entrance to Jerusalem. The inscription provides indirect evidence for the existence of the Jerusalem–Neapolis road prior to 130 CE.

Interestingly, a fragment of a possible milestone attributed to the third mile along the same road has been described in the literature in the past, by Thomsen (1917, 75, nos. 263a, 263a1). The fragment carries two inscriptions: one with the name of Emperor Nerva (96–98 CE), and the other with that of Emperor Trajan (probably before 111 CE). If this stone was indeed a milestone (a suggestion that cannot be verified, as the stone has disappeared), it, too, supports the existence of the northern road by then.

The starting point of these roads was naturally associated with the military camp of the Tenth Legion, which was stationed in Jerusalem at that time. Apparently, legionnaires prepared access roads to the camp immediately after the camp had been established in 70 CE, either by the renewal of former roads that were partly destroyed during the First Jewish Revolt, or by paving new roads whose starting point at that time was the camp of the Tenth Roman Legion.

Intersection of the city's main thoroughfares

The intersection of the Old City's main thoroughfares is located near the current site of Café Bashourah, at the centre of the Old City. An examination of the intersecting roads shows that both routes, the north–south street, and the east–west route (commonly identified as the cardo and decumanus of Roman Jerusalem), are not aligned on straight, perpendicular axes, but rather have small deviations at the point of their intersection. What follows is a brief description of the archaeological remains revealed along the routes of the main thoroughfares.

Beit HaBad/Khan e-Zeit Street follows a straight line from the area of Damascus Gate in the north for about 400 m to the south and then splits into three parallel alleys, which continue south for another 150 m, until they reach the intersection with David Street. Beneath these streets, the Western Cardo of the Roman city extends along their entire length (*c*. 550 m). The ancient street led in a direct line from the plaza inside the northern city gate to the south, probably reaching the north gate of the Tenth Legion's garrison (Fig. 12.2). Sections of ancient stone paving made of large limestone slabs set over a rock-hewn drainage channel were discovered in 1947 along the entire length of Beit HaBad/Khan e-Zeit Street at a depth of 1–1.2 m beneath the current street level (Johns 1948, 94; Weksler-Bdolah 2018, 214, figs 2, 3; 2020, 67, figs 28, 29).

South of the intersection with David Street, two parallel streets now continue in a slightly south-western direction: the Jewish Quarter (HaYehudim) Street and the Chabad Street. Excavations directed by N. Avigad in the 1970s between these two streets uncovered a 180 m stretch containing paved sections of a colonnaded street that was identified as the southern section of the Western Cardo (Gutfeld 2012, 13–100). The excavation finds showed that this section was paved no earlier than Justinian's reign, in the 6th century CE (Byzantine period). O. Gutfeld, who examined the finds, suggested that a narrow 5th-century street preceding the Byzantine cardo could be reconstructed along this axis.

In the past, scholars have remarked on the slightly different alignment of the northern part of the Western Cardo and the southern part. R. Reich proposed attributing this difference to a chronological gap between the northern part of the street, which was Roman, and the later southern Byzantine extension (Reich 1987, 164–167). In the opinion of Y. Tsafrir, the entire length of the Western Cardo was laid at the time of Aelia Capitolina and the slight deviation in its course is due to the fact that the northern part lies on an absolute north–south axis, while the southern part was aligned with the eastern wall of the Tenth Legion's camp

(Tsafrir 1999, 133–134, 145). According to Weksler-Bdolah (2018), the deviation indicates a join between two original Roman-period streets with different alignments: the Roman cardo, which ran directly southward from the plaza inside the northern city gate to a plaza that probably existed in front of the garrison's north gate, and the 'via principalis' that crossed the military camp from south to north and led to the north gate (Fig. 12.2). The slight deviation from the strictly orthogonal grid probably resulted from topographical adaptations.

The remains exposed along David Street and the Street of the Chain are generally accepted as belonging to the decumanus street, which led from the Roman city's western gate down the Transversal Valley to the Temple Mount in the east (Tsafrir 1999, 146; Kloner 2006). Here, too, there is a slight deviation in the axes of the eastern and western parts of the street.

A small paved section was recently exposed near the western end of David Street (Sion and Puni 2011). The street was dated to the 6th century CE (Byzantine period) and the excavators propose identifying it with the city's main lateral thoroughfare (the decumanus) shown on the Madaba map. It is reasonable to assume that this was also the route of a Roman street, from the time of Aelia Capitolina, that led to the western city gate.

Excavations conducted along the eastern section of the Street of the Chain in the early 1990s exposed paved sections of an earlier street (Abu-Riya 1991; Gershuni 1991; Kogan-Zehavi 1995. For summary, see Geva 2008, 1813). This street, identified by many as the decumanus of Aelia Capitolina, was aligned on a slight diagonal (south-west–north-east) and continued as far as the Temple Mount. The street was laid on top of the arches of the Great Causeway, a bridge that possibly connected the military camp of the Tenth Legion with the Temple Mount, as described above.

As noted, the intersecting roads in the centre of the Old City today have small deviations at the point of their intersection. It is suggested that this irregular layout is related to their history – that is, to their development as four separate roads, leading from the military camp to the north, east, south and west, in general. The so-called *tetrapylon* in the crossroads was probably located in a small square, in front of the camp gate, from which the roads were winding in different directions. The square, and the monument in its centre, probably compensated for the irregularity along the routes, stemming from topographical and other constraints.

Measurement of Distances along the Imperial Roads

In order to validate our suggestion, we have tried to locate the milestones that their findspots were documented in the past along the roads that radiate from Jerusalem (Fig. 12.1, Table 12.1): Milestones 3, 4, 5 along the northern Jerusalem–Neapolis Road;[5] Milestones 8, 9 along the north-western Jerusalem–Diospolis (via Beth-Ḥoron) road; Milestone 9 along the western Jerusalem–Diospolis (via Emmaus) road; Milestones 4, 5, 8, 9 along the south-western Jerusalem–Eleutheropolis road; Milestones 4, 6 along the southern Jerusalem–Hebron road; and Milestones 3, 7 along the eastern Jerusalem–Jericho road. In mapping the routes of the roads (Fig. 12.1) we relied on a digitation of the roads marked as 'Roman Road', or 'Ancient Road', in the *Map of Western Palestine*, published by the Palestine Exploration Fund (Conder and Kitchener 1880, sheets XVII and XVIII). The digitation was prepared by Leticia Barda of the Israel Antiquities Authority's Excavations and Survey Unit. Of the several routes that were marked around Jerusalem, we highlighted the routes along which most of the milestones were discovered, marking them as the Imperial roads.[6] An exception is the road from Jerusalem to Eleutheropolis (Beit Guvrin), which we marked along the route passing through the Nahal Refaim channel, leading to Beitar. This axis was marked by the PEF's surveyors, but not identified an 'Ancient Road'. However, as several milestones were found along this route, we marked it as the Imperial route (Fig. 12.1, south-western road).

The findspots of milestones in a 10-mile radius around the city were marked on the plan.[7] Distances along the roads were then measured between the findspots of each milestone and the point where all the roads converged (the proposed 'starting point'), using the *ArcGIS* Desktop software.[8] The distance that was measured was then divided into 1482 or 1575 m (the length of the mile used in Palestine), and compared with the number of miles marked on the specific milestone. We also added a calculation of a mean length, where 1 Roman mile = 1500 m (Table 12.1).

It should be emphasized that the results of our examination lack absolute accuracy – a result of a number of methodological difficulties. First, measurements should be made on a road segment that is completely preserved, between two milestones that are located in situ (Roll 1983, 152) – but these conditions do not exist in the case of Jerusalem. Most of the milestones were not found in situ, and the preserved sections of the roads are comparatively small. Another difficulty relates to inaccuracies in the measurements of the roads by the PEF surveyors from the outset, and deviations which arise in anchoring the PEF maps by turning them into a digital file (on which the digitization of roads is based). Yet another difficulty relates to the accuracy of the coordinates of the milestones, as reported in the professional literature since the 19th century. Since all the measurements, until about 20 years ago, were made on paper maps, with varying precision (and not with the Global Positioning System (*GPS*)), the deviation sometimes reaches dozens of metres or even more. Another difficulty arises from the fact that the length of the mile that was used in Roman Palestine is not known

Table 12.1: Milestones discovered along the routes of Roman roads leading to and from Jerusalem/Aelia Capitolina (after Weksler-Bdolah 2020, 174–177).

Road, Destination	*Number of milestones, or site discovered*	*Distance of milestones from Starting Point (Roman miles)*	*Location (New Israel Grid)*	*Date*	*Distance from Café Bashourah/Centre of City (calculated: 1 Roman mile = mean length of 1500 m)*	*References*
North: Neapolis	2 stones (possibly milestones)	3	(1) 222150/635350 (2) close to Shu'fat	(1) Nerva (96–98 CE) (2) Trajan (prob. 111 CE)	2.7 RM (3995 m)	(1) Finn 1868, 86. (2) Vincent 1901; Thomsen 1917, 75, nos. 263a, 263a1; Gibson 1995, 240
	Non-epigraphic milestone	4	221600/636900		3.8 RM (5763 m)	Vincent 1901, 98; Thomsen 1917, 75, no. 262; Avi-Yonah 1954, 60, no. 54; Gibson 1995, 239–240. Madaba mosaic map: staging-post, *mutation* (*To Tetarton*)
	1 milestone	5	221800/638600	162 CE Marcus Aurelius	5 RM (7507 m)	Clermont-Ganneau 1898 (I), 280–284; Thomsen 1917, 74–75, no. 261; Gibson 1995, 240.
North-west: Diospolis via Beth-Horon	2 milestones	8	217400/640900		7.9 RM (11841 m)	Dalaman 1912, 18.
		9	216150/641700		8.9 RM (13376 m)	Kh. El-Latatin; Seligman 2011, 308b.
West: Diospolis via Emmaus	1 milestone	9	North-east of Abu Ghosh 210300/635000	162 CE Marcus Aurelius	9 RM (13541 m)	Fischer, Isaac and Roll 1996, 293–294.
	1 milestone	12	206500/635500 205400/636000		12.5 RM (18759 m)	Fischer, Isaac and Roll 1996, 293.
South-west: Eleuthropolis	1 milestone	4	Near line of Ottoman railway		4.2 RM (6339 m)	Sejourne 1895, 269; Thomsen 1917, 80, no. 280.
	1 milestone	5	216100/627900 Under Ein Yalu		5.3 RM (7906 m)	Sejourne 1895, 269; Thomsen 1917, 80, no. 281.
	Nymphaeum Ein Hanniya		215000/627000			Saller 1946, 16; Tsafrir, Di Segni and Green 1994, 116
	1 milestone	8	212700/626200 Area of Bethar	130 CE Hadrian	8.9 RM (13357 m)	Germer-Durand 1894; Thomsen 1917, 80, no. 282; Isaac 1988b, 49.
	3 milestones	9	212165/626278	213 CE Caracalla	9.5 RM (14286 m)	Alt 1927, 10: Stiebel *et al.* 2017, 67–69, 72, footnote 2.

(Continued)

Table 12.1: (Continued)

Road, Destination	*Number of milestones, or site discovered*	*Distance of milestones from Starting Point (Roman miles)*	*Location (New Israel Grid)*	*Date*	*Distance from Café Bashourah/Centre of City (calculated: 1 Roman mile = mean length of 1500 m)*	*References*
South: Hebron	1 milestone	4	219300/626300	217 CE Makarinus	4.4 RM (6636 m)	Thomsen 1917, 82, no. 295; Deir-Tantur.
	1 milestone	6	East side of road, beyond the place where it turns left to Bethlehem and right to Bet-Jalla. Site of the Carmelite Monastery. 218799/624069	130 CE Hadrian	6 RM (8935 m)	Germer-Durand 1895, 70; Thomsen 1917, 82, no. 296.
	1 milestone	10	215000/620000		10.4 RM (15610 m)	Thomsen 1917, 82–83, no. 297, above Solomon's Pools.
East: Jericho	1 milestone	1	Near Augusta Victoria 223593/632349		1.7 RM (2532 m)	Thomsen 1917, 78, no. 277; Beauvery 1957, pl. 1.
	Monastery of Theodorus and Cyricus	2	224000/633000		2.2 RM (3292 m)	Seligman 2011b, 312; Amit, Seligman and Zilberbod 2003.
	Milestone station, 5 milestones	3	Ras ez-Zambi 225385/633660		3.2 RM (4792 m)	Thomsen 1917, 79, no. 278.
	3 milestones	7	230000/635100		7 RM (10498 m)	Ilan 1982; Ben David 2013, 210

for certain. While the length of a Roman mile was regularly 1482 m, in the eastern empire they used the Phileterian or Egyptian mile, that measures 1575 m (Roll 1983, 152).

Taking into consideration the methodological disadvantages listed above, the correlation that was found between the numbers specified on many of the milestones (I, II, III, etc.) and the actual distance that was measured along the roads is impressive. As this correlation appeared on stones from along all six roads radiating from Jerusalem in different directions, it supports, in our opinion, the suggestion that the 'starting point' of the Imperial roads should be located in the centre of the Old City. Had the starting point been located in Damascus Gate, as was previously suggested, that is, located 550 m (*c.* one third of a mile) north of the Café Bashurah site, then the distances that would be measured along the roads would have been shorter on the northern and eastern roads, and longer on the southern and south-western roads, so that the level of matching between the number of miles specified on the milestones and the real distance measured along the roads would have decreased.

To sum up, we propose identifying the starting point of Aelia Capitolina in Café Bashourah, which lies in the centre of the Old City of Jerusalem. Our proposal is based on the assumption that the initial road system that developed around Jerusalem, related to the military camp that was established in Jerusalem in 70 CE. Archaeological remains in close proximity to the site, the layout of the main streets of Aelia Capitolina around the site, and distances that were measured between the point in question and milestones that were discovered along the Imperial roads leading to Jerusalem, all support the proposal as well.

Notes

1 The following was presented, and submitted for publication at the Poliorcetics Conference, held at The Zinman Institute of Archaeology, University of Haifa in 2016. A summary of

this paper was included in Weksler-Bdolah 2020, 179–182. We would like to thank the organizers of the conference and the Israel Antiquity Authority for the invitation to contribute a paper to the book, and the permission to present the figures.

2 For the currently known data on the Roman road network around Jerusalem, and the milestones that were recorded along their routes, see Ben-David 2013 and references there.

3 Three milestones naming Aelia Capitolina as their starting point were discovered on the Neapolis road, one on the Gofna–Jericho road (a tributary of the northern road), two or three on the Hebron road, four or five on the Bet Guvrin road, and two on the road to Emmaus (Ben-David 2013, 216).

4 For a summary of other opinions see Gutfeld 2012, 23–25.

5 More milestone stations along this road, at a distance of 6, 7, 9 and 10 miles from Jerusalem, were reported along the Jerusalem–Neapolis road (Ben-David 2013, 209 and references there). We were unable to locate the exact findspots of these milestones and therefore did not include them in Table 12.1 and Figure 12.1.

6 For other, more or less similar, reconstructions of the Imperial road system around Jerusalem, see Roll 1983, 139; Tsafrir, Di Segni and Green 1994, Iudaea. Palaestina, Map of Eretz Israel during the Hellenistic, Roman and Byzantine periods; Fischer, Isaac and Roll 1996, figs 1, 11; Ben-David 2013, 208; Kloner, Klein and Zissu 2017, fig. 1; *inter alia*.

7 Along the northern road, only Milestones 3, 4 and 5, were marked.

8 By *ESRI* (Environmental Systems Research Institute).

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13

Regional Fortifications in the *Chora* of Hippos (Sussita)

Adam Pažout

Introduction

In this paper I will present some of the results of my PhD research focusing on the regional fortifications from the Hellenistic to the Byzantine period in the territory of the ancient city of Antiocheia Hippos-Sussita. The city is located on a tabletop mountain, *c*. 2 km east of the Sea of Galilee. The research region, which encompasses the *chora* of the city, is defined by the Sea of Galilee to the west, the deep gorges of the rivers Yarmouk and Ruqqad to the south and east, and by the valley of Nahal Daliyot with the site of Gamla in the north (Plate 13.1).

While the urban fortifications of the city were studied in the past (Eisenberg 2014; 2017), there exists a considerable corpus of fortified sites known from previous surveys and excavations that were not at the forefront of scholars' interest. The exception is the work of Z.U. Ma'oz, who dedicated several short studies (Ma'oz 2013; 2015) to the assumed system of Hellenistic watchtowers and early Roman forts. Nevertheless, many of his conclusions appear to need major revisions in light of new research. In particular, the notion that a specific style of masonry, the so-called MDBA (marginally drafted bossed ashlars), could be exclusively attributed to the Hellenistic period, needs to be questioned and considered in line with recent research on Greek fortifications that showed that masonry styles are not confined to a single period of use (Müth *et al.* 2016, 5).

The goal of the current research was essentially threefold: 1) to provide a description of the forms of fortifications and their spatial and temporal development in the study region from the Hellenistic to Byzantine period; 2) to provide conclusions regarding the function(s) of the fortified sites through study of their environmental setting, relation to road system and settlements; and 3) an attempt to draw the northern boundaries of the territory of Hippos-Sussita.

Methodology

Some 31 sites in the study region were identified as comprising of some fortification elements in the course of the Golan Survey,[1] with additional sites discovered and excavated in the course of a salvage excavation on behalf of the IAA (Zingboym and Bron 2017); and one further site was discovered during the course of the author's survey, bringing the total to 33 sites. H. Kanaf (no. 8) was excavated by Ma'oz (2015) as well as Height Spot 108 (Ma'oz 2013). Rujm Fik (no. 21) was excavated by Hartal (2007). The goal was to document the visible remains, identify fortification elements and draw a plan of the sites. The sites were surveyed on foot, employing mobile GIS devices with GPS receivers for storing the survey data; and drones for capturing aerial photos used for the generation of an orthophoto of the site.

The dating rests primarily on the surface finds as recorded in the database of the Golan Survey and on observation of the material made during the present survey, which of course presents itself with some methodological and interpretative limitations (*e.g.* whether the surface material represents all periods of occupation on site and how it relates to the visible structures).

The question of the function of the fortified sites was tackled using several GIS-based spatial analysis methods in what was coined a 'landscape approach' (Fachard 2016). These include:

Site location analysis; using Topographic Position Index (TPI).[2] TPI calculates the position of a site in terms of the slope position by computing the difference between cell elevation and average elevation within a specified neighbourhood on a Digital Elevation Model (DEM).[3] The values range from negative to positive – *i.e.* the cell is either located lower or higher than the average of its neighbourhood. The

resulting raster representing TPI values is then classified into six categories according to slope position where:

TPI ≤ −1.0 std (standard deviation) are valleys
−1.0 std < TPI ≤ −0.5 std are lower slopes
−0.5 < TPI ≤ 0.5 std, where the slope is ≤ 5° are flat (slopes)
−0.5 < TPI ≤ 0.5 std, where the slope is > 5° are middle slopes
0.5 < TPI ≤ 1.0 std are upper slopes
TPI > 1.0 std are ridges

Two neighbourhoods were defined, first as annulus around mid-point of the site with a dimension of 25–75 m, and the second as 300 m diameter. The goal of the analysis is to see whether there is a consistent preference for fortified sites to be located in certain topographic positions.

Cumulative focal mobility networks analysis (CFMN). This is a generalized model used to explore the connectivity and accessibility of various locations in the terrain and optimal pathways – natural corridors of movement – across all of the landscape (Déderix 2016), where all optimal movement corridors for a source point are computed (focal mobility network). These focal mobility networks are then vectorised and their density computed in a given search radius. The CFMN was computed for 51 points spread evenly across the study region in a diagonal grid with 4 km spacing, with a friction surface excluding steep slopes and streams from analysis. This model represents general movement patterns in the region. The r.walk module in QGIS and hydrological tools in ArcGIS were used (for further details see Pažout 2017). The results are used in concordance with pre-1967 topographical maps[4] for the reconstruction of the road system in the study region and its relationship to the fortified sites.

Visibility analysis; using viewshed tool in ArcGIS. Two parameters in the analysis were considered: the height of the observer (OFFSETA) and height of the observed feature (OFFSETB). The analysis is calculated for each fortified site separately. OFFSETA is set at 5 m for forts, 6 m for watchtowers below 8 × 8 m dimensions and at 8 m for larger watchtowers. OFFSETB is set at a lower value of 5 m, since it is assumed that different types of fortifications were used in each period, therefore even the observers located in higher towers must be able to see sites with lower altitudes. OFFSETB = 1 m is used in order to explore visual coverage of the landscape, road system and settlements; rather than 0 m value as 1 m OFFSETB tends to smooth small imperfections of the DEM. Finally, the radius of the analysis was set at 8 km (see *e.g.* Parker 1987, 165–181; Woolliscroft 2000). The goal is to see a) whether a signalling system could have existed between fortified sites; b) whether the sites could have had a surveillance function in relation to roads and/or settlements.

The combination of field survey and geospatial analysis will allow us to better understand not only the individual fortifications elements within the site but also the interplay between the sites, environment, road system and settlements on a regional scale.

Typology of Fortified Sites

The sites in Table 13.1 are listed in geographical order from north to south and from west to east. Out of 33 sites in the study region, eight sites did not yield any structural remains that could be identified as fortification elements (no. 4; 5; 7; 13; 14; 18; 32 and 33). One site (no. 20) could have been some sort of large public structure, but no evidence for fortification was identified. The remaining 24 sites can be divided into three broad categories according to the fortification elements found therein (cat. 1–3), with cat. 1 further divided into three subcategories (1A–1C).

Category 1 encompasses free-standing towers (Plate 13.2), 11 sites in total.

Subcategory 1A comprises three watchtowers along the line of the Roman road. Two of them (no. 6; 10) are associated with milestones and the spacing between them (*c*. 1550 m) clearly shows they were positioned at one Roman mile interval. The third site (no. 2) is located *c*. 4 miles along the road from site no. 6, supporting its identification as another watchtower. The association of the watchtowers with the Roman road clearly sets them apart from the rest of the sites and hence they form a separate category.

Subcategory 1B comprises three large towers (between 95–120 m^2; no. 8 stratum VI; 21; 23). The inner space of two of them (no. 21 and 23) is divided into rooms. The tower at site no. 23 is further strengthened by 1.1 m wide *proteichisma*. Both the walls of the tower and the *proteichisma* are built of ashlars in headers-and-stretchers with bosses and marginal drafting.

Subcategory 1C consists of six towers of smaller dimensions (between 36–73.5 m^2; no. 1; 3; 9; 12; 15; 26). The towers are either square or oblong. No internal division was observed. The building techniques varies with some towers built of roughly hewn ashlars or roughly hewn fieldstones. Masonry at no. 9, 15, and 26 appears to be laid as headers-and-stretchers; at other sites alteration is less regular.

Category 2 consists of seven sites (no. 17; 19; 27; 28; 29; 30 and 31; Plates 13.2 and 13.3). The sites comprise two principal elements: a central tower-like structure, and an outer perimeter wall (although the evidence at site no. 29 is problematic). The features of the individual sites vary and the only common layout of the two main components unites them in one category. The central structure is not always located in the geometrical centre of the site but is more often close to one side of the outer wall. In some cases (no. 28, perhaps also no. 17) other structures are attached to the central structure. Its dimensions vary from *c*. 38.5 up to 152 m^2 and it is mostly built of large roughly hewn ashlars or blocks, while the perimeter wall is built of unworked or

Table 13.1: List of sites.

No.	*Name*	*Category*	*HL*	*ER*	*LR*	*BYZ*	*Pottery from survey*	*Reference*
1	Horvat Zeiteh Southwest	1C	?	?	?	?	IA? Roman	Map 36/1; no. 55
2	Height Spot 500	1A	–	–	?	–	Roman	–
3	Nahal Sfamnun Cliff	1C	x	x	x	x	Roman; LR/BYZ	Map 36/1; no. 61
4	Rujm el-Hiri Watchtower 2	–	–	?	x	?	–	Map 36/2; no. 103
5	Rujm el-Hiri Watchtower 3	–	–	?	x	?	–	Map 36/2; no. 114
6	Roman Watchtower	1A	–	–	x	–	–	Map 36/2; no. 111
7	ʻUyun el-Hadid	–	–	–	x	–	–	Map 36/2; no. 118
8	Horvat Kanaf	1B/3	x	x	–	–	–	Map 36/1; no. 67
9	Height Spot 378	1C	x	–	–	–	–	Map 36/1, no. 69
10	el-Qusayyibe East	1A	–	–	x	x	–	Map 36/1; no. 79
11	Nahal Kanaf Fort	3	?	?	x?	?	Roman	Map 36/1; no. 75
12	Maqberat Majduliyye	1C	–	–	x	x	Roman; BYZ	Map 36/2; no. 139
13	Ramat ha-Magshimim South 2	–	–	–	x	x	LR/BYZ	Map 40/1; no. 13
14	Kursi Beach	–	–	–	–	x	–	Map 40; no. 13
15	Height Spot 108	1C	–	x	–	–	–	Map 40; no. 20
16	ʻEmeq ha-Boqrim Farm	3	–	x	x	–	Roman	Map 40; no. 28
17	Tell ʼAbu Madwwar	2	x	x	x	–	ER, LR/BYZ	Map 40; no. 39
18	ʻAin ʻUweinish	–	x	x	x	x	–	Map 40; no. 25
19	ʻAin ʻUweinish West	2	x	x	x	–	ER, LR	Map 40; no. 26
20	Rujm Zaki	–	–	x	x	x	–	Map 40; no. 54
21	Rujm Fiq	1B	–	?	x	x	–	Map 40; no. 66
22	Tal Fort	3	–	x	x	x	–	Map 40; no. 82; Eisenberg 2014
23	Nahal Ruqqad Fort	1B	x	x	–	–	–	Zingboym 2017
24	Height Spot 320	3	–	x	x	–	Roman	Map 40, no. 99
25	Zukye Kawarot	3	x	x	x	x	Roman	Map 40; no. 111
26	Height Spot 265 West	1C	–	x	x	x	–	Map 40/1; no. 45
27	Height Spot 227	2	–	–	?	x	MB, IA? LR/BYZ?	Map 44; site no. 7
28	ʻUyun ʼUmm el-ʻAzm West	2	–	x	x	x	ER, LR, BYZ	Map 44; no. 28
29	ʻUyun ʼUmm el-ʻAzm	2?	–	–	x	?	IA, LR, BYZ	Map 44; no. 27
30	A-Dan	2	x	x	–	–	HL, ER	Map 44; no. 29
31	el-Masiyye Southwest	2	–	–	x	x	IA? BYZ	Map 44; no. 57
32	Qaʻat el-Ksar	–	?	?	?	?	–	Map 44; no. 58
33	Mitzpor Negev Kinarot	–	–	x	x	–	BA? IA?	Map 44; no. 72

worked fieldstones or a combination of both. Marginally drafted and bossed ashlars were observed at sites no. 17, 28 and 31, suggesting that the central structure was built with better workmanship. The area enclosed by the perimeter wall could be established with some degree of certainty only at three sites: no. 27, over *c*. 1200 m^2; no. 30, *c*. 1790 m^2; no. 31, *c*. 1040 m^2. Evidence from the rest of the sites could suggest the enclosed area to be around 1000 m^2 on average, but the remains of the perimeter wall are often not visible or obliterated.

Category 3 consists of six sites (no. 8 stratum V; 11; 16; 22; 24; 25; Plate 13.3) representing large rectangular buildings. As in the case of the previous category, there is an apparent lack of uniformity. Stratum V at site no. 8 consists of a rectangular building (*c*. 15 × 27 m) with a central courtyard and rooms arranged on all sides around it. However, its walls are built of fieldstones. No. 11 is smaller (*c*. 15 × 22 m), built with roughly hewn ashlars and blocks and with some indication of internal division. No. 16 is trapezoidal (*c*. 34 × 40 × 35 × 24 m) but without

a clear indication of internal division. No. 22 consists of a rectangular structure (*c*. 14 × 9 m) with a probably earlier tower (5 × 5 m) attached to it in the north-western corner. No. 24 was partially excavated on behalf of IAA, and the excavations showed the corner of a large structure, built of limestone ashlars (instead of basalt as is usual in the region) set as headers-and-stretchers. The estimate of the size of the structure is *c*. 20 × 20 m but its internal arrangement is unclear. The size of *c*. 20 × 20 m is also estimated for no. 25, where some dividing walls could be observed in the western part of the site.

Spatial and Temporal Development of the Sites

Eight sites were attributed to the Hellenistic period (Table 13.1), with one site (no. 23) dated to the end of the 3rd/beginning of the 2nd century BCE. The rest is broadly dated from the 2nd to the first half of the 1st century BCE. There are two cat. 1C sites (no. 3; 9) along Ma'aleh Gamla and Kanaf spur, together with a cat. 1B tower at site no. 8. Two sites of cat. 2 are located on the southern terraces of Nahal Samakh-Nahal 'El-'Al valley (no. 17; 19). Another cat. 2 site (no. 30) is found on the plateau south of Hippos and one cat. 3 site is located on the prominent hill in the piedmont of the Golan south-west of the city (no. 25).

There is a marked increase in the number of sites (from eight to 16) in the early Roman period, with considerable continuity, when only no. 9 is abandoned. Cat. 1C site no. 1 on the Ma'aleh Gamla spur is a new construction. No. 8, after a short period of abandonment, was rebuilt on a different plan (cat. 3). The new site (no. 11; cat. 3) probably originates in this period, just south-west of no. 8. In the Nahal Samakh-Nahal 'El-'Al valley two additional sites were erected: no. 15 (cat. 1C) and 16 (cat. 3). Site no. 21 (cat. 1B) is tentatively built in this period, and it also represents one of only two sites located on the plateau east of Hippos. Site no. 23 was re-occupied in the 1st century CE. Multiple sites were built south of Hippos: no. 22 (cat. 3), several hundreds of metres south of the city; no. 24 (cat. 3) on a ridge between the of Nahal Meitzar and Nahal 'Ein Gev; no. 28 (cat. 2) on the western slopes of the plateau and no. 26 (cat. 1C) on a terrace above Ruqqad.

A total of 19 sites were attributed to the late Roman period, but the pattern changed. No. 8 was transformed into a settlement, and no. 15, 23 and 30 were abandoned. The Roman road traversing the region from north-east to west was built and at least three towers (cat. 1A) were erected along it (no. 2; 6; 10). Site no. 12 (cat. 1C) was probably erected in this period in the vicinity of the settlement of Majduliyya. A further three sites of cat. 2 rose to the south of Hippos. No. 27 and 31 in the valley of Nahal Meitzar and no. 29 (perhaps showing the re-use of an Iron Age fort) is on a terrace in the immediate vicinity of no. 28.

In the Byzantine period there is a marked decrease in the number of sites, especially north of Hippos. All the watch-towers on the Roman road appear to have been abandoned. As for the rest, only no. 3 (cat. 1C) at the western extremity of the Ma'aleh Gamla spur, and no. 12 (cat. 1C) continue to be in use. All the sites in the Nahal Samakh-Nahal 'El-'Al valley appear to have been abandoned. Tower cat. 1B (site no. 21) and site no. 22 continue until the 4th century CE. No. 24 was abandoned. In total there are 10 sites from this period.

Geospatial Analyses

The summarized results of the TPI analysis, showing the slope position for 24 sites, is given in Table 13.2. The analysis in both neighbourhood configurations gives similar results and differences are marginal. In the case of the annular neighbourhood, 50% of the sites (12) are located on ridges and 12.5% (3) on upper slopes, *i.e.* in elevated prominent positions (total 62.5%), whereas the diameter neighbourhood puts the figures at 54.16 and 12.5% respectively (13 and 3 sites; 66.67%). The annular neighbourhood appears to better reflect local topographical conditions of the site (*e.g.* no. 26 is indeed located on the upper part of a ridge, whereas in the diameter neighbourhood configuration the position is given as 'middle slopes'). Looking at the results in the SLOPE_POSITION_AN column, we see that only cat. 3 sites are consistently located on ridges (100%). Cat. 2 sites are predominantly located in elevated positions (3 ridges, 1 upper slope; 57.14%) but the rest are on the slopes or flat ground. Cat. 1A towers unsurprisingly follow flat ground on the plateau; 2 out of 3 cat. 1B are also elevated; in cat. 1C it is 4 out of 6 sites (66.67%). Thus only two categories (1A and 3) show a definite preference for certain site location (flat areas along the road in one case; a prominent elevated position in the other); on the other hand, other categories are more ambiguous, but still between 57.14–66.67% of the sites prefer elevated positions.

Plate 13.4 shows the interpretation of the results of CFMN analysis against the topographical maps together with the position of the sites in relation to the reconstructed road system. The main movement corridors in the region are a) the route along the shore of the Sea of Galilee; b) the south-west to north-east axis through the Khan el-'Aqabeh ascent continuing through Kfar Haruv, Afik, el-'Al and Khisfin where it branches to the north, north-west and west; c) the Kanaf ascent; d) the Lawiyeh ascent; e) a secondary ascent starting at the mouth of the Nahal Samakh valley going up in direction to Skufiyye where it branches; f) the ascent of the city of Hippos, which is not heavily accentuated in the model but must be included as a principal connection to the city. Further, the Ma'aleh Gamla ascent might be included as an alternative to the Kanaf and Lawiyeh ascents as well as some ascents going up from

Table 13.2: Results of TPI analysis showing slope position.

No.	*Name*	*Category*	*SLOPE_POSITION_AN*	*SLOPE_POSITION_DIA*
1	Horvat Zeiteh Southwest	1C	Ridges	Ridges
2	Height Spot 500	1A	Flat (slopes)	Flat (slopes)
3	Nahal Sfamnun Cliff	1C	Upper slopes	Ridges
6	Roman Watchtower	1A	Flat (slopes)	Flat (slopes)
8	Horvat Kanaf	1B/3	Ridges	Ridges
9	Height Spot 378	1C	Middle slopes	Lower slopes
10	el-Qusayyibe East	1A	Flat (slopes)	Upper slopes
11	Nahal Kanaf Fort	3	Ridges	Ridges
12	Maqberat Majduliyye	1C	Flat (slopes)	Flat (slopes)
15	Height Spot 108	1C	Ridges	Ridges
16	‘Emeq ha-Boqrim Farm	3	Ridges	Ridges
17	Tell ’Abu Madwwar	2	Ridges	Ridges
19	‘Ain ‘Uweinish West	2	Lower slopes	Lower slopes
21	Rujm Fiq	1B	Flat (slopes)	Flat (slopes)
22	Tal Fort	3	Ridges	Upper slopes
23	Nahal Ruqqad Fort	1B	Upper slopes	Ridges
24	Height Spot 320	3	Ridges	Ridges
25	Zukye Kawarot	3	Ridges	Ridges
26	Height Spot 265 West	1C	Ridges	Middle slopes
27	Height Spot 227	2	Ridges	Ridges
28	‘Uyun ’Umm el-‘Azm West	2	Upper slopes	Ridges
29	‘Uyun ’Umm el-‘Azm	2?	Middle slopes	Upper slopes
30	A-Dan	2	Flat (slopes)	Flat (slopes)
31	el-Masiyye Southwest	2	Ridges	Ridges

the Yarmouk valley on the western and eastern sides of the Nahal Meitzar valley.

In the Hellenistic period three sites are located along proposed ascents in the north: no. 3 (at the tip of both the Kanaf and the Ma‘aleh Gamla ascent), no. 8 and 9. All three sites are either cat. 1B or 1C towers. Two sites (cat. 2) in the Nahal Samakh-Nahal ’El-’Al valley are in fact isolated from major and secondary routes. The 3rd-century BCE site no. 23 might be located close to an ascent from the Ruqqad valley, but the valley at this point is so steep that it cannot in any case be a major thoroughfare, but of only local significance at best. No. 25 is positioned on a high prominent hill far from any route. No. 30 is located on a route starting in the Yarmouk valley but far from the ascent to its south-east.

In the early Roman period site no. 1 was located on an assumed alternative ascent of Ma‘aleh Gamla. No. 3 and 8 continue to exist (although no. 8 is on a different plan), while no. 11 appears close to the south-west tip of the Kanaf ascent. However, there now appear to be no sites at the eastern termini of both ascents. No. 16 seems to be well positioned on the route from the lake up to the plateau (under e) above); while no. 15 is located on an only tentative connection of the Lawiyeh spur and the southern slopes of Nahal Samakh valley (both sides of the valley are very steep hence the tentative connection). No. 21 lies on the main south-west to north-east route going through the region, as does no. 24. No. 22 lies very close to the road leading up to the eastern gate of the city of Hippos. No. 28 is located on a terrace below the cliffs of the plateau, therefore below and at a distance from the main route that runs on the plateau. The 1C site tower no. 26 might be located close to the descent towards Ruqqad (the same as no. 23) but as was stated earlier, the ascent/descent at this point seems problematic.

The main change in the northern part of the study region in the late Roman period is the emergence of a system of watchtowers along the Roman road (no. 2; 6; 10), which continues through the Lawiyeh spur down to the lake; while only three sites (no. 1; 3; 11) remain on the Kanaf

and Maʿaleh Gamla ascent. No. 12 is built on a local route between Majduliyya and Khisfin. Out of two new constructions in the Nahal Meitzar valley (cat. 2) no. 27 stands isolated on a hill far from any routes, while no. 31 might lie on a secondary connection between the Yarmouk valley and the plateau.

Only two sites (no. 3 and 12) remain in the northern part of the study region in the Byzantine period, both tentatively connected with local routes. All sites disappear from the Nahal Samakh-Nahal 'El-'Al valley. In the area south and south-east of Hippos, the situation is more stable, with only one site (no. 24) on the major route being abandoned.

Plate 13.5 shows a cumulative viewshed with numbers indicating how many times each location is visible from the individual sites (*e.g.* number 5 means that location is visible from five sites). Four points in the walls of Hippos were used as well (the east gate, west gate, bastion tower I and the northern wall behind the Hellenistic compound).

In the Hellenistic period only two sites are intervisible on the Kanaf ascent (no. 3 and 8), while no. 9 stands isolated. No. 8 is also intervisible with no. 19 across two valleys and the Lawiyeh spur, but without any connection to Hippos. The city itself is intervisible only with no. 25. Sites no. 17 and 30 are isolated.

Several clusters of intervisibility could be established for the early Roman period. Around the Kanaf ascent no. 8 is intervisible with no. 3 and 11 (but no. 3 and 11 are not visible from each other; in addition no. 1 is isolated). Sites no. 15, 16, and 19 in the Nahal Samakh valley are intervisible, but no. 17 stands isolated. On the plateau towers no. 21 and 23 are intervisible; while no. 26 appears to be isolated from them as well as from the rest. Four sites are visually connected to Hippos, but are not visible from each other (no. 22, 24, 25, 28). Site no. 30 remains isolated.

Most of these clusters dissolve in the late Roman period. Sites no. 1, 3, 11, and 12 are now isolated.[5] Sites no. 16 and 19 still form an intervisible cluster in the Nahal Samakh valley (no. 17 still isolated), however no. 21 and 26 on the plateau are isolated. The Hippos cluster is still in place, now with an extension through no. 24 to one site in the Nahal Meitzar valley (no. 31), where no. 27 is intervisible only with no. 31.

In the Byzantine period there is further isolation of the remaining sites as only the reduced Hippos cluster is still extant (sites no. 22; 25; 28). Two sites (no. 27 and 31) within Nahal Meitzar are also intervisible. The remainder (no. 3, 12, and 26) are isolated.

Discussion

The results of geospatial analyses appear ambiguous in many cases and given the equally ambiguous and often unclear evidence coming from surveys (especially regarding material for the dating of the sites), the interpretation rather provides working hypotheses that need to be addressed by additional research. However, let us review the evidence for each site/group of sites.

The cluster of sites along the Kanaf spur (no. 3, 8 and 9) is well connected to the ascent (proposed by both CFMN analysis and old topographical maps) from the Sea of Galilee towards the Golan. The cluster is composed of three towers located in a prominent position with perhaps a major site among them being no. 8 (cat. 1B). This is also the only site for which there is a definite date in the 2nd century BCE. No. 9 yielded only Hellenistic material and seems to have been abandoned in later periods. While only two sites are intervisible (no. 3 and 8) it appears that the intervisibility was either not of primary concern, or that there is an as yet unknown missing link in the line of towers. When site no. 9 was abandoned, two additional sites appear in the early Roman period: no. 1 and 11. While tower no. 1 could be located on an alternative ascent of Maʿaleh Gamla it is again visually isolated and its own visibility is rather limited mostly to the Daliyot valley in the north (with Gamla being not visible). No. 11 is removed from the Kanaf ascent and while it is intervisible with no. 8 the connection does not appear significant. Its position on an edge of a spacious terrace (*c.* 16 ha) suggests its function as a farmhouse. The function of the remaining sites might well be connected to policing/guard-posts on the ascent in the Hellenistic and early Roman period, tentatively linked first to Seleucid Gamla and then perhaps to the Jewish town at the same place representing guard-posts within its hinterland. The ascents are part of the communication connecting ʿAkko with the Sea of Galilee (through the Beit Kerem valley) and Batanaea where it branches to the north (Damascus) and south (Deraʿ). The question is whether there existed more such guard-posts on the route. We may note that in the late Roman period only two sites continue (not counting no. 11), both located on the Maʿaleh Gamla ascent, and in the Byzantine period only one site (no. 3), suggesting the lesser importance of the ascent and the gradual abandonment (or re-appropriation?) of the sites after the construction of the Roman road through the Lawiye spur in the 2nd century CE.

The three watchtowers (no. 2, 6 and 9), two of them associated with milestones, are clearly connected with the Roman Imperial highway and therefore with the activity of the Roman army in the region. The evidence suggests that there was a watchtower every mile, but unfortunately recent agricultural and building activity have obscured the other mile stations and towards the east the study region is already bounded by a demilitarized zone. The road continues towards Nawa in the east (Bauzou 1985) and the milestones found therein suggest construction during the joint reign of Marcus Aurelius and Lucius Verus (161/2 CE; IGLS XIV,2:M1–M6). Its western terminus lies below the Lawiyeh spur, where it joins the road around the Sea of Galilee.

Site no. 12, dated to the late Roman–Byzantine period, is not part of this system; but on the other hand it lies on a secondary route connecting several settlements in the area between Majduliyya and Khisfin. It is tempting to see here a late Roman/Byzantine *burgus* providing a guard and basic police functions on a local road and maintained by the local inhabitants (Isaac 1990, 178–184; Fuhrmann 2012, 36–37).

Sites in the Nahal Samakh-Nahal 'El-'Al valley do not appear as a coherent system. Two sites originating in the Hellenistic period (no. 17; 19; cat. 2) are located far from any routes and are visually isolated. While no. 17 provides the perfect defensible position, no. 19 is located on a terrace below cliffs. Taking into account its proximity to a water source and settlement, it rather represents a fortified farmstead. Hewn installations (and perhaps a small settlement) are associated also with no. 17 and it should be seen as a fortified farmstead as well. While no. 15 might be located on a secondary route connecting to Lawiyeh, the valley here is very steep and the route could not have been of major importance. Ma'oz (2013, 78) has already speculated that the site is probably an agricultural tower in the fields. Only the large fortified site no. 16 (cat. 3), located directly on the ascent from Nahal Samakh valley up to the plateau, in a well-defensible position with perfect visibility of the ascent and the southern part of the valley appears as a good candidate for a fort guarding and policing the road and perhaps indicating the northern boundary of the *chora* of Hippos. However, even here we find fragments of Pompeian millstones, which again raises the possibility that the site was a fortified farmstead or that it was re-appropriated in a later period.

The case for fortified farmsteads is also strong in other cases: sites no. 27–31 (all cat. 2). These are often associated with springs (no. 28; 29), agricultural installations (no. 27; 28; 31), good access to agricultural land, or proximity to settlements (no. 28 and 29 could form a core of such settlement pocket). Also of note is their good defensible position (with the exception of no. 30), often disconnected from major routes and with no regard for intervisibility.

Sites no. 22 and 24 are both on major routes and visually connected with Hippos, and are also good candidates for being forts maintained by the municipal authority within its territory, providing security and police functions.[6] No. 25, however, is disconnected from any major road, but its position and the lack of agricultural land suggest it was a major fortified point in the territory of Hippos, perhaps a garrison, treasury, refuge, or all of these, reminiscent of other Hellenistic/early Roman forts (*e.g.* Beth-Zur, Funk 1993; Moyet 'Awad, Cohen 1982 etc.).

The case of towers no. 21, 23 and 26 is more complicated. No. 21 is located directly on the major route running through the region and so it may represent a guard-post, but at a later stage it was incorporated into a system of field walls, which might indicate that its function changed. No. 26 is directly linked with a settlement (Kh. el-'Arais) and a spring and while it is tentatively connected with a route descending to the Yarmouk valley, this does not appear as a major communication due its topography. It may again be an agricultural tower. The massive Hellenistic tower no. 23 presents the same problem with regard to its connection to the road system: it is disconnected from major routes but has access to the best agricultural land on the plateau (albeit without its own water source). Therefore, I tend to see it as part (since not all of the site was excavated) of a large fortified farmstead/manor house similar to *e.g.* the one excavated in Ramat ha-Nadiv (Hirschfeld 2000), which also employs a similar type of massively fortified central tower.

Conclusion

It was shown that there are some 24 fortified sites in the southern Golan Heights, which can be roughly divided into three large categories depending on the presence of various fortification elements within the site: towers (cat. 1); central tower-like structures with an outer perimeter wall (cat. 2); and rectangular structures (cat. 3), where cat. 1 can be further split into three sub-categories: 1A (watchtowers on the Roman road), 1B (large towers with inner division) and 1C (simple towers).

The crucial point of interpretation lies with the analysis of three properties of the sites: a) site location; b) relation to the road system (and its reconstruction); c) intervisibility. The goal was to consider each site not in isolation but within the landscape, with regard to the natural environment, the road system and other sites within the region. The analyses showed that the majority of sites were built in naturally well-defensible positions and a considerable number of them are directly related to the major thoroughfares in the region. On the other hand the intervisibility of sites was apparently of no importance, as many of them are isolated or their visual connections are limited only to small clusters. According to the available evidence and the results of the analyses it is argued that only a few sites (all falling into cat. 3) could be considered as major forts, most likely maintained by *polis* of Hippos for providing road security, police functions or serving as garrisons and/or refuges (no. 16; 22; 24; 25). However, all of the sites in cat. 2 most probably represent fortified farmsteads associated with other settlements, agricultural installations, springs and available agricultural land. This system slowly developed from the Hellenistic period and reached its zenith in the late Roman period with a considerable decline in the Byzantine period.

Several sites located along the Kanaf and Ma'aleh Gamla spurs are likely to be connected with providing guards through the ascents on the important east–west communication route traversing the Golan. This system would belong to the Hellenistic period and as such it was most likely connected with Seleucid policy in the area and with the

major Seleucid point in Gamla (Joseph. *AJ* 13.393–394). Destroyed by Alexander Jannaeus during his campaign in the early 1st century BCE, its continuation in the early Roman period is problematic and again might be connected with the now Jewish town of Gamla, in light of the abandonment of Horvat Kanaf (no. 8) during or immediately after the Great Revolt. Either way, the importance of both ascents declined with the construction of a new road by the Roman army, furnished with milestones and watchtowers. This arrangement shows the keen interest of Roman administrators in road safety, and their direct involvement in the region. The road thus marks the watershed between the territory of Hippos to its south and that of direct Roman control to its north.

Other sites not mentioned in the discussion could have had various functions. No. 12 appears as an example of a Late Antique *burgus* providing some basic security for local inhabitants around Majduliyye, and no. 26 might have had the same function since the early Roman period. No. 21 might be connected with the major sites within the territory of Hippos, maintained by municipal authorities for providing security and police functions along major routes and in the countryside. Finally, no. 23 decidedly represents an example of a major fortified manor house previously unknown in the Golan and comparable to sites in Judaea, Samaria and the Galilee.

Notes

1 Map sheets 36/1 Maʻaleh Gamla, 36/2–3 Rujm el-Hiri, 40 ʻEin Gev, 40/1 Nov, 44 and 44/1 Hammat Gader. Available at http://survey.antiquities.org.il/index.html, accessed on 1/2/2016.

2 The TPI and slope classification is computed using the Jenness Topographic Position Tool for ArcGIS (Jenness 2006).

3 The DEM (25 m resolution) was kindly supplied by the Survey of Israel agency.

4 G. Schumacher's 1884 Map of the Golan (Schumacher 1888; 1:152,000) and 1920 Karte des Ostjordanlandes (sheet A3; 1:63,360). 1942 series of British army maps (sheets Sheikh Ali, Afik, Kafr El Ma, El Hamme; 1:20,000) and unprovenanced and undated Israeli map of Khisfin (1:20,000). The maps were kindly supplied from the map collections of the University of Haifa, Tel Hai Academic College and W.F. Albright Institute of Archaeological Research, Jerusalem.

5 No. 12 is well intervisible with the three known watchtowers on the Roman road, but these were excluded from the analysis at this point as they clearly represent a different system.

6 Although no. 22 was probably later turned into a farmhouse.

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14

The Extraordinary Roman Military Presence in Judaea from AD 70 until the 3rd Century

Werner Eck

From the beginning of the 2nd century BC, Rome was known as a *political* power in the East. However, it showed itself to be a *military* power only in those instances when Roman legions were deployed in an actual war, especially in violent conflicts with the Seleucid Empire. It was not until 64/63 BC when Pompey established the province of Syria, that Rome permanently stationed troops in the region, enabling it to interfere directly and continuously in the area if the need arose. Augustus transformed Syria into a strong military bastion, that for a long time, and operating alone, safeguarded the East both internally and externally (see for example Dąbrowa 1998; 2009).

Under Pompey, the territory of the Hasmonean kingdom became a Roman area of influence, although this did not lead to the direct inclusion of the country into the Empire as a provincialized region or a separate province. It probably did not seem necessary to do so, since intervention from the north was possible at any time. In addition, Augustus had a reliable partner in Herod, who undertook everything that was important to Rome. It was only when Herod's son Archelaus (AD 6) no longer fulfilled the necessary requirements that his ethnarchy became the subject of direct Roman rule. Judaea became part of the province of Syria, whose *legati* Augusti were also responsible for Judaea.[1] Judaea formed the southern part of Syria for the next 60 years, and was led by a *praefectus Iudaeae* as a subordinate administrator (AE 1963, 104 = 1999, 1681 = CIIP II 1277). In the southern part of Syria, *i.e.* the area called Judaea, no legion was stationed. All the legions of Syria and also the auxiliary troops had their camps in the northern part of the province; they had to maintain order within Syria, as well as in the new part of the province, which went as far as the border with Egypt, and also provide outward protection where necessary.

However, Judaea itself was not left without military protection in these first decades of direct Roman rule; some units were under the command of the Prefects, as they had been previously under Herod (Saddington 2008, 303–324),[2] and also under Archelaus. These were local forces, which were presumably sufficient, as long as bigger uprisings did not aggravate the unrest in the country. In the event of a larger uprising, the troops under the governors of Syria had to interfere. Numerous reports from Josephus show this very clearly for the six decades up to the year 66, the year of the outbreak of the great revolt. At that time, Cestius Gallus went to Jerusalem, with 12,000 legionaries and 10 units of his auxiliaries; this time, however, the legate failed in his attempt to defeat the insurrection in his province (Joseph. *BJ* 2.499ff). The small number of units in Judaea, under the command of the last prefect, Gessius Florus, played no part in this effort to overcome the revolt.

