

The Roman Bath-house at Humeima  
in its Architectural and Social Context

by


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ABSTRACT

In early second century Provincia Arabia, a Roman fort was built next to the Nabataean settlement of Hawar (Humeima in modern Jordan). Excavation indicates that Hawar's fort-complex contained many of the components traditionally associated with Roman forts, including an external bath-house.

This thesis places Hawar's bath-house in both its architectural and social-cultural context. The first goal is achieved by comparing this bath-house with 172 other baths associated with Roman forts, and with 175 baths in the ancient Near East. The analysis reveals that this is a typical Roman military bath. The second goal, to recreate the bath's social context, is approached by considering evidence from other sources about the purpose of this building, who used it, when it was used, and how it was used. Two appendices contain catalogues of comparative bath material. A third appendix argues that this Roman bath was used into the early Islamic period (c. 687-750).

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for this purpose. Finally, I would like to thank all my friends and family for the great boost provided not only by their continuous support, but also by their faith in my abilities.

DEDICATION

To my Dad

Who never got to see how I turned out

But would have been pleased

## CHAPTER 1

### Introduction

At the site of Humeima (ancient Hawar) in southern Jordan are the remains of a Roman fort (see Figures 1 and 2). Outside the fort are the remains of a contemporaneous bath-house, fed by a water supply which was regulated by a stopcock of Roman design and dimensions. Since Roman forts usually had their own bath-house and since auxiliary forts (like Hawar) normally had a bath-house located outside the fort, it is probable that Hawar's bath was built to serve the fort's garrison.

The military structures at Hawar consist of the fort and external bath-house, plus an 11 x 15 m watchtower 2 km to the southwest. The information which can be obtained from these structures can make significant contributions to our understanding of the military's role in Roman Arabia--a topic which is still not well understood (Isaac 1990: 118-19; Fiema 1995).

The excavation and analysis of Hawar's military structures in particular can advance our knowledge for several reasons. The first reason is simply that Hawar's fort is one of only a very small number of excavated forts in either Jordan or in the Roman Near East (Parker 1986: 45; 1995; cf. Kennedy & Riley 1990: 16).<sup>1</sup> In addition, Hawar's fort, built in the early second century, is currently the earliest known fort in Jordan (Parker 1995: 255), so it can help us understand military arrangements in this little-understood first century of direct Roman control. Moreover, Hawar's fort was clearly of some importance, as it is the largest known auxiliary fort in Jordan (Parker 1995: 255).

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<sup>1</sup>Excavation on the fort began in 1993 and is still continuing (see Oleson et al. 1994 & 1995). The bath-house was excavated in 1989 (see Oleson 1990). The watch-tower has not been excavated; surface pottery suggests it was in use in the late Roman/early Byzantine periods (Eadie 1984: 219).

Figure 1: Location of Humeima in the Near East

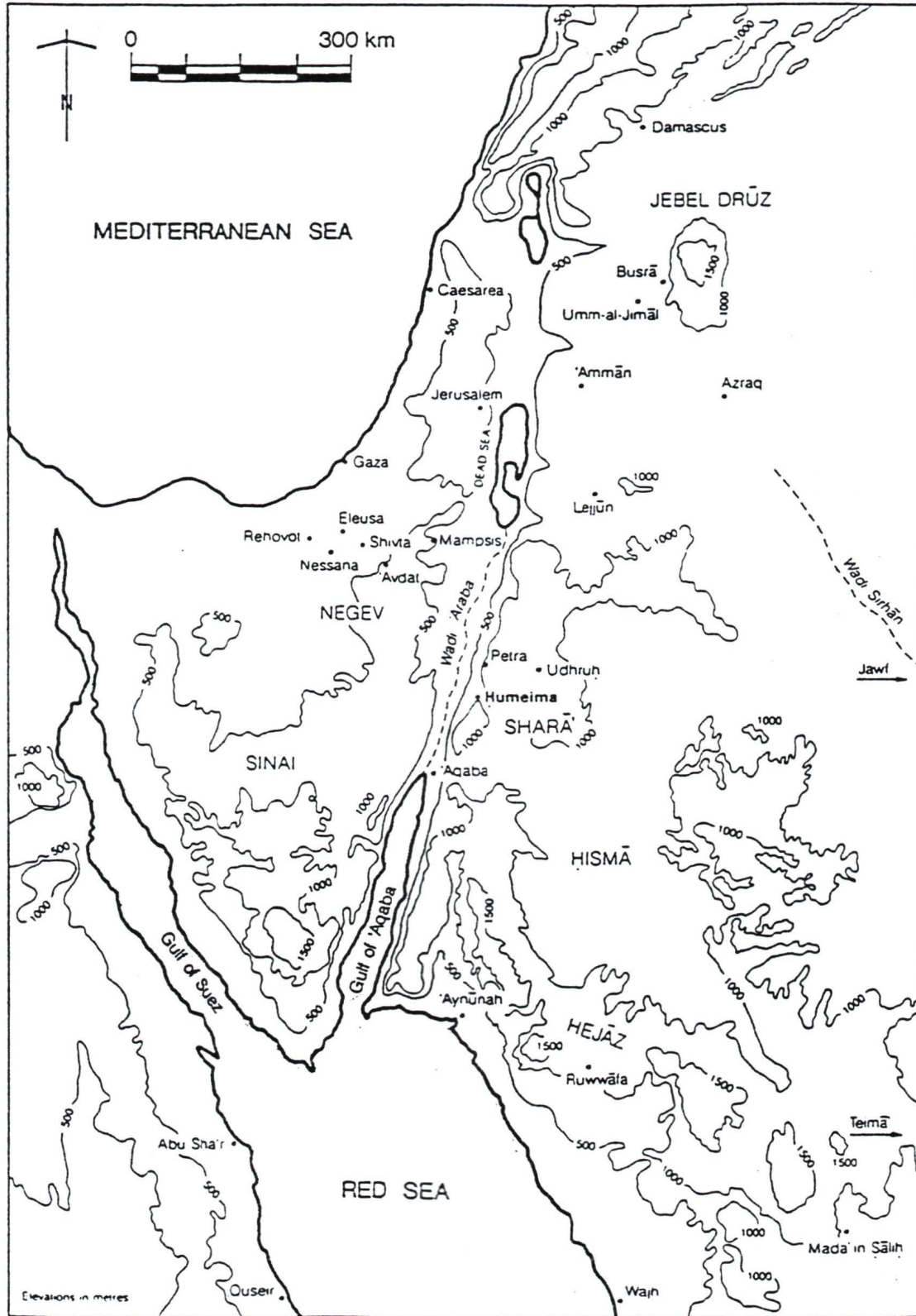
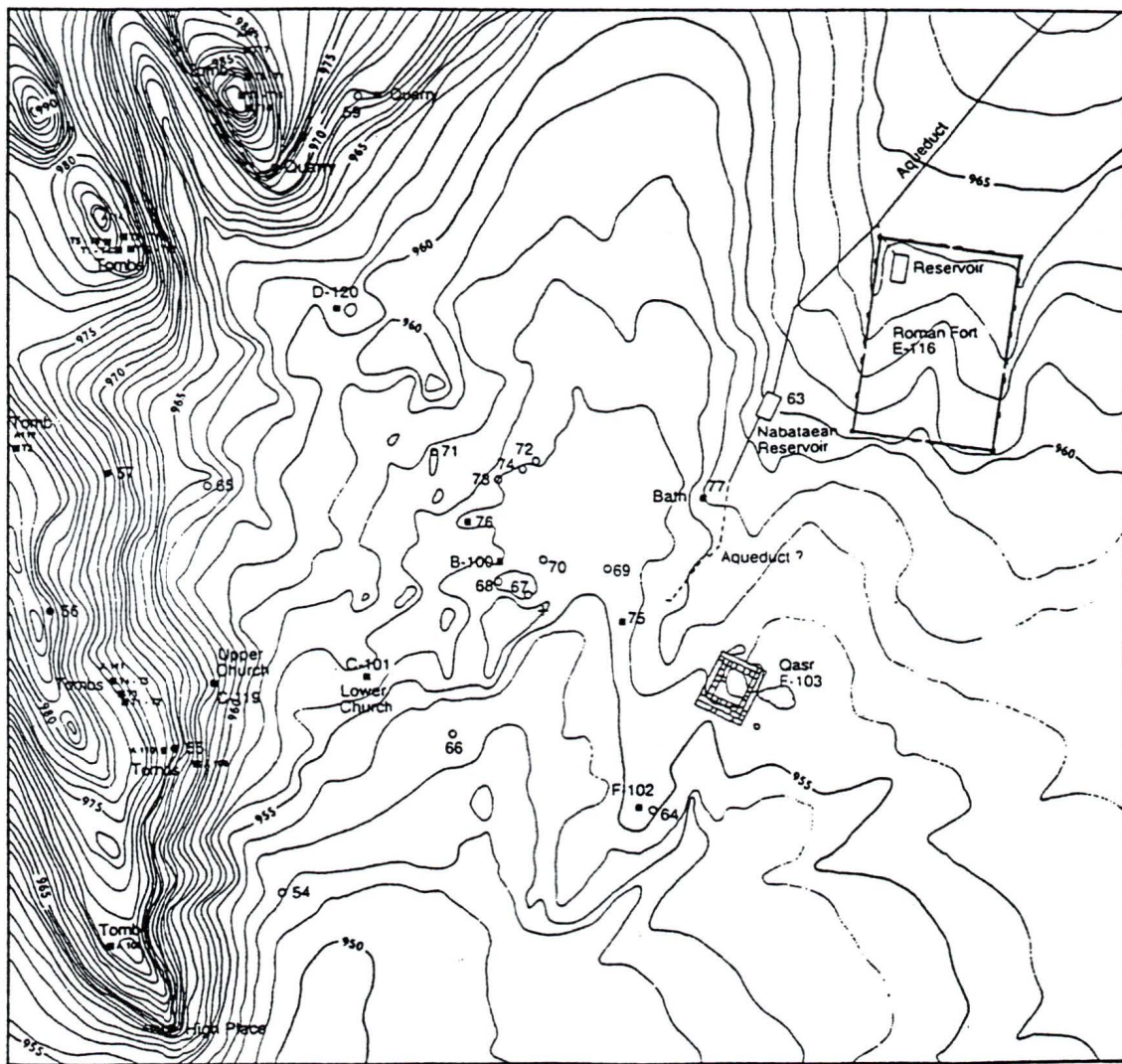


Figure 2: Humeima--General Site Plan

+



Brian Cannon Stephen Copp

+ HUMEIMA GENERAL SITE PLAN

- rock-cut cistern
- built cistern
- structures
- + main datum



But, most importantly for the purposes of this thesis, this fort in the middle of the Jordanian desert is associated with a bath-house which is typical of the bath-houses outside auxiliary forts in other parts of the Empire.

My first goal in this thesis is to put this bath-house in its architectural context and to show how it is a typical Roman military bath. My second goal is to recreate the social context of this bath-house, and to suggest how the building might have been used. As regards the second goal, it is unfortunate that the interior of the bath-house was cleaned out in the post-Classical period. As a result, the building contained none of the every-day artifacts (e.g., strigils and hair-pins) found in other bath-houses. In order to put this bath into its social-cultural context, therefore, I will have to make inferences based largely on the usage patterns suggested for other bath-houses.

The thesis consists of four chapters and three appendices. The remainder of this chapter will set up the social-historical context for this bath by outlining the position of Hawar in regional history, by stressing the cultural importance of Roman baths, and by reviewing the evidence for the use of baths by Roman soldiers.<sup>2</sup> Chapter 2 will provide an architectural context for Hawar's bath in relation to other military and Near Eastern baths. Chapter 3 will give suggestions, based primarily on ancient sources, for how and why this bath might have been used (e.g. who used it? how did they use it? when did they use it?). Finally, Chapter 4 will briefly summarize the results of these investigations and offer suggestions for subsequent research.

Appendices A and B contain comparative material which

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<sup>2</sup>This review of Roman social history will range very wide in chronological and geographical terms, since written evidence relating to military bathing practices is scanty.

will be referenced throughout the body of this work. Appendix A is a catalogue of baths in, or just outside, Roman (or Byzantine) forts; Appendix B is a catalogue of baths built in the Near East between the fourth century B.C. and A.D. 750. Appendix C addresses the possibility that Hawar's (Roman) bath-house might have remained in use in the seventh century, after Hawar came under Islamic control.<sup>3</sup>

### Introduction

The bath-house which is the subject of this thesis is located at Humeima in southern Jordan. Humeima is located 50 km southeast of Petra and 80 km north of Aqaba (see Figure 1). It is located in the Hisma desert: a "bleak and barren [plain of]...dried mudflats and sand...punctuated by craggy peaks of sandstone" (Bowersock 1983: 8). This was an extremely arid location in antiquity, and it remains so today, receiving an average of 95 mm of annual rainfall and, in poor years, as little as 40 mm (Eadie & Oleson 1986: 54).

### Humeima in its Historical Context

The site of Humeima has been used by humans since prehistoric times.<sup>4</sup> In the historical period, the site was first settled in the early first century B.C. by the

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<sup>3</sup>This thesis represents the state of my knowledge about Humeima and Near Eastern baths up to May 1996 when the thesis was submitted to my defense committee. Between May and September 1996 (when the thesis was defended) I travelled to Jordan, did some probes in and around Humeima's bath-house, excavated a Nabataean bath-house at Wadi Ramm, and visited two bath-houses (at Amman and Wadi Musa) which are not in my catalogues. After much deliberation, I have decided not to include any information obtained since May 1996 in this work as a) the new information does not conflict with any of the findings of this thesis and b) I thought it more appropriate to leave the thesis as defended.

<sup>4</sup>Palaeolithic and Neolithic flints have been collected on the site (Oleson et al. 1989: 27).

Nabataeans (Ouranios' Arabika in Jacoby 1958: 675 F1b, see below). The Nabataeans controlled a territory encompassing the Negev, parts of the Sinai Peninsula, the northern Hegaz, the Moab, and the southern Hauran at least as far north as Bostra (Busrā) (Patrich 1990: 21; see my Figure 1). In the late fourth or third century B.C., the Nabataeans were described as wandering pastoralists who had grown rich transporting frankincense, myrrh, and valuable spices from southern Arabia to the sea (Diodorus Siculus 19.94, probably based on Hieronymos of Cardia). By the first century B.C., a major change had occurred in Nabataean culture. The Nabataeans were no longer strictly wandering pastoralists. Strabo (16.4.26) reports that many lived in costly stone houses in unwalled settlements.<sup>5</sup> The remains of their settlements lined the Nabataean trade-routes radiating out from Petra (Graf 1992b: 970).<sup>6</sup>

The Nabataean settlement at Humeima was one such settlement, located on the most accessible route from Petra to the Gulf of Aqaba (Bowersock 1983: 8). According to Ouranios' Arabika (in Jacoby 1958: 675 F1b), the settlement was founded in the early first century B.C. by the Nabataean king Aretas III (reigned c. 87-62 B.C.).

Auara: town in Arabia, so named by Aretas, son of Obodas, as a result of an oracle given to his father. For Aretas set out to investigate the oracle, which was 'to seek a place auara'--that is 'white' in Arabic or Syrian. When Aretas had arrived and was keeping watch, there appeared to him an apparition, a man clothed in

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<sup>5</sup>The transformation of Nabataean culture as reflected by these two passages has been discussed by many authors including Bowersock 1983: 16-17, Oleson 1995, and Patrich 1990: 21-26. Other ancient literary passages mentioning the Nabataeans are discussed in detail by Bowersock 1983, and (more briefly) by Patrich 1990: 21-26. General descriptions of Nabataean history and culture can be found in Bowersock 1983, Glueck 1965, Hammond 1973, Patrich 1990, Graf 1992b, and Dudley 1992.

<sup>6</sup>E.g., along the Petra-Gaza road (Cohen 1982).

white riding a white camel, and when the apparition disappeared, there appeared spontaneously a craggy hill, firmly rooted in the earth. There he founded a town. (trans: Oleson 1990: 145)

The town which Ouranios refers to as Auara (αἰώρα in Greek) is Nabataean Hawar.<sup>7</sup> The identification of Hawar with modern Humeima has been firmly established by reference to a Byzantine map of the early Roman Empire:

Compelling evidence that Avara [Hawar] was the ancient name of Humayma is supplied by the Peutinger Table, which in its list of Arabian sites locates Avara 20 Roman miles S of Zadagatta (Sadaqa) and 23 miles N of Praesidio (Khirbet el-Khalde). These figures, 30 km and 36 km respectively, are in fact the exact distances between Sadaqa-Humayma and Humayma-Khirbet el-Khalde (Oleson et al. 1989: 272).

Nabataean Hawar is the most significant Nabataean settlement known in the Hisma (Graf 1983: 660; Oleson et al. 1989: 272; Oleson forthcoming [a]: 1). Clearly, a great deal of effort was expended in order to make the settlement viable. In the desert, a settlement is only viable if it can access enough water to maintain it through the rainless seasons. At Hawar, dozens of cisterns, two large reservoirs, a wadi dam, and a 27 km aqueduct were built in the first century B.C. or A.C. in order to supply the community with water.<sup>8</sup> Hawar's aqueduct is longer than any

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<sup>7</sup>It is not entirely clear whether the Nabataeans referred to their settlement as "Hawar" or "Hawara". The name "hwr" (Arabic "Hawar") appears in a late-first century Nabataean graffito carved near the settlement's "High Place" (see Graf 1992a for a discussion of this graffito). However, the presence of a vowel after the "r" in Greek and Latin spellings of the name (e.g. Αἰώρα, Havarra, Hauare, Hauanae) may suggest the Nabataeans pronounced "hwr" as "Hawara". Alternatively, the non-Nabataean spellings might reflect a Graeco-Latin tradition of feminising city names.

<sup>8</sup>On the Nabataean water-works see Oleson 1987, 1988, 1990, 1995.

other aqueduct built by the Nabataeans.<sup>9</sup> Given the magnitude of the effort to supply this community with water, it is viewed as a deliberate effort of the Nabataean king "probably to attract settlers, caravans, and a market" (Oleson forthcoming [a]: 1).

It will be many years before archaeology can reveal the full extent of the Nabataean settlement at Humeima. The occupational remains at Humeima cover an area of approximately 1 sq. km (Eadie & Oleson 1986: 54). Nabataean pottery sherds and stone wall blocks incised in the characteristic Nabataean fashion (see Hammond 1995: 219) are spread all over the surface of the site.<sup>10</sup> The ruins of approximately 40 structures (mostly houses) can be seen on the surface, but most of these structures probably date from the early Islamic period (Oleson forthcoming [a]: 10). To discover the archaeologically uncontaminated remains of the Nabataean settlement it will be necessary to look beneath the later occupation levels. To date, two Nabataean structures, possibly representing a house and a temple, have been found under later structures (house--under the Roman period bath: Oleson 1990: 153; temple--under a Byzantine period church: Oleson et al. 1993: 130). Because of the great depth of the overlying strata, it will be many years before the full extent of the pre-Roman habitation can be judged. However, on the basis of the water-supply system and local food resources, Oleson (forthcoming [a]) has hypothesized that the permanent population of the settlement center hovered around 654 persons in the Nabataean to early Islamic periods, and the regional population hovered around

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<sup>9</sup>The aqueduct at Petra was 6 km long; the aqueduct at Wadi Ramm was 1.5 km long (Oleson 1995: 714).

<sup>10</sup>Eadie (1984: 220) reports that "Nabataean painted and plain ware appear on virtually every square metre of the site and throughout the region".

817 persons.<sup>11</sup>

In A.D. 106, under Trajan's principate, the Nabataean kingdom became the Roman province of Arabia. Very little is known about the annexation process, which was apparently orchestrated by the governor of Syria (Cassius Dio 68.14).<sup>12</sup> By 107, Egyptian troops (members of the legio III Cyrenaica) were stationed in Arabia, and Arabia had its own governor (PMich 466).<sup>13</sup> There is no literary mention of battles associated with the annexation, and Arabia's transformation from a Roman client kingdom to a Roman province was probably relatively peaceful (Bowersock 1983: 81; Parker 1986: 125).<sup>14</sup>

Speidel (1977) has collected the information on the Roman troops stationed in Arabia in the second century (and later). The identity of Arabia's first (and only) permanent legionary garrison until the late third century was the legio III Cyrenaica (Speidel 1977: 693 & 699).<sup>15</sup> However,

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<sup>11</sup>Oleson's calculations also allow for the probable number of domesticated livestock and camels (see Oleson forthcoming [a]).

<sup>12</sup>Discussions of the annexation appear in Isaac 1990: 119ff., Millar 1993: 92, Parker 1986: 123-25, and Bowersock 1983, among others.

<sup>13</sup>On the interpretation of this papyrus, a letter home from a new recruit, see Speidel 1977: 691-93.

<sup>14</sup>As Bowersock (1983: 81) points out: "Trajan never takes the title Arabicus in his titulature, although he does add Dacius to commemorate another annexation of about the same period as the Arabian one", and the "coin legend which later appears in commemoration of the new province declares...Arabia adquisita not Arabia capta".

<sup>15</sup>After A.D. 139, the legio III Cyrenaica was permanently stationed in Arabia as is indicated by numismatic and inscriptional evidence, and (in the late fourth/early fifth century) by the Notitia Dignitatum (Speidel 1977: 693-98). Between A.D. 106 and A.D. 139, it is not clear whether the legio III Cyrenaica was permanently stationed in Arabia although Speidel (1977: 692-93, based on PMich 466) has

due to the absence of military diplomas and the scarcity of dated military inscriptions and archaeological excavations, almost nothing is known for certain about the auxiliary forces who were stationed in Arabia in the second to third centuries.<sup>16</sup> Speidel believes Arabia's first auxiliary garrisons would have come from out of province, and he demonstrates that they probably came from the neighboring provinces of Egypt, Judaea, and Syria (719; cf. Millar 1993: 95). He also suggests that "Such native troops as there were in the country were removed to other oriental provinces where one finds at least six cohortes Ulpiae Petraeorum" (1977: 719; cf. Millar 1993: 96-97; Parker 1995: 258). In contrast to this generally accepted view, a couple of scholars are now proposing that "units of the Nabataean army, re-equipped and reorganized under Roman officers" might have been posted in Arabia (Kennedy & Graf, reported in Isaac 1990: 132-33).

The most obvious artifact of Trajan's annexation of Arabia is the Via Nova Traiana, Trajan's "New Road" linking Bostra to the Red Sea. This Roman road, complete with milestones commemorating the emperor, was finished within a few years of Arabia's annexation.<sup>17</sup> However, this road was only "new" in the method of its construction. In terms of its placement, it followed a major caravan route which had been in use for hundreds of years (Isaac 1990: 120; e.g.,

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demonstrated that members of this legion were stationed in Bostra in A.D. 107.

<sup>16</sup>Information on the units stationed in Arabia in the late fourth to early fifth centuries is provided by the Notitia Dignitatum.

<sup>17</sup>"Trajanic milestone markers...indicate the S end of the Trajanic road [between Aqaba and Petra] was completed in 112, just after the central section between Petra and Philidelphia (Amman), completed in 111..., and just before the N sector between Philidelphia and Bostra, completed in 114" (Graf 1995: 264).

Numbers 20.17).

Scholars generally view the Via Nova Traiana as the pivotal component of the Roman presence in Arabia. In Parker's (1986: 2) words:

The original Roman frontier in Arabia is still not well understood but was based on a chain of forts along a great trunk road, the via nova Traiana. A few forts served as outposts east of this line. The frontier in general marked the eastern limit of cultivation and thus of most sedentary population, but it was not the eastern boundary of the province... Like most Roman frontiers, the Arabian limes not only controlled the movements of local tribes but also regulated international commercial traffic.

The Roman garrisons along the Via Nova Traiana controlled the east-west movement of nomadic people across the frontier and regulated and protected the north-south movement of people along the road (Parker 1986; Whittaker 1994: 79). Spaced at approximately 20 km intervals, the forts along the road would have provided a secure stopping point after a day's march (Isaac 1984: 185). Travellers using the road would have included military personnel, private travellers and trade caravans. After the formation of the new province,

A major trade for luxury traffic from the Hejaz and the Red Sea [still] passed through Arabia (via Aila [Aqaba], [Hawar], Philadelphia [Amman], Bostra [Busrā]) and continued to Damascus [see Figure 1]. The economic benefits of this traffic provided some of the resources for major programs of public works in Gerasa, Philadelphia, Esbus, Pella, Petra, Bostra, and other cities (Parker (1986: 128)).<sup>18</sup>

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<sup>18</sup>Luxury goods travelling along this road would have included the balsam, frankincense, myrrh, and spices mentioned in a mid-first century A.C. treatise (Peripl. 27.54; see Miller 1969: 151). In contrast to Parker, Bowersock (1983: 64) has argued that this route declined in importance in the first century B.C. as a result of a new maritime route being established between south Arabia and Egypt. Others have argued that this new route did not seriously effect the older land route (e.g. Parker 1986; Isaac 1980; Dudley 1992: 92-96). In addition, the assertion that this trade route's decline is

Graffiti from Roman soldiers and Roman ruins suggest that soldiers also patrolled the portion of this caravan route south of the Via nova Traiana (i.e., from Aqaba to Mada'in Sālih) (Parker 1986: 124). The southern section of the Via Nova Traiana (on which Hawar was located) is known from milestone inscriptions to have been maintained until at least the fourth century (Graf 1995: 264). The importance of the southern terminus of this road in the late third century is exemplified by the transfer of the legio X Fretensis from Jerusalem to Aqaba (Isaac 1980: 893).<sup>19</sup>

Hawar's fort was one of the many Roman forts built along the Via Nova Traiana. Due to the scarcity of written documentation and archaeological excavation, this early second century fort is also at present the oldest known fort on the Via Nova Traiana.<sup>20</sup> Hawar's fort is also one of the largest forts known in Jordan. It occupies an area of 3.0 ha; only the legionary forts at Lejjun and Udruh are larger than this auxiliary fort (Parker 1995: 255). Given its size, Parker (1995: 255) has suggested that the fort "was designed for a typical 500 man auxiliary unit of the Principate". No written evidence as yet supplies us with the identity of Hawar's original garrison, or describes its size.

The Notitia Dignitatum (Or. 34.25) reports that a unit of equites sagittarii indigenae was stationed at Hawar in

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exemplified by the Via Nova Traiana bypassing Petra (Patrich 1990: 27) has now been contradicted by compelling evidence that Petra was indeed on the Via Nova Traiana (see Graf 1995).

<sup>19</sup>The legion was still stationed there in the late fourth/early fifth century (Notitia Dignitatum).

<sup>20</sup>Ceramic and numismatic evidence shows the fort was constructed in the first half of the second century A.C. (Oleson et al. 1995: 8). The legionary fortress at Bostra, not yet excavated, also will probably date from the early second century.

the late fourth or early fifth century, and excavation has confirmed that Hawar's fort continued to be occupied into the fifth century (Oleson et al. 1995: 8). As was the norm for post-Diocletianic military garrisons (MacMullen 1980: 459), this unit was likely smaller than Hawar's original garrison. Estimates for the size of this unit of "native mounted archers" are in the range of 100-200 men (Kennedy & Riley 1990: 148).

As there is no written documentation of Hawar's garrisons besides the Notitia Dignitatum, all other information about Hawar's garrisons will have to come from archaeological discoveries and comparative studies with other parts of the Empire. Luckily, Roman (and Byzantine) legionary and auxiliary forts were fairly uniform throughout the Empire. Johnson, who has made a study of the Roman forts in Britain and the German provinces, has noted that

Both legionary fortresses and auxiliary forts of the first and second centuries AD conformed broadly in their planning to the basic principles laid down by...[Polybius in the second century BC and Hyginus Gromaticus in the late fourth or early fifth century AD], with divergences due mainly to the differing needs of an army in permanent garrison as opposed to a temporary camping site [the topic of Polybius's and Hyginus' works] (1983: 31).

Of course, there were variations in permanent fort design in different regions of the Empire and at different time periods (see Lander 1984), but the basic components of a permanent fort will always be present (a rectangular enclosing wall, intersecting north-south and east-west roads, a headquarters building, barracks blocks, granaries, etc.). Moreover, a bath-house is commonly appended to this list of expected or traditional elements (e.g., Evans 1986: 75; Johnson 1983; Le Bohec 1994: 60; Nielsen 1990: I.74; von Elbe 1975: 471; Wilson 1988: 14). Excavations at the forts of Lejjun and Da`janiya (Parker 1991) have already demonstrated that these expected components were present in

Arabian forts.

Excavation of Humeima's fort is still underway, but many of the traditional elements have already been identified. Humeima's fort has a rectangular perimeter wall 206.32 m long x 148.32 m wide (c. 500 x 700 Roman feet) (Oleson et al. 1994: 145-47). There are gates in each of its four sides. From the air, the north-south and east-west roads are visible. Part of the major north-south road (the Via Praetoria) was excavated in 1995 along with part of a barracks block and the headquarters building (see Oleson et al. 1995). Inside the headquarters building was found a sandstone altar and a statue base with Greek inscriptions, one of which mentions Jupiter Capitolinus. One hundred and fifty meters outside the fort are the remains of a Roman period bath-house. As will be shown in Chapter 2, this bath-house (whose water supply was regulated by a bronze stopcock one Roman foot in length, Oleson 1988: 123-25; 1990: 160-61) is typical in terms of its location, size, design, chronology, and lack of elaborate decorations of bath-houses built outside other Roman forts.

The chronology and character of the ceramics spread over the site and its necropoleis reveal that the Nabataean civilian settlement continued to exist after the construction of the fort. Such a civilian community was a normal adjunct to a Roman fort. In the northern frontier provinces, new communities typically sprang up outside of forts (Sommer 1984). In the East, however, the Roman army was frequently based in existing cities (Isaac 1986: 388-89; 1990: 133).<sup>21</sup> As the fort at Hawar was placed at the

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<sup>21</sup>E.g., Alexandria: Isaac 1986: 388, Bostra: Isaac 1990: 123-24; cf., Millar 1993: 94; Dura Europos: Kennedy & Riley 1990: 114, and pre-67 Jerusalem: Isaac 1986: 389. Fiema (1995) argues that the Roman and Byzantine armies garrisoned economically and politically important sites in southern Jordan, and the presence or absence of the military in a particular time period is an indication of the importance of

outside of the settlement, as there are no signs that the Nabataean settlement was destroyed before the Roman occupation, and as post-first century ceramics cover the settlement center, it is likely that the fort and civilian settlement existed concurrently from the time of the fort's construction (cf. Eadie 1984: 219). Moreover, hundreds of years later, when the Roman fort was eventually abandoned, a flourishing civilian settlement existed at Hawar.<sup>22</sup>

The size of Hawar's civilian population during the Roman period (c. A.D. 107-324) cannot be determined with accuracy until more excavations are conducted at the site. In the late Byzantine period, however, we have every reason to believe the town<sup>23</sup> was prosperous. In the middle of the sixth century, Hawar was assessed the second highest tax rate of any of the Transjordan towns under the jurisdiction of the dux Palaestinae (The Beersheba Edict, Alt 1921: 4). The construction of four (or five) churches between the mid-fifth and mid-seventh centuries (Oleson et al. 1995: 8) also attests to the prosperity of this community in the Byzantine period.

After being mentioned twice by Stephen of Byzantium in the sixth century, Hawar drops out of the historical records until it reappears in the early Islamic literature. We know, however, that by at least 634 the region of Jordan containing Hawar had come under Muslim control,<sup>24</sup> and, more

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that site in the same period.

<sup>22</sup>The fort was abandoned sometime in the mid-fifth century (Oleson et al. 1995: 8).

<sup>23</sup>Stephen of Byzantium (Ethnika 25 & 144) called Hawar a πόλις in the early sixth century. Ptolemy (Geog. 5.17), writing in the second century, had similarly listed it as a πόλις.

<sup>24</sup>Hawar could have been under Muslim control since at least 630 when Aqaba surrendered; on Aqaba's surrender, see Schick 1992: 111-12.

specifically, under the control of the Umayyad Caliphate. The members of the Umayyad family came from an important Meccan tribe. From 660-750 this family ruled a Muslim empire which encompassed the Arabian Peninsula, Jordan, Israel, Palestine, Syria, Iraq, Egypt and northern Africa. The Umayyad Caliphate (and the Umayyad period in Jordan) lasted until 750 when the Caliphate was overthrown by members of the rival Abbasid family.

The Abbasids came from another Meccan tribe, and were, additionally, descendants of the Prophet Muhammad's uncle al-'Abbas. In 686/687 a leading member of this family purchased Hawar, which was now known as Humeima.<sup>25</sup> Humeima is mentioned repeatedly in the early Islamic literature.<sup>26</sup> From this documentation, we know the Abbasids built a gasr and a mosque on the site. Archaeology has located these structures in the southeast corner of the site. Decorations in the gasr have been found to include multi-color wall frescos and ivory furniture panels (Oleson et al. 1993 & 1994). According to the early Islamic literature (see Schick forthcoming), it was from this isolated desert estate that the disgruntled Abbasids plotted to overthrow the Umayyad dynasty.

After overthrowing the Umayyads, the Abbasid family established their own Caliphate at Baghdad. Humeima was now far from the center of power, and without the presence of important Abbasids, the settlement declined. Although occasional light habitation continued up until the twentieth century, Humeima was never again a settlement of any importance.

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<sup>25</sup>In Greek, Roman, and Byzantine texts the site is exclusively referred to as "Hawar" (and derivations thereof); in the Islamic texts it is exclusively known as "Humeima" (Rebecca Foote, personal communication, May 1996).

<sup>26</sup>The literature for Humeima is discussed by Robert Schick (1994 & forthcoming).

### The Roman Bath-house

In 1989, a small (c. 10 x 15 m), multi-room, hypocausted, "Roman-style"<sup>27</sup> bath-house was excavated 150 m to the southwest of the southwestern corner of the fort (see Figure 2). In other parts of the Empire, a bath was commonly built at a Roman fort, and in the case of auxiliary forts (like this one), the bath was almost always built outside the fort. Because a bath-house is an essential component of a Roman fort, and because no other baths have been identified at Humeima,<sup>28</sup> it is logical to assume that this bath-house was built for the soldiers stationed at the fort. This conclusion is supported by the bath's date of construction (c. 135-324) (Oleson 1990: 153), and the (Roman) method of supplying the bath with water.<sup>29</sup>

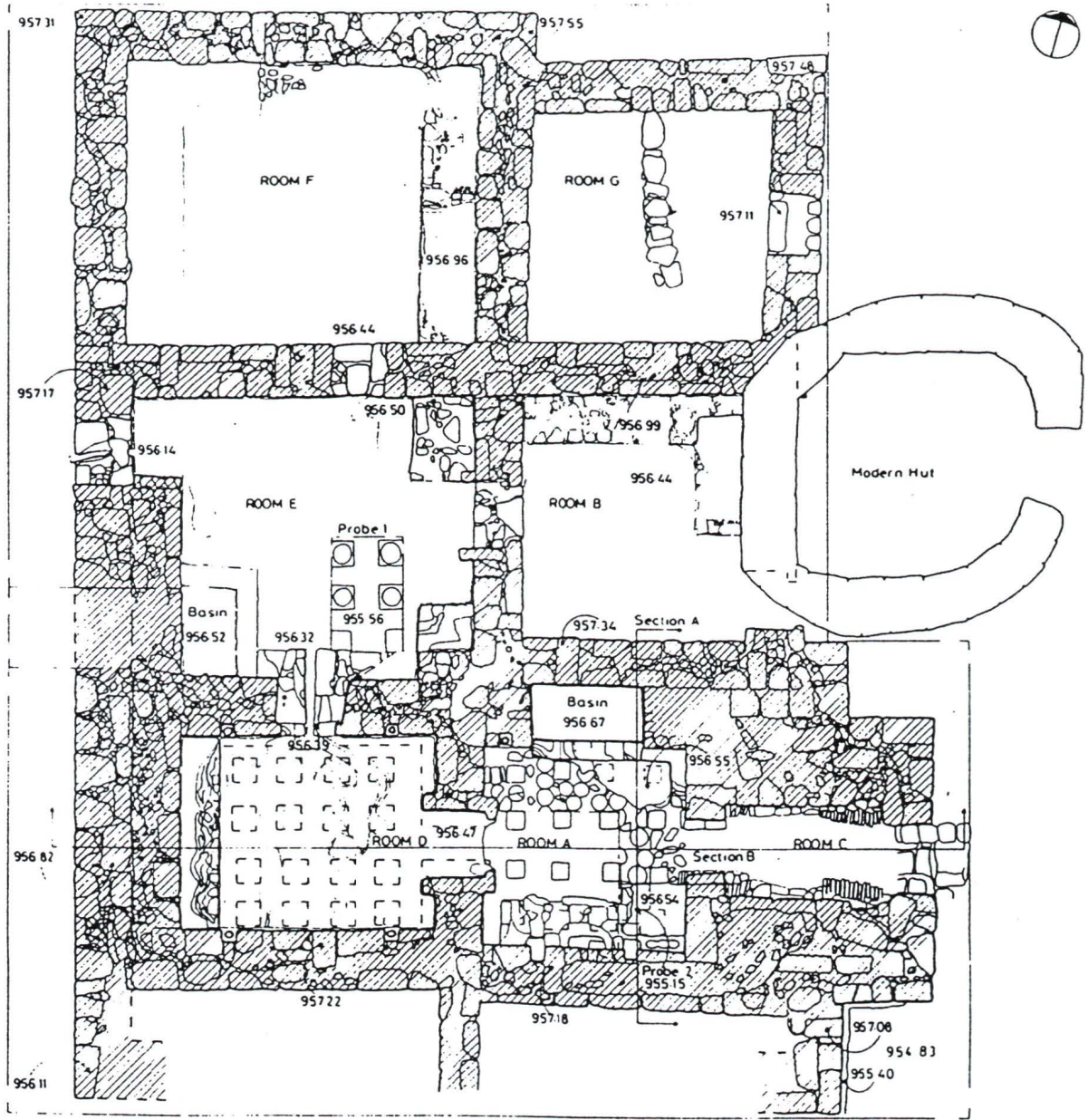
Humeima's bath-house was a typical Roman bath (see Figures 3 and 4). It contained a series of rooms which differed in terms of air temperature and function. People using this building would begin the bathing process by undressing in an unheated apodyterium (changing room) (Room B or F). Next, they would apply oil to their bodies and then lounge in a humid sweat room (Room D) until they had

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<sup>27</sup>By a "Roman-style" bath-house, I mean a building containing bathing-rooms heated to different air temperatures by means of a hypocaust supported with brick pillars (see below). Such bath-houses had become common by the first century B.C. when their construction method was described by Vitruvius (De Arch. 5.10).

<sup>28</sup>Remains of the heating systems of such structures should be visible in the site's surface debris.

<sup>29</sup>The water supply for this bath-house was diverted from the Nabataean reservoir in a controlled fashion by means of a bronze stopcock, one Roman foot in length, locked behind a grating. Previously the overflow from the Nabataean reservoir had not been regulated: "The bronze stopcock symbolizes the way Roman regulatory procedures, and Roman law, which had evolved to serve the needs of a cosmopolitan, urbanized empire, replaced the stern, but unwritten, informal tribal customs of the local Nabataeans (Oleson 1990: 161).

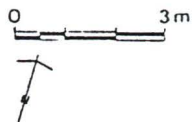


HUMEIMA  
Structure No.77  
Bath Building

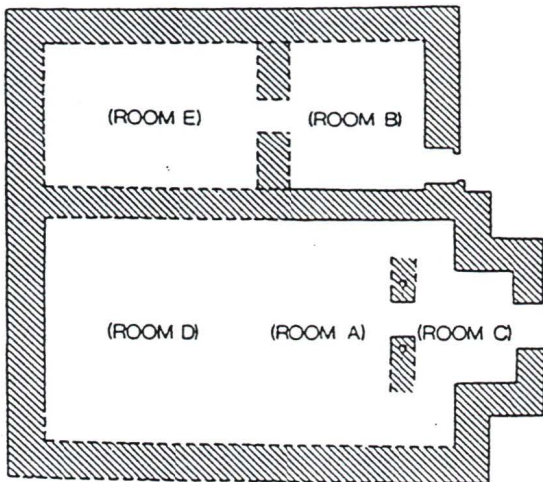
ARCHITECT DANIEL RITSEMA  
16 JULY, 1989



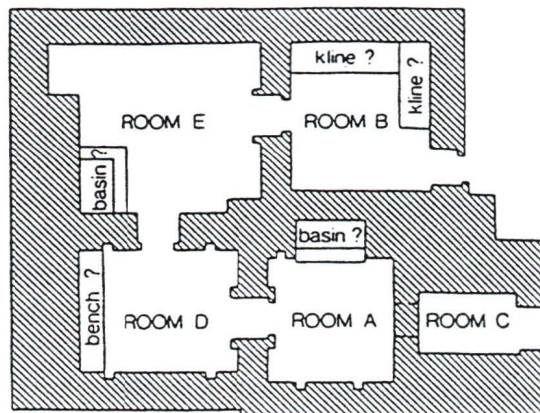
Figure 4: Bath-Building--Sequence of Development



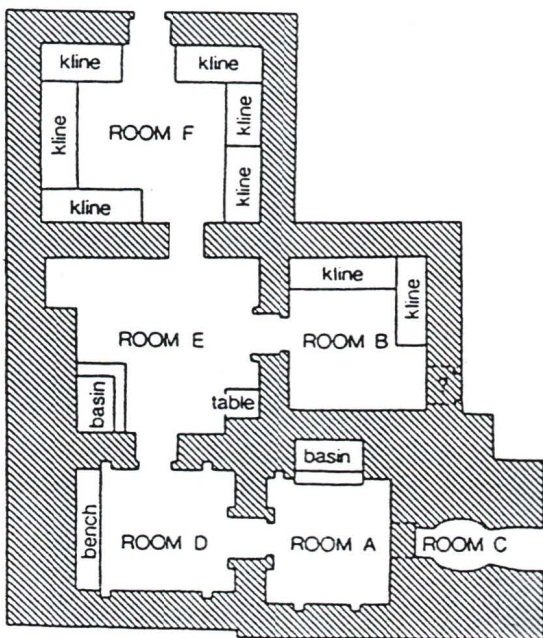
Chris Mundigler



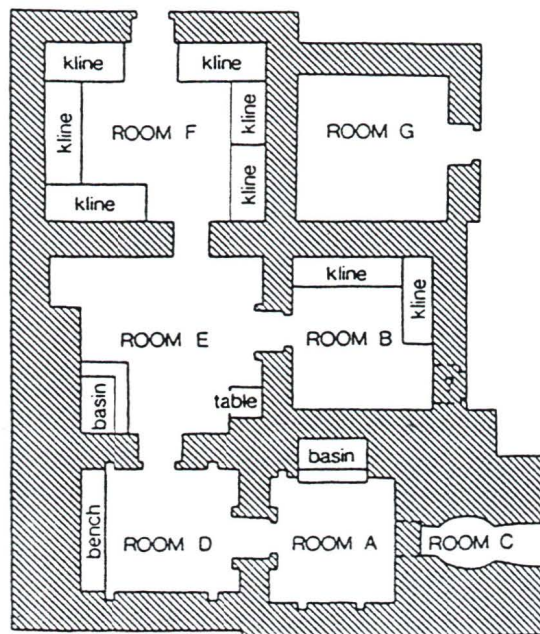
1. NABATAEAN STRUCTURE



2. BATH: STAGE I



3. BATH: STAGE II



4. BATH: STAGE III

built up a good sweat. The sweat, along with the oil, any dirt and dead skin was scraped off with a curved strigil before the bathers rinsed themselves with hot water in a hot room (a calidarium) (Room A). Next, the bathers would wash themselves in a basin which in the original bath-house construction (Bath Stage I) was located in a warm room (a tepidarium) and in the second construction phase (Bath Stage II) was located in an unheated room (a frigidarium) (Room E). The process of bathing ended back in the apodyterium where the bathers would regain their clothes and then relax on the benches.

The rooms in Humeima's bath were heated by the movement of hot air under the floor and inside the walls. The floors of the heated rooms sat on small pillars (pilae) and all the heated rooms, except the tepidarium, contained vertical pipes in their walls which acted as flues. Air heated in a furnace was drawn under the raised floors and up through the walls. The area beneath a raised floor was referred to as a hypocaust. Hypocausts lay under the calidarium, sweat room, and the tepidarium (Rooms A, D and E, see Figure 3). The water in the calidarium sat in a heated basin; in addition, before being used in the calidarium, the water may have been heated in a storage caldron set over the furnace.

#### Why was a Bath-house Built at Humeima?

The importance of baths to the Romans. At first glance, it may seem unusual that the Roman army would build a bath-house at this desert fortress. However, it must be remembered that bathing in such a building was an important aspect of Roman culture. To the Romans, bathing involved much more than cleansing the body; bathing was related to health, physical pleasure, social interaction, public

ostentation, and cultural identity.<sup>30</sup> The typical (Vitruvian-style) Roman bath-building was first built in the late Republican period.<sup>31</sup> The remains of such baths have been found throughout all parts of the Roman Empire. Their importance is reflected in the fact that they were one of the first buildings to be built in a new town (Nielsen 1990: I.74), and that they were so numerous within a town.<sup>32</sup> Moreover, in the Byzantine sources, the prosperity of a town is often exemplified by the maintenance of its baths;<sup>33</sup> whereas the fall of a town is often exemplified by the loss of its baths.<sup>34</sup> Bath-buildings continued to be built and

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<sup>30</sup>Health: Fontanille 1985, Yegül 1992: 35 & appendix A; Scobie 1986: 425, Jackson 1988; physical pleasure: Yegül 1992: 4-5 & 31, Dunbabin 1989; public ostentation: Yegül 1992: 33-34, Toner 1995; cultural identity: Yegül 1992: 4-5.

<sup>31</sup>More primitive bath-houses (in terms of their heating system) had originated in Greece in the fifth century B.C. (see Yegül 1992: 24-29).

<sup>32</sup>Fourth century Rome had over 800 public baths (Yegül 1992: 32); Thamugadi/Timgad had 13 public baths for a populace of 10,000 (Nielsen 1990: I.93).

<sup>33</sup>E.g. Cod. Theod. 15.1.32, trans. Pharr 1959: 427: "In order that the splendid cities and towns may not fall into ruins through age, We assign a third part of the income from the farms belonging to a municipality to be used for the repair of public works and the heating of baths"; Procop., Aed., 5.4.17, trans. Downey: 335: at Mocesus in Cappadocia, Justinian "built many churches and hospices and public baths and all the other structures that are the mark of a prosperous city".

<sup>34</sup>E.g. Herodian 3.6.9, trans. Whittaker 1969: 293 & 295: As a result of holding out against Severus, Byzantium was "completely destroyed; deprived of its theatres, baths and all its splendour and honour, it was handed over with the status of a village to be subject of Perinthus"; a similar fate befell Antioch (Libanius, Or. 20.6, trans. Norman 1971: 315): "The great city is to have the title of a petty town and it is to keep away from the luxury of the baths."; Procop. Pers. 1.13.17 & 1.14.11-12: when the Persian army comes to wrest the town of Daras from Roman control, the Persian commander tells the Roman commander to heat up the bath-house for he intends

used at least as long as a community remained in the Empire.

As well as being an important aspect of civic culture, bath-houses were an important aspect of military culture. This importance is understated in the extant literary and legal sources, but is obvious from the archaeological data.

Literary and legal evidence for Roman military baths.

There is no extant ancient source which discusses military baths or bathing habits per se. However, scattered references in the ancient sources allow us to make inferences about the soldiers' bathing habits. Thus, we can glimpse images of soldiers bathing on the march (e.g., Fronto, Princ. Hist. 12-13), soldiers bathing at a fort (e.g., Herodian 4.4), and soldiers bathing in public baths.<sup>35</sup>

Unfortunately, however, while these episodes give us tantalizing glimpses into the bathing activities of soldiers, what is most interesting is the overall paucity of references to what must have been a regular activity of soldiers. One reason for this, no doubt, is that ancient authors were more interested in describing the lives of the social elite than of the common people. Thus, many of the accounts of soldiers' baths are more specifically accounts of important officers using baths.<sup>36</sup> When literary mention

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to bathe in it the next day; the Romans understand this to mean they will join battle the next day.

<sup>35</sup>E.g., Amm. Marc. 26.6.14: soldiers using the Anastasian Baths in Constantinople; S.H.A., Alex. Sev. 53: soldiers using women's baths in Antioch; CIL II 5181: soldiers granted free admission to a leased bathhouse.

<sup>36</sup>E.g., Cicero Deiot. 17-21: while on campaign, Julius Caesar used the bathhouse of a client king; Fronto Princ. Hist. 12-13: simple bath of commander in field; Joseph., BJ 1.340-1.341 & AJ 14.462-14.463: Roman client king (Herod the Great) bathes in a bathhouse after a battle; Val. Max. 2.7.9: disgraced cavalry commander forbidden to use the bathhouse; S.H.A., Claudius 14: honoured military tribune granted his own bath-man and firewood for the bath.

is made of the common soldiers bathing, it is usually just a detail in the story of an important man.<sup>37</sup>

Because they are biased by the interests of the upper-class Romans who wrote them, the literary references can only provide us with fragmentary information about the bathing practices of soldiers. Some additional information may be gleaned from Roman legal documents. An edict of Theodosius (Cod. Theod. 7.11.1), revived by Justinian (Cod. Iust. 1.47.1), releases local governments from the responsibility of heating private baths for any but the most senior of military officers. This edict was ignored by "the dukes of the Euphrates frontier...[who, over a three year period] exacted a tremis [1/3 of a solidus] a day for wood and baths" and were subsequently required to repay the money twofold (Cod. Theod. 7.11.2; trans: Pharr 1959: 169). As with the literary accounts, these edicts also focus on the social elite. However, another law stating the penalty for soldiers caught stealing in the baths<sup>38</sup> was, no doubt, directed at the average soldier. And a rental contract for a bath-house in Spain (CIL 2.5181), specifying that soldiers were to be admitted free, also relates to the lower-class majority of soldiers.

Archaeological evidence for Roman military baths. The best evidence, however, for the importance of bath-houses in the daily life of the average Roman soldier comes not from

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<sup>37</sup>E.g., Herodian 4.4: After killing his brother, Caracalla flees to an army camp for safety; some soldiers are bathing when he arrives; S.H.A., Alex. Sev. 53: After Alexander Severus arrests some soldiers for their excessive bathing habits, the army rebels; S.H.A., Avid. Cass. 5: Before he was emperor, Avidius Cassius was put in charge of the Syrian legions in order to curb their inappropriate behavior, including their bathing behavior.

<sup>38</sup>Miles, qui in furto balneario adprehensus est, ignominia mitti debet ("A soldier caught stealing in the baths is to be discharged with ignominy.") Dig. 47.17.3 (Paulus), translated in Mommsen et al. 1985: III.790.

literary and legal sources, but rather from archaeological evidence. Indeed, the best evidence for the importance of bath-houses in military culture is the remains of numerous bath-houses associated with Roman forts. In Appendix A, I have catalogued over 170 such bath-houses associated with Roman forts. These bath-houses come from all parts of the Empire but the majority of them (62%) come from the Province of Britannia alone.

The high concentration of military bath-houses in Britannia and the "northern border provinces",<sup>39</sup> should not be taken as evidence that military bath-houses were more common there. Instead, given the importance of bathing in Roman culture, I believe that military bath-houses were equally common wherever Roman troops were stationed. Such baths are currently better known in places like Britain simply because 1) the British have been interested in identifying and excavating Roman baths for over a century, 2) military bath-houses in Britain are better preserved than other military structures because they were often the only part of a fort made of non-perishable materials, 3) because they were built of non-perishable materials, Roman baths are better preserved than many of the other ancient structures built in Britain, and 4) the inhabitants of Britain preceding the Roman conquest did not build bath-houses (as was common in the Hellenized East) and so Roman-period bath-houses are easier to identify there than in the East. Because of factors such as these, military bath-houses are better known in the northern frontier provinces than in other parts of the Empire. However, archaeological information from the other frontiers of the Roman Empire is

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<sup>39</sup>Defined by Nielsen (1990: I.61) as "Britannia, Germania Superior and Inferior, Raetia, Noricum, Pannonia Superior and Inferior, Dacia, Moesia Superior and parts of Moesia Inferior, and parts of Thracia". These account for approximately 85% of the baths in my catalogue.

increasing. In the Roman provinces of Arabia, Syria, and Judaea, for example, the majority of the posited military baths (see Chapter 2) have only been the subject of archaeological study during the past 15 years. On all of the under-excavated frontiers, there are probably many other military bath-houses waiting to be revealed.

Another important source of archaeological evidence is provided by the inscriptions which have survived pertaining to the construction or restoration of military bath-houses (e.g. at Qasr el-'Uweinid, see Appendix A). In the "northern border provinces", there are more extant inscriptions related to the restoration, as opposed to the construction, of bath-houses. In addition, most of these restoration inscriptions are from military, as opposed to civilian, baths. Such inscriptions show that the army was interested not only in providing its garrisons with proper Roman bathing facilities, but also in maintaining those facilities. According to the inscriptions, emperors and military officers were responsible for the restoration of military baths. However, there can be no doubt that it was the common soldiers who did all the work.<sup>40</sup>

More information relating to common soldiers can be found among the few surviving military documents. Some of the documents appear to refer to the duties of soldiers in regard to the baths. Thus, we read of soldiers working on the construction or repair of baths,<sup>41</sup> of soldiers

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<sup>40</sup>On these inscriptions, see Nielsen 1990: I.75; she describes the inscriptions in n. 6.

<sup>41</sup>Tab. Vindol. II 155, trans. Bowman & Thomas 1994: daily report for Vindolanda, early 90s A.C., "builders to the bath-house 18"; OClaud 141: personal letter?, December A.D. 109 or 110, centurion helping to pave bath-house

collecting supplies for baths,<sup>42</sup> and of soldiers working at the baths.<sup>43</sup> A more personal involvement of soldiers with the baths can be seen in documents which appear to record soldiers buying their own shoes, towels, and, possibly, soap for the baths.<sup>44</sup> Also of a personal nature is a soldier's balance sheet, found at the Hadrian's Wall fort of Vindolanda, which records that this soldier had received money "from Vatalis the bathman".<sup>45</sup> Finally, an interesting fragment of a document from Vindolanda may refer to a separate bath-house for the praetorium slaves (i.e., the slaves from the commanding officer's household).<sup>46</sup>

On the basis of this short survey of the literary, legal, and archaeological data, it can be surmised that the Romans built a bath-house at Hawar because the soldiers

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<sup>42</sup>PDura 82 = Fink 1971: #47, translated as Campbell 1994: #180 (pp. 111-12): a morning report of cohort XX Palmyreni, "sent: to collect wood for the bath, one soldier, of the century of Nigrinus, Zebidas, son of Barneus..." (Campbell 1994: 112); PSI 683, trans. Davies 1974: 316: soldiers collecting bath oil.

<sup>43</sup>AE 1979.643, translated as Campbell 1994: #181 (pp. 112-13): part of a daily report from Bu-Njem, Tripolitania, early 3rd century A.C., 2 soldiers listed as being "at the bath"; PGenLat 1, verso, part v = Fink 1971: #9: duty roster (table of names by dates with duties written in) of the Legio III Cyrenaica, several entries of ballio which Premerstein, cited in Fink, p. 112 entry 3a, translates as "on bath duty"; PMich 455a&b = Fink 1971: #52, possibly a morning report from 3rd century A.C., unit unknown, list of men assigned to duties includes "CVSTODIARUM BAL II" where BAL probably (but not necessarily) equals balnei (Fink 1971: 203 n. 8).

<sup>44</sup>Tab. Vindol. II 197, trans. Bowman & Thomas 1994: "Gallic shoes for the baths"; Tab. Vindol. II 184, on interpretation see Bowman 1994: 41 & 77: sudarium = towel, sebum = "tallow, probably used as soap", Bowman 1994: 77.

<sup>45</sup>ab Vitale balniatore, Tab. Vindol. II 181, trans. Bowman & Thomas 1994, from barracks, A.D. 104-120

<sup>46</sup>Tab. Vindol. II 322, trans. Bowman & Thomas 1994, A.D. 97-102/3

stationed at the fort expected to have access to such a facility. As in civilian life, going to the baths was a common and important aspect of Roman military life. From the archaeological evidence, we can see that bath-houses were commonly built and maintained at Roman forts. From the extant written sources, it is possible to make inferences about how such baths were used. In the next two chapters, I will draw on structural and written remains to aid in the interpretation of the architectural and social history of Humeima's bath-house.

## CHAPTER 2

## Hawar's Bath-house in its Architectural Context

The purpose of this chapter is to put Hawar's bath-house into its architectural context. In the process of doing so it will become apparent that in terms of its type, size, location (in relation to the fort), building materials, and date of construction and renovation, this building is typical of Roman military baths.

The chapter itself is organized into three sections. The first section introduces the body of comparative material which will be used to analyze this structure. The second, and largest, section analyzes aspects of this building in relation to other military and Near Eastern baths. The final section discusses the probable function of each of the building's rooms.<sup>1</sup>

Comparative Material

In order to understand a structure, it is important to consider it in context. The bath-house at Humeima was built in association with, and probably as part of a Roman fort-complex, and it was built in the Roman province of Arabia. Consequently, when I was first faced with the task of discussing this structure, I decided to seek out two different types of comparative material. The first type of comparative material, bath-houses proximally associated with Roman forts, has been used to form the catalogue in Appendix A. The second type of comparative material, Near Eastern baths, is contained in the catalogue in Appendix B. In my

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<sup>1</sup>This discussion is not meant to supersede either the preliminary report published by the bath-house's excavator (Oleson 1990), or his final report which is currently in preparation. More detailed information on the bath-house's construction (e.g., the composition and dimensions of the fixtures, and the thickness of the calidarium floor) is presented in Oleson's reports.

search for useful parallels, top priority was given to Near Eastern military baths, followed by any baths in the Near East, followed by military baths in other parts of the Empire. This prioritising is reflected in the level of completion of individual catalogue entries.

The catalogues were modeled on the "Catalogue of *thermae* and *balnea*" recently published by Igne Nielsen (1990: II). Like Nielsen, I collected information on the ancient and modern location of the bath, the bath's type, its size, and its date of construction and renovation. In contrast to her, I did not suggest whether the bath should be classified as *thermae* or *balnea*.<sup>2</sup> When I thought the case warranted it, I collected information on construction technique, state of preservation, and date of excavation, but, unlike her, I included this information in my comment section, rather than in separate categories. Also included in my comment section was anything of particular interest about the bath (e.g. decorations, hypocaust materials, source of water). In addition, for Near Eastern baths, I tried to record the bath's purpose (e.g. military, public, domestic). For baths associated with Roman forts, I also attempted to collect information on the bath's relation to the fort, the fort's type, and the fort's size. The entries also contain information on where published plans of the bath and/or site can be found and list the sources I used in compiling the entry.<sup>3</sup>

Twenty-seven percent (47/172) of the baths listed in Appendix A, and nineteen percent (34/175) of the baths in

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<sup>2</sup>There are no standard meanings of *thermae* and *balnea* (*balneae*, *balneum*) in either the primary or secondary literature (cf. Yegül 1992: 43). The primary basis for Nielsen's distinction is the presence or absence of a *palaestra* (see 1990: I.3).

<sup>3</sup>For additional information on the entries, see the notes preceding each catalogue.

Appendix B overlap bath-entries in Nielsen's catalogue. The code for the corresponding entry in Nielsen's catalogue is listed in the "Ref" section of my entry in the form "Nielsen (1990) C.xxx".

Baths proximally associated with a Roman fort.

Appendix A contains 172 baths proximally associated with a Roman (or Byzantine) fort.<sup>4</sup> Almost all of these baths are also temporally congruent with the associated Roman fort.<sup>5</sup> The types of baths described in this catalogue include the main bath-house used by a fort's garrison, special baths for senior officers, and baths in an inn (mansio) outside a fort. I have also included a few instances of baths used by Roman soldiers after they garrisoned an existing fortress (e.g. Masada) or city (e.g. Dura-Europos); although such bath-houses do not strictly fall in the category of baths associated with a Roman forts, they were facilities used by garrisoned soldiers.

Appendix A, no doubt, does not include every bath associated with a Roman fortress, but in compiling this catalogue I tried to include as many baths as possible, concentrating on those in the Near East. The distribution of the baths in Appendix A by province is as follows: Aegyptus 1, Africa Proconsularis 1, Arabia 8, Britannia 107<sup>6</sup>, Dacia 3, Germania Inferior 3, Germania Superior 23, Italia 1, Judaea 4, Mesopotamia 3, Moesia Inferior 4, Noricum 1, Numidia 2, Pannonia 1, Raetia 9, Syria 1, Thracia

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<sup>4</sup>I.e., baths in or within a couple hundred meters of a fort.

<sup>5</sup>Exceptions are the bath-houses at Kastron Mayfa`a and Philoteria which post-date the Roman/Byzantine occupation of their respective forts.

<sup>6</sup>The large number of British baths is a reflection of the disproportionate amount of archaeological attention devoted to that province (see above, Chapter 1).

1.<sup>7</sup>

Ancient Near Eastern baths. Appendix B lists 175 baths built in the Near East between the fourth century B.C. and the eighth century A.C. Baths in this catalogue include urban public baths, domestic baths, baths at religious centers, baths at caravanserai, and military baths.

The catalogue's fourth century B.C. starting date was chosen because it corresponds to the period when bath-houses were first introduced to the Near East.<sup>8</sup> The end date of A.D. 750 was chosen because that corresponds to the beginning of the Abbasid period and (because the Abbasid family moved away from Humeima at that time) to the beginning of Humeima's decline. The primary focus of the body of this thesis, however, is only on those baths whose dates overlap Hawar's bath-house's period of operation (c. second - eighth centuries A.C.). Information on the other baths in Appendix B will be used mainly in comparative tables. Information on the Umayyad period (A.D. 634-750) baths will also be discussed in Appendix C.

The geographical limits used in creating this catalogue correspond to the those of the Roman Near East. Similarly to Millar (1993: xi) and Nielsen (1990: I.95 n. 6), I am defining the Roman Near East as the territory included in the early second century A.C. provinces of Arabia, Syria, Judaea, and Mesopotamia. It makes sense to group these provinces together because, in terms of military policy and culture, these provinces formed a fairly cohesive group when compared to their neighbours in Egypt and Asia Minor. Forty-seven of the baths in this catalogue come from Arabia,

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<sup>7</sup>The names and borders of Roman provinces varied over time; to avoid confusion, I will hereafter employ Nielsen's (1990) names and borders which are based on the Empire at the end of Trajan's principate (A.D. 117).

<sup>8</sup>A consequence of Alexander the Great's conquests.

thirty-six from Syria, eighty-five from Judaea, and six from Mesopotamia. One other (Boutafis) was too near the intersection of Arabia, Judaea, and Aegyptus for me to assign to a province.

This catalogue does not claim to include every bath-house built in the Near East during its twelve century chronological range. Instead, an attempt was made to include the most well-known bath-houses, as well as the most readily accessible ones in the literature.

Roman military bath-houses in the Near East. The purpose in compiling these catalogues was to collect information which might be useful in making comparisons to the military bath-house at Humeima. A special subset of bath-buildings (which are included in both catalogues) is especially useful for such comparisons. These are the baths associated with Roman forts in the Near East.

Sixteen of the baths in my catalogues (15 + Hawar) fall into this category. These baths are located at ad-Dianam, Athis/Neocaesarea, Becchufrin (2 baths), Beer Sheba, Bostra, Dura Europos, cEn Haseva, Tell Faysal, Kastron Mayfa`a, Lejjun, Masada, Philoteria, Qasr el-cUweinid and Ramat Rahel.<sup>9</sup> Two of these proximally-associated baths (at Kastron Mayfa`a and Philoteria) post-date the forts with which they are associated and, hence, will not be discussed further.

Six of the remaining baths are within the Roman province of Arabia (ad-Dianam, Bostra, cEn Haseva, Tell

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<sup>9</sup>Other baths which might have been included in this category but were not because I am unclear of the nature of their possible association with a Roman garrison are the baths at BIRTHA/Zenobia, Dibon, the Roman-period bath at Jerusalem and the baths outside the military region at Dura Europos (all of which were in garrisoned towns), baths at `En Boqeq, Mezad `Arugot and Oboda (all in vicinity of forts), baths at Khirbet el-Khan and Maliatha (at road stations), and "The Baths in the Palace at Herodium" (which contains graffiti made by soldiers).

Faysal, Lejjun, Qasr el-cUweinid), one is in Syria (Athis/Neocaesarea), three are in Judaea (Beer Sheba, Masada, Ramat Rahel), and three are in Mesopotamia (Becchufrin x 2, Dura Europos). Three of these baths (ad-Dianam, En Haseva, Qasr el-cUweinid) are associated with auxiliary castella, two (Bostra, Lejjun) with legionary fortresses, two (Athis/Neocaesarea and Dura Europos) with fortified towns, and one (Masada) with a reused indigenous fortification. (The classification for the fortifications at Beer Sheba, Tell Faysal, Becchufrin, and Ramat Rahel is not clear.) The bath-house at Masada was used by the Roman army after the First Jewish Revolt but was not built by, or for, Roman soldiers.<sup>10</sup>

Very little is known about most of the Near Eastern baths which were apparently constructed by, and for, the Roman army. The only evidence for a bath at Qasr el-cUweinid is an inscription which may not even have originated on the site. No bath structure has been identified there. The baths at Bostra and Tell Faysal have not been excavated. Their existence has been hypothesized from the presence of hypocaust tiles. Moreover, the fort at Tell Faysal has only undergone a brief salvage excavation, and the excavators admit that the structure excavated may not have been a fort (Palumbo et al. 1993: 96). At Beer Sheba, the location of a Roman fort has been suggested on the basis of a 1918 aerial photo (Fabian 1995). The same photo shows a bath-house 200 m from the south-east corner of the fort. Unfortunately, neither of these structures seems to have been excavated, and the fort, at least, has since been built over.

The eight remaining bath-houses have all been excavated. However, the results of the (recent) excavation

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<sup>10</sup>Information on the baths discussed in this section can be found in Appendix A or B.

at cEn Haseva do not seem to have been published yet, and the excavations of the two Becchufirin baths have only been published in a cursory fashion. This leaves me with detailed information on only five of the Near Eastern military baths (ad-Dianam, Lejjun, Dura Europos, Athis/Neocaesarea, and Ramat Rahel).

As comparative material for Hawar's bath-house, the bath-houses at ad-Dianam and Lejjun are the most useful. Both were located within the confines of Arabia. Lejjun was the site of a legionary fortress located roughly 200 km northeast of Hawar and ad-Dianam was a castellum located 100 km north-northwest of Hawar, in the Negev Desert. Unfortunately for comparative purposes, both forts were probably built about 150 years after Hawar's fort.

The other three excavated bath-houses were apparently associated with garrisons within fortified communities. At Dura Europos, in Mesopotamia, the occupying Roman army blocked off part of the town for its own use and built a (third century) bath-house within this military precinct. The Roman army garrisoned Athis/Neocaesarea, in Syria, in the third century, and, in the fourth century, a bathing-suite was added to the principia. Finally, a third century bath-house was built at Ramat Rahel, in Judaea, as part of the camp installations of the occupying legio X Fretensis.

Whenever possible in the discussion of the architectural features of the Hawar bath, I will refer to the above bath-houses. It is unfortunate that the subset of baths associated with Near Eastern Roman forts is not larger. In my search for useful parallels for Hawar's bath-house, I was particularly interested in collecting information on all the military bath-houses in the Near East. That I was not able to find more is probably a reflection of the general lack of excavation undertaken on Roman military sites in the Near East (cf. Parker 1995: 251, Kennedy & Riley 1990: 14). Indeed, most of the baths

included in this subset (including the bath at Hawar) have only been excavated/identified within the last 15 years.

Egyptian military baths. One last group of bath-buildings which might provide a useful comparison group for the bath-house at Hawar are the first century military bath-houses in Egypt. These military baths may have been the design prototypes for the early military baths built in Arabia. The logic for this is as follows.

The bath-house was probably the most technically complicated of the structures built by the Roman army. Consequently, for other parts of the Empire, it has been suggested that legionary architects oversaw construction of military bath-houses (Nielsen 1990: I.77-78; cf. Birley 1977: 34-35).<sup>11</sup> The original legionary garrison of Arabia was the legio III Cyrenaica (Bowersock 1983: 106). The legion was stationed at Bostra, but an inscription from Qasr el-cUweinid (c. A.D. 201) (Kennedy 1982) provides evidence that members of the legion constructed military bath-houses in other parts of the province. It is therefore possible that the engineer who designed Hawar's bath-house came from the legio III Cyrenaica.

The province from which an architect came or in which he was trained in probably influenced the appearance of the baths he designed (cf. Nielsen 1990: 84). The legio III Cyrenaica was stationed in Egypt before it was transferred to Arabia, and many of its soldiers were recruited there.<sup>12</sup> Therefore, it might prove useful to compare Hawar's bath-house to bath-houses built in Egypt, especially those used

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<sup>11</sup>However, very little is really known about military architects (see Evans 1994: 144-48 for a discussion of this topic).

<sup>12</sup>On the legio III Cyrenaica in Egypt, see Lesquier 1918; on the same legion in Arabia, see Speidel 1977.

by the legio III Cyrenaica.<sup>13</sup> In Egypt, the legio III Cyrenaica was stationed in Nicopolis, a suburb of Alexandria (Speidel 1977: 693). Remains of a bath-house associated with the military camp at Nicopolis/Alexandria could apparently be seen until 1875 (Lesquier 1918: 390). Unfortunately, however, Lesquier (1918: 390) reports that we have neither a complete description nor a plan of this structure. As I know of no other military baths in Egypt which were possibly used by the legio III Cyrenaica before it came to Arabia, I have, reluctantly, decided to suspend this line of approach for the moment. I hope to resume it in a future work.

#### Analysis of Hawar's Bath

There are many aspects of the bath which could be subjected to a comparative analysis. Out of all these possibilities, it was decided to focus the present analysis on the structure's type, size, location (in relation to the fort), building materials, and date of construction and renovation. These aspects were chosen because they are broad enough to allow comparisons to be made between bath-houses from any period or any location, and because some or all of these aspects are usually included in preliminary excavation reports.

Typology. One common way in which archaeologists compare one bath-house to another is to compare each bath's respective place in a typology of plans. Since 1929, the predominant system for bath-house classification has been that employed by Krencker (DeLaine 1988: 17; see Krencker 1929: 177-81). In Krencker's system, bath-houses fall into one of three superordinate categories: the row type, the

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<sup>13</sup>We know the legio III Cyrenaica had a bath-house (or bath-houses) in Egypt because a duty roster from A.D. 87 records soldiers from this legion being on bath duty (Fink 1971: #9 = PGenLat 1).

ring type, and the imperial type. The row and ring type are based "on the route followed by the bather" and the, larger, imperial type is based "on the arrangement and multiplication of certain elements" (DeLaine 1988: 17). As Nielsen says:

In the row type, the bather follows the same route to and fro, retracing his steps; in the ring type, he embarks on a circuit, to wind up where he started; finally, the imperial type is a double ring type arranged symmetrically about a common central axis, the common rooms in the axis being frigidarium, tepidarium and caldarium (Nielsen 1990: I.4, underlining added).

Krencker's categories can be further divided into subcategories, some of which were included in Krencker's original treatise and some of which were added or modified by later scholars.

Krencker's system has been very influential. Perhaps most significantly, it was recently employed by Nielsen (1990) to classify the 387 baths in her "Catalogue of thermae and balnea". Based on their typological classifications, Nielsen was able, in the body of her work, to discuss, for example, the prevalence of angular row type baths versus axial symmetrical row type baths in different centuries and different regions of the Roman Empire.

While a common system for comparing the plans of baths built in different geographical regions and time periods would be very useful for architectural historians, it is not clear that Krencker's system is the best candidate. DeLaine (1988: 17-19) has reviewed some of the existing classification systems. She points out several problems with Krencker's system and suggests that a system based on close-knit geographical or temporal groups might be better.<sup>14</sup> This other approach has been used to classify some first century military baths in northwest Europe

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<sup>14</sup>Compare Nielsen's (1990: I.100) reservations about using Krencker's system to classify baths in the eastern provinces.

(DeLaine 1988: 18), and is similar to the approach employed by Yegül (1992) in his recent book on Roman baths.<sup>15</sup>

Although I considered adopting a geographically or temporally-narrow focus when attempting to classify Hawar's bath-house, I decided not to do so for two reasons. The first was that Hawar's bath was of a small, simple design, the essence of which seems to be repeated throughout the geographical and temporal sphere of the Roman Empire. The second was that the exact date of Hawar's bath-house, and, indeed, of the most likely comparison set (other Near Eastern military bath-houses) is not known.

Instead, I decided to collect information on as many military and Near Eastern baths as possible. I then intended to compare the plans of the catalogued baths on the basis of Krencker's typology. When I began this process, I felt that the advantages to classifying and comparing baths on the basis of Krencker's system were that his terms were relatively descriptive and they did not require knowledge of other bath plans. Unfamiliarity with the plan of other baths can be a problem, for example, when one is told that a certain bath is of the "En-Gedi type" (e.g. the bath at ad-Dianam, see Meshel 1989). Another advantage I saw in adopting Krencker's system was that it had already been used throughout Nielsen's (1990) catalogue.

However, since making my initial decision, I have come to question the usefulness of Krencker's approach. My reservations were aroused when I attempted to classify baths according to Krencker's typology. One problem I soon encountered was a difficulty in interpreting room functions, and hence direction of client-flow, because of

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<sup>15</sup>A similar approach has also recently been used by Charpentier (1995) to classify some (primarily) fifth century baths in northern Syria. Unfortunately, Charpentier's article was brought to my attention too late to have a major impact on my own classification attempts.

inconsistencies in the labels applied to rooms among published plans of the same bath-house. However, this problem might have been overcome if I had not encountered more serious difficulties. One such difficulty was that many of the baths in my catalogue had only been partially excavated, and hence the number and function of the rooms, much less the order in which they were used, was not clear (cf. Nielsen 1990: I.100 n. 36). In other cases, when a bath had been fully excavated, it was still not clear into which of Krencker's categories it should fit. Consider, for example, the subject of this thesis, the bath-house at Humeima. In stage I of the bath, the bathers travelled east to west, turned south, and then travelled west to east, before retracing their path (see Figure 4). Thus in stage I, Hawar's bath-house was of Krencker's "parallel row type" (□). But in stage II, with the addition of a second, alternate, apodyterium, the bath could be classified as either of the "parallel row type" (□) or the "angular row type" (⊔), depending on which apodyterium the bathers started from (Room B or F).<sup>16</sup>

As a consequence of my concerns with Krencker's system, as well as my difficulty in classifying Hawar's bath, I have decided not to use it to classify the remaining bath-houses. However, in spite of that decision, I still believe a discussion of typology can be informative, and I do not want to abandon completely the topic as it relates to Hawar's bath-house. Consequently, I have decided to discuss the typology of Hawar's bath-house only in relation to those baths in my catalogue which have been classified by Nielsen (1990), by their excavators, or, in a few simple cases, by myself, according to Krencker's classification scheme. However, because my reservations with Krencker's system are

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<sup>16</sup>For diagrams of the parallel and angular row types, see Nielsen 1990: II.fig. 1.

strongest as regards his subordinate categories (e.g. angular, parallel, axial), I have decided to ignore them and instead to compare the baths' plans only in terms of his superordinate categories (i.e. row, ring and imperial).

As I mentioned above, the bath-house at Humeima belongs to Krencker's row type. Bathers using this building would have travelled from the apodyterium to the calidarium, and then retraced their same route back to the apodyterium. The advantages of building baths of the row type was that they allowed for small, inexpensive, space-efficient bath-houses which could be easily adapted to limitations imposed by the location (cf. Nielsen 1990: I.4, I.114-15). They were also probably easier to design and build than the other types. Such advantages apparently appealed to the military. The vast majority of the classified baths from Appendix A are of the row type (47 baths: 41 castellum, 6 legionary). In contrast, only 3 (1 castellum, 2 in garrisoned cities) are of the ring type, and only 1 is possibly of the imperial type.<sup>17</sup> The row type was also, apparently, popular in the Roman Near East. Twenty-five of the Roman and Byzantine baths classified in Appendix B are of the row type. In contrast, 7 are of the ring type, 1 is either ring or row, and 3 are of the imperial type. (All 5 of the classified Umayyad baths are also of the row type.) Given that the row type allows for the smallest, most space efficient and adaptable bath-buildings, and that the row type was commonly used for military and Near Eastern baths, it is quite logical for the Roman army to have built a row type bath-house at this Near Eastern castellum. Similarly, the Roman/Byzantine army also built row-type baths at the

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<sup>17</sup>The bath at Lambaesis, in Numidia. It might, rather, be of the row type. The baths at Masada and Philoteria have been excluded from these calculations. The bath at Hawar is excluded from this, and all subsequent, comparative statistics.

Arabian forts of ad-Dianam and Lejjun.<sup>18</sup>

Size. In its latest stage, the bath-house at Humeima was 150 sq. m. in area. This is considerably smaller than the large imperial thermae in Rome, which were sometimes as large as 179,350 sq. m. (i.e. The Baths of Diocletian); however, a small size seems to have been quite proper for the balneum of an auxiliary castellum.

Table 1 shows the size distribution for the 56 baths in Appendix A which apparently served as a fort's main bath-house and for which I have been able to determine dimensions. Forty-six of these baths are associated with what is said to be an auxiliary castellum and ten with what is said to be a legionary fortress. As Table 1 shows, castellum bath-houses tended to be small. Most of those in my catalogue are under 500 sq. m. They range in size from 25 sq. m. to 2,300 sq. m. with an average size of 564 sq. m.<sup>19</sup> In contrast to castellum baths, legionary bath-houses tended to be larger. This is logical when you consider that legionary baths would have generally been used by larger garrisons.<sup>20</sup> The majority of the legionary baths in my catalogue are over 3,000 sq. m. They range in size from 223 to 18,550 sq. m. with an average size of 5,792 sq. m.<sup>21</sup>

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<sup>18</sup>In the Near Eastern garrisoned cities of Athis/Neocaesarea and Dura-Europos, ring type baths were built.

<sup>19</sup>The smallest is Castellum Bath XXVI at Iatrus; the largest is at Coriosopitum whose area includes a 1,400 sq. m. palaestra.

<sup>20</sup>MacMullen has studied unit sizes and suggests that legions ranged in size from 1,000 to 6,000 men (1980: 457 & 452) whereas auxiliary units ranged in size from 100 to 600 or 700 men (1980: 458). (This 700 man limit on auxiliary unit size is the probable real limit even though some units "should" have contained 1,000 men as indicated by their designation as "milliary", MacMullen 1980: 452).

<sup>21</sup>The largest is at Aquincum; the smallest is at Lejjun.

The bath-house at Lejjun, in Arabia, is by far the smallest of the legionary bath-houses in my catalogue. However, even at 223 sq. m., this legionary bath-house is still larger than the bath-house outside the Arabian castellum at Hawar (150 sq. m.).

Table 1  
Distribution of military baths by size.<sup>22</sup>

SIZE OF BATH	AUXILIARY CASTELLUM	LEGIONARY FORTRESS
Up to 500 sq. m.	22	1
501-1,000 sq. m.	12	
1,001-2,000 sq. m.	4	1
2,001-3,000 sq. m.	1	1
3,001-4,000 sq. m.		3
4,001-5,000 sq. m.		
5,001-6,000 sq. m.		
6,001-7,000 sq. m.		1
7,001-8,000 sq. m.		1
8,001-9,000 sq. m.		
9,000-10,000 sq. m.		
over 10,000 sq. m.		2
"small"	6	
"large"	1	
Total	46	10

The size of Hawar's bath-house is also quite typical in comparison to other Near Eastern bath-houses. Table 2 shows the size distribution for 60 of the Near Eastern hypocausted bath-houses contained in Appendix B.

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<sup>22</sup>When a palaestra formed part of a bathing complex, the palaestra size is included in the total bath-house size. The military bath in the garrisoned city of Dura-Europos is not included; nor is the bath at Coriovallum because I do not know if the garrison at Coriovallum's fort was legionary or auxiliary. Prestatyn has been included as, in spite of Wilson's (1988: 388) reservations, it could be a military bath-house.

Table 2  
Distribution of Near Eastern baths by size.<sup>23</sup>

SIZE	PRE-ISLAMIC	EARLY ISLAMIC
Up to 500 sq. m.	26	7
501-1,000 sq. m.	4	1
1,001-2,000 sq. m.	6	2
2,001-3,000 sq. m.	3	
3,001-4,000 sq. m.	1	
4,001-5,000 sq. m.	1	
5,001-6,000 sq. m.	1	
"small"	9	
"large"	2	1
Total	53	11

As Table 2 shows, most of the Near Eastern baths whose sizes are recorded in Appendix B were small. The predominance of small bath-houses in this region is logical. Roman and Byzantine urban centres had, depending on population size, only one or a few large bath-houses alongside many small baths. For example, Rome in the mid-fourth century had more than 856 small baths and 11 large thermae (Notitia Urbis Regionum), and Constantinople in the early fifth century had 153 small baths and 8 large thermae (Notitia Urbis Constantinopolitanae, see Yegül 1992: 324). Small baths probably also dominated in domestic, military, and religious structures where the bathing suite was required to fit into a confined area. It is, therefore, logical that one would find more small than large baths in all parts of the Empire. Similarly, as Table 2 shows, small bath-houses may have been more typical than large bath-houses in the Early Islamic period in the Near East.

Within this larger context, it is quite reasonable that

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<sup>23</sup>When a palaestra formed part of a bathing complex, the palaestra size is included in the bath-house size.

a small bath-house would have been built at Hawar. However, an important caveat to this discussion is the fact that I only know the size of about one-third of the baths contained in each appendix. One of the major reasons for the lack of size-information for baths contained in Appendix B is the incomplete excavation of many of these bath-houses. Until more Near Eastern bath-houses have been excavated, any conclusions regarding the predominance of small versus large baths in this region, however suggestive, will have to remain tentative.

Location. In the "northern border provinces", legionary bath-houses were usually placed inside a fort (e.g. at Deva and Isca) and auxiliary bath-houses were usually placed outside (e.g. Mediobogum and Vindolanda) (Johnson 1983: 194; Nielsen 1990: I.77).<sup>24</sup> Although we have only limited information on the military bath-houses in the Near Eastern provinces, this same internal versus external placement pattern seems to be repeated there. Roman legionary fortresses existed at Lejjun and Bostra, and bath-houses have been identified inside the ruins of each of these fortresses.<sup>25</sup> External bath-houses (within 200 m of a Roman fort) have been noted at ad-Dianam, cEn Haseva, and Beer Sheba, all of which were probably the sites of

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<sup>24</sup>The bath-house and the parade ground were two of the only military facilities regularly placed outside auxiliary forts (cf. Johnson 1983: 215-21). Nielsen (1990: I.74) suggests bath-houses may have been placed outside castella so they could be used by non-military settlers. It is also possible that the baths' external placement had to do with the smaller area within auxiliary, as opposed to legionary, forts. Indeed, sometimes, in a later stage of a castellum's life, after its garrison had been reduced and there was surplus space within its walls, an internal bath-building might be built (Johnson 1983: 194; cf. Welsby 1982: 25).

<sup>25</sup>The baths at Lejjun have been excavated; the baths at Bostra are only known from surface remains.

auxiliary forts (castella).<sup>26</sup> Hawar was also the site of an auxiliary castellum (Parker 1986: 140) and, there too, the bath-house was external to the fort. Thus, just as in the "northern border provinces", legionary fortresses in Arabia seem to have had internal bath-houses, and auxiliary forts, like Hawar, seem to have had external bath-houses.

Hawar's bath-house was located approximately 150 m southwest of the southwest corner of the fort. This distance was probably not unusual for that of an auxiliary bath-house. The other external bath-houses just mentioned were located within 50 and 200 meters of their forts.<sup>27</sup>

Several factors probably influenced the precise placement of an external bath-house. Where security was a concern, a bath-house might be located in a walled annex appended to the external walls of a fort (e.g. at Newstead and at Rough Castle). That this location was not used at Hawar may indicate that security of the garrison's bathing facilities was not considered a problem.

At other forts, a location close to flowing water seems to have been the major determinant of the location of the bath-house (Johnson 1983: 220). At Hawar, the bath-house was indeed located close to flowing water. However, this bath's water came from man-made and, hence, manipulable structures. Consequently, access to water may not have been the primary concern in the placement of this bath-building.<sup>28</sup>

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<sup>26</sup>The castellum designation for Beer Sheba is uncertain. The Notitia Dignitatum records the presence of a cohort of Dalmatian horsemen there, but Fabian has suggested that the fort might have been originally built for the Tenth Legion (see Fabian 1995).