After the conquest of Jerusalem and the end of the insurrection in September 70, Judaea was finally established as a separate province. The provincial territory was very limited in size, smaller than 10,000 km^2. Looking at the size of the territory, Judaea was in no way comparable with most of the other provinces in the Roman Empire, let alone with a province in which there were legions, such as Syria, Britain or one of the provinces on the Danube and the Rhine. Only the Alpine provinces – Alpes Maritimae, Alpes Graiae and Alpes Poeninae – were smaller. Cyprus was about the same size as Judaea. Other islands, which formed autonomous provinces, had a much larger territory: Sardinia stretched over 24,000 km^2, and Sicily was around the same size. Crete, which was even smaller than Cyprus – a little over 8000 km^2 – formed, with Cyrene, the double province of Crete-Cyrene. The province of Judaea, as far as we can see, was smaller than 10,000 km^2 until the later

3rd century,[3] since it was only then that the region south of Beer Sheva, all of Negev up to the Gulf of Eilat, became part of Palestine. Until the late 3rd century the Negev was still part of the province of Arabia.[4]

It is necessary to emphasize how small this province was in order to understand how extraordinary Vespasian's decision to establish Judaea as a province of its own was, and to give the province a structure that had been unknown until then in the Empire. He appointed as governor a praetorian senator, who had not yet been a consul and even gave him command of a legion. There had indeed been, since the time of Augustus, other praetorian senators as governors in other provinces, for example, in the three Gallic provinces: the Gallia Lugdunensis, the Aquitanica and the Belgica. But none of them had ever had a legion under his command. Furthermore, provinces much larger than Judaea existed without any such military occupation, for example Galatia or Lycia-Pamphylia in Anatolia, Raetia and Noricum on the upper Danube, as well as the aforementioned three Gallic provinces in what is France today. In most of these administrative districts, which had a much larger area than Judea, one or perhaps two auxiliary units were sufficient for internal security. Only in Raetia and Noricum, as border provinces, did more auxiliaries form the garrison, but this was without a legion. Considerably later, during the crisis under Marcus Aurelius, a legion was transferred to Raetia and Noricum.

It was not only the deployment of a legion that was new in Judea, but also the fact that it was only a *single* legion, whereas until then, at least two formed a provincial garrison (Thomasson 1973). That is why all the other provinces that had a legionary garrison were led by consular legates (that is, governors who had previously held the consulate, the highest republican magistrate). It must be mentioned that there was one province in which only one legion stood, and that was Africa. There, the situation had come about from a different set of special circumstances, mainly the political tension between the Emperor and the Senate. West of Egypt, since Augustus's time, there had only been one province with a single senatorial governor: the province of Africa proconsularis. If it was not considered desirable to leave the entire area from the gulf of Sidra (to the east of today's Libya) to the present middle of Algeria without the military protection of a legion, the legion then had to be under the command of a proconsul; this was the *legio III Augusta*.

This lasted only until the year AD 39, when Emperor Caligula withdrew the direct command over the Legion from the consular proconsul of Africa and entrusted it to one of the three praetorian legates who were serving under this proconsul. This legate became the commander of the legion, but not yet the governor of a province; this only happened later, with the foundation of the province of Numidia, probably under Septimius Severus. This is clearly illustrated by the fact that until the late 2nd century AD the legate was still referred to as *legatus legionis III Augustae* or *exercitus Africae* (CIL V 531; Dessau 989; AE 1908, 237), and not as a *legatus provinciae*. This anomaly in North Africa had arisen out of a special situation, which concerned the 'disempowerment' of the proconsul, that is, the representative of the senate, whom Caligula hated more than anybody else.

The question then arises of why Vespasian decided to create this new type of province in Judaea, where a legion was garrisoned under the command of a *non*-consular legate. In principle, Judaea, which was not very large in territorial terms, as has already been emphasized, could have been left as a part of Syria after the uprising; one of the Syrian legions could have been permanently stationed in Judaea without creating a separate province. I will return to this thought in a moment.

The reason could be seen in the fact that, at the very moment when Vespasian was entrusted by Nero with the suppression of the insurrection in the year AD 66/67, Judaea in fact became an independent area, and not part of Syria. For it was not possible to have two consular legates working side-by-side within the province of Syria, one for the province itself, the other for the warfare in the south of this province. It is not known whether Judaea was already called a province during the war against the rebellious part of the Jewish people. However, when Vespasian became emperor he probably did not want to change the situation, which had lasted there over four years. Also, the over-sized north–south expansion within Syria could have played a role. From Antioch, the governor's seat, to Jerusalem, there was a distance of about 600 km to be covered. Moreover, during the past decades, the legates of Syria had to take care of the south of the province, Judaea, all too often, even though their real task was to observe and control everything that happened at the Euphrates and beyond the river. The Parthian Empire was more dangerous than Judaea. This analysis of the situation made it seem more sensible to keep Judaea as an independent province even after the insurrection.

However, it cannot be totally excluded that for a short time Vespasian and Titus were considering returning to the old form of the political organization: Syria and Judaea united in one province. In the decades after AD 70 the legate of the new province is called, at least once not only *legatus Augusti pro praetore provinciae Judaeae*, which would have been enough, but *et legionis X Fretensis* was added (CIL III 12117 = Dessau 1036; CIL VI 41113; CIL X 6321 = Dessau 1035 = AE 1980, 202; AE 2003, 811 = AE 2008, 610). That is, the double function as a governor and immediate commander of the legion is emphasized. Since the *legio X Fretensis* had been part of the garrison of Syria regardless, it was perhaps thought that it would simply be stationed in the south instead of in the north, commanded by a normal legionary commander, the *legatus legionis*,

without also giving him the function of a provincial legate. However, if Vespasian and his son Titus had ever thought of this solution for securing Judaea, they gave up the possibility very quickly; because already in the late summer of AD 70, Josephus speaks of an M. Antonius Iulianus as τῆς Ἰουδαίας ἐπίτροπος (Joseph. *BJ* 6.238). Thus, in addition to the official who was responsible for the finances of Syria, a separate procurator had already been appointed for Judaea, a decisive indication that this southern part of Syria had been separated at that time. From then on, the history of Judaea as an independent military province begins.

With the departure of the Emperor's son Titus to Syria, the new governor took command of the province and the army. The first provincial governor was Sextus Vettulenus Cerialis, who had participated in Vespasian's suppression of the insurrection (PIR^2 V 500). He had the *legio X Fretensis* and a total of 10 auxiliary units under his command. Seven military diplomas provide information about the auxiliary units in Judaea. The constitutions attested by the diplomas were issued between AD 86 and 90, and almost all the diplomas have been published in the last 20 years (see the list in Eck and Pangerl 2012). Three of the 10 units were mounted, the other seven units were made up of soldiers on foot; one cohort was a so-called *milliaria* with the strength of around a thousand soldiers.[5]

The *alae* are the following: *ala I Thracum Mauretana, ala veterana Gaetulorum* and *ala Vocontiorum*.

The names of the *cohortes* are: *cohors I Augusta Lusitanorum, cohors I Damascena Armeniaca, cohortes I et II Thracum, cohors II Cantabrorum, cohors III Callaecorum Bracaraugustanorum* and *cohors I milliaria sagittariorum.* The names of the units tell us that they were all created in other provinces of the empire; only the soldiers of the *cohors I Damascena Armeniaca* were originally recruited in the neighbouring province of Syria.

All together around 5,500 men were serving in the auxilia, about as many as in the *legio X Fretensis*. Compared to the size of the province, which covered a slightly less than 10,000 km^2, the garrison was huge. No other province housed such a large occupation force, not even Germania inferior or Britannia, which were both particularly threatening regions from a military standpoint. Above all, the conditions for the lower German province were different to those for Judaea. There, on the Rhine, the catastrophe in the saltus Teutoburgiensis of AD 9 had not yet been forgotten. The army in Germania inferior had to defend the long border on the Rhine, where many hostile German tribes lived on the other side (Eck 2004, 63–208). In Britain, Rome was still in the offensive stage during the Flavian period; only a part of the island had been conquered (see Birley 2005, passim). The factor of external threat did not apply to Judea, because the adjoining Nabatean kingdom presented no fundamental danger to the province. It was therefore the problems within the province itself that made it necessary for Vespasian to allocate such an enormous garrison to this small territory. That the only legion was relocated to Jerusalem, in the centre of the Jewish-populated area, also speaks in favour of this. Jerusalem, the heart of the Jewish religion, should not be allowed to become again the centre of resistance against the Roman rule.

In most other provinces, the auxiliary troops were mainly stationed on the borders. For Judaea, it is by now possible to identify several places where auxiliary units were deployed, especially due to new or better reconstructed sources, although it is still unknown where some units had been deployed.[6] The following remarks already include the troops that were only stationed in the province a few decades later, since AD 117 and after.[7]

Under the second governor of the province, Sextus Lucilius Bassus, a military complex had already been built in AD 71/72 near Abu Gosh, on the road from Jerusalem to Lod, which then goes on to Caesarea; the camp was presumably occupied by a cohort. A fragment of the building inscription has been preserved (Eck 1999, 109ff. = CIIP I 2, 712). Two further building inscriptions of *legio X Fretensis* are also known in the greater Abu Gosh area, although the specific purpose of the respective buildings is unclear (CIIP I 2, 722. 723). Moreover, at the Abu Gosh Resurrection Church, the fragmentary funerary inscription of a Thracian soldier, who had served in an unknown cohort, has been discovered (CIIP I 2, 735). All of this documentary evidence combined allows the safe conclusion that an auxiliary unit was strategically stationed there to secure the road that connected Jerusalem to the Mediterranean coast. In addition, the important, permanently flowing, spring in the valley should presumably have been monitored that way.

A part of an auxiliary unit, probably a portion of the *cohors I milliaria Thracum*, was located to the south-east of Jerusalem, in En Gedi; there, in the year AD 124, a *centurio* is documented, with soldiers of this unit, in P.Yadin 11. The same unit is also found in Hebron, from which a road leads to En Gedi. The two pieces of evidence from Hebron, a brick stamp and a military diploma, are dated later, and therefore do not say anything decisive about the Flavian period (AE 1979, 633; RMD I 69; cf. Cotton, Eck and Isaac 2003, 28 on this unit). But it would conform with Vespasian's rational financial policy if he had stationed soldiers precisely to protect En Gedi, where the balsam plantations yielded such a significant return for the Fiscus. After all, Jewish insurgents had precisely attacked these plantations, in order to eliminate them as a source of revenue (Plin. NH 12.113; Cotton and Eck 1997, 153–160). Hebron, however, controlled a road leading from Jerusalem to the south.

However, this result must now be confronted with evidence for the same unit found near Bet Guvrin (Zissu and Ecker 2014). It cannot be ruled out that the unit may have changed its location or may have been distributed among

several places. Bet Guvrin is also located in the interior of the province, at an important crossroads.

An auxiliary unit should have had its camp at Emmaus, later Nicopolis. Several soldiers of the *Legio V Macedonica*, who had been stationed there for some time during the first revolt, are mentioned on their funerary monuments found nearby. Other military inscriptions have also been preserved, among them a newly-discovered tombstone for a soldier belonging to the *cohors III* or *IV Bracaraugustanorum*, as well as a building inscription of the *cohors VI Ulpia Petraeorum* (Eck 2014, 261ff). The latter unit was recruited from the inhabitants of Petra; it can therefore only have come to Emmaus after the annexation of the Nabataean kingdom, but a *cohors III Bracaraugustanorum* already belonged to the province during the Flavian period (see list below). Emmaus lay at the intersection of several roads that also led to Ascelon and Gaza on the Mediterranean coast.

A military presence is also indicated in Samaria-Sebaste, especially for legionnaires (Isaac 1992, 431). However, the tombstone of a *tesserarius*, who probably served in the *cohors V Gemella civium Romanorum*, points to an auxiliary unit (Avi-Yonah 1946, 94 no. 11; cf. Eck 2016b, 235f). The cohort itself came to the province at the earliest during Trajan's reign. Since the inscription is fragmentary, it does not allow a safe conclusion. But there is another fragmentary inscription from Sebaste, which also suggests a unit that had the honorary title *civium Romanorum* in its name, the *cohors V Gemella*, mentioned above (Avi-Yonah 1946, 95f no. 11a; Eck 2016b, 236–238). Together, both testimonies make the presence of an auxiliary unit in Samaria-Sebaste quite probable.

In Scythopolis, a *decurio* of the *ala Antiana* (= *ala Gallorum et Thracum Antiana*) is documented, under whose command an honorary statue was probably erected (Last and Stein 1990, 224ff. = AE 1990, 1013; Eck 2016b, 233). The occasion might have arisen from the stationing of the *ala* in Scythopolis, but this cannot be proven. On the other hand, since the city was on an important junction, the presence of a mounted unit would certainly make sense. This *ala* was part of the army of Judaea, during the reign of Trajan at the earliest.

Not far from Scythopolis, near Tel Shalem, the *ala VII Phrygum* was stationed. The unit is documented there by several inscriptions excavated in the *ala*'s camp in recent years; almost all these epigraphic documents belong to the time of Septimius Severus, before the year AD 209 (Arubas *et al.* 2019; Ecker *et al.* 2019). But the camp had already existed since Hadrianic times, as the famous bronze statue of the emperor that was found there in the 1970s testifies.[8] And the *ala* was stationed in the province before the Bar Kochba Revolt.[9] This camp was also located near an important connecting road from Scythopolis to the south.

Finally, a funerary epigram from Raphia (south of Gaza), for a *tribunus* who probably commanded an auxiliary unit, has recently been published. The unit must have been transferred from the Danube region to the region of present-day Israel no earlier than the 2nd century (CIIP III 2565). Raphia lay on the coastal road that led to Egypt, and it is quite likely that there was already a cohort there much earlier. Established stationing sites were often maintained for a long period, even though the units deployed there changed over the years, as is shown in numerous examples from provinces on the Rhine and Danube.[10]

Even these few possible hints to the location of auxiliary units from the 1st and 2nd centuries AD show that their distribution in the province was not intended for border management, but rather for monitoring the population within the territory of the province, and securing transport connections. The strategy was determined by the history of the first 60 years of direct Roman rule. Vespasian, from his own experiences in the region from AD 66 to 70, had obviously gained the insight that a strong military power had to be distributed within the province, if one wanted to keep the rather small territory with its massive internal problems under control.

It is possible, though not certain, that the composition of the army of the province had already changed during the Flavian period. Three units are attested there according to diplomas dated between AD 87 and 90: the *ala Vocontiorum*, the *cohortes I Augusta Lusitanorum* and the *II Thracum*, were in Egypt soon after the Flavian period. All three are documented *in Aegypto* in the year AD 105 (RMD I 9). The *ala Vocontiorum* also appears in a diploma for troops in Egypt, which may be dated earlier; so far, this certificate can only be dated to the period between AD 98 and 105 (RMD V 341). The two cohorts mentioned, which were relocated from Judea to Egypt, do not appear in this document, which does not mean, of course, that they were only transferred later. Diplomas usually concern only part of the auxiliaries of a provincial army. It remains unclear which auxiliaries replaced the three units when they left Judea, still under Domitian. The possibility that they were simply pulled out without any replacements is unlikely.

Significant changes were finally made during the Trajanic period, either as early as AD 107/8, or close to the very end of his reign. The fact that the status of the province in late Trajanic times was different to that in the Flavian period is undeniable. This is due in particular to the fact that the legionary occupation of the province had doubled. Early in the reign of Hadrian, a second legion is documented in the province, the *legio II Traiana*; this was not in the context of a war, but rather in the context of civil construction tasks, which were normally undertaken by legions who were stationed in a province for a longer period of time. The *legio II Traiana*, among others, was involved in building the aqueduct to Caesarea (CIIP II 1202), but the exact date of this building activity is not known. Furthermore, a milestone erected by this legion belongs to AD 120, that is, to the first

years of the reign of Hadrian.[11] It seems that by that time, the legionary occupation forces must have doubled; the *II Traiana*, in addition to the *X Fretensis*, was responsible for security in the province. Since a brick with the name of this unit was found at *Legio = Caparcotna*, where later the *legio VI Ferrata* was stationed for over a century, it may be concluded that *II Traiana* also had its camp there at the beginning of the Hadrianic period.

Two legions, however, demanded a governor of consular rank. In fact, in the earliest years of Hadrian, a L. Cossonius Gallus, who had previously been consul in AD 116 (RMD IV 229 = AE 1999, 1188), is documented as being the governor (CIIP II 1227).[12] However, one of his predecessors – it is uncertain whether this was his immediate predecessor – was already consul, namely, Lusius Quietus, who Hadrian had eliminated in the autumn of AD 117, shortly after taking office. The doubling of the legion and the rising rank of the governor thus coincide.

Furthermore, based on what we know of the 'normal' movement of legions, it is possible to suggest that this change of the province to the consular status had taken place even earlier, in the middle of the Trajanic period. Two legions were created in the context of Trajan's Dacian wars, certainly no later than AD 106, and probably already in 102: the *legio XXX Ulpia* and the *II Traiana*. At this time, each legion had his own permanent camp. The *legio XXX Ulpia*, one of the two Trajanic legions, went to Germania inferior and was stationed at Xanten; but the *II Traiana* should also have had a permanent camp in some province. This province is not yet known to us. We know for certain that the *legio II Traiana* moved to Egypt at the latest in AD 127. But between AD 107 and 127, where did the legion stay? Should we suppose that the *II Traiana* moved from one province to another, or is it not much more likely that the legion stayed in the same province from the time of its creation until it finally moved to Egypt? If the *II Traiana* was in Judea in AD 120, it seems more likely that it was sent there soon after its creation, that is, around AD 107. That would mean that since the middle of Trajan's reign, Judea had two legions. And the consequence would be that the governor must have been of consular rank. This view of Judea as a consular province with two legions as a garrison as early as AD 107/8, could be strengthened by the fact that a Pompeius Falco, who became consul in AD 108, is described as *leg(atus) Aug(usti) leg(ionis) X Fret(ensis) et leg(atus) pr(o) pr(aetore) [pr]ovinciae Iudaeae consularis* in his *cursus honorum* (CIL III 12117 = Dessau 1036).[13] That Iudaea was called *consularis* could point to a transitional period, because Pompeius Falco is referred to as the legate of *legio X Fretensis*, in the same way that he was before the change of the status of the province, but *Iudaeae* is characterized as a *consularis*.

Furthermore, at least from the late Trajanic period, the number of auxiliaries increased significantly, which indicates the arrival of a second legion, because every legion was accompanied by a certain number of auxiliaries. However, we do not have precise information regarding the identity and number of auxiliary troops that were relocated

Table 14.1: The units after the end of the Bar Kochba War and during the Flavian period.

Units after the end of the Bar Kochba War	*Units during the Flavian period*
Alae	Alae
Gallorum et Thracum Const(antium)	*I Thracum Mauretana*
Antiana Gallorum et Thracum sag(ittariorum)	*veterana Gaetulorum*
VII Phrygum	*Vocontiorum*
Cohorts	Cohorts
V Gemella	*I Augusta Lusitanorum*
I Thracum (milliaria)	**I Damascena Armeniaca**
I Sebastenorum (milliaria)	*I Thracum*
I Damascenorum Armeniacum sagit(tariorum)	*II Thracum*
I Montanorum	*II Cantabrorum*
I Flavia c(ivium) R(omanorum)	**III Callaecorum Bracaraugustanorum**
I Ulpia Galatarum	*I milliaria sagittariorum*
II Ulpia Galatarum	
III Callaecorum Bracaraugustanor(um)	
IV Callaecorum Bracaraugustanor(um)	
IV Ulpia Petreorum	
VI Ulpia Petreorum	

to the province. It is not until the year AD 136/7 that a complete list of *alae* and cohorts, which were deployed at that time in Syria Palaestina, is known through a military diploma (RMD III 160).[14] There were 3 *alae* and 12 cohorts, a number that remains constant in the diplomas in the following decades (see for example RMD I 69; III 173; RGZM 29, 41; AE 2007, 1766; 2011, 1810; Eck and Pangerl 2016). If the list is compared with the units known towards the end of the Flavian period, the result in Table 14.1 is shown.

The number of *alae* did not increase, there were still three; however, of the three *alae* from the Flavian period, none still existed in the province; they were completely exchanged. The number of cohorts increased over the years from 7 to 12, with two cohorts becoming *milliariae*, whereas only one *milliaria* previously existed in the province. Like with the *alae*, almost all the cohorts were new; the *cohors III Bracaraugustanorum* and the *I Damascenorum Armeniaca* were the only remnants from the old crew. This may also have applied to the *cohors I Thracum*, which would probably have been topped-up in the meantime, increasing from a *quingenaria* to a *milliaria*. But it is clear that the size of the auxiliary part of the army in Syria Palaestina nearly doubled.

Some of these units may have already arrived in the province with the second legion during the Trajanic period; however, this is currently impossible to determine accurately, especially because units could have been replenished or replaced following the heavy losses that were incurred during the Bar Kochba revolt (Eck 2012). But the *ala VII Phrygum* had surely already been transferred to the province before the uprising, because from March AD 158, three diplomas are known which were issued to veterans of this unit. The men had been taken into the unit 25 years earlier as recruits, in the spring of 133, shortly after the start of the uprising. If three of the diplomas from the year 158 have survived to this day, then the number of issued certificates from 158 must have been enormous. It is estimated that the chances of survival of such diplomas over time is a maximum of 1%, so according to this calculation there would originally have been at least 300 diplomas in the year 158, if we take into account the three that have survived. However, such a mass dismissal in 158 is only possible if many new recruits were added to the unit 25 years earlier. This means that a sudden drop in personnel must have occurred in 133, falling by more than a half, since the number of soldiers in an *ala* was slightly less than 500. It is immediately obvious that it was unlikely to be due to the natural death rate but could only be explained by massive losses during a war. We learn from other sources that at the beginning of the uprising in the year AD 132/133, the Roman losses had been enormous (RMD V 421; Eck and Pangerl 2006; 2007). Accordingly, it can be concluded that the *ala VII Phrygum* already belonged to the army of Judaea at that time. The same could also apply to others, but not for all.

It is necessary to question the reason for doubling the garrison in Judaea in the mid- or late Trajanic period. It had been assumed earlier that this doubling was a consequence of the 132–136 revolt, which seemed to make sense. This, however, was not the case, as has become clear in the last few decades; the doubling took place much earlier, at the same time the governor became consular. In the reign of Trajan, however, peace prevailed in the province, and this only changed at the end of his reign, as the diaspora revolt affected the province. There was yet another event that could have justified the enlargement of the army in Judaea, and that is the annexation of the Nabataean kingdom in the year 106. As far as the sources indicate, the annexation proceeded without major resistance; the legend on the coins, *Arabia adquisita*, seems to prove it.[15] It can hardly be denied that no stronger military resistance was carried out in AD 106. However, this must not have been the full reality, for we know that in the context of the Bar Kochba uprising at least, the dissatisfaction with the Roman domination of the Arabian province resulted in residents joining the Jewish uprising. Why would this dissatisfaction not have been revealed much earlier, during annexation, so that it became necessary to strengthen the border with the new province, thereby preventing Nabataean disorder

Table 14.2: Territory size, number of soldiers and units in the provinces.

Province	*Territory in km² (approx.)*	*Number of soldiers (approx.)*	*Number of units*
Syria	150,000	29,000	3 legions, 7 alae, 20 cohorts
Cappadocia	160,000	20,000	2 legions, 4 alae, 15 cohorts
Dacia (tres)	100,000	27,000	1 legion, 9 alae, 32 cohorts
Germania inferior	80,000	20,000	2 legions, 4 alae, 15 cohorts
Germania superior	100,000	20,000	2 legions, 3 alae, 16 cohorts
Pannonia superior	60,000	21,000	3 legions, 5 alae, 6 cohorts
Pannonia inferior	40,000	14,000	1 legion, 5 alae, 13 cohorts
Britannia	160,000	42,000	3 legions, 13 alae, 37 cohorts

from influencing Judaea? A clear answer seems impossible without new sources.

Regardless of the exact date of the expansion of the army in Judaea in the Trajanic period, 2 legions and 15 auxilia together comprising of between 18,500–20,000 soldiers are the strongest military power that ever stood in a Roman province relative to the size of its territory. No other province was as heavily militarized. Some brief information about the garrison size in relation to the territory of other provinces under Hadrian or Antoninus Pius will be sufficient to clarify this.

Table 14.2 contains only approximate numbers. The number of auxiliary units is based on the diplomas from the time of Hadrian and Antoninus Pius in which the highest number is mentioned. The size of each unit was assumed to be 500,[16] and in the case of a legion, 5,000.

The provincial territories were calculated on the basis of the information on modern states. In any case, an exact number cannot be given for the individual Roman provinces, but neither is it decisive.

It is important, however, that even in Britain, which has the largest number of soldiers in the first decades of the 2nd century, the ratio of territory to the size of the troops is about 4 km^2 to 1; in the two Pannonian provinces, whose area is not easy to calculate, it is around 3 km^2 to 1. In all other cases, the ratio is 5 to 1; in the case of Cappadocia, it is probably rather 8 to 1.

It is only by looking at this comparison that it becomes clear how remarkably different the situation is in Judaea. During the Flavian period, the ratio is about 1 soldier for every square km, but after the increase of troops, almost 20,000 soldiers were stationed in an area of less than 10,000 km^2, so the ratio is two soldiers for every square km. The density of the occupation in Judaea is about six times as high in the 2nd century as in the two Pannonian provinces together, and eight times as high as in Britain.

Comparing Judaea to other provinces, the particular situation in this country is strengthened furthermore by the fact that all the other provinces were on the outer borders of the Empire, which meant that the provincial army had the task of defending or deterring external enemies. But Judaea had no external borders (as had Syria Palaestina since AD 136), ever since the integration of Arabia under Trajan. After AD 66 the danger came from within the province itself. With double the size of the army since the time of Trajan, however, Rome seemed to be prepared.

And yet, in AD 132 the Roman army in the province was completely taken by surprise.[17] In the first months, the Roman troops were decimated to an unprecedented extent, and many thousands of legionaries but also auxiliary forces were heavily affected. Emergency measures were taken to bring the situation under control. Among other things, thousands of soldiers from the Misene fleet were transferred to the legions of Judea to fill the gaps (Eck 2007b, 30–32; 2012, 249–253). This however is not a topic for discussion in the present work. It was not until spring AD 136 (see W. Eck, Bar Kokhba, Oxford Classical Dictionary online), after almost four years, that the province was fully under control again. Rome and its representatives had not expected them to be challenged in such a small region in such a huge way.

It is now all the more surprising to the modern observer that after this challenge to Roman power, nothing changed militarily in the newly-named Syria-Palaestina. It might have been expected that it would have been rearmed, perhaps, as had previously been assumed when it was thought that the doubling of the army happened after the Bar Kokhba revolt, and not in the time of the Trajan as we now know to be the case. But, as far as we can see, nothing happened after AD 136. No other legion was moved here, nor additional auxiliary troops. The previous troop strength remained; only a few destroyed units may have been replaced by other auxiliaries.

The explanation for doing nothing is probably to be found in the fact that Hadrian and his military adviser(s) were aware of the extent to which the Jewish population had been decimated. According to Cassius Dio, 50 of the people's most important fortresses and 985 of the most significant settlements were destroyed, and 580,000 people had perished in the fighting or in the aftermath (Cass. Dio 69.14.1f; see Eck 2007a, 24–28; 2012, 249). It can be assumed with good reason that the exact figures given by the Greek historian go back to Hadrian's report to the Senate. It was possible to draw conclusions from this in Rome, as well as answer the question of how to secure the province militarily for the future. Archaeology has also proved the massive decline in the population, which must be derived from Cassius Dio. After the uprising, the Jewish centre was almost deserted for many decades, apart from the Colonia Aelia Capitolina, the former Jerusalem (Kloner and Zissu 2003). For Rome, this resulted in the conclusion that it was unnecessary to increase the number of troops.

The garrison remained the same throughout the 2nd century AD and apparently also in the 3rd century. The annexation of the Negev to the province of Syria Palaestina cannot be accurately dated, which is why it is unclear at which point this substantial expansion of the provincial territory involved significant military changes. There is some evidence for the military changes. Under Diocletian, for instance, a mounted unit was moved[18] to Costia, today's Yotvata, and a fort was erected for it (Eck 1992; Roll and Avner 2008). Likewise, the *cohors II Galatarum* stationed in the province since Trajan's time was moved to ʿAyn Gharandal, around 30 km north-east of Yotvata on the eastern side of the Araba valley (see now Darby 2015 = AE 2015, 1691).[19] More importantly, the *legio X Fretensis*, who had been in Jerusalem since the year 70 and controlled the Jewish heartland, was transferred from there to Aila, today's Eilat, at the southern end of the Negev. Their task in the

former centre of the Jewish country had become obsolete. Nothing shows more clearly that the Jewish population of the province had resigned itself to Roman rule. An uprising was no longer to be feared; the troops could also be transferred to the frontiers in Palestine as in other provinces. In the centre, they were no longer needed.

Notes

1 For Judaea as part of Syria and not an independent province see Eck 2007a, 24–51; 2008, 218–226; 2011, 45–68; Labbé 2012, passim.

2 At the address http://armyofromanpalestine.com/ a 'Database of Military Inscriptions and Papyri of Early Roman Palestine' can be reached, which promises to provide corresponding documents for the military in Judaea. But one quickly realizes that the database is completely incoherent in itself. For documents are also cited that refer to a unit that was once stationed in Judaea, but not at the time when an inscription or papyrus was written. Thus, to give just one example, P. Oxy. 477 from 132/133 is included, in which a former tribune of *cohors I Damascenorum* is mentioned. But he was active at a time when this unit was not yet stationed in Syria Palaestina. There is also another unit, usually called *I Flavia Damascenorum*, which appears without Flavia but was stationed in Germania. These testimonies have nothing to do with Judaea.

3 Today's Israel covers a total of almost 21,000 km^2, including the entire area north of the Karmel and the Negev in the south. This covers around 60% of today's territory, and Galilee is about a third. Both areas were not part of the province established by Vespasian, but the Palestinian territories, which reach about 6000 km^2. It is difficult to calculate the area of the province since the boundaries are not exactly known in the north as well as in the south (before the Negev, perhaps in the 3rd century), and the Peraia beyond the Jordan was part of the province. The fact that the territory covered less than 10,000 km^2 is quite certain. See Eck 2016a, 127–140.

4 Still under Pertinax and Septimius Severus the Negev belonged to Arabia, as shown for example by two milestones found between Avdat and Sha'ar Ramon on which governors of the province of Arabia are mentioned: David and Isaac 2020.

5 More details on almost all these units can be found in Cotton *et al.* 2003, 17–31.

6 See the overview by Isaac 1992.

7 For these auxiliary units see below.

8 Foerster 1980. Cf. also a building inscription of the *legio VI Ferrata*, AE 1988, 1053

9 See p. 124.

10 The best documented example is now Vindolanda in the province of Britain, see *e.g.* Birley 2002.

11 Isaac and Roll 1979 = AE 1979, 628 = 1989, 744 (Ptolemais): *[Imp(erator) Caesar divi Tr]aiani Part(h)ici fil(ius) d[ivi Nervae] nepos Hadrianus Aug(ustus) pontif(ex) max(imus) trib(unicia) potestas(!) IIII co(n)s(ul) III leg(io) II T(raiana) m(ilia) IX*.

12 Caesarea Maritima.

13 Now also AE 2003, 1706, an inscription from Kaunos, where at the end only the command of the *legio X Fretensis* is preserved; the rest of the inscription is lost.

14 The same list also appears CIL XVI 87 of the year 139.

15 For example Mattingly 1966, 96 no. 474; Strobel 2019, chapter IV 2.

16 The milliariae are included.

17 The rebellion broke out not in late summer 132, but just in spring, P. Yadin 42 = 5/6Hev. 42 (see Yadin *et al*. 2002).

18 It is spoken of an *ala*, but the castle was too small to accommodate an *ala* of traditional size.

19 Thanks to Avner Ecker for referring me to this inscription.

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15

Securing the Hostile Hinterland: The Roman Fort at Gračine and the Defences of *Narona*

Tomasz Dziurdzik and Anna Mech

Introduction

This article deals with the question of the strategic functions performed by the Roman fort (archaeological site Gračine) located in Humac, Ljubuški municipality in West Herzegovina Canton, Bosnia and Herzegovina (Fig. 15.1).[1] The site is dated to the 1st–3rd century CE by the small finds and is located on a plateau overlooking the Trebižat river, within the wider river valley. It was surrounded by stone walls, which are either covered by heaps of stones removed during agricultural work or not preserved at all, but its original size can be reconstructed as *c*. 105 × 140 m. In the past, the site was connected with the ancient toponym *Bigeste*, attested in the sources (*Tabula Peutingeriana* VI.4/ Talbert 5A4) as a road station. The identification is, however, far from certain, especially since the distances have been shown as possibly pointing to another archaeological site (Bojanovski 1973; 1977, 123–127) located in the village of Donji Radišići, some 3.6 km north-west. As such, only the name Gračine will be used in the current article.

The strategic functions of the fort must be considered in close relation to the Roman colony *Narona*, one of the most important cities in the province of Dalmatia, located some 13.5 km as the crow flies. Not only was the fort located within the city's rural territory, but it also lay on the road connecting it with *Salona*, the provincial capital. As such, its construction was an important measure in securing the area during the first decades of Roman rule, characterised by a lack of stability after a long period of warfare, culminating in the defeat of the so-called Pannonian-Dalmatian uprising in 9 CE. However, looking at those two strategic factors alone, the choice of the location for the fort is peculiar. This article answers this problem through analysing the relationship of the fort to the local landscape conditions, settlement patterns, communication routes and Roman strategy in the wider region, proposing a new interpretation of the ways it was employed in securing the hinterland of *Narona*, and in the Roman stabilisation and pacification of Dalmatia.

The Fort at Gračine in Early Research

Carl Patsch, the founding father of Bosnian-Herzegovinian archaeology, already stated that the site Gračine was a Roman auxiliary fort (Patsch 1897), but the evidence was not fully convincing. Numerous tombstones erected for active soldiers of different auxiliary units have been found in the region, pointing to the presence of a military force in the immediate area. Moreover, the site yielded numerous stray finds of a military nature, both pieces of equipment and building material, including roof tiles stamped with the names of military units. However, the site was subject to very limited archaeological fieldwork until the excavations conducted in 1977–1980. Unfortunately, the Yugoslav archaeologists led by Ivo Bojanovski lacked the experience in Roman military archaeology, which led to a poor understanding of the excavated features, the situation made all the worse by the fact that the research was never fully published. Apart from the yearly reports, full of technicalities such as the number of working hours but lacking proper presentation of archaeological data or interpretation, only a short summary has been made available (Bojanovski 1981). The larger parts of two buildings were excavated, as well as single walls of two further objects. The poor understanding is best underlined by the fact that one of them was interpreted as headquarters (*principia*), with two storeys and no courtyard, which would pose a major obstacle for the main functions of such an edifice. The second – ironically with what appears to be a courtyard in the middle – was described as a barrack for troops. There were also some probational

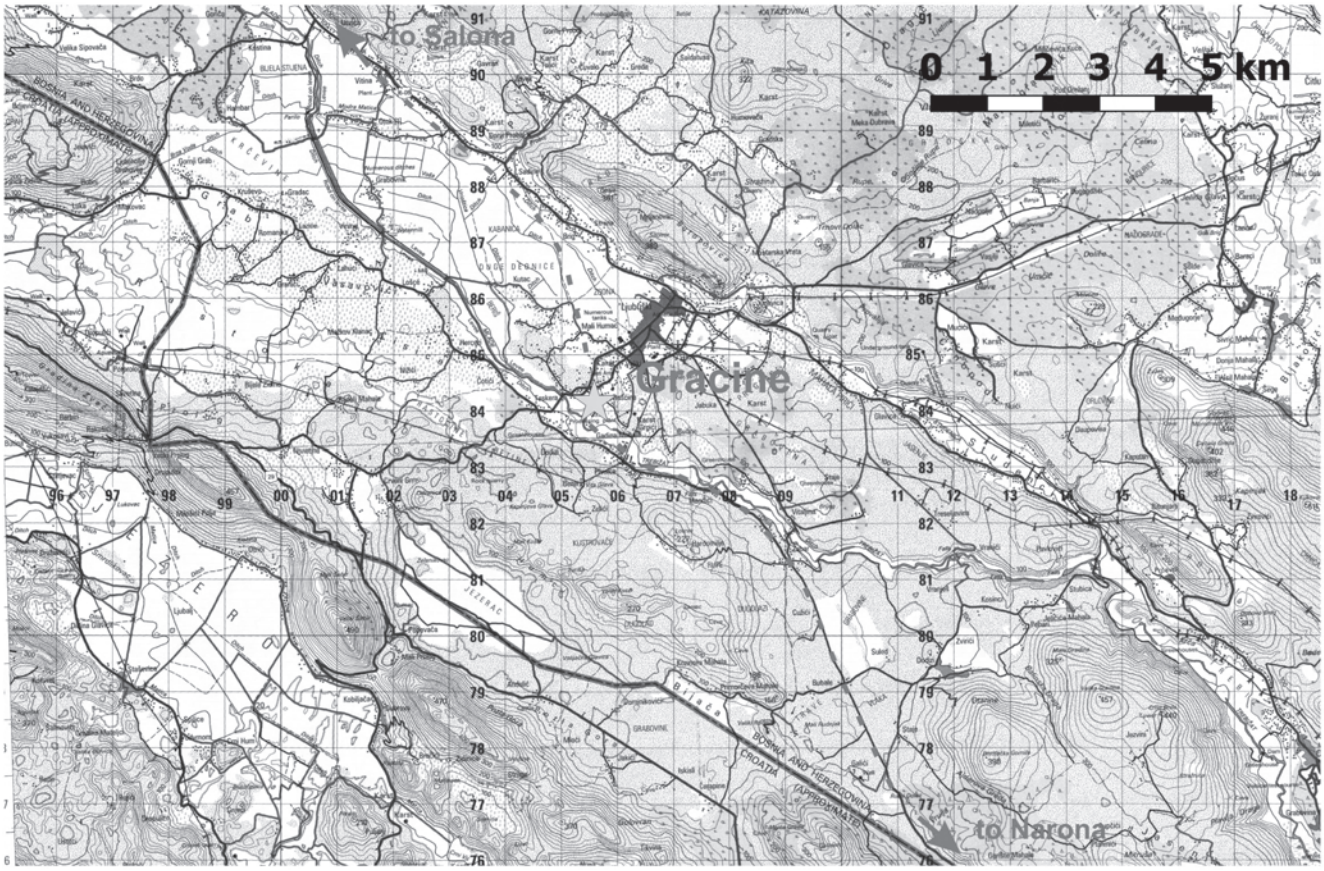

Fig. 15.1: The location of the Roman fort at Gračine (marked with a star) in relation to the landscape and the approximate course of the Roman road Narona-Salona *(map: Defense Mapping Agency, Former Yugoslavia 1:50,000, 2581 I).*

trenches investigating the perimeter wall, but their location was not provided; the only data published on the defensive wall is that it was present. In total, little was known about the way the fort functioned, including the possible strength of the garrison. The conservation work on the excavated walls further obscured some aspects of the site, resulting in new, sometimes more plausible interpretations of the role of buildings (Basler 1985, 22), some going as far as to state that the site was not the fort, but rather an annexe to it (Dodig 2006; 2011). The situation was made even worse by the fact that due to the civil war-related collapse of cultural heritage management, the site suffered some damage through illegal agricultural and construction activity, even though it was listed as a National Monument of Bosnia and Herzegovina.

Military History of Roman Dalmatia: Difficulties and Innovations

Dalmatia remains a province with relatively poorly reconstructed military history, the two most widely cited monographic analyses being over half a century old (Alföldy 1962; Wilkes 1969, 88–152), both surely ingenious, but now partly outdated, even after being revised (Alföldy 1987; Wilkes 2000). Some new accounts have been published (Zaninović 2010), plus many studies of a narrow, regional character, but a divide in the research remains an important part of the problem in reconstructing the military history. There is little cooperation and exchange of thought between the historical, epigraphic and archaeological approaches, all of which have more merit for some periods and some areas, but cannot alone explain the whole scope of the military history of pre-Roman and Roman Dalmatia. Since this article deals with the question of the role of a particular early Imperial fort in the defence of a city and its territory, just a few remarks will be made, pertaining to the problem at hand.

Part of the problem, apart from the abovementioned discontinuity of archaeological research, is also that much of the older and some new studies suffer not only from the limits imposed by the available sources, but also from poor understanding of how the epigraphic evidence relates to the positioning and movement of troops. Such false information sometimes still haunts the research especially as citations of works by respected scholars. Their interpretations are accepted on terms of authority without verifying the sources that were their basis. A commonly repeated misunderstanding is that the presence of tiles with stamps of legions or

other units is not always proof of their presence (or of presence of their detachment), but merely a sign that a particular unit was responsible for the production of a part of building material. It is especially true in the case of a fort like the one at Gračine, which supposedly had an early date of construction. One can even wonder if the earliest auxiliary units present in the area would have been able to produce their own building material such as roof tiles, which not only required the raw resources, but also a specialized workforce and the necessary installations. As such, it was sometimes centralized by the Roman military administration, even in provinces (and periods) with highly developed production (Sarnowski 1997). Auxiliary units – which by themselves lacked specialists – and particularly in the period when they were still almost entirely recruited in rather poorly developed parts of the Empire, simply lacked the know-how on how to survey the construction site, prepare and execute an architectural plan. On the other hand, it was always an important part of the functions performed by legions. Among the legionaries were soldiers who had the special functions of architects, land surveyors and engineers, and legionary centurions were often in charge of construction projects, including on two separate occasions when they reconstructed a temple of Liber Pater in the vicinity of the fort at Gračine, at least once supervising the auxiliaries.[2] Thus the presence of legionary tile stamps at Gračine or of some inscriptions in the surrounding areas commemorating soldiers of some further units does not imply that the whole unit or even a larger detachment was stationed there, but rather show transfer of individuals, materials and skills.

While the situation in the Bosnian and Herzegovinian part of Roman Dalmatia has been rather stagnant and characterised by numerous articles and books rephrasing and repeating the earlier conclusions, in other regions the military archaeology underwent a boom, especially in Croatia, related mostly to the accessibility of satellite pictures and orthophotographs. New finds and interpretations appear, including newly discovered military installations, as well as previously unlocated forts in areas that have yielded inscriptions that were known for years, but which were so far unconnected to any archaeological sites (Glavaš, Miletić and Zaninović 2010; Cesarik 2017; 2018a; 2018b; Vitale 2017). Part of this work remains to be verified with archaeological excavations (or even simply intensive surveys, including geophysical research) and the proposed chronologies and functions of the same installations – or even suggested 'systems' – wildly varies, ranging in some cases from being part of Octavian's 35–33 BCE offensive inland to the period of Claudian military reforms after 42 CE and control over a fairly pacified area. To this one can also add a suggestion that a part of them could also have been installations built for training rather than actual garrison use. Still, they show that the activities of the Roman army were far more intensive, complicated and dynamic, and left much more traces than has previously been suggested.

The Fort at Gračine and the Defences of *Narona*

The situation in the hinterland of *Narona*, located mostly on the territory of present day Bosnia and Herzegovina, has been the focus of recent regional studies, covering the whole military epigraphic material (Marín *et al.* 2000; Mayer-Olivé 2016), as well as dealing with specific units attested in the area of Ljubuški (Marić 2016a; 2016b; 2017). An article has also been published summarising the state of research, including also the latest iteration of the theory that the fort has been precedented by earlier permanent fortifications located somewhere in the area, constructed in the early Augustan period or even during the last decades of the Republic (Miletić 2017), but the evidence for this proposal is inadequate.

The inscriptions of active soldiers from the area of Ljubuški suggest that four cohorts were stationed there. The exact chronological relations – and especially the dates when the garrison was changed – are far from certain. The *cohors I Belgarum equitata* was the last unit that was probably stationed in the fort at Gračine, from the end of the 1st to the early 3rd century. Before it there was the *cohors III Alpinorum equitata*, stationed in the late 1st century. In the earlier part of the 1st century two units recruited in the Iberian Peninsula were probably garrisoned there, *cohors I Bracaraugustanorum equitata* and *cohors I Lucensium equitata*. While most researchers presume that the *cohors I Lucensium equitata* was the first to be stationed in Ljubuški, including suggestions that it was responsible for the construction of the permanent fort at Gračine already in the late Augustan–Tiberian period (Miletić 2017, 32–33), a recent article has stated that the unit was created only as late as *c*. 45 CE (Jiménez de Furundarena 2016, 171). The question of the date of this unit's creation seems unresolvable until further evidence can be found, be it inscriptions or military diploma.

While the works on the epigraphic material somehow built upon and expanded the earlier scholarship, the topic has been much less intensively studied in the field. Fortunately, a new Polish-Herzegovinian research project effected a change to the status quo concerning the understanding of the site Gračine. Starting in 2015 the site and its surroundings became the focus of new studies (Dziurdzik *et al.* 2016; Dziurdzik 2018). During the geophysical investigations of sites in the region, it was possible to survey the eastern part of the site. The results of electrical resistivity conducted in 2017 (Pisz and Dziurdzik 2019) were very difficult to interpret due to the local conditions, especially the geology (the bedrock being very close to the surface), which resulted in strong anomalies related to natural features. However, thanks to the measurements being repeated multiple times over the same area in several different configurations of

Fig. 15.2: The Roman fort at Gračine. Note the heaps of stones following the course of ancient walls (their probable course is marked with a dotted line) and the remains of buildings in the centre, excavated in the 70s. Two barrack blocks in the eastern part are reconstructed based on the results of geophysical prospection (orthophotograph: katastar.ba).

sampling (various intervals and electrode separation distances) we were able to determine that the archaeological features are most probably poorly preserved and buried very close to the ground. The results showed very characteristic anomalies, which were interpreted as the remains of two barrack blocks (measuring *c*. 55 by 9 m), complete with square officers' houses at the end of a row of double rooms serving the rank-and-file soldiers (Fig. 15.2).

The anomalies suggested not only the presence of this typical Roman military building type, but also the orderly organisation of space with streets: separating the barracks from the structures excavated in the 70s is a wide, strong anomaly caused by a hard surface of a street. A similar anomaly in the eastern part of the surveyed area is most probably caused by the remains of *via sagularis*, a street encircling Roman forts on the inside of the fortifications, another typical feature of Roman military installations. Our assumptions were further verified by the excavations by the Herzegovinian colleagues,[3] which fully proved the initial interpretation. This allows a final conclusion that the site was indeed a Roman auxiliary fort, and that there is a dire need for a re-interpretation of the results of the earlier, Yugoslav excavations to fully understand its interior architecture. The research will be continued in the future, but it is already possible to suggest that the interior of the fort was much better organised than it was assumed, with streets crossing at right angles and a centrally-located headquarters building (*principia*), and possibly also the house of the commander. The irregularities in the plan when compared to an 'ideal' Principate permanent fort are to be interpreted as stemming from a possible early dating. If it is indeed to be dated to the late first half of the 1st century (as suggested by small finds), most probably to the Claudian period, similar to the permanent construction of the closest legionary fortress, *Tilurium* (Tončinić 2014; 2015, 340), its construction then happened in the period when the interior design of Roman military installations was not yet fully developed and structured. Of course, one can never exclude the possibility that the same site was temporarily used by the Roman military in the earlier periods as well. However, any such

earlier Roman army presence cannot be linked to the stone buildings excavated at Gračine, which seem to belong to the period starting with the reign of Claudius.

While it was suggested that the two Iberian cohorts attested in the area of Ljubuški could have been garrisoned together (*cohors I Bracaraugustanorum equitata* and *cohors I Lucensium equitata*), perhaps also with *cohors III Alpinorum equitata* (Marić 2016a, 25, also 'el punto de mayor concentratión de fuerzas auxiliares' in Marín *et al.* 2000, 509), such a possibility must now be rejected, based on archaeological evidence (Fig. 15.2). While the new research finally confirms that the fort at Gračine was able to provide the space for a whole auxiliary cohort (that on the one hand it was doubted, and on the other suggested the presence of several units, shows the extent of confusion following the excavations in the 70s), it also shows that there was space only for a single such unit, particularly of the *equitata* type, which included an additional detachment of horsemen, in turn requiring far more space than an infantry-only unit. The two barracks that could have been identified on the eastern side of the fort probably had mirrored counterparts on the western side; together with the space in the northern and southern part of the fort it was enough to accommodate the whole unit with all the barracks of sub-units and other necessary structures, but far too little to even consider it as a double unit fort. Of special note is that of the four units probably stationing in the Ljubuški region and most probably connected with the fort at Gračine, each was of the same type. This suggests that it might have been a conscious decision resulting from a particular strategy.

Local Conditions, *Narona* and its Territory

When considering the reasons behind the choice of location for the fort, several factors must be considered. First, it must be stressed that from the local tactical conditions, the choice of Gračine seems suboptimal (Fig. 15.1). It is located on a low plateau overlooking the Trebižat river,[4] on its left (northern) side. While it protects a convenient river crossing, which was provided by the Romans via a bridge, it does so from a potentially 'hostile' side. Even though it had some visibility along the river itself both to the west and east, in most directions it was fairly limited by the uneven rocky landscape of its surroundings. Any sort of control over the wider river valley must have included further installations or extensive patrolling. Several watchtowers and defensive installations on hilltops in the region have been suggested (see Čović 1988, n. 25/101, 25/105, 25/116, 25/121 and possibly 25/135) but they are widely dated, and moreover, most such structures in the region date from Late Antiquity (Čremošnik 1990) and in most cases left few traces verifiable in the field other than undatable piles of stones. The river offered little in terms of facilitating transport, as it has numerous travertine barriers and waterfalls along its course. Additionally, before the Austro-Hungarian regulation, it must have periodically flooded large areas of the lower part of the valley. The extent to which this posed a nuisance for agricultural activities is well demonstrated by the fact that at least one sector of Roman road running through the area opposite the fort (in Hardomilje) was raised to double its function as a levee (Patsch 1907, 62–67). The spot chosen for the fort was both safe from the waters of the river and at a distance from the nuisances they caused, with high grounds to keep and graze the horses and animals for consumption.

It is also important to consider the defensive value of the fortifications at Gračine. The walls were not thoroughly investigated, but at least their presence has been confirmed by excavations (Bojanovski 1981). The heaps of stones removed during agricultural activities follow their course, clearly showing characteristic rounded corners where we should expect the corner towers to be; in some spots is visible what appears to be part of the original face of the Roman wall. There is no visible trace nor any report of a ditch, which may not have been created, as the bedrock is high and it would have had to have been cut. Interestingly enough, the fort was best defensible on the least-endangered side, from the south, where the edge of the plateau means that there is a rather steep climb to reach the fort. On the other sides of the fort there could be a slight disadvantage for the defenders caused by the land sloping gently south, but it is obvious that the choice of the place for the fort was not to improve its defences, even though it would be quite easy to find such spots in the surrounding areas. This was a common practice during the Principate, when military installations were mostly located in flat spots, and even their defensive constructions were suboptimal in comparison to the walls built by civilians around the cities, especially because the towers were on the inside rather than projecting outside.

In terms of protecting the colony *Narona*, the distance between the city and the fort was enough to provide adequate assistance within several hours after notification. More importantly, the fort did close one of the access routes from inland. However, it is interesting to note that the colony – as far as we know – was not similarly protected by any comparable military presence from other directions, including along the Neretva river, one of the most important ways into the middle Balkans. It is commonly assumed that the Roman military installations in Dalmatia were mostly aimed against the *Delmatae* tribe, with its centre in *Delminium* (Tomislavgrad). While indeed it seems true for the early presence of Roman auxiliary units and legions, at the time when the permanent forts and fortresses were erected, this threat was no longer particularly great. The concept of Carl Patsch of the existence of a *limes Delmaticus* has been challenged, re-formulated, re-dated (Šašel 1974; Wilkes 1977; Sanader 2002; Periša 2008; Tončinić 2015) and challenged again. For some part it is intertwined in the long discussions concerning the different meanings (ancient and modern) of

the term *limes* and its evolution. There is also the question of whether the Romans indeed envisioned such – rather complex – strategies, or if at least part of what is now perceived as a system was rather the result of a sum of reactions to disconnected conditions and events.

It is, however, obvious that the location of the fort at the important road connecting *Narona* with *Salona*, the capital of the province, was of obvious strategic value (Glavaš 2015 on the military role of roads in Dalmatia). Firstly, it allowed control and protection of the vital communication route. Secondly, in case of problems it allowed for rapid redeployment of troops and the strengthening of the sectors under attack. The origin of such a location could also be because the road served as an avenue of attack against the enemies of Roman order, the road with the permanent military fortifications along it somewhat fossilizing the situation from an earlier period. The role of *Narona* as a base of Roman military operations, a 'bridgehead' on the other side of the Adriatic in the times of the Republic, was emphasized (most vocally in Zaninović 1980). A supposition was often also added that while the city provided an important port, the staging area for the army and its marching camps would be outside of the walls, and in the view of the scholars stating this theory, both the direction of the army's movement and the landscape point in the direction of the Trebižat river valley (Zaninović 1980, 176; Dodig 2012, 26; Miletić 2017, 25–27). A less ambitious but more probable proposition is that the locations of permanent, Claudian forts and fortresses in Dalmatia generally follow the developments of the Tiberian and Augustan period. Of the ancient *Narona*, unfortunately only a small part of the city has been excavated (the spectacular discovery of a temple of Imperial cult being an important exception as well as providing a glimpse into the richness of the city), but the defences are quite well-known. The walls with numerous external towers date to the Late Republican period. While they were more than adequate to protect the city from anything but a prolonged siege, its rural territory (as well as merchants heading to or from *Narona*) was much further inland and had to be protected by closer installations.

There are further factors to consider, including an interesting observation that can be made about the distance between the fort at Gračine and the legionary fortress *Tilurium*. It is located almost exactly at the point where the reach of two-day infantry response along the road has been calculated (see the DARMC atlas (https://darmc.harvard.edu/), although it completely incorrectly marks the location of Bigeste), with a station of a *beneficiarius consularis* tasked with watching over the road located almost exactly halfway, at *Novae* (modern Runovići).[5] As such, we can imagine that the units stationed on the two ends of this sector shared the task of patrolling the road in equal distances. It must also be noted that the location of several military installations along a single road facilitated the supply systems, a problem especially evident in the mountainous province of Dalmatia. In fact, the choice of this particular road, running mostly through a chain of river valleys, can easily be understood as a sort of a compromise between the various factors: distance from the sea (from which a lot of provisions had to be transported), the need to protect the coastal area (which was better integrated into the Roman system), the safety of the road itself, and the desire to have a military presence deeper inland (where the enemies of the Roman order were). It is of special notice that the bulk of the Roman military forces in Dalmatia stayed on this very road throughout the whole period, with the number of units and troops declining over time. Needless to say, this was facilitated by the fact that the installations and organisational measures were already functioning, as opposed to the prospect of setting them up in a new location.

In this context it is also very important to look once more at the local conditions of Gračine. One thing that seems to be worth particular notice is the presence of a settlement of legionary veterans in the close vicinity of the fort. *Pagus Scunasticus*, as it was named, was founded by Tiberius in 14 CE for the veterans of *legio VII*, as attested by the two copies of the famous inscription.[6] The veterans set up an altar to Tiberius and Divus Augustus, explicitly stating not only the name of their settlement, but also that it was founded on the lands that belonged to the territory of *colonia*. Due to the fact that many of them erected tombstones, the issue was the subject of many epigraphic studies (Bojanovski 1985; Dodig 2005; Tončinić 2011; Glavičić and Pandža 2017), not to mention further important research, for example on the workshops that were producing the stelae. While this obviously strengthened the city by providing it with an additional population of fairly wealthy Roman citizens (Wilkes 1969, 113), this measure also had some defensive value. Perhaps long-term it was of lesser importance militarily, as the veterans who arrived were already well into their middle age, but it greatly contributed to the stability of the area, by introducing a rather 'dutiful' and highly organised element of population and strengthening the land divisions. This also provided a perfect framework for the military unit: together with the settlement of veterans, it was easy to provide the land needed for the fort plus the necessary pastures in its surroundings. Not only that, but the veterans and their farms would also be an important element in the supply of food for the garrison, the villa-type agriculture being so important in the supply systems of the Roman army, as it provided the surplus production that was necessary to sustain the soldiers. In fact, this may well be strongly connected with the decision to build the fort exactly where it was: not only would supply be easy, but the presence of the soldiers in the territory of *Narona* helped secure the production. Over time the presence of the troops could include more and more peacekeeping activities, going from providing *Narona* with a buffer from the enemies of Roman order to helping the

farmers keep away the pastoral population of the hinterland and their herds from interfering with the cultivation of the land. The long presence of some military units in a rather (by then) peaceful province may even be connected with it becoming a sort of provisioning centre. Perhaps the temple of Liber Pater, the god who was frequently associated with the food supplies for the army (Birley 1978, 153; Sarnowski 2013, 144), which was located somewhere near the fort at Gračine and twice renovated by the military,[7] is to be linked exactly with this development. The fact that in both cases the work was supervised by legionary centurions is because they were fulfilling assignments related to supplies rather than being specifically sent to overview reconstructions of a temple.

Final Remarks

The choice of location for the fort constructed at Gračine appears to have been made according to several factors at both the local and regional level, with a special focus on communication and supply, and far less of a consideration of the defensive properties of the particular place that was fortified. Concerning its strategic functions, they appear to be twofold: firstly, controlling and blocking the access to *Narona* from the direction with the highest possibility of enemy attack; and secondly, monitoring more local issues, in this case the fertile river valley. Similar to other permanent military structures in Roman Dalmatia, inertia (or military tradition?) also played its role, and the fort was constructed in an area that already had auxiliary and veteran presence. However, during the time the fort functioned, its roles changed, from battle-ready to more of policing, administration and supply, corresponding to the developments concerning the whole, partly demilitarising province.

Notes

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2 CIL III, 1789, 6363, 8485 and CIL III, 1790, 6362, 8484.

3 The archaeological interpretation was presented at the 24 International Limes Congress (Serbia, September 2018) and will be published in the proceedings of the conference.

4 The river frequently changes its name along the course; it enters the area of interest for the current article under the name Tihaljina, further downstream is called Mlade, and finally Trebižat, down until it flows into the Neretva river.

5 J.J. Wilkes did erroneously suggest some kind of a military installation, even calling it a fort, in the 3rd century at Tihaljina between Gračine and *Novae* (Wilkes 1969, 139 and 470), but based this assumption on a single private(!) dedication by a soldier of the *cohors I Belgarum* (CIL III, 12810), which was then garrisoning the fort at Gračine.

6 ILJug 113 and 114; AE 1950, 44.

7 CIL III, 1789, 6363, 8485 and CIL III, 1790, 6362, 8484.

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16

Fortifications of Nicaea: The Defensive Features of a 3rd-Century CE Rampart and their Transformation Throughout History

Ayşe Dalyancı-Berns

Introduction

'Who would not be astounded to look upon these walls around *Nicaea*, which draw so much confidence from their construction that the effort of every kind of engine against them is of no use but a wholly vain spending of time on the impossible?' With these words Theodore Metochites praised the fortifications of Nicaea in his oration of 1290 just before he became one of the leading statesmen of the Byzantine Empire (Foss 1996, 175). As he describes, the city walls impressively dominate the cityscape of Nicaea even today. The fortification is the most significant historical monument of the city, mainly because it has been preserved to a great extent. The walls are about 5 km long and they almost completely enclose an area of 145 ha. Built in the 3rd century CE, the fortification has undergone many alterations throughout the rich history of Nicaea until the present day.

The monument was an object of interest for travellers and researchers from the 16th century onwards. The first sketches of the city plan and gates are found in the publications of Richard Pococke (1773), Leon de Laborde (1838), and Charles Texier (1839) from the 18th and 19th centuries. However, the only substantial systematic documentation is the monograph of Walter Karnapp and Maria Alfons Schneider published in 1938. Thereafter, Clive Foss deals with the city walls of Nicaea in a chapter of his book *The Byzantine Fortifications* in 1986.

The current research on the monument is part of my dissertation project at the Faculty of Architecture of the Technical University Berlin.[1] In my thesis, the construction itself is considered as the main source for various questions regarding areas such as the construction process or the different functions of the building. In this paper I concentrate on the defensive features of the fortification. The paper presents the preliminary results of my research concerning the alterations of different parts of the fortification system within the various building phases. In particular, it will address whether we should understand the repeated modifications of towers and curtains as an attempt to improve constantly the defensive capacity of the wall, or whether the modifications also fulfil other requirements, such as symbolic manifestations, from time to time. With regard to these questions, I will consider the characteristics of each building phase in detail and compare them to assess the transformation of the walls' defensive features.

Nicaea, which is now called Iznik, is located in the modern province of Bursa, Turkey, about 200 km south of Istanbul. It is situated on flat terrain surrounded by mountains on the east coast of Lake Iznik. Nicaea was founded towards the end of the 4th century BCE, and later belonged to the Roman province of Pontus Bithynia (Şahin 1987, 1–2). Nicaea suffered from Gothic attacks in the 3rd century CE (Zosimos 1, 35, 2). In Late Antiquity, the city was an important centre due to its geographical position in the hinterland of Constantinople at the junction of several important routes. Therefore, the first ecumenical council was held in Nicaea in 325 CE (Şahin 1987, 23). The city was also a significant military base during the Arab invasions of Asia Minor in the 7th century, when it became the administrative centre of the Opsikion theme (Foss 1996, 23–24). In 727 the Arabs besieged the city, but failed to capture it (Ostrogorsky 1965, 120). Soon after, in 787 the last council gathered in Nicaea (Foss 1996, 19–21). In 1081 the Seljuks conquered the city and Nicaea became the centre of the Turkish state for a short period. After the First Crusade the Byzantines gained back the city, and in 1204, when Constantinople was captured by the Fourth Crusade, the Byzantine capital was transferred to Nicaea. After the Byzantine recapture of Constantinople in 1261, Nicaea lost its status as the capital of

the Empire. When the Ottomans conquered the city in 1331, it received its present name Iznik. Thereafter the city went through a phase of decline and lost its importance in relation to the new capitals, Bursa, and eventually Constantinople (Foss 1996, 75–87).

Brief Description of the Walls

The fortification system consists of two circuits, an inner wall (Wall A), and an outer circuit (Wall B). It has four main gates, which define the two central axes of the city (Plate 16.1). Two of these gates, Istanbul Gate in the north and Lefke Gate in the east, incorporate monumental arches from the 1st century CE in their core. The southern or Yenişehir Gate is only partially preserved, while the western Lake Gate is completely destroyed. The plan of the circuit is an irregular polygon and covers what was most probably the settlement area at the time. It runs in straight lines from the south-east to the north. In the south-west and north-east it has an indented trace. Here, apparently, some existing buildings were taken into consideration when the course of the wall was defined.

Wall A had at least 116 towers, 113 of which are preserved to differing degrees. Ninety-two towers of wall B survived, some in quite a poor state of preservation. The sophisticated planning of the fortification system with its solid structure, dimensions and the many projecting towers makes the monument unique in Asia Minor for the period of its construction (Crow 2001, 90–91).

In the following I would like to discuss each construction phase, considering specific aspects, such as layout and dimensions, permeability, defensive and aesthetic values, to assess whether there is an overall development pattern. It is quite difficult to distinguish the different phases of the construction and date the alterations definitively. Some of the phases are documented with inscriptions; where this is not the case, a relative chronology has been established on the basis of construction details and masonry types. Since the documentation effort and fieldwork still continues, the building phases, which I present, are a preliminary suggestion based on the present state of my research.

Construction Phase: 3rd Century

Two identical inscriptions document that the walls were dedicated to Emperor Claudius Gothicus who ruled between October 268 and 270 (Şahin 1979, 7b–9b). The construction must have been nearly completed by this date as the beginning of the construction seems to correlate with the end of the Gothic attacks on Nicaea in 259 (Zosimos 1, 35, 2). Coins of Emperor Gallienus and usurpers Macrianus and Quietus from around 260 have depictions of the walls of Nicaea, which is generally taken as evidence of the start of the construction (Weiser 1983, 87).

The fortification was initially designed as a single circuit and consisted only of 'Wall A' (Plate 16.1). The course of the wall, many preserved curtains (at least in their core) and half of the towers belong to this period (Dalyancı-Berns 2017, 417–426). The wall is built very solidly in mortared rubble with a facing on both sides (Fig. 16.1a–b). The curtains are 3.7 m thick and 9 m high in the first phase of construction. They have a facing of rubble stones, which are placed with their flat sides exposed. Courses of four brick rows run through the whole width of the curtains at regular intervals. The wall-walk could be reached through stairs built against the curtains on the city side and its dimensions were suitable for mounting and operating catapults of bigger sizes (Marsden 1969, 122). The curtains have no other defensive zone apart from the wall-walk since they have no openings on the ground level.

The wall had a minimum of 71 towers in this phase, which were positioned regularly with a distance of 45 to 55 m between them. Only along the lakeside in the west do the intervals measure up to 70 m.

Fig. 16.1: a) Interior view of the wall sections from the 3rd century; b) Exterior view of the wall sections from the 3rd century.

All the towers of this period are U-shaped and bonded to the curtains (Fig. 16.1b and Plate 16.2a). They protrude 9 m from the curtains with an average width of 9 m. Unlike the curtains they have a facing of brick, which was laid very precisely.

Almost all of the towers have a postern at ground level. The posterns consisted of a narrow vaulted passage making a right-angled turn inside the tower. Their clever design prevented the openings from being visible from the landside. Being so, they served as sally ports during a siege. Cuttings for the bolting mechanisms can still be seen on the door lintels and the embrasures (Plate 16.3). This would suggest that the sally ports could be closed temporarily by some kind of a barrier during an attack, to fulfil their military function.

Some of the towers have rectangular vaulted chambers without openings. As these chambers had no obvious defensive function, they must have been used as storage rooms. It seems that the builders did not take full advantage of having semi-circular towers, which enable shooting with a wide field of fire (Marsden 1969, 143). The defensive zones of the towers were limited to the sally ports and the upper platforms, some of which still have crenellations.

The four main gates on Wall A also originate from the first building phase. In this period, as well as these main gates that connected the city and its rural environment, there were also five secondary gates and numerous posterns, which allowed traffic to cross the wall. In periods of war, these openings had differing purposes. The specific military function of sally ports was counterbalanced by its vulnerability to attacks. In periods of peace, however, their permeability facilitated daily life. The inhabitants of Nicaea could avoid a detour via the main gates and simply take a shortcut through a postern or a secondary gate on their way to extramural sites, such as their fields.

As mentioned above, two freestanding monumental arches were integrated into the wall and henceforth served as the gates in the east and north (Fig. 16.2). The arches have three openings, one main passage 4.3 m wide and 5.15 m high with two side passages only 90 cm wide and 2 m high. This re-functioning required some alterations. In order to ensure security, the arches were provided with flanking towers on both sides. A portcullis was installed in each of the main passages. The upper parts of the arches were raised by brick structures, which also served as the slot required for the portcullis. The flanking towers have high rectangular chambers, which were covered by vaults. Like the regular towers they have no openings.

The Southern Yenişehir Gate has a different layout with its forecourt projecting to the city side. This gate was built entirely using re-used blocks. One of the flanking towers is destroyed without a trace. The second one, AT1 with its almost circular plan, is one of the largest towers in the whole fortification. It has a round chamber with four openings. Two

Fig. 16.2: Exterior view of Lefke Gate with the monumental arch of the 1st century (photo: M. Özkılınç, 2014).

of them are narrow loopholes with oblique jambs. That is, they are wider on the inside than on the outside, a feature which enabled the archer to cover a wider field of fire by moving from one side to the other (Marsden 1969, 128). They are situated on the front, directed to the countryside. The other embrasures are wider openings placed in the west and east sides covering the field along the curtains and the gate.

The Walls of Nicaea were originally built in a very sophisticated way. They were certainly capable of defending the city as well as intimidating the enemy with their solid structure and many towers. Still, they perform more than a solely defensive function. The posterns for example enabled connectivity of the city with its environment at many points, making this barrier permeable even though they were planned as defensive features. The combination of materials on the curtains and the skilful execution of the brick facings are of a high aesthetic quality. It is obvious that they were applied with the intention of demonstrating power and stability when representing the city (Crow 2001, 91).

Construction Phase: 8th Century

In the 8th century parts of the walls were rebuilt (Fig. 16.3). An in-situ inscription allows us to connect these activities with Leo III, who ruled between 717 and 741 (Körte 1899, 405–409; Şahin 1979, 234a–236b). His victory against the

Arabs and the renewal of the walls were commemorated in this inscription (Ostrogorsky 1965, 120; Foss 1996, 17–18, 90–91). Although the alterations were limited to very few sections, the result was impressive from an aesthetic point of view (Crow 2017, 104). It did not, however, substantially improve the defensive qualities of the wall.

Three of the semi-circular towers of the first phase were transformed into rectangular towers by an additional facing (Plate 16.2b). The new facing consisted entirely of finely cut spoil blocks, which were arranged carefully in regular courses. It was also applied to the curtains between the modified towers. The stability of the new masonry is obvious. Even so the effort of using spoil material in such a precise manner must have been motivated by other concerns. The transportation of the building materials to the construction site, the careful sorting of blocks depending on their dimensions as well as the placing of the heavy material into their new context were only a few steps of the construction process, which would have required a considerable amount of qualified manpower and equipment (Frey 2016, 45).

While the posterns of the original towers were kept in use, the former chambers were filled up and became unusable. The towers were crowned with a beautiful cornice, which in this context had purely an aesthetic value (Crow 2017, 104).

Nevertheless, the defensive quality of the wall was improved through the renewal of the battlements in this period. Long spoil blocks were laid on the former wall-walk so that the surface was stabilised. The parapet was raised and new crenellations made of spoil blocks were situated behind the new parapet (Fig. 16.4).

In this phase the alterations were restricted to a few sections but the project involved substantial effort, resulting in a very impressive appearance. Thanks to the fine layout and materials of high quality these sections are very distinctive within the whole fortification and therefore easily associated with the initiator of the project.

Construction Phase After the 8th Century

In a later phase a large-scale reinforcement project was undertaken. The fortification was modified to a great extent and this resulted in a completely new appearance. In particular, the wall's defensive capacity was considerably increased. Most probably Emperor Michael III initiated this extensive project in the 9th century (Foss 1996, 91–92). These modifications were dated to the 4th century by W. Karnapp and A.M. Schneider (1938, 42). However, considering the construction details, the alterations can only be after the 8th-century phase. The towers of this phase lean against the new, raised parapet of the 8th century wall-walk so cannot have been modified earlier than the 8th century.

The alterations can best be observed at the well-preserved south and south-east sections of the fortification. Two different approaches to the reinforcement are recognizable. First, new towers were inserted exactly in the middle of two existing towers so that the distance between the towers was reduced to approximately 25 m (Plate 16.2c).

The new towers have exactly the same U-shape and dimensions as the former towers. They only differ in their additional base of spoil blocks. The brickwork of the new shell is very similar to the original one to the extent that they are hardly distinguishable from one another.

Even if their appearance is similar, there is a crucial difference between both phases in that the later towers have chambers with openings. This remarkably improved the defensive functions of the circuit, since the defenders were now able to use their weapons from a new position. The chambers have three arrow slits with oblique jambs.

The second approach was transforming the original towers by reconstructing the superstructure completely. The towers were raised and new chambers were added (Plate 16.2d). As a result, these towers comprised of two storeys with the upper chambers having openings. In this way the towers gained a further defensive zone in addition to the posterns and platforms.

Fig. 16.3: Exterior view of the rebuilt wall sections of the 8th century.

Fig. 16.4: Wall-walk and the new battlements of the 8th century (photo: T. Kühnel, 2015).

This building phase was an extensive undertaking and while the additions improved the defensive power of the circuit tremendously, the appearance of the wall also played a decisive role. It is obvious that the builders took the original appearance of the fortifications into account when designing the new towers, even after some 500 years.

Construction Phase: 13th Century

The 13th century was a period of prosperity for Nicaea, as it became the new capital of the Empire (Foss 1996, 57–64). In the first decades of the century it was a centre of political and cultural activity under Theodore Laskaris and John Vatatzes. The new status of the city also seems to be reflected by the city walls, which once more underwent thorough changes. Theodore Laskaris apparently ordered the building of new towers, as two inscriptions indicate, one of which is still in-situ on the city-face of the tower AT 105b (Şahin 1979, 245b–247a).

These towers are rectangular and considerably higher than those that had existed hitherto. They have a high substructure of spoil material, which was elaborately arranged. The superstructure is composed of brickwork with decorative elements. The towers have rectangular chambers with wide openings.

The last essential addition to the fortification system is the outer circuit, the Wall B constructed under John Vatatzes between 1224–1254, after which the fortification attained its present appearance (Fig. 16.5) (Karnapp and Schneider 1938, 16–19; Foss 1986, 83; 1996, 94–96). The addition of the outer circuit is mentioned repeatedly in orations (Foss 1996).

It is obvious that this circuit was built in a single endeavour because the masonry is homogeneous and there are no construction details such as joints that would have suggested various building phases. It runs at a distance of 13 to 16 m parallel to Wall A. The course is, however, interrupted along the lakeshore. With the addition of the second circuit, the gates became more complex structures. They were additionally complemented with inner courtyards. These alterations enabled a threefold barrier at these vulnerable points of the fortification.

This new circuit is of much smaller dimensions than the inner circuit. Its curtains are approximately 2 m thick and 5 m high. The facings are of rubble stones with bricks arranged irregularly. The curtains of Wall B contained narrow slits with oblique sides and served as a defensive zone in addition to the curtains of Wall A. Ninety-two towers of this circuit can be traced. These towers were placed exactly in between two towers of Wall A (Plate 16.4). They have no posterns or chambers with the exception of the flanking towers of the gates. Their platforms were at the same level as the wall-walk, from which the defenders could shoot.

The gates were provided with flanking towers as in the original gates. These towers' facings of elaborate brickwork differed from the towers of Wall B. Evidently the exterior façades of the gates were designed more aesthetically (Jacobs 2009, 206–207). The brickwork of the towers has decorative elements and spoil blocks with reliefs were inserted symmetrically in the masonry on both sides of the openings with the obvious intent of embellishing the entrance of the city.

One significant impact of this building phase is the reduction of the connectivity between the city and the extramural areas. The ground level was raised by natural earth filling over the previous centuries and the posterns of Wall A were no longer in use. This level difference can still be observed at a recently excavated section of the wall, which accidentally exposed the foundations of Wall B. Wall B stands about 120 cm above the original level.

Wall B had in addition to the main gates only a few posterns as openings. So the whole fortification became a much more closed structure, creating a barrier between the city and its environment that provided a defensive advantage.

Overall, this last extension during the 13th century fundamentally transformed the fortification into a more complex and strong defensive structure. At the same time the gates were remarkably decorated with aesthetic features, especially on their exterior sides (Fig. 16.6).

Fig. 16.5: Exterior view of the fortification from the south-east.

Fig. 16.6: Exterior view of Lefke Gate after the 13th century.

Conclusion

As seen in the example of Nicaea, a fortification is a dynamic structure, which is steadily transformed and adjusted in response to different requirements. Sometimes historical events gave impulse for the improvement of the defensive capacity of the fortification. At other times it served as a medium to demonstrate power and stability as well as being a status symbol for individual emperors. These motivations are strongly interconnected and they cannot be interpreted as independent contradicting factors. Rather, they complement each other, and their manifestations on the wall had a direct impact on the daily life of the inhabitants of Nicaea, here most clearly demonstrated by the impact on the connectivity of the city with its environment.

Note

1 I would like to thank my supervisor Prof. i.R. Dr.-Ing. Dorothée Sack and Prof. James Crow from the University of Edinburgh for their valuable support and advice.

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17

Caesarea Maritima: Fortifications and City Expansion from the Time of Herod the Great to Late Antiquity

Peter Gendelman

It was the dream of King Herod the Great – the client king of Emperor Augustus – to reinforce the connections between Judaea and Rome. With the foundation of Caesarea Maritima this dream became reality. Judaea was given a marine gateway, a safe haven that strengthened the administrative and commercial connections with the rest of the Roman Empire. As early as the end of the 1st century CE, Caesarea became the capital of the province and one of the major port cities in the Roman East.

Caesarea Maritima had two fortification walls.[1] The early one, built by Herod, was planned to enclose a city much larger in area than what was occupied in his time. Herod's wall was modified in the second half of the 1st century CE. The second wall, built in Late Antiquity, was more than twice longer.

Herod's Fortification

Herod's fortification was first recognized in the early 1960s by the Italian Mission to Caesarea. The Italian archaeologists, under the direction of Antonio Frova, exposed two sections of the city wall: (a) about 100 m of the northern line along with two rounded towers; (b) a short section of the eastern line including the polygonal tower at the meeting point of the two lines (Fig. 17.1a, d). The Italian mission attributed the fortification to the Herodian period (Frova 1965, 268–280). Later, in 1978–1980, the Joint Expedition to Caesarea Maritima (JECM) excavated a 5 m segment of the eastern wall south of the Italian mission's excavation (Bull, Krentz and Storvick 1980, 43–49).

Northern Line of the Fortification

The northern city wall, 2.3 m wide, stands on foundations wider than itself made of roughly dressed kurkar ashlars,[2] sandstone pebbles and dark grey cementitious mortar. The wall itself is constructed in isodomic masonry whose ashlar stones are arranged in the pattern of headers-and-stretchers (Fig. 17.1b, c, e).[3] The masonry is cemented with dark grey mortar, which includes crushed *kurkar* rubble (for the northern line, see Frova 1965, 260, 263, 266, figs 324, 329, 330, 335; for the eastern, see Blakely 1992, figs 11–12). The large ashlars of the wall have drafted margins, a technique used in Hellenistic[4] fortifications as in the first wall of Jerusalem (Zelinger 2010, fig. 7) and in other Herodian defensive walls such as Samaria-Sebaste (Reisner, Fisher and Lyon 1924, 199–200).

The circular towers, 14 m in diameter each, are integrated with the wall (Fig. 17.1b, c, d). The towers are built on foundations wider in diameter than themselves. What remains of each consists of three courses of roughly shaped ashlars and a single course of headers with drafted margins (Frova 1965, 270, figs 344, 346, 347). Like the walls, the towers are also constructed of large ashlars with drafted margins arranged as headers-and-stretchers (Frova 1965, 270–271, figs 345, 347). Some scholars have interpreted the towers as the northern gate of the Herodian city (*e.g.* Levin 1975a, 12–13; Netzer 2008, 99).[5] This interpretation is hard to accept, however, in view of the segment of a 3 m-wide curtain wall between them (Fig. 17.1c),[6] built in the same way of ashlars with drafted margins and interlocked with the western tower (Frova 1965, 253, fig. 310). The gate interpretation becomes even more questionable considering the 12 m distance between the towers, which is more than twice as wide as the openings of Herod's gate at Samaria-Sebaste (Reisner, Fisher and Lyon 1924, 204, pls. 43b, 45a, 44a, plan 10) and of Herod Antipas's gates at Tiberias (Foerster 1993, 1470–1471).

The polygonal tower is integrated with the wall to protect the meeting point of the northern and eastern lines of Herod's fortification. It is constructed of isodomic masonry whose ashlars are arranged in two patterns:

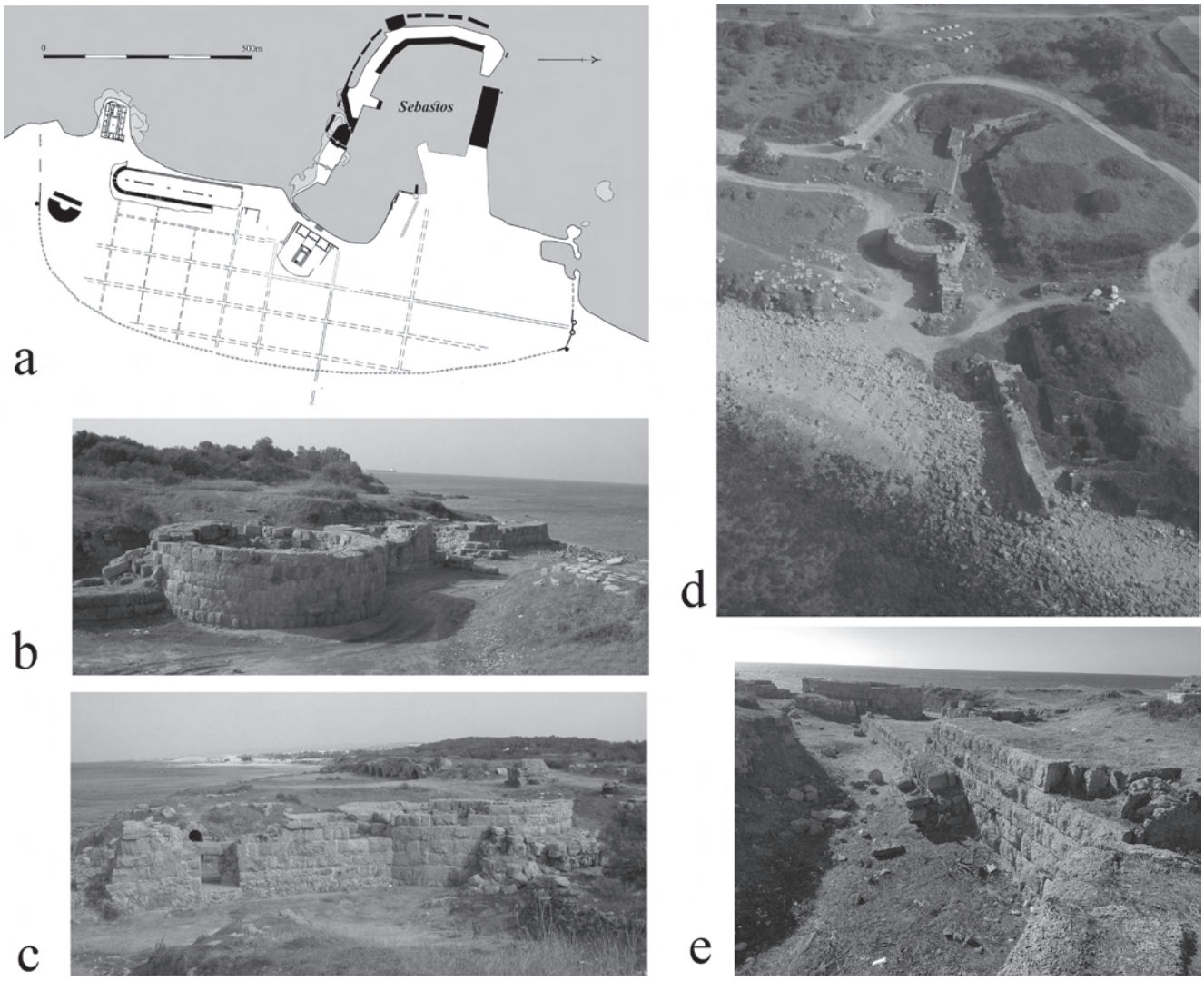

Fig. 17.1: Northern line of Herod's fortification, Caesarea Maritima.

(a) headers-and-stretchers and (b) HH-S-HH (a stretcher between double headers; see Frova 1965, 278, figs 364, 369–372).

The inner space of all towers was filled with layers of large roughly hewn sandstone blocks up to the level of the basement floor (Frova 1965, 270–271, 278, figs 345, 364, 369–372).

Eastern Line of the Fortification

The sections of the eastern line, excavated by the Italian Mission and the JECM, were constructed in the same way as the northern line (Frova 1962, 276–278, fig. 372; Bull, Krentz and Storvick 1980, 43–49, figs 20–22; Blakely 1989, fig. 3; 1992, figs 11–12). Yet in this line the ashlars preserved their bosses only in the lowest three courses of the east face of the wall. This has led certain scholars to the erroneous conclusion that the entire eastern wall was rebuilt in a later period (*e.g.* Raban 1987, 80). As a matter of fact, the bosses of the upper courses have been removed, presumably during the late 1st-century CE renovation (see below). This interpretation is reinforced by the northern wall, both of whose faces were exposed by the Italians. Here the bosses of the upper courses of the outer face of the curtain wall and the towers were removed, whereas the inner face still has them up to the highest preserved course. Obviously, it is technically impossible to rebuild one face of a wall and a circular tower without demolishing the opposite face.

Southern Line of Fortifications

In the 1990s the Israel Antiquities Authority (IAA) expedition, under the direction of Y. Porath, discovered a section of almost 60 m of the fortification wall south of Herod's theatre (Fig. 17.2a, b; Porath 2000, 41–42). This wall, thinner than the northern and eastern ones – only 1.8 m in width – is

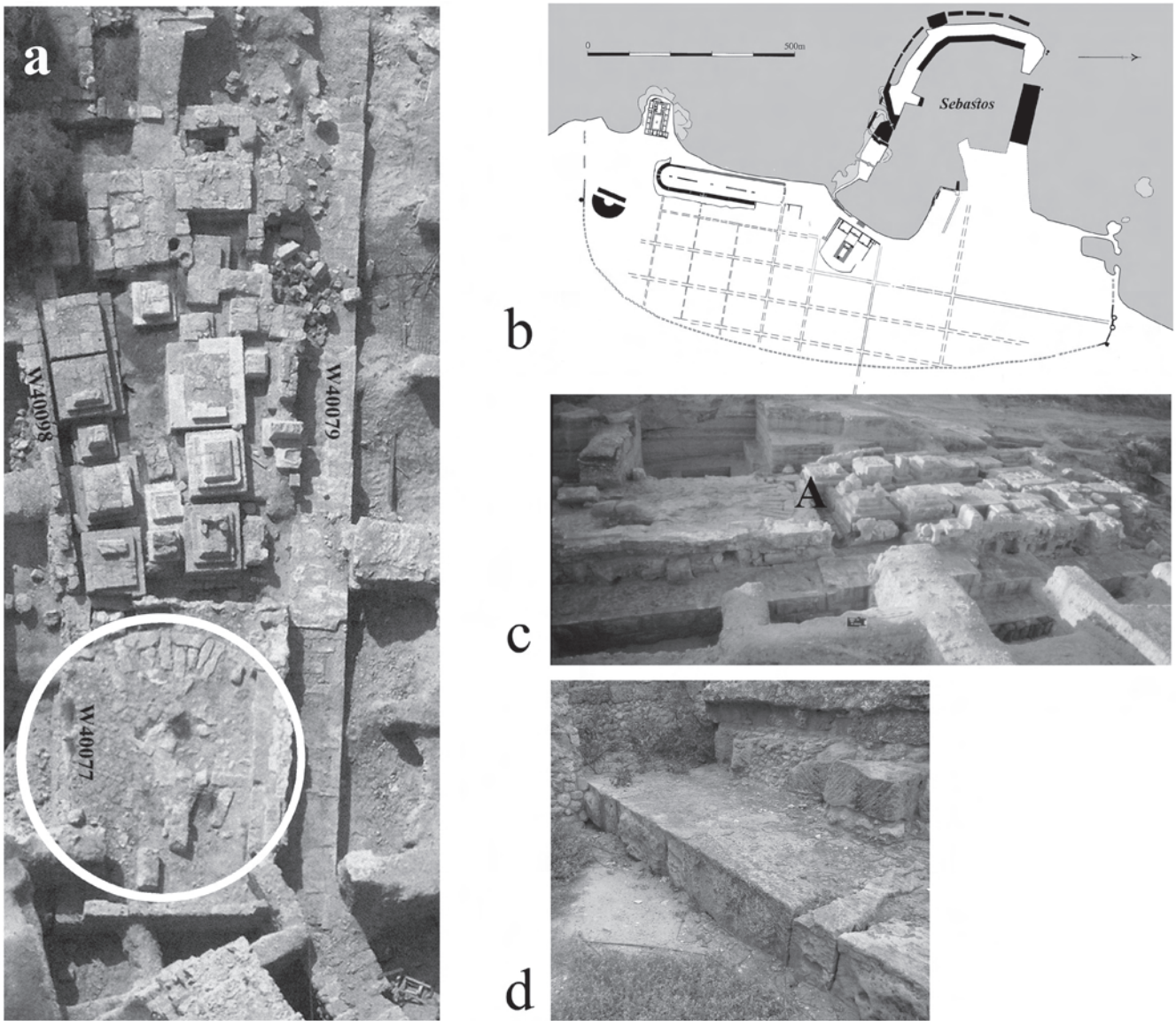

Fig. 17.2: Southern line of Herod's fortification, Caesarea Maritima (a after Porath 2000).

similarly built of large ashlars with drafted margins, laid on a foundation of roughly cut stones wider than the wall itself (Fig. 17.2c, d). A circular tower, 8.7 m in diameter, was found incorporated into the wall at the easternmost part of the excavated section (Fig. 17.2a). The tower is similarly constructed of large blocks with drafted margins.

Date of the Fortification

The Italian Mission, who were the first to discover the fortifications, dated them to the time of the foundation of Caesarea by Herod the Great. The dating was based on the finds of their excavation and the resemblance of the walls to other well-dated examples of Herod's fortifications, among them those of Samaria-Sebaste (Frova 1965, 251–263, 282–286). About a decade later the date was questioned by Levine and Negev, who proposed a Hellenistic date for the fortifications (Levin 1975b, 11–12; Negev 1975, 273). A Hellenistic or at least pre-Herodian dating of the walls was also suggested by Raban (1987; 1992) and other scholars (*e.g.* Hillard 1992). In 1979 and 1980 Blakely, on behalf of the Joint Expedition to Caesarea Maritima (JECM), re-examined the results of the Italian Mission within two probes, one next to the western edge of the northern line, and the other south of the polygonal tower. Blakely claimed that the fortification was erected between the late 2nd and the late 1st century BCE, and that 'whether or not actually built by Herod, these were the North fortification walls of Herod's city' (Blakely 1992, 40).

The long dispute concerning the dating of the earliest fortifications came to an end in the mid-1990s after the

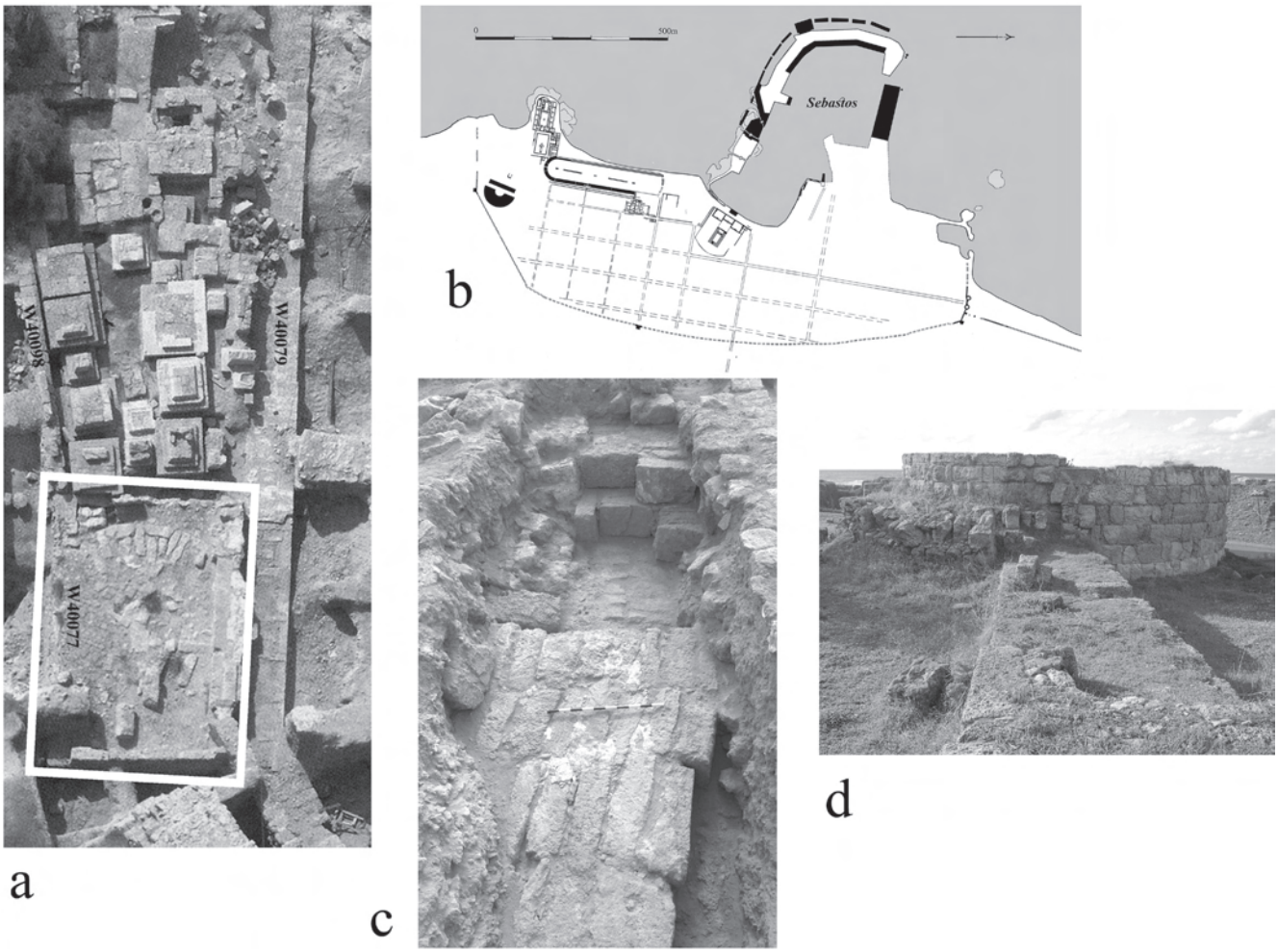

Fig. 17.3: The 1st-century CE alterations on Herod's fortification, Caesarea Maritima (a after Porath 2000).

IAA excavation of the southern line (Porath 2000, 41–42). In view of the similarity between the construction of the southern line to both eastern and northern lines and the complete absence of Hellenistic finds in this area, it became clear that the fortifications were built in Herod's time or shortly after his death.

The 1st-Century CE Alterations

During the 1st century, probably under the circumstances of the First Jewish Revolt, Herod's defensive wall was modified (Fig. 17.3b). On the southern line a rectangular tower, 9.8 × 6.8 m, replaced the circular one (Fig. 17.3a; Porath 2000, 41; 2008, 1660). The southern fortification line was shortened, and a new city wall – 2.4–2.5 m wide – wider than Herod's fortifications, was constructed on the east (Fig. 17.3a, b). The eastern part of Herod's southern line was dismantled down to the foundation level. The stones from the dismantled parts were most probably taken for the construction of the new eastern fortification line.

Additional information on the eastern fortification and the extent of Roman Caesarea was yielded from salvage excavations that I directed in 2008 and 2014. During the 2014 one-week excavation, remains of a city wall were found beneath one of Caesarea's *decumani* – an east–west street dating to the late 4th or early 5th century. The massive wall, almost 3 m wide, was most probably part of the eastern fortification line of Roman Caesarea. It was built of large ashlars consolidated with mortar of the kind used in the south fortification line (Fig. 17.3c). The rectangular tower uncovered in front of the massive wall is similar to the one that replaced the circular tower on the south. Given the shortage of time and the fact that the fortification's remains were buried under well-preserved later remains, it was impossible to find out whether in this area, like in the south, Herod's wall was incorporated into the early Roman fortification. Support for the interpretation that the massive wall and the rectangular tower were part of the early Roman fortification line, on the east, is provided by the remains of early Roman cemeteries documented beneath the remains of later Caesarean *insulae* further to the east.

Additional evidence for early Roman Caesarea's expansion was exposed during my 2008 excavation along *Decumanus Maximus*, where remains of a paved road were discovered beneath the 4th- and 5th-century structures of the Decumanus' northern sidewalk and its adjoining stores. The road was laid over a natural dune, and like the earliest street pavements of Caesarea (Porath 2008, 1660) was paved with a layer of packed crushed sandstone. The few pottery sherds found on and within the pavement are well dated to the Herodian period – from the late 1st century BCE to the early decades of the 1st century CE. The course of this Herodian road accords with the road leading from Caesarea to Samaria-Sebaste and Neapolis/Shechem as illustrated in the itinerary represented in the *Tabula Peutingeriana* (Roll 1996, 557–558).

The alteration of the northern line of Herod's fortifications was probably also carried out in the same period. The inner face of the eastern tower – and probably also the western one – was reinforced with a 2 m-wide wall constructed of large ashlars (Fig. 17.3d; Frova 1965, figs 300, 341, 348, 374–375). It is also possible that a reinforcing wall was simultaneously added along the whole inner face of the northern line. This assumption is supported by two segments (about 1.8 m wide each) of similar masonry, which were preserved east and west of the circular towers (Fig. 17.1e; Frova 1965, figs 367–366, 375).[7]

Two events that occurred during the 1st century CE may have triggered such significant alterations: the return of G. Florus and his troops to Caesarea from Jerusalem in 66 CE (*BJ* 2.332), and/or Vespasian's use of Caesarea as his main base in 67–69 CE (*BJ* 3.412).

The results of the IAA excavation of the south line showed that the Herodian fortifications retained their height when the renovation of the theatre took place during the Severan period (Porath 2008, 1660). Conclusions about the abandonment of the early fortifications and of their partial dismantling during the 4th century CE were drawn by the Italian Mission and the JECE team, on the basis of the results of their excavations of the northern and eastern lines (Blakely 1992, 40).

As for the long-term dispute over the function of Herod's fortification at Caesarea (*e.g.* Roller 1998, 143), the function, as I see it, was twofold: (a) to mark the city's *pomerium*; and (b) to protect the city from potential aggressors. According to Flavius Josephus, Herod built the city as 'a fortress (φρούριον) for the entire nation' (*AJ* 15.293). The term φρούριον is also used by him to characterize the fortresses of Antonia in Jerusalem, Alexandreion, Herodium and Machaerus (*AJ* 15.292, 20.6, 16.317; *BJ* 7.163–164). Obviously not only the height and the width of the Herodian walls ensured the safety of Caesarea, but the number and the strength of the city's defenders. It is assumed that a large contingent of troops was stationed at Caesarea as early as the foundation of the city (Levin 1975b, 16). Later, Caesarea served as a base for auxiliary troops, mainly recruited from the citizens of Caesarea and other Graeco-Roman cities of the province. During the 1st century CE as many as 3,000 auxiliary cavalry and infantry troops were permanently stationed within or near the city (Levin 1975b, 20–21; Speidel 1982–1983, 235). Their presence is recorded with reference to the events following the death of Agrippa I in 44 CE (*AJ* 19.357, 8.3) and once again regarding the dispute between the Jews and Pagans at Caesarea under the procurator Marcus Antonius Felix (*AJ* 19.176; *BJ* II.268–270).

The strong fortifications, large garrison and the loyalty of the population in general all made Caesarea Maritima the stronghold of Roman rule in the province of Judea; all undoubtedly made Vespasian and Titus choose the city of Caesarea as their military headquarters and the winter-quarter for Roman legions during the First Jewish Revolt (*BJ* 3.412, 4.88).

Free-Standing Gate or an Honorific Arch

In the 2nd and 3rd centuries new wealthy neighbourhoods and public monuments were built outside the *pomerium*: a circus on the east, an amphitheatre on the north-east and a small theatre next to Herod's theatre in the south (Fig. 17.4a).

In late 2005 an unexpected discovery of a monumental gate or arch was observed in one of the probes conducted by the Israel Antiquities Authority under my supervision, along the northern and eastern lines of Late Antique fortifications. The monument, built of *kurkar* ashlars larger than those of the fortification wall, was observed within one of the trenches, at the point where the north line of the Late Antique fortifications started to turn south-east (Fig. 17.4b). Only the eastern face of the monument and two of its three [?] archways were partially exposed. The best-preserved arch was the eastern one (1.6 m wide, over 2 m high). Of the central one, which was badly damaged, we revealed only the eastern jamb and the spring of the arch, its estimated width being no less than 2.5 m. The time of the erection of the monument is unknown; nevertheless, a 2nd-century CE date can be offered in association with the erection of the nearby amphitheatre.

In the late 3rd or early 4th century CE the monument went out of use and was incorporated as a foundation into a new fortification wall. Then, the eastern opening, and probably also the central one, was blocked and a rectangular tower was built in front of it. Due to the limited width of the probes we could not expose the entire monument; thus, its connection to the rest of the fortification could not be clarified.

In spite of the fact that the monument was not fully excavated, a reconstruction of a three-arched structure can be offered based on the probe results (Fig. 17.4c). It is possible that this free-standing monument, either an honorific monument or a gate, functioned as the north-eastern entrance to the late Roman city and at the same time marked

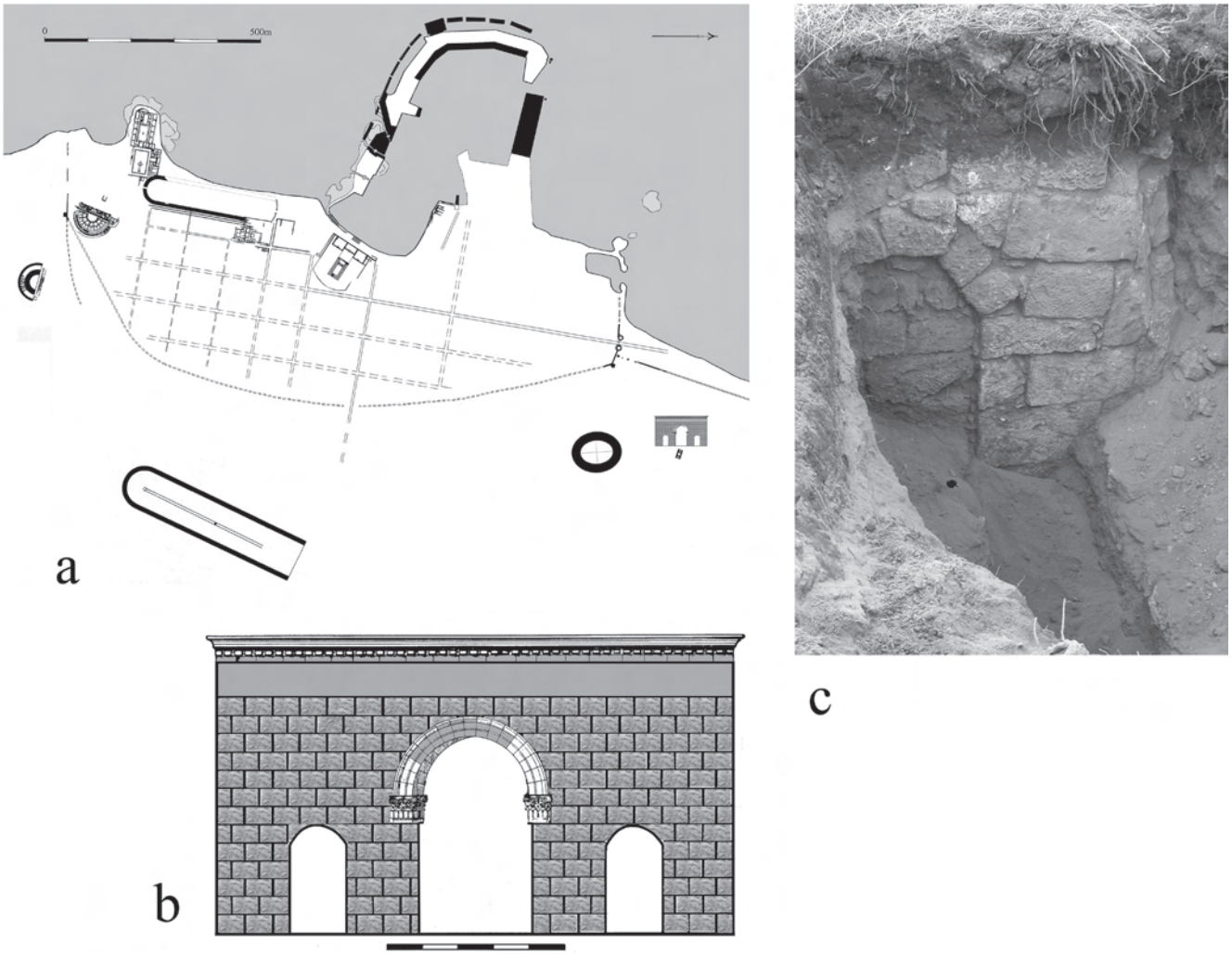

Fig. 17.4: Free-standing gate or an honorific arch, Caesarea Maritima.

the new *pomerium* of the growing city. From this monument most probably started the road leading from Caesarea to Ceparcotani/Legio and Shuni/Maiumas (Roll 1996, 555–556). The depiction of the road leading from Caesarea to Ceparcotani on the *Tabula Peutingeriana* reinforces the above assumption.