<sup>27</sup>ad-Dianam: 100 m, cEn Haseva: 50 m, Beer Sheba: 200 m

<sup>28</sup>If the army had wished it, the bath-house could even have been inside the fort since part of the aqueduct flow had been diverted to a reservoir within the fort walls (see Figure

Another factor which might have influenced a bath-house's position was its relation to an anticipated (or existing) civilian community. It has been suggested that auxiliary bath-houses were placed outside their forts so they could be used by civilians (Nielsen 1990: I.74). Moreover, on the basis of a study of the auxiliary castella in Britannia, Sommer (1984: 15) has suggested that the castellum bath-house was placed in the direction in which the army wanted a local community (vicus) to develop. The preferred position for a Britannic castellum bath-house seems to have been a location facing the porta praetoria (i.e. the gate opposite the principia). In a survey of 52 external bath-houses, Sommer found that almost half (46%) were located outside the front gate of the fort (the porta praetoria) whereas very few (10%) were located outside the back gate (Sommer 1984: 15; see also his Figure 22). Assuming that the south gate was the main gate (or porta praetoria) of the fort at Humeima, the bath-house there was in sight of the porta praetoria and the porta principalis dextra (the west gate) (see Figure 2). On the basis of Sommer's survey, this means that Hawar's bath-house was in a fairly typical position for an auxiliary bath-house.<sup>29</sup> Of course, at Hawar the army did not need to place the bath-house in the direction in which it wanted the vicus to develop because there was a pre-existing civilian community on the site. However, it is significant that the army placed its bath-house in the midst of, or adjacent to, this civilian community. It is also probably significant that

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<sup>29</sup>See figure 22 in Sommer (1984); Humeima's bath-house would be to the top right of his figure. My naming of the gates is based on the auxiliary fort shown in Johnson (1983) fig. 19. The rationale for the south gate being the porta praetoria is based on the placement of the east and west gates nearer to this gate than to the north gate.

the fort was placed to the north of the civilian community because in Britannia (new) vici most frequently developed to the south of forts (see Sommer 1984: 43 & fig. 21).<sup>30</sup>

Reuse of Nabataean structure. The military bath-house was placed within the civilian community in a converted Nabataean structure. The placement of the bath-house on top of a pre-existing structure imposed limitations on its shape, size and proximity to the fort. It also influenced the orientation of the walls such that the bath's orientation did not precisely match that of the fort.<sup>31</sup> At Ramat Rahel, in Palaestina, the Roman army also built a bath-house on top of an existing structure, and there too the Roman structure conformed to the orientation of the earlier structure. Thus, apparently, the advantages of converting an existing structure sometimes outweighed the disadvantages imposed by restrictions on its orientation, shape, size, and location. In addition, it is also important to consider that in order to have been judged as suitable for conversion into a bath-building, an extant structure (such as the Nabataean building at Hawar) must have already met some of the shape, size, or location requirements of a military bath-house.

Building materials. Roman military structures were built of local materials whenever possible (Breeze 1983: 50). The walls of Hawar's bath-house were faced with both rubble and the reused blocks of older Nabataean structures. The cores of the walls were composed of small bits of rubble in a crumbly, ashy mortar which was probably made from the

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<sup>30</sup>The southwest position of Humeima's bath-house, regardless of its orientation to the fort gates, was also a common location for auxiliary bath-houses (see Sommer 1984: fig. 21).

<sup>31</sup>The fort walls are oriented 10 degrees east of north (Oleson et al. 1994: 147); the bath-house walls are oriented 20 degrees west of north.

local materials. The interior walls of the rooms and the floors were covered with a plaster which was probably also made locally. The only parts of the structure which were probably not made from local materials were the glass windows and the ceramic pipes and tiles. Due to the lack of raw materials and the scarcity of fuel, it would have been difficult to prepare either of these materials at the site (Oleson, personal communication, March 1996). Therefore, they were probably manufactured elsewhere and then shipped into the fort. The ceramic building materials contain no stamps to indicate their source of origin.<sup>32</sup>

No evidence of mosaic floors or marble wall slabs was found in the bath-house. These embellishments are commonly found in Near Eastern non-military baths but it is not clear how common they were in the military baths built there. Two of the baths in Near Eastern garrisoned communities (Athis/Neocaesarea and Ramat Rahel) did contain such refinements, but they were absent in the excavated sections of the Arabian fort baths at Lejjun.

In the "northern border provinces", castellum baths (as opposed to legionary baths) were only moderately decorated, and they rarely contained marble or mosaics (Nielsen 1990: I.75-76). Their absence is in keeping with a presumed military emphasis on functionality over grandeur, an emphasis which is also mirrored by the plain plaster walls

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<sup>32</sup>The excavations of the fort have not turned up any stamped bricks or tiles, suggesting the ceramic building materials used at Hawar came from non-military kilns. The use of non-military ceramic building materials may be related to the early date of the fort or Hawar's distance from military kiln sites. Stamped bricks and tiles (including a hypocaust tile) have been found in the legionary fort at Bostra (Brulet 1984). However, from a letter written by a soldier stationed at Bostra in the early second century, we know that Hawar was over 8 days travel from Bostra (by road) (see Speidel 1977: 691-93). Perhaps this was too far away for the forts to share the same supply of tiles.

and floors of the bath-house at Hawar.

Date of construction and renovation.

Ceramic evidence suggests Hawar's bath-house was built in the Late Roman period (Oleson 1990: 153). Unfortunately, because this attribution is based on a small number of ceramics, it is not yet possible to date the bath-house any more precisely. The Late Roman period in Arabia corresponds to the period between A.D. 135 and 324 (Parker 1986: 11). Ceramics, coins, and weaponry from Hawar's fort indicate that the fort, itself, was built in the early second century A.C. (Oleson et al. 1995: 8). At Inchtuthil, in Britannia, the army constructed an external bath-house concurrently (c. A.D. 83) with the construction of a fort.<sup>33</sup> Similarly, at Qasr el-cUweinid, in Arabia, inscriptional evidence suggests that the army built a bath and a castellum concurrently (in A.D. 201). Therefore, it is conceivable that the bath at Hawar was built at the same time as its fort in the early second century A.C. However, it is also possible that the army added the bath-house sometime later, between the second and fourth centuries.

The second to fourth centuries A.C. (i.e. the Late Roman period) was a vibrant period in the construction of military bath-houses. I have gathered the dates of original construction for 83 of the military baths in Appendix A. Table 3 indicates the number of these baths which were built each century. At least half of these baths were built between the second and fourth centuries A.C. Moreover, one-third were built in the course of the second century.

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<sup>33</sup>And then abandoned both structures before they could be used.

Table 3  
Distribution of military baths by century.<sup>34</sup>

CENTURY	NUMBER
1st century A.C.	23
1st-2nd century A.C.	4
2nd century A.C.	30
2nd-3rd century A.C.	5
3rd century A.C.	7
3rd-4th century A.C.	1
4th century A.C.	11
"Roman"	1
"Roman or Byzantine"	1
Total	83

In the Near East, there does not really seem to have been a peak time for the construction of baths. Instead, as Table 4 shows, bath construction was fairly constant over a nine to twelve century period. Of course, Table 4, derived from the information in Appendix B, does not contain all the baths built in the Near East during this time period. However, this sample of dated baths contains so many items (142) that it is probably statistically representative.

Compared to other Near Eastern baths in general, the date of construction of Hawar's bath-house seems in no way remarkable. But a second to fourth century date for Hawar's bath does overlap the construction dates for the Near Eastern military baths at Athis/Neocaesarea, Dura Europos, Lejjun, Qasr el-cUweinid and Ramat Rahel. Moreover, for the undated military baths at ad-Dianam, Beer Sheba, cEn Haseva, Tell Faysal and Becchufrin, the date of Hawar's bath overlaps the date of their forts. Thus, the second to

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<sup>34</sup>Baths post-dating or pre-dating the occupation of the Roman garrison are not included.

fourth century A.C. seems to have been a peak period in the construction of Near Eastern military baths.

Table 4  
Distribution of Near Eastern baths by century.<sup>35</sup>

CENTURY	NUMBER
2nd century B.C.	2
2nd-1st century B.C.	2
1st century B.C.	9
1st century B.C. - 1st century A.C.	9
1st century A.C.	4
1st-2nd century A.C.	2
2nd century A.C.	5
2nd-3rd century A.C.	1
3rd century A.C.	11
3rd-4th century A.C.	2
4th century A.C.	10
4th-5th century A.C.	2
5th century A.C.	8
5th-6th century A.C.	2
6th century A.C.	3
6th-7th century A.C.	1
"Hellenistic"	2
"Hellenistic or Roman"	2
"Nabataean"	2
"Nabataean or Roman"	5
"Roman"	16
"Byzantine"	18
"Roman or Byzantine"	8
"Byzantine or Early Islamic"	3
Early Islamic (Umayyad)	13
Total	142

<sup>35</sup>The (military?) mikveh at Rujm ed-Deir is not included.

In the Late Byzantine period (c. 491-640, Parker 1986: 11), the bath-house was renovated through the addition of a second apodyterium (Room F), the filling in of the hypocaust under Room E, and the rebuilding of the heating system in Rooms C, A, and D (Oleson 1990). Sometime later, perhaps also in the Late Byzantine period, another room (Room G) was added.<sup>36</sup>

Renovations were very common in bath-houses. At least 52 of the baths in my catalogues were renovated or repaired at least once, and many underwent multiple alterations.<sup>37</sup> Renovations and repairs to heating systems were particularly common. This is not surprising considering the thermal stresses which these areas experienced; not to mention the heavy traffic and moist atmosphere in the rooms above. At Nysa-Scythopolis, the large public bath-house underwent many alterations to its heating system:

Since the furnaces wore out fairly rapidly, changes made in the furnace system were reflected by various

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<sup>36</sup>The addition of Room G might, alternatively, have been Islamic; see below, Appendix C.

<sup>37</sup>Military baths undergoing renovations/repairs: Aquincum, Beaupt Park, Bewcastle, Birdoswald, Biriciana, Cilurnum (External Bath-house), Coriovallum, Dura Europos (Bath E3), Echzell, Hüfingen, Jagsthausen, Lambaesis, Letocetum, Praetorium, Prestatyn, Rainau-Buch, Ruturiae, Saalburg, Schirenhof, Slaveni, Turicum, Vindolanda (The Military Bath-house), Vindolanda (Mansio Baths), Vindonissa, Vinovia, Walldürn (rebuilt after fire), Würzburg, Zugmantel (Castellum Bath I), Zugmantel (Castellum Bath II); for additional, inscriptional, evidence to repairs to military bath-houses, see Nielsen (1990) vol. 1 p. 75 n. 6; Near Eastern baths undergoing renovations/repairs: Antiochia (Bath C), Antiochia (Bath F), Ashkelon, Athis/Neocaesarea (Northern Extramural Baths), Barade, Bostra (South Baths), Cyprus (Lower Slope Baths), Dura Europos (Bath F3), Dura Europos (Bath E3), Dura Europos (Bath C3), Emmaus, Gadara (Byzantine Baths), Gerasa (The Baths of Placcus), Hammat Gadder, Masada ("Public" Baths in the Fortress), Horvat Minnim, Khirbet Moyat `Awad, Nysa-Scythopolis, Philoteria, Qasr al-Hayr East (Extra-Muros Baths), Ramat Hanadiv, Sepphoris (The Roman Bathhouse), Tel Sera`, Tiberias, Horvat Zikhrin.

phases of use, including the sealing off of furnaces and their replacement with new ones, the blocking of vents which fed hot air to the hypocaust and the opening of others, as well as the blocking of passages between the hypocausts at various points between the halls (Bar-Nathan & Mazor 1989-1991: 41).

In other bath-houses, renovations sometimes seem to have been motivated by a need to reduce the amount of water or fuel the bath-house required (cf. Nielsen 1990: I.116). For example, renovations at Mampsis and Ashkelon reduced the size of a bath-tub, and at Gadara, renovations reduced the size of the heated area. Thus, the renovations at Humeima which involved filling in a hypocaust and rebuilding the remaining heating system were probably not uncommon.

The exact date of the renovations at Humeima is unknown. On the basis of stratified pottery, the excavator believes they occurred in the Late Byzantine period (Oleson 1990). The Late Byzantine period seems to have been a fairly stable and prosperous time for Near Eastern settlements, especially for the settlements in the southern Near East. Even as late as the beginning of the seventh century, "Jordan appears to have been generally peaceful and prosperous" (Schick 1992: 108). The Byzantine period was also a time of great prosperity in the Negev (Shereshevski 1991: 1-2), the desert region west of Hawar which shares much the same environmental conditions. This region "reached its highest density of settlement, and presumably of population" in the late fifth and sixth centuries (Cameron 1993: 177). In Hawar itself the prosperity of the settlement is reflected in the construction of four (or five) churches between the mid-fifth and mid-seventh centuries (Oleson et al. 1995: 8), and the enormous amount of surface pottery of that period (Eadie 1984: 221).

Given the prosperity of Hawar's community in the Late Byzantine period, the renovation of its bath-house does not seem surprising. Archaeological evidence has shown that

bath-houses were also renovated in the Late Byzantine period at Nysa/Scythopolis (sixth century), Gerasa (A.D. 584: The Baths of Placcus), and Antioch (A.D. 537-538, see Kennedy 1985: 9). Moreover, literary evidence records that the Emperor Justinian renovated a multitude of bath-houses in the mid-sixth century,<sup>38</sup> including at least one bath-house used by troops (at Circesium, Procop. Aed. 2.6.9-.11). In this context, a Late Byzantine date for the renovations to Hawar's bath-house does not seem out of place.<sup>39</sup>

At Hawar, the Late Byzantine renovations of the bath-house were presumably initiated by the garrison, if there were still troops stationed in Hawar, and by the civilian inhabitants of the town if the garrison had left. This issue cannot be settled definitively without knowing the exact date of the bath-house's renovations.<sup>40</sup> However, the lack of mosaics and marble panelling in the renovation stage suggests that the renovations were carried out by and for the military. Such decorations were common in urban baths, including, for example, the small fifth century urban baths at Barade and Sergilla in Syria. Given that a fifth century tax record for Palaestina Tertia (The Beersheba Edict) records that Hawar was assessed the second highest taxes among the Transjordan towns (Alt 1921: 4), Hawar's civilians should have been able to afford such luxuries. Indeed,

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<sup>38</sup>Procop. Aed. 2.6.9-.11, 5.2.4, 5.3.4, 5.3.7, 5.9.33. Procopius also records that Justinian constructed many new bath-houses: Aed. 2.8.25 (in a garrisoned town), 2.10.22, 4.10.21, 5.2.4, 5.3.18-.19, 5.4.17, 6.1.13, 6.2.6, 6.4.11, 6.5.10.

<sup>39</sup>Moreover, at this time, imperial policy encouraged the renovation of existing structures over the building of new ones (Di Segni 1995: 317-18).

<sup>40</sup>The garrison was present until at least the early fifth century as indicated by the archaeological (Oleson et al. 1995: 8) and documentary evidence (Notitia Dignitatum Or. 34.25).

marble was used in the Late Byzantine churches built on the site (Oleson et al. 1995: 8). Consequently, the lack of elaborate decoration suggests that the bath-house was renovated by and for the garrisoned soldiers.<sup>41</sup>

### The Bath-Rooms<sup>42</sup>

The bath-house at Hawar did not contain all the rooms which are attested in military baths. Instead, the builders seem to have chosen just the most essential rooms for their small bath. In the remainder of this chapter, I will briefly comment on some of the rooms which were or were not present.

Room D. Room D (3.10 x 2.39 m), which was present in all of the bath-house phases, sat on a hypocausted floor and had flue-pipes embedded in its walls. Its only fixture was a flat bench; there was no basin for water. The excavator has suggested that this room was a sweat room (Oleson 1990: 153).<sup>43</sup>

Sweat rooms could either be dry or wet sweat rooms. Room D was apparently a wet sweat room. The drainage of the bath-house was arranged such that water from Room A would have flowed across the floor of Room D on its way to an exit drain in Room E. Thus the patrons sitting on the bench in Room D would have been subjected to a hot, moist atmosphere,

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<sup>41</sup>It is also theoretically possible that a separate (lavish) bath-house was used and maintained by the civilian populace. However, flue pipe fragments from the walls of such a structure would be visible on the surface of the site. (Indeed that is how the present bath-building was identified before its excavation.) There are no surface remains indicative of another bath-house at Humeima.

<sup>42</sup>See Figures 3 and 4.

<sup>43</sup>Oleson (1990) uses the word laconicum. Since the words laconicum and sudatorium are ambiguously defined in both the primary and secondary literature, I will use the neutral term "sweat room" instead.

perfect for building up a pore-cleansing sweat.

Sweat rooms were common in military bath-houses. They could appear as round detached rooms, or as rectangular rooms either unintegrated or integrated into the bathing sequence. Nielsen (1990: I.78-79) suggests the round, detached, rooms are the earliest developmentally; whereas the rectangular, integrated, rooms are the latest.<sup>44</sup>

The sweat room at Hawar was rectangular and integrated into the bathing sequence. Such sweat rooms were common after the late second century A.C. (Nielsen 1990: I.79), an observation which might be useful in helping to date the bath-house. Of course, the (rectangular) shape of the bath-rooms was to some degree restrained by the Nabataean building used as its base; however, note that 1) the existing Nabataean structure was considered a suitable base on which to build the bathing rooms, and 2) the architect instead could have built a detached circular sweat room as was common in military bath-houses before the second century A.C.

Room A. Room A (2.47 x 2.45 m) was also present in all bath-house stages. It was the bath's calidarium. The calidarium (or hot-water bathing room) was the quintessential room in a hypocausted bath-house.

Room A sat on a hypocausted floor and had flue pipes embedded in its walls. It also contained a built-in splash basin. This basin, jutting out from the wall, sat over the hypocaust, and a flue pipe ran up the wall on either side of the basin. This ensured that the water in the basin stayed hot. The bathers would have inserted shallow vessels into this basin and then doused themselves with the heated water.

Room C. The calidarium was heated by a praefurnium (furnace) which adjoined it on the east. Like the

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<sup>44</sup>For another, early, discussion of round sweat rooms in castellum baths, see Fair (1927).

calidarium, this praefurnium was present in all bath-house stages.

The bath-house at Hawar contained only one praefurnium. Large bath-houses (e.g. at Nysa/Scythopolis), luxury bath-houses (e.g. at Herodian palaces) or bath-houses in colder climates sometimes contained more than one furnace. However, multiple furnaces required more fuel than a single furnace and hence were probably avoided by military architects. That some military bath-houses in the "northern border provinces" did contain multiple furnaces was, most likely, a design limitation imposed by the cold climate (Nielsen 1990: I.79).

Room B. Room B (3.09 x 2.74 m), an apodyterium (or changing room), was present in all stages of the bath-house. In bath-house stage II, the room was lined with two (or three) plastered benches with built-in pillows (klinai), but arrangements for seating or reclining presumably existed in stage I as well (Oleson 1990: 156). An apodyterium was the first and last room used by the bathers. In this room, the bathers would change out of their clothes before their bath. After their bath, they would change back into their clothes and then relax on the benches.

The walls of this apodyterium were made of stone. In the "northern border provinces", a stone apodyterium might be indicative of a building constructed in the second century A.C. or later because, before that time, wooden apodyteria were common (Nielsen 1990: I.79-80). However, the stone apodyterium at Hawar probably reflects not its date of construction so much as the scarcity of wood in the region.

Room F. One of the alterations made to the bath in the Late Byzantine period was the addition of a second (stone) apodyterium (Room F). This second apodyterium was larger (4.34 x 3.47 m) than the original one (Room B, 3.09 x 2.74 m) and contained more benches. With the addition of this

second apodyterium, there were now eight klinai available for the bathers to relax on after their bath.

The renovators might have had two motives for building this second apodyterium. The first was to make the bath-house more efficient in terms of the number of people served per unit time. The second was to provide off-duty soldiers and civilians with more space for lounging, gaming, and socializing.<sup>45</sup>

The increase in the percentage of unheated rooms was consistent with bath-house developments in the eastern provinces, and, particularly, in the Near East. In these provinces, "There is a development from a fairly equal balance between the heated and the cold section [of the baths] in the Roman period, to a growing cold section at the expense of the heated one, which in the course of the Byzantine period became quite small" (Nielsen 1990: I.115). This development has been demonstrated in the plan of baths built from the second to sixth centuries (Nielsen 1990: I.115). The addition of a second apodyterium at Hawar, in conjunction with the filling in of a hypocaust, may also reflect this trend.

Room G. In the final bath-house stage (stage 3), postdating the Byzantine addition of Room F, Room G was added. Room G is a square room appended to the northeast corner of the bath-house. It was described by its excavator in this way:

The walls are less well built than those elsewhere in the Bath, they do not bond with them, and the only door opens outside the building. The interior of this room had been cleared out to the foundation level sometime in the post-classical period, and no interior features remain to provide a clue to its original function (Oleson 1990: 153 & 156).

In his preliminary publication of the bath-house,

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<sup>45</sup>On the importance of fort baths in the social life of soldiers, see below, Chapter 3.

Oleson (1990) suggested that Room F might have housed a latrine. Latrines are present in many Near Eastern and military baths. They are also common in external military bath-houses (Johnson 1983: 213). In military baths, they are "usually small and rectangular in shape" (Nielsen 1990: I.80 n. 50). Moreover, latrines "were always near the [bath-house] entrance, so they could normally also be used by passers-by" (Nielsen 1990: I.163). If Room G is a latrine then a good parallel for it can be found in the fifth century baths at Sergilla, in Syria. Sergilla's bath-house contained a rectangular room, approximately equal in size to Room G at Humeima, which housed a latrine. The latrine-room was located near the entrance to the bath-house, in the northeast corner of the building, with an exterior entrance.<sup>46</sup> Thus, Humeima's Room G (a rectangular room in the northeast corner of the bath-house, located near the bath-house entrance, with an external entrance) might

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<sup>46</sup>It also could be entered from inside the bath-building; for a plan of the bath-house see Charpentier (1995) fig. 6.

A quick perusal of bath plans suggest that the northeast corner of a bath-building may have been a fairly typical location for the placement of a latrine. The military baths at Cilurnum, Collen, Saalburg, Vindolanda (The Military Bath-house and The Mansio Baths) and the Near Eastern baths at Sergilla and Dura Europos (Bath F3) contained a latrine in or near their northeast corner. In addition, the baths at Faesulae, Massaciuccoli, Nida (East Baths), Leptis Magna (Hunting Baths), Thugga (Licinian Baths), Cuicul, Madaurus, Lambaesis (Large Baths, "Palais du Legat"), Ratae Coritanorum, and Augusta Raurica (Women's Baths, phase I) (all shown in Nielsen 1990: II) also contained latrines near their northeast corner. For many of these baths, including perhaps the one at Humeima, the latrines may have been relegated to the northeast because the architectural emphasis of the building was on the southwest where Vitruvius (De Arch. 5.10.1) advises that the heated rooms be placed. The set of heated rooms usually would be flanked on one side by the furnace area and on the other side by the unheated bathing rooms. In many baths, particularly small row type baths, this may have made the northeast corner the best option for the placement of a latrine.

have contained a latrine. However, without fixtures, there is no way to verify this interpretation.

An alternative interpretation is that Room G served as a fuel storage area. Such storage areas were common in Roman, Byzantine, and Early Islamic bath-houses where they tended to be easily accessible to the furnace. In many baths, the storage area was directly adjacent to the furnace.<sup>47</sup> In other baths, such as the bath at Sergilla, the furnace and fuel storage areas were near each other but separated by a service corridor. This might be similar to the arrangement which existed at Hawar. At Hawar, Room G is not directly adjacent to the furnace (Room C) but its only door was on the side of the building from which the furnace was stoked, and the door of Room G was within 8 meters of the furnace entrance. It would have been a simple matter for people to carry the fuel outside the building from Room G to the furnace.

In addition, storage areas usually faced onto the road for the easy unloading of fuel (Nielsen 1990: I.20). The modern (dirt) road through Humeima runs past the entrance to Room G on the east side of the bath-building. The road is on slightly higher ground than the land on either side of it which protects it from flooding during the winter rains. For the same reason, Oleson believes the Via Nova Traiana might have followed the same route through the site (personal communication, March 1996).

Room E. Room E (3.55 x 3.15 m) was situated between the apodyteria (Rooms B and F) and the sweat room (Room D). It contained a splash basin and two square tables built into corners of the room. In the earliest bath-house phase, a hypocaust ran under the floor, but there were probably no flue pipes in the walls (Oleson 1990: 156). This means that

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<sup>47</sup>E.g. at Ashkelon (Bath in Barne'a Quarter), Hammam As-Sarakh, Qasr Ain es-Sol.

not only were the walls not heated, but that, without flues, the heat from the furnace would not have been drawn under the floor (cf. De Vries in press: 9). Room E was thus only heated passively.

Situated as it is between an unheated apodyterium and a directly heated sweat room, Room E probably served as a climatic transition room between the heated section of the bath and the unheated one. Such rooms (called heat traps by Nielsen) were common in military bath-houses (Nielsen 1990: 79). In Arabia, another transitional room, between an unheated atrium and a fully heated tepidarium, existed in the military bath-house at Lejjun (De Vries in press: 8). As in the bath at Humeima, this room contained a hypocaust without wall flues. Interestingly, however, the hypocaust only ran under the half of the room closest to the tepidarium; the half closest to the atrium was not suspended. It is possible that there also was not a hypocaust under the full floor area of Room E at Humeima. The known extent of the hypocaust there is restricted to a small probe (Probe 1 in Figure 3) excavated near the southeast corner of the room (running from the southern wall to the center of the room). However, as this probe revealed hypocaust supports (pilae) within less than a meter of the doorway to the stage I apodyterium (Room A), it is somewhat unlikely that the hypocaust would not have run under the entire floor.

De Vries (in press) labels Lejjun's transitional room a frigidarium and Oleson (1990) originally proposed calling Room E a frigidarium. However, I think Hawar's transitional room is probably best labelled as a tepidarium.<sup>48</sup> A tepidarium was one of the more essential rooms in a bath-

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<sup>48</sup>The labels are, to some extent, not important. We know the room contained a wash-basin and we know the room was indirectly heated. The label is simply architectural shorthand.

house, and in the early row type baths of the western provinces, at least, it was more common than a frigidarium (Nielsen 1990: I.67). Tepidaria often contained a hypocaust with no wall flues (Nielsen 1990: I.156). Moreover, they tended to face south and/or west. Hawar's Room E faces west.

In the second bath-house phase, the hypocaust in Room E was filled in. After that, the room no doubt served as a frigidarium. Room E's hypocaust was filled in at the same time that the hypocaust system in Rooms C, A, and D was rebuilt. Perhaps these renovations were motivated by damage to the hypocaust: at Emmaus, in Judaea, a tepidarium was turned into a frigidarium after an earthquake damaged the hypocaust system. Alternatively, the renovations might have been motivated by the need to re-configure an ineffective heating system: at Coriovallum, in Germania Inferior, renovations were carried out "probably because the heating system did not function properly" (Stolte 1976: 243-44). Finally, the renovations might have been motivated by a desire to reduce the amount of fuel required to run the furnace. At any rate, the placement of a frigidarium between the apodyteria and hot rooms of a small bath-house was in no way unusual.

Palaestra. Hawar's bath-house did not have a palaestra. A palaestra was a courtyard for exercise taken in the course of the bathing process. Palaestrae started to be excluded from Roman-style baths in the course of the second century A.C.<sup>49</sup> By the third century A.C., such palaestrae were uncommon in the Near Eastern baths and this trend may be partially related to the absence of one at Hawar. Probably a more important factor, however, was the absence of palaestrae in military bath-houses in other parts

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<sup>49</sup>They were rare in the "northern border provinces" after the mid-second century (Nielsen 1990: I.81).

of the Empire (i.e. in the "northern border provinces"). Nielsen hypothesizes that one of the reasons military bath-houses did not include palaestrae was because "soldiers presumably received all the exercise they needed without one" (1990: I.79).<sup>50</sup>

### Conclusion

Humeima's bath was built in the ancient Near East and it was built outside of a Roman auxiliary castellum. It should come as no surprise therefore that this bath-house has much in common with both Near Eastern and military baths. For example, its small size (under 500 sq. m.) and simple row plan is typical of both varieties of baths. In terms of its lack of elaborate decoration, however, this bath is more reminiscent of a utilitarian castellum bath than the comfort-focused baths found in Near Eastern communities and private villas. In terms of its location (external to the fort, within sight of the porta praetoria, and on the edge of a civilian community), this bath-house is also typical of castellum baths found in other parts of the Empire. In addition, Hawar's bath was built during the peak period for (Roman-Byzantine) military bath construction. Thus, in many ways, this structure represents a typical small military bath. To modern archaeologists, however, this is a very rare and special bath because it is one of the only military baths in the Roman Near East for which we possess detailed information.

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<sup>50</sup>On the soldier's daily exercise, see below, Chapter 3. For a contrasting view to Nielsen's, see De Vries (in press: 5).

### CHAPTER 3

#### Hawar's Bath-house in its Social Context

Every building is constructed, maintained, and abandoned or destroyed in a social-cultural context. The bath-house at Humeima is no exception. The bath-house was built as an adjunct to a Roman fort which was itself adjacent to a Nabataean settlement located on Arabia's primary north-south road. The fort and settlement at Hawar are still undergoing excavation, and there is much still to be discovered about them. However, the overall preliminary stage of Hawar's excavations should not stop us from trying to interpret the role which the already excavated buildings played within Hawar's community. Indeed, by referring to ancient literary and military documents, as well as the results of excavations at other Roman forts, it is possible to draw inferences about how Hawar's bath-building functioned in its social-cultural context. In particular, the topics to be explored in this chapter include why this bath-house existed, who used it, when it was used, and how it was used.

#### Why did this Bath-building Exist?

Cultural identity. In Chapter 1, I suggested that this bath-house was built because the soldiers stationed at Hawar would have expected to have access to such a bath-house. "Going to the baths" was an important part of Roman urban culture, and the construction of bath-houses at Roman forts elsewhere indicates that the bath-house was an important aspect of military, as well as civilian, culture. Regardless of whether troops were stationed far from the land of their birth or were garrisoned within their native province, their own bath-house, a structure common in all parts of the Roman Empire and used by all levels of society, would have assured these troops of their continuing

participation in Roman society.

Health. A garrisoned company was probably also provided with a bath-house for reasons of health: in a Roman fort, "where a large group of people occupied a considerably small area...hygienic principles had to be observed by each legionary and by the whole unit" (Press 1988: 77). The Roman army's concern for the hygienic conditions of its camps and men is reflected in regulations that the camps and men's apparel be kept clean (e.g. Cod. Iust. 1.46.4, Veget. 2.14, S.H.A. Avid. Cass. 6). A concern with hygiene is also reflected in the military's efforts to provide the soldiers with clean water, flushed latrines, good food, frequent exercise, and expert medical care. In addition, the army encouraged personal cleanliness by placing handwashing basins in latrines and in other parts of the fort.<sup>1</sup>

The army's care to ensure clean water, hygienic conditions, good food, and frequent exercise was probably related to the practice of preventive medicine, and so, too, was the building of bath-houses. "Ancient medicine was predominantly preventive in nature and its preponderant aim was to treat and maintain a healthy body" (Yegül 1992: 352). For the Romans, health was related to the proper balancing of hot, cold, wet, and dry bodily humours. The Roman bath-house, featuring rooms adjusted for different temperatures and humidities, played a role in Roman medicine.<sup>2</sup> As regards preventive medicine, the Roman medical writer Celsus

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<sup>1</sup>On all these topics, see Davies 1989d; on the soldier's diet, see Davies 1989c; on washing facilities in centurions' quarters, see Davison 1989: 233-37.

<sup>2</sup>On the role of baths in Roman medicine, see Fontanille (1985). "La conduite médicale semble rechercher l'équilibre dans l'organisme humain entre le chaud, l'humide, le froid et le sec. Le bain permettait donc d'essayer d'y parvenir" (Fontanille 1985: 22).

included trips to the bath-house among his recommended activities for healthy people (Med. 1.1-3). Therefore military bath-houses, like the one at Hawar, were probably provided not only so that soldiers could get a much more thorough cleaning than would be possible at a hand basin, but also so that, by using the bath-house, the soldiers would remain healthy.<sup>3</sup>

In addition to its role in preventive medicine, the military bath-house might also have been used in curative medicine. Velleius Paterculus (2.114.1-2.114.2) reports that Tiberius carried a set of bathing equipment with him on campaign which he provided to those who were ill:

Throughout the whole period of the German and Pannonian war there was not one of us, or of those either above or below our rank, who fell ill without having his health and welfare looked after by Caesar with as much solicitude indeed as though this were the chief occupation of his mind, preoccupied though he was with heavy responsibilities. There was a horsed vehicle ready for those who needed it, his own litter was at the disposal of all, and I, among others, have enjoyed its use. Now his physicians, now his kitchen, and now his bathing equipment, brought for this one purpose for

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<sup>3</sup>The importance of a bath-house-style cleaning is stressed by Jackson (1988: 49) who suggests that "regular visits to the baths would have reduced the frequency and transmission of those epidemic diseases whose vectors were insects, like fleas, lice and ticks, which thrive on unclean human bodies". However, the link between using a public bath and remaining healthy has been questioned by other modern authors. Scobie (1986) points out that given the practice of treating medical ailments in communal bath-water which was not treated with disinfectants, "Roman public baths might not have been as sanitary as is commonly assumed and...the risks of becoming infected with a wide range of contagious and infectious diseases in such establishments would have been great" (1986: 426). Page (1993) further points out that given the lack of water treatment "clean" water would not have been very clean, and hence bath-water would have contained parasites and bacteria such as the bacterium which causes Legionnaires' disease. However, Scobie's and Page's objections are based on modern conceptions of hygiene. The Romans did not know about bacteria, and they believed baths were healthy.

himself alone, ministered to the comfort of all who were sick. (trans: Shipley 1924: 287 & 289)

Per omne belli Germanici Pannonicique tempus nemo e nobis gradumve nostrum aut praecedentibus aut sequentibus imbecillus fuit, cuius salus ac valetudo non ita sustentaretur Caesaris cura, tamquam distractissimus ille tantorum onerum mole huic uni negotio vacaret animus. Erat desiderantibus paratum iunctum vehiculum, lectica eius publicata, cuius usum cum alii tum ego sensi; iam medici, iam apparatus cibi, iam in hoc solum uni portatum instrumentum balinei nullius non succurrit valetudini.

This passage illustrates both that a link existed between bathing and Roman medicine, and that Tiberius, at least, did not deny the curative benefits of bathing to soldiers on campaign.<sup>4</sup>

Convalescing soldiers were also sent to spas. Davies (1989d: 228) suggests that "some military provinces had a spa, originally built by and for the garrisoning troops". These spas were bath-houses built at hot springs revered for their curative powers. The general belief in the curative value of hot springs is exemplified in a passage from Artemidorus. In his book on dream interpretation, Artemidorus declares that to dream of bathing at a hot spring "foretells health to the sick...For men frequent the warm springs when they are recovering from a sickness" (λούεσθαι δὲ θερμοῖς ὕδασι λέγω δὲ τοῖς αὐτοφύεσι τοῖς μὲν νοσοῦσιν ὑγείαν...σημαίνει· ἢ γὰρ ἀναλαμβάνοντες...εἰς θερμὰ πορεύονται, Artem. Onir. 64, trans: White 1975: 49). Medicinal bath spas were found throughout the Roman world.<sup>5</sup>

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<sup>4</sup>Velleius Paterculus does not specify what instrumentum balinei Tiberius brought with him on campaign. In the Digesta, the instrumentum of a bath-house apparently referred to all the equipment of a bath-house, including the bath-attendants (Dig. 33.7.13, 33.7.14, 33.7.17). Tiberius' instrumentum balinei might have included portable basins, strigils, bath-oil, towels, or attendants.

<sup>5</sup>On this topic in general, see Jackson 1990.

Spas apparently frequented by Roman soldiers were located at Bath in Britannia, Aachen in Germania Inferior, Baden-Baden and Wiesbaden in Germania Superior, Varazdinske Toplice in Pannonia Superior, and (probably) Apulum in Dacia and Lambaesis in Numidia (Davies 1989d: 228). In peacetime, sick soldiers were probably sent to such spas to bathe in and drink their healing waters (Davies 1989d: 228).

Bath-houses built at the forts were also, no doubt, used to heal the sick or injured. Some military hospitals contained their own set of bathing rooms (Davies 1989d: 222-26). These rooms probably played an important role in the medical procedures followed for the treatment of injuries or illnesses.<sup>6</sup> "Depending on their quality, quantity and the motive of the bather, baths were variously either cures, or vehicles for other substances as cures, or a vital part of convalescent therapy" (Zajac 1994: 3). When a fort did not have a hospital with its own bathing suite, medical treatments might have been carried out in the fort's main bath-house. Medical instruments indicative of such treatments have been found in a room adjoining the palaestra of the Legionary Baths at Colonia Ulpia Traiana (Xantem, Germany) (Yegül 1992: 355). Finally, the connection between bath-houses and curative, or preventive, medicine is reflected by the frequent inclusion of statues of healer deities in bath-houses and by the frequency of bath-house inscriptions wishing the bather health.<sup>7</sup>

Relaxation. Another motive the army might have had in

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<sup>6</sup>For a list of illnesses which were treated in bath-houses, see Scobie 1986: 425.

<sup>7</sup>Statues of Asklepios and Hygieia were frequently erected in bath-houses (Dunbabin 1989: 30, Scobie 1986: 425), including the bath-house described by Lucian (Hipp.); statues of Asklepios and his six children (all healer deities) were set up in the public baths at Dion in Macedonia (Harrington 1996: 28 & 30). Some of the health-related inscriptions in bath-houses are discussed by Dunbabin (1989).

building Hawar's bath-house was to give the soldiers a place to relax after they had completed their duties. Relaxation seems to have been Herod the Great's primary motive for visiting a bath-house after a battle: Josephus tells us Herod went to the bath-house because he was tired and hot (BJ 1.340, AJ 14.462).

The Roman soldiers garrisoned at Hawar would not have spent their days fighting battles.<sup>8</sup> However, it is likely that they would have spent part of each day engaged in military drills. Such drills were considered essential for maintaining both the health of the soldiers and their effectiveness as a military force (e.g. Veget. 3.2, Onasander, Strategikos 10.1, Cod. Iust. 1.27.2.9). The drills simulated battle maneuvers and hence were physically demanding.<sup>9</sup> At the end of their drills, and their other duties, the soldiers probably would have welcomed the opportunity to relax.<sup>10</sup>

For soldiers stationed at a Roman fort, the bath-house provided one of the few avenues for relaxation. Breeze (1983: 56) lists the relaxation activities available to garrisoned soldiers as 1) gambling with their comrades, 2) partaking in the entertainments of the vicus, or 3) using the bath-house. The bath-house would have offered the

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<sup>8</sup>On the role of the Roman army in Arabia, see Isaac 1990: 118-34.

<sup>9</sup>For detailed discussions of these drills, see Davies 1989b & e.

<sup>10</sup>Other in-camp duties of the soldiers would have included guard duty, record keeping, cleaning the fort, maintaining the equipment, and working in the baths (perhaps stoking the furnace or cleaning). Members of Hawar's garrison might also have been dispatched on scouting patrols, to guard convoys, to relay messages, to garrison small towns, and to obtain supplies. On the duties of Roman soldiers, see Davies 1974; on the duties of the equites cohortales, see Davies 1989a, esp. 146.

enjoyment not only of bathing but also of socializing and gambling with one's colleagues. Thus Davies (1974: 332) says, "The bath-house was almost the equivalent of the NAAFI [Navy Army Airforce Institute], where the men off duty could bathe, exercise, amuse themselves, gamble, and eat." Gambling probably took place in the apodyterium of military bath-houses, as gaming pieces and altars to Fortuna have been found there (Johnson 1983: 220). Thus, in comparison to other fort buildings, the bath-house occupies a unique place in military architecture: it was the only part of a fort built at least in part for leisure purposes (Le Bohec 1994: 160).

As a consequence of bathing's association with leisure, some ancient sources suggest that it had a negative influence on soldiers.<sup>11</sup> Such passages form part of a moralist tradition that luxury corrupts (the topos of

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<sup>11</sup>E.g. in 359 B.C., a Greek trierarch had accused his predecessor, Apollodorus, of corrupting the crew of a trireme by paying them too high a wage and allowing them to use a bath-house (Demosthenes, Poly. 50.35); Cassius Dio reports that Queen Boudicca denigrated Roman soldiers as people "who bathe in warm water [ὑδατι θερμῷ λουμένων], eat artificial dainties, drink unmixed wine, anoint themselves with myrrh, [and] sleep on soft couches with boys for bedfellows" (Cass. Dio 62.6.4, trans. Cary 1925: 93); Livy (23.28.10-23.28.16) relates that Hannibal ruined his army by wintering them at Capua where they had access to many pleasures, including baths; a letter supposedly written by Alexander Severus complains of soldiers "whoring and drinking and bathing and, indeed, conducting themselves in the manner of the Greeks" (amant, potant, lavant, et Graecorum more quidem se instituunt, S.H.A., Alex. Sev. 53, trans. Magie 1924: 285-87); a similar letter supposedly written by Marcus Aurelius complains that "the Syrian legions...are running riot in luxury and conducting themselves with the morals of Daphne...[and] all are accustomed to bathe in hot water" (legiones Syriacas...diffluentis luxuria et Daphnidis moribus agentes, quas totas exalantes, S.H.A., Avid. Cass. 5.5, trans. Magie 1922: 243); Vegetius (c. A.D. 400) recommends rural recruits over urban recruits, partially because the rural recruits are "unaccustomed to the baths" (balnearum nescia, 1.3, trans. Stelten 1990: 13).

luxuria, see Toner 1995, Edwards 1993). More specifically, the idea that baths could exert a negative influence on people is a reoccurring theme in Greek (Rich et al. 1901: 267), Roman (Toner 1995: 54-64; Dunbabin 1989: 7), and Christian (Yegül 1992: 315-20) moral writings. To the moralist, the ideal soldier would have resembled Vegetius' rural recruit, "the boy who grows up in the open air and is kept in condition by hard work, who has borne the heat of the sun, is scornful of the shade, unaccustomed to the baths, [and] unfamiliar with luxuries" (1.3, trans: Stelten 1990: 13). The ideal Roman soldier would be strong and durable, self-sacrificing, and would have no desire for luxuries, just like Scipio Africanus (as depicted by Seneca Ep. 86). But the ideal Roman soldier was not a real Roman soldier. Real people periodically need to relax and enjoy themselves. One of the army's motives for building bath-houses at its forts must have been to provide the garrisoned troops with an avenue for relaxation.<sup>12</sup>

Presumably, in combination with proper military discipline, military bath-houses would not have had a detrimental effect on Roman soldiers. Instead, by reinforcing the Roman soldier's cultural identity, by contributing to his health, by helping him overcome his wounds and illnesses, and by providing him with a place to

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<sup>12</sup>Cf. Dunbabin (1989: 7): "The moralists, indeed, are never tired of thundering against the luxury of the baths, the precious marbles, sun-filled rooms, water heated almost to the boiling point, and of course the silver vessels and precious perfumes. Ammianus Marcellinus draws a vivid picture of the ostentation of the Roman aristocracy, arriving at the baths with their train of fifty servants; and the immorality and opportunity for licence afforded by men and women bathing together is a favourite theme for many church fathers, as for pagan moralists before them. But for the average inhabitants of the cities of the empire, the baths, large and small, were a place of refreshment and relaxation from the burdens of everyday life, an essential part of the pleasures of civilised living".

relax after his military duties, most military bath-houses would have exerted a positive influence on the soldiers who used them.