A relevant comparison of an arch that also served as a city gate is the Hadrianic monument in Gerasa (Detweiler 1938; Raja 2012, 215). If the Caesarea monument was built as a gate, it could possibly have been flanked by towers, as were the Damascus Gate of Aelia Capitolina/Jerusalem (Magen 1994), the Southern Gate of Philippopolis/Shahba (Segal 1997, 98, figs 104–106), and the Western and Southern Gates of Gerasa (Bol, Hoffmann and Weber 1990, 216–238).

Late Antique Fortifications

By the 4th century the populated area of the city had more than doubled and the Herodian fortifications lost their defensive value (Fig. 17.5a). There is no written evidence regarding the circumstances that led to the erection of the Late Antique defensive wall.

The study of the Late Antique fortification began in the 19th century with the survey undertaken by Conder and Kitchener (1882, 14–15).[8] They erroneously dated the remains to the Roman period. The eastern line of the Late Antique fortification was first excavated by the Italian Mission (Fig. 17.5c; Frova 1959, 14–21). In 1974 the Joint Expedition revealed a section of the wall next to the Eastern Circus (Fig. 17.5b; Humphrey 1975). In 1988/9 the Combined Caesarea Expedition uncovered another section nearby the excavation of the Italian Mission (Fig. 17.5d; Holum *et al.* 1992, 95–97). Both the Joint and the Combined Caesarea expeditions suggested that the Late Antique fortification was constructed in the late 4th or early 5th century. In 2000 Porath uncovered a section of the southern fortification line south of the small theatre (Porath 2008, 1662).

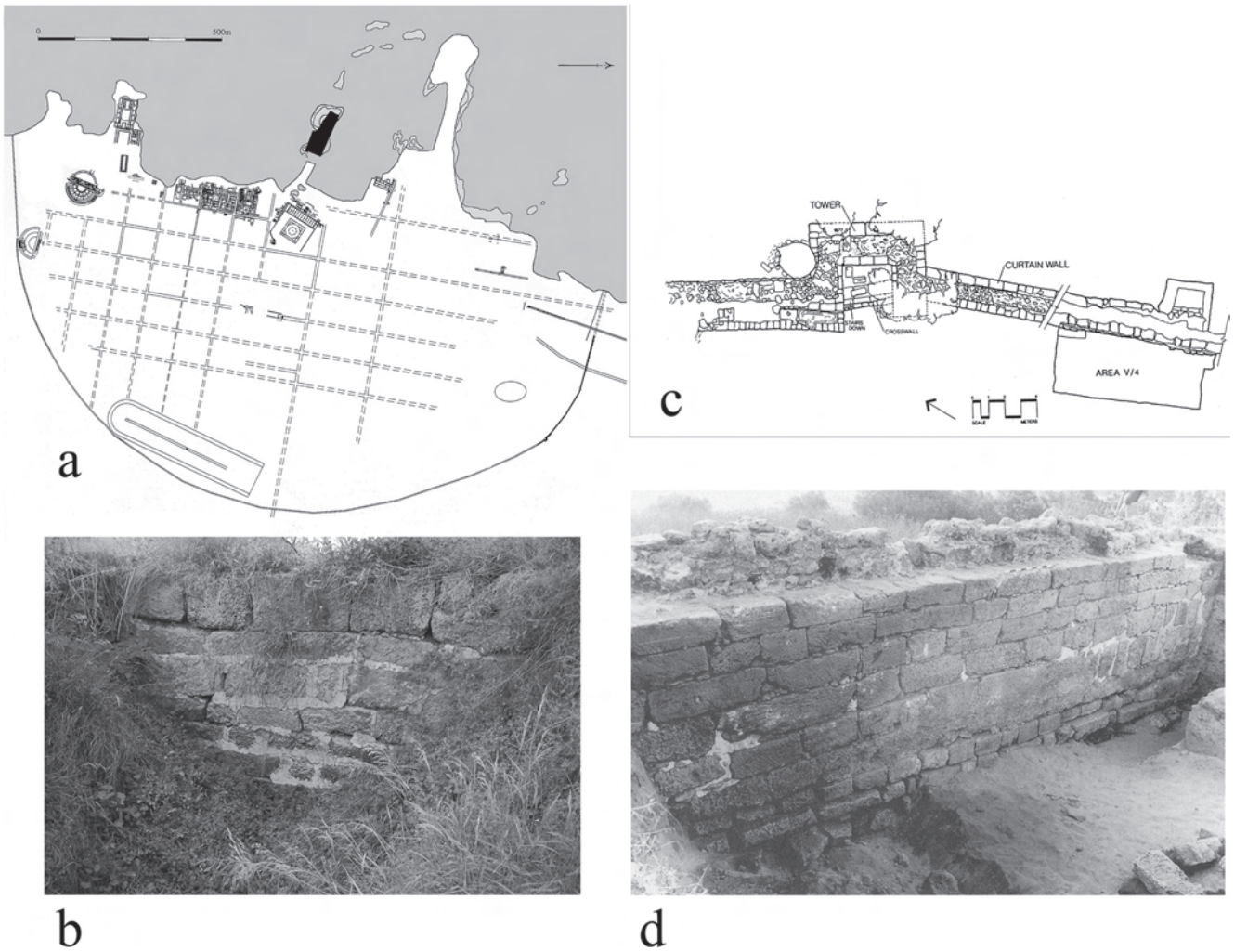

Fig. 17.5: Late Antique fortifications – Italian Mission, JECM and CCE excavations, Caesarea Maritima (c and d after Holum et al. *1992).*

The probes conducted by the Israel Antiquities Authority, under my supervision, in late 2005, revealed additional sections in unexplored areas in the north and the east. The first 300 m of the northern line, starting at the shore on the west, run in a straight line; then the line gradually turns south-east and climbs the *kurkar* ridge. Seven trenches were opened: four at the outer side of the north line, the rest at the outer face of the eastern line. In three of the trenches excavated at the outer side of the north line the results were very much alike: a massive wall – 2.5 m wide, preserved up to 4.5 m in height. The wall built of greyish concrete mixed with *kurkar* rubble and faced with *kurkar* ashlars (Plate 17.1a, b). The foundation of the northern line is stepped and 1.2–1.8 m deep. To protect the ashlars from sea humidity and saltiness, the outer face of the wall was coated with white plaster incised with a fishbone pattern (Plate 17.1c). The width and construction methods accord with the results of CCE excavations on the eastern line (Holum *et al*. 1992, 95).

The remains of the rectangular tower uncovered in the fourth trench of the northern line provided evidence that the northern line was protected by towers like the eastern one, where a similar tower was excavated by the Italian mission. The tower was built against the outer face of the wall, projecting 7 m to the north; its walls, 2.1 m wide, were constructed of ashlar on wider foundations at least 1.5 m deep (Plate 17.1d, e). The interior of the tower was paved with sandstone slabs. Two amphorae were found buried upside down beneath the pavement, with only their perforated bases exposed (Fig. 17.4b). These amphorae were probably used by the military personnel as sinks.

Along the outer side of the fortification wall we found a crushed *kurkar* pavement, between 2 and 4.5 m wide (Plate 17.1a). In my opinion the pavement was laid along the whole fortification wall to allow routine maintenance and prevent vegetation from damaging the wall. Remains of a kind of shallow ditch, 22–23 m wide and about 2.5 m deep, were found in two probes north of the crushed

kurkar pavement. The north side of the ditch was faced with stepped ashlar-built counterscarp wall more than a metre wide.

After the Late Antique fortification went out of use, most probably as a result of the Muslim Conquest in 640 or 641, the ashlar stones of the upper courses of the wall were robbed and pieces of concrete with rubble were thrown and heaped beyond the city wall. The piles protected the remaining wall from further robbing or damage. In time, the wall and the piles of rubble were almost entirely covered by sand dunes (Plate 17.1a, d).

The excavation of the three trenches along the outer side of the east line showed that also in these spots the foundations were stepped, partly placed upon the bedrock and partly on top of earlier constructions. Here too the wall was constructed of concrete and *kurkar* rubble and faced with *kurkar* ashlars, yet the state of preservation is poorer than that of the northern line, mainly due to the massive robbing.

In contrast to the plaster coating that covered the whole northern wall, here only the joints between the *kurkar* blocks were coated with plaster to protect the concrete from the rain; the rest of the ashlar faces remained bare (Holum *et al.* 1992, 96). The reason must have been the location of the eastern line in a much higher and drier area, on top of the *kurkar* ridge. For exactly the same reason neither a paved sideway nor a ditch were needed here.

Date

The scholars of previous excavations reached the conclusion that the new fortifications were erected sometime during the late 4th or early 5th century CE (Humphrey 1975, 9–15, Holum *et al.* 1992, 96).

The pair of amphorae discovered in the tower of the northern line yielded further information concerning the range of time proposed by the Joint and the Combined Expeditions for the foundation of the defensive wall. Both amphorae are of the type produced in the region of Antioch between the 3rd century CE and the second half of the 4th; and are considered forerunners of LRA 1 (Arthur and Oren 1988, 201, fig. 5:9; Reynolds 2008, 70–72, fig. 3:a–k).

Guards at the gates of Caesarea are mentioned three times by Eusebius in his *The Martyrs of Palestine* (Eusebius X.1, XI.6, 29); they were stationed there during the Christian persecutions under Diocletian and his successors (303–311 CE). It is hard to believe that a guard would have been positioned at a gate of an unfortified city. In my opinion Eusebius's information along with the amphorae provide solid grounds for suggesting a late 3rd- or early 4th-century CE date for the erection of the late fortifications of Caesarea.

The phenomenon of fortifying of Late Antique cities in times of crises is also familiar from both capitals of the Roman Empire. For the first time since the days of the Republic, in 271 Aurelian started to fortify Rome again. In 324 Constantine began to build the fortification wall of his new capital, Constantinople. The double Theodosian walls were added at the beginning of the 5th century.

Between the 4th and 6th century, unfortified cities in the region were also surrounded by new defensive walls (Walmsley 1996, 146–147); among these were Beit Shean/Scythopolis (Mazor and Bar-Nathan 1998, 24, 35, figs 28, 35), Aelia Capitolina/Jerusalem (in the early 5th century see Weksler-Bdolach 2006–2007), Tiberias (dated to the reign of Justinian I accordingly to Procopius of Caesarea, see Foerster 1993, 1470–1471; Hirschfeld 1993, 1470; 2004, 78–87), and ʿAmman/Philadelphia. Cities whose fortifications have not yet been discovered, such as Ashkelon and Gaza, were also fortified as evidenced by the Madaba map and Umm-ar-Rasas mosaic.

Unlike other parts of the Empire, where cities were threatened either by barbarian intrusions or by Sassanian invasions, this region was relatively peaceful. Fourth- and 5th-century Caesarea was not threatened by foreign invasion; and against the two Samaritan civil revolts in 529 and 556, the walls had no effect.

I would like to argue that Caesarea was fortified in Late Antiquity for a threefold reason:

- To get in line with the Imperial capitals
- To give the citizens a sense of security
- To update the limits of the *pomerium*

In the 7th century Caesarea was threatened by a foreign army twice. On the first occasion in 614, the city opened its gates to the Sassanian army without a struggle, thus giving up the defensive benefits of the wall (Sebêos 1904, 68, translation after Holum 1992, 74).

Several years later, in 634, the city was besieged by the Muslims. After seven years of siege, according to al-Balādhurī, when the Muslims failed to take the walls, a Jew named Joseph led them into the city via a conduit (al-Balādhurī: 196, translation after Holum 1992, 83; 1996, 626). The long-lasting Muslim siege demonstrates well the defensive value of Caesarea's Late Antique fortifications.

Notes

1 The fortifications of Early Islamic and Medieval Caesarea fall outside the chronological range of this study.
2 Kurkar is the name for local calcareous sandstone, which was the main building material in Caesarea and other coastal cities.
3 On some cases the sequence of two or three headers were employed especially at the joining point of the northern and eastern lines. This feature is also known from Herodian structures at Jerusalem and Samaria Sebaste.
4 For early examples of drafted-margins masonry, see Jacobson 2000, 139–141.

5 The later theorized an additional gate on the southern line. This theory is by no means supported by the results of IAA excavation.
6 The segment is 3 m wide and 1.5 m high above foundation.
7 The Italian Mission proposed a Second Jewish Revolt date for this reinforcing wall (Frova 1965, 283). This date does not accord with the political situation in the province during the Second Jewish Revolt, when the rebels posed no real threat to the city of Caesarea.
8 The line of the Late Antique fortification of Caesarea appears on earlier surveyed maps such as that of M. Jacotine (1799) and A.L. Mansell (1863), and is mentioned by early travellers and scholars such as R. Pococke (1745) and V. Geuérin (1875) (Vann 1992, 279–283, figs 6, 10).

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18

Habonim-Kafr Lām: A *Ribāt* of the Levantine Coastal Defensive System in the First Centuries of Islam

Hervé Barbé and Itamar Taxel

Introduction[1]

Habonim (Kafr Lām or Kafr Lāb in Arabic) is located on a littoral *kurkar* ridge, *c*. 30 m above sea level, 1 km inland from the Mediterranean coast, and a little less than 3 km from the harbour town of Dor, itself 15 km north of Caesarea and 7 km south of ʻAtlit (Fig. 18.1).

Between March and December 1999, an archaeological excavation and a restoration programme were undertaken on this site by the Israel Antiquities Authority, supervised by Yoav Lehrer, the late Miriam Avissar and Hervé Barbé (Barbé, Lehrer and Avissar 2002; 2008). The study of pottery assemblage presented in this article was conducted by Miriam Avissar and was recently updated by Itamar Taxel.

After first reviewing the historical sources, this article proposes to date the construction of the fortress by presenting selected archaeological finds from key stratigraphic contexts. Through an examination of the architectural particularities of the site, we will submit comparisons with a number of other sites and shall end with a discussion of its functions, emphasizing its geographical position.

The Sources

The first mention of the site in Arabic sources is by the 13th century geographer Yāqūt al-Rumi (1179–1229):

كفر لاب: آخرة باء موحد: بلد بساحل الشام قريب من قيسارية. بناه هشام بن عبد المالك. منه مجاهد الكفر لابي. روى عنه شرف بن المرجا المقدسي حكاية.

(Yāqūt, Muʿjam, IV, 290)

> Kafr Lāb. A town on the coast of Syria (Bilād al-Shām), near Kaisariyyah (Caesarea). It was built by the Khalīf Hishām ibn ʻAbd al Malik. Mujāhid al-Kafr Lābī comes from this village.
>
> (Le Strange 1890, 470; Marmadji 1951, 175)

We shall return to the last sentences in this quotation by Yāqūt in our conclusion.

Several references to the site also exist in the Frankish sources of the 13th century (Paoli, *Codice* I, no. 9, 288–289, no. 10, 289, no. 11, 290; Röhricht, *Regesta*, no. 768, 205, no. 818, 219–220, no. 866 232–233, no. 1233, 324a and no. 1319, 344–345; Hospital, no. 1250, 64, no. 1414, 159, no. 2725, 776 and no. 3029, 31; Eracles, II, ch. 32, 398). Called *Kafarleto, Capharleth* or *Cafarlet*, a corrupted form of Kafr Lām, it is noteworthy that the site systematically appears as *casali* or *casal*, *i.e.* ʻvillage' in Latin or old French, never as a castle or another term evoking any fortification or fortified site. The site was indeed busy during the Frankish period, as is evidenced in the written sources, as well as the remains discovered on the site.

How did the site name Kafr Lām become Cafarlet? The first part of the name, Cafar, is the Latin phonetic transcription of the Arab ʻ*Kafr*'. To this term was added the suffix ʻ*let*'. In old French, the diminutive suffix *-let* describes it as small. Therefore, a ʻ*châtelet*' is a small castle (Littré 1882, 575), a ʻ*caselet*' is a small hamlet, a small *casal* (Godefroy 1901, 71), *i.e.* a little village. Kafr, in Arabic means a village, a hamlet, and so Cafarlet to the Crusaders was seen as ʻa small village', a small hamlet, even ʻa small rural estate'. The Crusaders thus built the place-name by keeping the Arabic ʻ*kafr*' and adding to it the Frankish suffix ʻ*let*' a construction that was not very far from the primitive name, Kafr-lam, as the Franks must have heard it pronounced by the natives.

Dating the Construction by the Finds

Three excavation areas were opened inside the enclosure, Areas 10, 20 and 70, and four outside, Areas 30, 40, 60 and A (Fig. 18.1). The bedrock was reached on each of these

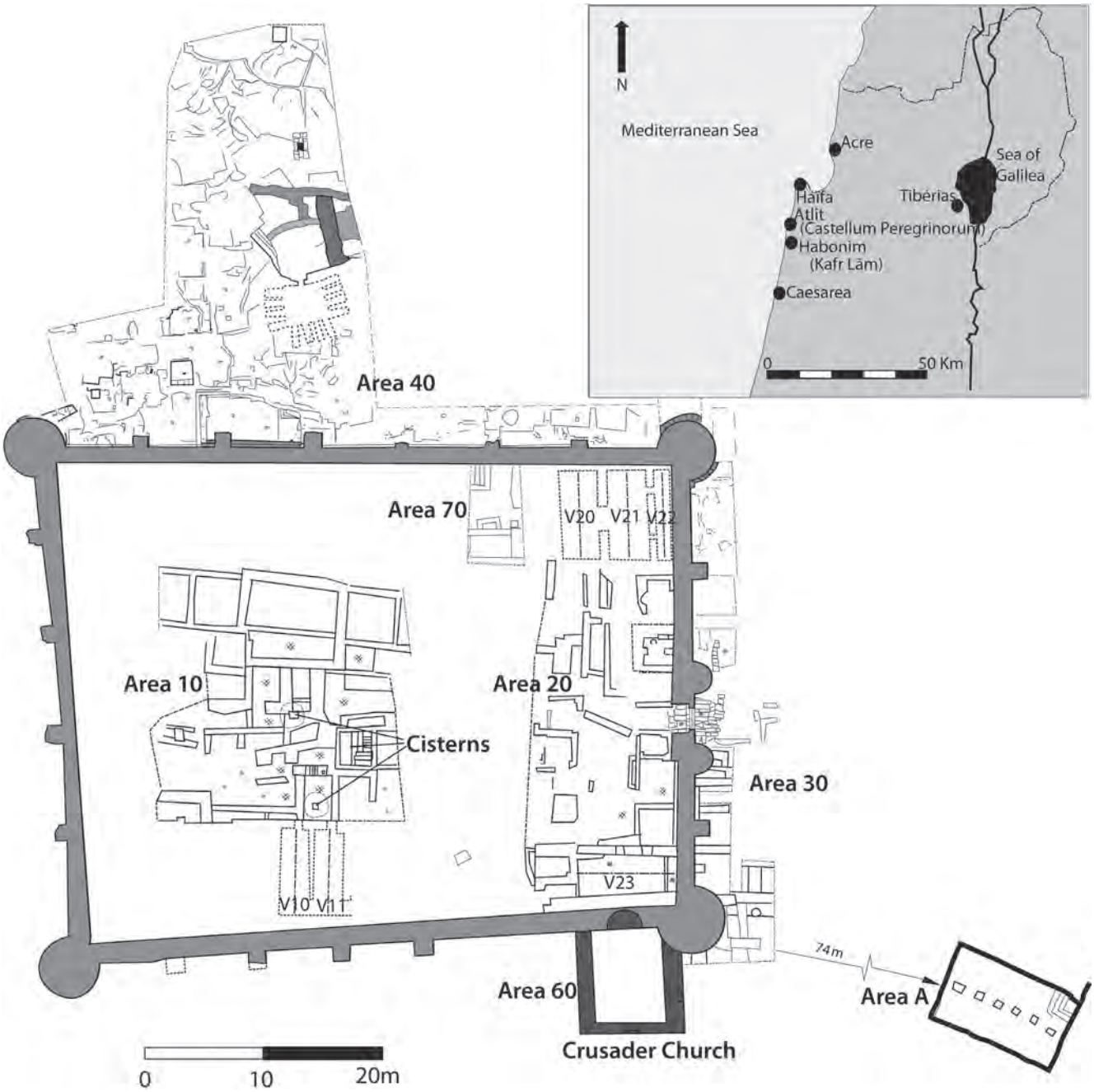

Fig. 18.1: Location of Habonim and general plan of the remains of the castle with areas of archaeological excavations.

areas with the exception of Area 20. Only one sector will be mentioned here, Area 10, *intra-muros*, where our work allowed us to clear and partially dismantle the original pavement floor of the inner courtyard.

The Late Byzantine and Umayyad Pottery Below and Above the First Floors from Area 10 (Figs 18.2–18.4)

The earliest potsherds were retrieved from a channel built on the bedrock under the first plaster floor of the castle and are dated to the Roman period, including two fragments of discus lamps (not illustrated).

More relevant to the dating of the castle's construction is a lamp (Fig. 18.2, 1), which came from a fill situated just under the original pavement floor of the courtyard. This almost complete lamp belongs to Sussman's Type 4 of her 1983 typology of the 'Samaritan' lamps (1983, 74) and to Type V.B28 of her recent classification (Sussman 2017, 187–190), which she dates to the 7th–8th centuries CE. However, recent publications of Early Islamic assemblages

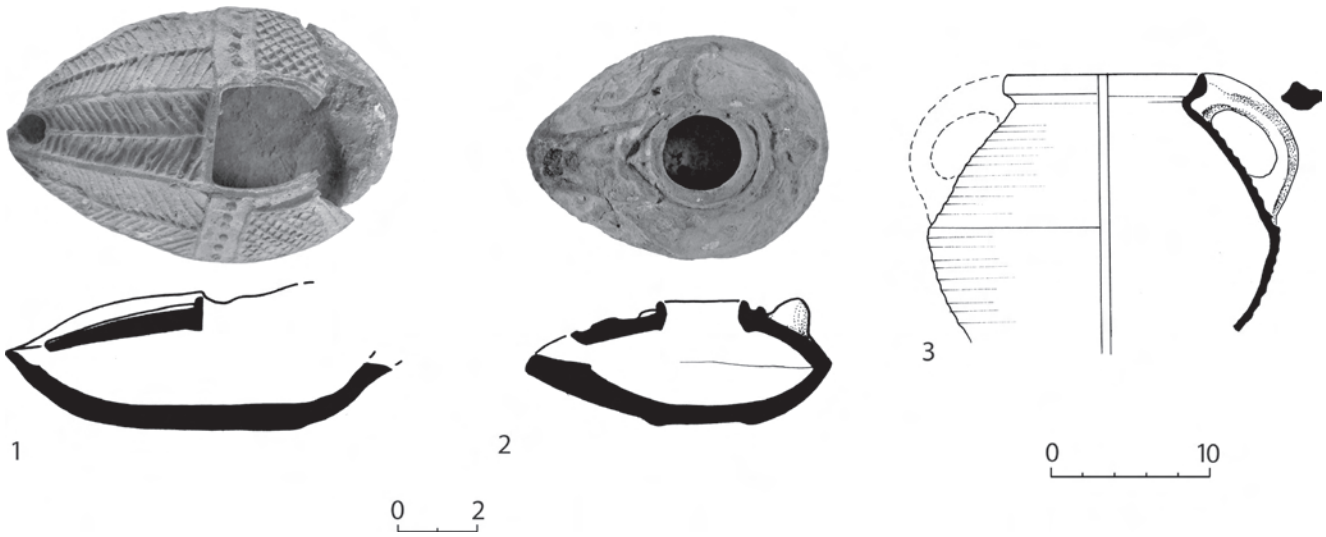

Fig. 18.2: Lamps found under (1) and above (2) the fortress' courtyard floor, and a cooking pot (3) found under the floor.

show that this lamp type continued to be produced at least until the 9th century CE (*e.g.* Tal and Taxel 2008, 154, figs 6.101–6.103).

Another complete lamp (Fig. 18.2, 2) is an Early Islamic channel-nozzle lamp with a conical handle that comes from a later fill above the pavement floor of the courtyard. It can be dated from around the middle of the 7th century CE to the 9th century CE (Hadad 2002, 82–95, Type 36; Stacey 2004, 149–150, Form 1).

Two floor types characterize the first construction phase inside the castle: plaster floors (L1097, 1100, 1105) and, more commonly, kurkar pavements (L1073, 1075, 1081, 1087, 1101, 1102). The fill over the bedrock, in places where the earliest floors were probably completely destroyed, yielded a large amount of fragmentary and restorable storage jars (L1084, Fig. 18.3, 1; L1106, Fig. 18.3, 2, 3; L1131, Fig. 18.3, 4; L1107, Fig. 18.3, 5) and one fragmentary cooking pot (L1107, Fig. 18.2, 3). The predominating jar type is a white-painted bag-shaped form with a short neck, a plain or thickened rim and a slightly carinated shoulder (Fig. 18.3, 2–5), which is typical of the central coast and the Carmel region. This type is dated to between the 5th and 7th centuries CE, if not somewhat later (Riley 1975, 26–27, Type 1B; Calderon 2000, 127–129, pl. 17:11–14, figs 16–18), though the present short-necked variants apparently do not pre-date the 6th century. Another type is the so-called Gaza amphora, in this case the variant with a plain rim that continues the line of the shoulder (Fig. 18.3, 1); it is dated to between the late 6th/7th to the 8th century CE (Majcherek 1995, 169, Form 4; Pieri 2005, 106–107, Forms B2 and B3). The neckless cooking pot, with an everted, internally-concave rim and carinated body (Fig. 18.2, 3), is typical of the 6th and 7th centuries CE (Calderon 2000, 138, pl. 22:38; Yannai 2010, 128, fig. 19:5, 6, 8). Interestingly, a large number of bag-shaped jars of the same type retrieved from below the castle floors were also found on the floor (Fig. 18.4). This similarly suggests that only a short time elapsed between the construction of the castle's earliest floors (that sealed material, which may have originated from earlier structures or installations that existed at the site), and the abandonment of these floors.

To conclude the dating question, the ceramics found under the castle's earliest floors (including in the courtyard) is comprising indeed mainly of long-lived forms that mostly span the 6th to early 8th centuries CE. However, the presence of the late 'Samaritan' lamp in a sub-floor context allows fixing the *terminus post quem* of the castle's establishment in the 7th century. Therefore, its construction obviously cannot begin until the middle or second half of this century (namely only during the Umayyad period, when *ribātat* were first built along the Palestinian shore), though at any rate not after the first half of the 8th century. Ceramics typical to the 8th century onwards, including types that appeared only in the second half of the 8th or in the early 9th century, were found only above the castle floors. The discovery of a coin from the end of the 6th or the beginning of the 7th century CE below the floor inside the castle, and the presence of many Abbasid coins of the 9th century CE above the floors inside and outside the castle supports this chronology.

These conclusions refute some recent claims that the Habonim fortress was only built in the Abbasid period. First, David Nicolle in his book *Saracen Strongholds* writes that Habonim was strengthened from the 9th–10th century CE (Nicolle 2008, 29). More recently, Alastair Northedge, in the review of Jean Mesqui's book on Caesarea (Northedge 2016, 131), referring to both the Ashdod-Yam and Habonim fortresses, says that Israeli archaeologists are wrong in

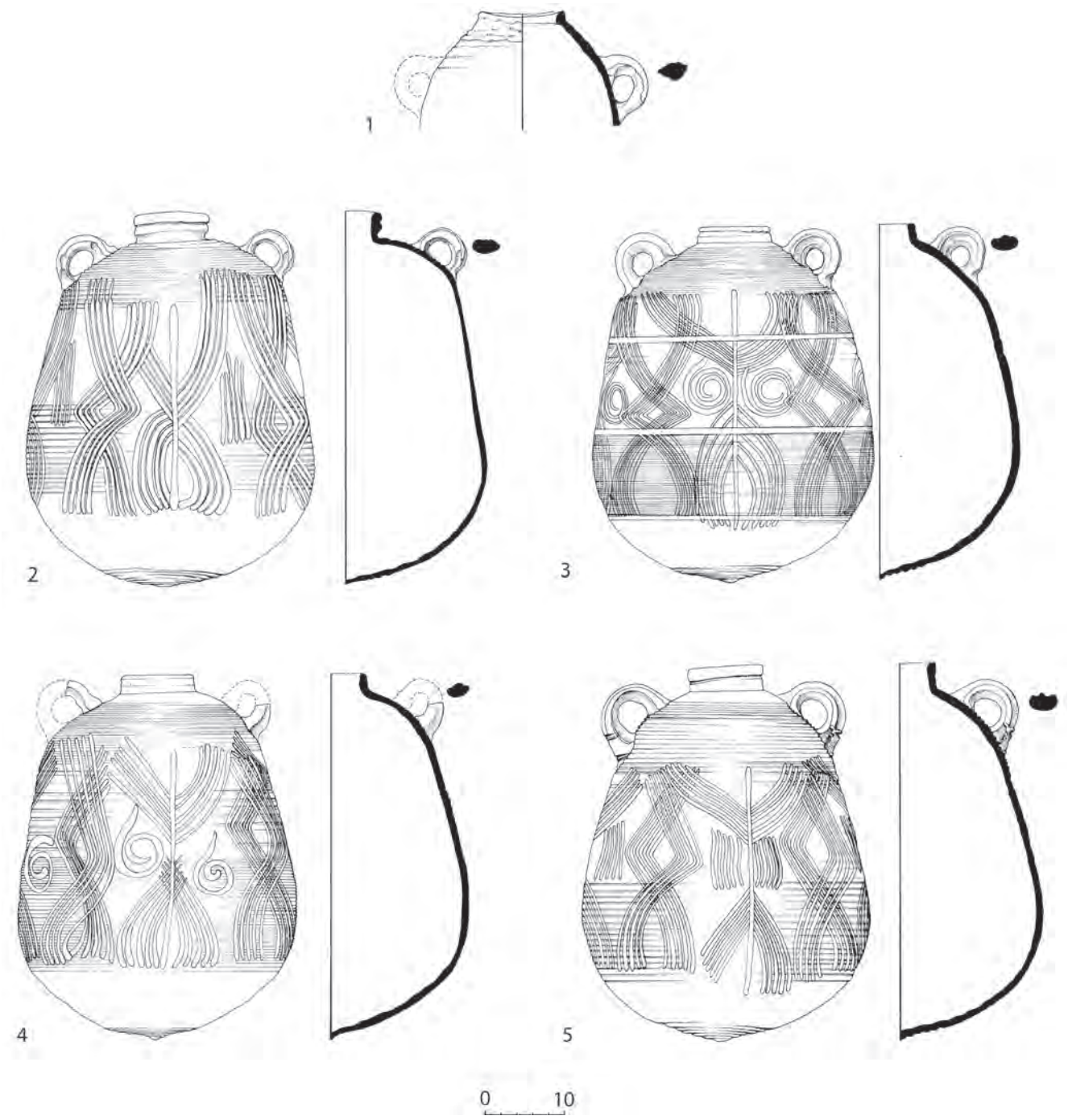

Fig. 18.3: Storage jars found under the early floors of the fortress' rooms.

dating to the Umayyad period sites that should, according to him, be dated to not before the Abbasid period.

Similarly, Andrew Petersen's review (2017) of the Ashdod-Yam fortress excavation report (Raphael 2014) casts doubt on the dating of this fortress to the Umayyad period, while arguing in favour of a 'considerably later' date. Petersen's conclusion is based on his claims that 'It is apparent that the material excavated beneath the fortress was mixed, containing Byzantine pottery as well as finds from the Late Roman, Umayyad and later periods'. However, Raphael (2014, 27, 32) clearly notes that the strata below the fortress' earliest floors contained 'relatively clean' loci of 'Byzantine' pottery, while mixed assemblages of Umayyad to Crusader pottery were found only in fills accumulated over the fortress' floors. Although Raphael does not mention which other pottery

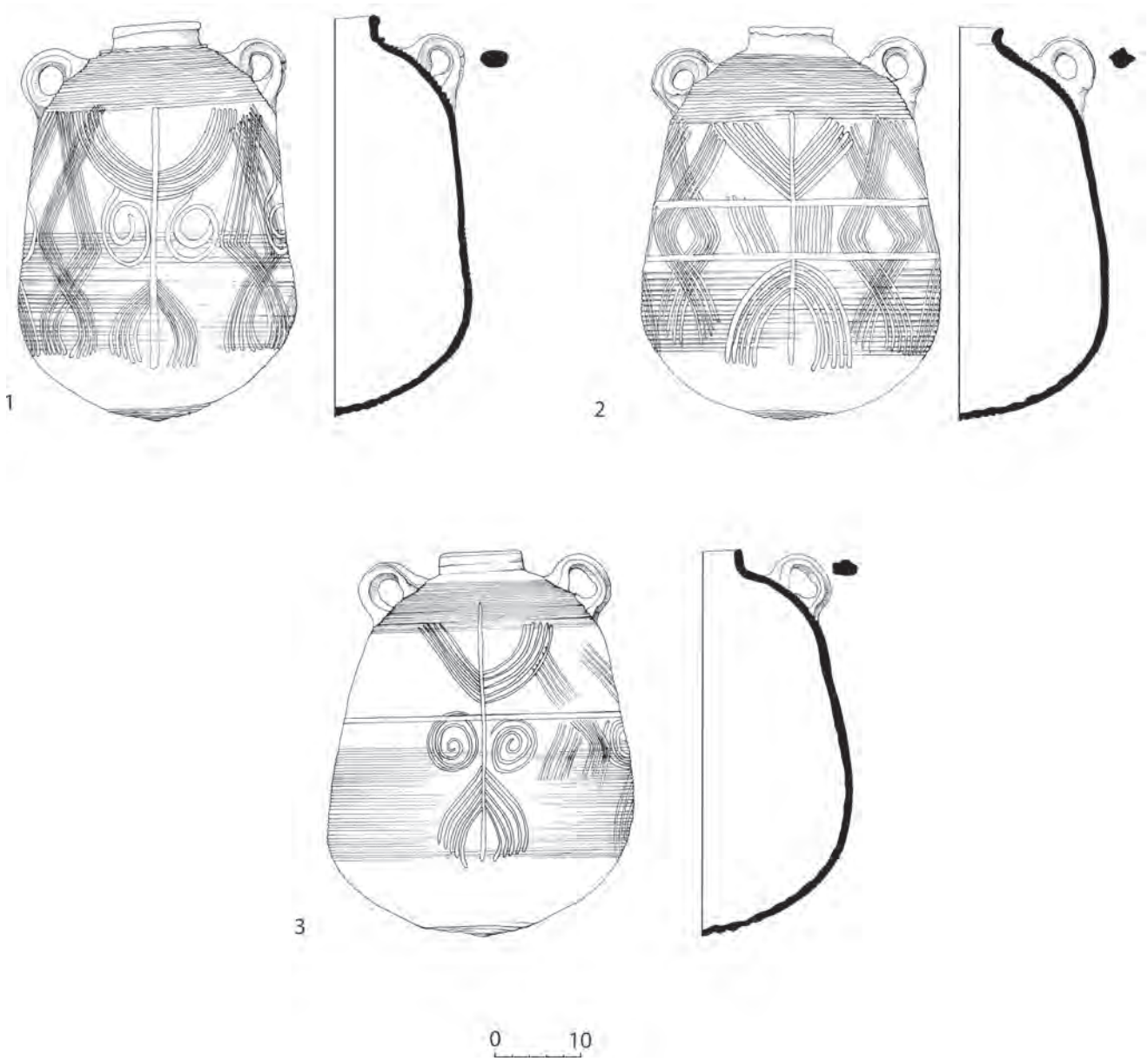

Fig. 18.4: Storage jars found over the early floors of the fortress' rooms.

was presumably found under the fortress' floors, nowhere in her report is it mentioned that this material post-dates the Umayyad period. Furthermore, in Yavneh-Yam the Byzantine harbour town clearly declined after the Muslim conquest and was finally abandoned no later than the late 7th/early 8th century. As suggested (Fischer and Taxel 2014), this decline occurred, among other reasons, due to the establishment of a Muslim military fortress at the site, and there is no reason to believe that there was a gap of half a century or more between the town's abandonment and the construction of the local *ribāt*. A similar situation apparently occurred also at Ashdod-Yam and Habonim.

More recently, Denys Pringle discussed the Early Islamic phase of the fortifications of Ascalon, which he dates to the Umayyad period, *inter alia* based on radiocarbon samples. When comparing Ascalon's Umayyad walls to the Early Islamic town walls of Caesarea and Arsuf and the fortresses of Kafr Lam and Ashdod-Yam, Pringle accepted the Umayyad-period dating of the Arsuf, Kafr Lam and Ashdod-Yam fortifications (he only doubted the Umayyad-period dating of the Caesarea walls and tended to date them to the Abbasid period); furthermore, Pringle noted that the type of mortar used in the construction of the Ashdod-Yam fortress is identical to that used in the Umayyad walls of Ascalon (Pringle 2019, 205–209).

Architectural Description and Comparisons

The dating of the construction of the Habonim site to the Umayyad period is confirmed by the analysis of the stratigraphy and finds, thereby reinforcing the account of the geographer Yāqūt. The dating no longer being an issue, one should look for contemporary parallels in terms of architecture.

The structure presents a slightly trapezoid plan, 63 m on the longest side and 47 m on the shortest, with an internal surface of about 2000 m^2. It has four solid towers, one in each angle, two semi-circular solid towers situated on each side by the door opening to the south, and 18 external buttresses distributed at more or less regular intervals of 7 or 8 m (two in the south, four in the north, six in the east and on the west). The vestiges of five vaulted rooms built along the internal facing of the curtain wall and opening onto a central paved courtyard with cisterns obviously belong to the original plan (V10, V11, V20, V21 and V22).

By its general plan Habonim is inspired by the Roman-Byzantine *castellum* (Schlumberger 1939, 357–358, Stern 1946, 84; Dentzer 1994, 92; Al-Asad, Bisheh and Kerberg 2000, 20–21) and especially the forts of the Limes called *quadriburgia* (Parker 1987, 156; 1995, 252).

As for the solid circular tower, found in the fortifications prior to the Muslim conquest on the Tigris or another auxiliary's camp in northern Iraq, it seems to be a resurgent character of the Persian military architecture (Sarre and Herzfeld 1920, 89–93, Taf. CXXVIII; Stern 1946, 85–86; Oates 1968, fig. 6; Wood 1992, 126).

The solid towers and the absence of loopholes in the curtain walls gives evidence that active defence was only operated from the upper level (curtain ways and summits of towers). It is the usual bias of the Sassanid fortification (Stern 1946, 85–86).

Habonim is thus the product of a mixture of influences of the Roman-Byzantine and Sassanid architecture common to the Umayyad period in the Levant. If those architectural choices produced a typical plan, the latter is not characteristic of a precise function and some buildings might have had a residential function, 'palaces', alongside more military, castles, *ribātat*, or economical functions, namely khans/Caravenserails or '*villae*'.

A survey shows that several sites in the Near East present the same features, allowing for comparisons. In Israel, we should mention Ashdod Yam (Nachlieli *et al.* 2000, Nachlieli 2008; Raphael 2014) and Khirbet el-Minya (Grabar *et al.* 1960; Creswell 1969, 381–389; Rosen-Ayalon and Cytryn-Silverman 2005, 216–219; Kuhnen 2016). In Syria, sites that should be borne in mind include Djebel Seis (Sauvaget 1939, 239–256; Brish 1963, 141–187), Qasr al-Hayr al-Garbi (Schlumberger 1939a; 1939b) and Qasr al-Hayr al-Sharqi (Gabriel 1927, 302–329, Garbar 1965; 1966; 1970). And finally, for Jordan, important comparisons include Qastal (Carlier and Morin 1987; 1989), Qasr al Kharrana (Jaussen and Savignac 1922, 51–77), Umm al-Walid (Haldiman 1992), and Khan az-Zabib (Bujard and Trillen 1997).

All of these buildings were built between 685 and 750 CE (Bujard and Trillen 1997, 369). Inscriptions still specify the date of construction of some of these buildings (Qasr al Kharrana before 710, Khirbet el-Minyeh in 712–715, Khan az-Zabib in 722–723, Qasr al-Hayr-al-Garbi in 727, Qasr al-Hayr-al-Sarqi in 729).

Functions of the Site

In the late 10th century CE, the Arab geographer al-Muqaddasi wrote that:

> The capital (al-qusaba i.e. Ramla) has *ribātat* along the sea. The *ribātat* of the district are: Ghazza, Mīmās, 'Asqalān (Ascalon), Māhūz- [the port of] Azdūd (Ashdod), Māhūz- [the port of] Yubnā (Yavneh), Yāfā [Jaffa], Arsūf … The alarm is sounded when the Rūm ships come into sight: if it be night a beacon is lit at the *ribāt*, and if it be by day they make smoke. From each *ribāt* to the capital is a series of lofty towers in each of which is stationed a company of men.
>
> (Muqaddasi, 177, trans. Collins 1994, 161; trans. Miquel 1963, 209–210)

The reading of Muqqadasi evokes well a system of coastal settlements in contact with the enemy, the '*Rūm*' (that is the Byzantine), with a military vocation 'where the men under arms assemble', the first of which being to alert centres of an intrusion. The excavations carried out on the site of Ashdod-Yam allow us to identify it with the *ribāt* of Māhūz Azdūd.

In Yavneh-Yam (Māhūz Yubnā), a fortress built on a promontory at the southern end of the harbour was founded in the late 7th or early 8th century CE and continued to function until the first half of the 12th century (Taxel 2013, 92–96; 2014, 119; Fischer and Taxel 2014, 215–220, 236).

A portion of the city wall of Arsuf is dated by archaeological research to the second half of the 7th century CE. Its architecture is characterized, as in Ashdod-Yam and Habonim, by the presence of the same type of external buttress and a gate between two semi-circular solid towers (Roll 1991, 118; 1996, 599; cf. Pringle 2019, 206–207).

Concerning the other sites mentioned by al-Muqaddasi, their exact location is not specified. However, the mapping of these sites, according to the surviving toponymy, immediately reveals that they divide up along the coast following a relatively regular spacing (Fig. 18.5). The measure on a map at a scale of 1:250,000 gives a respective gap of 18 km between Gaza-Mimas and Ascalon; 15.5 km between Ascalon and Ashdod-Yam; 17 km between Ashdod-Yam and Yavneh-Yam; 15.5 km between Yavneh-Yam and Jaffa; and

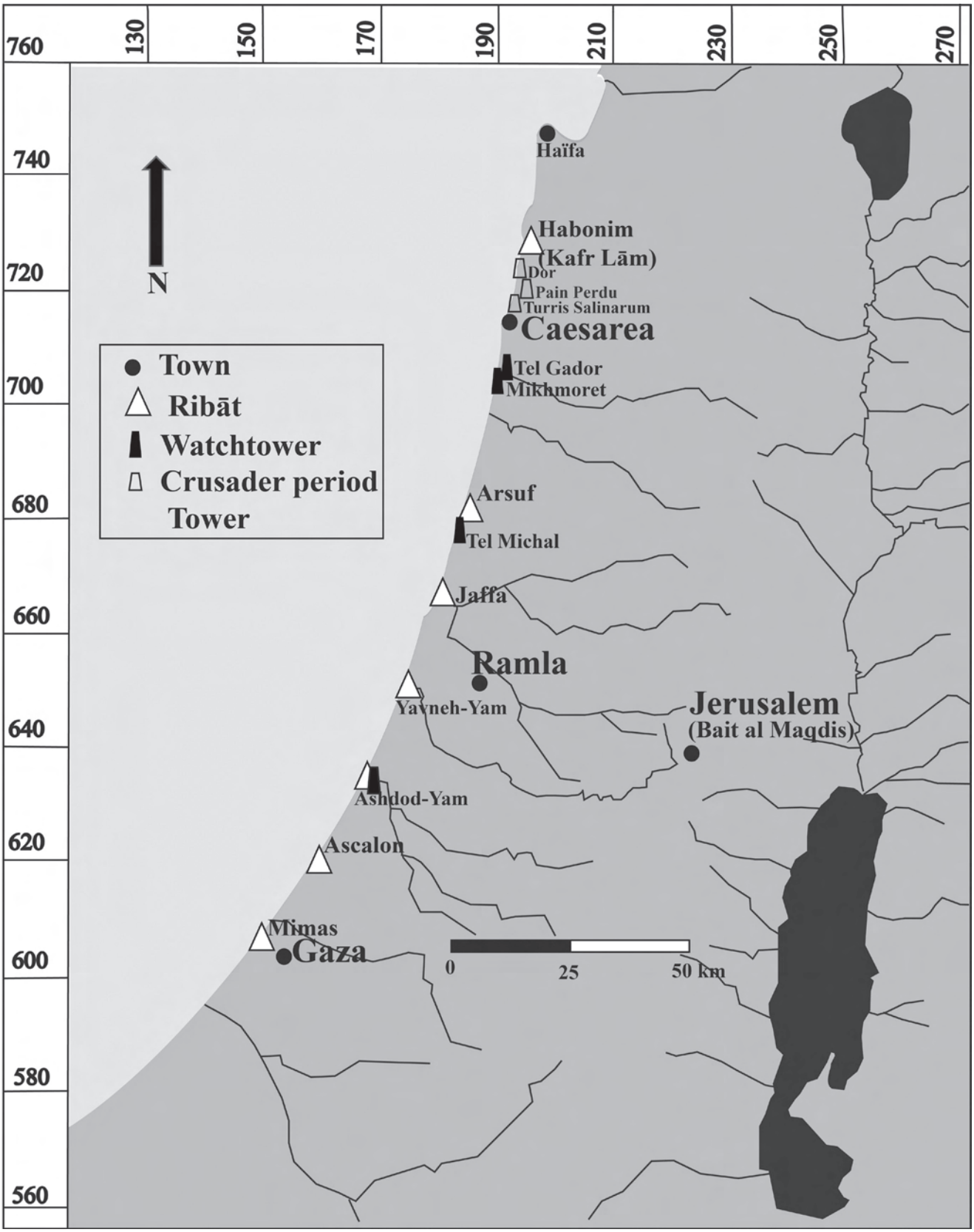

Fig. 18.5: The coastal defensive system of Palestine at the start of the Early Islamic period.

between Jaffa and Arsuf a gap of 16.5 km, giving an average of 16.4 km between each *ribāt*. The distance calculated in the same way between Arsuf and Habonim is about 50 km, that is, more or less three times the value of the space observed between the *ribāt* dividing up on the coast from Gazza to Arsuf (16.4 × 3 = 49.2 km).

This observation allows us to consider the continuity of a *ribātat* system to the north of Arsuf. There was no known monument of the Habonim or Ashdod-Yam type at Caesarea, or at the other sites mentioned in al-Muqaddasi's list. But Caesarea, Ascalon, Jaffa and Arsuf are fortified port cities whose description of the defence works, for the Early Islamic period, has always reached us via the geographer al-Muqaddasī (Miquel 1963, 174).

Exactly 15.5 km south of Habonim lies Caesarea, where urban fortification of the site occurs at the beginning of the Early Islamic period, probably in the Umayyad period or at the very start of the Abbasid period, as was recently demonstrated by a French mission (Mesqui *et al*. 2015, 333). These fortifications are characterized by curtain walls with shallow external buttresses as in the Umayyad fortifications in the Amman Citadel in Jordan (Mesqui *et al*. 2015, 96). In Caesarea, also, the fortification of the ancient theatre is dated from the Umayyad period (Porath 2000, 39*).

A portion of the Arsuf-Appolonia city wall, dated to the second half of the 7th century CE and probably during the reign of Hishām ibn 'Abd el-Malik (625–705), was exposed during the archaeological work. Its architecture is characterized, as at Ashdod-Yam and Habonim, by the presence of buttresses against its external facing and, similar to these sites, the gate is protected by two semi-circular towers (Roll 1991, 118; 1996, 599).

In the absence of buildings similar to the Habonim and Ashdod-Yam fort model, it seems that the fortified city in itself should be considered a *ribāt*, where *ribāt* is practiced (Chabbi *IE*$_2$, 519).

Another type of structure, also mentioned by al-Muqaddasi, completed this system. Four quadrangular towers interpreted by the excavators as watchtowers are located along the coast, three of them with external corner buttresses (Fig. 18.5). From the north to the south, the first is in Tel Gador, 9 km to the south of Caesarea (Barkaï and Ratzlaff 2018). The second is 3 km further south in Mikhmoret (Porath 1983, 71–72; Porath, Dar and Appelbaum 1985, 134–135). The third was excavated on the site of Tel Michal, 4 km south of Arsuf and 12.5 km to the north of Jaffa (Brandfon 1989, 195–197). The distances between these towers, or between them and a *ribāt*, make it possible to envisage a range of these structures every 3 or 4 km. Consequently, the existence of three, even four, of these towers between every two *ribātat* can be considered. A fourth watchtower was excavated in Ashdod, located 0.9 km south-west of the *ribāt* on a small dune 35 m above sea level which dominates the immediate neighbourhood. We suggest that this tower should be interpreted as the watchtower of the *ribāt* itself which, implanted too low on the beach, could not function as a watchtower for any of the other towers. Generally, these watchtowers were dated by the excavators to between the 9th and 10th century CE. However, these towers have only been the subject of short studies rather than exhaustive stratigraphic publications. Therefore, it is difficult to know if these dates correspond to the towers' construction or to later occupation phases. Pottery of the late Byzantine and Early Islamic period (7th–8th centuries CE) was found on the floor of the Tel Gador tower. A recent dating by Carbon 14 of an inner plaster from that tower was dated to the 9th–10th century CE, but this can also represent a post-construction repair.

While three of the corner towers of Habonim present a common diameter of 5.2 m, that of the south-west tower is 6 m. This difference in diameter would justify a greater height. At the end of the 8th century and at the beginning of the 9th century CE, watchtowers, wider and higher than the above-mentioned towers, are known from the *ribātat* of Monastir and Sousse in Tunisia (Lezine 1956, 20–21; 1971, 82–88).

We still find references to several isolated towers located between 'Atlit (Château Pèlerin – Castellum Peregrinorum) and Caesarea in the descriptions of the itineraries of pilgrimages to the Holy Land in the 12th–13th centuries CE (Michelant and Raynaud 1882, 190; Riley-Smith 1996, 39). However, their origin could predate the Crusades (Fig. 18.5). Some of them appear in the documentation and Dor sketches from the 19th century show a high wall that was apparently part of a Norman keep. The Franks called this fortification 'Merle' and it is located exactly 3 km south of Habonim (Benvenisti 1970, 189). As the pilgrims walked along the coastal road from Dor to Caesarea, they discovered other towers. One of these, called 'Pain-perdu' (Khirbet Kebbāra?), was mentioned as a property of the Order of Saint Lazarus in 1234 and 1235 CE (Röhricht, Regesta no. 1051, 275; no. 1066, 278). Further to the south, on the Crocodile River (*li Flum as Cocatrix*, Nahal Taninim) the accounts attest a tower of the Salines (*Turris Salinarum*, Khirbet el-Melah), which was given in 1166 CE to the Hospitallers by Hugo, Lord of Caesarea (Röhricht, Regesta no. 426, 111). On the map of the survey of Western Palestine Khirbet el-Melah is located 3 km north of the medieval town of Caesarea. These medieval towers therefore seem to perpetuate the Early Islamic gap.

The absence of references to a fortification at Habonim in the Frankish sources where the site is always called a village, and the construction in the 13th century CE of a small church or chapel with its apse inserted into the external facing of the western curtain wall, prove that at that time the site had lost any defensive value.

Conclusions

We suggest interpreting the Umayyad 'castle' of Habonim as a *ribāt*. Probably built at the beginning of the 8th century CE, it was a part of a defensive system, which was still in use during the 10th century CE and later, and experienced further elaboration.

At the end of his account, the Arab geographer Yāqūt wrote about the site of Habomim (Kafr Lām) that 'Mujāhid al-Kafr Lābī comes from this village'. However, one wonders: would it not be because he served in the *ribāt*, to study the Koran and defend a border of the Islam territory that this Muslim coming from Kafr Lab (*al-Kafr Lābī*) would have deserved the title of Mujāhid? This person may well indeed have been one of these volunteers, *mujāhidūn*, or *murābiṭūn* (Khalilieh 2008, 173–177), coming to fulfil the jihād in one of the numerous *ribātat* that seem to have existed along the Levantine coast in the first centuries of Islam.

Note

1 This article is in memoriam of Miriam Avissar, who participated in the excavation of the Habonim fortress and the initial study of the ceramic finds from the site.