Romanization. Besides affecting the soldiers who used them, bath-houses would also have influenced non-military people who came into contact with them. This influence might have been one of the reasons why the Roman army built bath-houses.

Consequently, one of the army's motives for the construction of Hawar's bath-house might have been to promote the romanization of a frontier region.<sup>13</sup> This motive has been suggested for the military baths built in the "northern border provinces".<sup>14</sup> The indigenous peoples of the northern frontier provinces did not have a previous tradition of bath-house building. Thus, "Baths were among the first manifestations of Roman culture with which the local inhabitants became acquainted...[Military] baths were normally...placed outside the forts and were thus open both to the soldiers and to the traders, craftsmen and other camp followers who settled in the vicinity" (Nielsen 1990: I.74, cf. I.5). The conquered people, no doubt, learned about the pleasure and cultural significance of Roman baths while bathing in military bath-houses. The locals then reproduced these bath-houses in their urban centres. Further, the army provided the architects, and sometimes the labour, so that

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<sup>13</sup>The possibility that baths played a role in the romanization of frontier regions often appears in the modern literature regarding Roman baths (e.g. DeLaine 1988: 11; Toner 1995: 53; Dunbabin 1989: 7; Nielsen 1990). For example, DeLaine (1988: 11) states that "For Romans...[baths] were one of the essential elements of the civilised life, one which could be used as a symbol of the romanisation of conquered barbarians".

<sup>14</sup>The argument which follows was derived from Nielsen (1990: I.73-84). For a different perspective on the romanization question in general, see Millett (1990), esp. 65-103.

the new Romans could build bath-houses and the other essential components of a Roman town.

A quotation from Tacitus' Agricola highlights the role of bath-houses in the romanization of the inhabitants of Britannia:

Agricola had to deal with people living in isolation and ignorance, and therefore prone to fight; and his object was to accustom them to a life of peace and quiet by the provision of amenities...And so the population was gradually led into the demoralizing temptations of arcades, baths, and sumptuous banquets. The unsuspecting Britons spoke of such novelties as 'civilization', when in fact they were only a feature of their enslavement. (Agr., 21, trans. Mattingly (rev. Handford), 1970: 72 & 73)

namque ut homines dispersi ac rudes eoque in bella faciles quieti et otio per voluptates adsuescerent...paulatimque discessum ad delenimenta vitiorum, porticus et balineas et conviviorum elegantiam. idque apud imperitos humanitas vocabatur, cum pars servitutis esset.<sup>15</sup>

Thus, military bath-houses seem to have played a role in the romanization of some frontier regions. However, this was probably not a goal behind the construction of Hawar's bath. Unlike the northern regions which had no pre-Roman tradition of bath-house building, bath-houses had been built in the hellenized regions of the Near East since the fourth century B.C. Nabataeans had travelled throughout the Near East and, hence, were familiar with the bath-house. Indeed, the Nabataeans themselves had built bath-houses before their

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<sup>15</sup>Tacitus does not seem to approve of "Agricola's policy of civilising per voluptates" (Dunbabin 1989: 7) but Tacitus' approval is not important for the present argument. (Cf. Furneaux & Anderson's (1922: xxxvii) praise for Agricola: "Like many men of his age--and unlike his own son-in-law, if we may judge from his cynical phrases---he [Agricola] saw the advantage of diffusing Roman civilization in the provinces, and, though he does not appear to have initiated this policy in Britain, he deserves praise for recognizing its merit and zealously forwarding it.")

territory became part of the Roman Empire.<sup>16</sup> Consequently, the Roman bath-house at Humeima would not have presented a new concept to the indigenous inhabitants of Arabia.

#### Who used this bath-building?

Let us now turn away from the question of why this bath-house existed and instead consider who might have used it. The bath-house at Hawar was built in conjunction with the Roman fort. As a result, there is no doubt that the primary clientele of this bath-house were the soldiers stationed at the fort. In some Roman forts, there were also additional bath-houses built to serve just the commanding officer and, perhaps, the senior officers. Usually these bath-houses were located inside the fort, adjoining the commander's house (e.g. at Cilurnum and at Housesteads). No evidence of such a bath-house has been found at Humeima (e.g. flue tiles or hypocaust tiles) and, given the scarcity of furnace-fuel (to be discussed below), it is unlikely that such a bath-house ever existed here. This means that Hawar's bath may have been used by both the enlisted men and the officers.

In addition, this bath-house may have been used by other people as well. The Vindolanda tablets have revealed that the commanding officer and some of the other officers in a fort may have been accompanied by their families (Bowman 1994: 56-57), who would, no doubt, also have made use of the common bath-house.

Slaves also apparently used bath-houses. There is ample evidence that Roman soldiers kept slaves (see Speidel 1989; MacMullen 1984: 444-45). Special bath-houses for slaves have been postulated to exist at the Roman forts at

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<sup>16</sup>At Petra, Khirbet Moyat 'Awad and, maybe, at Mampsis; hypocausted bath-houses were also built next to Nabataean temples at Wadi Ramm, Sahir al-Baqar, and Sia but the dates of these bath-houses have not yet been determined.

Vindolanda and Deva. Since no such baths existed at Hawar, it is possible that the soldiers' slaves--if there were any at Hawar--also used the garrison's bath-house.<sup>17</sup>

In other parts of the Empire, scholars assume that local, non-military, people used a fort's bath-house, especially where the bath-house was placed outside the fort walls (e.g. Birley 1977: 37; Nielsen 1990: I.74). Indeed, some scholars suggest that the military purposely built bath-houses outside of forts so that they could be used by the local people. Sommer (1989: 15) suggests that the position of an external bath-house was meant to suggest the general direction outside of the fort in which the military wished a new civilian settlement (vicus) to develop. The civilian settlement at Humeima pre-dated the Roman fort. The fort's bath-house was placed in the midst of this settlement, in a renovated Nabataean structure, 150 m away from the fort. If Hawar's bath-house was also intended to be used by the civilian community, it was in a good location for this purpose.

Finally, because Hawar was on the major north-south road from the Red Sea to Syria, the bath-house might have also been used by travellers. At other Roman forts, bath-houses were apparently made available to travelling military personnel. At some forts, special baths might have been provided for such travellers, whereas, at other forts the main bath-house would have been used.<sup>18</sup> In addition,

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<sup>17</sup>Examples of slaves bathing: Apul. Met. 10.13-10.15, Columella Rust. 1.6.19-1.6.20, CIL 2.5181, CIL 11.6167, CIL 14.2978-9, Mart. Epig. 8.67; bath-house for slaves at Vindolanda: Tab. Vindol. II 322; bath-house for slaves at Deva (Chester): Webster 1985: 205.

<sup>18</sup>Special bath-houses: e.g., baths in mansio at Vindolanda; main bath-house: "other units on the move spending the night under the shelter of the fort pitched their tents...and could make use of the bath house independently of the usual garrison" (Webster 1956: 45)

because Hawar was on an important trade route, it is possible that non-military travellers might also have been able to gain access to this bath-house.<sup>19</sup> Pliny (HN 12.65) reports that caravans paid all along their route for water, for fodder, and for lodgings; some caravaners might also have paid for a bath.

Given that several different groups of people (i.e. officers, enlisted men, families, slaves, local civilians, and travellers) might have been using Hawar's bath-house, there must have been some way of regulating the time each group had access. This might have been done by assigning different bathing times to different groups. The bathers for a certain time or a certain day might also have been given tickets. Lead disks, 12-21 mm in diameter, found elsewhere in the Empire, probably served as admission tokens for public baths. These objects resemble coins and are usually circular. They often have inscriptions relating to a specific bath-house and contain representations of bathing equipment, bathers, or gods involved with bathing.<sup>20</sup> One such disk has been found in a military bath-house. This thin lead disc, 12 mm in diameter, and stamped with an abbreviation for the legio II Augusta was found in the frigidarium drain of the fortress baths at Isca (Caerleon). It has been tentatively interpreted as "an admission token for civilians to the baths" (G. C. Boon, reported in Rankov et al. 1982: 420).

Ostraca may also have been used in regulating entry to a military bath-house. A number of ostraca bearing the

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<sup>19</sup>Gichon believes that, in the nearby Negev, "cursus publicus and private travellers were particularly dependent upon the military installations for rest, shelter and protection, the more so since these posts controlled the water sources which had to serve the traveller as well" (1974: 535).

<sup>20</sup>For a full discussion of bath-tokens, see Nielsen 1990: I.134-35.

names of Roman soldiers were found in bath-house strata from Masada. The translators of these ostraca suggest they served a function in the Roman army's administration of the bath-house (Cotton & Geiger 1989: 103-104). Perhaps they were used as entry tokens.

Of course, it is not known for certain whether other groups used Hawar's bath-house, much less how their usage was regulated. Thus, in the following sections of this chapter I will concentrate on the bath-house's probable primary users: the Roman garrison at Hawar.

#### What time of day was the bath-house used?

One interesting question to consider regarding this bath-house is what time of day the military might have used it. Civilians usually bathed in the late afternoon. The time of the typical Roman bath seems to have been determined by two factors. The first was that the bath-house achieved the optimum bathing temperature in the afternoon. The second was that the most convenient and efficient time to bathe was after the day's work had been completed but before dinner. Thus, people were able to relax after work, and then replenish with dinner the fluids and energy they had lost in the bath.<sup>21</sup>

It is likely that these two factors (bath temperature and efficient time-management) would also have influenced the time of military baths. However, to the military, the second factor was, no doubt, the most important. Consequently, one could argue that the soldiers would have bathed at whatever time of day their baths would be most

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<sup>21</sup>For a discussion of civilian bathing times, see Nielsen 1990: I.135-36.

convenient to their superiors.<sup>22</sup> In this regard, soldiers could be compared to slaves who bathed not when the water temperature was the best, but when their absence would be least disruptive to their masters. Thus, for example, the cook and the pastry-chef in Apuleius' Metamorphoses (10.13-10.15) went to the baths after the master's dinner. Similarly, Martial's (Epig. 8.67) house-slaves went to the baths at a time when they were not needed to feed or bathe their owner and at a time which seems to have been a "down time" for the household (i.e. there was no water in the house nor fire in the kitchen).

Assuming that soldiers bathed at a time which was most convenient in terms of their activities, what time would that would have been? It probably would not be morning or early afternoon, because this type of bath is very relaxing and it would not be good to relax the soldiers before they had completed their work. Thus the late afternoon or early evening would seem to be a more appropriate time. Moreover, since the soldiers' work involved physical activity, a bath after they had completed this work would have had the advantage of relaxing their muscles.

Literary evidence relating to the time of military baths is very scarce, but the little evidence there is supports the hypothesis that Roman soldiers would have bathed in the late afternoon/early evening. Fronto relates that Lucius Verus, in command of a field army, bathed after the business of the day was completed and before dinner (Princ. Hist. 13). Julius Caesar, also in command of a field army, bathed before dinner while he was billeting with

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<sup>22</sup>Josephus (BJ 3.85ff.) reports that the daily routine of Roman soldiers was very structured; e.g., "The hour for supper and breakfast is not left to individual discretion: all take their meals together. The hours for sleep, sentinel-duty, and rising are announced by the sound of the trumpet; nothing is done without a word of command" (BJ 3.86-87, trans. Thackeray 1927: 601 & 603).

a client king (Cic. Deiot. 17). Another client king, Herod the Great, bathed in the evening after winning an important battle (Joseph. BJ 1.340-1.341, AJ 14.462-14.463). Finally, in a letter recorded in S.H.A.,<sup>23</sup> Septimius Severus complains that undisciplined tribunes are bathing in the middle of the day (S.H.A., Pesc. Niger 3). This suggests that the middle of the day was the wrong time for soldiers to bathe.

The most important evidence, however, regarding the time at which the soldiers stationed at a fort might bathe comes from Herodian. In History 4.4, Herodian relates how Caracalla murdered his brother Geta and then ordered the guards to convey him to the military camp for safety. When he arrived in the camp some of the soldiers were bathing:

After the murder Caracalla was the first to jump up and run from the chamber. Rushing through the whole palace, he shouted out that he had escaped a great danger and only just been saved. He ordered the palace guards to take him away and conduct him to the military camp since he knew he would be safely protected there. If he remained in the palace building, he declared, he would be destroyed. The soldiers believed him, since they had no idea of what had been done inside, and so they all rushed outside with him as he ran out at full speed. There was confusion among the populace when they saw the emperor come running quickly through the middle of the city at nightfall. Bursting into the camp and the temple where the standard and the images of the soldiers are worshipped, Antoninus threw himself on the ground. Then he offered thanks and made a sacrifice for his safety. When the news circulated among the soldiers, as some were already taking their baths and others sleeping [ὡν οἱ μὲν ἤδη περὶ λουτρὰ εἶχον οἱ δὲ ἀνεπαύοντο], they all hurriedly mustered in

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<sup>23</sup>As with the other documents in S.H.A., this letter was probably not really written by the alleged author (Septimius Severus) but rather by the author of this biography (see Magie 1922: xx-xxi). There is a great deal of debate about who this author was (for a brief summary of the issue, see Conte 1994: 650-52 & 675). Authorship aside, however, these documents, probably written between 390 and 420 (Conte 1994: 651), are useful for the attitudes they reveal regarding the bathing behavior of Roman soldiers.

a panic. (trans. Whittaker 1969: 393)

The camp Caracalla goes to is probably the praetorian camp in Rome, although an argument could be made for the camp of the legio II Parthica at Albanum.<sup>24</sup> At the time of this event the camp at Albanum had at least one bath-house and the praetorian camp in Rome probably did also.<sup>25</sup> Therefore, the soldiers in the camp mentioned were most likely bathing in a bath-house. The time of their bath can be inferred from this passage, and from other authors who describe Caracalla's entry into the camp, as taking place in the evening.<sup>26</sup> Together with the previous passages, this camp vignette suggests that the proper time for a military bath was in the late afternoon/early evening.<sup>27</sup>

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<sup>24</sup>In Herodian's version, Caracalla spends the night in an unspecified camp, and bribes the soldiers there, before going to address the senate. In the version given in S.H.A. (Carac. 2), Caracalla bribes the soldiers at Albanum before going to address the senate. However, from the sloppy organization of this story, it is not clear whether Caracalla had spent the night with the soldiers in the praetorium camp or the soldiers in Albanum. Cassius Dio's (78.3) account does not identify the camp either.

<sup>25</sup>On the bath-house at Albanum, see Appendix A. No bath-house is as yet known in the praetorian camp at Rome but very little of the camp has been excavated; there is evidence that another military camp in Rome, the Castra Peregrina, had its own bath-house (see Richardson 1992: 78), and the castra nova of the horse guards might have also (see Speidel 1994: 128 & fig. 10).

<sup>26</sup>Herodian: Caracalla runs through the city on his way to the camp περὶ δειλὴν (around afternoon, late afternoon or evening); Cassius Dio 78.3.1: Caracalla arrives in the camp at ἑσπερας (evening).

<sup>27</sup>The passage in Ammianus Marcellinus, 26.6.14, where Procopius visits the legionaries in a bath at dawn should not be taken as contrary evidence. Ammianus Marcellinus states that the legions had set up their standards in the bath (ubi locata...signa); thus, the legion was apparently using this building as its headquarters. The translations of this passage by Rolfe (1940) and Yonge (1894) support this interpretation. Similarly, after the sixth century, bath-

The location of the heated rooms in Humeima's bath is consistent with the idea that this bath-house would have been used in the late afternoon/early evening. In his discussion of bath-houses, Vitruvius recommends that the heated rooms face west or south if one is to bathe between midday and evening:

Now the hot and tepid baths are to be lighted from the winter west; but if the nature of the site prevents, at any rate from the south. For the time of bathing is fixed between midday and evening. (De Arch. 5.10.1, trans. Granger 1931: 303)

*Ipsa autem caldaria tepidariaque lumen habeant ab occidente hiberno, si autem natura loci inpedierit, utique a meridie, quod maxime tempus lavandi a meridiano ad vesperum est constitutum.*

At Humeima, the sweat-room is on the south-west corner of the building. It is not known whether it contained windows but pieces of what might be window glass were found in the calidarium. The calidarium was located on the southern side of the building and its outer wall faced south. In addition, Room E which, in its earliest bath-house stage had contained a hypocaust, was on the western side of the building. Therefore, on the basis of the physical layout of Humeima's bath-house, and on the literary evidence discussed above, I tentatively conclude that the Roman soldiers at Hawar would have used the bath in the late afternoon and early evening.

#### How often was this bath-building used?

There is very little evidence one can draw on to answer the question of how often Humeima's bath-house would have been used. In spite of assertions in the secondary sources

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houses were sometimes used for Byzantine army barracks (Karpozilos et al. 1991: 271).

that Roman soldiers stationed at a fort bathed "regularly",<sup>28</sup> I have found almost nothing in the primary or secondary sources to suggest how often "regularly" actually was.

The only primary document I know of which is relevant to this question is a duty roster from Egypt for the legio III Cyrenaica (Fink 1971: #9 = PGenLat 1). This roster lists the daily work assignments for October 1 through October 10, A.D. 87 for 31 members of the legion. With the exception of October 2, one to three soldiers were working at the baths every day. On the basis of this one document, it is hard to know whether this legion's bath-house was in daily use (assuming that someone on another duty roster was working there October 2) or whether it was used only occasionally but that a record of one of these occasions just happened to survive. The secret to how often this legion's, or any garrison's, bath-house would have been used probably depended on the availability of water and fuel, a point to which I shall return in a moment.

Among the secondary sources, the only attempt I know of to calculate how often the soldiers garrisoned at a Roman fort could use the fort's bath-house was made by De Vries (in press: 4). He calculated that each legionary at el-Lejjun, in Arabia, could have bathed once every 3 weeks. However, his calculation is based on some questionable assumptions, one of which is that the bath-house was in daily use.

The problem with the assumption that Lejjun's bath was used continuously is that Roman baths required a constant supply of raw materials (i.e. water and fuel) to remain in operation. In the towns, citizens contributed to the provisioning of public baths, thus allowing such baths to

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<sup>28</sup>Le Bohec 1994: 160: "regularly"; Evans 1986: 75: "regular baths".

remain in daily operation.<sup>29</sup> On private estates, there was no need to keep the baths in continuous operation. At Pliny the Younger's villa at Laurentum, the bath-house furnace was only fired up when Pliny was in residence (Pliny, Ep. 2.17). Presumably, keeping the bath in operation when the master was absent would have been a waste of fuel and/or water.

In order to speculate on whether the bath-house at Hawar was in continuous, frequent, or infrequent operation, one needs to consider the possible sources of water and fuel on which it could draw. Because it was attached to the Nabataean aqueduct which had a discharge of 1.72 l/sec (Eadie & Oleson 1986: 68), there would have been enough water to keep the bath-house in continuous operation. Fuel for the furnace, however, was probably scarce.

Forbes (1966) lists the main fuels for hypocausts as wood, charcoal and coal. Locally available coal was used in some military baths in Britannia (Forbes 1966: 20), but it was not generally used elsewhere in the Empire and was probably not used at Hawar, as there was no regional source. Charcoal may have been used at Hawar, but it could not have been made there because of the lack of suitable wood.<sup>30</sup> Hence, if charcoal was used at Hawar, it would have had to be carried in. Although lighter than wood, charcoal is more expensive, and it seems unlikely that it would have been an economical energy source for a relatively large-scale

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<sup>29</sup>In the Late Republic and Early Empire, individuals often gave money for the procurement of fuel and water for public baths (Nielsen 1990: I.122-25). In Late Antiquity, the money was often obtained by taxes: e.g., Cod. Theod. 15.1.32 (A.D. 395): "We assign a third part of the income from the farms belonging to a municipality to be used for the repair of public works and the heating of baths" (trans. Pharr 1959: 427). For more on the provisioning of public baths, see Nielsen 1990: I.122-25.

<sup>30</sup>The majority of the wood at Hawar would have probably been shrubs (see below) which Theophrastus (Hist. Plant. 5.9.3) says are inappropriate for conversion to charcoal.

consumer.

Of the main bath-fuels, this leaves only wood as a locally obtainable source of fuel for Hawar's bath. Unfortunately, there never would have been very much wood available at Humeima. In this desert environment, both wild and cultivated trees were (and are) rare. Literature from the early Islamic period, based on 200 years of oral tradition, states that a patriarch of the Abbasid family had a grove of 500 olive trees at Humeima in the seventh century (Schick forthcoming). Given the climate at Humeima, Oleson (forthcoming [b]) has speculated that a special micro-catchment system of irrigation would have had to be set up for every one of these trees, in order to ensure their survival. In the Roman period, micro-catchments might have been used to support some trees at Humeima, but, given the labour required to support trees here, it is not likely that there were ever many trees at Humeima. It is also unlikely that such specially maintained trees would have ever provided much in the way of fire-wood, except when they were pruned.<sup>31</sup>

The most prevalent source of wood at the site today is the Jointed Saltwood bush (Haloxylon articulatum) which the local bedouin use to make their tea-fires. Carbonized remains of this bush, found in the furnace, produced a <sup>14</sup>C date of A.D. 350 ± 60, suggesting that the Romans had used it to fuel the bath-house (Oleson, reported in De Vries 1991: 271). The excavator of a bath-house at Mampsis, in the Negev desert, also believes that its bath-house was

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<sup>31</sup>Of course, if there were hundreds of olive trees on the site in the Umayyad period, their lees and pits would have provided another potential source of fuel. Olive waste was used as a source of fuel in another Umayyad period bath (Qasr al-Hayr East: Extra-Muros Baths) but there is no evidence that this source of fuel was used at Umayyad period Humeima. Moreover, there is no evidence that this grove of olive trees existed at Humeima in the Roman or Byzantine periods.

fuelled by desert shrubs since no other fuel was available in the region (Negev 1988: 169). However, the Jointed Saltwood bush would not have been a very efficient source of fuel: "It produces a very hot flame, but for only a short time, and enormous quantities must have been needed to heat the Bath Building" (Oleson 1990: 160). These bushes are fairly prevalent around Humeima (c. 8 bushes every 100 sq. m.) but the region would have been quickly de-bushed if Jointed Saltwood was frequently used to heat the bath.

Thus, there was little fuel locally available at Humeima with which to fire the bath-furnace. However, charcoal might have been brought in, and it is possible that wood might have been brought in also. A morning report covering 4 days in late March c. A.D. 233 from Dura Europos lists one man being sent to collect firewood for the baths.<sup>32</sup> Other men listed in the same document have been sent to collect wheat, to escort the barley-collectors, have been detailed to the headquarters of the governor with letters, or have been sent to Becchufrayn on detachment. These tasks are listed among the business for a particular day. For each task, the assignment is listed, the number of soldiers assigned and their identity, and whether the soldiers are missi or reversi (sent or returned). Given the structure of this document, it is obvious that these tasks require more than a single day to complete. Since only one man is being sent to collect firewood for the bath, and since firewood was probably hard to obtain around Dura (Welles et al. 1959: 278 n. 9), it seems more likely that this soldier is going to requisition firewood than to collect it himself.

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<sup>32</sup>PDura 82 = Fink 1971 #47: missus lig balnei mil i nigrini zebidas barnei, "sent: to collect wood for the bath, one soldier, of the century of Nigrinus, Zebidas, son of Barneus..." (trans: Campbell 1994: 112)

Roman military supplies were often obtained by requisition: "Documents from Egypt record soldiers collecting tunics, cloaks, blankets, and garments; palm ropes; oil for cooking, lighting, and bathing; weapons; hides; chaff for fuel and fodder" (Davies 1974: 316). Sometimes troops could travel a great distance to requisition supplies: "Cohors I Hispanorum, based in Maceonia, had men in Gaul to collect corn and clothing" (Davies 1974: 316). Consequently, although there was probably insufficient wood at Hawar to run the bath very often, it is possible that the army brought in additional wood and charcoal for the furnace. Indeed, fuel seems to have been obtained for military baths in Egypt in this way (Lesquier 1918: 354-57). Similarly, in Britannia, "coal was...carted to Roman forts, where it was used in the furnaces of baths" (Forbes 1966: 26).<sup>33</sup>

If wood was shipped into Hawar's fort, it would have to have come from a well-watered region which was relatively nearby. This was presumably the southern region of the Jordanian Plateau, in particular the al-Shara' escarpment, which was 550 m higher than the Hisma desert (and hence received more rainfall), and was linked to Hawar by the Via Nova Traiana. There were oak forests in this area in antiquity but, as a result of extensive exploitation, all that remains today of these forests is "scattered residual scrub" (Hart 1986: 338). Wood shipped from this region would only have taken a few days to reach Hawar's garrison.

In addition to charcoal and wood, there are some other possible fuels which could have been used at Hawar. Forbes

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<sup>33</sup>For more information on how Near Eastern garrisons obtained their supplies, see Lesquier 1918: 349-75.

Almost nothing is, as yet, known about the supplies shipped to Hawar's garrison. Large quantities of oyster shells found in the fort in 1995 indicate that shell fish was brought from the Red Sea for this desert garrison.

(1966: 14) mentions that chaff, straw, and dried dung were frequently used as fuels in the ancient Near East. Several military documents from Egypt record the arrival of shipments of chaff apparently destined for bath fuel.<sup>34</sup> Dung is used as a fuel for Islamic baths,<sup>35</sup> and, more specifically, camel dung is apparently still used as a cheap fuel for Near Eastern potters and lime-burners (Forbes 1966: 15). Dung was used as a primary source of fuel at the Arabian fort of Lejjun (Parker 1984: 37), but I have not been able to ascertain whether it was used in Lejjun's bath-house. Given the scarcity of fuel at Humeima, dung from the local camels, sheep, and goats might have been used in the bath-furnace.

The upshot of this discussion of the possible fuels used in Hawar's bath-house is that, with the exception of Jointed Saltwood, it is not known which fuels would have been used. This summer we hope to test the feasibility of some of the hypothesized bath-house fuels. The frequency with which this bath-house could operate would have depended on the availability of fuel. Until we can make stronger assertions about the fuel used, we cannot answer the question of how often this bath would have been operational.

#### How did the soldiers using the bath-house bathe?

The interior of Humeima's bath-house was cleared out earlier this century by a local inhabitant. As a result, the original cultural deposits inside the bath do not

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<sup>34</sup>See Lesquier 1918: 355-56; Bülow-Jacobsen (1992: 111-12) likewise suggests the chaff shipments in OClaud 124 & 125 might have been destined for bath fuel; OTait 1641ff, cited in Davies 1974: 316 n. 32, also lists chaff being collected by the army as fuel and fodder.

<sup>35</sup>One of the personnel positions listed for Islamic bath-houses in both the tenth century and the twentieth century translates as "superintendent of the supply of dung-fuel for the furnace" (Sourdel-Thomine 1971: 140).

survive. However, the manner in which bathers used this building can be surmised by reference to other Roman baths.

Hawar's bath-house contained the same type of rooms as are found in bath-houses throughout the Roman Empire. Consequently, the soldiers stationed at Hawar probably bathed in a similar fashion to Romans anywhere in the Empire. Having said that, I should point out that there was apparently no fixed pattern for using the rooms in the Roman bath: personal preferences influenced the order and method in which people used the existing rooms (Yegül 1992: 39). The description which follows should give an idea of how typical soldiers might have used Hawar's bath-house.

Upon entering Hawar's bath-house, the bathers went into an apodyterium (changing room) where they changed out of their clothes and put on sandals to protect their feet from the heated floors. Next, they probably headed straight through the unheated room on their way to the sweat room. Here, they would rub oil over their body and then lounge on the bench until a good sweat was built up. The sweat, along with oil, dirt, and loose skin would then be scraped off using a curved strigil, usually made of metal. Then the bathers would go into the calidarium (or hot-room) where they would rinse themselves off by pouring bowlfuls of heated water over their head and body. After rinsing in the calidarium, the bathers would retrace their path to the sweat room where they might stay a little longer before going into the unheated room called a frigidarium. Here they would use shallow bowls to scoop up cold water from a basin and then pour the cold water over their bodies to close their pores. They would then be rubbed down with towels and might, perhaps, be anointed with perfumed oil. Finally, the bathing process ended back in the apodyterium where, after they changed, the bathers could stretch out on the benches and relax.

Examples of the bath equipment used by soldiers have

been found in military contexts. "Gallic shoes...for the baths" are mentioned in a document from the fort of Vindolanda (Tab. Vindol. II 197, trans. Bowman & Thomas 1994). Four wooden slip-on sandals, found at Vindolanda, have been tentatively identified as such bath shoes (Birley 1977: 125-126 & Fig. 38). Towels (sudaria) are also mentioned in the Vindolanda tablets (Tab. Vindol. II 184). In addition, one of the translators of the Vindolanda tablets has speculated that a substance listed as sebum (tallow) might have been used as soap (Tab. Vindol. II 184, on interpretation, see Bowman 1994: 77). However, the Romans generally used bath oil instead of soap. Bath-oil is mentioned in a military document from Egypt (PSI 683, cited in Davies 1974: 316). The oil used by some soldiers may even have been scented. Scented unguents were apparently present in the camps, since Pliny (HN 13.4) mentions that they were used to anoint the standards and eagles on holidays. Finally, a strigil has been found in the bath-house of the Roman fortress of Isca (Caerleon) (Rankov et al. 1982: 420).

Another accessory commonly used by Roman bathers was a bath-attendant. Bath attendants might serve as capsarii (who guarded the bathers' clothes), unctores or aliptae (who anointed the bathers and acted as masseurs), as perfusores (who poured water over the bathers), or as alipili (who plucked out the bathers' arm-pit hair). Sometimes, a single attendant, referred to as a balneator performed all of these duties. In civilian contexts, the positions of Roman bath attendants were filled by slaves or people of low social status.<sup>36</sup>

That an attendant was an important piece of bathing equipment is illustrated by a story about the Emperor

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<sup>36</sup>On Roman bath attendants, see Nielsen 1990: I.125-31.

Hadrian:<sup>37</sup>

He often bathed in the public baths, even with the common crowd. And a jest of his made in the bath became famous. For on a certain occasion, seeing a veteran, whom he had known in service, rubbing his back and the rest of his body against the wall, he asked him why he had the marble rub him, and when the man replied that it was because he did not own a slave, he presented him with some slaves and the cost of their maintenance. But another time, when he saw a number of old men rubbing themselves against the wall for the purpose of arousing the generosity of the Emperor, he ordered them to be called out and then to rub one another in turn. (S.H.A. Hadr. 17.5., trans. Magie 1922: 53)

publice frequenter et cum omnibus lavit. ex quo ille iocus balnearis innotuit: nam cum quodam tempore veteranum quendam notum sibi in militia dorsum et ceteram partem corporis vidisset adterere parieti, percontatus, cur se marmoribus destringendum daret, ubi audivit hoc idcirco fieri quod servum non haberet, et servis eum donavit et sumptibus. verum alia die cum plures senes ad provocandam liberalitatem principis parieti se adtererent, evocari eos iussit et alium ab alio invicem defricari.

Notice that when asked why he was scraping against the marble, the veteran did not reply "because I do not have a strigil" but rather "because I do not have a slave". Hadrian, in return, does not give him a strigil, but rather gives him slaves. Later, Hadrian does not require each man to strigil himself, but rather to strigil each other. The advantage of having someone else handling the strigil is that there are some places which must have been hard to reach on one's own body. This service would have been but one of the advantages of having an attendant in the baths.

There is some evidence that people serving in the military had their own bath attendants. A letter, supposedly written by the Emperor Valerian to the procurator

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<sup>37</sup>This story is not necessarily true. However, in order to make sense to its readers, even a fictitious story must contain plausible details. Here it is the details which concern us.

of Syria, lists the privileges which are to be accorded to a new tribune in the Fifth Legion. Amongst the entitlements which this man is to be given is listed one bath attendant (balneatorem unum, S.H.A., Deified Claudius 14). Another illustration of a military bath attendant comes from Procopius. Procopius (Pers. 1.13.29-.32) relates the story of "a certain Andreas, one of the personal attendants of Bouzes...[who] was following the army, for he cared for the person of Bouzes in the bath" (Ἀνδρέας δὲ ἦν τις ἐν τοῖς Βούζου οἰκείοις...τῷ στρατῷ εἶπετο, ἅτε τοῦ Βούζου σώματος ἐν βαλανείῳ ἐπιμελούμενος, trans. Dewing 1914: 111). These two examples illustrate that fact that some officers had their own bath attendants. An example from Josephus could be taken to mean that enlisted men also had bath attendants. Describing a post-battle visit to a bath-house by Herod the Great, Josephus reports:

That evening, Herod having dismissed his companions to refresh themselves after their fatigues, went himself just as he was, yet hot from the fight, to take a bath, like any common soldier, for only a single slave attended him. (BJ 1.340, trans. Thackeray 1927: 159)

Ἡρώδης δὲ πρὸς ἑσπέραν ἤδη τοὺς φίλους κεκμηκότας ἐπὶ θεραπείᾳ τοῦ σώματος διαφεῖς καὶ αὐτὸς ὡς ἦν ἔτι θερμὸς ἐκ τῶν ὀπλῶν λουσόμενος ἦει στρατιωτικώτερον. εἰς γοῦν αὐτῷ παῖς εἶπετο.

The statement λουσόμενος ἦει στρατιωτικώτερον. εἰς γοῦν αὐτῷ παῖς εἶπετο seems to imply that Herod was acting like a common soldier because he was accompanied by a single slave.

It is, therefore, possible that bath attendants might have been available to serve the soldiers at Hawar. Roman soldiers commonly kept slaves and Speidel (1989) has argued that cavalry soldiers had personal slaves. A soldier's own slave could have assisted him in the bath, or company slaves might have regularly worked as bath attendants. Another possibility is that local people might have been hired as bath attendants. Finally, soldiers listed as on bath-duty in the military records might also have served as personal

bath attendants; however, it is just as likely that their job was to stoke the furnaces.<sup>38</sup>

### Conclusion

Unless military documents are found at Humeima which detail the use of the garrison's bath-house, any conclusions made about the use of this building will have to remain tentative. However, as I have attempted to show, it is possible to use the scant primary and secondary material to create logical arguments for the probable function and use of this military bath-house.

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<sup>38</sup>Soldiers on bath-duty: AE 1979.643, translated as Campbell, 1994, #181, pp. 112-13: part of a daily report from Bu-Njem, Tripolitania, early 3rd century AD, 2 soldiers listed as being "at the bath"; PGenLat 1, verso, part v = Fink (1971) #9: duty roster (table of names by dates with duties written in) of the Legio III Cyrenaica, several entries of ballio which Premerstein, cited in Fink, p. 112 entry 3a, translates as "on bath duty"; PMich 455a&b = Fink (1971) #52, possibly a morning report from 3rd century AD, unit unknown, list of men assigned to duties includes "CVSTODIARUM BAL II" where BAL probably (but not necessarily) equals balnei (Fink 1971: 203, n. 8).

## CHAPTER 4

### Conclusion and Recommendations for Future Research

In A.D. 106, the Roman Emperor Trajan annexed the Nabataean kingdom, and thereby created the Roman province of Arabia. Shortly after that, a Roman fort was built next to the Nabataean settlement of Hawar. Perhaps at the same time but, at any rate, during the Roman era, a military bath-house was built outside the fort, on the edge of the civilian settlement.

My purpose in this thesis has been to place this bath-house in its architectural and social-cultural context. To facilitate this process, I collected comparative information on other bath-houses associated with Roman forts, and on other bath-houses built in the ancient Near East. In addition, I examined Roman and Byzantine literary accounts, and military records, to obtain primary documentation relating to the use of Roman (and Byzantine) military baths.

The information obtained was integrated into the first three chapters of this thesis, along with relevant information from secondary works. Chapter 1 first provided an introduction to the site and history of Humeima, and then reviewed the cultural significance of bathing to the Romans, and the evidence for military bathing practices. Chapter 2 discussed architectural aspects of Humeima's bath, and compared it to other baths associated with Roman forts and with other baths built in the ancient Near East. This analysis found that in terms of its placement, size, simple plan, lack of elaborate decoration, and date of construction, this bath-house was typical of the castellum baths found throughout the Roman world. Moreover, the date of its renovation was not unusual in respect to other Near Eastern baths. Chapter 3 sought to recreate the social-cultural atmosphere in which Humeima's bath existed while addressing important questions about its function (why did

the Roman army built this bath-house, who would have used it, what time of day would it have been used, how often would it have been used, and how would the soldiers using it have bathed). The analysis of these questions drew heavily on primary documentation to present reasoned discussions of each of these questions.

The results of the present body of work cannot produce a definitive series of statements on why this building was built as it was, and how it was used. Indeed, such definitive statements are only rarely possible in archaeological work. However, as a result of these investigations, we now have a better understanding of the architectural and social contexts in which this small military bath was built and used.

At the beginning of this thesis I pointed out that the military structures at Humeima could make important contributions to our understanding of Roman Arabia and the Roman Near East. The topic of this thesis, the bath-house at Humeima, is an important building for several reasons. The first is that it represents a typical Roman military bath in a region in which few of these structures are known.

The bath-house at Humeima was built by, and for, the soldiers at a Roman fort. Bathing was an important aspect of Roman culture, and people throughout the Roman Empire used hypocausted bath-houses regularly, including soldiers garrisoned at Roman forts. The importance of such baths in Roman military life is amply demonstrated by the frequency with which hypocausted bath-houses have been identified at Roman forts. Appendix A contains over 170 such examples. Unfortunately, however, the vast majority of the known military bath-houses are located in the northern frontier provinces (especially Britannia); whereas, only a handful are from the Near East.

The paucity of identified military baths in the Near East probably does not mean that the Roman army did not

build bath-houses there. Rather, the small number of baths is most likely a reflection of the relative lack of archaeological attention paid to the Near Eastern military sites. However, in the past 15 years, archaeological attention in this region has intensified (Kennedy 1992: 473). Thanks particularly to the efforts of Parker (1986), Kennedy, and Riley (Kennedy and Riley 1990), hundreds of military sites have now been identified in this region. At least 32 Roman forts have been identified in Jordan alone (Parker 1995: 251). Given the building practices in other parts of the Empire, it would be expected that many (or most) of the Near Eastern forts and fortresses would have had associated bath-houses.

To date, however, the number of excavated or even identified military bath-houses in the Roman Near East is very small. Only 14 such structures can be posited and most, like the bath-house at Humeima, have only been investigated in the past 15 years. Moreover, 3 of these baths are only known from surface remains, 1 is only known from an inscription, and 2 have been lost or destroyed after brief salvage excavations. The excavated bath-house at Humeima thus occupies an important place in Roman military and Near Eastern archaeology. Although it probably represents a structure that was commonly built by the Romans in the Near East, it also represents a structure for which, at the present time, we have almost no other source of knowledge.

In addition, the bath-house at Humeima is important because it might be one of the earliest Roman baths in Arabia. The fort at Humeima is the oldest dated Roman fort in Arabia (Oleson, personal communication, April 1996). If the bath was built concurrently with the fort in the early second century, then it would be one of the first bath-houses built by the Romans after they annexed Arabia in A.D.

106.<sup>1</sup> This would make it an important structure for investigating the transition from Nabataean to Roman Arabia.

Moreover, Humeima's bath was not only used by the people who built it. It was probably also used by civilians, and it was used after the end of the Roman era. Thus, to archaeologists and social historians, the bath-house at Humeima is also important because it represents an architectural and cultural constant within the evolving dimensions of a local community. When the bath-house was built, the civilian settlement at Hawar was composed primarily of indigenous Nabataeans, and the fort was occupied by Roman soldiers most likely from out-of-province.<sup>2</sup> Later, in the late fourth/early fifth century, the fort was apparently garrisoned by native Arabians,<sup>3</sup> but these indigenous inhabitants, and their civilian counterparts, would not have been culturally identical to those present on the site 2-300 years earlier. Indeed, one difference is that many now probably worshipped the Christian god instead of the ancient Nabataean gods.<sup>4</sup> Another new element was added to the cultural mosaic of Humeima in 686/687 when the site was purchased by a member of the Abbasid family. It is not certain that the bath-

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<sup>1</sup>On the dating of the bath, see above, chapter 2.

<sup>2</sup>Speidel's (1977: 719-20) analysis of the early Arabian garrisons would suggest that Hawar's garrison was non-Nabataean. Kennedy and Graf's alternative hypothesis (reported in Isaac 1990: 132-33) would suggest that some soldiers would have been non-Nabataean, but, perhaps, only the officers.

<sup>3</sup>The Notitia Dignitatum (Or. 34.25) records that a garrison of equites sagittarii indigenae was stationed there.

<sup>4</sup>At Petra, sixth century scrolls record Christian inhabitants with Nabataean names (Koenen 1995: 10). At Humeima, the stage II renovations of the bath-house coincide with the Late Byzantine construction of four or five churches on the site (see above, chapter 2).

house remained in operation after the Abbasids purchased the site;<sup>5</sup> however, if it did, its early Islamic patrons would also have differed culturally from all previous patrons of the bath-house. Thus, from both a social and architectural standpoint, it is significant that although the cultural make-up of Humeima's inhabitants changed over time, their need for a bath-house did not.

Finally, the bath at Humeima is important because the information collected about it can now be used to explore additional questions about military and Near Eastern baths. Below are a few examples.

As I mentioned previously, Humeima's bath may be one of the first baths built by the Roman army after the annexation of Arabia. Therefore, because of its early date and Roman builders, this bath could be useful to anyone interested in investigating the transition from the pre-Roman baths built by the Nabataeans to the Roman baths built in the former Nabataean kingdom. In particular, the design features of this bath could be useful for investigating the relative influences of local traditions versus training and previous experience on the design of military baths. Bath-houses were built in the Nabataean kingdom before it was annexed by the Romans. After it was annexed, the original garrisons probably came from out-of-province; the legionary forces certainly did (Speidel 1977: 719-20). Thus, the architect who designed Humeima's bath-house was probably not Nabataean. It would be interesting, therefore, to compare this bath both with earlier Nabataean baths and with earlier baths built in the province of the military architect's previous posting (perhaps Aegyptus).<sup>6</sup>

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<sup>5</sup>This topic is discussed in Appendix C.