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Abbreviations

AAS: Annales Archéologiques de Syrie.
ADAJ: Annual of the Department of Antiquities of Jordan.
BASOR: The Bulletin of American Schools of Oriental Research.
BIFAO: Bulletin de l'institut français d'archéologie orientale.
ESI: Excavations and Surveys in Israel.
HA: Hadashot Arkaelogiyot (Archaeological News; Hebrew).
HA–ESI: Hadashot Arkaelogiyot–Excavations and Surveys in Israel (1999→).
IE: Encyclopédie de l'islam. First edition.
IE$_2$: Encyclopédie de l'islam. Second edition.
IEJ: Israel Exploration Journal.
IFAPO: Institue Français d'Archéologie du Proche Orient.
NEAEHL5: Stern, E., Geva, H. and Paris, A. (eds) (2008) *New Encyclopedia of Archaeological Excavations in the Holy Land. Supplementary Volume*. Jerusalem, The Israel Exploration Society.
RHC.: Académie des Inscriptions et Belles-Lettres (ed.) (1841–1906) *Recueil des historiens des croisades*. Paris, Académie des Inscriptions et Belles-Lettres.
RHC. Lois.: *RHC*. Les assises de Jérusalem, 2 vols., Paris (1841–3).
RHC. HOcc.: *RHC.* Historiens occidentaux, 5 vols., Paris (1844–95).
RHC. HOr.: *RHC.* Historiens orientaux, 5 vols., Paris (1872–1906).

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19

Countermeasures: The Destruction of Siege Equipment at Acre, 1189–1191

John D. Hosler

In his 14th-century Arabic military treatise, whose title translates as 'the dispelling of woes in the management of wars', the author 'Umar Ibn Ibrahim al-Awsī al-Ansarī concludes with a nod to the defence of fortifications during a siege:

> He [the defender] should employ those machines which counter the operation of the adversary and defend the fortress, and which abrogate [the effect] of the enemy's machines (Scanlon 2012, 20.2).

In modern military parlance, al-Ansarī is describing 'countermeasures', what the United States Department of Defense defines as a 'form of military science that, by the employment of devices and/or techniques, has as its objective the impairment of the operational effectiveness of enemy activity' (Office 2018, 56). The role of countermeasures in medieval siegecraft is an understudied subject. Works on medieval siege tactics centre on their technical/technological aspects and functions in siege warfare; however, studies of the latter usually focus on offensive tactics, that is, how soldiers and machines are deployed against *fortifications*. Rarer are lengthy examinations of weapons deployed against other *weapons*. Perhaps this lack of scholarship follows naturally from the extant manuals from the Late Antique period and beyond. Writers like Vegetius (Reeve 2004, 4.19–23), Maurice (Dennis 1984, 10.3), Leo VI (Dennis 2015, 15.42–46), and other Byzantine treatises (Dennis 2008, 13), and, later, Christine de Pisan (Willard 1999, 2.36–38) all treated it in significantly less detail than they did offensive siege tactics.

To address a lacuna, then, this essay concentrates on the defence, how a medieval garrison responded to siege engines with contrivances of its own. In particular, it offers not a general survey of 'how to defend a city' but a specific analysis of the use of countermeasures to deliberately destroy or disable besiegers' military equipment. The setting is the siege of Acre in 1189–1191, which was the opening encounter of the Third Crusade in the East and one of the longest sieges of the entire medieval period. I will show how countermeasures there inflicted capital losses on the Christian besiegers and argue that it was these – and not other factors such as army size or sustainment issues – that greatly extended the duration of what should have been a much shorter affair.

The siege of Acre was the first and longest military encounter during the Third Crusade. It began in August 1189 with the arrival of an army under the command of Guy of Lusignan, the titular king of Jerusalem; these forces were eventually buttressed with periodic, but substantial, seaborne reinforcements. In time, Guy was supplanted by other Christian leaders who took command of army operations, such as Henry of Champagne, count of Troyes, King Philip Augustus of France, and King Richard the Lionheart of England. Defending Acre was the Muslim garrison inside the city (which was reinforced via land by Saladin in mid-September 1189 and periodically by sea thereafter) and the sultan's own relief army, buttressed with numerous Muslim lords from Egypt, Syria, the Jazira, and elsewhere. Over the course of two years, the Christians and Muslims engaged in a series of major and minor land engagements (eight set-piece battles and at least 26 skirmishes). The Christian army barricaded its camp outside of Acre with ramparts and ditches in the late fall and winter of 1189, and Saladin proved unable to ever break through them (Pryor 2015, 115). Properly ensconced, the former attempted to breach and/or top Acre's walls (12 major siege operations), efforts responded to in kind by its defenders. In July 1191, the Crusaders finally collapsed Acre's walls through sapping, which led to the subsequent surrender of the garrison.

The siege is well-described by an array of Latin, Old French and Arabic documents, written from multiple perspectives by both witness and non-witness sources (Hosler 2018c, 3). Tactical and operational details feature prominently in said documents, which allows us to closely examine the methods employed by attacker and defender alike and identify three principal countermeasures employed by the Acre garrison. The most prevalent of these was incendiary counter-battery fire or 'counterfire', showcased most famously by the tale of the Damascene chemist Ali, who burned three Crusader siege towers in 1190. The other two prominent countermeasures include non-incendiary counterfire and the theft of the besiegers' equipment.

Incendiary Counterfires

Counterfire is defined as 'fire intended to destroy or neutralize enemy weapons' (*DOD* 2008, 55). A major type of counterfire described at Acre involved the use of incendiaries, and in many cases, so-called 'Greek Fire'. Arabic combustibles were not true Greek Fire: they were lobbed spheroconical jars (Nicolle 2016, 163–177; Pradines 2016, 153–62) of crude oil or naphtha, not the Byzantine-style distillations of crude oil shot out of tubes (Haldon and Byrne 1977, 92–98; Haldon *et al.* 2006, 291).

Naphtha was in ready supply in the general region. There were known sources of petroleum, one of them being in the region of Hît on the Euphrates River, which had supplied asphalt and naphtha since Assyrian times. Recipes existed as well, such as the two 11th-century Arabic recipes for naphtha written by Mardī ibn 'Ali al-Tarsusī (Fahmy 1966, 158–159; Lewis 1974, 223–233). Moreover, a workshop that seems deliberately designed for the production of both naphtha and spheroconical jars, or grenades, has been located in Hama in Syria (Pentz 1988, 92–93). Hama is reasonably close in proximity to Acre (about 179 miles, as the crow flies), but equally important, the lord of Hama was Taqī al-Dīn (Al-Malik al-Muẓaffar Taqī al-Dīn 'Umar), Saladin's nephew and commander of the sultan's right wing at the siege. He was thus a potential supplier of grenades to the Acre garrison. If Taqī al-Dīn had any supplies at the onset of the siege, these could have been spirited into the city on Friday, 15 September 1189, when he broke the Crusaders' left flank and cleared a path to the walls; Saladin himself entered the city (Hosler 2018a, 24). In July 1190, Saladin sent Taqī al-Dīn north on a mission to intercept the army of Frederick Barbarossa, which was moving through Anatolia. Passing through Hama, Taqī al-Dīn could have replenished his supply of jars and taken them back to Acre, to which he returned in November (Hosler 2018a, 62 and 88). As a case study in the use of incendiary weapons in the period, then, the siege of Acre has much to offer in terms of both military technology and questions of materiel and supply.

That said, within Acre itself supplies were carefully husbanded. This is because the Christian blockade of the city's land side after the fall of 1189 meant that jars of the substance had to arrive over the water. Ships sometimes delivered stores, but whenever Christian vessels controlled access to the port in the spring, summer and autumn (barring a few times when Muslim ships were able to run the blockade), it had to be secreted in via swimmers crossing the harbour. Whenever a swimmer arrived safely, the garrison sent a carrier pigeon to Saladin confirming the delivery. It could be a tricky journey, for swimmers had to avoid Christian ships and lookouts. Not all of them arrived successfully. There is a story of one courier getting caught in a fishing net: the Christians confiscated his phials of naphtha and then decapitated him (Stubbs 1864–65, 1.55). Another swimmer was not caught but drowned, supposedly with a purse filled with 1,000 *dinars* (Richards 2002, 124).

Once delivered, the naphtha could be deployed effectively against siege engines via direct fire methods. In September 1190, the garrison set alight the tips of two bolts and shot them into the side of a Crusader artillery piece. It began to burn, and the fire spread to a second engine astride it (Stubbs 1864–65, 1.47a; Richards 2002, 124–125; Ailes and Barber 2003, 3534–3555).[1] However, quantities of naphtha were too scarce to use regularly on long-distance shots. Even riskier were shots from catapults, as the parabolic trajectory reduced targeting precision (Fulton 2018, 356–403). This reality meant that short-ranged delivery methods predominated.

Accordingly, sallies and hand-held missiles were the preferred method for using naphtha. If the operation was conducted quickly and with the element of surprise, riders on horseback could reach the perimeter of the Christian camp and discharge their weapons with some accuracy, and at close range. Following the arrival of Henry of Champagne, count of Troyes, in September 1190, the two leaders of the Acre garrison, Emirs Bahā al-Dīn al-Asadī Qāraqūsh and Ḥusām al-Dīn Abū'l-Hayjā, began deploying sallies of naphtha-armed riders (Richards 2002, 123–125).[2] Groups would gallop straight at Henry's trebuchets and then toss their jars before wheeling around in retreat. Several engines were burned in such a fashion, including one weapon for which Henry had paid 1,500 *dinars* (Richards 2002, 122–123). A month later, Muslims again emerged from Acre's gates and threw naphtha jars at the wooden rampart protecting the Christian camp, setting several sections ablaze. Another attack was repelled in November when forward riders were stopped at the camp perimeter and then driven back into the city when Henry and Geoffrey of Lusignan, the lord of Jaffa and Ascalon, led the Knights Templar in a cavalry charge (Stubbs 1868–71a, 3.175). On 11 June 1191, sorties by the garrison resulted in the inflammation of a battering ram and artillery owned by Philip Augustus (Stubbs 1864–65, 3.5; 1868–71a, 3.207; Richards 2010, 2.387). These engines

had been left unguarded when the French king ordered their operators to join an infantry assault on Acre's gates: 'Biaus sire, Deus, com povre atente!' (Ailes and Barber 2003, 4676).

Carrying incendiaries was of course risky business. It took skill and confidence to pull off a successful attack because the rider had to get within throwing distance, surely less than 50 m. Riders might lose their nerve and pivot too early; they might throw and miss; and horses could be tripped up in the various bits of debris strewn around the siege camp, especially during night-time sallies.[3] In a well-known example from Acre, in the fall of 1190 a garrison rider fell off his horse and immolated his own testicles with naphtha. The details differ between the sources – whether the rider was Emir Ḥusām himself or someone else, whether it was poured on his nether region by a Crusader or, rather, if it simply landed in his lap (Stubbs 1864–64, 1.54; Ailes and Barber 2003, 3689–3694). But the results, if the tale is true, were certainly disagreeable (Mitchell 2004, 176).

Sallies were not the only method of employing hand-held incendiaries, of course: as will be familiar to anyone who has seen movies featuring medieval-style warfare, historical or fictional, the Acre garrison was adept at hurling fire from the city walls. When Crusader engines chanced to approach, naphtha jars were lobbed atop them by hand. During one assault on 2 July 1191, the French pushed a Welsh cat (mantlet) against the wall. The defenders dumped pieces of wood and other sorts of kindling on top of the housing: this was then set alight with lit jars of naphtha. The Crusader assault halted, and in the aftermath Philip Augustus accused his fire-averse soldiers of incompetence (Stubbs 1864–65, 3.8; Ailes and Barber 2003, 4803–4832). Thrown jars of naphtha also appear in the accounts of the attack on the Tower of Flies in Acre's port in September 1190. Several Pisan galleys attacked the tower, which was posted at the end of the mole on the south-east side of the port, and one ship was equipped with a three-story siege tower covered in leather (Stubbs 1864–65, 1.58; Ailes and Barber 2003, 3765–3792). The Pisans managed to anchor this ship to the mole, but its close proximity to the Tower of Flies allowed its defenders to hit the galley with naphtha, and because the leather skins had not been doused with fire-resistant vinegar its tower was immolated (Stubbs 1864–65, 1.58; Ailes and Barber 2003, 3793–3812). In the wake of the Pisan failure, Muslim ships increasingly were able to run the blockade (Hosler 2018a, 80–81).[4]

The neutralization of a dual battering ram attack on 15 October 1190 is an equally impressive example. Two huge rams were pushed against the walls, one owned by Thierry, archbishop of Besançon, and the other by Count Henry (Stubbs 1864–65, 1.59; 1868–71b, 3.cxx–cxxi.429–40; Richards 2002, 129–130; Ailes and Barber 2003, 85). Some dried-up bushes were dropped on the housing of Thierry's ram, and atop these was poured tar, pitch and animal fat, and then the whole mess was dusted with chunks of sulphur. Finally, lit jars of naphtha were hurled onto the kindling. The beams and roof of the housing ignited and the soldiers inside fled. Other Muslim riders burst through a gate and hit Henry's ram with naphtha, too. Once the assault ended, the flames were doused and both rams were dragged inside the city. A battering ram itself can be massive and difficult to inflame but, as in this case, the weak points were its crew, superstructure and swinging mechanisms (Stubbs 1864–65, 1.59; 1868–71b, 3.cxxi.441–60; Richards 2002, 130 and 142; Ailes and Barber 2003, 3839–3868).[5]

Ali Immolates the Siege Towers

The most famous application of naphtha at Acre was its role in the destruction of the siege towers with direct fires in early May 1190. There were three towers, financed respectively by Guy of Lusignan, Ludwig III, landgrave of Thuringia, and the marquis, Conrad of Montferrat. Each was multi-storey, mobile, fire-proofed with vinegar-soaked animal skins, and fronted with nets designed to catch small-arms missiles (Stubbs 1864–65, 1.36; 1868–71b, 3.cxiii.201–208; Stevenson 1875, 253; Richards 2002, 110; 2010, 2.372–73; Ailes and Barber 2003, 3396–3403). How the vinegar was applied is not specified: perhaps the leathers were 'soaked' in troughs initially, but once on the long journey towards the walls it seems likely that Crusaders would have dabbed/sponged vinegar on the leather as needed. The towers evoked such fear that Acre's defenders evidently sought parley with the besiegers, although their overtures were rebuffed (Stubbs 1864–65, 1.36; Richards 2002, 110; 2010, 2.373; Ailes and Barber 2003, 3402–3404).[6] The Muslim garrison then tried to immolate the machines with naphtha, but the vinegar proved an impenetrable barrier. On either 5 or 6 May, the towers reached the city perimeter: their bridges were dropped and Crusaders charged across and began fighting atop Acre's walls (Stubbs 1864–65, 1.36; Hofmeister 1912, 36.53.15–21; Richards 2002, 109–10; 2010, 2.372). It is at this point that Ali enters the story. A metal worker from Damascus, he had been secreted into the city and now claimed to know a variation of naphtha that could penetrate the towers' defences. Emir Qāraqūsh was eventually persuaded to let him try (Meynard 1898, 4.448).

There are three accounts of Ali's work, all in Arabic sources. According to the witness source Bahā' al-Dīn Ibn Shaddād (Saladin's *qadī*/judge), Ali mixed naphtha with other ingredients in copper vats until the whole mixture was hot. Then, a pot of the mixture was launched, and the first siege tower was immolated (with a single, direct shot from a catapult). The remaining two towers were then destroyed in like fashion (Richards 2002, 110–111). The other two renderings are more complex. As told by another witness source, 'Imad al-Dīn al-Iṣfahānī (Saladin's *kātib*/secretary), and also Ali 'Izz al-Dīn Ibn al-Athīr al-Jazarī

(a historian writing in Mosul), there was not one pot but several, shot in deliberate succession. Ali mixed, and then had the garrison shoot, several pots of oil mixed with other, undescribed substances at the first tower; these were not lit with fuses. The pots hit and their contents splashed all over the siege tower's leather-and-vinegar shielding but had no apparent effect. Their impotence caused great rejoicing and mocking among the Christian crew stationed inside and on top of the tower. However, then Ali had the garrison shoot a 'full pot, having ignited it'. When it struck the leather, flame was produced and stuck. More lit pots were shot and the tower was soon consumed by fire. Thereafter, using the same technique, the remaining two towers were immolated as well (Stubbs 1864–65, 1.36; 1868–71b, 3.cxiii.213–16; 1876, 2.84; Stevenson 1875, 253; Howlett 1884–85, 1.348; Meynard 1898, 4.449; Ailes and Barber 2003, 3424–3427; Richards 2010, 2.373–74). The garrison proceeded to celebrate with joy, so much so that 'staid and stern men were as excited as flighty girls!' (Richards 2002, 111).

This story of Ali is well known. J.R. Partingdon examined some of the sources for the story several decades ago but offered no interpretation of the event (1960, 24–25). The contents of Ali's jars remain a mystery today. That all the Arabic sources contain the story suggests that it is fundamentally true: a young chemist/enthusiast tinkered and somehow found a way to penetrate vinegar-soaked leather with incendiaries. Whether he did so with one pot or several cannot be known for certain.[7] But the descriptions are enough to put forward a hypothesis on what happened to the siege towers.

I suspect the contents of Ali's unlit pots were crude oil and then either ground sulphur and/or saltpetre. Sulphur (S) is a highly flammable substance and has been used in siege warfare since antiquity (Mayor 2009, 210–211). The Acre garrison had ready stores of it during the siege. As we have seen, it dropped chunks of sulphur atop Archbishop Thierry's battering ram, which provided ample fuel to incinerate it. The other substance, which could have been used in conjunction with sulphur or alone, is saltpetre; in Arabic, commonly *bārūd* or *natrun* (Forchheimer 1952, 103–106). Saltpetre is the chemical compound KNO_3 (potassium + nitrate radical) and, along with sulphur and charcoal, is one of the three ingredients of medieval (black) gunpowder. Saltpetre is an oxidising agent: it contains packed oxygen that is released rapidly upon reaction and increases the intensity of fire (Smith 2010, 59). There were natural sources of saltpetre in Damascus, from where Ali hailed, and traces of potassium nitrate have been found in Syrian grenades from the burning of old Cairo in 1168; moreover, the process of purifying saltpetre had been known by Arabs since the early 11th century (al-Hassan 2001, 115–18; Monchamp 2016, 195–207).[8] If Ali indeed mixed his naphtha pots with saltpetre, it would represent another early reference to weaponization of the compound in the Middle East.

Mixed together or used separately, sulphur and saltpetre can be very useful in a siege. First, they are highly effective in the immolation of wooden objects. For example, Emperor Henry VII once used a combination of sulphur and saltpetre to burn down the wooden barriers erected against him in Rome in 1312 (Williams 2012, 106). Thus, even without the charcoal additive of gunpowder recipes, the two substances were efficacious when used in conjunction. Second, both powdered sulphur and saltpetre can eradicate the quenching effects of vinegar. If Ali's pots were a mixture of crude oil and either one of these powdered substances, there would have been three potential chemical effects:

First, the sulphur could have interacted with the vinegar (CH_3OOH) to quench it. The balanced chemical equation for vinegar plus sulphur is $2S + 6CH_3OOH = 2S(CH_3COO)_3 + 3H_2$, which results in sulphur acetate and hydrogen gas. This would have the dual advantage of nullifying the vinegar warding *and* increasing flammability in the time before the gas dissipated.

Second, saltpetre interacts with vinegar as follows: $8KNO_3 + 9CH_3COOH = 8NH_3 + 18CO_2 + 6H_20 + 8K$. The result is more benign, producing ammonia, oxygen, water and potassium; however, it would still eradicate the warding effect of the vinegar.

Third, mixing oil with both sulphur and saltpetre produces an easily- and clean-burning substance.[9]

In all cases, the added crude oil would have created an additional 'sticky' effect, allowing the powders to grip the leather and do their work. Keeping these chemical effects in mind, we can make some sense of Ali's story. With the vinegar eradicated – and possibly weaponized via the production of hydrogen gas, if sulphur was used – the siege tower had only leather warding to protect its superstructure. And this could be burned, just as had been the leather shield on the Pisan siege tower employed against the Tower of Flies later that same year.

Along these lines, I am inclined to give more credence to 'Imad al-Dīn and Ibn al-Athīr's versions of the story, that it was not one but rather multiple pots shot in sequence. A single pot, as described by Ibn Shaddād, would have been unlikely to achieve the desired effect. With a lit fuse, it would have ignited either on the way to target (in which case consuming the powders – and very quickly so if the oxidizer saltpetre was present) before touching the vinegar, or it ignited upon impact, bursting upon the leather surface. In this latter case, Ibn Shaddād claims, 'hardly had it hit the target before it immediately burst into flames and the whole became like a huge mountain of fire' (Richards 2002, 111). This seems quite improbable because only one spot of the leather would have had its vinegar eradicated – on the remaining surfaces the vinegar would have remained, and the immolation would not have been nearly instantaneous. Rather, it would have fizzled as the fire stretched and contacted other soaked areas of the leather. More reasonable are

'Imad al-Dīn's and Ibn al-Athīr's versions: that Ali pasted different portions of the leather armour with unlit pots, thus eradicating the vinegar, before then dousing the leather with fire. These successive shots of unlit pots thus facilitated the conflagration at the end.

I will offer the following hypothesis, then. The Crusader siege towers were first hit with multiple direct shots of pots filled with oil and sulphur, which removed patches of vinegar by converting it to sulphur acetate and hydrogen and covered the spots with two kinds of combustible fuel. Thereafter, Ali's subsequent lit naphtha pots were able to inflame various portions of the leather protecting the tower's wooden structure. The fire probably fizzled in some places (where vinegar remained) but attached in others, thus allowing it to spread. Given that supplies of sulphur at Acre are testified in the sources, this seems the most likely conclusion. If the garrison happened to have saltpetre at its disposal (either on store or brought by Ali himself), that would have been efficacious in eradicating the vinegar barrier, as well as providing a hotter fire through its oxidizing qualities. Without an explicit description of the pots' contents in the texts, we cannot be absolutely certain, but it seems a reasonable theory that chemistry, and Ali's chemical know-how, was instrumental in the efficacy of the Muslim counterfire at Acre.

Non-Incendiary Counterfire

Incendiaries were not the only sort of counterfire employed by the Acre garrison. A second type was direct and indirect deployment of stones and sharps, which, like fire, had the potential to either disable or destroy the Christian engines, especially the artillery.[10] In late August and early September 1190, a Muslim ballista shot bolts at enemy trebuchets in an attempt to hit and crack their pivoting beams. One Muslim catapult purportedly launched direct shots of projectiles weighing much more than a talent, and two men were needed to load it. Christian sources cast doubt on the efficaciousness of crushing projectiles, such as with the case of a curious miracle story in which a particular Crusader is struck in the back by a large casted stone but survived and was, in fact, completely unharmed (Stubbs 1864–65, 1.47a; Richards 2002, 124–125; Ailes and Barber 2003, 3534–3555). The best-known story is that of a trebuchet the Crusaders dubbed 'Bad Relation' (*Malam cognatam*). In mid-June 1191, the garrison used it to shoot directly at one of Philip Augustus' trebuchets, the aptly named 'Bad Neighbour' (*Malam vicinam*). Bad Relation, the Muslim weapon, put Bad Neighbour out of commission multiple times with counterfire, probably by striking the carriage holding the lever arm. Each time it was damaged, an anonymous priest blessed the weapon and collected alms for its repair (Bradbury 1992, 125). Other catapults were likewise targeted, including weapons owned by Duke Hugh of Burgundy, Richard the Lionheart, and the Knights Hospitaller (Rogers 1992, 226–227).[11] The heavy strikes from Crusader artillery demonstrated the urgent need for this counterfire: the Hospitaller weapon once knocked down a 30-square foot section of the wall adjacent to the Cursed Tower, which sat at the joining point between Acre's northern (running west–east) and eastern (south–north) walls. Richard's weapons damaged another tower and hit the market inside the city with indirect shots (Stubbs 1864–65, 3.7; Richards 2002, 155; Ailes and Barber 2003, 4781–4786).

A different application of crushing counterfire was the vertical dropping of heavy objects from Acre's battlements. During the attack on the Tower of Flies, the Muslims dropped rocks and large pieces of wood on scaling ladders in order to break them, knock them down, and crush the Crusaders upon them. The following month (October) the city garrison dropped pieces of stone columns atop Thierry of Besançon's battering ram before burning it (Stubbs 1864–65, 1.59; 1868–71b, 3.cxxi.441–60; Richards 2002, 130; Ailes and Barber 2003, 3839–3868). The aforementioned Welsh cat (mantlet) was pummelled with rocks before, again, the Muslims had to resort to naphtha (Stubbs 1864–65, 3.8; Ailes and Barber 2003, 4803–4832). This relatively simple, non-mechanical countermeasure is likely underreported and must have been prevalent throughout the siege (and indeed other sieges), but it seems to have rarely been decisive on its own.

The techniques described thus far targeted the Crusader siege engines and devices, which might injure or kill their crews as a side benefit, but of course those crews could be targeted directly as well. It was a means to an end: rendering the siege device impotent. Antipersonnel missiles shot from handheld slings, bows and crossbows – ubiquitous techniques since Antiquity – were far too ubiquitous for the sources to describe over and again with each successive attack on the walls. Only a few descriptions are explicit. At the Tower of Flies, the first Muslim response was to exchange missile shots with the fortified Pisan galley. The volleys failed to halt the ship's advance, and, as already noted, it was ultimately able to drop anchor on the harbour mole (Stubbs 1864–65, 1.58; Ailes and Barber 2003, 3765–3792). Crossbow bolts were shot at Archbishop Thierry's battering ram but they failed to find the gaps in its housing, so instead the ram had to be successively pummelled with rocks and burned with naphtha (Stubbs 1864–65, 1.59; 1868–71b, 3.cxxi.441–60; Richards 2002, 130; Ailes and Barber 2003, 3839–3868). Hence, targeting of Crusader devices and machines, not their crews, seems to have been the more effective method during the Acre siege.

Theft

Riskier was the third and final countermeasure, theft. Stealing (or seizing, depending on one's perspective) siege engines and equipment required the use of sallies and put defenders at

great risk because they had to be on foot, not on horseback. Exposing themselves to missiles shot from the Crusader camp, Acre's garrison attempted to drag their opponent's equipment back into the city when the opportunity arose to do so and the devices were still in adequate repair. On 31 December 1190, members of the garrison rushed the forward Crusader trenches and attempted to pull away some siege ladders with ropes. Four knights (Ralph of Tilly, Humphrey of Veilly, Robert of Lanlande and Roger of Glanville) jumped on top of one ladder to prevent this. The Muslims atop the city wall responded by throwing jars of naphtha onto the ladder – a case of 'if we can't have it, neither can they'. The knights somehow extinguished the flames four times before eventually cutting the ropes and taking the ladder back (Stubbs 1868–71a, 3.175). The size of the equipment seemed inconsequential: ladders were certainly smaller and more portable than Henry of Champagne's battering ram, but the defenders took it all. The ram, which was immobilized on 15 October 1190, the same day as Archbishop Thierry's, was seized after its wooden housing had been torched and all of its operators had run off. It was dragged into Acre, where its metal cap, whose estimated weight was near a thousand kilograms, was removed and sent to Saladin as a prize. Eighty Muslims died in the operation, however, demonstrating the risks involved when sallying on foot (Richards 2002, 130). The looting of destroyed engines is also mentioned by 'Imad al-Dīn: after the immolation of the three siege towers, the garrison inspected their remains and extracted from them what iron and armour they could (Meynard 1898, 4.449).

Decisiveness

The tactics and techniques applied by the garrison at Acre are likely familiar to anyone versed in siege warfare. What is remarkable about them, however, is their aggregate decisiveness. The Muslims operated at an extremely high level for nearly a year and a half, often while in a state of material privation brought on by the Crusader blockade of the city. This trend continued even after the winter of 1190–1191, when Saladin swapped out the Acre garrison, replacing the defenders with fresh soldiers and giving the commanding emirs a well-earned break. Ibn al-Athīr criticized him for that decision, on the basis that the new men lacked the hard-earned experience of the veterans who had been holding the Crusaders off. While this may have been the case, the new garrison seemed similarly adept with deploying countermeasures, at least. It must have been maddening for the Christians to repeatedly watch their significant financial investments in machinery go up in flames before their eyes. For the Muslims, it must have been frustrating to repeatedly destroy enemy machines, only to see new ones continually being constructed and pushed into action.

The garrison continued to ably defend against artillery attacks, even those of Philip Augustus, through the spring and summer of 1191. To that point, every single Christian assault during the siege of Acre that involved machinery had been turned away by their destruction or incapacitation. Even the arrival of Richard the Lionheart could not initially turn the tide. Arriving on 8 June, his subsequent illness and myriad squabbles with Philip prevented the English king's deployment of his artillery (Baldwin 1986, 77–79). On 14 June, Richard recovered and ordered a continual bombardment of the city from his engines (Hosler 2018a, 120–121). The combined French and English attack was too much for the exhausted and materially-deprived garrison to handle. Nonetheless, even without the active threat of counterfires, the Crusader artillery could only weaken and partially penetrate, not destroy, Acre's curtain wall (Fulton 2018, 16; Hosler 2018a, 100).

Although it is true that the Christians had experienced other critical setbacks during the siege of Acre, it was the nullification of their siege equipment that prevented penetration into Acre and effectively extended the duration of the operation. Operations had been delayed by two major elements but neither prevented siege attacks – they only degraded their intensity. First, the presence of Saladin's relief army provoked Christian leaders to divert their attention from Acre's walls, which led to two major field losses and thousands of casualties on 4 October 1189 and on 25 July 1190 (Oman 1998, 333–340; Hosler 2018a, 27–38 and 67–71); these were followed by a nearly-disastrous foraging expedition to Haifa in November (Hosler 2018b). But the siege camp was never abandoned, and Saladin was never able to prevent or even seriously disrupt Christian assaults against Acre.

Sustainment issues likewise bedevilled but did not prevent siege assaults. Personnel losses in battle, while often severe, were eventually replaced by troop transports arriving from the West. Following the disastrous St James offensive of 25 July, reinforcements on western ships returned the armies to its previous numerical strength by the fall (Hosler 2018a, 61–72). Material privations were severe in the winters of 1189–1190 and 1190–1191, when food supplies ran dangerously low and starvation, disease and exposure claimed numerous lives. Again, the arrival of supplies by sea partially solved sustainment issues. Muslim ships sank some supply galleys but never enough to completely strangle the siege camp from the seaward side, much less prevent the deployment of artillery, rams, cats or ladders. Therefore, neither logistics, succour, nor blockade prevented Crusader siege attacks; rather, they were turned away with countermeasures from the garrison.

The Underground Endgame

The countermeasures employed by Acre's Muslim garrison effectively nullified the threat of Crusader assaults, that is, until mid-June 1191. While artillery, rams, ladders, cats

and (possibly) towers remained in use for the remainder of the siege, in the end, they did not penetrate or overtop the walls (Hosler 2018a, 122). Rather, the Christians only finally triumphed through the use of sapping. The arrival of Philip Augustus in April 1191 resulted in a three-pronged French assault. The first prong of artillery attacks failed, as we have seen, and some of Philip's pieces were destroyed (Delaborde 1882, 74; Richards 2002, 147; 2010, 2.387). The second prong involved a renewed effort to fill Acre's moat with the bodies of dead horses and soldiers in order to facilitate the advance of a Welsh cat and battering rams. In a cunning, albeit macabre, counter, some members of the garrison jumped into the moat and began dismembering and hauling away the corpses, thereby forestalling the crossing of the machines. The Crusaders managed to push the machines across nonetheless but they were, again, incinerated (Stubbs 1864–65, 1.50; 1868–71a, 3.207; Morgan 1982, 5.14.157; Richards 2002, 147, 149, 150–151; Ailes and Barber 2003, 3620–3655).

What did work, however, was the third prong of the assault: concurrent French tunnelling. A portion of the wall adjacent to the Cursed Tower on the north-east perimeter was collapsed by miners in early June 1191. Some soldiers managed to enter the city but were quickly driven back out, and the breach was repaired (Stubbs 1868–71a, 3.207; Delaborde 1882, 74; Morgan 1982, 5.14–15.157; Richards 2002, 150–151). One month later, French miners dug towards the same spot and were speedily met by a Muslim countermine (another effective countermeasure); however, a second group of sappers was not, and they managed to undermine a different section of wall. Although the French were again driven out of the breach, an impression had been made: that very afternoon, 3 July, the emirs in Acre sought a parley with the French king that eventually resulted in the surrender of the city (Stubbs 1864–65, 3.11; 1868–71a, 3.211; Delaborde 1882, 81; Howlett 1886, 3.427; Richards 2002, 158; Ailes and Barber 2003, 4861–4902).[12] That the Crusaders turned to the spade in the wake of the garrison's debilitating defensive tactics should not be surprising. Numerous historical examples across successive centuries can be advanced in which subterranean tactics succeeded after above-ground attacks had been neutralized: for example, Suleiman's taking of Rhodes in 1522 (DeVries and Smith 2012, 179); the Spanish attack on Montalcino in 1553 (Pepper and Adams 1986, 101–105), Union operations underneath Elliott's Salient in the United States Civil War (Trudeau 1991, 97–108), or the tunnelling of the Ypres Salient in World War I (Barton, Doyle and Vandewalle 2004, 79–80).

Yet the fact that the Acre garrison was able to hold out for nearly two years by eliminating, disabling or capturing the Crusader siege devices or their crews is most impressive. It should compel scholars to study defensive countermeasures more closely in future work. At the same time, it is clear that no garrison could hold out indefinitely, and independently, against an overwhelming besieging force. Despite its clever and valorous collective effort, Saladin's inability to drive off the Christian host eventually resulted in the garrison's capitulation to Philip and Richard in July 1191. Countermeasures delayed, but could not prevent, the victory of the armies of the Third Crusade.

Notes

1 On various known fire arrow recipes, see Smith 2010, 84–87.
2 There is a similar anecdote from the siege of Manzikert in 1054 (Dennis 1998, 108).
3 As happened a century later at Acre, when the Knights Templar had difficulty conducting sallies against the Mamluks; see Crawford 2018, 107.
4 A very different proximate account is in Richards 2002, 127–128.
5 Scholarly analysis of battering rams is limited, but see Bachrach and Aris 1993, 1–13.
6 There is no way to know how 'pure' the Crusaders' vinegar was or how consistently it was applied across the leather skins; indeed, we cannot even know if said skins covered the entire superstructures of the towers. Any analysis of these wardings must therefore be somewhat conjecture.
7 Fulton (2018, 185) suggests the first series of pots were used to judge range to target and that only the lit pot contained incendiaries. But such wastage of pots (and especially oil) seems imprudent when the shot weight might have been replicated with stones, especially given the difficulty of acquiring the naphtha (and perhaps the ceramic vessels as well) in the context of a strong crusader blockade.
8 Saltpetre was called 'Chinese snow' in Arabic and 'Chinese salt' in Persian (Chase 2003, 84).
9 My thanks to both Ann Mills (Minnesota State College and University System) and Robert Kuehn for their assistance with the chemical calculations.
10 Studies on types and uses of non-gunpowder artillery include: for antiquity Marsden 1969; 1971; Rihll 2007; and for the middle ages Purton 2009; 2010; Fulton 2018.
11 There were nine *petrariae* total (Fulton 2016, 13).
12 On sapping operations in the middle ages, see Purton 2018.

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20

Crusader Coastal Fortifications: Preventing Longshore Raids in the Shallows, While Keeping the Sea Approach Open and Safe

Ehud Galili and Sarah Arenson

Introduction

The First Crusade (1096–1099 CE) arrived at the Holy Land by land. After a century, the great majority of the Crusading forces, as well as pilgrims and commercial traffic, were seaborne (Mollat 1967; Prawer 1970). During the First Crusade, coastal towns were avoided. The main Crusading force went directly to conquer Jerusalem, and the coastal towns, supported by the Fatimid navy, yielded later and only after prolonged sieges. Ashkelon, a major port city on the Egyptian border, fell to the Crusaders only in 1153 (Lev 1984; Hamblin 1986). After replacing the Fatimid dynasty by his own Ayyubid lineage, Saladin (1137–1193 CE) tried to re-establish the Muslim navy, but his successors did not move in that direction (Ehrenkreutz 1955). The Mamluks, coming to power in Egypt in 1261, failed completely in their maritime attempts (Ayalon 1965). By the mid-13th century CE, the Europeans controlled the northern and middle sea routes of the Mediterranean, as well as the shorter, transverse, north–south sea routes (Pryor 1988). Only the southern route, along the North African coast was controlled by the Muslim countries bordering it.

The Crusader Kingdom of Jerusalem did not develop a navy, as they were able to rely on the Christian maritime entities, *e.g.* the Italian communes, Catalan and Atlantic maritime powers, to provide both a navy and a commercial fleet. The maritime republics of Italy, mainly Pisa, Genoa and Venice, as well as other maritime forces, enabled the conquest of the coast (Favreau-Lilie 1989). Even Jerusalem was taken only after a small fleet was dismantled in Jaffa and its timbers and cables were transformed into siege machines (Prawer 1970 I, 228–229). Because of their unique ability, these maritime powers demanded and received extreme privileges in the coastal towns, becoming extra-territorial entities with disastrous results (such as the Acre St Sabas war of 1256; Prawer 1970 II, 360f). These maritime powers continued, until the end of the Crusades, to provide coastal defence and support of land offensives. Their main role was to sustain the Kingdom's lifeline to Europe – transferring men and supplies, as well as connecting the local, regional and international commercial systems. In the last half century of Crusader presence in the East, the commercial interests of the maritime powers often outweighed their loyalty to the Christian cause, and they weakened the Kingdom (Schein 1986; Menache 2012).

After conquering the Holy Land, the Crusader kings and their vassals, being a minority surrounded by a hostile local population and Muslim political entities constantly at war with them, invested much in fortifying their cities and strongholds. Nevertheless, the lack of manpower to man the defences, as well as the feudal system, hindered the creation of a standing army and compelled the feudal authorities to transfer key fortifications to the military orders. They functioned as a standing army of the Kingdom, holding most important castles and strongholds on a permanent basis (Prawer 1972, 252–279). This process was evident prior to the battle of Hittin (1187 CE), and became widespread in the 13th century CE during the second phase of the Crusader kingdom (Prawer 1970 II, 443), when it clung to the sea, the only safe lifeline left for it (Benvenisti 1970, 76).

Against this background, the design and building of Crusader coastal fortifications took shape (Prawer 1972, 280–351; Pringle 1995; Ellenblum 2001; Boas 2006). The three sites discussed here – Atlit, Arsuf and Ashkelon (Fig. 20.1) – are located on the shore, facing the open sea. The heavy line of their land defences runs from north to south, encompassing their fortifications in a flat horseshoe form (as in Ashkelon), or a trapeze-like form, with a long line to the east and two shorter ones in the north and south

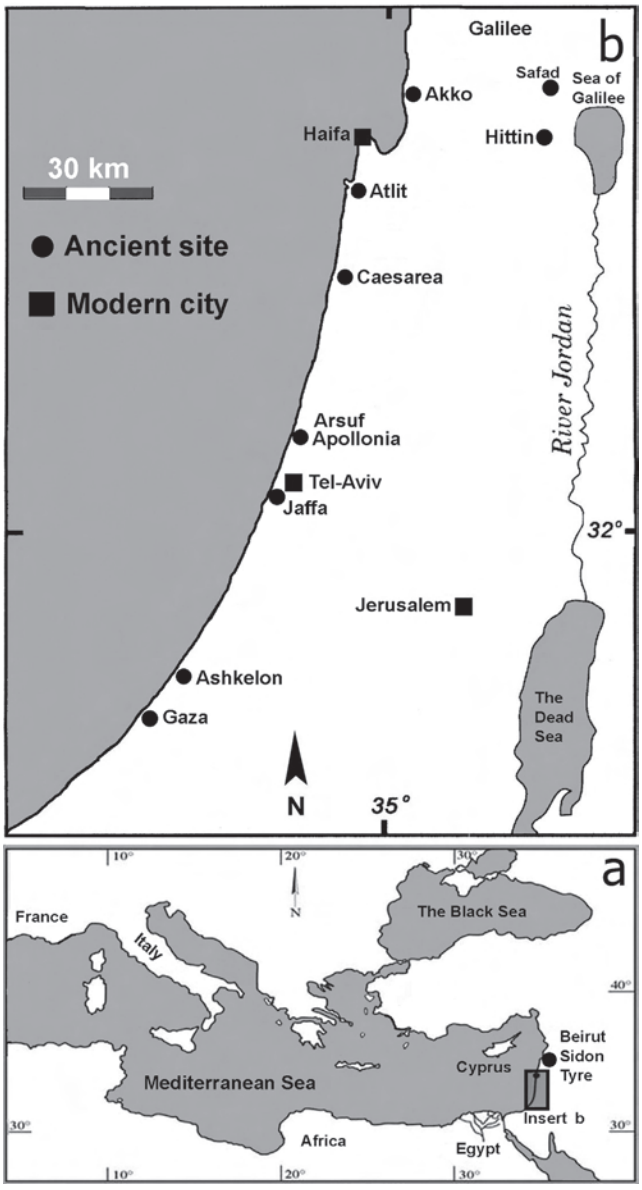

Fig. 20.1: Key map: a) the eastern Mediterranean, b) the Israeli coast and locations of sites mentioned in the text.

(Arsuf and Atlit). The defence wall had a deep dry moat in front and a counterscarp. Above the wall rose several towers. The towers were designed to cover blind or 'dead' spots from the defender's point of view. The main gate to the hinterland facing east was defended by additional towers. Secondary gates were sometimes found to the north and south, leading to the main coastal road. The sea gate in the west was at the lee of the heavy fortifications. Obviously, the utmost defensive effort was directed towards the east, whence most attacks were expected. The citadel in these three sites, as in most coastal sites, was located above the beach, at the westernmost part of the fortified area. It was designed as an independent unit, and in many cases, it held for a while after the outer wall was breached and the town was taken. The outstanding feature of these fortifications was the relative weakness of defences on the sea side, or western part of the sites. The Crusaders and the maritime republics felt they had the dominance of the sea. It was of paramount importance to keep a free access to the sea gate to the sites, both to enter and to take off, in case of imminent danger. This was clearly in the interest of extra-territorial actors, the European maritime powers, and the international military orders, as well as the local Frankish population. This situation changed with the appearance of the skilled and motivated Mamluk cavalry. In the campaign by Sultan Baibars (1263–1265 CE), during the siege of Caesarea, a number of attempts were made to storm the citadel from the sea under cover of heavy barrage by stone shot (Benvenisty 1970, 139).

There is a contemporary report which mentions that during the final battle over Acre, there was a dramatic fight around the tower at the south-east end of the wall, by the sea. Overcoming the obstacles erected there, the Muslim cavalry succeeded in penetrating the defences (Minervini 2000, 438). Here there were evidently no coastal fortifications, as a trellis (metal bar in ancient French) erected ad hoc failed to stop the assault. This contemporary report and the fact that there was no Muslim naval action at the time, shows that the attack and penetration of the city fortifications were carried out by cavalry charging along the shallows (Prawer 1970 II, 464; Lyons 1971 II, 70). The Mamluk cavalry was the mainstay of the later Ayyubid armies, even before they ruled Egypt. Something had to be done to counter their attacks along the shallows. Beside past observations on remains of walls and towers in the sea, terminating the city walls (see below), recent underwater and coastal surveys in Atlit, Arsuf and Ashkelon revealed a series of obstacles. These were a line of boulders or built walls, starting from the towers at the end of the city walls and stretching into the sea. Such obstacles, here described in context for the first time, served to block a raid along the shore and preserve the free approach to the sea. Atlit was a stronghold of the Templars; Arsuf held a similar position with the Hospitallers; and Ashkelon was an important sea gate in the south of the country. It appears that this new feature of Crusader fortifications may be dated to the second half of the 13th century CE, and could have been developed as a response to the Mamluk tactics described above.

Atlit

Atlit Castle lies on a *kurkar* (aeolianite sandstone) peninsula some 10 km south of Haifa. The peninsula is bordered in the north and south by sandy bays. Numerous shipwrecks, cargoes and harbour installations were discovered underwater, suggesting that the bays had been used as anchorages since the Early Bronze Age.

Crusader Atlit

The Crusaders started fortifying Atlit at the beginning of the 12th century, with the building of a small fortress (Destroit) on the Atlit ridge (Fig. 20.2a), aimed at securing the pilgrims' way from Akko to Caesarea and Jerusalem. Only later, in the 13th century, did the vital strategic need to secure the connection to Europe necessitate the building of Atlit's coastal fortifications, the remains of which are still visible today. The castle, *Castrum Peregrinorum* or *Château Pèlerins* (the Pilgrims' Castle, or *Castrum Filii Dei*), was built during 1217–1218 by the Knights Templar, the Knights of the Teutonic Order and individual European Crusaders (Johns 1931; 1947). It was constructed on the rocky peninsula using stones quarried on the 'Atlit ridge (Figs 20.2b, 20.3 and 20.4). Protected by the sea on three sides, the castle was vulnerable to attacks only from the east.

The fortifications were described in detail by Johns (1931, 111–129; 1947, 14–94) and later by Benvenisti (1970, 175–185, 259–260, 283–290), Prawer (1972), Ronen and Olami (1978, 38–54), Pringle (1989, 14–25), Boas (1999, 110–112; 2006) and Mol (2012, 84–91). The external fortifications on the Kurkar ridge were studied by Galili and Ronen (2019) (Fig. 20.2c). Practically all experts who described the Atlit fortified complex considered it a prime example of Crusader military construction. Seemingly only T.E. Lawrence expressed a negative opinion on its design (Lawrence 1936, 42, 43).

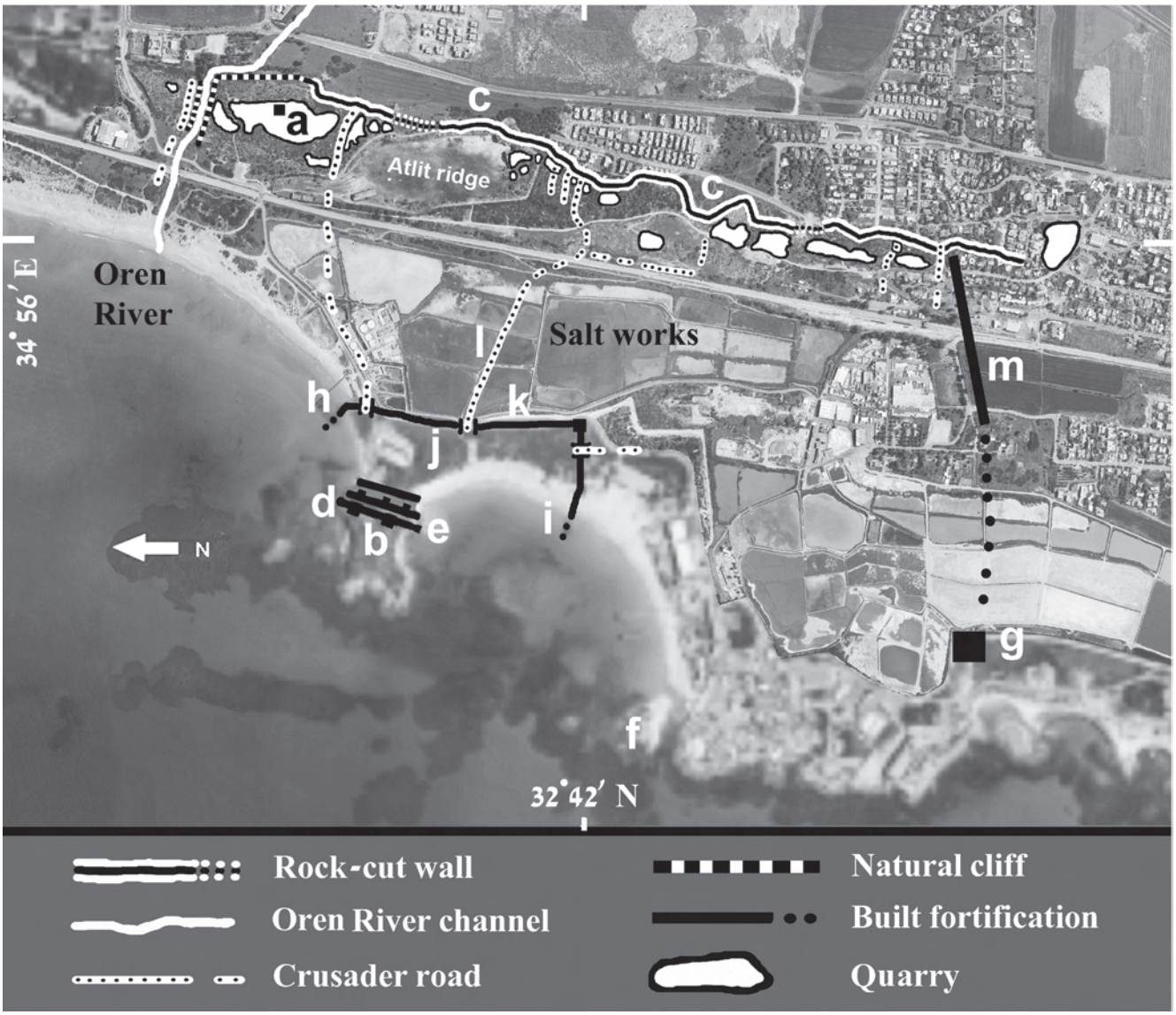

Fig. 20.2: The Atlit Crusader complex: a) Destriot fortress, b) the castle, c) the eastern rock-cut wall, d, e) coastal guard towers, f) external tower on a small island, g) external tower, h, i) the northern and southern guard towers of the town wall, j) the town, k) the town wall, l) causeway, m) rampart (modified after Galili and Ronen 2019, aerial photo by The Survey of Israel).

Fig. 20.3: Aerial photo of Atlit fortress looking north-east, 1938: the northern sea tower is marked by an arrow (courtesy of the National Library, photos collection, Jerusalem, photo by Zoltan Kluger).

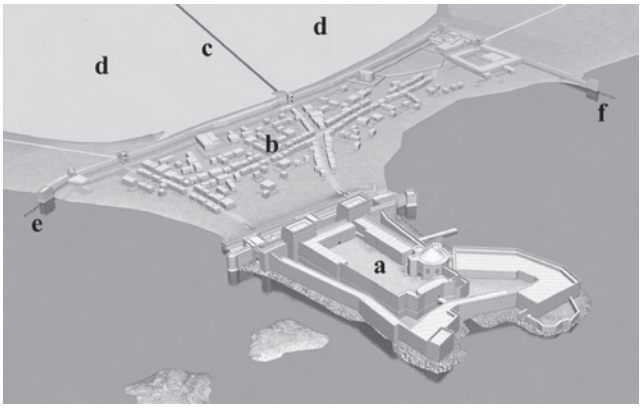

Fig. 20.4: Artist reconstruction of the crusader castle and town looking south-east: a) castle, b) town, c) causeway, d) evaporation salt pans, e, f) sea towers and barriers (drawing Pawel Moszczynski after Johns 1947).

Fig 20.5: The northern sea tower looking west: 1927 (courtesy of the American Library of Congress, the American Colony in Jerusalem, no. 880).

The Fortifications of the Castle on the Promontory

On the peninsula's neck were two massive walls, towers and a moat. Its bottom was below sea level, enabling its flooding by the sea. The outer wall (16 m high) had three towers protruding into the moat, enabling enfilading shooting. West of the outer wall was a second line of defence, a massive wall based on two gigantic towers (*c*. 30 m high). That wall ended with two guard towers (a round tower in the north and a square one in the south) (Fig. 20.2d, e).

The External Fortifications

In addition to the castle and town fortifications, the Crusaders built a complex of external fortifications, east and south of the promontory and the town. The easternmost external defence line was located on the 'Atlit ridge, on the eastern perimeter of the Crusaders' fortified complex. It consists of a longitudinal quarry, which served as a rock-cut defence wall (Fig. 20.2c), intending to hold off attacks from the east, giving time for people to escape into the protected peninsula (Galili and Tirosh 2009; Galili and Ronen 2019). A guard tower was built on a small rocky island called *Beit el Milh* (Arabic for 'House of Salt'), located on the south-western side of the bay (Fig. 20.2f). According to Johns (1947, 72) it was a watchtower or a lighthouse. Another tower was built about 200 m to the south, at the eastern end of an east–west oriented rampart crossing the lowland and constituted the southern external defence line (Fig. 20.2g).