<sup>6</sup>The legio III Cyrenaica was transferred from Aegyptus. Other early units stationed in Arabia came from Syria and Judaea (see Speidel 1977: 719).

Also, as regards the question of the importance of local building traditions, it might be interesting to compare the hypocausted baths built by several different groups before their territories came under Roman control. Thus, it would be interesting to compare hypocausted baths built in the Nabataean kingdom, the Jewish kingdom, Parthian Dura Europos, and Hellenistic Syria. Such a comparison might reveal different cultural biases in bath-house design which might also differ from the design of Roman baths built by non-indigenous troops. Of course, in any such investigation, special consideration will have to be taken of the time-period in which the baths were built. For example, the presence of mudbrick hypocaust pilae in both a Seleucid bath at Tel Anafa and a Herodian bath at Masada (Baths on Lowest Terrace of the Northern Palace) may be as indicative of an early stage in hypocaust development as a shared cultural bias in building materials.<sup>7</sup> In addition, it must be remembered that there was an architectural and cultural interchange between these cultures before they became "Roman". On a large scale, this is illustrated by the mere presence of hypocausted bath-houses throughout the pre-Roman Near East and, on a small scale, it is illustrated by the presence of Nabataean motifs in a Jewish villa bath at Khirbet el-Muraq.

Another interesting idea for future research would be to compare the bathing facilities available to soldiers from Hellenistic times up until the end of the Byzantine period. Of interest would be the degree to which bathing facilities in Nabataean forts (e.g. Horvat Ma'agura) and Jewish forts (e.g. Ramat Hanadiv) might have influenced later Roman/Byzantine military bath-houses in the same regions.

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<sup>7</sup>Cf. Barag 1967: 250: Sun-dried bricks were one of the most common building materials in the ancient Near East but kiln-fired bricks were unknown before the Roman period.

In such a comparison, the bath-house at Hawar would be useful as a typical example of a Roman-period castellum bath-house, external to its fort.

Finally, as regards Humeima's bath-house itself, another topic worthy of further attention is the possibility that this bath-house was used by travellers. Humeima was on the caravan routes in the Nabataean, Roman and Early Islamic periods.<sup>8</sup> At other caravan stops, in all these periods, bathing facilities have been found which may have been used by travellers.<sup>9</sup> It is, therefore, possible that Humeima's bath-house was also used by travellers. Of course, Humeima's bath-house was considerably smaller than the "Extra-Muros Baths" at Qasr al-Hayr East but it was approximately equal in size to the baths at Qasr el Mushah postulated to have been used by travellers (see Bisheh 1989: 88). Humeima's bath was also probably larger and more elaborate than some of the unhyponocausted facilities provided at other road stops such as Horvat Ma'agura and Maliatha.

The main advantage to allowing travellers to use Humeima's bath is that if (non-military) bathers were charged an entrance fee, this service could have provided a

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<sup>8</sup>In Nabataean and Roman times it was on the main north-south route from Bostra to the Red Sea. In the Umayyad period, "It was located near the pilgrimage route, so...many travellers used to pass through" (Schick 1994: 150). That the Via Nova's Red Sea port (Aqaba) was still heavily involved in overland caravan trade at the end of the Byzantine period/beginning of the Umayyad period is demonstrated by the terms of Aqaba's surrender to the Muslims: "This is a guarantee from God and Muhammad the prophet, the apostle of God, to Yuhanna b. Ru'ba and the people of Ayla [Aqaba], for their ships and their caravans by land and sea...It is not permitted that they shall be restrained from...using their roads by land or sea" (extracts from Schick 1992: 112).

<sup>9</sup>E.g. Khirbet el-Khan (date unknown), Horvat Ma'agura (Nabataean), Maliatha (Nabataean and Roman), Khirbet Moyat `Awad (Nabataean [and Roman?]), Qasr al-Hayr East: Extra-Muros Baths (Umayyad), Qasr el Mushah (Umayyad [or Byzantine]), Sahir al-Baqar (Nabataean or Roman).

source of income for the people who controlled the bath (i.e. the garrison).<sup>10</sup> Baths (via entrance fees) were used to generate money for their owners in both Roman (Nielsen 1990: I.124-25) and early Islamic (Morony 1984: 269-70) times. At a road station like Hawar travellers might have been allowed to use the garrison's bath for a fee. Pliny (HN 12.65) reports that caravaneers were accustomed to pay all along their route for water, fodder, and lodgings. They might also have been enticed to pay for a bath. At other Roman forts, extra weapons, tools, and tiles were apparently fabricated to be sold or bartered outside the camp as a source of revenue (Campbell 1994: 121). Perhaps fort baths, such as Hawar's, could also have been used as a source of revenue for the military. Additionally, after the town was no longer garrisoned, the bath might have served as a source of revenue for Hawar's civilian inhabitants. More research needs to be done into the role of baths at caravan stops before this possibility can be addressed adequately.

In terms of architectural and social history, the bath-house at Humeima is an intriguing structure. It was built by soldiers but was likely also used by civilians and travellers. It was built by Roman pagans but was probably also used by Nabataean pagans and Byzantine Christians, as well as, perhaps, the early followers of Islam (see Appendix C). It was built in a water- and fuel-poor region and, in order to function, relied on the importation of water and, perhaps, fuel. Given the difficulties of running a bath-house in the desert, the fact that it remained in use for hundreds of years is strong testimony to the importance of bath-houses in the cultural life of Humeima's inhabitants.

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<sup>10</sup>Soldiers presumably did not pay to use a military bath. At an early second century non-military bath-house in Spain, soldiers were also admitted free (CIL 2.5181).

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- AE L'Année Épigraphique
- AJA American Journal of Archaeology
- BASOR Bulletin of the American Schools of Oriental Research
- CIL Corpus Inscriptionum Latinarum
- ESA Excavations and Surveys in Israel
- IEJ Israel Exploration Journal
- JRA Journal of Roman Archaeology
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## APPENDIX A

## Catalogue of Baths Associated With Roman Forts

Notes:Composition of catalogue entries.

Name of site: Ancient and/or modern (in brackets)

Location: Roman province in Trajan's time  
(underlined), modern territorial region (in brackets)

Date built and date renovated (plus evidence for dates)

Bath Type: based on Krencker's classification scheme

Bath Size: in sq. m.

Bath Rooms: if identified by excavator

Relation to Fort: internal or external, and exact location

Fort Type: auxiliary castellum or legionary fortress, information on fort design if given by excavator)

Fort Size: in ha.

Plans: source of published plans on bath (and fort)

Reference: publications consulted to create this entry

Comment: other items of interest regarding this bath

Provincial labels. The names and borders of the Roman provinces varied over time. For consistency with Appendix B, I have decided to use the provincial boundaries which existed in Trajan's day (the early second century A.D.). This has been done to make the baths easier to locate; it does not necessarily represent the territorial affiliation of the bath at the time of its construction.

Room labels. I have gone with the excavators' or discussants' interpretation of what rooms are present. However, I have noticed that a heated room, with or without a water receptacle, not directly adjacent to the furnace is called a tepidarium by some authors, an additional calidarium by others, and a steam room (sudatorium or laconicum) by still others.

Dates. All dates are A.D. (unless otherwise specified).

Fort size. Unless given in one of the papers in an entry's reference section, the fort sizes were taken from Johnson (1983) or Le Bohec (1994).

Fort type. Unless given in one of the papers in an entry's reference section, the fort types for Britannic forts were taken from Sommer (1984).

References References containing information on more than one bath-house are listed in the main bibliography. Articles/books used for only one bath-house are cited in full as part of the entry for that bath-house.

Abbreviations in catalogue entries.

B = bath; F = fort; B&F = both bath and fort;  
B in C = bath in city;

A = apodyterium, F = frigidarium, T = tepidarium,  
C = caldarium, S = sudatorium, L = laconicum,  
S/L = either sudatorium or laconicum;  
P = palaestra.

**(Aalen)**

Loc: Raetia  
Date: F: built c. 138-161  
B Type:  
B Size: "large"  
B Rooms:  
Rel to F: bath house in vicus  
F Type: Auxiliary Castellum  
F Size: 5.6 ha  
Plans:  
Ref: von Elbe (1975) p. 6; Johnson (1983) p. 282  
Comment: Largest auxiliary fort of Upper German-Raetian limes

**(Abergavenny)**

Loc: Britannia  
Date:  
B Type:  
B Size:  
B Rooms:  
Rel to F: external  
F Type: Castellum  
F Size:  
Plans:  
Ref: Sommer (1984)  
Comment:

**Abusina (Eining)**

Loc: Raetia (on Danube)  
Date:  
B Type:  
B Size:  
B Rooms:  
Rel to F: in annex  
F Type: Auxiliary Castellum  
F Size: 1.8 ha  
Plans: F&B: von Elbe (1975) p. 116  
Ref: von Elbe (1975) pp. 114-17  
Comment:

**ad-Dianam** (Yotvata)

Loc: Arabia (Israel: in Negev)  
 Purpose: Military  
 Date: F: Diocletian (inscription) c. 297; destroyed late 4th C.; B: no dateable finds  
 B Type: 'cEn-Gedi type' - single row  
 B Size: ?  
 B Rooms: ? (C identified)  
 Rel to F: external; 100 m north of fort  
 F Type: Castellum (quadriburgium)  
 F Size: 39.4 m x 39.7 m  
 Plans: F: Meshel (1989) p. 230; B: Meshel (1989) fig. 4  
 Ref: Ze'ev Meshel, "A fort at Yotvata from the time of Diocletian," IEJ 39 (1989) 228-238; Ze'ev Meshel "Yotvata," in E. Stern et al., (1993, vol. 4, pp. 1517-20)  
 Comment: B: Meshel (1989) speculates fort may have been built when "the Negev, Sinai and southern Transjordan were transferred from Arabia to Judaea" p. 238; meagre remains; not fully excavated; round and square pilae, square pipes in walls; obviously (?) related to fortress; near Humeima!

**Aesica** (Greatchesters or Great Chesters)

Loc: Britannia  
 Date: Hadrianic?  
 B Type: Axial row type  
 B Size: 540 sq. m.  
 B Rooms:  
 Rel to F: Sommer (1984) mentions bath 90m to south of fort (same bath?)  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 135  
 Ref: Nielsen (1990) C.136  
 Comment:

**Albano:** see Albanum

**Albanum** (Albano)

Loc: Italia (Italy)  
 Date: c. 202  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external, southwest of fort and beyond Appian Way  
 F Type:  
 F Size:  
 Plans:  
 Ref: Herbert W. Benario, "Albano and the Second Parthian Legion," Archaeology 25 (1972) 257-63.

Comment: part of wall preserved in church of San Pietro;  
camp established by Septimius Severus for 2nd  
Parthian Legion; Benario's map of camp shows  
another bath inside camp (not mentioned in text)

### Alexandria

Loc: Aegyptus (Egypt)

Date:

B Type:

B Size:

B Rooms:

Rel to F:

F Type:

F Size:

Plans:

Ref: Lesquier (1918) p. 390

Comment: to west of Roman suburb of Nicopolis; praetorium  
and bath of Roman camp could be seen until 1875;  
we do not possess either a complete description  
or a plan of the bath (Lesquier, 1918); English  
built their camp over Roman camp

### Aquincum (Budapest)

Loc: Pannonia

Date: Early 2nd C; rebuilt many times, e.g., in 268  
(tile stamps) and in 3rd-4th C; probably  
destroyed by fire in 364-365 (tile stamps)

B Type: Axial symmetrical row type, later half-symmetric  
row type

B Size: 1st phase 8,550 sq. m. incl P 10,000 sq. m.

B Rooms:

Rel to F:

F Type: Legionary

F Size: 24 ha

Plans:

Ref: Nielsen (1990) C.193

Comment:

### Athis/Neocaesarea (Dibsi Faraj): Principia Baths

Loc: Syria (Syria)

Purpose:

Date: Early 4th C; re-utilized as dwelling in Arab  
times

B Type: Ring type

B Size: 500 sq. m.

B Rooms: C, 2 Ts, etc.

Rel to F:

F Type: garrisoned city

F Size:

Plans: Area: Harper (1975) p. 321

Ref: Harper (1975); Nielsen (1990) C.378

Comment: salvage excavation: site since flooded by dam;

excavator (Harper) suggests the principia was built when the village was fortified and garrisoned in the 3rd C; bath-wing added to the principia in the Early Byzantine period; 3 furnaces; box-flue tiles; marble-clad walls; service corridors at semi-basement level

**Auara:** see Hawar

**(Bainsbridge)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external; overlaid by later extension  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Balmuidly): Annex Bath**

Loc: Britannia (Antonine Wall)  
 Date: c. 143  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: bath-house in annex to east of fort  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Johnson (1983) fig. 205  
 Ref: Fair (1927); Wilson (1967)  
 Comment: External bath-house "seems to have been an afterthought, since it was laid out over the ditches of the fort, which then had to be filled in order to support the building". It was soon replaced by internal bath-house. (Wilson, 1967, p. 48)

**(Balmuidly): Internal Bath**

Loc: Britannia (Antonine Wall)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: internal, against back of rampart  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Johnson (1983) fig. 205  
 Ref: Fair (1927); Wilson (1967)  
 Comment: External bath-house "seems to have been an

afterthought, since it was laid out over the ditches of the fort, which then had to be filled in order to support the building". It was soon replaced by internal bath-house. (Wilson, 1967, p. 48)

**(Bar Hill)**

Loc: Britannia (Antonine Wall)  
 Date:  
 B Type:  
 B Size:  
 B Rooms: include latrine  
 Rel to F: internal, built against back of rampart  
 F Type: Castellum  
 F Size:  
 Plans: B: Rook (1992) Fig. 29 (photo 27)  
 Ref: Johnson (1983) p. 213  
 Comment: at lowest point of fort

**(Bearsden)**

Loc: Britannia (Antonine Wall)  
 Date: AD 142-65  
 B Type: row  
 B Size:  
 B Rooms:  
 Rel to F: in annex in east of fort  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Johnson (1983) fig. 206, Breeze (1983) fig. 12 (plans slightly different); B: Breeze (1983) fig. 27 & 28 (Photo); Rook (1992) p. 40  
 Ref: Sommer (1984); Breeze (1983) pp. 38-39; Rook (1992) p. 40  
 Comment: A timber; rectangular sweat room with external entrance; earlier, unfinished, bath-house nearby

**(Beaupart Park)**

Loc: Britannia  
 Date: Phase 1: 2nd quarter of 2nd C; then short period of abandonment; Phase 2a&b: end of 2nd C - middle of 3rd C  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: n.a.  
 F Type: n.a.  
 F Size: n.a.  
 Plans: B: Cleere (in Maxfield, 1989) p. 164  
 Ref: Cleere (in Maxfield, 1989) pp. 162-64  
 Comment: Bath-house built by Classis Britannica; phase 1 visually similar to Auara's Stage 1.

**Becchufrin** (Kifrin/Kufrin): Internal BathsLoc: Mesopotamia (Iraq: east of Dura Europos)

Purpose: Military

Date: F: c. 194

B Type:

B Size:

B Rooms:

Rel to F: internal, next to praetorium?

F Type:

F Size: 170 m x 130 m

Plans: F(&amp;B?): Invernizzi (1986b) p. 364 (structures not labelled); B: Invernizzi (1986b) p. 371 (aerial photos)

Ref: Antonio Invernizzi, "Kifrin--Βηλλουφρεων," Mesopotamia 21 (1986a) 53-84; A. Invernizzi, "Kifrin and the Euphrates Limes," in Philip Freeman & David Kennedy (eds.), The Defense of the Roman and Byzantine East (part 1, pp. 357-381). Oxford: BAR International Series 297, 1986b.

Comment: salvage excavation preceding flooding by dam; remains of internal baths slight; not much information given on baths (see Invernizzi, 1986b, pp. 362-63); fort mentioned in military papyri from Dura-Europos; caravan city

**Becchufrin** (Kifrin/Kufrin): Extramural BathsLoc: Mesopotamia (Iraq: east of Dura Europos)

Purpose: Military

Date: F: c. 194

B Type:

B Size:

B Rooms:

Rel to F: external

F Type:

F Size: 170 m x 130 m

Plans: F(&amp;B?): Invernizzi (1986b) p. 364 (structures not labelled)

Ref: Antonio Invernizzi, "Kifrin--Βηλλουφρεων," Mesopotamia 21 (1986a) 53-84; A. Invernizzi, "Kifrin and the Euphrates Limes," in Philip Freeman & David Kennedy (eds.), The Defense of the Roman and Byzantine East (part 1, pp. 357-381). Oxford: BAR International Series 297, 1986b.Comment: salvage excavation preceding flooding by dam; not much information given (see Invernizzi, 1986b, pp. 362-63); photo of pilae from baths (Invernizzi, 1986b, p. 370); fort mentioned in military papyri from Dura-Europos; caravan city

**(Beckfoot)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Beer Sheba)**

Loc: Judaea (Israel)  
 Purpose:  
 Date: B: Roman or Byzantine; F: "might have been built as early as the 3rd. c. as a camp for the Tenth legion after the legion was transferred from Jerusalem to Eilah" (Fabian, 1995, p. 239)  
  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: outside fort; c. 200 m from southeast corner of fort  
  
 F Type:  
 F Size:  
 Plans: B&F: Fabian (1995) Fig. 3  
 Ref: F: Peter Fabian. "The late Roman Military Camp at Beer Sheba: A New Discovery," The Roman and Byzantine Near East (JRA Supplementary Series no. 14, Ann Arbor, MI: 1995) pp. 235-240.  
 Comment: fort not excavated and has been built over (but outline can be seen in 1918 aerial photo); fort "is different from all contemporary military installations in southern Israel...Yet it resembles the large structures known from Transjordan at Lejun, Udrah and Alia" (Fabian, 1995, p. 239); the Notitia Dignitatum mentions a Roman fortress manned by a cohort of Dalmatian horsemen; Beer Sheba shown as military camp on Madaba map; Fabian suggests Beer Sheba was "the military headquarters of southern Palestine" (p. 239); possibly dux palestina resided in Beer Sheba

**(Belovo)**

Loc: Thracia (Bulgaria)  
 Date: F: Late Roman  
 B Type:  
 B Size:  
 B Rooms:

Rel to F:  
 F Type:  
 F Size:  
 Plans:  
 Ref: Krasimira Vacheva, "Baths in Bulgaria," Balnearia  
 1.1 (1993) 6  
 Comment: "military baths"

Benwell: see Cundercum

Beth-Yerah: see Philoteria

(Bewcastle)

Loc: Britannia (just north of Hadrian's Wall)  
 Date: Hadrianic; "remained in use, with modifications,  
 into Severan period" (Johnson, 1983, p. 287)  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: internal, in southeast praetentura  
 F Type: Castellum (irregular hexagon)  
 F Size: 2.4 ha  
 Plans: F&B: Johnson (1983) fig. 212  
 Ref: Johnson (1983) p. 287  
 Comment:

Binchester: see Vinovia

(Birdoswald)

Loc: Britannia (Hadrian's Wall)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Wilson (1967) p. 61  
 Comment: Inscription (dated 297-305) recorded  
 reconstruction of balneum, praetorium & principia

Biriciana (Weissenburg)

Loc: Raetia  
 Date: Early 2nd C.; phase II from second half of 2nd C  
 B Type: Angular row type  
 B Size: 480 sq. m. (phase I), 1,320 sq. m. (phase II)  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 168

Ref: Nielsen (1990) C.136

Comment:

**(Birrens)**

Loc: Britannia

Date:

B Type:

B Size:

B Rooms:

Rel to F: stone building in annex possibly bath (Sommer, 1984)

F Type: Castellum

F Size: 1.7 ha

Plans:

Ref: Sommer (1984)

Comment:

**(Birthdir)**

Loc: Britannia

Date:

B Type:

B Size:

B Rooms:

Rel to F: probably bath in vicus (Sommer, 1984)

F Type:

F Size:

Plans:

Ref: Sommer (1984)

Comment:

**Bisericuta:** see Dinogetia

**Boppard am Rhein:** see Boudobriga

**Bosra:** see Bostra

**Bostra (Bosra):** North Baths

Loc: Arabia (Syria)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Rel to F: inside fort

F Type: Legionary fortress

F Size: 16.8 ha

Plans: B in city: Bowersock (1983) p. 189; F in city: Kennedy & Riley (1990) fig. 72

Ref: Bowersock (1983) p. 189; Kennedy & Riley (1990); Raymond Brulet, "Estampilles de la III<sup>e</sup> Légion Cyrénaïque à Bostra," Berytus 32 (1984) 175-79

Comment: North Baths shown in Bowersock's map would lie

inside fort shown in Kennedy & Riley's map if the two maps were superimposed; stamped legionary tiles have been found in fort area (including a round hypocaust tile); Bostra was base for the legio III Cyrenaica; I have not found any description of these baths

**(Bothwellhaugh)**

Loc: Britannia (Scotland)  
 Date: c. 142-65  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: 100 west of fort  
 F Type: Castellum  
 F Size: "small"  
 Plans:  
 Ref: Rook (1992) fig. 35 (photo); Wilson (1988) p. 403; Sommer (1984)

Comment:

**Boudobriga** (Boppard am Rhein)

Loc: Germania Superior  
 Date: 357-59 (tile stamps); abandoned in 406; incorporated into a church in the 5th C  
 B Type: Variant of the parallel row type  
 B Size: 1,500 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.159

Comment:

**Bowes:** see Lavatrae

**(Bowness)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in vicus  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Brecon Gaer)**

Loc: Britannia (Wales)  
 Date: possibly 3rd C  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: internal bath in praetentura  
 F Type: auxiliary fort  
 F Size:  
 Plans: B: Welsby (1982) fig. 27.3 (rooms not labelled)  
 Ref: Welsby (1982) p. 25  
 Comment: Welsby speculates that the bath-house was "placed in the midst of the praetentura when presumably the fort garrison had been reduced"

**Brocolitia** (Carrawburgh)

Loc: Britannia  
 Date: Hadrianic?; fort built around 130 A.D.  
 B Type: Axial row type  
 B Size: 440 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.137  
 Comment: Sommer (1984) mentions bath outside fort (not sure if same one)

**(Brough)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: probably external bath to east  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Bryn-y-Gefeiliu)**

Loc: Britannia (Wales)  
 Date: fort site occupied c. 90-160 ??  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: stone building in annex might be bath or mansio  
 F Type: Castellum  
 F Size: 4 acres + 3 acre annex  
 Plans:

Ref: Garlick (1973) p. 70; Sommer (1984)  
 Comment:

**Budapest:** see Aquincum

**(Bumbesti)**

Loc: Dacia (Romania)  
 Date: 201 (CIL III 14485)  
 B Type: Parallel row type  
 B Size: 240 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 142  
 Ref: Nielsen (1990) C.149  
 Comment:

**(Bu Ngem)**

Loc: Africa Proconsularis (Libya)  
 Date: F: c. 200  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: internal  
 F Type:  
 F Size: c. 1 ha  
 Plans: F&B: Lander (1984) p. 114-19 & fig. 100  
 Ref:  
 Comment: free-standing, beside principia

**(Burgh by Sands)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Cadder)**

Loc: Britannia (on Hadrian's Wall)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: "probably annex with bath to E" of fort (Sommer, 1984)

F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Caerau)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in annex to northeast of fort  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

Caerhun: see Canovium

Caerleon: see Isca

Caernarfon/Caernarvon: see Segontium

**Cambodunum (Kempten)**

Loc: Raetia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type:  
 F Size:  
 Plans:  
 Ref: Yegül (1992) pp. 386-87  
 Comment:

**(Camelon)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Canovium (Caerhun)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external bath-house  
 F Type: Castellum  
 F Size: 4.86 acres  
 Plans: B&F: Taylor & Collingwood (1927) p. 185  
 Ref: Garlick (1973) pp. 62-66  
 Comment:

**(Carpow)**

Loc: Britannia (Scotland: Perthshire)  
 Date: F: early 3rd C  
 B Type:  
 B Size: c. 1,100 (my estimate)  
 B Rooms: 2 As, 1 F, 4 Ts, 2 Cs  
 Rel to F: internal, on via principalis  
 F Type: legionary  
 F Size:  
 Plans: B: Black (1993) p. 7  
 Ref: E. W. Black, "An unsuspected fortress bath,"  
Balnearia 1.1 (1993) 6-7  
 Comment: excavators originally called this building the praetorium but Black reinterprets it as a bath-house; unusual in that it has "two complete and identical sets of bath rooms around a common frigidarium"; Black suggests each half of the building was for a different legion with 2 legions occupying the fort at the same time

**Carrowburgh:** see Brocolitia

**(Castlecary)**

Loc: Britannia  
 Date: Antonine  
 B Type:  
 B Size:  
 B Rooms: S/L attached  
 Rel to F: inside fort, close to rampart & parallel to it  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Lander (1984) p. 77 fig. 56  
 Ref: Fair (1927)  
 Comment:

**(Castleford)**

Loc: Britannia  
 Date:  
 B Type:

B Size:  
 B Rooms:  
 Rel to F: bath in annex  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Chelmsford)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in vicus  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Chester:** see Deva

**(Chester-le-Street)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Chesterholm:** see Vindolanda

**Chesters:** see Cilurnum

**Cilurnum (Chesters):** External Bath-house

Loc: Britannia  
 Date: 2nd half of 2nd C; rebuilt several times;  
 abandoned in 367  
 B Type: Ring type  
 B Size: 490 sq. m. ("originally much smaller")  
 B Rooms: include latrine  
 Rel to F: external, between fort & river, on "military way"  
 F Type: cavalry Castellum  
 F Size:  
 Plans: B: Birley (1959) p. 22; Rook (1992) fig. 38

(photo fig. 39); Breeze (1983) fig. 27 (slightly different); F: Birley (1959) p. 12; F&B: Birley (1959) fig. 3

Ref: Nielsen (1990) C.139; Eric Birley, Chesters Roman Fort (London: Her Majesty's Stationery Office, 1959).

Comment: often called finest military bath-house in Britain; glazed-glass window in C (4 feet wide); bath-house in praetorium is "smaller but more luxurious than that outside fort" (Birley, 1959, p. 20)

**Cilurnum (Chesters): Praetorium Baths**

Loc: Britannia

Date:

B Type:

B Size:

B Rooms:

Rel to F: in praetorium

F Type: cavalry Castellum

F Size:

Plans: F&B: Birley (1959) p. 12

Ref: Eric Birley, Chesters Roman Fort (London: Her Majesty's Stationery Office, 1959).

Comment: bath-house in praetorium is "smaller but more luxurious than that outside fort" (Birley, 1959, p. 20)

**(Collen)**

Loc: Britannia

Date: Flavian?

B Type: Axial row type

B Size: 1,030 sq. m.

B Rooms:

Rel to F:

F Type: Castellum

F Size:

Plans: B: Nielsen (1990) fig. 138

Ref: Nielsen (1990) C.140

Comment:

**Copaceni:** see Praetorium

**Corbridge:** see Coriosopitum

**Coriosopitum (Corbridge)**

Loc: Britannia

Date: Flavian, after 79; destroyed in the early 2nd C

B Type: Angular row type

B Size: 900 sq. m., incl. P 1,400 sq. m.

B Rooms:

Rel to F:

F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.141  
 Comment:

**Coriovallum (Heerlen)**

Loc: Germania Inferior (Netherlands)  
 Date: c. 50; restored c. 250; in 1st half of 4th C.  
 partly destroyed & site incorporated into fort

B Type:  
 B Size: 2,064 sq m.

B Rooms:  
 Rel to F:

F Type:  
 F Size:  
 Plans:

Ref: Stolte (in Stillwell et al., 1976); Hugo J. Helmer, "The reconstruction of the Baths of Heerlen in ARCHEON, Alphen aan den Rijn," Balnearia 1.1 (1993) 5-6.

Comment: 3rd C. alterations "probably because the heating system did not function properly" (Stolte, 1976, pp. 243-44); inscription from site records restoration done by a decurio in Colonia Ulpia Traiana (Xantem) in 250; the baths have been enclosed in a museum; a full-scale reproduction of the baths has been built at Alphen aan den Rijn

**(Cramond)**

Loc: Britannia (on Antonine Wall)

Date:

B Type:

B Size:

B Rooms:

Rel to F: external

F Type: Castellum

F Size:

Plans:

Ref: Wilson (1988) p. 333; Sommer (1984)

Comment: Bath-house excavated in 1975-76 & then back-filled.

**(Croy Hill)**

Loc: Britannia

Date:

B Type:

B Size:

B Rooms:

Rel to F: external

F Type: Castellum

F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Cundercum** (Benwell)  
 Loc: Britannia  
 Date: Hadrianic?  
 B Type: Angular(?) row type  
 B Size: 440 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.142  
 Comment: Sommer (1984) mentions bath 270 m southwest of fort (same bath?)

**Derventio** (Papcastle): External Bath-house  
 Loc: Britannia (Lake Country)  
 Date: 4th C  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Cavalry Castellum  
 F Size: 6 3/4 acres  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Derventio** (Papcastle): Commander's Bath  
 Loc: Britannia (Lake Country)  
 Date: 4th C  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: for commanding officer  
 F Type: Cavalry Castellum  
 F Size: 6 3/4 acres  
 Plans:  
 Ref: Garlick (1970) p. 43  
 Comment:

**Deva** (Chester)  
 Loc: Britannia  
 Date: finished 79  
 B Type:  
 B Size: c. 6,500 sq. m.  
 B Rooms: include gymnasium  
 Rel to F: inside fort, east of porta praetoria

F Type: Legionary Fortress  
 F Size: c. 24 ha  
 Plans: B&F: Garlick (1973) p. 21 ("imaginary reconstruction")  
 Ref: Garlick (1973); Watson (1985) p. 204  
 Comment: fortress equipped with piped spring water

Dibsi Faraj: see Athis

Dinogetia (Bisericuta)  
 Loc: Moesia Inferior  
 Date: Dioclenianic/Constaninian; remodelled for another purpose by Justinian  
 B Type: Parallel row type  
 B Size: 360 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.183  
 Comment:

(Dolaucothi)

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external; south of river (& vicus between fort & river)  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

(Dover)

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in vicus  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Dura Europos (Salihiyeh): Bath E3**

Loc: Mesopotamia (Syria)  
 Purpose: Military?  
 Date: Early 3rd C  
 B Type: Ring type (later row type)  
 B Size: 700 sq. m.  
 B Rooms:  
 Rel to F: within military precinct  
 F Type: garrisoned city  
 F Size: 9 ha  
 Plans: B: Yegül (1992) fig. 423  
 Ref: Nielsen (1990) C.362; Yegül (1992) pp. 358  
 Comment: within a 9 ha region of city walled off for use of Roman garrison; walled-off region also contained principia, barracks blocks, and temples; "Dura provides an excellent though rare example of the accommodation for an implanted urban garrison within the circuit of an existing stronghold" (Kennedy & Riley, 1990, p. 114); Apodyterium identified by benches along walls

**Ebchester:** see Vindomora

**Eboracum (York)**

Loc: Britannia  
 Date: 4th C.  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: internal  
 F Type: legionary  
 F Size:  
 Plans: B&F: Garlick (1971) pp. 38-39 ("conjectural reconstruction"); Wilson (1988) p. 227  
 Ref: Wilson (1988) p. 233-34  
 Comment: remains preserved beneath "Roman Bath Inn"

**Eboracum (York): Baths in Canabae**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in canabae  
 F Type: legionary  
 F Size:  
 Plans: B&F: Garlick (1971) pp. 38-39 ("conjectural reconstruction")  
 Ref:  
 Comment:

**(Echzell)**

Loc: Germania Superior  
 Date: 92-100; restored 180-200; restored 211-222 (tile stamps)  
 B Type: Row type  
 B Size: over 875 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 150  
 Ref: Nielsen (1990) C.161  
 Comment:

**Eining:** see Abusina

**(Elginhaugh)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: "Probably bath outside fort" (Sommer, 1984, p. 80)  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(cEn Haseva, Tel Tamar)**

Loc: Arabia (Israel: in Arabah in Negev)  
 Purpose: Military  
 Date: B: Roman; F: probably founded after annexation of Arabia; projecting towers added late 3rd/early 4th C; fell into disuse during 2nd half of 4th C  
 B Type: info not yet available  
 B Size: " " " "  
 B Rooms: " " " "  
 Rel to F: 50 m southeast of fort  
 F Type: Castellum  
 F Size: c. 46 m x 46 m  
 Plans:  
 Ref: Rudolph Cohen, "The fortress at cEn Haseva," Biblical Archaeologist 57:4 (1994) 203-214; Staff, "1995 excavation opportunities," Biblical Archaeology Review 21.1 (1995) 45.  
 Comment: Cohen's 1994 article was published before the 1993 season at which point the excavation of bath was still in the early stages; "Roman" baths are mentioned in a description of the site published prior to the 1995 season

**Exeter:** see Isca Dumnoniorum

**(Tell Faysal)**

Loc: Arabia (Jordan)  
 Purpose:  
 Date: F: end of 2nd C/beginning of 3rd C CE  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: unknown  
 F Type: fort or watchtower; but may be caravanserai or villa  
 F Size: 31 m x 37 m  
 Plans:  
 Ref: Gaetano Palumbo, Khairieh `Amr, Ali Musa & Michelle Rasson-Seigne, "Salvage Excavations at 'Tell Faysal', Jarash," ADAJ 37 (1993) 89-117  
 Comment: salvage excavation in 1991; site had been heavily damaged by 20th C construction; only a small portion of "fort" was excavated; fort would have controlled southern access to Gerasa; "the presence of a large number of hypocaust tiles...may indicate the presence of a bath in the area" (Palumbo et al., 1993, p. 95); hypocaust tiles also reused in "late" kiln; "fort" now preserved under highway

**(Forden Gaer)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in vicus  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Frankfurt am Main:** see Nida

**(Galligaer)**

Loc: Britannia  
 Date: 110-130, abandoned 130  
 B Type: Axial row type  
 B Size: 800 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:

Ref: Nielsen (1990) C.143

Comment:

**(Gelligaer II)**

Loc: Britannia (Wales)

Date:

B Type:

B Size:

B Rooms:

Rel to F: in annex bonded to fort

F Type: Castellum

F Size:

Plans: B&F: Sommer (1984) fig. 10 (structures not labelled)

Ref: Sommer (1984)

Comment:

**Gemellae**

Loc: Numidia

Date: Hadrianic (tile stamps)

B Type: Double row type

B Size: 115 sq. m.

B Rooms:

Rel to F:

F Type: Castellum

F Size:

Plans:

Ref: Nielsen (1990) C.230

Comment:

**Glannoventa (Ravenglass)**

Loc: Britannia

Date: F: c. 130 (replaced earlier fortlet); occupied until c. 400; idle for periods in 2nd & 3rd C.

B Type:

B Size:

B Rooms: "identity of the various rooms are in doubt" (Wilson, 1988, p. 255)

Rel to F: external; NE of fort (but Wilson, 1988, says in NE corner of fort)

F Type: Castellum

F Size: 3 1/2 acres

Plans:

Ref: Sommer (1984); Wilson (1988) pp. 254-55

Comment:

**Greatchesters or Great Chesters: see Aesica**

**Grinario (Köngen)**

Loc: Germania Superior

Date: F: Antonine

B Type:

B Size:  
 B Rooms:  
 Rel to F: internal  
 F Type:  
 F Size:  
 Plans: B: Manderscheid (1988) fig. 199; Johnson (1983)  
 fig. 146 (unlabelled)  
 Ref: Johnson (1983) p. 193-94  
 Comment: "grand"

**Halton or Halton Chesters:** see Hunnum

**Hardknott:** see Mediobogdum

**Hawar/Auara (Humeima)**

Loc: Arabia (Jordan: in Hisma)  
 Purpose: Military  
 Date: B: Phase 1: Nab building; Phase 2: Late Roman  
 bath; Phase 3: Byzantine bath; F: built 2nd C  
 B Type: row (stage 1 = parallel row type)  
 B Size: 150 sq. m.  
 B Rooms: A-F/T-L-C  
 Rel to F: outside fort  
 F Type: Castellum (Parker, 1986)  
 F Size: 3.0 ha  
 Plans: B: Oleson (1989) figs. 4-6; B&F: Oleson (1994)  
 fig 1; F: Oleson (1994) fig. 3  
 Ref: B: John P. Oleson, "Humeima hydraulic survey,  
 1989: Preliminary field report," Classical Views  
 34 (1990) 145-63. F: John P. Oleson, Khairieh  
 `Amr, Rebecca Foote, & Robert Schick,  
 "Preliminary report of the Humeima excavation  
 project, 1993," Classical Views 38 (1994) 141-79.  
 Comment:

**Heddernheim:** see Nida

**Heerlen:** see Coriovallum

**(Hindwell Farm)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: probably bath to SE of fort (Sommer, 1984)  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(High Rochester)**

Loc: Britannia  
 Date: unknown  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: internal  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Welsby (1982)  
 Comment:

**(Hofheim)**

Loc: Germania Superior  
 Date: B: c. 83/84; F: Claudian  
 B Type:  
 B Size:  
 B Rooms: entrance-court, A, E, T, C, S/L  
 Rel to F:  
 F Type:  
 F Size:  
 Plans:  
 Ref: Fair (1927)  
 Comment:

**(Housesteads): External Bath-house**

Loc: Britannia (on Hadrian's Wall)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external, to east of fort  
 F Type: Castellum  
 F Size: 1.7 ha  
 Plans: F&B: Connolly pp. 24-25 (sketch); F: Breeze fig. 1  
 Ref: Welsby (1982) p. 120  
 Comment:

**(Housesteads): Praetorium Bath**

Loc: Britannia (on Hadrian's Wall)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in praetorium  
 F Type: Castellum  
 F Size: 1.7 ha  
 Plans: F&B: Connolly pp. 24-25 (sketch); F: Breeze fig. 1  
 Ref: Welsby (1982) p. 120; Johnson (1983) p. 134

Comment: in most secluded part of building

**(Hüfingen)**

Loc: Germania Superior  
 Date: Vespasian (tile stamps); rebuilt in Flavian to Trajanic times; functioned until 3rd C  
 B Type: Angular row type  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 153  
 Ref: Nielsen (1990) C.163  
 Comment:

**Humeima:** see Hawar

**Hunnum** (Halton or Halton Chesters)

Loc: Britannia  
 Date: Severan?  
 B Type: Axial row type  
 B Size: 650 sq. m.  
 B Rooms:  
 Rel to F: within praetentura  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 136.  
 Ref: Nielsen (1990) C.144; Welsby (1982); Sommer (1984)  
 Comment: Sommer (1984) mentions that an annex to SW was probably over an earlier bath

**Iatrus:** Castellum Bath XVI

Loc: Moesia Inferior  
 Date: First half of 4th C  
 B Type: Axial row type  
 B Size: 35 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.364  
 Comment: See also Castellum Bath XXVI

**Iatrus:** Castellum Bath XXVI

Loc: Moesia Inferior  
 Date: Second half of 4th C  
 B Type: Axial row type  
 B Size: 25 sq. m.  
 B Rooms:

Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.364  
 Comment: See also Castellum Bath XVI

**Iciniacum** (Theilenhofen)  
 Loc: Raetia  
 Date: 2nd-3rd C; built upon older baths; abandoned in 260  
 B Type: Parallel row type  
 B Size: 510 sq. m.  
 B Rooms:  
 Rel to F: external, 250 m SW of fort  
 F Type: Castellum  
 F Size:  
 Plans: B: von Elbe (1975) p. 389  
 Ref: Nielsen (1990) C.201; von Elbe (1975) p. 388-89  
 Comment: altar to Fortuna found in apodyterium

**(Ilkley): Praetorium Bath**  
 Loc: Britannia  
 Date: late 4th C  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: added to praetorium  
 F Type: Castellum  
 F Size:  
 Plans: B: Welsby (1982) fig. 41B  
 Ref: Welsby (1982) p. 119  
 Comment: may be bathing suite; many of rooms roughly built

**(Ilkley): Vicus Bath**  
 Loc: Britannia  
 Date: late 4th C  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: bath in vicus  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment: probably bath in vicus

**(Inchtuthil)**  
 Loc: Britannia  
 Date: c. 83  
 B Type:  
 B Size:

B Rooms:  
 Rel to F: external; just beyond southern defenses  
 F Type: Legionary Fortress  
 F Size: 21.4 ha  
 Plans: F: Breeze (1983) fig. 31  
 Ref: Breeze (1983) p. 42; Wilson (1967) p. 18  
 Comment: fort abandoned before completion; bath-house had not been used before demolished; except for bath-house & fort wall, fort built of timber; Wilson (1967) p. 18: stone for officers' bath-house may have come from quarry 2 1/2 miles to the south

**(Inveresk)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in vicus  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Isca (Caerleon)**

Loc: Britannia (Wales)  
 Date: 1st C (Flavian)  
 B Type:  
 B Size: c. 8,000 sq. m.  
 B Rooms: include P  
 Rel to F: inside in praetentura  
 F Type: Legionary Fortress  
 F Size: c. 19 ha  
 Plans: B: Yegül (1992) fig. 86 & 87; F&B: Johnson (1983) fig. 197  
 Ref: Johnson p. 266; Watson (1985) p. 204; N. B. Rankov, M. W. C. Hassall, & R. S. O. Tomlin, "Roman Britain in 1981," Britannia 13 (1982) 328-422.  
 Comment: finds from bath: possible admission token (lead disk stamped with L·IIA), decorated bronze strigil, bone gaming counters

**Isca Dumnoniorum (Exeter)**

Loc: Britannia  
 Date: c. 60-65  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type: Legionary Fortress

F Size:  
 Plans:  
 Ref: Yegül (1992)  
 Comment:

**(Jagsthausen)**

Loc: Germania Superior  
 Date: 2nd C?; rebuilt in 248 (CIL XIII 6562)  
 B Type: Axial row type  
 B Size: 465 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.165  
 Comment:

**(Kapersburg)**

Loc: Germania Superior  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Johnson (1983) p. 207  
 Comment: lead pipes served bath-house

**Kastron Mayfa`a (Umm ar-Rasas)**

Loc: Arabia (Jordan)  
 Purpose:  
 Date: B: Umayyad (8th C); F: 3rd or early 4th C  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type:  
 F Size: 2.2 ha  
 Plans: transformation of gate to bath: Bujard Fig. 4.1 & 4.2  
 Ref: Jacques Bujard, "La fortification de Kastron Mayfa`a/Umm ar-Rasas," SHAJ V (1995), pp. 241-49.  
 Comment: in the Umayyad period, the eastern gate of the Roman fort was blocked up and a hammam (bath) was installed between its two towers; 3 arches still standing in bath

**Kempten:** see Cambodunum

Khirbet el-Kerak: see Philoteria

Kifrin: see Becchufrin

Köngen: see Grinario

(Kösching)

Loc: Raetia  
 Date: F: Flavian  
 B Type:  
 B Size:  
 B Rooms: S/L  
 Rel to F:  
 F Type:  
 F Size:  
 Plans:  
 Ref: Fair (1927)  
 Comment:

Kufrin: see Becchufrin

Lambaesis (Lambese)

Loc: Numidia  
 Date: Mid-2nd C; restored during the reign of Septimius Severus (CIL VIII 2706); rebuilt in 260-269 (AE 1971 no. 508?)  
 B Type: Imperial type or double symmetric row type  
 B Size: 3,070 sq. m.  
 B Rooms:  
 Rel to F: inside in SE corner  
 F Type: Legionary  
 F Size: 20 ha  
 Plans: B: Nielsen (1990) fig. 196 & 22-23; Yegül (1992) fig. 244  
 Ref: Nielsen (1990) C.233; Yegül (1992) pp. 216-17  
 Comment:

Lambese: see Lambaesis

(Lancaster)

Loc: Britannia  
 Date: built c. 120/130; disused by c. 160; formed part of another building c. 250-300; demolished 4th C. for new fort  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Wilson (1988) p. 258-59; Welsby (1982) p. 45

Comment:

**Lauriacum** (Lorch)

Loc: Noricum  
 Date: Severan?  
 B Type: Parallel row type  
 B Size: 4,000 sq. m., incl. P 7,350 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Legionary  
 F Size: 22 ha  
 Plans: B: Nielsen (1990) fig. 161  
 Ref: Nielsen (1990) C.188  
 Comment:

**Lavatrae** (Bowes)

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: to south of fort between fort and river  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Garlick (1971) p. 28; Sommer (1984)  
 Comment:

**(Leintwardine)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in annex to south  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(el-Lejjun)**

Loc: Arabia (Jordan)  
 Purpose: Military  
 Date: B: built early 4th C (coin); c. 363-502 building re-used (no longer bath); F: c. 284-551  
 B Type: Angular row type  
 B Size: c. 223.1 sq. m.  
 B Rooms: at least 5 rooms (not completely excavated); A-Atrium-F (with hypocaust under half)-T-C (naming of rooms conjectural)  
 Rel to F: inside fort, abutting north enclosure wall

F Type: Legionary fortress  
 F Size: 4.6 ha  
 Plans: F&B: Parker (1991) fig. 2; B: Parker (1991) fig. 14  
 Ref: De Vries "Plan of the Bath and the Function of Its Rooms"; S. Thomas Parker, "Preliminary Report on the 1989 Season of the Limes Arabicus Project," Preliminary Reports of ASOR-Sponsored Excavations, 1982-89 (pp. 117-54). Baltimore: 1991.  
 Comment: Bath not completely excavated; may be another bath (or latrine) in east vicus building pre-dating fort; may be a more monumental bath "across wadi north of northeast corner of the fortress" (De Vries note 5) but this seems purely conjectural. Caveat: De Vries labelling of rooms different from Parker's (1991).

**Letocetum (Wall)**

Loc: Britannia  
 Date: Phase 1: 1st C., Phase 2: early 2nd C.?, Phase 3: 3rd C., Phases 4&5: (dates not given in Wilson, 1988; phases 4&5 might be single phase)

B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Wilson (1988) p. 182; Sommer (1984)  
 Comment: phase 3: new apodyterium & cold plunge added; phase 4: internal changes; phase 4: main stoke hole rebuilt; Sommer (1984): probably bath in vicus

**(Llandoverly)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: bath or mansio outside fort to west  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Llanio)**

Loc: Britannia  
 Date:

B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external; to south of fort  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Sommer plate 18 (aerial photo)  
 Ref: Sommer (1984)  
 Comment:

Lorch: see Lauriacum

**(Loughor)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Low Borrow Bridge)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: probably bath outside fort to south (Sommer, 1984)  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Lympne)**

Loc: Britannia (Saxon Shore)  
 Date: F: abandoned c. 350  
 B Type:  
 B Size: small  
 B Rooms:  
 Rel to F: internal  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Lander (1984) p. 178  
 Ref: Reece (in Maxfield, 1989) pp. 152-57; B. W. Cunliffe, "Excavations at the Roman fort at Lympne, Kent 1976-78," Britannia 11 (1980) 227-

88, esp. 256-8  
 Comment: excavated in 1852; not known if all rooms found

**Mainz:** see Mogontiacum

**(Malton)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in defended vicus  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Sommer (1984) fig. 13 (structures unlabelled)  
 Ref: Sommer (1984)  
 Comment:

**(Margidunum)**

Loc: Britannia (England: Nottinghamshire)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type: Camp?  
 F Size:  
 Plans:  
 Ref: Taylor & Collingwood (1927) pp. 195-196 (interim report)  
 Comment:

**(Marienfels)**

Loc: Germania Superior  
 Date: After 83, i.e., late 1st C to early 2nd C; abandoned around 150  
 B Type: Axial row type  
 B Size: 375 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Krencker (1929) Abb. 352  
 Ref: Nielsen (1990) C.166; Yegül (1992) p. 386  
 Comment:

**(Maryport)**

Loc: Britannia  
 Date: F: early Trajanic?  
 B Type:  
 B Size: 444.4 sq. m. (107.2 sq. m. main building + 337.2

sq. m. S/L)  
 B Rooms: isolated, circular, S/L  
 Rel to F: external, close to spring  
 F Type: Auxiliary  
 F Size:  
 Plans:  
 Ref: Sommer (1984); Fair (1927)  
 Comment: S/L 20 feet from main building

**Masada** (Masada, Mezada, es Sebbe): "Public" Baths in the Fortress

Loc: Judaea (Israel: west shore of Dead Sea)  
 Purpose: public bath for fortress dwellers  
 Date: Herodian (37-4 BC); rebuilt during revolt in 73; defunct in Trajanic times  
 B Type: row  
 B Size: 290 sq. m., incl. P 500 sq. m.  
 B Rooms: A, T, F, C, P  
 Plans: B: Nielsen (1990) fig. 242; Area: Netzer (1993) p. 974  
 Ref: Nielsen (1990) C.346; Ehud Netzer, "Masada," in Stern et al. (1993) v. 3 pp. 973-985, esp. 978-979; Hannah M. Cotton & Joseph Geiger, Masada II. The Yigael Yadin Excavations 1963-1965. Final Reports, The Latin and Greek Documents (Jerusalem: Israel Exploration Society, 1989); Tsafrir et al. (1994) p. 180  
 Comment: P with pool and portico of Nabataean capitals; mosaics; wall frescos; stepped pool in F; C largest room; C had apse in north for basin & rectangular niche in south for bathtub; some hypocaust pilae made of round bricks, some of stone; rectangular flue pipes; probably used by Roman soldiers after 73/74 as evidenced by "a graffito...which probably reads LEG X found in the calidarium" (Cotton & Geiger, 1989, p. 103) & ostraca from this bathhouse apparently bearing the names of Roman soldiers (see Cotton & Geiger, 1989, pp. 103-104)

**Mediobogdum** (Hardknott)

Loc: Britannia  
 Date: F: started during Trajan (finished under Hadrian); sacked & abandoned 197 (so bath must be 2nd C)  
 B Type: row  
 B Size:  
 B Rooms: F(with plunge bath), T, C isolated circular S/L (with hypocaust, later dismantled)  
 Rel to F: external; SE of fort  
 F Type: Auxiliary  
 F Size: 3 acres

Plans: B: Rook (1992) figs. 46 & 47; Garlick (1970) p.  
47 (photo); F&B: Johnson (1983) fig. 164  
Ref: Garlick (1970) p. 47; Fair (1927)  
Comment:

**(Melandra Castle)**

Loc: Britannia  
Date:  
B Type:  
B Size:  
B Rooms:  
Rel to F: in vicus  
F Type: Castellum  
F Size:  
Plans:  
Ref: Sommer (1984)  
Comment:

**Mogontiacum (Mainz)**

Loc: Germania Superior  
Date: Hadrianic. Built upon an earlier bath of 90 (tile  
stamps)  
B Type: Axial half-symmetric row type  
B Size: over 3,500 sq. m.  
B Rooms:  
Rel to F:  
F Type: Legionary  
F Size:  
Plans: B: Nielsen (1990) fig. 154  
Ref: Nielsen (1990) C.167  
Comment:

**(Moresby)**

Loc: Britannia  
Date:  
B Type:  
B Size:  
B Rooms:  
Rel to F: probably bath in vicus (Sommer, 1984)  
F Type: Castellum  
F Size:  
Plans:  
Ref: Sommer (1984)  
Comment:

**(Mumrills): Rampart Bath**

Loc: Britannia (Antonine Wall)  
Date:  
B Type:  
B Size: "small"  
B Rooms:  
Rel to F: internal, near rampart

F Type: Castellum  
 F Size:  
 Plans: F&Bs: Johnson (1983) fig. 204  
 Ref: Johnson (1983); Watson (1985) p. 205  
 Comment: small and utilitarian

**(Mumrills): Praetorium Bath**

Loc: Britannia (Antonine Wall)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: adjoining praetorium  
 F Type: Castellum  
 F Size:  
 Plans: F&Bs: Johnson (1983) fig. 204  
 Ref: Johnson (1983); Watson (1985) p. 205  
 Comment: Watson (1985) thinks it was for commandant's household; Johnson (1983) disagrees: the addition of "such a large and complex bathhouse...seems unlikely to have been intended solely for the commander's household" (p. 134)

**(Neckarburken)**

Loc: Germania Superior  
 Date: c. 85  
 B Type: Axial half-symmetric row type  
 B Size: Over 510 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.168  
 Comment:

**Neocaesarea:** see Athis

**(Nether Denton)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: probably an external bath to east (Sommer, 1984)  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Netherby)**

Loc: Britannia  
 Date: Hadrianic  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Welsby (1982)  
 Comment:

**Neuss:** see Novaesium

**(Newstead)**

Loc: Britannia  
 Date: originally built c. 80  
 B Type:  
 B Size:  
 B Rooms: F (cold bath in apse), T, C, S/L  
 Rel to F: in annex to west of fort  
 F Type: Castellum  
 F Size: 4.3 ha  
 Plans:  
 Ref: Sommer (1984); Fair (1927)  
 Comment:

**Nida** (Frankfurt am Main, Heddernheim): Western Bath-house

Loc: Germania Superior (Germany)  
 Date: S/L: constructed 83-84 & destroyed 88-89  
 B Type:  
 B Size:  
 B Rooms: isolated circular S/L  
 Rel to F:  
 F Type:  
 F Size:  
 Plans:  
 Ref: von Elbe (1975) pp. 127-28; Fair (1927)  
 Comment: caveat: there is also a Hedderheim in Raetia

**(Niederbieber)**

Loc: Germania Superior  
 Date: B: Late 2nd C (Commodian); destroyed in 260; F: 185-92  
 B Type: Axial symmetric row type  
 B Size: 1,300 sq. m.  
 B Rooms:  
 Rel to F: inside fort in retentura  
 F Type: Castellum  
 F Size: 4.9 ha  
 Plans: F&B: Johnson (1983) fig. 210; B: Krencker (1927)

Ref: Abb. 354; Johnson (1983) fig. 146 (unlabelled)  
 Nielsen (1990) C.169; Johnson (1983) pp. 284-86  
 Comment:

**Nigrumpullum** (Zwammerdam)

Loc: Germania Inferior (Holland)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: possibly bath-house outside fort  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: J. K. Haalebos (in Stillwell et al., 1976)  
 Comment:

**Novae** (Svistov)

Loc: Moesia Inferior (Bulgaria)  
 Date: demolished by Romans in 2nd C & replaced with hospital  
 B Type: row  
 B Size: at least 2400 sq. m. (probably larger)  
 B Rooms: include P  
 Rel to F: inside fort at cross roads of via praetoria and  
via sagularis  
 F Type: legionary  
 F Size:  
 Plans:  
 Ref: Dyczek, Piotr, "Two baths from Polish excavations  
 at Novae," Balnearia 2.1 (1994) 6-7.  
 Comment: wall decorated with frescos and stucco

**Novaesium** (Neuss)

Loc: Germania Inferior  
 Date: Domitian  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type: 23-25 ha  
 F Size:  
 Plans: F&B: Le Bohec (1994) fig. 31a  
 Ref:  
 Comment:

**(Oberscheidental)**

Loc: Germania Superior  
 Date: Late Domitianic to 100; abandoned around 150  
 B Type: Axial row type  
 B Size: 820 sq. m.  
 B Rooms:  
 Rel to F:

F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 152  
 Ref: Nielsen (1990) C.172  
 Comment:

**(Old Kilpatrick)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: in annex  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Old Penrith)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

Papcastle: see Derwentio

**(Pennal)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Sommer (1984) plate 24 (aerial photo)  
 Ref: Sommer (1984)  
 Comment:

**(Pen-y-Darren)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:

B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**Philoteria** (Beth-Yerah/ Khirbet el-Kerak)

Loc: Judaea (Israel: on south bank of Sea of Galilee)  
 Purpose:  
 Date: 4th-5th C A.C.; repaired (possibly in 6th C);  
 Islamic period settlement above ruins of bath  
 B Type: Angular row type  
 B Size: 400 sq. m.  
 B Rooms: F, T, C  
 Rel to F: over part of wall  
 F Type:  
 F Size:  
 Plans: B: Maisler et al. (1952) fig. 1  
 Ref: Nielsen (1990) C.347; B. Maisler, M. Stekelis, &  
 M. Avi-Yonah. "The excavations at Beth Yerah  
 (Khirbet el-Kerak) 1944-1946," IEJ 2 (1952) 218f;  
 Ruth Hestrin, "Beth Yerah," in Stern et al.  
 (1993) v. 1 pp. 255-59  
 Comment: rubble benches, mosaics, bath-tubs, round pool;  
 water brought in clay pipes from aqueduct; also  
 2nd-3rd C A.C. fort: "The original bath (4th or  
 5th C A.C.), which rested on the wall of the  
 fort...could not have been erected as long as the  
 fort was used for its original military purpose"  
 (Maisler et al., 1952, p. 223).

**(Piercebridge)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: bath-suite in building?  
 F Type: Castellum  
 F Size:  
 Plans: B: Welsby (1982) fig. 52.1 (rooms not labelled)  
 Ref: Welsby (1982); Wilson (1988) p. 242  
 Comment:

**Praetorium** (Copaceni)

Loc: Dacia  
 Date: 138 (CIL III 13795-96); restored 236 (CIL III  
 14216, line 19)  
 B Type: Axial row type  
 B Size: 175 sq. m.

B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.150  
 Comment:

(Prestatyn)

Loc: Britannia (Wales)  
 Date: Phase 1: c. 100; Phase 2: c. 150; abandoned c. 160  
 B Type:  
 B Size: "tiny"  
 B Rooms: 3 rooms  
 Rel to F: external; SE of fort  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Wilson (1988) p. 387-88; Sommer (1984)  
 Comment: Phase 1: 2 heated rooms (timber frigidarium hypothesized); Phase 2: stone frigidarium with cold plunge added. "The baths were presumably civilian rather than military, as the structure is too small to have served as the garrison bath-house" (Wilson, 1988, p. 388). But some bricks in pilae have stamp of XXth Legion.

(Qasr el-cUweinid)

Loc: Arabia (Jordan: 15 km southwest of modern Azraq)  
 Purpose: Military  
 Date: Servian c. 200 (inscriptions); possibly abandoned 4th C (pottery)  
 B Type: see comment  
 B Size: " "  
 B Rooms: " "  
 Rel to F: " "  
 F Type: irregular quadrangle  
 F Size: c. 0.25 ha (Parker, 1986, says size average for Arabian castellum)  
 Plans: F: Parker (1986) p. 18  
 Ref: Parker (1986) pp. 17-19; D. L. Kennedy, Archaeological Explorations on the Roman Frontier in North-East Jordan (Oxford: BAR International Series 134, 1982); David Kennedy, "The Roman frontier in Arabia (Jordanian sector)," JRA 5 (1992) 473-89  
 Comment: Bath building has not been found. Evidence for bath is based on an inscription commemorating the construction of a castellum and balneum by the legio III Cyrenaica ("Castellum et <s> praesidium Severianum . Vexillatio leg(ionis) III

Cyrenic(ae) (sic) baln(eum) Mucia[no] et Fab[ian]o [co](n)s(ulibus) extruxit", Kennedy 1982: 125). The "reference to the construction of a bath (balneum) at such a remote fort is striking testimony to the creature comforts available to the Roman soldiers on the Arabian frontier" (Parker 1986: 17-18). Kennedy (1992: 480) doubts inscription was originally from here given the paucity of water; J. P. Oleson (personal communication Feb. 95) saw no evidence of a bath here.

**(Rainau-Buch)**

Loc: Raetia  
 Date: Around 140; rebuilt in second half of the 2nd C and after 233  
 B Type: Axial row type  
 B Size: 990 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 175  
 Ref: Nielsen (1990) C.202  
 Comment:

**(Ramat Rahel)**

Loc: Judaea (Israel: 3.5 km south of old city of Jerusalem)  
 Purpose: Military?? (see comment)  
 Date: 2nd half of 3rd C; church and monastery built in mid-5th C continued to use bath; destroyed in early 7th C by fire  
 B Type: ? (location of doors uncertain)  
 B Size:  
 B Rooms: open courtyard maybe palaestra  
 Rel to F:  
 F Type:  
 F Size:  
 Plans: Area: Aharoni (1993) p. 1267 (unlabelled)  
 Ref: Benjamin Isaac. The Limits of Empire: The Roman Army in the East. Oxford: Clarendon Press, 1990; Yohanan Aharoni, "Ramat Rahel," in Stern et al. (1993) v. 4, pp. 1261-67; Yohanan Aharoni, Excavations at Ramat Rahel: Seasons 1959 and 1960 (Roma: 1962); Yohanan Aharoni, Excavations at Ramat Rahel: Seasons 1961 and 1962 (Roma: 1964)  
 Comment: on top of hill; site would have controlled access to Jerusalem; bathhouse and aqueduct which supplied it built by Roman legion; Roman Tenth Legion occupied Jerusalem and Ramat Rahel in 3rd C; "the camp installations of the Roman Tenth

Legion...comprised an elegant block of living-quarters with a peristyle, and a bathhouse...and apparently other temporary and simpler structures" (Aharoni, 1964, p. 121); bath = "double row of adjoining rectilinear rooms" (Aharoni, 1962, p. 69); heated rooms on east (!); tubuli; tiles in bath-house with stamp of Roman Tenth Legion; mosaic floors; rectangular basins; basins connected with terracotta piping; drainage pipes under mosaic floors; bath built on top of older building (reproducing its orientation); I haven't seen any mention of a fort proper

**Ravenglass:** see Glannoventa

**(Reculver):** Internal Bath A

Loc: Britannia (England: southeast coast)  
 Date: one of internal bath-house dates to later 3rd C  
 B Type:  
 B Size: small  
 B Rooms:  
 Rel to F: in praetentura (one of 2 baths there)  
 F Type: Castellum  
 F Size:  
 Plans: B: Welsby (1982) Fig. 27.4A&B (rooms not labelled)  
 Ref: Welsby (1982)  
 Comment: Fort partly lost to sea

**(Reculver):** Internal Bath B

Loc: Britannia (England: southeast coast)  
 Date: one of internal bath-house dates to later 3rd C  
 B Type:  
 B Size: small  
 B Rooms:  
 Rel to F: in praetentura (one of 2 baths there)  
 F Type: Castellum  
 F Size:  
 Plans: B: Welsby (1982) Fig. 27.4A&B (rooms not labelled)  
 Ref: Welsby (1982)  
 Comment: Fort partly lost to sea

**(Reculver)**

Loc: Britannia (England: southeast coast)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external: north of fort  
 F Type: Castellum  
 F Size:

Plans:  
 Ref: Sommer (1984) p. 95  
 Comment: Fort partly lost to sea; "probably" bath to north  
 of fort

**(Red House)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

**(Ribchester)**

Loc: Britannia  
 Date: 2nd C.  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external; outside NE corner of fort  
 F Type: Castellum  
 F Size:  
 Plans: B: Rook (1992) fig. 58  
 Ref: Fair (1927); Sommer (1984); Rook (1992); Taylor &  
 Collingwood (1927) pp. 192-93  
 Comment:

Richborough: see Ruturiae

**(Risingham)**

Loc: Britannia  
 Date: unknown  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: internal  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Welsby (1982); Johnson (1983) p. 287  
 Comment:

**(Rough Castle)**

Loc: Britannia (Antonine Wall)  
 Date:  
 B Type:  
 B Size:

B Rooms:  
 Rel to F: in annex to east of fort  
 F Type: Castellum  
 F Size:  
 Plans: F&B: Wilson (1967) p. 45  
 Ref:  
 Comment:

**Ruturiae** (Richborough)

Loc: Britannia (Saxon Shore fort)  
 Date:  
 B Type: row  
 B Size: c. 100 sq. m. (my estimate from fort plan)  
 B Rooms:  
 Rel to F: internal bath-house  
 F Type: Auxiliary  
 F Size:  
 Plans: B: Rook (1992) fig. 60; F&B: Blagg (in Maxfield, 1989) p. 144  
 Ref: Blagg (in Maxfield, 1989) pp. 143-45; Welsby (1982)  
 Comment: Bath-house "poorly constructed which necessitated numerous repairs during its life. The excavator suggested that due to its small size, it may have been intended for use by officers only" (Welsby, 1982, p. 25); bath-house built over mansio

**(Saalburg)**

Loc: Germania Superior  
 Date: 135 (tile stamps); rebuilt in 180s  
 B Type: Axial row type  
 B Size: 880 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 156  
 Ref: Nielsen (1990) C.173; Johnson (1983) p. 207  
 Comment: lead pipes served bath-house

**Salihiyeh:** see Dura Europos

**(Salisberg)**

Loc: Germania Superior  
 Date: 95-100 (tile stamps); functioned only 10-20 years  
 B Type: Axial row type  
 B Size: 600 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:

Ref: Nielsen (1990) C.174

Comment:

**(Schirenhof)**

Loc: Raetia

Date: Mid-2nd C; rebuilt at the beginning of the 3rd C  
and in 233-250

B Type: Axial row type

B Size: 1,125 sq. m.

B Rooms:

Rel to F:

F Type: Castellum

F Size:

Plans: B: Nielsen (1990) fig. 174

Ref: Nielsen (1990) C.203

Comment:

**(Schlossau)**

Loc: Germania Superior

Date: Late 1st C to 2nd C; abandoned 150

B Type: Axial row type

B Size: 380 sq. m.

B Rooms:

Rel to F:

F Type: Castellum

F Size:

Plans: B: Nielsen (1990) fig. 157

Ref: Nielsen (1990) C.175

Comment:

**Segontium (Caernarfon/Caernarvon)**

Loc: Britannia (Wales)

Date: built at close of 3rd C; never completed;  
dismantled early 4th C.

B Type:

B Size:

B Rooms:

Rel to F: internal bath-house in praetentura

F Type: auxiliary Castellum

F Size:

Plans: B: Welsby (1982) fig. 27.5B (rooms not labelled)

Ref: Welsby (1982); Garlick (1973) pp. 66-67

Comment: inscription relating to repair of fort aqueducts

**(Slack)**

Loc: Britannia

Date: F: abandoned c. 140

B Type:

B Size:

B Rooms:

Rel to F: external

F Type: Castellum

F Size:  
 Plans: F&B: Sommer (1984) fig. 17  
 Ref: Garlick (1971) p. 34; Sommer (1984)  
 Comment: "An altar dedicated to Fortune by a centurion of the VI Legion was found in 1736 in the bath house" (Garlick, 1971, p. 34)

**(Slaveni)**

Loc: Dacia (Romania)  
 Date: Severan (tile stamps); rebuilt by Philip the Arab  
 B Type: Parallel row type  
 B Size: 300 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.152  
 Comment:

**(Stockstadt)**

Loc: Germania Superior  
 Date: After 83, late 1st to early 2nd C  
 B Type: Axial row type  
 B Size: 720 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 158  
 Ref: Nielsen (1990) C.176  
 Comment:

**Svistov:** see Novae

**Tel Tamar:** see cEn Haseva

**(Templebrough)**

Loc: Britannia  
 Date: 2nd half of 1st C.  
 B Type:  
 B Size:  
 B Rooms: isolated circular S/L (with hypocaust)  
 Rel to F: external bath-house by river  
 F Type:  
 F Size:  
 Plans:  
 Ref: Garlick (1971) p. 34; Fair (1927)  
 Comment: "fort...first excavated by May in 1920 before its destruction by a steel works" (Garlick, 1971, p. 34)

**Theilenhofen:** see Iciniacum

**(Tomen-y-Mur)**

Loc: Britannia (Wales)  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external bath-house  
 F Type: Castellum  
 F Size: just over 3 acres (4 acre extension)  
 Plans:  
 Ref: Garlick (1973) pp. 69-70  
 Comment:

**Turicum (Zürich)**

Loc: Raetia  
 Date: Second half of 1st C; totally transformed in mid-2nd C  
 B Type: Axial row type  
 B Size: 145 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Nielsen (1990) C.204  
 Comment: replaced by city baths in mid-2nd C

**Umm ar-Rasas:** see Kastron Mayfa`a

**Vindolanda (Chesterholm): The Military Bath-house**

Loc: Britannia  
 Date: 163-200 (from tile stamps); several rebuilding phases  
 B Type: Angular row type  
 B Size: 310 sq. m.  
 B Rooms:  
 Rel to F: external, in vicus  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 140; Birley (1977) fig. 5; Connolly p. 29 (reconstruction); F&B: Birley (1977) fig. 4; Connolly pp. 26-27 (sketches)  
 Ref: Nielsen (1990) C.146; Birley (1977); Wilson (1988); Alan K. Bowman, Life and Letters on the Roman Frontier (London: British Museum Press, 1994)  
 Comment: writing tablets found on site mention baths but seem to predate (A.D. 92-130) this bath (see Bowman 1994: 13); "hot-room floors showed signs of frequent repairs," Birley suggests A and

latrine were either added in later stage or they were built by the garrison auxiliaries whereas legionary craftsmen built the central block; western stock-hole filled in in later stage; 2 types of hypocaust pillars: monolithic and "mortared thin slabs"; "In the Roman period, boys must have been employed to crawl beneath the suspended concrete floors and clean out the soot" (Birley 1977: 36); "numerous hairpins, beads and delicate box-wood combs" found inside; Birley thinks civilians used this bath (p. 78); latrine in northeast corner

**Vindolanda** (Chesterholm): Praetorium Baths

Loc: Britannia

Date:

B Type:

B Size:

B Rooms:

Rel to F: internal, in commanding officer's residence

F Type: Castellum

F Size:

Plans:

Ref: Birley (1977)

Comment: excavated in the early 19th century but not fully published; Birley (1977) suggests that the officers bathed here rather than in the main baths (p. 37 & 90)

**Vindolanda** (Chesterholm): Mansio Baths

Loc: Britannia

Date:

B Type:

B Size:

B Rooms: 2 hypocausted & 3 non-hypocausted rooms + furnace

Rel to F: external, in vicus

F Type: Castellum

F Size:

Plans: mansio: Birley (1977) fig. 10; mansio & fort: Birley (1977) fig. 4

Ref: Birley (1977)

Comment: "We must assume that the principal guests in the mansio would have been army officers on the move between posts and civil government officials-- census and taxation officers, couriers and the like. But others who could pay would probably have been equally welcome if there was room." (Birley 1977: 46); bathing rooms next to kitchen on one side and latrine on other side (in northeast corner of bathing suite); 2 hypocausted rooms in first phase; one of hypocausted rooms eventually walled up

**Vindomora** (Ebchester)Loc: Britannia

Date:

B Type:

B Size:

B Rooms:

Rel to F: "hypocaust in an apse-shaped room, probably part  
of the bath-suite in the commandant's house"  
(Wilson 1988: 245)

F Type: Castellum

F Size:

Plans:

Ref: Wilson (1988)

Comment:

**Vindonissa** (Windish)Loc: Germania Superior

Date: 47-69; rebuilt in 70

B Type: Axial symmetric row type

B Size: 3,230 sq. m. incl P/basilica thermarum

B Rooms:

Rel to F:

F Type: Legionary

F Size: c. 18 ha

Plans: B: Nielsen (1990) fig. 160; Yegül (1992) fig. 85;

F: Johnson (1983) fig. 178

Ref: Nielsen (1990) C.177

Comment:

**Vinovia** (Binchester): Praetorium BathsLoc: Britannia

Date: built late 4th C; modified later (date unknown)

B Type:

B Size:

B Rooms:

Rel to F: free-standing addition to praetorium

F Type: Castellum

F Size:

Plans: B: Rook (1992) fig. 34

Ref: Fair (1927); Welsby (1982) p. 119-20

Comment: modifications included 2 new rooms; "major  
changes may indicate that the baths had become  
communal rather than being used by the commandant  
only" (Welsby, 1982, p. 120).**Vinovia** (Binchester): Vicus BathsLoc: BritanniaDate: S/L: probably Flavian

B Type:

B Size:

B Rooms: isolated circular S/L (with hypocaust)  
(presumably belongs to baths in vicus but not

certain)  
 Rel to F: external, in vicus SE of fort  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Fair (1927); Sommer (1984)  
 Comment: bronze strigil found in S/L

Wall: see Letocetum

#### Walldürn

Loc: Germania Superior  
 Date: 148-161 (tile stamps); burned down and new baths  
 built in 232 (inscription); destroyed 248-60.  
 B Type: Axial row type  
 B Size: 525 sq. m. (phase I)  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 162  
 Ref: Nielsen (1990) C.178  
 Comment:

#### (Wallsend)

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: possibly bath in vicus (Sommer, 1984)  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

#### (Watercreek)

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external bath to S; possibly bath or mansio to NE  
 (beyond river)  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

Weissenburg: see Biriciana

**(Welzheim)**

Loc: Germania Superior  
 Date: Second half of 2nd C  
 B Type: Axial row type  
 B Size: over 300 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 159  
 Ref: Nielsen (1990) C.179  
 Comment:

**(Whitley Castle)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: probably external bath to NE  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

Windish: see Vindonissa

**(Würzburg)**

Loc: Germania Superior  
 Date: Probably Flavian-Trajanic; S/L added later (Fair, 1927)  
 B Type: Axial row type  
 B Size: 170 sq. m.  
 B Rooms: A, F, T, C, S/L; furnace next to C & S/L  
 Rel to F:  
 F Type: Auxiliary Castellum  
 F Size:  
 Plans: B: von Elbe (1975) p. 472  
 Ref: Fair (1927); Nielsen (1990) C.180; von Elbe (1975) pp. 471-73  
 Comment: "bathhouses an indispensable attribute of even a small fort where the soldiers could relax when off duty" (von Elbe, 1975, p. 471); interior walls plastered & painted; all rooms had glass windows; outside walls whitewashed

**(Y Gaer)**

Loc: Britannia  
 Date:  
 B Type:  
 B Size:

B Rooms:  
 Rel to F: external  
 F Type: Castellum  
 F Size:  
 Plans:  
 Ref: Sommer (1984)  
 Comment:

York: see Eboracum

Yotvata: see ad-Dianam

(Zugmantel): Castellum Bath I  
 Loc: Germania Superior  
 Date: Around 110 (tile stamps); entirely rebuilt in 150  
 (tile stamps)  
 B Type: Axial row type  
 B Size: 240 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 163  
 Ref: Nielsen (1990) C.181  
 Comment: Covered by Castellum Bath II

(Zugmantel): Castellum Bath II  
 Loc: Germania Superior  
 Date: Around 150 (tile stamps); restored around 200  
 (tile stamps)  
 B Type: Axial row type  
 B Size: 290 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Nielsen (1990) fig. 164  
 Ref: Nielsen (1990) C.182; Johnson (1983) p. 207  
 Comment: lead pipes served bath-house

Zürich: see Turicum

Zwammerdam: see Nigrumpullum

## APPENDIX B

Catalogue of Baths in the Near East  
Built Between the 4th Century B.C. and A.D. 750

Notes:Composition of catalogue entries.

Name of site: Ancient and/or modern (in brackets)  
 Location: Roman province in Trajan's time  
           (underlined), modern territorial region (in  
           brackets)  
 Purpose for which bath built: e.g., military, civic,  
           domestic  
 Date built and date renovated (plus evidence for  
           dates)  
 Bath Type: based on Krencker's classification scheme  
 Bath Size: in sq. m.  
 Bath Rooms: if identified by excavator  
 Relation to Fort: (if applicable) internal or  
           external, and exact location  
 Fort Type: (if applicable) auxiliary castellum or  
           legionary fortress, information on fort design  
           if given by excavator)  
 Fort Size: (if applicable) in ha.  
 Plans: source of published plans on bath (and fort)  
 Reference: publications I consulted to create this  
           entry  
 Comment: other items of interest regarding this bath

Temporal period. The fourth century B.C. was chosen as the starting date for this catalogue because that is when bath-houses were first introduced to the Near East (as a result of Alexander the Great's conquests.) The end date was chosen as A.D. 750 because that corresponds to the beginning of the Abassid Caliphate and (because the Abassids moved away from Humeima) to the beginning of Humeima's decline.

Geographical region. The geographical region covered in this catalogue corresponds to the territory included in Trajan's provinces of Arabia, Judaea, Syria, and Mesopotamia. Although the names and borders of these provinces varied over time, I have decided to use Trajan's terminology as it corresponds to the Roman Near East at the time of Arabia's annexation (in the early second century A.C.). A location within Trajan's provinces has been noted for each catalogue entry. This has been done to make the baths easier to locate; it does not necessarily represent the territorial affiliation of the bath at the time of its construction. In addition, I have given the location of each bath in the modern territorial regions of Jordan, the West Bank, Israel, the

Gaza Strip, the Golan Heights, Syria, Iraq, and Turkey. Near territorial borders, it was sometimes difficult to determine to which region an ancient site belonged: I apologize for any inaccuracies. For the Roman territorial boundaries, I consulted the maps in Tsafirir et al. (1994) and Nielsen (1990); for the modern boundaries, I consulted the National Geographic Atlas of the World, 6th ed. (1990).

Ritual baths Jewish ritual baths (migvaot) could be considered bathhouses in that they often contain two or more rooms (for bathing and dressing). However, my purpose in compiling this catalogue was to document bathhouses which might be useful to consider in relation to the Roman-style bathhouse at Humeima. Since one of the defining characteristics of Roman-style baths is hot water bathing facilities (hence thermae), I have only included the migvaot which had provisions for hot-water bathing.

Alphabetizing. I have attempted to make my alphabetizing conform to the system used in the General Index to volumes I-XXX of the Annual of the Department of Antiquities of Jordan. Thus, "the sites are classified alphabetically, based on the main element of the name without the [Arabic] definite article (al, el, ed, esh, er)." (p. 7) Khirbet, Horvat, and Tell have been ignored for purposes of alphabetizing. Jebel and Wadi are used in alphabetizing.

Room labels. I have gone with the excavators' or discussants' interpretation of what rooms are present. However, I have noticed that a heated room, with or without a water receptacle, not directly adjacent to the furnace is called a T by some authors, an additional C by others, and a steam room (S or L) by still others.

Roman Military Baths in Near East. These are contained in both Appendix A (military baths) and Appendix B (Near Eastern baths).

References References containing information on more than one bath-house are listed in the main bibliography. Articles/books used for only one bath-house are cited in full as part of the entry for that bath-house.

Abbreviations in catalogue entries.

B = bath; F = fort; B&F = both bath and fort;  
 B in C = bath in city;

A = apodyterium, F = frigidarium, T = tepidarium,  
 C = caldarium, S = sudatorium, L = laconicum,  
 S/L = either sudatorium or laconicum;  
 P = palaestra

An entry of the form "m.r. XXXXXXX" (where the X's are numbers), following "Tsafrir et al. (1994)" gives the map coordinates used in that source.

`Abda: see Oboda

**Abila** (Qweilbeh/Quailibah): Bath/Nymphaeum Complex

Loc: Arabia? (or Judaea) (Northern Jordan: 15 km north-north east of Irbid)

Purpose: civic? (at centre of city)

Date:

B Type:

B Size: "massive ruins of bath/nymphaeum complex"

B Rooms:

Plans: B in city: Mare (1994) p. 360

Ref: W. Harold Mare, "The 1992 Season of Excavations at Abila of the Decapolis," ADAJ 38 (1994) 359-78; Staff, "Focus on digs," Biblical Archaeology Review 22.1 (1996) 24

Comment:

Acco: see Ptolemais

**ad-Dianam** (Yotvata)

Loc: Arabia (Israel: in Negev)

Purpose: Military

Date: F: Diocletian (inscription) c. 297; destroyed late 4th C.; B: no dateable finds

B Type: 'cEn-Gedi type' - single row

B Size: ?

B Rooms: ? (C identified)

Rel to F: external; 100 m north of fort

F Type: Castellum (quadriburgium)

F Size: 39.4 m x 39.7 m

Plans: F: Meshel (1989) p. 230; B: Meshel (1989) fig. 4

Ref: Ze'ev Meshel, "A fort at Yotvata from the time of Diocletian," IEJ 39 (1989) 228-238; Zeev Meshel "Yotvata," in E. Stern et al., (1993, vol. 4, pp. 1517-20)

Comment: B: Meshel (1989) speculates fort may have been built when "the Negev, Sinai and southern Transjordan were transferred from Arabia to Judaea" p. 238; meagre remains; not fully excavated; round and square pilae; square pipes in walls; obviously

(?) related to fortress; near Humeima!

**Amman:** see Philadelphia

**Amwas:** see Emmaus

**(Tel Anafa)**

Loc: Syria {or Judaea?} (Golan Heights)

Purpose:

Date: building: Late Hellenistic (late 3rd quarter or early 4th quarter of 2nd C B.C.); site: abandoned in 2nd quarter of 1st C B.C., resettled early 1st C A.C., abandoned again by end of 1st C A.C.

B Type:

B Size:

B Rooms: furnace, bathing room, dressing room

Plans: Herbert (1993) p. 59

Ref: Sharon Herbert, "Anafa, Tel," in Stern et al. (1993) v. 1, p. 58-61

Comment: bathing rooms part of Late Hellenistic building consisting of a central courtyard surrounded by rooms on four sides; "primitive hypocaust system of mud-brick pillars" (Herbert, 1993, p. 59); black and white mosaic; plaster basin in bathing room; coin of 128-125 B.C. in construction fill of bathing suite; in 1st quarter of 1st C B.C. building underwent substantial renovations throughout which bath remained in use

**`Anin:** see Betoaenea

**(`Anjar)**

Loc: Syria (Lebanon)

Purpose: civic

Date: `Anjar: 714-15 (Umayyad)

B Type:

B Size:

B Rooms: 4 rooms

Plans: B in town: Creswell (1989) pp. 123

Ref: Creswell (1989) pp. 122-24; Maurice Chehab, "The Umayyad palace at `Anjar," Ars Orientalis 5 (1963) 17-25

Comment: detached bath-building inside north gate of city; at one of lowest points inside enclosure; C has "semi-circular recess[es] to right and left, as in Qusayr `Amra and Hammam as-Sarakh" (Creswell, 1989, p. 124). Creswell: square hall & usual sequence of three rooms.

**Antiochia on the Orontes:** Bath A

Loc: Syria (Turkey)

Purpose:

Date: A.D. 350-400; abandoned after earthquake during reign of Justinian  
 B Type: Angular row type?  
 B Size: 1,025 sq. m.  
 B Rooms:  
 Plans: B: Manderscheid (1988) abb. 31  
 Ref: Nielsen (1990) C.377  
 Comment:

**Antiochia on the Orontes: Bath B**  
 Loc: Syria (Turkey)  
 Purpose:  
 Date: 3rd C (coins)  
 B Type: Angular row type  
 B Size: 180 sq. m.  
 B Rooms:  
 Plans: B: Nielsen (1990) fig. 256  
 Ref: Nielsen (1990) C.376  
 Comment:

**Antiochia on the Orontes: Bath C**  
 Loc: Syria (Turkey)  
 Purpose:  
 Date: 3rd C; rebuilt in the late 4th C; destroyed by an earthquake during the reign of Justinian  
 B Type: Imperial type  
 B Size: 3,700 sq. m.  
 B Rooms:  
 Plans: B: Nielsen (1990) fig. 254, Yegül (1992) fig 414  
 Ref: Nielsen (1990) C.374; Yegül (1992) p. 326  
 Comment: Yegül, 1992, sees similarities to South Baths at Bosra & Sanctuary of Jupiter Heliocaminus at Baalbek

**Antiochia on the Orontes: Bath E**  
 Loc: Syria (Turkey)  
 Purpose:  
 Date: After A.D. 305 (coins)  
 B Type: Angular row type  
 B Size: 1,050 sq. m.  
 B Rooms:  
 Plans: B: Manderscheid (1988) abb. 33, Yegül (1992) fig. 426  
 Ref: Nielsen (1990) C.375  
 Comment:

**Antiochia on the Orontes: Bath F**  
 Loc: Syria (Turkey)  
 Purpose: public  
 Date: restored in 537  
 B Type:  
 B Size:

B Rooms:  
 Plans:  
 Ref: Yegül (1992) p. 326  
 Comment: smaller and less opulent than Bath C

**Antiochia Hippos:** see Hippos

**Apamea** (Qala'at al Mudiq): North Baths  
 Loc: Syria (Syria: 55 km north of Hama)  
 Purpose:  
 Date: A.D. 117  
 B Type:  
 B Size:  
 B Rooms:  
 Plans: B in C: Burns (1992) p. 47  
 Ref: Burns (1992); Manderscheid (1988) p. 58  
 Comment: on cardo in north of city; "lavish in scale with two large halls for the cold and warm baths" (Burns, 1992, p. 48)

**Ashkelon/ Ascalon**

Loc: Judaea (Israel--on Mediterranean Sea)  
 Purpose: "can't yet decide whether this is a small public bath or a large private one" (Stagner, 1991, p. 49)  
 Date: 4th C A.C. (Byzantine), several repairs and at least one renovation; replaced by monumental apsidal building in 6th C  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Lawrence E. Stager, "Ashkelon," in Stern et al., (1993) v. 1, pp. 103-112; Lawrence E. Stager, Ashkelon Discovered (Washington, DC: Biblical Archaeology Society, 1991)  
 Comment: built over Roman villas; "much-repaired mosaic floor", in 2nd phase tub-size reduced; inscription on 2nd phase tub reads "Enter, enjoy, and...", garbage and nearly 100 6th C skeletons of infants found in baths' sewer system (presumably from after baths' abandonment)

**Ashkelon/ Ascalon**

Loc: Judaea (Israel--on Mediterranean Sea)  
 Purpose: part of estate  
 Date: Byzantine  
 B Type: "southern type"  
 B Size: 294 sq. m.  
 B Rooms: C, S, T, E, possibly A  
 Plans: B: Israel (1993) fig. 106; Area: Israel (1993) fig. 105  
 Ref: Yigael Israel, "Ashqelon," ESI 13 (1993) pp. 100-

105

Comment: in Barne'a Quarter of Ashkelon; c. 4.5 km NE of Tel Ashkelon; salvage excavation in 1991; 2 sitz-baths in F; fuel-storage area next to furnace; next to baths is "white-washed room with a lavatory bowl and basin made of plaster" (Israel, 1993, p. 104)

**Khirbet `Atara:** see Ataroth I

**Ataroth I** (Khirbet `Atara, Khirbet Rafat)

Loc: Judaea (West Bank?: double village north of Jerusalem)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans:

Ref: Tsafrir et al. (1994) p. 71, m.r. 168141 (Kh. `Atara), 170142 (Kh. Rafat)

Comment: "bath house"

**Athis/Neocaesarea** (Dibsi Faraj): Principia Baths

Loc: Syria (Syria)

Purpose:

Date: Early 4th C; re-utilized as dwelling in Arab times

B Type: Ring type

B Size: 500 sq. m.