The Town Fortifications and the Barriers Across the Beach and the Shallows

The town (200 × 700 m), developed east of the castle and adjacent to it, was protected by a surrounding wall extending into the sea in the northern and southern bays. The town wall was L-shaped, the long eastern leg (600 m long) extending north–south. The southern wall (200 m long), aligned east–west, started at the south-east corner of the town. Both walls have guard towers at both extremities built in the shallow sea in the north and the south bays (Figs 20.2h, i and 20.5). In the south-east corner of the city wall (where the two walls meet) there stood a square corner tower, similar to the Destroit tower. The town wall was built of large ashlars (140 × 80 × 70 cm). It had three gates (two on the east and one on the south), from which two roads led, east and south. The town wall had at its front a moat 2 m deep.

Of the two towers built at sea, the northern one, probably resembling the south-western one, was better preserved (Fig. 20.5). The rectangular vaulted tower (*c.* 8 × 3 m) was entered by a single opening in the south. It had archer slits in its east wall and probably also in the west. Staircase

remains in the east wall suggest a probable approach to the roof. The lower courses above the waterline were built of ashlars 75 cm high, while the underwater base was built of larger stones (see below). The underwater foundations of the guard tower consisted of large stones (1.5 × 1.5 × 1 m, weighing about 5 tonnes). The town wall and the towers were probably built together, as an integral part of the overall defence system.

Underwater research opposite the north tower revealed a line of large stones (about 2.1 × 1.15 × 1.15 m, weighing about 5 tonnes each) extending to the north-west (Figs 20.6a, b). These have a massive square base and a tapering octagonal shape. They are perforated at the top, suggesting that they were connected to each other by a cable or chain, forming a barrier preventing an approach in the shallows along the shore (Galili and Sharvit 1999; Galili and Tirosh 2009, 62–65; Galili and Ronen 2019) (Fig. 20.7).

The recent water depth at this place is *c*. 1.5–2 m. However, in recent decades the area has suffered from coastal erosion and a lack of sediments due to sand quarrying. Photos from the beginning of the 20th century (Fig. 20.5) suggest that before the quarrying there was more sand in the area. In recent years, the sea bottom is often covered by a shifting sand layer up to 1.5 m thick, and the water depth opposite the guard tower changes accordingly. During the Crusader period the sand layer was thicker and the water depth opposite the wall's end must have been shallower (0.6–1 m), enabling cavalry to bypass the wall and the tower by riding along the shallows. Given the water depth at this area and the size of the stones, the line of standing stones must have been an underwater barrier reaching the sea surface, creating an impassable obstacle to horse riders. Bypassing this obstacle required troops to enter deeper water, and swim through, while being easy targets for the archers on the guard tower.

Johns (in Pringle 1997) noted that the two towers at the end of the city wall were 'built far enough into the sea to make it difficult for an enemy to wade round'. Boas (2006, 34) has suggested, based on some sea-level studies in Akko (Raban 1986, 185), that the towers were actually built on land, as the sea level during the Crusader period was lower by 1 m than the present one. However, our studies

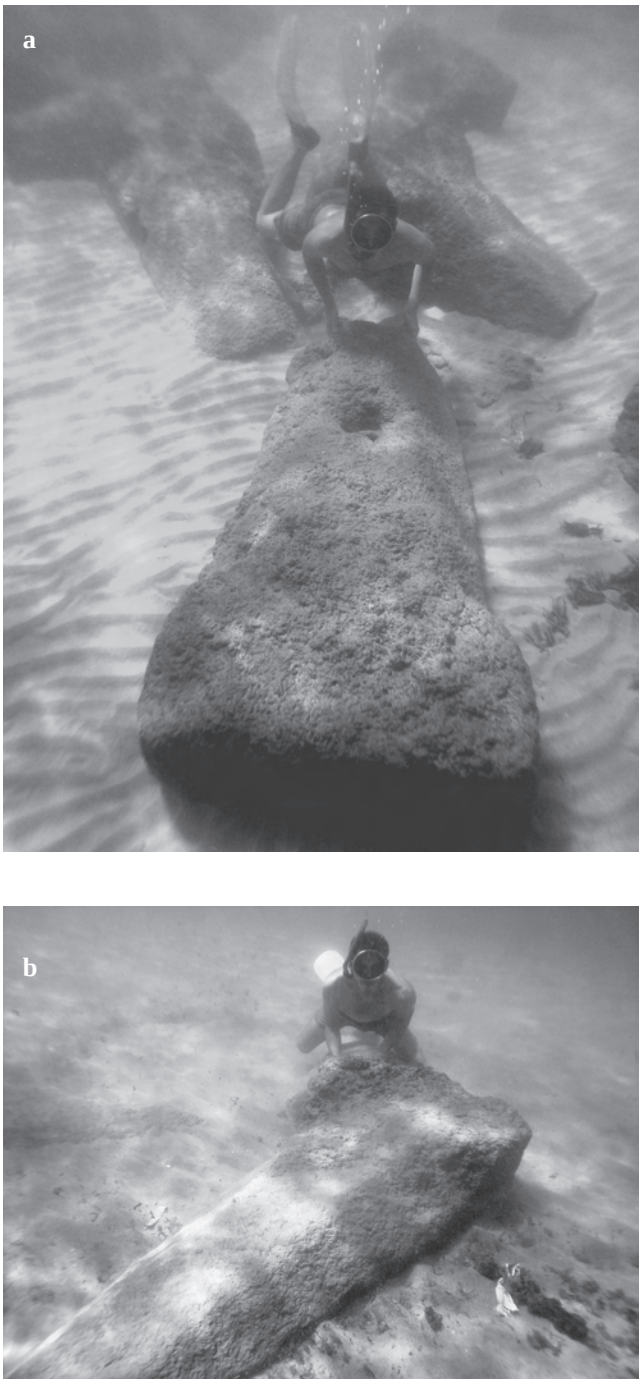

Fig. 20.6: a) Tapering octagonal stones perforated at their top on the sea bottom, looking west; b) Tapering octagonal stone, looking west.

Fig. 20.7: Artist reconstruction of the guard tower and the sea barrier (drawing B. Galili).

on sea-level changes in Akko (Galili 2009; 2017, 337) and the Carmel coast (Galili, Zviely and Weinstein-Evron 2005) showed that there has been no considerable sea-level change (exceeding the local tidal range) in the last 2,000 years.

Arsuf

The ancient site lies above the coastline on top of a steep coastal escarpment, *c.* 35 m high, formed by marine erosion of the *kurkar* ridge and the western part of the castle. The erosion was accelerated by the building of a modern marina to the south. Arsuf reached the height of its prosperity during Byzantine times, when it became the main urban centre of the southern Sharon (Roll 2007). The foundations of a round massive tower, of a 5 m diameter, discovered at the top of the site, overlooking the sea, may have been part of the local Ribat fortification during the early Muslim period (Khalilieh 1999).

Crusader Arsuf

In 1099 CE, the Crusaders, led by Godefry de Bouillon, failed to take Arsuf. Baldwin I conquered the city in 1101 (Prawer 1970 I, 177). The Muslim city wall was preserved, but the city was levelled and redesigned. It fell to Saladin after the battle of Hittin in 1187, and was then demolished, like other coastal fortifications. In 1191 a battle between Saladin and Richard I (Lionheart) ended with a Christian victory and the Lord of Arsur built the castle in 1241. Sultan Baibars conquered Arsuf in March 1265, following a heavy siege (Raphael and Tepper 2005). Arsuf was abandoned and has remained in ruins ever since (Benvenisti 1970, 130–135; Roll 2007).

The Fortifications of Crusader Arsuf

The castle is an elaborate concentric structure, covering 18 dunams. It had a deep wide moat (maximum width 30 m) and towers rising 50 m above sea level. A bridge in the south-eastern part of the moat connected the town to the castle (Benvenisti 1970, 134; Roll and Arubas 2006; Roll 2007). Two tunnels between the anchorage and the castle are of special interest. The opening of one is located at the low northern end of the *kurkar* hill. It is about 2 m high and 1 m wide, its walls with candle niches. It progresses eastward in a sloping ascent. About 35 m east of the entrance are two perpendicular shafts rising towards the castle's courtyard (Roll 2007, 88–89). The tunnel is blocked, probably part of the Mamluk demolition. The second tunnel is 100 m long ending in two shafts, leading to the moat and to the outer gate of the castle. This tunnel seems to be connected to the final siege, either as a mining operation by the Mamluks or as countermining by the besieged Crusaders (Roll 2007, 89).

The Trapezoid Enclosure on the Coast at the Foot of the Castle

Below the castle there is a trapeze-like enclosure, *c.* 30 × 100 m, covered by sea water *c.* 1–2 m deep, previously identified as a port or harbour (Figs 20.8 and 20.9). At the south-west, it has a so-called opening, 10 m wide. The eastern face is 70 m long. The feature is enclosed by sea walls built in the classical tradition of caissons filled with hydraulic concrete. The two short arms at the north and south of the enclosure end in the west with round towers. The two walls of the castle continue to the west, and join the two arms of the trapezoid feature. An underwater investigation suggested that it was initially built during the Byzantine period and had two later (13th century CE) Crusader phases (Grossman 1995, 120–130; 1997; 2001).

However, the dating of the initial building stage of the trapezoid feature to the Byzantine period is highly speculative. This dating is based on two pottery sherds found out of context inside the trapezoid basin and the interpretation of the analysis of mortar samples taken from several places in it. Underwater surveys in Apolonia (Galili, Dahari and Sharvit 1993; Galili 2009) yielded numerous Byzantine pottery sherds at sea, scattered on the sea bottom in the Apollonia region. Thus, the two sherds found in the basin may not be considered a reliable marker for dating this structure. As to the mortar analysis, with the exception of one sample taken from the base of the south-west tower, all other mortar samples were identified as Crusader. The sample taken from the north tower may be associated with a secondary use of stones and materials, as was often practiced by the Crusaders. Given the lack of absolute dates, the proposed dating of the initial construction of the trapezoidal structure to the Byzantine Period, based solely on the similarity of a single sample, seems highly speculative. The layout of the north and south walls of the trapezoidal structures, that are perfectly aligned with the Crusader walls on land, suggest that the structure was built during the Crusader period.

During the 1990s it was proposed that the trapezoidal structure was a built harbour (Grossmann 1995, 120–130; 1997; 2001) and as such it appears in the maps, plans and publications (Fig. 20.8) (*e.g.* Conder and Kitchner 1881–1883). However, Raban (cited by Grossmann 1995, 128) proposed that the 'Crusader harbour' was actually built by the Crusaders as a lower fortress, and was never used as an anchorage (Raban 1979; 1985). Underwater surveys conducted between 1990–2003 identified the natural anchorage of Arsuf/Apollonia in the sea, some 400 m south of the trapezoidal enclosure, suggesting that the anchorage was used from the 2nd millennium BCE onward (Galili, Dahari and Sharvit 1993). No decisive evidence for a built harbour was found in Apollonia. This study concluded that the trapezoidal enclosure at the castle's foot could not have served as a harbour, but may have been used as a landing point for small boats (Arenson 2007, 202–203; Galili 2009). Further underwater research, including water probes and test excavations conducted in this structure indicated that the water depth within the trapezoidal basin (average of *c.* 1 m) and the entrance (0.6 m deep) is too shallow for a harbour,

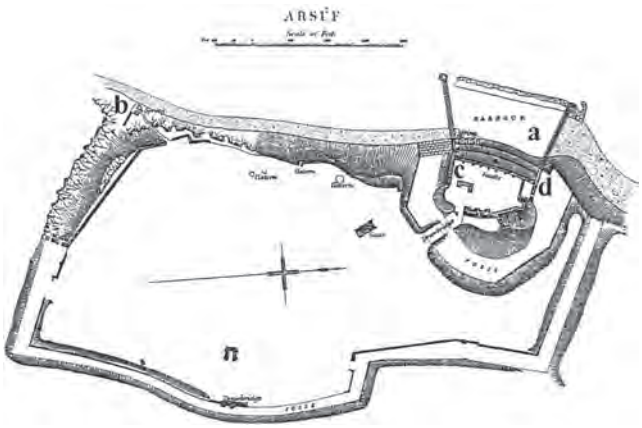

Fig. 20.8: Plan of Arsuf castle and fortifications: a) the coastal trapezoid feature, b) the southern barrier and the spring, c, d) the walls attached to the coastal trapezoid feature (modified after the PEF map of 1882).

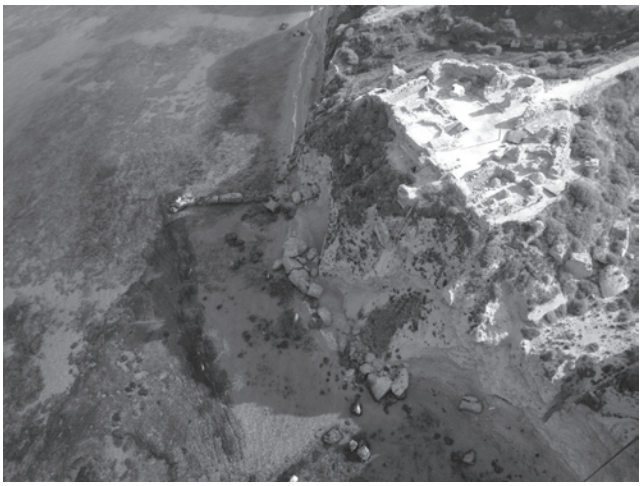

Fig. 20.9: Aerial photo of the trapezoid feature (O. Tal and D. Mirkin).

though small boats can be dragged manually through its entrance. It was concluded that the basin could hardly qualify as a real harbour (Mirkin 2018, 43–59). Sea-level considerations were used by Grossmann (1995, 128) and Mirkin (2018) to evaluate the depth of the trapezoidal basin during the Byzantine and the Crusader periods (according to them plus 1 m and minus 0.45 m respectively). However, as noted above, our studies suggest that there have been no sea-level changes exceeding the local tidal range in the last 2,000 years.

The Southern Fortified Barrier Across the Beach and the Shallows

Two huge blocks representing the remains of a fortified structure that stood on the beach opposite the southern city wall are depicted about 250 m south of the trapezoidal

Fig. 20.10: Arsuf coast in 1918, looking north, the southern barrier is marked by 'a', the trapezoid feature marked by 'b' (IWM Catalogue number Q 44230, Lt. Col. Coulson Richard N. Collection, after Shoten-Hallel 2016).

enclosure, in an 1874 map (Conder and Kitchner 1881–1883) (Fig. 20.8b) and in photos from 1918 (Fig. 20.10a). The map depicts a *c.* 30 m long wall crossing the beach at the foot of the southern city wall, with two rectilinear buildings depicted at its west end. A spring is marked north and adjacent to these structures. A trail leads from the fortified area on the cliff above, to the two structures and that spring on the beach (Fig. 20.8b). By the 1990s only one block (4.5 × 5 × 3.5 m) remained on the coastline and since the beginning of the 20th century, it has been situated in the shallows (Fig. 20.11). West of this block, a 22 m wall built of ashlars (80 × 50 × 40) running east–west was identified at water depth of 1 m (Galili, Dahari and Sharvit 1993, fig. 4). It is suggested that the coastal structures described above (probably the remains of a massive guard tower) and the adjacent ashlar-built wall at sea, are a part of the southern Crusader beach fortification complex. This complex aimed at protecting the castle against raids on the coast and in the shallows. It secured the free supply of reinforcements to the castle, as well as the escape route from the castle, via the tunnels, to the safety of the sea.

Amitai (2005, 76) suggests that the Mamluk artillery covered the anchorage and there was no chance of entering with supplies or escaping via the sea. Lyons (1971 II, 75) mentions a description of Baibars firing at the Crusader boats. This information strengthens our argument that the sea approach was protected by the coastal fortifications and the enemy could only bombard it from above. Previously it was proposed that the northern tunnel may have been intended for an emergency exit to the harbour (Roll 2007, 89). We suggest that the whole coastal complex, including the trapezoidal structure and the southern coastal fortification described above, represents an effort to keep the sea approach open and safe from coastal raids along the shallows. An example of troops passing on the beach of Apollonia, between the castle and the trapezoidal structure is depicted in a movie (Rishoni 1 2008). During the First World War, on 19 September 1918, British troops and horses marched from south to north through gaps in the coastal walls. These walls connected the trapezoidal enclosure with the walls of the castle, as they are depicted in a plan from 1874 (Figs 20.8 and 20.9).

Fig. 20.11: The southern coastal fortification of Arsuf in 1998, looking north-west (D. Zviely).

Ashkelon

Ashkelon is situated on a coastal escarpment *c.* 10 m high, some 15 km north of Gaza. It is located close to important roads and has a continuous history of about 5,000 years. Underwater investigations revealed concentrations of lost anchors some 300–600 m offshore, representing open anchorages. In the shallows close to the coast, arrangements facilitating hauling of watercraft were recovered. Wrecked ships and cargoes, including dozens of lead ingots dated to the 10th–13th centuries CE were found some 80–150 m off shore, at depths of 2–5 m, where ships losing control ran into the breakers (Galili *et al.* 2019). The finds suggest that Ashkelon never had a sheltered, built harbour. Ships anchored offshore and lighters performed the loading and unloading between the ships and the coast (Galili, Sharvit and Dahari 2001; Galili 2009). The lack of a protected harbour did not undermine its position as a major commercial centre (Babcock and Krey 1943, 22–30). Ashkelon reached the height of its prosperity during the Roman-Byzantine periods. In the early Muslim period, the city was the northern gateway into Egypt. From the end of the 10th century until *c*. 1150 CE the Fatimids rebuilt its walls with towers and fortified gates (Benvenisti 1970, 114–130).

Ashkelon of the Crusaders

The Crusaders conquered Ashkelon in 1153 CE, many years after the other coastal towns, and ruled it until 1167. In 1191 King Richard I reconquered it and rebuilt its fortifications, but within a year it was destroyed again. In 1239 it was reconquered by the Crusaders and its citadel rebuilt, but in 1247 it fell to the Muslims, finally to be thoroughly demolished by the Mamluks in 1270 (Prawer 1958; Benvenisti 1970, 114–130).

Since then the site was abandoned. The remains seen today include the Crusader fortifications, being the modification of the Fatimid works on the eve of the Crusader conquest of 1153, probably a continuation of the Roman, Byzantine, Umayyad and Tulunian plan (Kedar and Mook 1978)

The City and its Fortifications

The circumference of the landside wall of Ashkelon is *c.* 2400 m, and that of the seaside wall is 1200 m (Fig. 20.12). Angles and towers were strengthened by marble and granite columns taken from the ruins of the classical city.

The main gate faced east, two gates faced north and south and the sea gate faced west; all were protected by towers, barbicans and outer walls, and had elaborate indirect approaches. The heaviest towers seem to have been located at the south-western corner of the wall, on high ground, overlooking the coast. There are the remains of two huge towers – 'the Tower of the Hospital' or 'the Tower of Blood' right on the scarp going down to the sea, and 'the Tower of the Maidens' further east (Benvenisti 1970, 125–126). Pringle has shown with considerable certainty that the last Crusader fortification work, done by Richard of Cornwall in 1240–1241, was restricted to building a citadel on the north-western part of the city (Pringle 1995, 143–146) (regretfully, the 2019 publications on the subject were beyond our reach). In the case of Ashkelon, where there was no definite anchorage or built port, the location of the citadel, traditionally overlooking the harbour, could be chosen by other considerations. In view of the thorough destruction of the previous fortifications by the Muslims, as described during the building project of Richard I in 1191 (Pringle 1995, 136–137), it may have been easier and faster to build a new citadel in a fresh location.

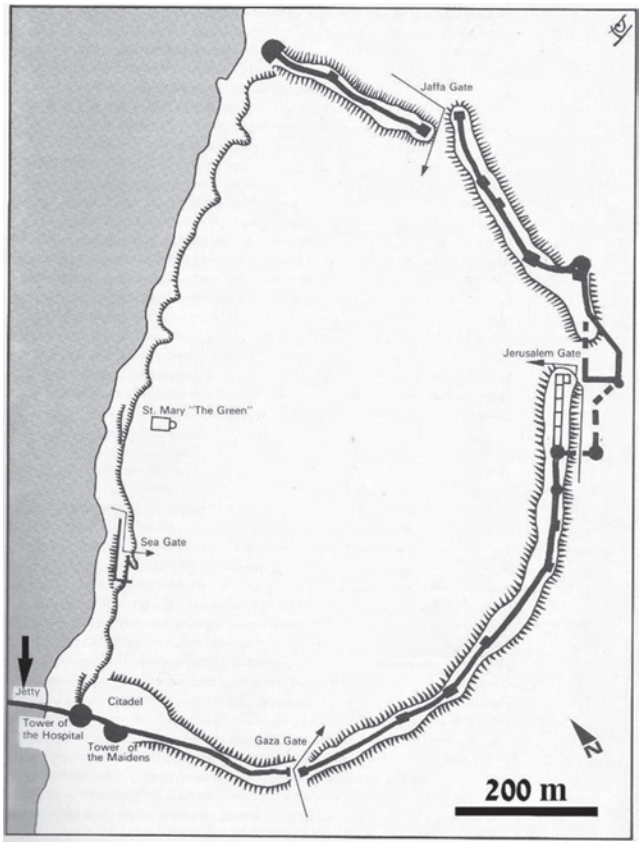

Fig. 20.12: Plan of Ashkelon castle and fortifications (after Benvenisti 1970). The jetty proposed by Benvenisti is marked by an arrow.

The Barrier Across the Beach and the Shallows

The ruins of a sea-wall at the south-western fringes of Ashkelon's site is a massive structure, *c.* 2 m thick and up to 7 m high. Most of the wall was eroded by the sea. However, the remaining parts indicate that it was reinforced by granite columns in secondary use. At the south beach of the site there is a rocky plateau protruding some 35 m seaward from the city wall (Fig. 20.13, marked by an arrow). The remains of a huge (10 × 8 × 5) fortification, built of kurkar stones cemented by mortar, is seen on the plateau. This fortification (Tower of the Hospital) is similar in nature and setup to the Arsuf/Apollonia southern fortification on the beach.

According to Benvenisti (1970, 77, 130) traces of marine structures survive at Ashkelon, Arsuf, Caesarea and Acre. He stated that the only structure in Ashkelon harbour, known as a bad and dangerous port, is the broad jetty that joins the south wall of the city (Fig. 20.13). As has been stated before, our underwater and coastal research suggests that the so-called jetty, mentioned above, is actually a coastal barrier, similar to those in Atlit and Arsuf. The Ashkelon coastal defence constituted an independent unit, aimed at protecting the shallows. This situation is demonstrated in the final siege of the citadel in 1247. The Egyptian forces tried to invade it from the sea side, assistance to the Crusaders came from Acre by sea, and the garrison finally evacuated by boats (Prawer 1975 II, 315). It is proposed that the southern coastal fortification of Ashkelon was built for the same purpose as those in Arsuf and Atlit. It aimed at protecting the sea approach against longshore attacks and raids via the shallows, which were expected to come from the south, while the new citadel of 1240 overlooked the whole length of the sea front from the north.

Discussion and Conclusions

During the last phase of the Crusader Kingdom, several coastal cities were conquered by Sultan Baibars. As Akko was still in Christian hands, the survivors in almost all of them fled there by boats. This was the case at Caesarea and Haifa in 1265, while in Arsuf, which was taken at the same

Fig. 20.13: The remains of the Ashkelon southern coastal fortification, 1997, looking south-west (E. Galili).

year, nobody escaped the harsh fate (Prawer 1970 II, 464, 466). In 1268, this scene repeated itself in Jaffa (Prawer 1970 II, 478). At the very end, with the fall of Akko in 1291, the survivors were evacuated by ships to Cyprus and further west to Europe. The same happened in Tyre, Sidon, Beirut and finally Atlit, the last Crusader foothold in the Holy Land (Prawer 1970 II, 557). There were never enough boats to the rescue, and never enough money to pay for it. This caused dramatic situations, described in the historical sources and corroborated by the archaeological finds (Favreau-Lilie 1993; Kool 2017). A typical scene happened on Friday 18 May 1291. Following a siege of several weeks, Frankish Akko fell to the Mamluk army. In the succeeding melee soldiers and citizens, desperate to escape the enemy, crowded into the harbour. Eyewitnesses related that a few people, mostly noble ladies and merchants, succeeded in escaping by bribing owners of small rowing boats with jewellery and gold to ferry them offshore to ships sailing for Cyprus and Tyre. Many, however, drowned with their precious possessions in the stormy sea. A hoard of gold coins discovered in the course of dredging works in Akko marina (Galili 2017; Kool 2017) may be associated with the evacuation event. The numismatic evidence clearly suggests that this group of coins constituted a hoard or part of a hoard of coins which reached Akko in the last decades of Frankish rule, and were presumably dispersed on the seabed due to a catastrophic event.

Fortifications built by the Crusaders have been described and studied intensively; however, the special attention paid to fortifying the approaches to the sea seems to have been neglected. For the Crusaders, assuring an approach to the sea, always the lifeline and the last refuge, was a key factor in establishing coastal fortifications, especially in the last stages of their rule. Protecting a coastal site by built fortifications is different from protecting either a terrestrial site or an island. Prior to the adoption of powder-operated long-range heavy guns, the sea had a double role in regard to coastal fortifications. During high

tide or breakers, it functioned as the ideal moat or barrier, but during low tide, the shallow sea was a weak point in otherwise unbreakable fortifications. Erecting fortifications and barriers on tidelands or in the breakers zone, often underwater, is problematic. The destructive marine erosion and wave forces will create a need for constant rebuilding that will be costly and hard to maintain. The discussed underwater and coastal features were the Crusader solution to this problem.

The issues brought up in this study may bear on military history in general, especially on the military use of flat sea shores, shallows and beaches as roads and passages in attack and defence. An early described case of the military aspects of such terrain is when the Roman army led by Scipio (209 BCE) used a providential fall in water level to breach the besieged city of Cartago Nova (now Cartagena in Spain) (Lowe 2000, 39–52). The use of such terrain in invasions by modern armies is well known. The same is true regarding the obstacles devised and erected to counter such invasions. The fortifications described above could be added to the list of military engineering practices and techniques used by the Crusaders in the Levant.

In spite of inferior Mamluk sea power and the innovative steps taken by the Crusaders to counteract the new Mamluk tactics arising from their very inferiority at sea, the Crusaders ended up being driven into the sea. The Mamluks continued to hold fast against repeated Crusading projects, turned the coast into a wasteland and guarded it with the help of watch towers (*Mikhras*, *Bur*j, Khalilieh 2007) and saints' tombs, around which seasonal celebrations were established (Drori 1981, 45, 54; Taragan 2007). The degree of destruction of the coast of the Holy Land since this period has no parallel in any other part of the Muslim world (Ayalon 1965). This policy was started by Saladin at Ashkelon, and later implemented by the Mamluks. The total destruction of the coastal strongholds was not implemented inland. On the contrary, the castles of the Galilee, such as Safad, Hunein, Tibnin, Beaufort and others, taken about the same time as the coastal towns, were preserved and further developed (Prawer 1970 II, 473). The coastal fortifications gave the Crusaders the chance to escape by sea, but the Muslims ensured that they would not be able to repeat the challenge.

The situation was summarized by the Sultan Baibars, commenting on the concept of the Crusaders, that 'stone walls could take the place of man', and that 'fortresses could guarantee sovereignty over hostile populations'. Referring to the fortification of Arsuf, he stated in 1263 that 'a country cannot be defended by walls, nor her people [be guarded] by moats' (Lyons 1971 II, 54). A few years later, after his crushing naval defeat in Cyprus (1270), he coined the immortal phrase – '[for] you [the Crusaders], your boats are your horses; [for] us, our horses are our boats' (Lyons 1971 II, 153–154).

Note

All citations concerning the campaign of Sultan Baybars are taken from his official biography by Muhyi al-Din Ibn 'Abd al-'Zahir, abridged by Ibn al-Furat, edited and translated by the Lyons.

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21

Three Main Towers of Medieval Caesarea: Their Architecture and Function

Vardit Shotten-Hallel, Jean Mesqui and Uzi ʻAd

Introduction

This study focuses on three elements of the medieval fortifications of Caesarea Maritima: the northern gate tower (GT1); the rectangular tower located at the north-eastern corner of the fortifications (T3); and the eastern gate tower (GT9). All three of these towers formed part of the outer fortifications of Caesarea up to 1265 and each of them incorporates elements dating from different periods. Each gate tower, therefore, is presented independently, with a discussion of its historical background and a description and interpretation of the architectural findings relating to it. A summary of the principal similarities and differences between the three structures provides the broader context within which to understand the fortifications of Frankish Caesarea in the Crusader period.

Geographical Location

The medieval fortifications of Caesarea Maritima consist of a wall almost 1 km long, strengthened by 16 towers. The city had three entrances in the medieval period and possibly also earlier. In addition to the two gate towers discussed here, there was a third entrance in the southern wall, not far from the sea-castle. Different phases of construction are evident in the archaeological remains of the walls' inner and outer faces, and are discussed here in relation to the gate towers. The wall runs from the north side of the harbour to the east, and from there to the south of the harbour, forming a rectangular fortification, open on the western side facing the sea (Plate 21.1).

Construction Phases: Historical Notes

During the two Frankish occupation phases of the site in 1104–1187 and 1191–1265, the historical sources only briefly mention the campaigns of fortification. Five different Frankish phases can be identified according to the historical sources as well as three destruction events. The first major construction campaign took place after the conquest of the town by Baldwin I. It is assumed that the Franks would have undertaken some repairs to the enclosing walls following the initial storming of the Islamic walls in 1101, in order to rectify the harm done by the small mangonel (traction trebuchet) that had damaged the walls during the attack:

> But the attackers, impatient to storm the city, finally built ladders and climbed over the walls.
>
> (Annali Genovesi di Caffaro, 9–13; RHC Occ, I, 421–423; IV, 543–544)

Almost 90 years passed from its foundation as a Frankish settlement to the first destruction of its fortifications, a few years after the conquest by Saladin. The city was taken soon after the battle of Hattin (July 1187), but the Islamic sources report on destruction there only after the conquest of Acre by Richard I, and before the King journeyed along the coast to Jaffa in August 1191 (Mesqui 2014, 106–107 with sources). Caesarea was already abandoned when Richard's army camped within its walls; and one can assume that only the parapets above the walls and the most fragile parts of the buildings had been destroyed by Saladin's army.

The Treaty of Jaffa, concluded in September 1192 to guarantee three years of truce between Saladin and Richard I, left the Franks with control of the coastal area from Jaffa to Tyre. Under the treaty concluded by al-Malik al-ʿĀdil and Aimery of Lusignan in September 1204, Jaffa, Ramla and Lydda were again in Frankish hands, while Sidon remained in Muslim hands (Khamisy and Pringle 2019, 54–55). Charters indicating property exchanges between the lords of Caesarea and the military orders are recorded from 1206,[1] possibly attesting both to the fact that the town had

not been totally demolished by the Ayyubid ruler and also to the construction works that had begun after its recovery by the Franks in August 1191. A second construction campaign on the fortifications was made at the time of the Fifth Crusade, when in 1218 both Jacques de Vitry, bishop of Acre, and Oliver of Paderborn, who accompanied the Crusade, reported on how King John of Brienne, Leopold, Duke of Austria, the patriarch, Jacques de Vitry himself, the bishops of Münster and Utrecht, the Hospitallers of St John and the Christian forces awaited the refortification of the castle of Caesarea (*castrum civitatis*), which had been half destroyed (*semidirutum*) (*RRR* 1804; *RRH* no. 913; Olivier of Paderborn 1894, 172; Jacques de Vitry 1998, 82–83, no. 3).

In the winter of 1219 Caesarea was besieged and raided by al-Muʿaẓẓam ʿĪsā (*Coradin* in the Latin sources), nephew of Saladin, who has been installed by his father, Sultan al-ʿĀdil I, as governor of Damascus already in 1200. The city does not appear to have been defended while the Frankish army was away in Damietta, since al-Muʿaẓẓam was able to attack the castle directly. During the siege the small royal garrison was replaced by Genoese soldiers, as the king's lieutenant in Acre had not been able to raise a troop. However, unlike the fate of al-Muʿaẓẓam's subsequent failed attacks on ʿAtlit Castle (Powell 1986, 176; Mesqui 2014, 108), his attack on Caesarea was a major success. After only a few days, the Genoese garrison fled and al-Muʿaẓẓam is said to have destroyed the castle overlooking the harbour.

In 1227 it was decided by the military orders to strengthen Caesarea and Jaffa before the arrival of Emperor Frederick II (Roger of Wendover 2, 326). Work was carried out on the castle of Caesarea between May and September 1228 by German Crusaders, who 'refortified the castle that Coradin had knocked down' (*refermèrent le chastel que Coradin avoit abatu, L'histoire d'Eracles, RHC Occ RHCO* II, 365; Mesqui 2014, 109). The emperor arrived in the region towards the end of 1228 and by February 1229 he had already agreed a treaty with Sultan al-Malik al-Kāmil of Egypt. The treaty was swiftly reported to Pope Gregory IX by Herman of Salza, grand master of the Teutonic Order, as well as the permission to refortify Jerusalem (which was again in Frankish hands), Jaffa, Caesarea and the new Teutonic castle of Montfort belonging to the Hospital of St Mary of the Germans (*Historia Diplomatica* 3, 92; *MGH Leges* 2, 161–162, no. 121; *RRH* no. 999; *RRR* 2101). Fredrick II's letter to the German barons and knights includes the agreement according to which the Franks were permitted to rebuild the castles of Jaffa, Caesarea, Sidon and the castle of the Teutonic knights (Montfort) (*Historia Diplomatica* 3, 96–97; *MGH Leges* 2, 162–167; *RRH* no. 1000; *RRR* 2102).

The last known fortification campaign attested in the sources took place under Louis IX in 1251–1252. The King, encamped with the Christian army at Caesarea (*in castris*), reported on the important progress that they had achieved through the simultaneous construction of walls and ditches.[2] This, certainly the most impressive refortification phase, is also the last construction campaign on the walls of Caesarea. Despite the strength of the fortifications, the city was nonetheless conquered in 1265 by Baybars, who ordered the systematic destruction of its walls, dividing the work among his emirs. In the month of Ramadan 662 A.H. (summer 1264), Baybars ordered Emir Nāṣir al-Dīn to raid Caesarea and ʿAtlīt: 'He rode to the gate … and plundered, killed and took prisoners', and then did the same at Caesarea.[3] Baybars went on to capture and demolish Caesarea the following year. Following the destruction, the city was completely abandoned and served as a quarry for stones for the emirs of Jaffa and Acre. In 1882 the ruins were granted to Bosnian Muslim immigrants, with the walls being used as quarries and as foundations for new houses (Mesqui 2014, 142–145). The occupation of the walls and the area within them lasted until the evacuation of the Bosnian population from Caesarea in 1948. Between 1960 and 1962 the walls were totally cleared of houses under the direction of Avraham Negev, who left an unpublished report summarizing his findings (Negev 1989).

History of Research

A survey by the officers of the Palestine Exploration Fund (PEF) yielded the first plan of the medieval fortifications, including 15 towers (Conder and Kitchener 1881–1883 II, 23–27), of which they identified only T15 as a gate tower. The archaeological excavations under A. Negev conducted between 1960 and 1962 exposed for the first time the Frankish fortification system beneath the houses and the installations of the Bosnian settlement. The historical and archaeological interest in the medieval fortifications of Caesarea started when Yoseph Porath excavated the walls in the south-west part of the city, exposing a segment of wall attributed to the Abbasid period (Porath 1990). The cornerstone of the new research on the fortifications was, however, his work on the north-east tower (T3, Porath 2011), where Lee I. Levine and Ehud Netzer had already noticed, as well as in T4, the remains of earlier constructions that they attributed to the Byzantines (Levine and Netzer 1986, 182–183).

Between 2006–2012, Porath excavated the north-eastern corner of the fortifications.[4] What triggered the excavations of this area, however, was the discovery of two architectural sculptures that had remained unnoticed by Levine and Netzer. Importantly, Porath excavated the area south of T3, thus providing a wider context for the Frankish occupation of the site. He also revealed the existence of an Islamic gate embedded in the Frankish constructions, which was the first step towards recognition of the Early Islamic enclosure of the city.[5]

Between 2006–2012 N. Faucherre and J. Mesqui (Mesqui and Faucherre 2006) conducted a survey of the Frankish remains of Caesarea and the excavations of T6 and T7 (see

Plate 21.1). They revealed for the first time the existence of the remains of an earlier wall along the full extent of the medieval walls. Following this, J. Mesqui (Mesqui 2014) published a wide-ranging study of the history and architectural development of Caesarea Maritima, integrating the archaeological data from the French-Israeli mission's excavation campaigns. His study provides the most up-to-date research of Caesarea's Frankish monuments and fortification system to date, and also includes, in addition to a vast amount of historical and archaeological material, architectural reconstructions of many of the buildings.

In 2015 'Uzi 'Ad conducted an excavation between GT9 and T10, in an area known as the Crusader Market, and on the street and in the rooms east and north-east of the temple podium ('Ad *et al.* 2017). The wall along the excavated segments near GT9 predates the Crusader walls, and has been dated to the Abbasid period, being a direct continuation of the city wall exposed below T10. In 2017, 'Ad also excavated the moat north of GT1. The full results of this later excavation remain to be published, but it is worth noting that the foundations of the glacis, belonging to the final Frankish phase, were carved into the Roman-Byzantine cityscape. The remains of a lavish mosaic floor, marble paving and a portico comprising an assemblage of Roman columns and Corinthian capitals facing an open courtyard, have been excavated north of the moat. A series of rooms on two floors overlooking the courtyard located some 2 m above the level of the moat, indicates that the Franks had dug into the earlier remains in order to clear the area for their defences. From the 9th century, after long years of decline, the city of Caesarea began to enjoy prosperity once again (Avni 2016, 48–49). It has been portrayed as a most beautiful place, protected by fortified walls and enjoying the best fruits and running water, as described by al-Muqaddasī and by Nāṣir-i Khusraw, who also mentioned the town's Friday mosque (Al-Muqaddasi 1906, 174; 1994, 146; Nāṣir-i Khusraw 1896, 14; 2001, 25). No Umayyad-period finds have been identified in this area, apart from three fragments identified in T6 (Barbé in Mesqui 2014, 289–290), conforming to the small number of finds in other areas of the city. The various excavations have recorded very little construction activity and most of the finds relate to farming and agriculture facilities. The Early Islamic town of Caesarea was enclosed by a strong wall, *c*. 2.6 m thick, with a few projecting towers and at least three two-towered gatehouses located to the south, east and north-east, with large but slender buttresses placed between the towers. Exceptionally, in T7, an ancient square Byzantine pillar replaced the buttresses on the cardo side. Hence, these remains constitute the first major line of fortifications of Caesarea and have been identified as belonging to the Early Islamic period. The foundations of the Early Islamic walls comprised a random collection of Roman-Byzantine elements, such as fragments of entablatures (T3, T6, GT9). The walls incorporated ancient columns, positioned either horizontally or vertically to strengthen them (*e.g.* in T6 and the Sea Castle, Mesqui 2014). The masonry in the main parts of the buildings comprises medium-size stones (Fig. 21.1). The external faces of the two Early Islamic gates to the north and east were built in a more monumental way with large elongated blocks and stretchers (see below in T3 and GT9).

The remains of the Early Islamic wall served as a reference point for the Frankish fortifications. The wall, as built by the Crusaders and by Louis IX in the final Frankish phase, enclosed an area similar to that of the Islamic town, topping and encasing the earlier walls. The remains of the Islamic walls served as the foundation, and along lengthy sectors of it literally as scaffolding for the fortifications of the following centuries. During an unknown period, prior to King Louis IX's works, three of the buttresses were complemented by slender projecting towers to improve the flanking of the wall. This may have occurred during the Islamic period, or during the first years of the Frankish occupation.

Gate Tower 1 (GT1)

Caesarea is situated on the coastal road that led the pilgrims to Jerusalem, as attested in several pilgrims' accounts (*e.g.* Pringle 2012, 85–86, 109, 168).[6] The Late Islamic and Early Frankish northern entrance into Caesarea was situated in T3, close to the north-eastern corner of the walls. As shown below, this entrance was blocked up at the beginning of the 13th century as King Louis IX's architects preferred to build a new entrance in the middle of the northern stretch of the walls, which was more convenient for defence. GT1 served as the main northern entrance point into late Crusader Caesarea for those who approached the city from the northern part of the kingdom and from the main pilgrimage port at Acre, as well as from the coastal towns in the principality of Antioch and the county of Tripoli.

Construction Phases

Unlike T4, T6, T7, GT9, T10 and T13, the site of GT1 proper revealed no finds from earlier periods being reused as part of its foundations, other than a small segment of wall embedded on the south-eastern external corner set between two vertical Frankish walls (Mesqui 2014, 160 and fig. 189), which can be identified as predating the Frankish masonry. This is probably the same wall as the one defined as Abbasid east of T3 and south of GT9, although no Byzantine remains or *spolia* were observed in its foundations.

The foundation trenches of the scarp around GT1, belonging to the final Frankish phase, cut into a rich layer from the Roman-Byzantine periods, which included a colourful mosaic floor and a wide portico constructed from an assemblage of Roman columns and Corinthian capitals with marble and plain mosaic floors. To clear the area for the moat, the Frankish builders cut around 2 m into an open

Fig. 21.1: The wall between GT9 and T10, view to north-east.

courtyard, revealing a series of four large rooms arranged like shops on two floors overlooking the open courtyard. Excavations in the southern upper part of the moat revealed that the foundations for GT1 had been laid in a fan-like arrangement (Fig. 21.2).

The gate tower was approached across the moat by a wooden flying deck supported on a masonry pier (Fig. 21.3) and leading to a gate in its west face, which gave access to an L-shaped entrance way that necessitated a right-angled turn to the right.

A monumental opening was located on its south façade facing the town. The upper level of the tower, an additional level and a gallery, were accessed via an inner staircase from the ground floor. The vaulted shooting gallery was built within the eastern and northern walls, overlooking the ground floor with windows opening to the wall's interior. The gallery was accessed from the wall-walk on the east and also via an external staircase from the south-eastern corner of the tower, east of the monumental southern opening.

Architectural Elements

The 13th-century architectural elements preserved in situ in GT1, each with its distinct design, can be associated with the last Frankish phase at Caesarea and are in the style of Louis IX. Four engaged rectangular shafts, chamfered on their free edges, mark the four corners of the ground floor plan. These shafts are similar to those on the ground floor at Montfort Mill, where the use of chamfered rib-vaults, which sprang from an impost situated above a similar section of engaged columns, shaped the overall appearance of the structure. The columns are topped by four decorated capitals (Figs 21.4a–d). Three of the capitals, of which only two still preserve their original details, are carved in limestone, while the fourth, now critically deteriorated, is carved in sandstone. The design of the capitals consists of sculpted vegetal elements, mostly clover leaves springing from deeply carved stems. Nurith Kenaan-Kedar compared the leaves on the capitals (GT1) and corbels (GT9) from Caesarea with the bossed keystones from Montfort castle (Kenaan-Kedar 2017, 277–279). She

Fig. 21.2: Top view of the fan-like foundations of GT1. IAA.

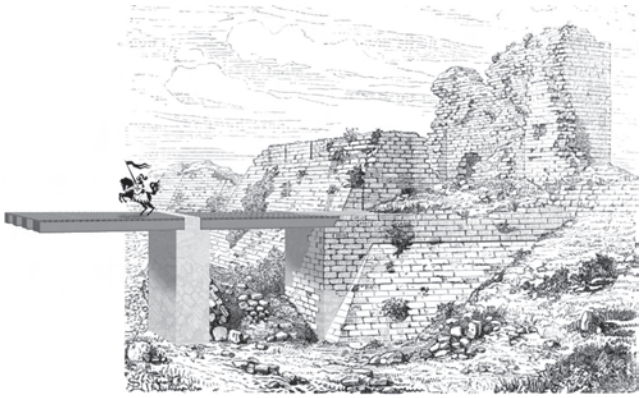

Fig. 21.3: GT1, proposed reconstruction of bridge over the moat superimposed on engraving from 1871 by E. Guillaume Rey, Etudes sur les monuments de l'architecture militaire des Croisés en Terre Sainte (Paris, 1871) 225, fig. 56. Ido Rozenthal.

also presented the arguments of Eugène Viollet-le-Duc and Emile Mâle, who stressed the interpretation of these floral motifs as free from any symbolic meaning beyond their sheer reference to nature and to the love of nature. These structures, Montfort castle and the gate towers at Caesarea, date to the mid-13th century and belong to a similar lexicon of purely vegetal motives. No representations of human figures have been found to date on any architectural sculptures or elements from medieval Caesarea, including GT1.

Three of the capitals (Fig. 21.5) preserve an imprint on the top face, indicating a pre-planned design for a chamfered rib to be located above them. The imprint also matches the design of the chamfered engaged columns below the capitals. Unlike the imprint, the remains of tri-concave ribs are still preserved on these three capitals.

Numerous fragments of the chamfered type of rib template have been found throughout the site; many of them were located in the area of the east wall's tower and were piled on the roof of the gate tower by the excavators and conservators of the site in the 1960s (see GT9).

There are several feasible explanations for this difference between the pre-planned design and the final executed element. It may indicate a change in plans if, during the process

Fig. 21.4: a) Capital at south-east corner of GT1 ground floor. Limestone, fully preserved (photo: Assaf Peretz); b) Capital at south-west corner of GT1 ground floor. Sandstone, unpreserved face (photo: Assaf Peretz); c) Capital at north-west corner of GT1 ground floor. Sandstone, partly preserved (photo: Assaf Peretz); d) Capital at north-east corner of GT1 ground floor. Limestone, partly preserved (photo: Assaf Peretz).

of construction, it was decided to carve ribs from a different template. Although the planned vaults were designed to bear chamfered ribs to conform with the design of the engaged columns, the final choice however, was the more delicate and slender template as in T3 and GT9.

Tower 3 (T3)

The building as we know it from the archaeological excavation and surveys is a monumental and complex structure located within the north-eastern angle of Caesarea's Frankish walled enclosure. Although archaeologically we have little evidence of the Early Islamic period, its construction evolved from a gatehouse consisting of two rectangular towers situated on the former *cardo maximus*, excavated by Y. Porath (2011), to a wide rectangular corner tower encasing the earlier structures.

J. Mesqui (2014, 163–170) identified three phases in the Early Islamic gate: the first phase was the construction of the towers, while the next two comprised partial reconstruction and/or repair. The present study describes the changes and modifications that occurred during the Frankish occupation of the city, in light of a new interpretation of the historical documentation.

Construction Phases

Four distinct phases have been identified in T3, from the initial construction, prior to the Frankish occupation, to the modern phase of reuse, centuries after the fall of the city to the Mamluks.

Phase A

The first phase identified as a construction phase consists of two rectangular structures, measuring almost *c*. 8.6 m by 6.7 m, with an opening set between them measuring 4.8 m and a 4.4 m-wide gate. A change in level between the two structures may indicate the sequence of construction. This

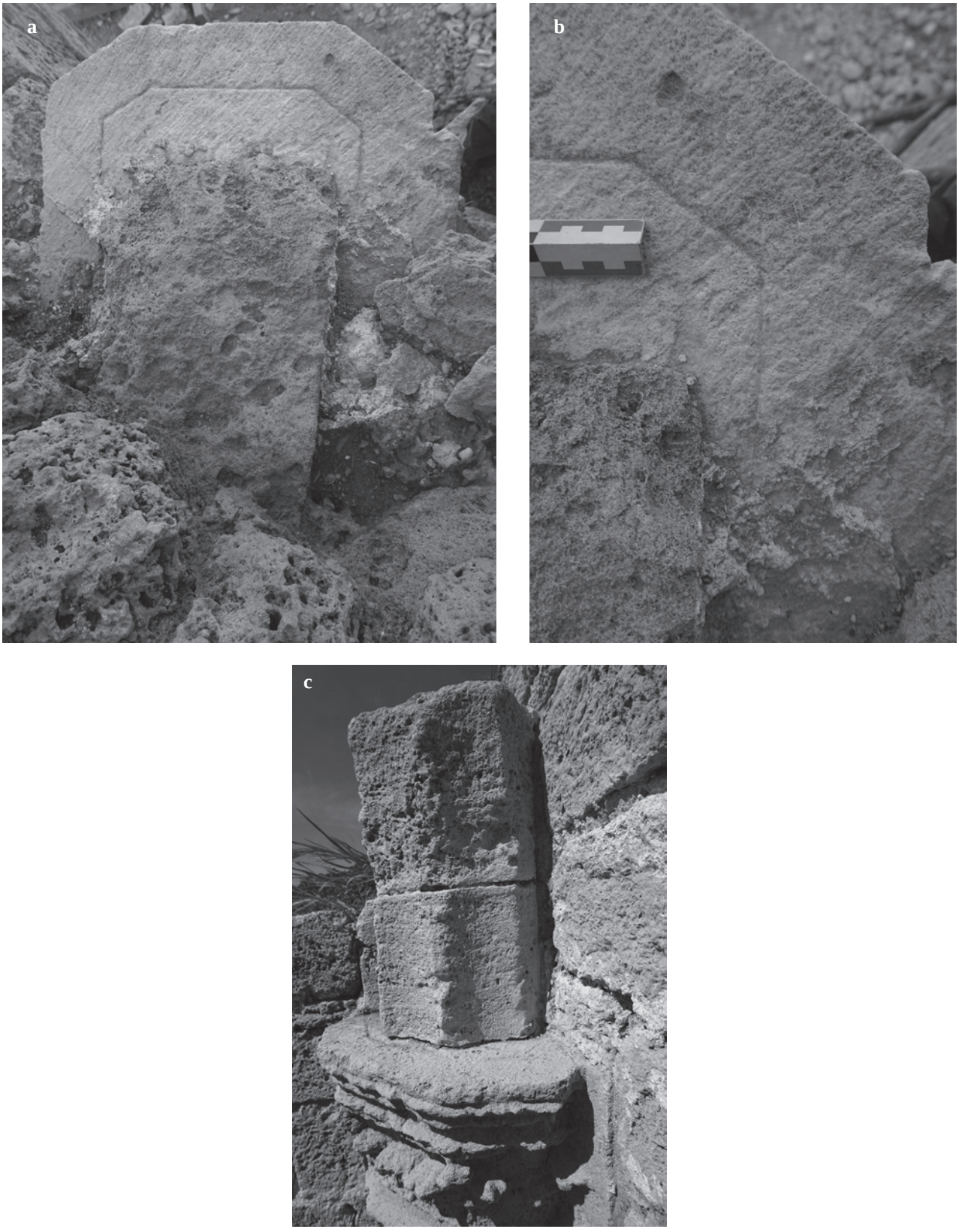

Fig. 21.5: a) Capital in GT1 showing the difference between the pre-planned design (chamfered edges) and the executed result (concaved on three edges); b) Pre-design for a chamfered rib is carved on top of the capital (capital and detail); c) Three-edged concaved ribs positioned on a capital marked for a chamfered template.

structure predates any evidence of Frankish presence at the site. From a comparison of its construction technology with that of the early remains of T4, GT9 and T13, this phase has been dated to the Early Islamic period (Abbasid period, 8th to 10th century CE).

Characteristics of the early construction phase A:

a. Ground plan consisting of two rectangular structures.
b. Foundation layer consisting of Roman-Byzantine elements.
c. Use of large rectangular stone blocks, arranged in horizontal courses. Block size consistently 96–100 cm long by 52–55 cm high.
d. Insertion of headers (elongated blocks inserted into the core of the wall). The headers were placed on even courses along a vertical axis (Plate 21.2).

At least three large voussoirs (indicated in Plate 21.2 as ex situ stone blocks) belonging to this phase originated in the passage between the two rectangular structures.