B Rooms: C, 2 Ts, etc.

Rel to F: in principia

F Type: garrisoned city

F Size:

Plans: Area: Harper (1975) p. 321

Ref: Harper (1975); Nielsen (1990) C.378

Comment: salvage excavation: site since flooded by dam; excavator (Harper) suggests the principia was built when the village was fortified and garrisoned in the 3rd C; bath-wing added to the principia in the Early Byzantine period; 3 furnaces; box-flue tiles; marble-clad walls; service corridors at semi-basement level

**Athis/Neocaesarea** (Dibsi Faraj): Western Extramural Baths

Loc: Syria (Syria)

Purpose: civic

Date: 4th C; abandoned mid 5th C and apparently replaced by Northern Extramural Baths

B Type:

B Size: 600 sq. m.

B Rooms:

Plans: Area: Harper (1975) p. 321

Ref: Harper (1975); Nielsen (1990) C.379 (she combines

the Western and Northern Extramural Baths in one entry)

Comment: salvage excavation: site since flooded by dam; outside citadel on west; "at a low level convenient for the easy supply of water" (Harper, 1975, p. 329); partially excavated; limestone block masonry; geometric mosaics; cold plunge bath

**Athis/Neocaesarea** (Dibsi Faraj): Northern Extramural Baths

Loc: Syria (Syria)

Purpose: civic

Date: built in 452 (dated by inscription); renovated in 6th C by changing function of some rooms and adding new rooms; renovated for non-bathing purposes in Early Islamic period

B Type:

B Size:

B Rooms: multiple hot rooms; multiple As; latrine

Plans: Area: Harper (1975) p. 321

Ref: Harper (1975); Nielsen (1990) C.379 (she combines the Western and Northern Extramural Baths in one entry)

Comment: salvage excavation: site since flooded by dam; outside northeast gate of citadel; not fully excavated; built chiefly of brick; built "on a flat area created by the cutting back of the bank of debris outside the citadel wall and the destruction of some small earlier buildings" (Harper 1975: 329); in 1st phase, F floored with mosaic displaying animal theme; in 2nd phase, F refloored with mosaic incorporating a personification of Hygiene; in 2nd phase there was an underground service room for stoking two furnaces and draining bath

**Athis/Neocaesarea** (Dibsi Faraj)

Loc: Syria (Syria)

Purpose: domestic

Date: house: built in early 4th C A.C.; abandoned in mid 4th C when basilica built in area

B Type:

B Size:

B Rooms:

Plans: Area: Harper (1975) p. 321

Ref: Harper (1975) p. 325

Comment: salvage excavation: site since flooded by dam; rich house with private bath; in fortified city

**Auara:** see Hawar

**Avdat:** see Oboda

**(Tel Aviv)**

Loc: Judaea (Israel)  
 Purpose:  
 Date: Byzantine  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: E. Ayalon, "Tel Aviv, 'Haaretz' Museum," ESI 4  
 (1985) 107-108  
 Comment: in valley east of Tel Qasile; part of hot room  
 uncovered in salvage excavation in 1984; Ayalon  
 says very similar to Byzantine bathhouse at Tel  
 Qasile

**(Babisqa/Babiska): Double Baths/ Large and Small Baths**

Loc: Syria (Syria)  
 Purpose: civic  
 Date: 5th-6th C  
 B Type: Two axial row types  
 B Size: 191 and 124 sq. m.  
 B Rooms:  
 Plans: Nielsen (1990) fig. 260  
 Ref: Nielsen (1990) C.380; Grabar et al. (1978) p. 95;  
 Charpentier (1995)  
 Comment: not excavated; Charpentier (1995: 229-30) suggests  
 the "Large Baths" may not be baths

**Banias:** see Pnias

**Barade (Brad)**

Loc: Syria (Syria)  
 Purpose: civic, Tchalenko: originally part of private estate  
 Date: phase I (hot rooms): 4th C; phase II (cold rooms):  
 probably 2nd half of 5th C  
 B Type: angular row type  
 B Size: less than 500 (my estimate from Charpentier's plan)  
 B Rooms: uncovered F/atrium-(unheated) "salle de transition  
 avec un bassin"-L-(heated) destrictarium?-C;  
 latrine  
 Plans: B: Charpentier (1995) fig. 9 (ignore earlier plans  
 published by Nielsen, Yegül, and Tchalenko; B in C:  
 Tchalenko (1953) Pl. CXXXIII & CCVII, Burns (1992)  
 p. 59  
 Ref: post-excavation: Charpentier (1995); pre-  
 excavation: Nielsen (1990) C.381; Yegül (1992) pp.  
 334-38; Grabar et al. (1978) p. 95; Tchalenko  
 (1953); Burns (1992) pp. 58-59  
 Comment: excavated in 1992 and 1994 by Charpentier (final  
 report in process); beware the pre-excavation  
 accounts of these baths in Nielsen (1990), Yegül  
 (1992), Grabar et al. (1978); Tchalenko (1953), and

Burns (1992); "the low-vaulted rooms are quite different from the fifth century baths at Serjilla" (Burns, 1992, p. 58); mosaic in uncovered F; individual tubs; hot section more elaborate than at Serjilla

**(Baqa el-Garbiya)**

Loc: Judaea (Israel: near Caesarea)  
 Purpose:  
 Date: probably late Roman or Early Byzantine; ceased to function by end of Byzantine period; another structure built over top at later time  
 B Type:  
 B Size:  
 B Rooms:  
 Plans: Badihi & Boshnino (1991) p. 113  
 Ref: Radwan Badihi & Aviva Boshnino, "Baqa el-Gharbiya," ESI 10 (1991) 113; Tsafir et al. (1994) p. 135 (under entry for Geth in Samaria), m.r. 154202  
 Comment: partially excavated in salvage excavation

Batanaea: see Betoaenea

**Becchufrin (Kifrin/Kufrin): Internal Baths**

Loc: Mesopotamia (Iraq: east of Dura Europos)  
 Purpose: Military  
 Date: F: c. 194  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: internal, next to praetorium?  
 F Type:  
 F Size: 170 m x 130 m  
 Plans: F(&B?): Invernizzi (1986b) p. 364 (structures not labelled); B: Invernizzi (1986b) p. 371 (aerial photos)  
 Ref: Antonio Invernizzi, "Kifrin--Βυλλουφρελν," Mesopotamia 21 (1986a) 53-84; A. Invernizzi, "Kifrin and the Euphrates Limes," in Philip Freeman & David Kennedy (eds.), The Defense of the Roman and Byzantine East (part 1, pp. 357-381). Oxford: BAR International Series 297, 1986b.  
 Comment: salvage excavation preceding flooding by dam; remains of internal baths slight; not much information given on baths (see Invernizzi, 1986b, pp. 362-63); fort mentioned in military papyri from Dura-Europos; caravan city

**Becchufrin (Kifrin/Kufrin): Extramural Baths**

Loc: Mesopotamia (Iraq: east of Dura Europos)  
 Purpose: Military  
 Date: F: c. 194

B Type:  
 B Size:  
 B Rooms:  
 Rel to F: external  
 F Type:  
 F Size: 170 m x 130 m  
 Plans: F(&B?): Invernizzi (1986b) p. 364 (structures not labelled)  
 Ref: Antonio Invernizzi, "Kifrin--Βηλλουφρεϊν," Mesopotamia 21 (1986a) 53-84; A. Invernizzi, "Kifrin and the Euphrates Limes," in Philip Freeman & David Kennedy (eds.), The Defense of the Roman and Byzantine East (part 1, pp. 357-381). Oxford: BAR International Series 297, 1986b.  
 Comment: salvage excavation preceding flooding by dam; not much information given (see Invernizzi, 1986b, pp. 362-63); photo of pilae from baths (Invernizzi, 1986b, p. 370); fort mentioned in military papyri from Dura-Europos; caravan city

#### (Beer Sheba)

Loc: Judaea (Israel)  
 Purpose:  
 Date: B: Roman or Byzantine; F: "might have been built as early as the 3rd. c. as a camp for the Tenth legion after the legion was transferred from Jerusalem to Eilah" (Fabian 1995: 239)  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: outside fort; c. 200 m from southeast corner of fort  
 F Type:  
 F Size:  
 Plans: B&F: Fabian (1995) Fig. 3  
 Ref: F: Peter Fabian. "The late Roman Military Camp at Beer Sheba: A New Discovery," The Roman and Byzantine Near East (JRA Supplementary Series no. 14, Ann Arbor, MI: 1995) pp. 235-240.  
 Comment: fort not excavated and has been built over (but outline can be seen in 1918 aerial photo); fort "is different from all contemporary military installations in southern Israel...Yet it resembles the large structures known from Transjordan at Lejun, Udrah and Alia" (Fabian, 1995, p. 239); the Notitia Dignitatum mentions a Roman fortress manned by a cohort of Dalmatian horsemen; Beer Sheba shown as military camp on Madaba map; Fabian suggests Beer Sheba was "the military headquarters of southern Palestine" (p. 239); possibly dux palaestina resided in Beer Sheba

**Beisan:** see Nysa-Scythopolis

**Beit Jibrin:** see Eleutheropolis

**Bet She'an:** see Nysa-Scythopolis

**Bethafu:** see Boutafis

**Beth Guvrin:** see Eleutheropolis

**Beth Shean:** see Nysa-Scythopolis

**Beth Yannai:** see Betoaenea

**Beth-Yerah:** see Philoteria

**(Beth-Zur, Khirbat et Tubeiqa)**

Loc: Judaea (West Bank: near Hebron)

Purpose:

Date: Hellenistic

B Type:

B Size:

B Rooms:

Plans: Area: Sellers (1933) plate II

Ref: Ovid Rogers Sellers, The Citadel of Beth-Zur  
(Philadelphia: The Westminster Press, 1933, pp. 16-19); Reich (1988) p. 102

Comment: tubs, benches, basins, and possible foot baths; no hypocaust mentioned; Sellers suggests it may be bathhouse or dye/ tanning plant; Reich (1988) thinks it is bathhouse and is one of earliest ones in Israel

**Betoaenea/Batanaea (Beth Yannai?) (`Anin)**

Loc: Judaea (Israel: village 15 miles east of Caesarea)

Purpose: medicinal baths

Date:

B Type:

B Size:

B Rooms:

Plans:

Ref: Tsafrir et al. (1994) p. 88, m.r. 165211

Comment: "medicinal baths"

**Birtha:** see Zenobia

**Bosra:** see Bostra

**Bostra (Bosra):** South Baths

Loc: Arabia (Syria)

Purpose:

Date: first built in 2nd C A.C.; rooms added in 3rd C;

rooms converted and new rooms added in 4th C; in Umayyad period communal bathing pools replaced by small individual basins and some rooms used for non-bathing purposes

- B Type: Nielsen' classification: Axial half-symmetric row type (probably not based on full plan)  
 B Size: 2,760 sq. m. (based only on a portion?)  
 B Rooms:  
 Plans: B: Weiss (1994) fig. 35; Nielsen (1990) fig. 218 (represents only a portion of Weiss' plan); B in city: Bowersock (1983) p. 189  
 Ref: Nielsen (1990) C.286; Harvey Weiss, "Archaeology in Syria," AJA 98 (1994) 101-158, esp. 153 (best source for information); Segal (1988) pp. 56-57  
 Comment: see Weiss (1994) for changes in bath in each time period

**Bostra (Bosra):** North Baths

Loc: Arabia (Syria)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Rel to F: inside fort

F Type: Legionary fortress

F Size: 16.8 ha

Plans: B in city: Bowersock (1983) p. 189; F in city: Kennedy & Riley (1990) fig. 72

Ref: Bowersock (1983) p. 189; Kennedy & Riley (1990); Raymond Brulet, "Estampilles de la III<sup>e</sup> Légion Cyrénaïque à Bostra," Berytus 32 (1984) 175-79

Comment: North Baths shown in Bowersock's map would lie inside fort shown in Kennedy & Riley's map if the two maps were superimposed; stamped legionary tiles have been found in fort area (including a round hypocaust tile); Bostra was base for the legio III Cyrenaica; I have not found any description of these baths

**Bostra (Bosra):** Central Baths

Loc: Arabia (Syria)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans: B in city: Bowersock (1983) p. 189

Ref:

Comment:

**Boutafis/Bethafu** (vicinity of esh Sheikh Zuweid)

Loc: Aegyptus? (near meeting point of Aegyptus, Arabia & Judaea) (Egypt)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans:

Ref: Tsafrir et al. (1994) p. 92, m.r. 065070

Comment: "bath-house"

**Brad:** see Barade

**Caesarea Maritima:** Bath in Promotory Palace

Loc: Judaea (Israel)

Purpose: in palace

Date: renovations in Roman Imperial period

B Type:

B Size:

B Rooms:

Plans:

Ref: Barbara Burrell & Kathryn Gleason, "The Promontory Palace at Caesarea, Israel," AJA 99 (1995) 306-307

Comment: C with mosaic floor and stone suspensurae; "alterations were made throughout the Roman Imperial period, with small private bathing suites replacing one another as they went out of use" (Burrell & Gleason 1995: 307); bricks with stamp of 10th Legion

**Caesarea Maritima**

Loc: Judaea (Israel)

Purpose: probably belonged to a villa

Date: A.D. 550-640

B Type:

B Size: small

B Rooms: F, T, C, latrine, service court, etc.

Plans: B: Holum et al. (1988) p. 183 & 184

Ref: Kenneth G. Holum, Robert L. Hohlfelder, Robert J. Bull, & Avner Raban. King Herod's Dream: Caesarea on the Sea (New York: W. W. Norton & Company, 1988) pp. 182-83.

Comment: round F

**Caesarea Panias:** see Panias

**Caesarea of Philip:** see Panias

**Capernaum** (Kefar Nahum)

Loc: Judaea (Israel: top of the Sea of Galilee)

Purpose:

Date: built and abandoned in 1st C A.C.  
 B Type:  
 B Size:  
 B Rooms: A, F, T, C (etc.?)  
 Plans:  
 Ref: V. Tsaferis & M. Peleg, "Kefar Nahum - 1984," ESI 3 (1984) p. 64; V. Tsaferis & M. Peleg, "Kefar Nahum: Excavations of the Department of Antiquities - 1985," ESI 4 (1985) p. 59;  
 Comment: round and square bricks in C; not fully excavated

**Caphar Saba** (Khirbet Sabiye)

Loc: Judaea (Israel)  
 Purpose:  
 Date: Roman  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Tsafrir et al. (1994) p. 99, m.r. 144176  
 Comment: "Roman bath-house"

**Chorazin** (Khirbet Kerraze)

Loc: Judaea (Israel: north of Sea of Galilee, 4 km north of Capernaum)  
 Purpose: public ritual bath complex  
 Date:  
 B Type: mikveh  
 B Size:  
 B Rooms:  
 Plans: Area: Yeivin (1993) p. 302  
 Ref: Zeev Yeivin, "Chorazin," in Stern et al., (1993) v. 1 pp. 301-304; Z. Yeivin, "Korazim - 1983/1984," ESI 3 (1984) 66-71, esp. 67; Tsafrir et al. (1994) p. 103, m.r. 203257  
 Comment: Jewish community; immersion pool; clay oven installed in 6th/7th C A.C. (but complex might not have been used for bathing at this time)

**Colonia Emmaus** (Moza, Motza, Qalunya)

Loc: Judaea (Israel: west of Jerusalem)  
 Purpose:  
 Date: Roman  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Barag (1967) p. 267; Tsafrir et al. (1994) p. 105, m.r. 165133  
 Comment: not same as Emmaus; military colony established by Vespasian; bath uncovered by Mandatory Department of Antiquities

**Cyprus: Lower Slope Baths**Loc: Judaea (West Bank)

Purpose:

Date: Herodian; L added at later stage

B Type: Axial row type

B Size: 200 sq. m.

B Rooms: A, 2 Fs, 2 Ts, 1 L, 1 C

Plans: B: Nielsen (1990) fig. 238; Netzer (1993) p. 315 (better); Area: Netzer (1993) p. 315

Ref: Nielsen (1990) C.337; Ehud Netzer, "Cyprus," in Stern et al., (1993) v. 1 pp. 315-317; Small (1987)

Comment: 2 furnaces: 1 next to C, 1 next to L; circular L; mosaic in A; stepped pools in Fs; rough-hewn stone & ashlar; possible Hasmonean mikveh beneath one of Ts**Cyprus: Upper Baths**Loc: Judaea (West Bank)

Purpose:

Date: Early Roman period; bathtubs in T added in later phase

B Type:

B Size:

B Rooms:

Plans:

Ref: Ehud Netzer, "Cyprus," in Stern et al., (1993) v. 1 pp. 316; Small (1987)

Comment: wall frescos in F and T; white mosaic and opus sectile floors; marble wash-basin and stone carved bathtub in C; stepped immersion pool in F; bathtub in T; entrance via courtyard which might have been roofed; F smaller than T or C; possible second story; cisterns beneath some of rooms; rough-hewn stone**(Dana-Nord)**Loc: Syria (northern Syria: c. 10 km east of Babisqa)

Purpose:

Date: Byzantine

B Type:

B Size:

B Rooms:

Plans:

Ref: Tchalenko (1953) vol. 1, p. 25, 118; Charpentier (1995) p. 225 n. 25

Comment: covered cistern believed to be from baths

**(Deir el-Balah)**Loc: Judaea (Gaza Strip: in Sinai)

Purpose:

Date: Byzantine

B Type:

B Size:  
B Rooms:  
Plans:

Ref: Eliezer D. Oren, "Sinai: Byzantine and Arab Periods," in Stern et al. (1993) v. 4 p. 1396.

Comment: prosperous Byzantine town near Deir el-Balah; ancient name of town not known; might be Sykamazon from Madaba map; salvage excavations in 1973 uncovered sections of "well constructed bathhouse"

**(Khirbet edh-Dharieh)**

Loc: Arabia (central Jordan)

Purpose: in residential building

Date: residential building occupied 1st C A.C. to beginning of Byzantine period

B Type:

B Size:

B Rooms: 2 rooms: 1 C

Plans:

Ref: Patricia M. Bikai & Deborah Koorring, "Archaeology in Jordan," AJA 99 (1995) 507-533, esp. 521-22.

Comment: circular hypocaust bricks; good photo of C showing hypocaust, intact C floor and rectangular wall-grooves for flue-pipes p. 522; also Nabataean temple at site

Dhiban: See Dibon

**Dibon (Dhiban, Diban)**

Loc: Arabia (Jordan: in Moab)

Purpose:

Date: Roman or Byzantine (no direct evidence)

B Type: ? (not fully excavated)

B Size: ? (not fully excavated)

B Rooms: ? (not fully excavated)

Plans:

Ref: A. D. Tushingham. The Excavations at Dibon (Dhiban) in the Moab: The Third Campaign 1952-53. Cambridge: American Schools of Oriental Research, 1972, p. 57.

Comment: "Whether it was constructed earlier in the Byzantine period or is to be assigned to the Roman period is at present unclear. A bath would be a natural amenity in a Roman garrison town of the third century." (Tushingham, 1972, p. 57) Only C excavated.

Dibsi Faraj: see Athis

**Dora (Tel Dor)**

Loc: Judaea (Israel: on Mediterranean)

Purpose: public

Date: Roman

B Type:  
B Size:  
B Rooms:  
Plans:

Ref: E. Stern, I. Sharon, & A. Gilboa, "Tel Dor - 1987," ESI 7-8 (1988/89) pp. 43-49; Biblical Archaeology Review 21.1 (1995) p. 39

Comment: hypocaust bricks in centre of room are round whereas those against walls are square; hypocaust under at least 2 rooms; floor in larger room also supported by low partition wall built of square hypocaust tiles; bath-house being excavated further in 1995

**(Khirbet ed-Dura)**

Loc: Judaea (Golan Heights)

Purpose:

Date: Byzantine

B Type:

B Size:

B Rooms:

Plans:

Ref: Amir Golani, "Golan, Survey of Central Area," ESI 9 (1989/1990) pp. 7-8; Tsafrir et al. (1994) p. 114, m.r. 212266

Comment: severely damaged by modern construction and by west side tumbling down slope; part of C uncovered; suspensura & hypocaust; "small pools paved with white mosaics" (Golani, 1989/1990, p. 8)

**Dura Europos (Salihiyeh): Bath F3**

Loc: Mesopotamia (Syria)

Purpose:

Date: Mid 1st C A.C.; probably restored in 150-175; defunct c. 210; [Yegül, 1992, p. 33: destroyed in fire in 215]; a military amphitheatre was built into the P in A.D. 216

B Type: Angular (?) row type

B Size: 630 sq. m., incl. P 1,680 sq. m.

B Rooms: F (with pool), T, S/L, C (with basins), P, 2 latrines, etc.

Plans: B: Nielsen (1990) fig. 247; Brown (1936) Pl. 3

Ref: Nielsen (1990) C.360; Clark Hopkins, The Discovery of Dura-Europos (New Haven: Yale University Press, 1979); F. E. Brown, "Block F<sub>3</sub>," pp. 49-83 in M. I. Rostovtzeff et al. The Excavations at Dura-Europos. Preliminary Report fo the Sixth Season of Work. October 1932-March 1933 (New Haven: Yale University Press, 1936)

Comment: Parthian; plaster in F painted with Victory; none of rooms perfectly square or rectangular; gypsum mortar; 2 furnaces; square hypocaust tiles; service

area adjoining each furnace; 3 rooms with hypocausts & tubuli; furnace floors slope as recommended by Vitruvius; heated rooms domed; terracotta piping inserted in arches to lighten load; pillars, spandrels & soffits of arches around F pool were painted; in phase 2, F pool filled in & replaced with basin, F lined with rubble benches with "arms" rising 0.18 m above bench height, new bathing room added, fuel room adjoining furnace, fuel room has mudbrick walls; water not heated before entering basins; F repaved multiple times, remains of dedicatory inscription in F

**Dura Europos (Salihiyeh): Bath C3**

Loc: Mesopotamia (Syria)

Purpose: Military?

Date: Early 3rd C; rebuilt later

B Type: Ring type (later row type)

B Size: 1,050 sq. m.

B Rooms:

Plans: B: Yegül (1992) fig. 425

Ref: Nielsen (1990) C.361; Yegül (1992) pp. 358

Comment: Yegül (1992) suggests C3, E3 & M7 built after destruction of F3 and "soon after the establishment of a new garrison and the arrival of new troops in the city in 210" (p. 338). Brown, cited in Yegül (1992) suggests they are "exclusively military baths, but a step in the intense Romanization of municipal life characteristic of the city's last half century" (p. 338).

**Dura Europos (Salihiyeh): Bath E3**

Loc: Mesopotamia (Syria)

Purpose: Military?

Date: Early 3rd C

B Type: Ring type (later row type)

B Size: 700 sq. m.

B Rooms:

Rel to F: within military precinct

F Type: garrisoned city

F Size: 9 ha

Plans: B: Yegül (1992) fig. 423

Ref: Nielsen (1990) C.362; Yegül (1992) pp. 358

Comment: within a 9 ha region of city walled off for use of Roman garrison; walled-off region also contained principia, barracks blocks, and temples; "Dura provides an excellent though rare example of the accommodation for an implanted urban garrison within the circuit of an existing stronghold" (Kennedy & Riley, 1990, p. 114); Apodyterium identified by benches along walls

**Dura Europos** (Salihiyeh): Bath M7Loc: Mesopotamia (Syria)

Purpose: Military?

Date: Early 3rd C

B Type: Ring type

B Size: 600 sq. m.

B Rooms:

Plans: B: Yegül (1992) fig. 424

Ref: Nielsen (1990) C.363; Yegül (1992) pp. 358

Comment: Apodyterium identified by benches along walls; Yegül (1992) suggests C3, E3 & M7 built after destruction of F3 and "soon after the establishment of a new garrison and the arrival of new troops in the city in 210" (p. 338). Brown, cited in Yegül (1992) suggests they are "exclusively military baths, but a step in the intense Romanization of municipal life characteristic of the city's last half century" (p. 338).

Eboda: see Oboda

`Ein Yalu: see `En Ya'el

**(El Barà)**Loc: Syria (Syria: just north of Muggleyya)

Purpose:

Date: 5th C

B Type:

B Size: small

B Rooms:

Plans:

Ref: Charpentier (1995)

Comment: in village; Charpentier (1995: 228) believes the baths at El Barà, Sinsarah, Muggleyya, Frikia and Sergilla form a local group: "Ces bâtiments s'organisent systématiquement sur un plan rectangulaire, avec le même nombre de salles disposées selon un schéma identique..." (description of similarities follows)

**Eleutheropolis** (Beth Guvrin/ Beit Jibrin)Loc: Judaea (Israel: The Shephelah)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans:

Ref: Amos Kloner, "Beth Guvrin: Church at Mahat el-Urd (Makhatet el-`Urj)," in Stern et al., (1993) v. 1, pp. 196-97

Comment: Kloner does not suggest bath but hypocaust might be

from bath; hypocaust built over mosaic in church;  
not clear if hypocaust built when church was in use  
or later

**Elusa**

Loc: Arabia (Israel: in Negev)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans:

Ref: Avraham Negev, "Elusa," in Stern et al. (1993) v. 1  
p. 381

Comment: bathhouse in western half of city; water conveyed  
from reservoir to bathhouse in lead and clay pipes;  
town founded by Nabataeans

**Emmaus** (Amwas, Maqam es-Sheikh `Ubeid): The Southern Baths

Loc: Judaea (Israel)

Purpose:

Date: 3rd C A.C.?.; renovated to a smaller size after  
damaged by the earthquake of 498; town abandoned in  
636; Crusaders used baths as warehouses; Mamelukes  
turned baths into holy place

B Type: Axial row type

B Size: 100 sq. m.

B Rooms:

Plans: B: Manderscheid (1988) abb. 24; Gichon (1993) p.  
387 (phase 2)

Ref: Nielsen (1990) C.338; Mordechai Gichon, "Emmaus:  
The Southern Baths," in Stern et al. (1993) v. 2,  
p. 387-89.

Comment: thermal springs known for healing powers; probably  
are other baths at site waiting to be found; not  
fully excavated; water from reservoir; tanks for  
cold, warm, and hot water; after renovation, T  
turned into F and C turned into T; possibly  
palaestra

**(`En Boqeq/Qasr Umm Baghheq)**

Loc: Judaea (Israel: oasis on west shore of Dead Sea)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans:

Ref: M. Gichon. "En Boqeq," in Encyclopedia of  
Archaeological Excavations in the Holy Land, v. 2,  
1976, p. 365.

Comment: possible bath-house (not cleared); 4th C fort at

site but not sure of bath's relation to fort

(En-Gedi)

Loc: Judaea (Israel on border between Israel and West Bank: oasis on west shore of Dead Sea)

Purpose:

Date: between A.D. 70 and 132

B Type: Row

B Size: 200 sq. m.

B Rooms: 2 As, F (with pool), T, C

Plans:

Ref: B. Mazar & I. Dunayevsky, "En-Gedi: Fourth and fifth seasons of excavations preliminary report," IEJ 17.3 (1967) 133-43; Benjamin Mazar, "En-Gedi: The Bathhouse," in Stern et al. (1993) v. 2 pp. 404-405.

Comment: built on top of earlier bath; might be part of larger building; built with reused architectural pieces from Herodian building (e.g., Doric capital used in floor)

(cEn Haseva, Tel Tamar)

Loc: Arabia (Israel: in Arabah in Negev)

Purpose: Military

Date: B: Roman; F: probably founded after annexation of Arabia; projecting towers added late 3rd/early 4th C; fell into disuse during 2nd half of 4th C

B Type: info not yet available

B Size: " " " "

B Rooms: " " " "

Rel to F: 50 m southeast of fort

F Type: Castellum

F Size: c. 46 m x 46 m

Plans:

Ref: Rudolph Cohen, "The fortress at cEn Haseva," Biblical Archaeologist 57:4 (1994) 203-214; Staff, "1995 excavation opportunities," Biblical Archaeology Review 21.1 (1995) 45.

Comment: Cohen's 1994 article was published before the 1993 season at which point the excavation of bath was still in the early stages; "Roman" baths are mentioned in a description of the site published prior to the 1995 season

(`En Ya'el, `Ein Yalu)

Loc: Judaea (Israel: near Jerusalem)

Purpose:

Date: Roman

B Type:

B Size:

B Rooms: at least 2 rooms

Plans: Area: Edelstein (1988/89) fig. 48 (bath no. 4-5)

Ref: G. Edelstein, "`En Ya'el," ESI 5 (1986) pp. 30-33;  
G. Edelstein, "`En Ya'el - 1987," ESI 7-8 (1988/89)  
pp. 54-57; Tsafrir et al. (1994) p. 122, m.r.  
166127

Comment: on upper terrace; C "with pottery heating pipes  
embedded in plaster, and a stone paved floor  
resting on brick arches" (Edelstein, 1986, p. 30)

(`En Ya'el, `Ein Yalu)

Loc: Judaea (Israel: near Jerusalem)

Purpose:

Date: Roman (after Bar Kokhba Revolt)

B Type:

B Size:

B Rooms: at least 3 rooms

Plans: Area: Edelstein (1988/89) fig. 48 (bath no. 8-10)

Ref: G. Edelstein, "`En Ya'el," ESI 5 (1986) pp. 30-33;  
G. Edelstein, "`En Ya'el - 1987," ESI 7-8 (1988/89)  
pp. 54-57; Tsafrir et al. (1994) p. 122, m.r.  
166127

Comment: on lower terrace; tiles with stamps of Tenth Roman  
Legion; circular room with wall frescos; mosaic;  
wall flues

(`En Zur)

Loc: Judaea (Israel: near Ramat ha-Nadiv)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans:

Ref: Tsafrir et al. (1994) pp. 211-12 (under entry for  
Ramat ha-Nadiv), m.r. 145217

Comment: "bath-house"

(el-Fedein)

Loc: Arabia (northern Jordan)

Purpose:

Date: Islamic

B Type:

B Size: 400 sq. m.

B Rooms:

Plans: Humbert (1989) fig. 1

Ref: J. B. Humbert "Fedein (el)," in Homès-Fredericq &  
Hennessy (1989)

Comment: Figure 1.3 in Humbert (1989) labelled "'Arab  
castle', perhaps Umayyad bath," only mention to  
bath in this entry.

**(Tell Faysal)**

Loc: Arabia (Jordan)  
 Purpose:  
 Date: F: end of 2nd C/beginning of 3rd C A.C.  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F: unknown  
 F Type: fort or watchtower; but may be caravanserai or villa  
 F Size: 31 m x 37 m  
 Plans:  
 Ref: Gaetano Palumbo, Khairieh `Amr, Ali Musa & Michelle Rasyon-Seigne, "Salvage Excavations at 'Tell Faysal', Jarash," ADAJ 37 (1993) 89-117  
 Comment: salvage excavation in 1991; site had been heavily damaged by 20th C construction; only a small portion of "fort" was excavated; fort would have controlled southern access to Gerasa; "the presence of a large number of hypocaust tiles...may indicate the presence of a bath in the area" (Palumbo et al., 1993, p. 95); hypocaust tiles also reused in "late" kiln; "fort" now preserved under highway

**(Frikia)**

Loc: Syria (Syria: just north of Sergilla)  
 Purpose:  
 Date: 5th C  
 B Type:  
 B Size: small  
 B Rooms:  
 Plans:  
 Ref: Charpentier (1995)  
 Comment: in village; Charpentier (1995: 228) believes the baths at El Barà, Sinsarah, Muggleyya, Frikia and Sergilla form a local group: "Ces bâtiments s'organisent systématiquement sur un plan rectangulaire, avec le même nombre de salles disposées selon un schéma identique..." (description of similarities follows)

**Gadara (Umm Qeis/ Um Qeis/ Umm Qais): Byzantine Baths**

Loc: Judaea (Jordan)  
 Purpose: civic  
 Date: Early 4th C., 2nd period 5th C (following "severe" fire); used into early 7th C; during Umayyad period converted to smaller domestic units  
 B Type: Ring type  
 B Size: Nielsen: 2,340 sq. m.; Weber: 30 x 50 m  
 B Rooms:  
 Plans: B: Manderscheid (1988) abb. 166, Holm-Nielsen et al. (1989) fig. 4; B in C: Weber (1990) centerfold,

no. 14  
 Ref: Nielsen (1990) C.339; Weber (1990) pp. 26-27; S. Holm-Nielsen, U. Wagner-Lux, K. J. H. Vriezen, & T. Weber. "Um Qeis (Gadara) in Homès-Fredericq & Hennessy (1989) vol. 2  
 Comment: Excavated in early 1980s by Danish team; on south side of decumanus maximus (entered from it); built on steep slope; southern facade was 14 m high; rectangular rooms; C made smaller during rebuilding; "fuel stored in two vaulted chambers under the bath, with direct access from the street" (Nielsen, 1990, vol. 1, p. 20 n. 77)

**Gadara** (Umm Qeis/ Um Qeis/ Umm Qais): Baths of Herakleides  
 Loc: Judaea (Jordan)  
 Purpose: civic  
 Date: 3rd C A.C.  
 B Type:  
 B Size:  
 B Rooms:  
 Plans: B in C: Weber (1990) centerfold, no. 17  
 Ref: Weber (1990) pp. 28  
 Comment: Excavated in 1960s by Jordanian & German teams; 100 m north of decumanus maximus; mosaics still in place; mosaic designs geometric; one mosaic names Herakleides as donor

**Gadara** (Umm Qeis/ Um Qeis/ Umm Qais): el-Qasr  
 Loc: Judaea (Jordan)  
 Purpose:  
 Date: 3rd C A.C.  
 B Type:  
 B Size:  
 B Rooms:  
 Plans: B in C: Weber (1990) centerfold, no. 18  
 Ref: Weber (1990) pp. 28  
 Comment: unexcavated; 3 m high standing remains of a substantial octagonal building; "several water channels between the street and the building hint that it may have been the monumental vestibule for a baths" (Weber, 1990, p. 28); 200 m south of decumanus maximus

**Gadaris**: see Gazara

**Gazara/ Gadaris** (Tell Jezer) (Biblical Gezer): The Syrian Bath  
 Loc: Judaea (Israel: near Emmaus)  
 Purpose:  
 Date: Hellenistic  
 B Type:  
 B Size:

B Rooms: 7 rooms + furnace  
 Plans: B: MacAlister (1912) fig. 110  
 Ref: MacAlister, R. A. Stewart, The Excavation of Gezer 1902-1905 and 1907-1909 (London: John Murray, 1912) pp. 223-228; Reich (1988) p. 102  
 Comment: one of earliest hot bath-houses in Eretz-Israel; furnace; no mention of hypocaust; cement floors; 3 rooms contain tubs/tanks; water from all tubs drained across floors and left building via drain in one room; barrel vaults

**Gazara/ Gadaris** (Tell Jezer) (Biblical Gezer): The Roman Bath

Loc: Judaea (Israel: near Emmaus)  
 Purpose:  
 Date: Roman  
 B Type:  
 B Size: 375 sq. m.  
 B Rooms: A, T, C, F, atrium, latrine  
 Plans: MacAlister (1912) plate 1  
 Ref: MacAlister, R. A. Stewart, The Excavation of Gezer 1902-1905 and 1907-1909 (London: John Murray, 1912) pp. 228-36; Tsafir et al. (1994) p. 131, m.r. 142140

Comment: floors paved with white or coloured mosaics; marble-lined walls, square hypocaust tiles; pool in F; hoard of coins in F drain perhaps from admission fees; building has been greatly damaged from being used as a quarry

**Gelilot**: see Tel Mikhal

**Gerasa** (Jerash): The Baths of Placcus

Loc: Arabia (Jordan)  
 Purpose:  
 Date: A.D. 454-455; restored in 584  
 B Type: Angular row type  
 B Size: 830 sq. m.  
 B Rooms: "besides the usual heated rooms, an atrium and an open court with a swimming pool--an extremely rare element at this time and in Christian context" (Yegül 1992: 320)  
 Plans: cathedral complex (including baths): Piccirillo (1993) fig. 527; cathedral complex in city: Piccirillo (1993) p. 355  
 Ref: Nielsen (1990) C.341; Yegül (1992) p. 320  
 Comment: Built by bishop as "an adjunct to an important ecclesiastical complex, although their size and planning make it most likely that their use was not restricted to the clergy" (Yegül, 1992, p. 320)

**Gerasa (Jerash): East Baths**Loc: Arabia (Jordan)

Purpose:

Date: 3rd C A.C.?

B Type:

B Size:

B Rooms:

Plans: B in city: Bowersock (1983) p. 188

Ref: Manderscheid (1988) p. 116; Nielsen (1990) p. 112  
n. 131; Segal (1988) p. 24Comment: not excavated; not fully exposed; partly overbuilt;  
poorly preserved; larger & more complex than West  
Baths**Gerasa (Jerash): West Baths**Loc: Arabia (Jordan)

Purpose: civic

Date: 2nd C (probably 2nd half)

B Type: Imperial type?

B Size: 4,500 sq. m.

B Rooms:

Plans: B: Nielsen (1990) fig. 241; B in city: Bowersock  
(1983) p. 188

Ref: Nielsen (1990) C.340; Segal (1988) p. 24

Comment:

**Gerizim Mons (Mount Gerizim, Jebel et-Tur)**Loc: Judaea (West Bank)

Purpose: Domestic?

Date: Hellenistic (city established c. 200 B.C.,  
destroyed 114-111 B.C.)

B Type: Tub Room

B Size:

B Rooms:

Plans:

Ref: Itzhak Magen, "Gerizim, Mount" in Stern et al.  
(1993) v. pp. 484-488Comment: 2 bathrooms in one residential building and 1 in  
another; bathrooms have stone or plaster bathtubs;  
one bathroom has plastered wash basin; no mention  
of a suite of bathing rooms or a hypocaust**(Guwaniye)**Loc: Syria (northern Syria: c. 15 km southwest of  
Babisqa)

Purpose:

Date: Byzantine

B Type:

B Size: small

B Rooms:

Plans:

Ref: Charpentier (1995) p. 225 n. 25

Comment:

Halebiye: see Zenobia

**(Hammam As-Sarakh/ Hammān al-Sarāh)**

Loc: Arabia (Jordan)  
 Purpose: hammam of Qasr el-Hallabat (2 km away)  
 Date: Umayyad, A.D. 705-15  
 B Type: Angular row type  
 B Size: 310 sq. m. (bathing + audience rooms)  
 B Rooms: entrance hall, A-T-C  
 Plans: B: Bisheh (1987) fig. 1; Creswell (1989) p. 166  
 (quite different)  
 Ref: Nielsen (1990) C.288; Ghazi Bisheh. "Hammām al-Sarāh in the light of recent excavations," Domaszener Mitteilungen 4 (1987) 225-30, plates 59-66; Creswell (1989); Khouri (1992) pp. 27-30.  
 Comment: 3 parts: audience hall, bathing rooms, hydraulic structures; A tunnel-vaulted, T cross-vaulted, C domed; tunnel-vaulted recess in T; 2 semi-circular recesses in C; probably water tank over furnace; unroofed fuel storage/service area adjacent to furnace; latrines flushed by waste water; well water raised by animal-powered saqiyah into raised reservoir from which gravity-flow was used to convey it to bath through ceramic pipes; also pipes to garden; pool & fountain in audience hall; decorated with mosaics, marble, statues & painted plaster; "strikingly similar to Quasayr Amra, though its masonry is better finished off and its courses more tightly joined" (Bisheh, 1987, p. 229); stone pilfered in 1950s; clearance and partial reconstruction in 1974 but no report on this work; adjacent unroofed mosque is from Ottoman period

**(Hammat Gadder)**

Loc: Judaea (Jordan: in Yarmuk Valley near Gadara)  
 Purpose: therapeutic  
 Date: built late 2nd C A.C.? Phase 1: Roman & Byzantine; Phase 2: early Islamic (renovated & re-opened in 663); abandoned 9th/early 10th C  
 B Type:  
 B Size: 4200 sq. m.  
 B Rooms:  
 Plans: B: Manderscheid (1988) abb. 175; B (Phase 1): Hirschfeld & Solar (1981) fig. 2; B (Phase 2): Hirschfeld & Solar (1981) fig. 3; Area: Hirschfeld & Solar (1981) fig. 1  
 Ref: Yizhar Hirschfeld & Giora Solar. "The Roman Thermae at Hammat Gader: Preliminary report of three seasons of excavations," IEJ 31 (1981) 197-219;

Stern et al. (1993) v. 2, p. 569  
 Comment: "The combination of a sacred spring, therapeutic  
 thermae and a cultic theatre offered visitors the  
 same type of religious, medical and social  
 facilities which were available at many cultic  
 centres throughout the Roman Empire" (Hirschfeld &  
 Solar, 1981, p. 198); water from hot spring; tubs;  
 window glass; lamps; images defaced in Abassid  
 period

**Hammatha:** See Hammat Gader

**Hammath-Tiberias:** see Tiberias

**Tell el-Hammeh:** see Hammat Gader

**Horvat Hanot:** see Kh. el Khan

**Hawar/Auara (Humeima)**

Loc: Arabia (Jordan: in Hisma)

Purpose: Military

Date: B: Phase 1: Nab building; Phase 2: Late Roman bath;  
 Phase 3: Byzantine bath; F: built 2nd C

B Type: row (stage 1 = parallel row type)

B Size: 150 sq. m.