Blocks on the south face (on the left in Plate 21.2) are in their original location but slightly displaced due to the destruction of the tower. The blocks in the centre have clearly been moved from another part of the building (*e.g.* arch voussoirs). After restoring the city, the Franks made numerous modifications to the initial structure, as presented in the following phases.

Phase B

Elements of Phase B1

During this phase the northern facade of the passage between the two rectangular structures was supplemented with two granite columns,[7] topped by two debased Corinthian capitals of the 2nd to 3rd centuries CE (Plate 21.3). Two sculpted elements, each featuring an ape, were integrated into the fabric of the wall and positioned above the columns (see description below). The two granite columns in T3 possibly originated from the eastern *circus* and underwent adjustment for use at the entrance. While it is plausible that the columns were positioned freely to form a triple-opening gate as supporting a free-standing portico, the sculptures already formed part of an integral section of wall. Clearly, the rear parts of the sculptures were carved to function as building blocks.

The total width of the wall cannot be reconstructed from the depth of the block, as the latter may represent only its exterior face.

Elements of Phase B2

At the same time or slightly later, a wall built of stones cut considerably smaller than those of the initial construction of phase A enclosed the wide passage between the two rectangular structures that belonged to the initial construction, and a narrow entryway (90 cm wide and 1.15 m deep, Plate 21.4) was set between the two columns. The sculpture on top of the columns would seem to have projected from the north face of the wall. The columns could also be seen from the external (northern) face of the wall. It is questionable, however, whether there were recessed niches or alcoves to receive them. It is currently impossible to determine this without destroying the masonry.

In addition to the opening and probably from the same period, two slight walls were built against the inner sides of the towers and another wall on the south, with an opening towards the city, much narrower than the original large Islamic entrance.

Elements of Phase B3

The elements concentrated to the south and west of the towers, inside the Islamic enclosure and added only after the erection of the B2 elements, comprise a glacis (or talus) built along the southern and western faces of the towers. The glacis on either side of a modest entrance is constructed in an interrupted line. The entrance located in the southern part of the structure continued to remain in use after construction of the glacis (Fig. 21.6).

Phase C

This phase, belonging to the construction campaign of Louis IX, comprises the encasing of the northern and eastern sides of the former structure to form a massive rectangular tower. The passage between the two Islamic structures was blocked, with the new northern facing totally hiding the columns, capitals and sculpture. In addition, the eastern rectangular structure of the original building became filled with rubble and mortar core, possibly resulting from the unstable and poor state of preservation of the vault. From a modest structure of 186 m^2 of the total roof area, T3 was

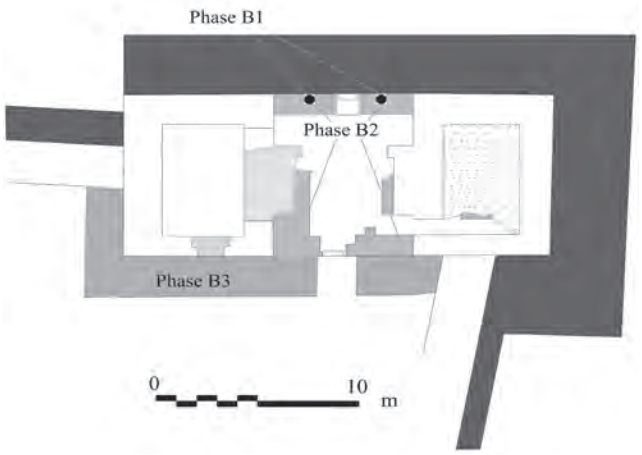

Fig. 21.6: Plan of GT3 with elements from the three different stages within phase B marked: phase B1: columns; phase B2: wall between columns; phase 3: glacis in interrupted line (David Zell, authors).

Fig. 21.7: The glacis around Tower 3, view to south-west.

transformed into a much larger structure, almost doubling the overall roof size to 360 m^2. A vast floor was built on top of the initial structure, covered by rib vaults (see below ex situ architectural elements) while around it, as in GT1, a vaulted shooting gallery, accessible from the wall-walk on the south, was built between the Islamic original facings and the new walls of the tower. The remains of the Islamic building were plastered in a similar way to the Frankish masonry, with the intention of merging the various structures into a tower with a more unified appearance.

Finally, as demonstrated by the earlier surveys, once the digging of a moat around the fortification allowed it, an 8 m-high glacis was built against it on its exposed quarters (Mesqui 2014, 120; Fig. 21.7).

Phase D

The destruction of the Frankish structure from phase C was followed by alterations and the reuse of architectural elements taken from the immediate surroundings. During this phase of reuse, which is attributable to the Bosnian settlement from 1882 onwards, the western part of the northern postern was repaired to support the newly built houses. This previous entrance, now clearly blocked by the glacis had probably served merely as a recess during the final phase of occupation of the structure. The tower in its last Frankish phase form consisted of a small area of ground floor, about half the size of the original Islamic structure, and an upper floor circumscribed by a shooting gallery.

Architectural Elements

A limestone capital, decorated with a clover leaf corbel, is positioned on the west jamb of the blocked opening in T3. The normally hidden face of the corbel is exposed on the face of the wall, while the sculpted part of it inside the opening is only partly visible (Fig. 21.8).

The design of this corbel is similar to the corner corbel on the south-east corner of GT1, indicating that the two capitals were probably carved in the same atelier, possibly by the same sculptor. Whether or not they belonged to the same structure, however, is uncertain. The element in T3 is in secondary use and it too is a corbel rather than an element originally positioned on a straight segment of a wall (outlined in Figs 21.10a and 21.11a). No traces of marks can be seen on top of it to indicate the planned design for the ribs, unlike their appearance on top of the capital from GT1 (Fig. 21.4d).

Clover and acanthus leaves were typical vegetal motifs in the Frankish architectural vocabulary. The clover leaves at GT1 are represented open with deeply carved stems, similar to those presented on the console at T3. There is

Fig. 21.8: Capital in secondary use at T3 (photo: Assaf Peretz).

no archaeological indication to associate this element with the architecture of this tower. During the excavation, a plain keystone and several fragments of rib-vaults with a concave-on-three-edges type of template were found by Y. Porath near T3. Differences in their level of detailing might suggest that it is unlikely that the corbel and these elements belonged to the same system, though the same argument cannot be sustained by the difference in materials – sandstone for the ribs and keystone, and limestone for the console – as the ribs and capitals of GT1 were carved using both stone types.

The Animated Corbels

Two other sculpted corbels, found in situ, were discovered by Y. Porath during his excavation of T3 and differ significantly from the vegetal capitals discussed above in both subject content and architectural style.

These elements, found in their original position within the northern façade of the tower, consist of large sandstone sculptures carved as building blocks in the rear, and originally positioned above two granite columns topped by debased Corinthian capitals. The overall form of these two corbels suggests that they were designed to complement the façade. The artist, therefore, was already involved during the construction process, possibly even at the design stage, working with the master mason in order to ensure the full integration of the elements into the final programme. The backs of the sculptures were carved as rectangular blocks and incorporated into the face of the ashlar wall. The corbels are similar, each depicting an ape. The western corbel was completely exposed during Porath's excavation, but the eastern corbel is still half-buried in the blocking additions. Sometime after the excavation, the western capital disappeared from the site, while the corbel was left on the remains of the wall (Fig. 21.9).

During the destruction of the tower the apes' heads too were destroyed, making it impossible to conclude anything about their upper parts. The question of their structural function, as carrying an arch or a lintel, has thus remained unanswered. The artist commissioned to do the work may have been given a particular choice of subject, and the decision to depict two apes at the margins of the city seems to reflect the image of the ape as an early Christian symbol. Apes belong to the core of Romanesque and Gothic sculpture, often represented on church capitals, where they are visible from below and afar. One notable exception occurs at the abbey church of Saint-Gilles-du-Gard, where two large sculpted apes (and a camel) located on a base for two pillars on the northern face, to the left of the central portal, are easily visible from close up by anyone entering the church (Fishhof 2006, 93–118). In Gothic sculpture, apes may represent several themes. The apes here, at Caesarea, have very long twisted tails, suggesting they were intended to symbolize the Devil, who was believed to have no end.[8] The emphasis on the apes' hindquarters, which are situated just above the viewer's head, reveals the purpose of this pose: ridicule and mockery.[9]

Ex Situ Elements Near T3

In addition to the sculpted elements, the excavations at T3 revealed several ex situ architectural elements, including a plain keystone (Fig. 21.10) and an assemblage of rib vault voussoirs of different sizes (*e.g.* Fig. 21.11) incorporating a *tas-de-charge* (Fig. 21.12), all made of sandstone. They were all scattered randomly in an accumulation layer from the 19th century, having originated in the upper floor of T3, where a large rib-vaulted hall was located.

A New Interpretation of the Historical Sources

Following the above architectural analysis, which has identified only the elements belonging to the final Frankish phase, it is now necessary to revisit a charter dated to February 1206 (Tibble 1989, 122; Pringle 1995, 89, 99–100). In the charter, Juliana, lady of Caesarea, alienated several properties to the Teutonic Order. They included:

> The tower of Mallart, with the square (or street, *platea*) in front of the same tower that extends as far as the boundary with the vacant property (*gastina*) belonging to the Templum

Fig. 21.9: Current view of the animated corbels. View to north-east.

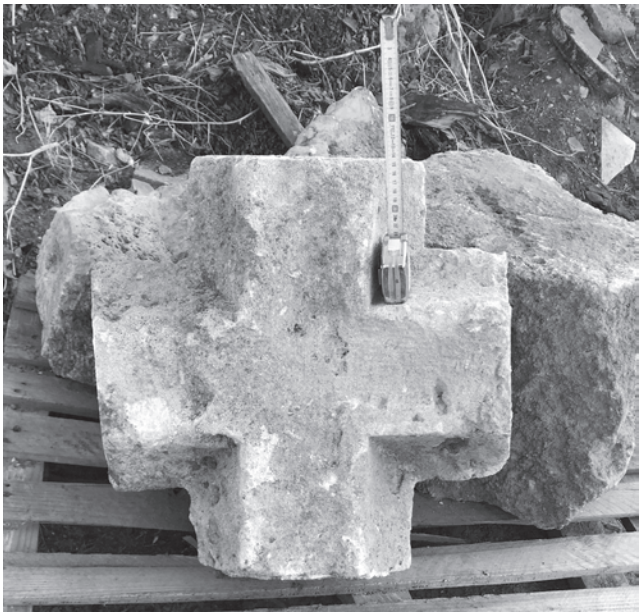

Fig. 21.10: Keystone (sandstone), concave template, plain boss. Key 48 × 48.5; Rib 26 × 26/32.

Fig. 21.11: Rib voussoir (sandstone), concave template. Dimensions: 57 × 50 × 45.

Fig. 21.12: Tas-de-charge *(sandstone), broken, 3 concave ribs.*

> Domini. And I grant in similar fashion another small tower that faces this one, at the corner of the city walls on the east. These towers must be handed over to the lord of Caesarea if he has need of them against his enemies; after peace has been restored between them, the aforesaid brothers should have the aforesaid towers back again.
>
> (Strehlke 1869, 32–33, no. 40; *RRR* no. 1567; *RRH* 810)[10]

The charter concerns two towers located close together at one of the corners of the east city wall, both of them being apparently considered small structures at the time of the charter. Prior to 1251, and before the works of Louis IX, the only pair of towers documented are those from the north-eastern corner of the enclosure that featured the previous north-eastern gate into Caesarea (Mesqui 2014, ill. 86).

Hence, it is possible to deduce that, in 1206, two independent towers existed here, and that their former status as a gatehouse had probably disappeared by then, perhaps because the walls were no longer functioning as a barrier. It seems highly unlikely that during that period, following the destruction by Saladin's armies (see above), any fragile element would have survived. Thus, the hypothesis of the two columns and corbels of phase B-1 having already been there, is refuted.

It is also interesting to connect this donation to that of a series of grants made by the king himself in Acre, after the conquest, to the Hospitallers and particularly to the Teutonic knights. In 1193 for instance, Henri of Troyes, who was intended to become king but died before his coronation, granted the Teutonic knights a barbican, towers and fosse, under the condition that the order would fortify and reinforce them (Strehlke 1869, 24, no. 28). In 1195, the Hospitallers were granted by the same Count Henri a stretch of the walls of Acre, with the 'barbacane', in exchange for their building a new gate there (Delaville Le Roulx (1894–1906) I, 616–617, no. 972).

This new interpretation of the charter from 1206 allows us to suggest a date for the Frankish phase between the Islamic period (phase A above) and the work of Louis IX (phase B above). Mesqui (2014, 172) considered that this interim phase had the objective of transforming the former gatehouse into a strong tower, which he called 'an autonomous postern-tower, heavily fortified towards the city itself' and conjectured a dating just before the battle of Hattin. This is further reinforced by the new interpretation of the 1206 charter, which suggests that the gate tower had been transformed into a *maison forte* by the Teutonic Knights themselves, after 1206. It is nevertheless impossible to know whether the restoration took place immediately after the grant. This new interpretation of the words *in cantone murorum, ex parte orientali*, has allowed us to establish the location of the towers. The modest glacis towards the city (in the south) indicates that the *maison forte* stood alone in the ruined city.

The subphases of phase B show that the works were perhaps not carried out in a single campaign. The most intriguing element is the enclosing wall between the two towers on the north, with the Romanesque sculptures, perfectly in line with the architectural style at the beginning of the 13th century in the Levant. Were the two columns initially free-standing, determining a decorative *portico*, totally unknown in any such architectural programme? It is more probable that they were intended from the beginning to be embedded in the wall, on either side of the northern door of the *maison forte*.

Gate Tower 9 (GT9)

GT9 is situated in the middle of the eastern wall of the Early Islamic enclosure, at the intersection of the former Roman *cardo maximus* and *decumanus maximus.*

Construction Phases

The Early Islamic Gatehouse

The phases in the construction of the eastern gate tower have been identified as very similar to those of T3. Unlike T3's corner position, however, GT9 was located in a straight section of wall (Mesqui 2014, ill. 505).

The wall south of GT9 initially protruded to the east, and overlaid flagstones dating to the Byzantine period that formed part of the *cardo maximus*. Underneath the *cardo* a segment of the Roman-Byzantine *cloaca* (sewer) is seen. The *cloaca*, preserved for some 8 m south-west of GT9, had already been excavated in the 1960s by A. Negev. The tower and an additional unidentified structure to the south-west of it were built on foundations made of *spolia*, consisting of stones that had previously served as bases for large Roman columns and parts of a long entablature decorated

with heads. The latter, perhaps representing human figures, were severely damaged, possibly by the builders of the Early Islamic structures.

Various areas within GT9 preserve the remains of the original, Early Islamic construction. The characteristics of the construction are similar to those described for T3 and include:

a. Ground plan consisting of two rectangular structures (Fig. 21.13 left).
b. Foundation layer consisting of Roman-Byzantine elements (Fig. 21.14).
c. Use of large rectangular stone blocks, arranged in horizontal courses, with block sizes consistently ranging from 96 to 100 cm long by 52 to 55 cm high, alternating regularly with headers (long blocks inserted into the core of the wall).

The inner, western façade of GT9 has preserved large blocks, similar in size to those used in T3, phase B, on either side of the western opening. On the north-east corner of the southern tower, a straight joint (*coups de sabre*) indicates the end of the Islamic wall.[11]

An excavation south of this area, conducted during 2015 by U. ʻAd, re-exposed, for conservation purposes, the meeting point between GT9 and the town's wall (previously exposed by Negev, see Mesqui 2014, ill. 277).[12] It clearly showed that the foundations of GT9 and the wall are contemporaneous, while the foundations for the tower technically predate the wall that adjoins it from the south-west. As in T3, the masonry of the two earlier towers differs from the masonry of the walls (Plate 21.5) in using monumental blocks rather than small elongated blocks (Fig. 21.15).[13] A. Negev (1989, 10) attributed the differences in block size to two different groups of masons, and not to the possibility of an earlier structure that might have predated the Crusader construction.

Architectural Elements

The Frankish building consists of a massive rectangular gate tower, with an angled entrance as in GT1. The main entry point was through a monumental portal located in the north façade of the new tower. Adjoining the eastern faces of the Early Islamic structure, this new gate tower retained the previous passage between the two towers as the second segment of the entrance, perpendicular to the main axis of the tower.

Clearance work in the 1960s by A. Negev revealed the Crusader gate tower to its full height in several places. His description of it includes some important details about the original Frankish structure: the remains of iron hinges for the doors were preserved in two marble thresholds of the outer and inner openings. Negev noted: ʻAll brackets [corbels] and

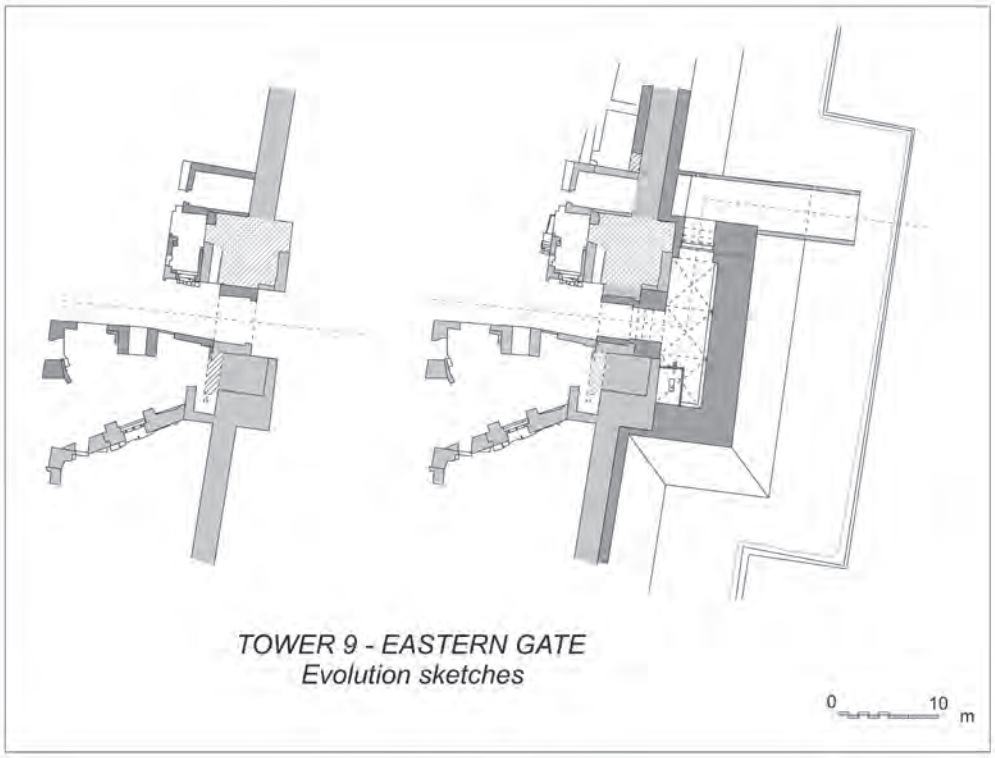

Fig. 21.13: Evolution of Gate Tower 9 from the early structure to the Frankish gate tower. To the left, the Early Islamic gate (in dark grey, early Crusader additions). To the right, the late Crusader gate tower (in dark grey, late Crusader additions).

Fig. 21.14: Earlier remains of the original tower, consisting of Roman-Byzantine elements, preserved on the south-west corner of GT9. To the left are the foundations of a wall that adjoined the corner of the tower.

considerable sections of the arches were found in situ. Six of the brackets were decorated with floral designs, one was decorated by a lion's head, and one was plain.' A photograph taken during the works, however, records a now missing corbel on the east façade (second corbel from the north).

The gate tower was heavily restored by M. Yafe,[14] who was in charge of the reconstruction. The rib-vault was reconstructed using some of the original elements for the northern vault in particular, with new rib-vault segments and voussoirs moulded in concrete and completing them. The original elements were placed by the conservators on the reconstructed ground floor hall, though some of these elements probably represented parts of the upper destroyed vault.

In Situ Elements

The elements found in situ during the excavation of GT9 include seven out of the eight sandstone corbels originally integrated within the walls of the elongated structure. Where the photographs from the time of the excavation show a missing corbel (second from the north Fig. 21.16), there now stands a corbel that was apparently part of the original structure. Hence, it can be assumed that this corbel was found during the excavations in the debris or destruction layer, and then restored to place. The corbels function as supports for the rib-vaulted ceiling and are decorated with various designs, including geometrical, floral and vegetal motives. The same type of corbel with a lion's head, mentioned by Negev, is probably also represented by one on the eastern wall of the gate tower, although the state of erosion makes it difficult to identify.

The geometrical shapes of some corbels of GT9 (Fig. 21.16) greatly resemble a number of those at Royaumont Abbey, north of Paris (Fig. 21.17), while the vegetal and floral motives in Caesarea (Fig. 21.18) are similar in design to various corbels of Royaumont's refectory (Figs 21.19 and 21.20). This abbey was built under the patronage of King Louis IX between 1228 and 1235, long before his departure for his first crusade (Seventh Crusade 1249–1254), though the works are attributed to his mother, Blanche of Castile.[15] It is important to note, however, that the sculptural language of Royaumont is similar to that of other mid-13th-century architecture of the Île-de-France. The similarities between Caesarea and Royaumont should not therefore be taken as meaning that Caesarea adopted the style of a specific institution, but rather a style common in France in that period.

An additional artistic parallel for some of capitals preserved in GT9, as well as in T3 (reused) and GT1, is the

Fig. 21.15: South façade of GT9, early construction exposed on upper level of the gate tower.

Fig. 21.16: North-west corner corbel at GT9, Caesarea.

Fig. 21.17: Corbel at the refectory, Royaumont Abbey.

Fig. 21.18: Five-petal flower and clover leaves on north-west corbel at GT9, Caesarea.

Fig. 21.19: Five-petal flowers on a corbel at Royaumont Abbey refectory.

Fig. 21.21: Keystone from Royaumont Abbey.

Fig. 21.20: Clover leaves on a corbel at Royaumont Abbey refectory.

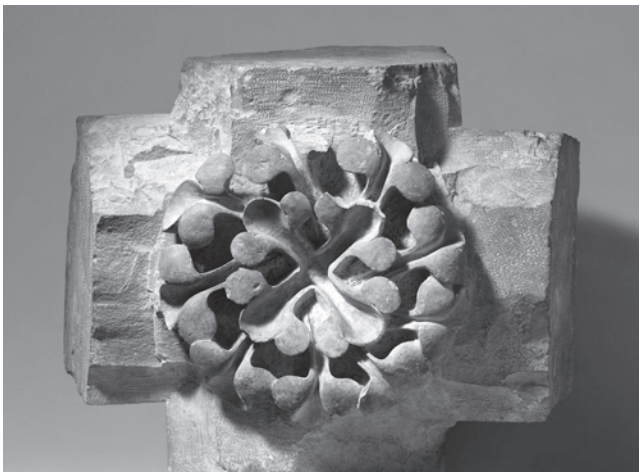

Fig. 21.22: Keystone from Montfort Castle. The Metropolitan Museum of Art. Gift of Clarence H. Mackay, Archer M. Huntington, Stephen H.P. Pell and Bashford Dean, 1928. Accession Number: 28.99.1.

thick open stem of the clover leaves. A keystone, currently on display at the Royaumont Abbey exhibition (Fig. 21.21), as well as a keystone from Montfort Castle (Fig. 21.22), currently in the Metropolitan Museum of Art, share a similar wide stem for the leaf design to that of the corbel in the south-east corner of GT1 (Fig. 21.23).

Ex Situ Elements

The ex situ elements include architectural pieces made of marble, sandstone and limestone. In his report, A. Negev observed the lack of use of spolia in the Frankish buildings of Caesarea. Marble columns were reused in the foundations of

Fig. 21.23: Corbel in GT1, north-east corner. Limestone, in situ (photo: Assaf Peretz).

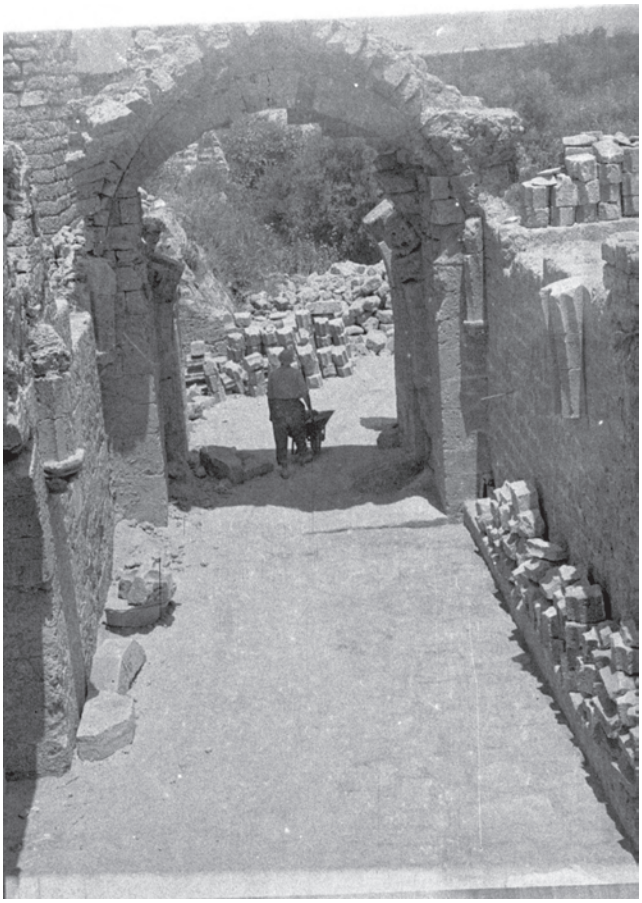

Fig. 21.24: Impost and octagonal pier fragments (photo: A. Wegman).

the castle for example; but, as Negev noted, the Roman capitals, friezes and columns were only rarely integrated within the Frankish structures in their original form.[16] Several marble elements of Roman-Byzantine origin were reshaped to create

Fig. 21.25: View to north, photographed during reconstruction 1960–63. Three fragments, possibly originated from the upper level. 1965–1971, Hebrew University, A. Negev collection, photo courtesy of J. Patrich.

Frankish elements, a phenomenon observed at other Frankish sites.[17] Most of the ex situ elements were found during A. Negev's excavation, and are recorded in his photographs. The marble elements can be identified as belonging to the upper story of GT9, as the ground floor was built using sandstone for all the architectural decorations still in situ. However, it is hard to determine the origin of the rib-vault voussoirs, since the same template was used for both the gate tower levels.

Two segments of an octagonal pier (Figs 21.24, 21.25 and 21.26) in Negev's photographs were positioned on the roof of the gate tower (Fig. 21.27) by the conservator, in what seems to be their original location, in continuity with the gate tower's west wall of its ground floor.

G. Schumacher (1887–88) recorded two pedestals for octagonal piers, similar in plan to the remains from GT9, originally from the ground floor of the sea castle or citadel (5 ft 4 in = 1.61 m), and a smaller detail pedestal (3 ft 11 in = 1.2 m) for the upper floor (see Mesqui 2014, 356–357; Plate 21.6).

This construction method was also recorded for several buildings at 'Atlit castle. In situ bases of octagonal piers indicate their use in the largest halls within the castle. An octagonal base made of two halves has remained preserved beneath the collapse and debris in the south-west hall. Another pillar base, preserved in the west hall, is also composed of two halves that combine to make an octagon.

The largest number of rib fragments found so far belong to the concave-on-three-edges type. Elements associated

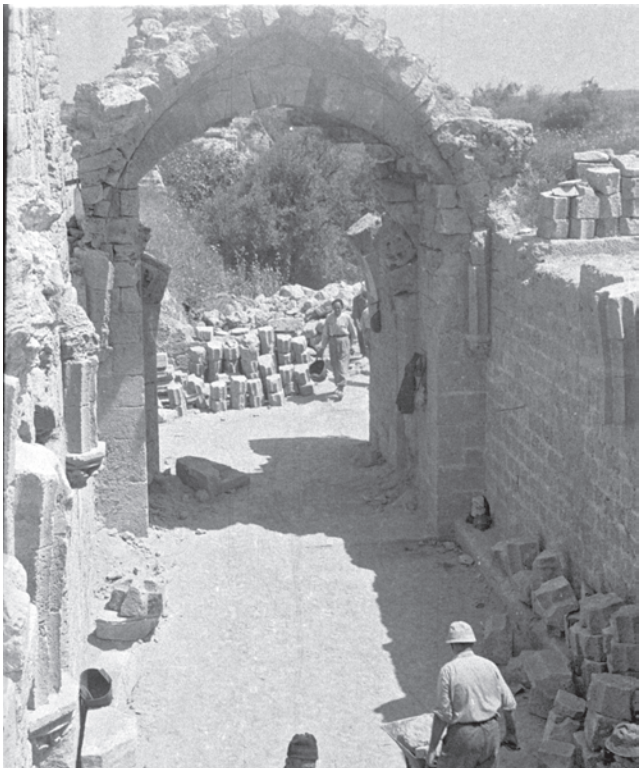

Fig. 21.26: Detail: Two halves of an octagonal column segments, an impost and a keystone found during excavation by A. Negev.

Fig. 21.27: The elements seen in Fig. 21.29 placed on the roof of GT9 (photo: A. Wegman).

with this type are abundant and include pier members (two halves that probably formed an octagonal pier, see below), a *tas-de-charge* and at least two keystones. A. Negev excavated a large lump of masonry west of GT9, consisting of a double-faced wall segment preserving an impost and *tas-de-charge* for three ribs (Figs 21.28, 21.29 and 21.30).

Figs 21.28, 21.29 and 21.30: Ex situ wall segment including an impost and rib voussoirs retrieved during excavation near GT9 (photos 1965–1971, A. Wegman).

Figs 21.28, 21.29 and 21.30: (Continued)

Fig. 21.31: Ex situ wall segment including an impost and rib voussoirs currently seen on site.

We struggled to identify the remains of a large lump of masonry recently found at the site (Figs 21.31 and 21.32) together with another very similar lump that appears in photographs of the excavation in the 1960s.[18] Only the concave-on-three-edges type of rib moulding is visible in the photographs, which also present a segment that cannot be accurately identified. This segment (or these segments) clearly originated from the outer walls of the upper story in the gate tower, as all the vaulting elements of the ground floor are preserved in situ.

A marble element currently seen on site is an impost that also originated, in high probablity, in the upper storey of the GT9 (Fig. 21.33). The top of the impost is marked for three concave template ribs *and* two halves of the same rib template. These marks contribute to understanding the original structure, as they indicate that this impost constitutes one half of an impost for an octagonal pier. Unlike the impost in the lumps of masonry described above, clearly projecting from a wall, these marks indicate the impost topped a free-standing pier. An oblique X preserved on the face of this element may be identified as a mason mark, while another mark represents a six-arm cross. Although such marks are often interpreted as a mason's signature, here it may denote a planning mark to indicate the elements' position in the architectural plans.

Fig. 21.32: Another view of the wall segment currently seen on site.

Summary

The three buildings that constitute the focus of this paper, although comprising only a small part of the fortifications of Caesarea, present a diachronic perspective on the evolution of the city, from the Islamic period to the 20th century.

Fig. 21.33: Caesarea, half impost (115 × 69 cm) originally placed on octagonal pillar. Marks carved indicate the tripartite tas-de-charge *of three complete concave ribs and a half on either side. Proconnesus Marble.*

Islamic Period

The highest enclosure of the city, probably early Abbasid, comprised a strong wall built on top of Roman-Byzantine architectural elements, reused as its foundations. The wall was strengthened by means of reused ancient column shafts positioned either horizontally or vertically. The main part of the wall was built of medium-size ashlars, poorly cut, and was plastered on the external facing (Mesqui 2014, 302–312). Conversely, the two main gate towers, each formed by two narrow rectangular units, were built of large blocks, well cut and dressed and carefully assembled. The lower courses of the construction, such as those of the walls of GT9, also incorporated Roman-Byzantine column shafts, segments of entablatures, capitals and possibly other elements, reshaped. As there is no trace of plastering on the external facing of the towers to cover the elements of *spolia*, it has to be assumed that they were intended to demonstrate the status and the riches of the city, its monumental past and its present Islamic rulers. The layout of the walls, with the regular rhythm of their buttresses, shows clearly that a single design had been chosen for this enclosure, using the former axes of the Roman-Byzantine town to determine the general plan.

Crusader: First Frankish Occupation, Before 1187

There is no evidence of any fortification activities having been carried out by the Franks after the conquest of 1101 and before 1187. Arguably, the rectangular projections made in front of T8, T19 and T11 were added to the Early Islamic structures, but in this case it is very likely that they had been built earlier, already in the Late Islamic period, which lasted centuries more than the Frankish period before Hattin.

Crusader: Second Frankish Occupation Between 1191–1228

As the walls were deserted and no longer in use, our interpretation of the 1206 charter points to the lords of Caesarea being forced of necessity to grant towers on the city wall to the military orders in order to defend the *chef-lieu* of their lordship. This charter, which in our view shows that the two ruined towers of the north-east Islamic gatehouse were granted to the Teutonic Order, explains the process of transforming a ruined gatehouse into a *maison-forte* (fortified house), most probably not long after 1206. The dating of this operation is limited to 1206 as its *terminus post quem* and 1251 as its *terminus ante quem*.

This rectangular fortified house was surrounded by a glacis, probably on all its faces, which indicates that it stood isolated from the line of defence of the walls, which were then in disrepair. The northern wall, erected between the two Islamic rectangular towers, comprised two columns with Roman debased capitals, overlain by two Romanesque sculptures featuring apes crouching with their tails curved and bent around, interlaced with stalks and leaves. The sculptures, placed on either side of the northern postern, formed a most peculiar addition to a fortified edifice. The two apes overlooking the visitors, not without some mockery, and guarding the gate entrance, recall numerous examples that can be seen in marginal sculptures of the Romanesque religious architecture.

Crusader: Third Frankish Phase, from the Time of Louis IX

The vast works undertaken by Louis IX led to a complete transformation of the walls, by adding the surrounding ditches. The king's campaign included new towers encasing the Islamic ones. A considerable moat was dug following construction of the first floor, at the same time of the construction of an impressive glacis, 7 m high. The two main gates of the Islamic town (T3 and GT9) had a different fate in this process. The former east gatehouse (GT9) became the main entry point to the Crusader renewed city, while the north-east gatehouse (T3), already transformed into a *maison-forte*

by the Teutonic knights, became a considerable rectangular tower commanding the new walls. Since a gate tower cannot be located at the corner of a fortification, this change led to the construction of a new gate (GT1), in the north.

All three towers reflect a common design: they are two-stories high with rib-vaults. Vaulted shooting galleries feature at mid-level between the two floors, overlooking the ground level and the moat. The galleries are accessed independently from the inside of the towers by a wall-walk within the curtain, as in T3 and GT9, and occasionally by external staircases as in GT1. This latter feature can also be seen in the keep of the royal port-city Aigues-Mortes, France, built around 1240 by Louis IX.[19]

The capitals that feature in the three towers are clearly derived from Gothic models already in use in the 1230s in the royal buildings in the Ile-de-France. The systematic use of rib profiles with concave edges (type 1-c) reveals their conformity to the contemporaneous decorative style. That the corbels of the ground floor were designed as simpler moulded rib-voussoirs (chamfered edges of type 1-a) seems to indicate a change of architectural status during the course of works on this tower.

Following royal French models, these three towers were destined to play a special role in the city of Caesarea. As in the other Frankish cities of the Kingdom of Jerusalem too, Caesarea had its *Cour aux Bourgeois* (burgess court). Similar to the role of the main gate tower of Coucy, France (built 1220–1230), the main gate of the city (GT9) could also serve as a communal house. The hall on the first floor may possibly have served as an audience hall for the burgess class of Caesarea, while the ground floor served as an entry point.

The most recent studies by Y. Porath and by N. Faucherre and J. Mesqui, were followed by excavations and surveys by U. ʻAd and P. Gendelmann on behalf of the IAA and the Caesarea Development Company. These latest excavations have revealed new aspects of the site's evolution and enabled us to update the architectural analysis of the finds accordingly. Moreover, by analysing the new architectural evidence and comparing it to the published sources, we are now able to offer new historic interpretations of the archaeological finds, and identify with greater certainty specific places within the fortification system of Frankish Caesarea.

Notes

1 In 1206, *Iuliana domina Cesaree*, amortises properties to the Teutonic Order which were then abandoned and deserted. Strehlke 1869, 32–3, no. 40; *RRR* no. 1567; *RRH* 810, see below in T3 for the interpretation of the charter.

2 ʻAs for our status, we would like to inform you, by the grace of God, that we are now safely residing in the camp at Caesarea in Palestine, with the Christian army, continue fortifying the fortress. And, since the works to the walls have already made good progress for the most part, in order to strengthen the defences we are now devoting equal attention to the walls and ditches, assiduously toiling from day to day'. Free translation by Jean Mesqui: *et, cum jam pro magna parte processum sit in operibus murorum, nunc etiam ad confirmacionem operis, assidue laborando, de die in diem operari facimus ad muros pariter et fossata*. Arch. nat., Layettes du Trésor des Chartes, J303, n° I, pièce 17, publié par J. de Laborde, Layettes du Trésor des Chartes, t. III, Paris, 1875. Pp. 139b–140b, n° 3956.

3 As described in *Ibn al-Furāt* 1971, 67, section 82.

4 Excavation on behalf of the IAA in collaboration with The Leon Recanati Institute for Maritime Studies at the University of Haifa.

5 It had already been suggested in the 1990s that the Crusader walls followed the line of the Early Islamic ones: Porath, Neeman and Badihi 1990; Pringle 1993, 166; 1995, 89–91; 1997, 42.

6 Caesarea is referred to as Caesarea of Straton. See Wilbrand of Oldenburg 2011, 131.

7 Marble columns (Roman-Byzantine spolia) identified along the *cardo maximus*, *e.g.* near T4, are in *cipollino verde* (green marble).

8 *e.g. Physiologus* 2009, 38–39.

9 These two sculptures were previously erroneously interpreted as griffins: Charland 2016.

10 *Et eciam dono eidem hospitali turrem Mallart cum platea, que est ante ipsam turrem, que protenditur usque ad divisionem gastina que est de Templo domini: et aliam parvam turrem dono similiter, que est opposita huic, in cantone murorum civitatis a parte orientali, que predicte turres domino Cesaree debent tradi, si eidem essent necessarie contra inimicos suos*.

11 Two upper courses of the Islamic wall embedded in the northern tower constituted narrow blocks that may have been used as vertical stretchers. Their use in a row may indicate a temporary shortage of elongated blocks, or, equally plausible, it can be associated with the Frankish rebuilding of the gate tower.

12 Excavation no A-7475 of the IAA, on behalf of Caesarea Development Company.

13 Works carried out by the IAA on behalf of the Caesarea Development Company during March 2018, included conservation of the lower courses in the Abbasid wall and Byzantine pavement south of GT9.

14 A. Negev benefitted from M. Yafe's work and experience. He expressed his gratitude to him in regard to the repair of the aqueducts in Caesarea; see Negev 1964, 237.

15 The young prince was 12 years old when his father Louis VII died (1226). Despite his young age, the new king was closely attached to the abbey and his involvement was recognised by its abbot, Adam of Saint Leu, who testified at Louis' canonisation proceedings to the king's involvement in the construction of the abbey and the abbatial life. See his testimony: *Le roi participle en personne aux travaux de construction* in: Louis Carolus-Barré, Le Procès de canonisation de Saint Louis (1272–1297). Essai de reconstitution (Rome 1994), 121–126, 236–237.

16 Negev of course was not aware of the two Corinthian capitals integrated in T3 and situated on top of two marble columns. See T3.

17 *E.g.* Arsur, where Roman-Byzantine *spolia* were integrated into the castle’s lay and religious buildings. See Shotten-Hallel, Yohanan and Tal in press).

18 Another view of the wall segment. Harvard University, Judaica Division. Widener Library. Scenery of Caesarea Antiquities and Dor-Tantura beach, Shlezinger, Fritz, 1960.

19 For a comparison of Aigues Mortes and Acre see Richard 2007. For the site of the royal fortifications see: *Inventaire* 1973.

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Abbreviations

MGH: Monumenta Germaniae Historica, ed. Georg Pertz *et al.* (Hanover/Weimar/Berlin, Stuttgart/Cologne, 1826ff).

MGH Leges 2: Constitutiones et acta regum Germaniae (Hanover, 1837)

RHC Occ.: Recueil des Historiens des Croisades, Historiens occidentaux 5 vols. (Paris, 1844–1895).

RHC Or: Recueil des Historiens des Croisades. Historiens orientaux, 5 vols. (Paris, 1872–1906).

RRH: Röhricht, Reinhold. *Regesta regni Hierosolymitani* (Innsbruck, 1893).

RRR: Revised Regesta Regni Hierosolymitani on-line: http://crusades-regesta.com/.

UKJ: Mayer, Hans Eberhard. *Die Urkunden der lateinischen Könige von Jerusalem*, 4 parts (Hanover, 2010).

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22

Battlefield Archaeology at Tannenberg (Grunwald, Žalgiris): Physical Remains of the Defeat of the Teutonic Order in Prussia in 1410

Sven Ekdahl

Introduction[1]

Among the many great battles of the European Middle Ages the battle of Tannenberg on 15 July 1410 plays a special role. It was not only of great importance at the time, but also in later centuries, its associated symbolism was an important identity-forming factor in the history of many central and east European states and nations.[2] Since it was a victory of the allied armies of the Kingdom of Poland and the Grand Duchy of Lithuania over the Teutonic Order in Prussia, the issue is still very topical, especially in Poland and Lithuania, as can be seen not least from the big celebrations on the occasion of the 600th anniversary in 2010 (Ekdahl 2013b). It is, however, also remarkable that the victory of the German 8th Army over the Russian Narew-Army at the end of August 1914 also received the name 'Battle of Tannenberg'. This was because, as Field Marshal Paul von Hindenburg said, it wiped out the 'painful memory' of the defeat of the Teutonic Order (Hindenburg 1920, 85). After the First World War, when Poland and Lithuania had gained their independence, the Germans built their giant Tannenberg monument at a distance of about 15 km from the old battlefield of 1410 (Ekdahl 1982, 21–22; 2010c, 36–37; Tietz 1999). Now only some ruins are left.

The medieval battle was fought in Prussia, the country of the Teutonic Knights (Fig. 22.1). Since the end of the Second World War this part of the territory has belonged to Poland. The traditional German name is Battle of Tannenberg (Polish Stębark), while the Poles and Lithuanians name it after the village of Grünfelde (Grunwald and Žalgiris). Tannenberg and Grünfelde are about 3 km apart and form a triangle together with the village Ludwigsdorf (Polish Łodwigowo). In the middle are the ruins of St Mary's Chapel, which was built in 1411 by the new Grand Master Heinrich von Plauen in memory of the fallen Christians on both sides (Ekdahl 2008, 295). According to my research this was a spot of strong symbolic importance, namely the place of the Battlefield Chapel of the Teutonic Order's army. The statutes of the Order determined that the Battlefield Chapel was to be set up well-protected in the middle of the army's camp. The frequently held opinion that Grand Master Ulrich von Jungingen was killed in action in this very place does not stand up to recent research (Ekdahl 2009; 2016c).

On the complicated question of the size of the armies and the number of the fallen, there are very different views in the research and no further assumptions will be added to that here.[3] A report of Hungarian envoys, which might be dated to the second half of August 1410, says that 8,000 men were killed 'on both sides', which means a total of 16,000 deaths. That number can be compared with the information in a papal bull granted by Pope John XXIII from 6 October 1412, claiming that 18,000 bodies of Christians were buried by those who had escaped the slaughter (Ekdahl 1982, 181–183, 191–192; 2010c, 179–181, 188–189). The most important place for the burials can only have been the battlefield itself, which is why mass graves are to be expected there.[4]

This essay will only deal with one aspect of this immensely multi-faceted topic, namely the question of the site of the main battlefield and what artefacts and human remains have been found so far. Focus has naturally always concentrated on the Chapel of St Mary and its surroundings, especially since the Germans erected a large memorial stone there in 1901 in memory of the fallen Grand Master Ulrich von Jungingen (Ekdahl 1982, 21; 2010c, 36–37; 2012b, 27; 2016c). This was also done to celebrate the royal coronation of Frederick III of Brandenburg to King Frederick I in Prussia 200 years earlier.

Fig. 22.1: Map of Prussia in 1410 (map by S. Ekdahl 2012).

Research up to the End of the 20th Century

Older Reports[5]

In a book published in 1783 by a scholar from Königsberg, there are the first concrete references to mass graves from the battle: 'To the south [starting from the chapel] there are some pits with subsided earth, under which one has found an astounding number of human bones.' The local historian Emil Schnippel in 1935 considered the 'mysterious holes' in the fields at Grünfelde and Ludwigsdorf as graves of the slain. These were shown to King Friedrich Wilhelm IV when he visited the battlefield in 1842 on a return journey to Berlin from Saint Petersburg. According to Schnippel they could hardly have a natural origin. He himself had seen three of them, two near Grünfelde. An investigation was made more difficult by the fact that the farmers used to throw the stones collected in the fields into these holes, so that they were filled up over time (Schnippel 1935, 43–44).

In the contemporary and very important Polish chronicle *Cronica conflictus* it is said that the Polish king Władysław II Jagiełło had the noblest of both sides buried in a church near the battlefield (*in quadam ecclesia loco conflictus propinqua*) (*Cronica conflictus* 1866, 439; 1872; 1911, 30). Half a century later, the Polish chronicler Jan Długosz, who knew this description, added that it was in the small wooden church in Tannenberg (Długosz 1997, 120).[6] However, German, and later on Polish, investigations in the 20th century did not produce a definitive result. In contrast, skeletons were found elsewhere by pure accident, as, for instance, in 1910–1913 when the road between Grünfelde and Ludwigsdorf was widened. Corpses were also found during peat burrowing in the bogs north-east of Grünfelde.

The statements on the pits and holes and the skeletal finds are the most valuable in the older literature. Of course, finds of other kinds (parts of weapons, stones for cannons etc.) are mentioned, but unfortunately without precise information about the location where they were discovered. Worth mentioning is, for example, a stamp of a member of the noble family of Eulenburg, fighting on the side of the Teutonic Order (Ekdahl 2009, 48–49; 2010a, 73). It was probably found during excavations near the ruins of the chapel, but we do not know for sure.

Polish Excavations 1958–1960[7]

The political situation after the Second World War, especially the problems concerning the Oder-Neisse border between Poland and Germany, led to an increased interest in Poland in the victorious battle of 1410. On the occasion of the 550th anniversary in 1960, a monumental site with a museum about 500 m north-east of the Chapel ruins was built (Ekdahl 1997a, 92–105; 2002, 111–113) and comprehensive archaeological investigations were carried out. The main focus was on the place of the Chapel ruins and the area east of the road from Stębark to Łodwigowo, because of the views of the authoritative historian Stefan M. Kuczyński (Kuczyński 1955/1987, 365 and maps). He, in turn, like all historians before and even after him, represented the wrong view of the Prussian historian Johannes Voigt of 1836, that the camp of the Polish king during the days before the battle was located south of Great Damerau Lake (Jezioro Dąbrowa Wielka) (Voigt 1836, 78). This led to the thesis that one has to look east of the said road to find the main battlefield of 1410. The monument site was built on the spot where the Grand Master, according to Kuczyński's views, had his command post.

In order to cope with the great task, archaeologists, assisted by the Ministry of Defence, received help from the Polish army who provided helicopters, trucks, minesweepers – used as metal detectors – and 160 soldiers. Frogmen were used in the waters on the edge of the battlefield; 2500 m³ earth was examined; 1,500 photos and 500 m of film were taken; and 400 sketches and drawings made. Because of the size of the area, investigation outside the area around the chapel was limited to search trenches and soil samples. In several places, phosphate analysis of the earth was carried out to search for mass graves. It is important to note that the area around the chapel was populated and used by people for centuries after the battle (Ekdahl 1994).

A list of the excavation sites and a detailed description of the findings will not be repeated here; a summary can be found along with many illustrations in my book about the Battle of Tannenberg, which was published in German in 1982 and translated into Polish in 2010 (Ekdahl 1982, 329–333; 2010c, 306–311). The excavation leader at the chapel, Romuald Odoj, in contributions from 1961 and 2014, reported on the results achieved by his team (Odoj 1961; 2014).

As for the grave finds, there were both primary and secondary graves in and around the chapel. Of great interest are the burnt (cremated) human remains that were discovered in several places inside and outside the chapel walls. In total, there were about 80 to 100 kg of burnt bones, estimated to be from 200 to 300 people. Many small molten silver lumps found there could have come from money for mercenaries (Ekdahl 2009, 49–50). How to interpret these finds is an important research problem, because the church did not permit the burning of corpses, except in the case of epidemics. Many unburnt bones were also discovered around the chapel and its surroundings, some in mass graves. Of particular interest is a grave that was originally round with a diameter of approximately 2 m. Half of it was cut off by the chapel wall showing that it was later than the grave (Fig. 22.2). In it were found skeletal parts from about 20 men under the age of 35 years. Several skulls and bones showed traces of sharp blows. Another mass grave with the bones and skulls of five people was discovered in the 'vestibule' of the crypt. They were of young men between the ages of 20 and 35, and some have injuries caused by sharp weapons such as swords or hatchets. In the graves, crossbow bolts and other military items, such as parts of a gauntlet, were found.

Outside the chapel wall a secondary grave with a 25 cm-thick layer of human bones was detected between two buttresses. It contained the remains of about 50 people. On the skulls and bones, traces of injuries could be observed. Between the bones, some crossbow bolts were found. There was also another secondary grave with the remains of about 70 people. This pit was almost square with a side length of about 3 m.

That summarises the rich finds in and around the chapel. Investigations east of the road from Stębark to Łodwigowo, where the historians and archaeologists expected the main battlefield to be found, were in contrast fruitless with regard to weapon parts and human remains. In some places the thick humus layer contained large amounts of medieval and newer ceramics.

Archaeological Excavations Towards the End of the 20th Century[8]

The archaeological exploration of the site by Polish scientists at the time of the 550 years celebration in 1960 was, after a preliminary investigation in 1979, continued in a first stage from 1980 to 1985 and in a second stage from 1988 to 1990. In the area of the chapel some more findings were made (crossbow bolts and other militaria), but in other areas the number of discoveries connected with the battle was very low. The results of all investigations were published in articles in the series 'Studia Grunwaldzkie' (vol. 1–3), edited by the Kętrzyński Institute in Olsztyn (formerly Allenstein). One of them, richly illustrated, deals with the human bones that had been found since the beginning of Polish archaeological research at Grunwald (Łuczak 1991). These human remains are now in the care of the Museum of Morąg, formerly Mohrungen.

New Evaluation of the Written Sources (Ekdahl 1965; 1982, 354–361; 2009; 2010c, 329–334; 2016a, 177–181; 2018, 243–246)

Archaeologists have to consult the statements of the historians and assume that they have analysed and interpreted the written sources correctly. If that is not the case, even

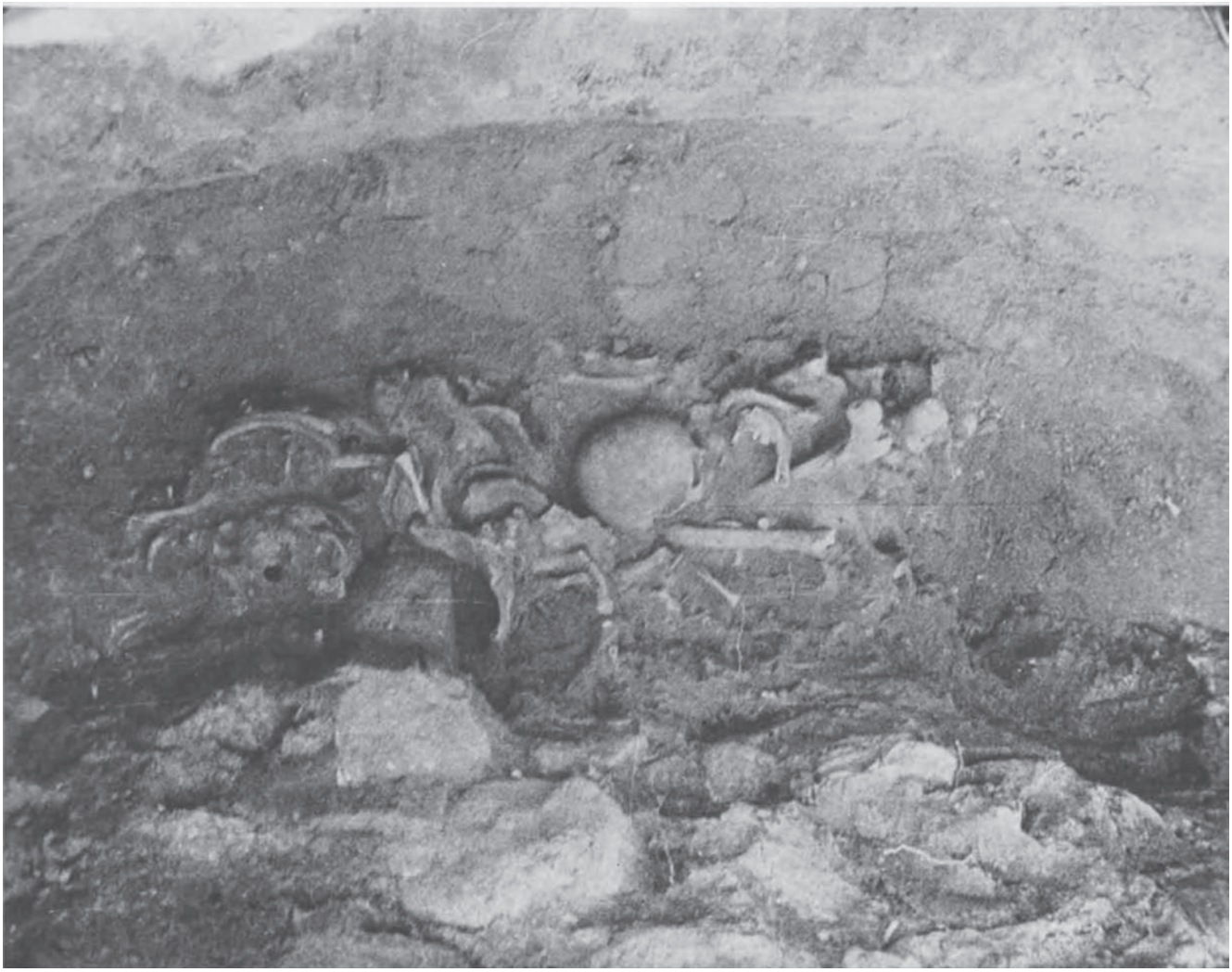

Fig. 22.2: Mass grave at St Mary's Chapel, half of which was cut off by the chapel wall. Muzeum Warmii i Mazur, Olsztyn, no. 5640. Photo R. Odoj 1960.

the best archaeological investigation will go nowhere. As was briefly mentioned above, research on Grunwald has always believed in the incorrect statements of the Prussian historian Johannes Voigt in 1836 and has therefore been caught in a cul-de-sac for more than 180 years. This concerns not only Poles, but historians of all countries. Their maps all contradict each other regarding the deployment of the armies and the course of the battle, but they all – like Johannes Voigt – hold the opinion that the Polish army's camp on the morning of 15 July 1410, was located at the southern end of the Great Damerau Lake. They are thus all incorrect.

In Voigt's description of the battle it is said that on 13 July 1410 the Polish king marched north to Gilgenburg (in Polish Dąbrówno), where he camped about 4 km south of the town with his force: *wo er eine halbe Meile südlich von der Stadt mit seiner Streitmacht lagerte* (Voigt 1836, 78).[9] As proof of his claim Voigt refers to the famous chronicle *Annales* of the Polish historian Jan Długosz from the second half of the 15th century. However, in that chronicle there is no talk of a camp *south* of the town: *et in planicie camporum supra lacum medio pene milliari a Dabrowno vocatum Dambrowskie iezioro, locat stativa* (Długosz 1997, 83). The lake in question is either the Great or the Small Damerau Lake (Jezioro Dąbrowa Wielka or Jezioro Dąbrowa Mała). Gilgenburg is situated about half-way between their northern and southern ends. In other words, Voigt has not provided any evidence to support the correctness of his claim. However, his interpretation was promptly accepted in research and carried on from generation to generation by historians and archaeologists from all countries, wrongly referring, as Voigt did, to Długosz (Ekdahl 2009, passim). The common depictions of the Polish army's march to the battlefield on the morning of July 15 are consistent with

this erroneous interpretation in the well-known book by the Prussian historian.

A well-known Polish variant of Voigt's thesis was launched by Andrzej Nadolski from the University of Łódź in the second half of the 20th century. According to him, the main battlefield is situated east of the road between Stębark (Tannenberg) and Łodwigowo (Ludwigsdorf) in an area he called 'Valley of the Great Stream' (Dolina Wielkiego Strumienia).[10] One of his followers is the British military historian Stephen Turnbull, who has published a widespread and oft-quoted book *Tannenberg 1410: Disaster for the Teutonic Knights* (Turnbull 2003, 36–37 and maps).

I conducted my own analysis, entirely different from the prevailing Polish research, in a seminar essay for Prof. Erik Lönnroth at Gothenburg University in 1965 (Ekdahl 1965), but only published it a long time later, most notably in a Polish conference book in 2009 (Ekdahl 2009; 2013a). I refer to the statement of the contemporary chronicler Annalista Thorunensis, a well-informed Franciscan monk from Thorn (Polish Toruń), that the Polish King's camp during the days before the battle was located in the north-west corner of Small Damerau Lake (Jezioro Dąbrowa Mała): *Fixit* [Władysław Jagiełło] *tentoria sua non longe a civitate Gilgenborg prope campum, qui dicitur Virczighuben* (in Polish Wierzbica) (Annalista Thorunensis 1866, 314). This statement has been totally ignored by research until now. It leads to a completely different conclusion about the march of the Polish army and the site of the future battlefield(s) (Plate 22.1). In my address at the Press Conference in the Museum of the Battle of Grunwald on August 15 2015, this was clearly expressed: 'I therefore assert that the "real" battlefield was not situated to the east and the south of Stębark, in the terrain of the so-called 'Wielki Strumień', as asserted by modern Polish historians and archaeologists, but instead to the east and the south of the village of Grunwald'.[11] A sketch, which I sent to Jonathan C.N. Coulston from the University of St Andrews at his request in 2011 sets out how I view the deployment of the armies before the battle (Fig. 22.3).

Polish archaeological research after the Second World War was very successful in the area of the chapel ruins, but could not locate the great battlefield of 1410. The reason for this was the erroneous interpretations of the written sources provided by the historians and the associated false assumptions about where the battle might have taken place.

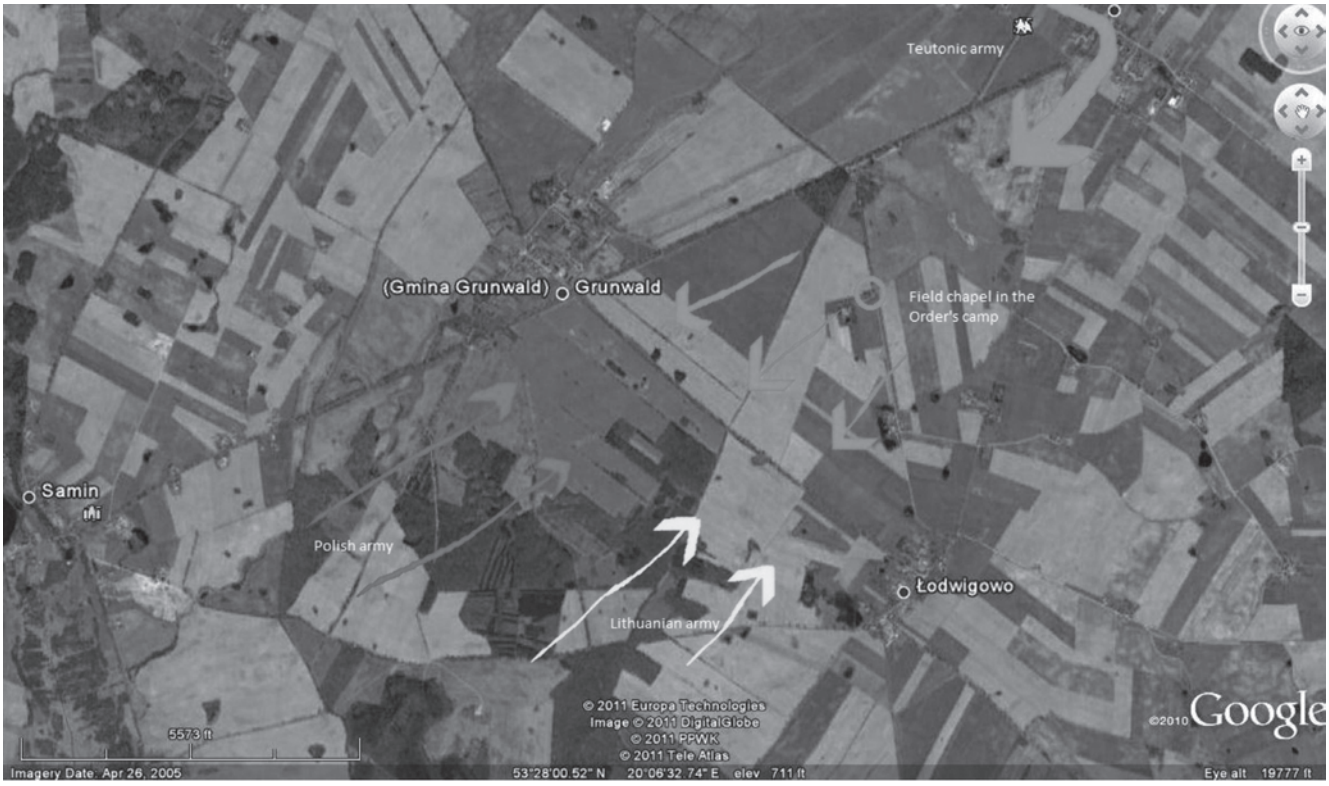

Fig. 22.3: Position of the armies before the battle. Sketch by S. Ekdahl for J.C.N. Coulston of 30.04.2011. © 2011 Europe Technologies. Image © 2011 DigitalGlobe. © 2011 PPWK. © 2011 TeleAtlas.

The Polish-Scandinavian Research Project 2014–2018

First Survey in 2014

In 2014, an important Polish-Scandinavian research project was initiated between the Grunwald Muzeum – Muzeum Bitwy pod Grunwaldem w Stębarku – and the Danish Archaeological Society Harja from Odense.[12] The project's aim was to try and locate the battlefield(s) of 1410 and find artefacts that would enrich the existing collection and which could be presented in the museum. The necessary permission for this was obtained from the appropriate conservationist and the planned undertaking was given the green light. It was agreed that the detector department of Harja would help to search for the battlefield(s) at Grunwald with modern metal detectors equipped with Global Positioning System (GPS) and that the Danish archaeologist, detectorist and computer specialist Glenn Abramsson would document the search tracks and sites of discovery and draw the relevant maps (Fig. 22.4).

As the managers of the museum – the director Szymon Drej and Piotr A. Nowakowski, the chief archaeologist – hoped to be able to verify the prevailing Nadolski thesis, the first search, for a week in September 2014, mainly took place to the east of the Stębark-Łodwigowo road (Tannenberg-Ludwigsdorf) in the area of the so called 'Valley of the Great Stream' (Abramsson 2014; Nowakowski 2015). Twenty-two of the participants were Harja members from Denmark and Norway, while 11 were Poles, most of them living in the United Kingdom. The search, however, was not successful (Ekdahl 2016a, 182–186). A total of 155 ha of land was searched for 799 hours, but the results were very disappointing, as very few military objects were found: a few arrowheads and bits and a part of a spur. The management therefore decided that in 2015 my research results would be taken into account, but without giving up Nadolski's views. This was confirmed in a letter to the magazine 'Mówią wieki' in September 2017: 'As stated above, our research is carried out *sine ira et studio*. For this reason, in 2015 we decided to explore zones which in the opinion of Sven Ekdahl were the proper area of the battle of Grunwald. This, however, does not mean that we have abandoned the verification of the hypothesis proposed by Andrzej Nadolski' (Drej/Nowakowski 2017). In my reply to the Museum I stressed that the letter should be regarded as a defence memorandum to show that the traditional guidelines had not been abandoned by the Museum's management (Ekdahl 2017c).

2015

Fifteen Harja members from Denmark and Norway and a dozen other detectorists from the United Kingdom and Poland joined the project in August that year.[13] The University of Gothenburg and the Polish-Scandinavian Research Institute (Instytut Polsko-Skandynawski) in Copenhagen (IPS) were represented by me, and Lithuanian Television (LRT Televizja) by Aleksandras Matonis from Vilnius. During the course of a week, eight fields mainly west of the Stębark-Łodwigowo road with a total area of 120 ha were searched for 681 hours

Fig. 22.4: Fields scanned with metal detectors 2014–2017. Map by G. Abramsson 2017. Google Earth © 2017 Google. Image © 2017 ONES/Airbus.

(Abramsson 2015; cf. Nowakowski 2016). The result was significantly better than the year before: we found parts of spurs, swords and iron gloves, three axes and many crossbow bolts and arrowheads (Ekdahl 2016, 186–195 with photos). Piotr A. Nowakowski later announced that the number of such projectiles was 37. A comparison with the very few finds from 2014 is striking. In 2015, as in 2014, many horseshoes were also found, but they are surely mostly from later farming and not related to the battle of 1410. The large amount of militaria on fields near the chapel is interpreted by both Nowakowski and myself as evidence that heavy fighting had taken place there when the wagon lagers in the Teutonic Order's camp were stormed and captured in the final stage of the battle. Several other findings have to do with the fact that the Chapel was a place of pilgrimage for a long time after the battle (Ekdahl 1994). When the same fields were investigated again in 2017, 2018 and 2019 under favourable weather conditions, a further large number of artefacts was found, not least in terms of militaria.

Of particular interest are the finds of crossbow bolts on both sides of the road halfway between Grunwald and Łodwigowo, where troops of the Lithuanian Grand Duke Vytautas (in Polish Witold, in German also Witowt) according to my research clashed with the left wing of the Knight's army (Ekdahl 2012a, 291–292). According to me, the main battlefields of King Jagiello's Polish army are situated farther to the north-west, closer to the village of Grunwald, but in 2015 it was not possible to search those fields because of various crops growing there. The most interesting areas are now owned by farmers simply because leading Polish historians and archaeologists have always considered them uninteresting. The museum acquired large land areas before the 1960 jubilee, but that was in accordance with the incorrect hypothesis described above. As a result, agreements with the landowners must be entered into before any search can take place on fields other than those owned by the museum.

2016

The search was continued during a week in September 2016.[14] It started with a solemn ceremony in the presence of, among others, the Marshal of Warmia and Mazury (in German: Ermland and Masuren) and the Director of the Ministry of Culture and Education in Olsztyn (formerly Allenstein). As in the year before I had been asked to give a speech (Ekdahl 2016b), and in this context I handed over bound copies of a work published by me a few weeks before in a Lithuanian book on the occasion of the 90th birthday of the historian Prof. Mečislovas Jučas in Vilnius: *Archäologische Grabungen bei Grunwald (Tannenberg, Žalgiris) in den Jahren 2014 and 2015* (Ekdahl 2016a).

Throughout the year the survey was competently organized by Jaroslaw Malecki M.A. of the Grunwald Museum in accordance with the decisions made by the Museum's management. Harja's participation in 2016 was also considered indispensable. Of the 26 detectorists that year, GPS search tracks from 11 members of Harja were recorded by Glenn Abramsson on a Google Earth map. During 470 search hours, 11 fields of approximately 100 ha were searched (Abramsson 2016). Apart from the findings in the surroundings of the chapel, the result was particularly good in some areas along the road between Grunwald and Łodwigowo.

Most militaria artefacts (crossbow bolts and arrowheads as well as other parts of weapons and equestrian equipment) were found in the fields between Grunwald and Łodwigowo, especially in the area marked as battlefield by two crossed sabres on the famous original hand-coloured map of East and West Prussia (etc.) by Baron von Schroetter of 1796–1802 (scale: 1:50,000) (Schroetter 1796–1802). Military artefacts from 1410 were also found west of the road between the two villages. The survey east of the road leading from Stębark (Tannenberg) to Łodwigowo – the area of the 'Great Stream Valley', according to the Nadolski thesis – produced no positive results. Some of the most important findings of that year were exhibited by the Museum.

The Search for Mass Graves

Metal artefacts can be traced by metal detectors, but to find mass graves other technical equipment is required, namely Ground Penetration Radar (GPR). It was therefore great news for the project when a Lithuanian GPR team led by TV journalist, editor and diplomat Aleksandras Matonis arrived at Grunwald on 16 September 2016 and was able to attend the opening ceremony of the exhibition.[15] The Lithuanians did not belong to the Harja group, and I was completely unaware of their plans to visit Grunwald.

On the following two days (a Saturday and a Sunday), the GPR team from Vilnius was able to spend several hours searching for mass graves. Since Matonis was very familiar with my Grunwald research, he asked me to suggest an appropriate area for their survey, which I did.

The results of this survey with ground penetration radar on 17 and 18 September 2016 were very exciting. Within an area proposed by me on fields north-east of the road between Grunwald and Łodwigowo (about halfway between the villages) 17 anomalies were found consisting of pits of different sizes, shapes and depths (Plate 22.2). The depths range from 1 to 2.4 m. In several of them, reflecting objects – probably made of metal – were traced. This indicates that they are not of natural origin (Vengalis 2016/2017).

This finding of course raises the question whether some of the anomalies could possibly be mass graves from the battle of 1410. As the technical expert Rokas Vengalis stated in his report of 29 September 2016, which was written in Lithuanian and translated into English in April 2017, a regular archaeological excavation is required to verify whether they are of natural origin or not (Vengalis 2016/2017).

2017

My aforementioned work *Archäologische Grabungen bei Grunwald (Tannenberg, Žalgiris) in den Jahren 2014 and 2015* about the survey with metal detectors in those years and its results were not welcomed favourably by the Grunwald Museum, whose management subsequently ended correspondence with me in October 2016.[16] In 2017, relations became more strained when I gave a lecture at the University of Haifa on 23 February and another at the University of Warsaw on 24 April,[17] and I also published two articles on my research and the results of the metal detectors surveys in the well-known popular historical journal *Mówią wieki* (Ekdahl 2017b; 2017c). In those lectures and articles I also mentioned the interesting discovery of anomalies in fields between Grunwald and Łodwigowo by the Lithuanian team using GPR, which greatly annoyed the management of the museum. Of course, I have never asserted that the anomalies are mass graves, but merely emphasized this as a possibility and stressed the necessity of a regular archaeological excavation to establish the facts.

On 24 August 2017, *i.e.* two weeks before my planned departure from Gothenburg to Grunwald for that year's survey, the management of the museum declared that I was not welcome to participate in the search, despite my membership in Harja and my function as IPS Secretary General (Ekdahl 2018; 2019a–c; cf. 2017a). Consequently I had to cancel the trip by ferry from Karlskrona to Gdynia and the stay at hotels in Poland. Despite the negative news as well as a later decreed news blackout concerning the survey and the findings, including the deletion of informative files on the internet, I received valuable information on the results, mainly from the Dane Glenn Abramsson and the Norwegians Trond A. Hansen and Kjell Kåsastul. The number of search hours was approximately 900 and the surveyed area of 7 fields was approximately 90 ha (Abramsson 2017). There were no important findings of militaria east of the Stębark-Łodwigowo road (according to the Nadolski hypothesis about the main battlefield in the so-called Valley of the Great Stream, 'Dolina Wielkiego Strumienia'), but the survey in the surroundings of St Mary's chapel and west of it at the Grunwald-Łodwigowo road produced excellent results. They were virtually the same fields that had already been searched in 2015, but due to the humid weather, with even greater success. Of the four years covered by the project until then, 2017 was the most rewarding. Among other things, approximately 65 crossbow bolts and 20 arrowheads were found, as well as parts of spurs, stirrups, gauntlets etc. (Plate 22.3). Harja Members from Norway and Denmark found two interesting spearheads, possibly Lithuanian or Prussian. Some of the projectiles seem to be of Tartar origin.

2018

The result of the survey in 2018 can be viewed as confirmation of the previous results of the years 2014 to 2017. Sixteen Harja members and about the same number of Poles were involved this time. During 570 hours of search, around 82 ha of land were searched (Abramsson 2018). Another survey in the 'Valley of the Great Stream' was very wisely omitted for this fifth year of search. Unfortunately, it was not possible to investigate the most interesting and still 'virgin' fields east and south-east of Grunwald because they were planted with oilseed rape. Therefore, the museum management relocated the search mainly to fields that had already been searched earlier. Nevertheless, and despite the dry soil with poor conductivity for the signals of the metal detectors, the result was rather good, as quite a lot of artefacts were found including, for instance, a well preserved spur with a wheel. It was discovered at the highest point of the road between Grunwald and Łodwigowo.[18] There were also some coins found.

Upon completion of this year's search, the discovered artefacts were exhibited on 21 September in the bureau of the museum at Stębark.

Consequences and Prospects

The project in its entirety, during the five years 2014–2018, has meant that a total of about 530 ha were investigated during more than 3,500 search hours. It has clearly established that the previously held thesis of a large battlefield east of the road from Stębark to Łodwigowo must finally be shelved. The logical consequence of all this is both obvious and at the same time painful for the Grunwald Museum. The imposing victory monuments and the museum were built for the anniversary in 1960 in accordance with incorrect assumptions about the march of the armies, their deployment and the site of the battlefield. They are located in a place that does not have much in common with the battle itself (Ekdahl 1965; 1982, 359–360; 2009; 2010c, 333–334).

In 2016, about 5 million Euros (22 million zloty) were granted for the construction of a new museum at Grunwald (Porowska 2017). Construction began in 2018. The site was determined years ago and, of course, cannot be changed. It is close to the parking lot near the road between Stębark and Grunwald, at a distance of a few hundred metres from the museum of 1960.

Of interest is a comparison with a similar problem experienced by the Bosworth Battlefield Heritage Centre in Leicestershire in the UK, commemorating the decisive battle of Bosworth on 22 August 1485, in the 'War of the Roses' between the families of York and Lancaster.[19] Recent research, at a cost of £1,000,000, has shown that the 1974 Heritage Centre was built in the wrong place in accordance with incorrect assumptions published one year before (Williams 1973), and that the battlefield is situated about 2 km further away. 'The Bosworth Battlefield Survey,' led by Dr Glenn Foard of the Battlefields Trust, ran for five years, combining documentary, topographical and fieldwork

research. The Project aimed to piece together the landscape of 1485, including Shakespeare's famous march, and to locate any evidence of the battle. A metal detecting survey of a huge area of land finally recovered a unique collection of medieval cannon balls and a scatter of small items lost by combatants in the battle. The most iconic of these is the Bosworth Boar, which was found in 2009. The Battlefield Survey proved that the Battle was fought about a mile south-west of Ambion Hill either side of the Fenn Land.[20] The management of the Centre has accepted this fact and has drawn up the following plan: all buildings, including the museum, will remain as before, but visitors can now follow a 'Battlefield Trail' across the fields and thereby get a panoramic view of the landscape together with audio and visual information about the battle during the walk. Corresponding agreements have been met with the many landowners affected. Would not a similar pragmatic solution also be suitable for the Grunwald Museum?

Shorter presentations on the new Grunwald research results highlighting various aspects are already available in English (Ekdahl 2018), Swedish (Ekdahl 2019a), German (Ekdahl 2019b), Russian (Ekdahl 2020a) and Danish (Ekdahl 2020b). There is also a four-language book with several attachments (Ekdahl 2019c). In 2017, an illustrated article was published in a German archaeological journal under the heading 'Mass graves from the Battle of Tannenberg?' (N.N. 2017), and the issue was discussed in June 2018 on a double page in the German newspaper *Welt am Sonntag* (Seewald 2018a). A few days later, an even richer illustrated article appeared in the internet edition 'Welt Online' (Seewald 2018b).

The great archaeological interest in the battle is in large part down to the fact that one has found only a few traces of other great battles of the European Middle Ages. An example of this is the famous Battle of Agincourt/Azincourt 1415 (Sutherland 2002/2015; 2006). There are outstanding, unique finds at 'Korsbetningen' of the battle between the troops of King Valdemar Atterdag of Denmark and the armed peasantry of Gotland in front of the walls of Wisby 1361, but this is an exception (Thordeman 1939–1940).

A Note

The search with metal detectors at Grunwald will hopefully continue in the coming years. A new survey took place in September 2019 but without participation of the Scandinavian archaeological society Harja (see Addendum).[21] Surveys on fields previously ignored by research would be very important and further finds would certainly support the results achieved already. Artefacts from the battle of 1410 are to be expected especially in the as yet un-investigated areas south and east of the village of Grunwald. It is most likely that there are also mass graves. However, these can only be detected by specialists using ground penetration radar. The Lithuanian side has offered to undertake this task, carry out appropriate archaeological excavations and also pay for the necessary financial compensation of the farmers concerned.[22] Whether the management of the Grunwald Museum agrees with such a solution, however, is doubtful because national feelings and national pride play a major role in this regard. It is hugely important that the anomalies discovered in 2016 in the fields between Grunwald and Łodwigowo are finally investigated, regardless of by whom, so that we will know whether they have a natural origin or are mass graves.

The Grunwald Museum and its managers deserve many thanks for taking the initiative in the successful project in cooperation with the Danish Archaeological Society Harja. The book by the Museum on the project, and the results achieved, remain to be seen. Its undertaking and its outstanding results are an important milestone in the history of battlefield archaeology. This success can be attributed to the fact that the international project was based on cooperation between researchers from several nations: Poland, Denmark, Norway, the United Kingdom and Lithuania, as well as – through my own research – Sweden.

Addendum

Thanks to the Editors' cooperation, I am able to add a short report on the results of the Polish survey with metal detectors at Grunwald from 14–21 September 2019.

In an internet post, to which Marek A. Janicki from the Warsaw University kindly drew my attention, there is an interview with Jarosław Malecki, who some months ago replaced the former chief archaeologist Piotr A. Nowakowski and organized that year's search.[23] It states that in 2019 about 70 ha of land were searched by about 60 detectorists from all over Poland and by a search delegation from Lithuania. They discovered over 60 crossbow bolts and arrowheads as well as parts of swords, axes and equipment for horse and rider (bits of horse bridle, spurs, stirrups and horseshoes, etc.). In addition, there were coins of the Teutonic Order and many artefacts from the period after 1410, as well as no fewer than 2 tonnes of scrap iron. To put that in context, from 2014–2018 a total of 5 tonnes was found.

Information on where the artefacts of 1410 were found is unfortunately not provided, but the published photos show previously searched areas east of the road from Grunwald to Łodwigowo. These are fields designated on the map from Baron von Schroetter (*c.* 1800) as 'Battlefield 1410'. It could not be established from these photos whether any 'new' fields were also searched.[24]

What are very important are the statements of J. Malecki that 'older theses' on the deployment of the armies between Tannenberg/Stębark and Ludwigsdorf/Łodwigowo, in the so-called 'Valley of the great Stream' (Dolina Wielkiego

Strumień), could not be confirmed. Instead, the Royal Army was lined up on the other side near Grünfelde/Grunwald, closer to the battlefield. This is why the victorious battle of the Polish king was named after this village.[25]

Thus, under the new chief archaeologist, the Grunwald Museum has obviously dared to rethink and reject the old theses, which date back to Johannes Voigt and, with a few exceptions, have been widely adopted in all international historical and archaeological research on the battle. It seems that the many years invested to get my analysis of the written and other sources accepted by the Polish colleagues have finally paid off.

The open-mindedness of Jarosław Malecki is, in view of the many consequences, a courageous decision that demands respect. It also opens up new prospects for cooperation between the Grunwald Museum and the Danish Archaeological Society Harja, together with the Lithuanian colleagues. In an email from the end of September 2019, Glenn Abramsson confirmed Harja's willingness to assist in future surveys at Grunwald. This is a message that everyone should be happy about!

Notes

1 The author thanks Mr James Harrison, Dallgow-Döberitz (Germany) for revising the English manuscript.
2 Ekdahl 1982, 14–37 ('Die Bedeutung der Schlacht für das historische und politische Bewusstsein in Polen und Deutschland im 19. und 20. Jahrhundert'); idem 1991; 1997b; 2010b; 2010c, 39–50; and 2013b.
3 The problem is discussed by Ekdahl 1982, 68–73; 2010c, 79–82. Also see idem 2010a, 8–9.
4 The problem of burying the dead after a battle in the Middle Ages is handled by Curry and Foard 2016.
5 For the following see Ekdahl 1982, 320–323; 2009, 49–50; 2010c, 299–302.
6 *in ecclesia parochiali lignea in Timbarg sepelirentur*.
7 For the following see Odoj 1961; Ekdahl 1982, 324–353; 2010c, 302–328.
8 For the following see Ekdahl 1982, 361–369; 2010c, 335–341; Nadolski 1991; Nowakowski, Mielczarek and Wawrzonowska 1991.
9 Voigt refers to the half *milliaria* mentioned by Długosz. See the following note. At the time of Voigt, a Prussian mile was about 7.5 km.
10 Nadolski 1990/2010; 1993. Also see, for instance, Biskup 1991, 80–81 and maps; Nowakowski 2005, fig. 142; Kwiatkowski 2010, 374.
11 Ekdahl 2015; 2016a, 200. Cf. the important essay by Białuński 2011 and the book by Gouguenheim 2012, 101–105.
12 For the following see Ekdahl 2016a; 2018; 2019a–c.
13 For the following see Abramsson 2015; Ekdahl 2015; 2016a, 186–195.
14 For the following see Abramsson 2016; Nowakowski 2017; Ekdahl 2018; 2019a–c.
15 The team of A. Matonis consisted of Rokas Vengalis (technical director), Saulius Palauskas, Ieva Černiūtė, and Eduardas Bareika (photographer and owner of a drone).
16 For the following see Ekdahl 2018; 2019a–c.
17 Invitation by the Museum of Polish History (Muzeum Historii Polski) and the Institute of History at the University of Warsaw (Instytut Historyczny UW). Lecture: 'Modern Battlefield Archaeology at Grunwald'.
18 Email from K. Kåsastul 17.9.2018.
19 There is much literature on the battle and its consequences, and also about the questions concerning the battlefield. I refer only to the online article 'Battle of Bosworth Field' (https://en.wikipedia.org/wiki/Battle_of_Bosworth_Field) and the homepage of Bosworth Battlefield Heritage Centre (https://www.bosworthbattlefield.org.uk).
20 See 'A Battlefield Lost and Found'. Online: https://www.bosworthbattlefield.org.uk/site-history.
21 Cf. emails from G. Abramsson to S. Ekdahl 31.1.2019 and 30.4.2019.
22 Information from Aleksandras Matonis during a conversation in Vilnius on 6.7.2018.
23 Email from 27.9.2019. See: https://zwiadowcahistorii.pl/coudalo-sie-znalezc-pod-grunwaldem-podsumowanie-vi-edycji-badan-archeologicznych-pola-bitwy/?fbclid=IwAR2tURZacydy0jS7-IDzeku61vG7wvUcrkg1ue-nZ82mxovhB8BzoiJsFB8.
24 For help with the image analysis, I thank Glenn Abramsson (email with map from 29.9.2019).
25 J. Malecki also stresses that the graves of the fallen must still be found, so much remains to be done.

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23

Contra Multitudinem Ruthenorum Armatorum: The Russian-Livonian Battle of Lake Smolino (1502) Reconsidered

Alexander Baranov

On 13 September 1502, during the Russian-Livonian War of 1501–1503 (for a general description of events see: Lenz 1928, 31–46; Kentmann 1929, 102–111; Bazilevich 1952, 473–481, 495–499, 521–522; Fennell 1961, 239–242, 254–256; Kazakova 1975, 221–234; Bessudnova 2007; Alexeev 2009, 398–405, 408–426, 430–431), a fierce battle took place between the Livonian Branch of the Teutonic Order and the Grand Duchy of Moscow on the shores of Lake Smolino, south of Pskov. The outnumbered Livonian army managed to defeat the Muscovite, Novgorodian and Pskovian forces. Limited documentary evidence concerning the battle has resulted in the growth of historiographic 'legends', and thus a new battleground was created in terms of the interpretation of the battle. While the Livonian sources, and Baltic German scholarship, considered the Battle of Lake Smolino as a momentous event that had a significant impact on the future course of history (Lenz 1929, 45; Kentmann 1929, 111; Wittram 1973, 57), Soviet and Russian historiography suggests otherwise (Bazilevich 1952, 499; Kazakova 1975, 234; Alexeev 2009, 423). Bazilevich tried to downplay the importance of the battle and called it 'unsuccessful' for the Livonian side. Attempts to reconstruct the battle are contradictory (Urban 1981, 424–425; Bessudnova 2007, 170–175). Kazakova (1975, 232–234) briefly delivers a comparison between the main Russian and Livonian sources describing the battle, while Alexeev (2009, 420–423), in general, repeats her account with a different conclusion, claiming that the outcome of the battle was rather undecided. Bessudnova (2007, 172) rightly concludes that the sequence of events is not entirely clear. Moreover, there has been no scholarly attempt to locate the battlefield. This paper will suggest a new framing of the Battle of Lake Smolino and its location based on an analysis of both Livonian and Russian primary sources.

I will first provide a brief overview of this period and the main actors in the conflict. In the second half of the 15th century, the political system to the east of Livonia changed dramatically due to the rise of the Grand Duchy of Moscow. The rulers of Livonia, namely the Teutonic Order, the archbishop of Riga and the bishops of Dorpat, Ösel-Wiek and Courland, on the one hand (for the most recent general overview of the Livonian medieval history see Brüggemann *et al*. 2018; for the organization of the Teutonic Order in Livonia see Jähnig 2011), and the Russian lands of Novgorod and Pskov on the other (for medieval Novgorod see Yanin 2008; for medieval Pskov see Arakcheev 2004; on their mutual relations see Valerov 2004), in spite of confessional differences and armed conflicts, shared strong political, economic and cultural ties (on the Russian-Livonian relations in general: Kazakova 1975; Dircks 1988; Angermann 2001; Selart 2007; 2008; 2015). The centuries-long *status quo* between the Livonian rulers and the neighbouring Russian lands ended with the establishment of the Muscovite protectorate over Pskov and the final submission of Novgorod in the 1470s. The Masters of the Teutonic Order in Livonia had to act in the light of this new reality and establish diplomatic relations with Grand Duke Ivan III of Moscow. The Grand Duke considered the Livonian territory an especially suitable path westwards. He wanted to use Livonia for his diplomats to receive European doctors, architects and cannon makers, as well as for the import of modern weapons, gun powder, warhorses, etc (Baranov 2017).

Meanwhile Livonian relations with Pskov had been souring. The 480 km-long borderland between Livonia and Pskov included water, marsh and woodland areas, and was therefore not clearly defined, resulting in various territorial conflicts between the Livonian rulers and the inhabitants of Pskov. The authorities in Pskov used Moscow's patronage and military strength as an argument against Livonia to acquire and hold disputed territories (Pickhan 1988;

Bessudnova 2016, 65–93). In this context, the Teutonic Order's Livonian Masters aspired to their corporation's indisputable hegemony over Livonia, and this is how their policies and rhetoric toward the Russians should be understood. In their correspondence, the Masters frequently referred to Russian 'schismatics' and 'unbelievers', who were threatening the very existence of Livonia, to justify their actions in the internal conflict with the archbishops of Riga. But they were not alone: all actors in this internal conflict used the enemy image of the schismatic Russians to justify their position or to compromise their opponents (Selart 2009). Yet, despite all the anti-Russian rhetoric, the Livonian Masters preserved the peace with the Russians, which was briefly interrupted only during the armed conflict with Pskov in 1480–1481. After the Muscovite intervention and the conclusion of the new peace agreement in 1481 (Baranov 2016, 266–281; Bessudnova 2019), the Livonian Masters of the Teutonic Order did not want to provoke the Russians to war again under any circumstances. The peaceful situation on the eastern border was supposed to help them achieve their political plans, namely the Order's hegemony over Livonia. The relationships with the Grand Duke of Moscow remained stable and even friendly until the 1490s. During this period, the Order succeeded in ending its internal conflicts, in addition to establishing good relations with the Archbishop of Riga, thus consolidating its control over Livonia. But the true test was yet to come. Various political, diplomatic, social and economic factors, which cannot be discussed here, led to the deterioration of the relationships between Moscow and Livonia in the 1490s. The erection of the mighty fortress at Ivangorod on the Russian-Livonian border in 1492, the constant movements of Russian troops near the border, and the dramatic closing of the Hanseatic merchant quarter in Novgorod in 1494 strengthened the suspicious approach of the Livonian rulers toward the Grand Duke and his intentions towards Livonia (Selart 2003; Bessudnova 2015, 171–226).

In 1494, Wolter von Plettenberg was elected as Master of the Teutonic Order in Livonia. He ruled the Order for over 40 years, until 1535, and faced numerous challenges during this long period (on Wolter von Plettenberg in general see Lenz 1928; Angermann 1985a; 1985b; Angermann and Misāns 2001; Bessudnova 2015, 106–132). The first and immediate one was the dangerous worsening of the relationships with Moscow and the possibility of war with this powerful neighbour (Wimmer 1985). The tensions on the border escalated after 1498, and in 1500 the Master finally decided to join the Grand Duke of Lithuania, Alexander (1492–1506), in his armed conflict against Moscow. Wolter von Plettenberg undertook two campaigns against Pskov: in the autumn of 1501, he managed to defeat the Russian army, which was sent to Livonia, and to plunder some areas near Pskov; in the autumn of 1502, he tried in vain to capture the strongly fortified city of Pskov itself, but was forced to retreat upon hearing of the forthcoming arrival of the Russian army from Novgorod. The combined forces of the Muscovites, Novgorodians, Pskovians and Tatars pursued Master Plettenberg and caught his army near Lake Smolino. On 13 September 1502 they attacked the Livonians. After the pitched battle, the Russians retreated, and Master Plettenberg led his forces back to Livonia. Thus, the alliance with the Lithuanians turned out to be useless, since the promised military help never appeared and the Master was forced to fight alone. The battle of Lake Smolino was the final act of the Russian-Livonian war, and the peace negotiations and the agreement of 1503 followed.

The Russian-Livonian war of 1501–1503 was the only war to take place during Wolter von Plettenberg's tenure, but this event, and the Battle of Lake Smolino in particular, have coloured Livonian historiography and Baltic German scholarship towards the Master as the 'saviour' of Livonia from the alleged imminent destruction and occupation by Moscow (Kienitz 1849; Angermann 1985a; 1985b). Wolter von Plettenberg was praised and glorified as a military genius, an ideal ruler and a true knight. At the end of the Order's *Chronicle of the Masters*, which was composed shortly after his death, we can find a summary of his achievements as seen in the 16th century: 'Wolter von Plettenberg reigned very successfully, won the battle with the Russians, died at a good age sitting on the throne and girdled with his sword' (Bunge 1847, 186; general overview of short Chronicles of the Masters: A. Thumser 2011, 205–219). This striking image of the aged wise ruler with the sword survived in numerous depictions of the Master from the 16th century to the present (Angermann and Misāns 2001, 31–32). The victories of the Master over the Russians, and especially the battle of Lake Smolino, played an important role in subsequent Livonian historiography, which was strongly influenced by the contemporary Muscovite destruction of the local political structures during the Great Livonian War in the second half of the 16th century (1558–1583). The Livonian victory over the Russians in the battle of Lake Smolino turned into the political symbol of the generation that witnessed the destruction of its homeland in 1558–1561 (Kreem 2013, 243–245). In this later historiography, there appeared many obviously fantastic details of the battle, which were continually and uncritically reflected in following chronicles and works. Already during his lifetime, Wolter von Plettenberg was mentioned together with Judas Maccabeus as an example of the true crusader and victorious commander who fought the enemy against all odds with God's help (Kreem 2013, 241). But if we leave aside the glorification of the Master and take a closer look at how exactly the battle of Lake Smolino was described in the sources and in the modern scholarship, we will find a very different picture. In this paper, I will address two important matters: the location of the battlefield and the course of the battle. The most important Livonian sources are a letter of

the anonymous Teutonic knight about the battle, which was written presumably immediately after the event (Arbusow 1905, Nr. 382, 276–279), and the remarkable treatise 'A pleasant story about the wonderful business of the lords of Livonia with the Russians and Tartars' (*Eynne schonne hysthorye van vunnderlyken geschefthen der heren tho Lyfffflanth myth den Rüssen unde Tartaren*), composed *c*. 1508 to promote the indulgences campaign in Westphalia and Lower Saxony for the Teutonic Order in Livonia (Schirren 1861, 151–155; Arbusow 1910; Benninghoven 1962; Ehlers 2007, 385–402; M. Thumser 2011; Kreem 2013). The treatise is a very specific source, which provides a dark picture of 'horrible' and 'cruel' Russians and their ruler, the Grand Duke of Moscow. Later Livonian chronicles of the 16th century written by Balthasar Russow and Johannes Renner added some details to the account of the *Schonne hysthorye* (Russow 1584, 33–34; Hausmann and Höhlbaum 1876, 133–135). The Russian sources are represented by the chronicles of the 16th century from Pskov and Moscow (Bychkov 1859, 242; Platonov 1901, 256; Nasonov 1941, 87–88).

Concerning the location of the battlefield, the Livonian sources describe this military event as a battle 'against the multitude of armour-clad Russians near Pskov' (*contra multitudinem Ruthenorum armatorum … in campis prope Plescoviam*) (Bruiningk 1904, 227) and do not give any more precise information. The 'Voskresenskaya' chronicle of Moscow defines the place as 'near Smolino' (Bychkov 1859, 242). Yet the so-called Russian 'First' chronicle of Pskov does mention the exact location of the battlefield: according to this chronicle, the Russian forces caught the retreating Livonians *v ozerovakh na mogilnike*, 'on the burial ground in [or between] the lakes' (Nasonov 1941, 87). If we look more closely at the map of the region, we can immediately recognize this as the area between the Lake Smolino and Lake Glukhoe to the south. Pskovian archaeologists confirmed the high concentration of the burial grounds of the 14th–15th centuries in the vicinity of the modern urban-type settlement Palkino on the south-eastern shore of the Lake Smolino (I am grateful to Sergey Salmin, a Senior Research Fellow at the Pskovian Archaeological Centre, for this consultation). Two roads lead to the Palkino area from Pskov: one from the north, from Izborsk, and another one from the east. The northern Izborsk region was plundered by the advancing Livonian army before the unsuccessful siege of Pskov, thus making the eastern route to the Lake Smolino a likely retreat for the Master Plettenberg and his forces. The Pskovian chronicle mentions that, following the siege of Pskov, the retreating Livonians burned the bridges on the rivers Cheryokha and Mnoga to slow down the Russian army, both located to the south of Pskov. After that they turned to the west and crossed to the western side of the Velikaya river, continuing their march to Lake Smolino (Nasonov 1941, 87). Overall, the battlefield was presumably located in the triangle between Lake Smolino to the north, the Lake Glukhoe to the south and the Smolinka River to the east (Plate 23.1; I am grateful to Alexander Krasnikov and Evgeniy Sherstniov for maps and illustrations).

The reconstruction of the course of the battle is a more complicated task, since the Livonian and Russian sources deliver completely different pictures. For example, the anonymous Teutonic knight, who participated in the battle, speaks about the good order and careful advance of the Russian battle formations (Arbusow 1905, Nr. 382, 279), while Balthasar Russow, the author of the later Livonian chronicle, vividly describes loud cries and a wild charge of the Russian warriors (Russow 1584, 34). The chronicles of Pskov and Moscow refer to a first Russian attack on the Livonian *kosh* (camp or wagon train), which is completely missing in the Livonian sources (Bychkov 1859, 242; Nasonov 1941, 87). The numbers of the combatants, as is usual in medieval sources, are another problem, since the reported size of the Russian forces varies from 18,000 up to 90,000 warriors with an additional 30,000 Tatars (Russow 1584, 34; Hausmann and Höhlbaum 1876, 134; Arbusow 1905, Nr. 382, 279). Needless to say, all those numbers have nothing to do with reality and they exceed by far the Russian manpower resources and logistic limits of the period. To demonstrate, in the campaign of the previous year (*i.e.* 1501) against Livonia, the Russian forces consisted approximately of 5,000–6,000 warriors (Kazakova 1975, 223). According to the letter of the anonymous Teutonic knight, the Livonian forces consisted of 2,500 heavy mounted warriors, including 433 brothers and sergeants of the Order (Plate 23.2), and of another 2,500 infantrymen, including *Landsknechte* – the German mercenaries (Plate 23.3; Arbusow 1905, Nr. 382, 279).

There were also a few hundred Estonian baggage train peasants, and some crews with the field artillery, which was previously used during the siege of Pskov. Overall, the Livonian army totalled approximately 5,500 men. On the other side, the Pskovian forces formed the backbone of the advancing Russian army. From the 'First chronicle' of Pskov, we know that the city of Pskov itself maintained 300 of the best equipped heavy cavalrymen, as the retinue of the local prince and deputy of the Grand Duke of Moscow (Plate 23.4; Nasonov 1941, 58).

In addition to this, there were another estimated 600–700 mounted warriors, which is a force of about 1,000 Pskovian heavy cavalry. Other Pskovian city-fortresses, such as Velye, Voronach, Gdov, Opochka, Ostrov, Izborsk etc, were probably able to maintain much smaller forces of 50 up to 150 cavalrymen. All in all, we can suppose at most up to 1,500–2,000 additional mounted warriors from the land of Pskov. Those were the best-equipped and professional combatants. The Pskovian infantry was of lesser quality and may be estimated in total as 4,000–5,000 conscripts and volunteers, plus some mercenary hand gunners (Nasonov 1941, 57). Thus,

taking into account the need for the garrisoned troops, the Pskovians were able to send against the Livonians no more than 5,000 men: approximately 1,500 mounted warriors, some mercenary hand gunners and *c*. 3,000 infantrymen. The additional forces from Novgorod included about 3,000 cavalrymen: probably 1,000 Novgorodians, 1,500 Muscovites and no more than 500 Tatars in the service of the Grand Duke of Moscow (the anonymous Teutonic knight speaks of 3,000 cavalrymen: Arbusow 1905, Nr. 382, 279). Daniil Shchenya, the Russian commander, organized his force of about 8,000 warriors into five tactical units: forward and main regiment, regiments of right and left 'hands' and the so-called 'watch' regiment with the baggage train (Bychkov 1859, 242). From the report of the anonymous Teutonic knight, we learn that the Livonian army was divided into three units. There were two bodies of heavy cavalry, one commanded by the Master, Wolter von Plettenberg, and the other by Land Marshal, Johann Plater, while the infantry were led by Archbishop Michael Hildebrand of Riga, to whom was entrusted the main banner of the Order. The anonymous knight points out that the task of the Land marshal's unit was to deliver a decisive blow to the enemy (Arbusow 1905, Nr. 382, 279). I propose, therefore, that this heavy cavalry unit waited in an ambush position not far from the battlefield, possibly between the hills and forests in a south-easterly direction. The main body of the Livonian army lined up between the Lakes Smolino and Glukhoe with the infantrymen of the Archbishop to the left and the heavy cavalry of the Master to the right (Plate 23.5).

The Russian sources indicate that the advancing Russian army received false rumours about the flight of the Livonians from the battlefield and firstly attacked the Livonian camp, which was defended by the Estonian baggage train peasants. The Russian chronicles describe the abandoning of the camp as a tactical decision of the Master, but it also seems plausible that the Livonians did not have enough time to cross the Smolinka river with their trains before the battle. The Estonian peasants were put to the sword and, according to the Russian chronicles, the Muscovites and the Pskovians began to fight each other for the spoils (Bychkov 1859, 242; Nasonov 1941, 87–88). It is hard to determine whether this description was supposed to excuse the unsuccessful outcome of the battle. In any case, the Russian forces continued the pursuit of the allegedly fleeing Livonians, crossed the shallow river Smolinka and encountered the Livonian battle formations. The field artillery of the Master perhaps managed to fire some rounds at the oncoming enemy, but it seems that it had no significant impact on the course of the battle. The Livonian army certainly used its artillery during the unsuccessful siege of Pskov, but available sources do not provide any details regarding the role of the artillery during the battle of Smolino. According to the report of the anonymous Teutonic knight, the heavy cavalry of the Master charged the centre of the Russian army. Then, the infantry of the Archbishop attacked one of the Russian wings, and in this case we can suppose that it was the regiment of the right 'hand'. Both the anonymous knight and the author of the *Schonne hysthorye* claim that the Master and his horsemen succeeded in breaking through the enemy lines. Since the Russian centre was well organized in depth, it is very likely that Wolter von Plettenberg managed to rout only the regiment of the left 'hand'. He continued to pursue the fleeing enemies and soon became lost to the view of the Livonian infantry (Plate 23.6).

At this point the remaining mass of the Russian warriors turned against the Archbishop of Riga and surrounded his forces. The anonymous knight mentions the Tatars and *Landsknechts* who furiously charged the Livonian infantry. In scholarship, those *Landsknechts* were literally understood as being western or German mercenaries (Bessudnova 2007, 182), but it seems that the knight who wrote our letter was using German terminology, and really meant local Russian mercenaries, like the Pskovian hand gunners. In any case, the Russian attack was devastating and, according to Livonian sources, the Russians reached the position of the main banner of the Order and even tore a part of it (Arbusow 1905, Nr. 382, 279). The famous diplomat and writer, Sigismund von Herberstein (1486–1566), claimed later that 400 Livonian infantrymen perished during this fight (Herberstein 1571, 113). At this crucial point the Land Marshal, Johann Plater, led his unit out of the ambush position and struck the Russian forces from behind (Arbusow 1905, Nr. 382, 279). The seemingly unexpected charge of the Livonian heavy cavalry succeeded in putting the Russians to flight (Plate 23.7).

One of the Pskovian princes tried to rally his men, but, according to the Pskovian chronicle, he was instead repeatedly cursed by fleeing Pskovians (Nasonov 1941, 88). The Master returned only after the battle was decided. The author of the *Schonne hysthorye* narrates that, following the battle, the Livonians found numerous chains, which were prepared for them, since the Russians believed that no fighting would be necessary to capture the Livonians (Schirren 1861, 154). It seems that this literary topos was originally borrowed from the *Histories* of Herodotus, which described a Spartan attack on the city of Tegea. The Spartans brought chains to enslave their enemies, but were utterly defeated and ended up as prisoners in their own chains (see Gouguenheim 2013, 13). The author of the *Schonne hysthorye* understands the victory over Russians as a miracle, as a clear sign that God and the Virgin Mary protect Christian Livonia from 'heretical' Russians (Schirren 1861, 153–154). The Livonian prelates declared every anniversary of the battle as a feast day equal to Easter. The Master of the Order and his officials founded several church benefices to the honour of the Virgin Mary (Schirren 1861, 154; see also von Bruiningk 1904, 226–227).

To sum up, my analysis of the course of the battle shows that the actions of the Master Wolter von Plettenberg were

not exactly decisive for its outcome. The steadfastness of the Livonian infantry (see also Arbusow 1905, Nr. 371, 266) and of the German *Landsknechts* and the surprising attack of the heavy cavalry under command of the Land marshal Johann Plater were the two key factors that helped the Livonians to hold out against the superior Russian forces. The Master deserves the credit for the general plan of the engagement, but his prolonged pursuit of fleeing enemies did not allow him to influence the course of a battle personally.

A final remark: according to one late Livonian chronicle, Master Wolter von Plettenberg promised to make a pilgrimage to Jerusalem if he won the battle. After the victory the Master was not able to go to the Holy Land, and one of his local commanders, Rupert de Grave, undertook the pilgrimage instead. In addition to this narrative from the 17th century we possess the contemporary documentary evidence of the journey of Rupert de Grave who visited the Holy Land and Jerusalem in 1525, almost 500 years earlier (Kreem 2013, 245). Thus, the battle discussed in this paper has an unexpected historical connection between Wolter von Plettenberg and the Holy Land.

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