B Rooms: A-F/T-L-C

Rel to F: outside fort

F Type: Castellum (Parker, 1986)

F Size: 3.0 ha

Plans: B: Oleson (1989) figs. 4-6; B&F: Oleson (1994) fig  
 1; F: Oleson (1994) fig. 3

Ref: B: John P. Oleson, "Humeima hydraulic survey, 1989:  
 Preliminary field report," Classical Views 34  
 (1990) 145-63. F: John P. Oleson, Khairieh `Amr,  
 Rebecca Foote, & Robert Schick, "Preliminary report  
 of the Humeima excavation project, 1993," Classical  
 Views 38 (1994) 141-79.

Comment:

**(Tell Hefer/ Tell el-Itshar)**

Loc: Judaea (Israel: c. 15 km southeast of Caesarea)

Purpose:

Date: Byzantine

B Type:

B Size:

B Rooms:

Plans:

Ref: Samuel M. Paley & Yosef Porath, "Hefer, Tel" in  
 Stern et al. (1993) v. 2 pp. 609-14, esp. 613

Comment:

**Al-Hemma:** See Hammat Gader

**Herodium** (Jebel Fureidis): Baths in the PalaceLoc: Judaea (West Bank)

Purpose: baths in fortified palace

Date: last 3rd of 1st C B.C.; converted into monk's cells in Byzantine period

B Type: Angular row type

B Size: 300 sq. m.

B Rooms: A, F (with pool), T, C

Plans: B: Nielsen (1990) fig. 243

Ref: Nielsen (1990) C.342; Gideon Foerster, "The Mountain Palace-Fortress" in Stern et al. (1993) v. 2 pp. 619-621; Small (1987)

Comment: in northwest of palace; mosaic floors; frescos in Pompeian First Style; circular T (D 4.15 m); another story above bath; "In the bathhouse were several erotic inscriptions written by soldiers" (Foerster, 1993, p. 621)**Herodium** (Jebel Fureidis)Loc: Judaea (West Bank)

Purpose: palace baths

Date: Herodian

B Type:

B Size: large

B Rooms: A, 3 Ts, 2 Cs (1 possibly L), F not yet found

Plans: B: "Herodion - 1982/1983" p. 48

Ref: Ehud Netzer, "Lower Herodium" in Stern et al. (1993) v. 2 pp. 621-626, esp. 623; "Herodion - 1982/1983," ESI 2 (1983) pp. 47-49Comment: in lower Herodian; near southwest corner of pool complex; "largest of its kind so far discovered in any of Herod's palaces" (Netzer, 1993, p. 623); not fully excavated; large C; round C or L (D c. 4 m); mosaic floors; frescos; marble wash basin with mythical figure, 2 furnaces; one corner and several room bases cut into bedrock**Herodium** (Jebel Fureidis)Loc: Judaea (West Bank)

Purpose:

Date: Herodian?

B Type:

B Size: small

B Rooms:

Plans: B: Netzer (1981) Ill. 77

Ref: Ehud Netzer, "Lower Herodium" in Stern et al. (1993) v. 2 pp. 621-626, esp. 623; Ehud Netzer, Greater Herodium (Qedem 13, Jerusalem: Hebrew University of Jerusalem, 1981, pp. 47-49.Comment: in lower Herodian; north of pool complex; some hypocaust pilae made of round flat bricks, some made of stone; mosaic in C; mikveh; not fully

excavated

**Herodium** (Jebel Fureidis)

Loc: Judaea (West Bank)

Purpose:

Date: Herodian?

B Type:

B Size: small

B Rooms:

Plans:

Ref: Ehud Netzer, "Lower Herodium" in Stern et al. (1993) v. 2 pp. 621-626, esp. 623; E. Netzer, "Herodion--1984/1985" ESI 5 (1986) 49-50

Comment: in lower Herodian; north of pool complex; similar to other bathhouse in this area and "both structures probably belong to a residential complex which formed part of the palace, perhaps for housing toparchy administration" (Netzer, 1986, p. 50); discovered in 1985

**Hippos/ Antiochia Hippos/ Sussita**

Loc: Judaea (Golan Heights: 2 km east of Sea of Galilee)

Purpose:

Date: Byzantine

B Type:

B Size:

B Rooms:

Plans:

Ref: Claire Epstein, "Hippos (Sussita)" in Stern et al. (1993) v. 2 pp. 634-636

Comment: "baths...required a considerable amount of water" which was a valuable commodity" (Epstein, 1993, p. 635); city prosperous in Byzantine period

**Humeima:** See Hawar

**(Hurfeish)**

Loc: Judaea (Israel: northeast of Acco)

Purpose:

Date: Byzantine

B Type:

B Size:

B Rooms:

Plans:

Ref: Tsafrir et al. (1994) p. 148, m.r. 182269

Comment: "Byzantine bath-house"

**(Il-Anderun)**

Loc: Syria (northern Syria)

Purpose:

Date:

B Type:

B Size:  
 B Rooms:  
 Plans:  
 Ref: Yegül (1992) p. 318  
 Comment: small bath in village; inscription over entrance translates: "I, Thomas, [acting] for the sake of the property owners, have given this bath, presenting this memory. What is the name of the bath? Health. Through this entering, Christ has opened for us the bath of healing." (Yegül, 1992, p. 318)

Tell el-Itshar: see Hefer

Khirbet Jalil: see Tel Mikhal

Khirbet Jeouni: see Rosh Pinna

Jebel Fureidis: see Herodion

**(Jebel Seis/ `Usays)**

Loc: Arabia (Syria: 105 km southeast of Damascus)  
 Purpose: I'm not sure of its role in its community (qasr, granary, large houses and a mosque)  
 Date: Umayyad (before 715) [date based on association with qasr whose date is based on a literary reference to Walid I having a residence here, and from dated graffiti scratched on rocks]  
 B Type:  
 B Size: 272 sq. m. (bath + audience hall)  
 B Rooms:  
 Plans: Area: Creswell (1989) p. 119; B: Creswell (1989) p. 121 (unlabelled)  
 Ref: Creswell (1989) pp. 118-122; Burns (1992) pp. 133-134  
 Comment: bath + audience hall like Qasr `Amra; 150 m east of qasr (same distance as at Humeima); small spring

Jebel et-Tur: see Gerizim Mons

Jerash: see Gerasa

**Jericho (Jericho):** Bath in the Central Building of the Hasmonean Palace Complex

Loc: Judaea (West Bank)  
 Purpose: palace baths  
 Date: Central Building: 1st stage of Hasmonean palace complex (c. 134-104 B.C.), probably filled in c. 92-83 B.C. so fortified palace could be built on top

B Type:  
 B Size:

**B Rooms:**

Plans: Area: Netzer (1993) p. 682 and p. 684; mikveh: Netzer (1982) p. 109

Ref: Ehud Netzer, "Jericho: Hellenistic to Early Arab Periods," in Stern et al. (1993), v. 2, pp. 681-691; Netzer (1982) pp. 108-110

Comment: in northwest corner of building; mikveh with storage and immersion pool connected by pipe; 800 flat bowls found in mikveh indicating "that for a considerable portion of the time in which the migve was in use, the pools were not emptied in order to clean the bottoms" (Netzer, 1982, p. 108); bathtub; "installation for heating water", 2 pools to west

**Jericho (Jericho): Baths in the "twin palace"**

Loc: Judaea (West Bank)

Purpose: palace baths

Date: Hasmonean (c. 76-67 B.C.)

B Type:

B Size:

B Rooms:

Plans: Area: Netzer (1993) p. 683 and p. 684

Ref: Small (1987); Ehud Netzer, "Jericho: Hellenistic to Early Arab Periods," in Stern et al. (1993), v. 2, pp. 681-691; [E. Netzer & E. Meyers. "Preliminary report on the Joint Jericho Excavation Project," BASOR 228 (1977) 15-29]

Comment: two adjacent mirror-image palaces; "both palaces contained bathhouses, consisting of a bathroom and an immersion pool, as well as other pools for immersion" (Netzer, 1993, p. 685); swimming pool adjacent to each palace

**Jericho (Jericho): Independent Bath (Small)**

Loc: Judaea (West Bank)

Purpose: palace baths

Date: c. 40-37 B.C.

B Type:

B Size:

B Rooms: "entrance room", "cold-water pool", "hot-water pool", "bathroom with bath tub", also possibly "dressing-rooms"

Plans: Area: Netzer (1993) p. 684 no. 9; bath & mikveh: Netzer (1982) p. 112

Ref: Small (1987); Ehud Netzer, "Jericho: Hellenistic to Early Arab Periods," in Stern et al. (1993), v. 2, pp. 681-691; Netzer (1982) pp. 110-114

Comment: "The addition of the mikvehs and the bathhouse west of the pools may be attributed to the difficult location (and the problems of water supply) created by the fortified palace built on the artificial mound during Alexander Jannaeus' reign" (Netzer,

1993, p. 686); water heated by tank over furnace; mosaic floors; frescoes; water from aqueduct; pools drained (by pipes) into large swimming pool; mikveh with two pools nearby; in last stage of mikveh, immersion pool could be heated

**Jericho (Jericho): Bath in Herod's 1st palace**

Loc: Judaea (West Bank)

Purpose: palace baths

Date: Palace: c. 35-30 B.C.

B Type:

B Size:

B Rooms:

Plans: Area: Netzer (1993) p. 683

Ref: Small (1987); Ehud Netzer, "Jericho: Hellenistic to Early Arab Periods," in Stern et al. (1993), v. 2, pp. 681-691; James Pritchard. Excavation at Herodian Jericho, 1951. AASOR 32-33 (1958) [bath pp. 9-12]

Comment: Pritchard identified it as a gymnasium but Netzer says now considered part of Herod's 1st palace; hypocaust; mosaics; "well-plastered bathrooms similar to those found at Khirbet Qumram" (Netzer, 1993, p. 683)

**Jericho (Jericho): Baths in Herod's 2nd palace**

Loc: Judaea (West Bank)

Purpose: palace baths

Date: palace: c. 30-25 B.C.

B Type:

B Size:

B Rooms: A, T, F (with stepped pool), C

Plans: Area: Netzer (1993) p. 683

Ref: Small (1987); Ehud Netzer, "Jericho: Hellenistic to Early Arab Periods," in Stern et al. (1993), v. 2, pp. 681-691

Comment: built on top of Hasmonean palace; "Roman-style bathhouse"; hypocaust; most rooms had mosaic floors; fresco and stucco wall decorations

**Jericho (Jericho): Baths in Herod's 3rd palace/  
Baths in North Wing of Herod's Palace/  
Baths in the Winter Palace (Nielsen)**

Loc: Judaea (West Bank)

Purpose: palace baths

Date: Last third of 1st C B.C. (Nielsen); c. 15-10 B.C. (Netzer, 1993)

B Type: Axial row type

B Size: 350 sq. m.

B Rooms:

Plans: Area: Netzer (1993) p. 683; B: Small (1987) fig. 1 (does not show F, unlabelled); Netzer (1993) p.

688 (unlabelled)

Ref: Nielsen (1990) C.343; Ehud Netzer, "Jericho: Hellenistic to Early Arab Periods," in Stern et al. (1993), v. 2, pp. 681-691; Small (1987)

Comment: Roman-style bathhouse, northeast side of north wing of palace; except for bath (built of Roman concrete) most of north wing built of mud brick; F has stepped pool; circular room (D. 8 m) may be L

**(Jerusalem): Baths in Upper City**

Loc: Judaea (Israel)

Purpose: domestic

Date: Herodian

B Type: domestic bathrooms

B Size:

B Rooms:

Plans:

Ref: Small (1987) p. 60; Avigad (1984); Nahman Avigad, "Herodian Period," in Stern et al. (1993) v. 2 pp. 729-735

Comment: each house in upper city had at least one mikveh and some houses had two or more; "implies a high degree of observance of the laws of ritual purity" (Avigad, 1993, p. 729); "typical plan...is a stepped pool, hewn into the rock, with a vaulted ceiling built of ashlar" (Avigad, 1993, p. 729); private mikvehs indicate wealth of owner; "these baths were used only for ritual immersion, and not for bathing as such, which took place in other pools or in bathtubs...Several private buildings were even equipped with steam baths, besides the ordinary bathrooms. These were a Roman innovation, and had hypocausts (heating chambers) beneath their mosaic floors. The floors here were supported by pottery pipes rather than by the small brick columns generally found in such hypocausts." (Avigad, 1984, p. 142)

**(Jerusalem, at Khirbet Ka`kul)**

Loc: Judaea (Israel)

Purpose:

Date: Late Hellenistic or Early Roman

B Type: mikveh

B Size:

B Rooms:

Plans:

Ref: Jon Seligman, "Jerusalem, Kh. Ka`kul," ESI 13 (1995) 69-70

Comment: in northern quarter of modern Jerusalem; in antiquity near Jerusalem-Mikhmas road; "three tabuns excavated nearby may have served to heat the water for the bath" (Seligman, 1955, p. 67)

**(Jerusalem): Roman Baths**Loc: Judaea (Israel)

Purpose:

Date: "built in the period between 70 and 132 A.D., and continued in use till the third century" (Barag, 1967, p. 266)

B Type:

B Size:

B Rooms:

Plans:

Ref: Barag (1967) p. 266

Comment: on eastern slope of Mt. Zion; excavated in 1890; bricks with stamps of Legio X Fretensis**(Jerusalem)**Loc: Judaea (Israel)

Purpose:

Date: Byzantine (or Early Islamic)

B Type:

B Size: "spacious"

B Rooms:

Plans:

Ref: Hillel Geva and Michael Avi-Yonah, "The Byzantine Period" in Stern et al. (1993) v. 2 pp. 768-85; esp. 774

Comment: northwest of Robinson's Arch; brick hypocaust; "secondary use of bricks with the stamp of the Tenth Roman Legion" (Geva and Avi-Yonah, 1993, p. 774)

**(Jerusalem)**Loc: Judaea (Israel)

Purpose: public

Date: end of Byzantine period

B Type:

B Size:

B Rooms:

Plans:

Ref: Michael Avi-Yonah, "The Southwestern Hill" in Stern et al. (1993) v. 2 pp. 774-75; esp. 774; Avigad (1984) pp. 210-11

Comment: in northern part of Jewish quarter; marble-lined "sitting-bath"; square pottery flues; square hypocaust tiles; photos: Avigad (1984) p. 210

**(Jerusalem)**Loc: Judaea (Israel)

Purpose: monastery baths

Date: monastery: founded in 6th C A.C.; enlarged in 7th C (mainly after Islamic conquest); abandoned in 9th C

B Type:

B Size:

## B Rooms:

## Plans:

Ref: David Amit, Samuel Wolff & Amir Gorzalezany,  
"Jerusalem, the Third Wall (Area D)," ESI 13 (1995)  
80-83

Comment: in residential area of Armenian monastery; (now at  
east end of Prophets Street); stone-paved bathing  
pool; vestibule; furnace; salvage excavation in  
1991-92

**(Jerusalem)**

Loc: Judaea (Israel)

## Purpose:

Date: Byzantine

## B Type:

B Size: 50 sq. m.

B Rooms: F-T-C

Plans: bath and city: Geva & Avi-Yonah (1993) p. 769; B:  
Chambon (1989/1990) fig. 132

Ref: Alain Chambon, "Notre Dame Monastery" ESI 9  
(1989/1990) p. 145-46; Hillel Geva and Michael Avi-  
Yonah, "The Byzantine Period" in Stern et al.  
(1993) v. 2 pp. 768-785; esp. 783

Comment: outside city on grounds of Notre Dame monastery; NW  
of Damascus Gate; salvage excavation (1987); marble  
floor-slabs; hypocaust in partly rock-cut  
depression

**(Jerusalem)**

Loc: Judaea (Israel)

## Purpose:

Date: Umayyad

## B Type:

B Size: large: "caldarium alone had an area of more than  
1,000 sq. m." (Ben-Dov, 1993, p. 794)

## B Rooms:

## Plans:

Ref: Meir Ben-Dov, "Umayyad Seat of Government," in  
Stern et al. (1993) v. 2, pp. 793-94

Comment: in NW wing of building on Temple Mount; only  
partially cleared; "entrances supported by pointed  
arches [are] the first discovered to date in an  
Umayyad bathhouse" (Ben-dov, 1993, p. 794); window  
glass; reused bricks of Tenth Legion

Tell Jezer: see Gazara II

Jimzu: see Gamzo

Khirbet Ka`kul: see Jerusalem

**Kallirrhoe (El Zar'ah)**

Loc: Judaea (Jordan: on east shore of Dead Sea)  
 Purpose:  
 Date: Byzantine (maybe built on Roman building)  
 B Type:  
 B Size:  
 B Rooms:  
 Plans: Area: Strobel (1989) fig. 2  
 Ref: A. Strobel. "Zarah (el)/Kallirrhoe," in Homès-Fredericq & Hennessy (1989)  
 Comment: "According to ancient Roman and Jewish literary sources, a famous thermal bath complex ("beautiful springs") was situated in this area in Greco-Roman times... [citations follow]" (Strobel, 1989, p. 633); at least 38 hot springs in vicinity; bath shown on Madaba map

**(Kastron Mayfa`a/ Umm ar-Rasas)**

Loc: Arabia (Jordan)  
 Purpose:  
 Date: B: Umayyad (8th C); F: 3rd or early 4th C  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type:  
 F Size: 2.2 ha  
 Plans: transformation of gate to bath: Bujard Fig. 4.1 & 4.2  
 Ref: Jacques Bujard, "La fortification de Kastron Mayfa`a/Umm ar-Rasas," SHAJ V (1995), pp. 241-249.  
 Comment: in the Umayyad period, the eastern gate of the Roman fort was blocked up and a hammam (bath) was installed between its two towers; 3 arches still standing in bath

**(Kefar Sava)**

Loc: Judaea (Israel: between Caesarea and Antipatris)  
 Purpose:  
 Date: Roman  
 B Type:  
 B Size: "large"  
 B Rooms:  
 Plans:  
 Ref: "Kefar Sava - Nabi Yamin (Tomb of Benjamin)," ESI 1 (1982) 63  
 Comment: site of Roman way station; salvage excavation in 1982; part of furnace room and hypocaust uncovered

**Khirbet el-Kerak:** see Philoteria

**Khirbet Kerraze:** see Chorazin

**(Khirbet el-Khan, Horvat Hanot)**

Loc: Judaea (near border of Israel and West Bank)  
 Purpose:  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: A. Shenhou, "Horvat Hanot (Khirbet el-Khan)," ESI 5 (1986) pp. 46-47; Tsafrir et al. (1994) p. 167, m.r. 154124  
 Comment: salvage excavations in 1985; remains of road station on Jerusalem-Eleutheropolis road; numerous 0.2 m x 0.2 m tiles might be from bathhouse; white mosaics

**Khorvat 'Eleg:** see Ramat Hanadiv

**Kifrin:** see Becchufrin

**Kufrin:** see Becchufrin

**Kurnub:** see Mamphis

**Kypros:** see Cyprus

**(el-Lejjun)**

Loc: Arabia (Jordan)  
 Purpose: Military  
 Date: B: built early 4th C (coin); c. 363-502 building re-used (no longer bath); F: c. 284-551  
 B Type: Angular row type  
 B Size: c. 223.1 sq. m.  
 B Rooms: at least 5 rooms (not completely excavated); A-Atrium-F (with hypocaust under half)-T-C (naming of rooms conjectural)  
 Rel to F: inside fort, abutting north enclosure wall  
 F Type: Legionary fortress  
 F Size: 4.6 ha  
 Plans: F&B: Parker (1991) fig. 2; B: Parker (1991) fig. 14  
 Ref: De Vries "Plan of the Bath and the Function of Its Rooms"; S. Thomas Parker, "Preliminary Report on the 1989 Season of the Limes Arabicus Project," Preliminary Reports of ASOR-Sponsored Excavations, 1982-89 (pp. 117-54). Baltimore: 1991.  
 Comment: Bath not completely excavated; may be another bath (or latrine) in east vicus building pre-dating fort; may be a more monumental bath "across wadi north of northeast corner of the fortress" (De Vries note 5) but this seems purely conjectural. Caveat: De Vries labelling of rooms different from Parker's (1991).

**(Lod)**

Loc: Judaea (Israel)  
 Purpose:  
 Date: end of Byzantine period (finds)  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: "Lod," ESI 1 (1982) 67  
 Comment: "massive piers, stone pavings, broken clay pipes, bricks, and slags...perhaps represent the remains of a bathhouse" ("Lod" p. 67)

**(Horvat Ma'agura)**

Loc: Arabia (Israel: in Negev, northwest of Eboda)  
 Purpose:  
 Date: fortress: 2nd C B.C. - 1st C A.C. (ceramics)  
 B Type:  
 B Size:  
 B Rooms:  
 Rel to F:  
 F Type:  
 F Size: 20.5 x 20.5 m  
 Plans:  
 Ref: R. Cohen, "Horvat Ma'agura," ESI 7-8 (1988/89) p. 114; Tsafrir et al. (1994) p. 172, m.r. 126030  
 Comment: salvage excavations in 1985 & 1987; Nabataean and Roman road station; bathing area next to west wall of fort; water drains from bathtub across floor; shelf along wall; stove for heating bath water; wooden ceiling

**Machaerus (Qala'at el Mishnaqa/ Al-Meshneq)**

Loc: Judaea (Jordan)  
 Purpose: Military?, hill fortress of Herod the Great  
 Date: 30 B.C.; destroyed A.D. 72 by Romans  
 B Type: Angular row type or ring type  
 B Size: 330 sq. m.  
 B Rooms:  
 Rel to F:  
 F Type: Castellum  
 F Size:  
 Plans: B: Small (1987) fig. 3 (not labelled)  
 Ref: Nielsen (1990) C.345; Small (1987)  
 Comment: site of John the Baptist's execution

**(Khirbat al Maffjar): Baths in the Palace**

Loc: Judaea (West Bank?: north of Jericho)  
 Purpose: part of palace complex  
 Date: Umayyad, early 8th C; destroyed 746 in earthquake  
 B Type: Angular row type  
 B Size: 1,750 sq. m.

B Rooms: large (30 x 30 m.) unheated room with bathing pool, 2 smaller cold rooms, 2 hot rooms, sit-down latrine, diwan (audience hall for owner)

Plans: Creswell (1989) fig. 100 (bathing rooms A-G at bottom)

Ref: Nielsen (1990) C.344; Creswell (1989) pp. 186-200; Yegül (1992) p. 341

Comment: "the largest and finest hammam so far discovered in Islam" (Creswell, 1989, p. 186); octagonal C with niches for individual bathing; richly decorated hall attached to bathing suite (contains large cold pool): controversy over usage; Yegül (1992) suggests entertainment hall "whose use was primarily, though not exclusively, connected with the baths" (p. 347); elaborate entrance porch; private entrance for Khalif from qasr; water brought by aqueduct to reservoir and then fell (working water mills) to cistern and to baths; palace abandoned before it was finished but bath had been in use for long time before that; "emphasis is on aquatic sport and frivolity" (Creswell, 1989, p. 200)

**(Ma'in)**

Loc: Judaea (Jordan: c. 10 km west of Madaba)

Purpose: private

Date: A.D. 547/48 (mosaic with inscription)

B Type:

B Size:

B Rooms:

Plans:

Ref: Piccirillo (1993) p. 202; Leah Di Segni, "The involvement of local, municipal and provincial authorities in urban building in late antique Palestine and Arabia," The Roman and Byzantine Near East (JRA Supplementary Series n. 14, Ann Arbor, MI, 1995) p. 327

Comment: near hot spring; bath on northwest slope of tell; discovered by chance in 1980; "very elaborate" (Di Segni)

**Tell Makmish:** see Tel Mikhal

**Maliatha** (Sha'ar Ramon)

Loc: Arabia (Israel: in Negev)

Purpose: in khan

Date: Khan: built by Nabataeans in 1st C A.C. and used until mid 3rd C A.C.

B Type:

B Size:

B Rooms: at least 2 rooms

Plans:

Ref: R. Cohen, "Sha'ar Ramon - 1986," ESI 7-8 (1988/89) 164-165; Tsafir et al. (1993)  
 Comment: salvage excavation; road station between Petra and Eboda?; in southeast corner of Khan; no hypocaust; plastered rooms with plaster basins; drainage across floor; stove in adjoining room may have been for heating bath water; this room added in later stage

**Mamshit:** see Mampsis

**Mampsis** (Mamshit, Kurnub): Building V (The Bath-house)  
 Loc: Arabia (Israel: in Negev)  
 Purpose: civic  
 Date: Negev: Late Nabataean period; Nielsen: 2nd C A.C. or later; still in use in Late Roman and Byzantine periods; used as a dwelling in Late Byzantine times  
 B Type: Angular row type  
 B Size: 190 sq. m.  
 B Rooms: A-F-T-L-L (but Ls may be Cs)  
 Plans: B: Negev (1988) p. 168 & 169; B in C: Shereshevski (1991) Map 1  
 Ref: Nielsen (1990) C.289; Negev (1988)  
 Comment: quality of wall masonry differs between rooms; water from public reservoir; conduit from reservoir to bath may have been filled and emptied by jars; water and fuel scarce in area; fuel was juniper bushes; A largest room; A has a Nabataean style; benches; 2 baths in F; size of a F tub reduced in later stage; no basins or tub in T but provision for water (no hypocaust); 2 Cs or Ls (hard to identify due to damage to floors, but no tubs); Negev suggests Late Nabataean date on basis of stratigraphy and Nabataean-style A

**Mamshit:** see Mampsis

**Maqam es-Sheikh `Ubeid:** see Emmaus

**Mareshah:** see Marisa

**Marisa** (Mareshah)  
 Loc: Judaea (Israel: The Spephelah)  
 Purpose:  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref:  
 Comment: baths to be excavated in 1992 or later (Prof Amos Kloner, director)

**Masada** (Masada, Mezada, es Sebbe): "Public" Baths in the Fortress  
 Loc: Judaea (Israel: west shore of Dead Sea)  
 Purpose: public bath for fortress dwellers  
 Date: Herodian (37-4 B.C.); rebuilt during revolt in 73; defunct in Trajanic times  
 B Type: Angular row type  
 B Size: 290 sq. m., incl. P 500 sq. m.  
 B Rooms: A, T, F, C, P  
 Plans: B: Nielsen (1990) fig. 242; Area: Netzer (1993) p. 974  
 Ref: Nielsen (1990) C.346; Ehud Netzer, "Masada," in Stern et al. (1993) v. 3 pp. 973-985, esp. 978-979; Hannah M. Cotton & Joseph Geiger, Masada II, The Yigael Yadin Excavations 1963-1965. Final Reports, The Latin and Greek Documents (Jerusalem: Israel Exploration Society, 1989); Tsafrir et al. (1994) p. 180  
 Comment: P with pool and portico of Nabataean capitals; mosaics; wall frescos; stepped pool in F; C largest room; C had apse in north for basin & rectangular niche in south for bathtub; some hypocaust pilae made of round bricks, some of stone; rectangular flue pipes; probably used by Roman soldiers after 73/74 as evidenced by "a graffito...which probably reads LEG X found in the calidarium" (Cotton & Geiger, 1989, p. 103) & ostraca from this bathhouse apparently bearing the names of Roman soldiers (see Cotton & Geiger, 1989, pp. 103-104)

**Masada** (Masada, Mezada, es Sebbe): Bath in Western palace  
 Loc: Judaea (Israel)  
 Purpose: for royal apartments  
 Date: Herodian  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Small (1987); Ehud Netzer, "Masada," in Stern et al. (1993) v. 3 pp. 973-985, esp. 977  
 Comment: in northeast corner of royal apartment wing; migvaot; bathtubs in C; mosaics

**Masada** (Masada, Mezada, es Sebbe): Bath on Upper Terrace of Northern Palace  
 Loc: Judaea (Israel)  
 Purpose:  
 Date: Herodian; went out of use in 2nd stage in Herodian period  
 B Type:  
 B Size: "small"  
 B Rooms:

## Plans:

Ref: Ehud Netzer, "Masada," in Stern et al. (1993) v. 3  
pp. 973-985, esp. 976

Comment: on eastern cliff

**Masada** (Masada, Mezada, es Sebbe): Baths on Lowest Terrace  
of Northern Palace

Loc: Judaea (Israel)

Purpose:

Date: Herodian

B Type:

B Size:

B Rooms: F, T, C

Plans:

Ref: Small (1987)

Comment: ashlar; C on round mudbrick pilae; white mosaic;  
primary ref: Josephus, The Jewish War, 7.8.3 289-91

**Martyrius Monastery** (Khirbet Murasas)

Loc: Judaea (West Bank?: near Jerusalem and Jericho)

Purpose: monastery baths

Date: Byzantine (c. 6th C), monastery abandoned in 7th C  
after Arab conquest

B Type:

B Size: c. 117 sq. m.

B Rooms:

Plans:

Ref: Itzhak Magen, "Martyrius Monastery," in Stern et al.  
(1993) v. 3 pp. 968-972

Comment: in middle of western side of monastery, C might  
contain separate cell for abbot; mosaic; pool

**(Me`ez-Ikhkhenis)**

Loc: Syria? (Syria)

Purpose:

Date: ancient village: 2nd - 7th C A.C.

B Type:

B Size:

B Rooms:

Plans:

Ref: Tchalenko (1953) vol. 1, pp. 280-283

Comment: bath-inn? (resembles bath-inn at Babisqa), probably  
fed by aqueduct located near center of small  
village

**Al-Meshneq:** see Machaerus

**(Mezad `Arugot, Qasr el `Areija)**

Loc: Judaea (Israel: on west bank of Dead Sea near En-  
Gedi)

Purpose:

Date:

B Type: 'pool'  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Tsafirir et al. (1994) p. 185, m.r. 186096  
 Comment: also fort; all articles cited on it in Tsafirir et al. (1994) are in Hebrew

**Mezada:** see Masada

**(Midjleyya, Muggleyya)**

Loc: Syria (northern, central Syria)  
 Purpose: civic  
 Date: Nielsen: 6th C (Roman); Charpentier & Tchalenko: 5th C  
 B Type:  
 B Size: "small"  
 B Rooms:  
 Plans: B: Yegül (1992) fig. 419; Area: Tchalenko (1953) Pl. CXL  
 Ref: Charpentier (1995); Yegül (1992) pp. 333-34; Tchalenko (1953)  
 Comment: Yegül, 1992: Similar to Serdjilla but not as inventive; Charpentier (1995: 228) believes the baths at El Barà, Sinsarah, Muggleyya, Frikia and Sergilla form a local group: "Ces bâtiments s'organisent systématiquement sur un plan rectangulaire, avec le même nombre de salles disposées selon un schéma identique..." (description of similarities follows)

**(Horvat Migdal, Zur Nathan)**

Loc: Judaea (West Bank)  
 Purpose:  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Tsafirir et al. (1994) p. 186, m.r. 150183  
 Comment: "bath-house"

**(Tel Mikhal, Tell Makmish, Gelilot, Khirbet Jalil)**

Loc: Judaea (Israel: on Mediterranean Sea)  
 Purpose:  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Plans: Area: Levy (1991) p. 120 (does not show fort)  
 Ref: Yosef Levy, "Gelilot (Kh. Jalil)," ESI 10 (1991) 120-121; Tsafirir et al. (1994) p. 244, m.r. 131174

Comment: Roman fort in region; part of **I** and hypocaust excavated in salvage excavation; white mosaic floor in **I**; two plastered oval hipbaths; marble tiles; water conveyed from well to bath-house in pottery pipes

**(Horvat Minnim/ Khirbet el-Minya)**

Loc: Judaea (Israel: on northwest shore of Sea of Galilee near Tiberias)

Purpose:

Date: Byzantine; several renovations

B Type:

B Size:

B Rooms:

Plans: Area: Grabar et al. (1960) fig. 2

Ref: Oleg Grabar, "Minnim Horvat," in Stern et al. (1993) v. 3 pp. 1050-51; O. Grabar, J. Perrot, B. Ravani, & Myriam Rosen, "Sondages à Khirbet el-Minyeh," IEJ 10 (1960) 226-243; Geoffrey R. D. King, "Settlement patterns in Islamic Jordan: The Umayyads and their use of land," SHAJ IV (1992) pp. 369-375

Comment: The Umayyad palace here "must certainly be connected with a no-longer extant bathhouse (from the Byzantine period...), about 200 m to the northwest"; [the bathhouse at Humeima is also c. 200 m NW of the later qasr]; the Byzantine bathhouse was excavated before 1960 but the excavator died before it could be published and no posthumous publication had yet appeared as of 1993; Sauvaget (cited in Creswell 1969) has also suggested there is a hammam on the western side of the qasr but this area has not been fully excavated and Grabar et al. (1960) say "L'hypothèse de Sauvaget que l'on trouverait un bain dans le coin sud-ouest du palais n'est, pour l'instant, pas à retenir" (p. 226 n. 2); agricultural estate around qasr; qasr perhaps used by Umayyad court in winter; qasr may also have served as a "road stop" for travelling court or caliph; one of only qasrs west of River Jordan

**Khirbet el-Minya:** see Horvat Minnim

**Motza:** see Colonia Emmaus

**Mount Gerizim:** see Gerizim Mons

**(Khirbet Moyat `Awad)**

Loc: Arabia (Israel: in Arabah in Negev)

Purpose:

Date: B: end of 1st C/ beginning of 2nd C A.C. (2

phases); khan: in use 3rd/2nd C B.C. to 3rd C A.C.  
 B Type: "bathhouse"  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Rudolph Cohen, "Mo'a (Khirbet Moyat `Awad)" in Stern et al. (1993) v. 3 pp. 1137-40; Isaac (1990) pp. 129-30  
 Comment: Nabataean; along western side of 40 x 40 m khan or caravanserai; "Rooms are arranged against exterior wall around an open courtyard" (Isaac, 1990, p. 130); multiple bath-rooms; bench along wall of A; aqueduct brought water from 11 x 9 m pool to bathhouse; site on caravan route from Petra to Gaza

**Moza:** see Colonia Emmaus

**(Khirbet el-Muraq)**

Loc: Judaea (West Bank: c. 12 km west of Hebron in foothills of Hebron range)  
 Purpose: baths for villa  
 Date: Herodian (Herodian pottery, coins from A.D. 67 & 68)  
 B Type:  
 B Size: ? (but wall around whole villa complex only encloses 1554 sq. m.); C 3.10 m x 3.10 m  
 B Rooms:  
 Plans:  
 Ref: E. Damati. "Khirbet el-Muraq", IEJ 22 (1972) 173.  
 Comment: salvage excavation; Nabataean capitals and mason's mark featuring Nabataean numeral; strong wall around villa; bath next to northern wall; hypocaust entirely within hewn rock; threshold to T paved with small white tesserae; plaster on walls shows impression of clay pipes

**Khirbet Murasas:** see Martyrius Monastery

**(Na'aran)**

Loc: Judaea (Golan Heights)  
 Purpose:  
 Date:  
 B Type:  
 B Size:  
 B Rooms: 4 rooms  
 Plans:  
 Ref: Claudine Dauphin, "Golan Survey - 1988," ESI 9 (1989/1990) pp. 6-7  
 Comment: near Roman road; flue recesses in internal walls; flue pipe fragments; circular and square hypocaust tiles

**Neocaesarea:** see Athis

**Neronias:** see Panias

**Nysa-Scythopolis** (Beisan, Beth Shean) (Biblical Beth Shean)

Loc: Judaea (Israel)

Purpose: civic

Date: built in Roman era; standing remains from 5th & 6th C; fell into disuse after earthquake of 749

B Type:

B Size: c. 5700 sq. m. ("largest bath building unearthed so far in this country", Foerster, 1993, p. 227)

B Rooms:

Plans: B: Mazor (1987/88) fig. 8; Bar-Nathan & Mazor (1989/1991) fig. 56; B in city: Foerster (1993) p. 224 no. 7 & p. 228 no. 2

Ref: Gideon Foerster, "Beth-Shean at the Foot of the Mound," in Stern et al. (1993) v. 1 pp. 223-235; Tsafrir et al. (1994) pp. 223-25, m.r. 197211; G. Mazor, "The Baths", ESI 6 (1987/88) 10-18; Rachel Bar-Nathan & Gary Mazor, 'City Center (South) and Tel Iztabba Area. Excavations of the Antiquities Authority Expedition,' ESI 11 (The Bet She'an Excavation Project (1989-1991)) 38-43

Comment: part of Roman building dismantled in preparation for Byzantine building; many renovations; 15 dedicatory inscriptions from early 6th C; entered through propylaeum off of colonnaded street; wall paintings; mosaics; window glass; benches; many pools; "water was supplied to the pools by means of a syphon system built of pottery pipes and was drained through pottery pipes equipped with a stop valve" (Bar-Nathan & Mazor, 1989-1991, p. 41); at one stage, a pool converted into peristyle; at least 9 furnaces; "Since the furnaces wore out fairly rapidly, changes made in the furnace system were reflected by various phases of use, including the sealing off of furnaces and their replacement with new ones, the blocking of vents which fed hot air to the hypocaust and the opening of others, as well as the blocking of passages between the hypocausts at various points between the halls" (Bar-Nathan & Mazor, 1989-1991, p. 41); being conserved and restored

**Nysa-Scythopolis** (Beisan, Beth Shean) (Biblical Beth Shean):  
The South Bathhouse

Loc: Judaea (Israel)

Purpose:

Date: Late Roman; used in Byzantine period

B Type:

B Size: small

B Rooms: at least 5 rooms  
 Plans: B in city: Foerster (1993) p. 224 no. 5  
 Ref: Gideon Foerster, "Beth-Shean at the Foot of the Mound," in Stern et al. (1993) v. 1 pp. 223-235; M. Pelag, "The South Bathhouse," ESI 6 (1987/88) 43-44  
 Comment: between amphitheatre and theatre; mosaics in plain white and geometric designs; walls faced with pink marble, white marble or painted plaster; lead and pottery pipes; pools; bathtubs

**Oboda** (`Abda, `Avdat, Eboda)

Loc: Arabia (Israel: in Negev)

Purpose:

Date: Byzantine (6th C)

B Type:

B Size: c. 300 sq. m. (my estimate from plan)

B Rooms: A, F, T, C, Courtyard, Pool

Plans: B: Negev, 1993, p. 1165; Area: Negev, 1993, p. 1155

Ref: Avraham Negev. "Oboda," in Stern et al. (1993) v. 3, pp. 1155-1165; Shereshevski (1991); Tsafrir et al. (1994) pp. 114-15 m.r. 129023

Comment: shown on Peutinger Table on main Aila-Jerusalem road; bath-water from well; cross-shaped C; bath-tubs; stone benches; domed and barrel-vaulted roofs; "one of best preserved Byzantine buildings of this type (Negev, 1993, p. 1165); also Byzantine fortress at site (but not near bath-building); also Nabataean-Roman camp

**Palmyra** (Palmyra): The Baths of Diocletian

Loc: Syria (Syria)

Purpose: civic (but see comments)

Date: A.D. 284-305; perhaps the cold section belongs to a palace from the 1st half of the 3rd C A.C., later converted into baths

B Type: Axial row type

B Size: 270 sq. m.

B Rooms:

Plans: B in C: Browning (1979) map 4

Ref: Nielsen (1990) C.382; Iain Browning, Palmyra (London: Chatto & Windus, 1979)

Comment: entrance to baths meant to be imposing: 1) entrance juttred out into colonnaded street, 2) portico was higher than colonnades, 3) portico supported on red granite columns whereas everything else along street made from honey-colored limestone; and 4) granite columns sat on raised bases; S. T. Parker has suggested to me that it is probably not a coincidence that the date of construction of the baths closely corresponds to the construction of the fort of the legio I Illyricorum in 293-305 (personal communication, March 20, 1996)

**Panias/ Paneas/ Paneias/ Caesarea Panias/ Caesarea of Philip/ Neronias (Banias)**

Loc: Syria (Golan Heights)

Purpose:

Date: Roman

B Type:

B Size:

B Rooms:

Plans:

Ref: Zvi Uri Ma'oz, "Banias," in Stern et al. (1993) v. 1, pp. 136-143

Comment: in western quarter; wall frescos; "completely covered today"

**Panias/ Paneas/ Paneias/ Caesarea Panias/ Caesarea of Philip/ Neronias (Banias)**

Loc: Syria (Golan Heights)

Purpose: part of villa?

Date: villa: 4th - 5th C A.C.

B Type:

B Size:

B Rooms:

Plans:

Ref: Zvi Uri Ma'oz, "Banias," in Stern et al. (1993) v. 1, pp. 136-143

Comment: in southern quarter; semicircular structure; white mosaic floor; not fully excavated

**(Pardessiya, Khirbet Umm el-Fulus)**

Loc: Judaea (Israel?)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans:

Ref: Eli Yannai & Etan Ayalon, "Pardessiya (Kh. Umm el-Fulus)," ESI 10 (1991) 17.

Comment: site probably contains ruins of a Byzantine farm or monastery; ceramic tiles might be from bath-house

**Pella of the Decapolis (Tabaqat Fahl)**

Loc: Judaea (Jordan)

Purpose: civic

Date: early Roman period (1st C A.C.) (style of architecture)

B Type:

B Size:

B Rooms:

Plans: Area: Smith p. 1176 & 1174

Ref: Robert Houston Smith "Pella" in Stern et al. (1993) v. 3 pp. 1176-77; Robert Houston Smith & Leslie

Preston Day, Pella of the Decapolis: Vol. 2. Final Report on the College of Wooster Excavations in Area IX, The Civic Complex, 1979-1985, The College of Wooster, 1989, pp. 10-19.

Comment: only semi-circular exedra excavated; baths not fully excavated because modern water table too high; water prevented excavators from reaching floor level at any spot in exedra; square and circular tiles set in cement in construction of shelf and channel; baths perhaps pre-dated civic complex as not on same grid system; also hammeh north of city

### **Pelusium**

Loc: Arabia (Egypt: in northwest Sinai)

Purpose:

Date: Hellenistic or Roman

B Type:

B Size:

B Rooms:

Plans:

Ref: Eliezer D. Oren, "Northwest Sinai," in Stern et al. (1993) v. 4 pp. 1394-1395

Comment: bathhouse complex uncovered in 1987-1991 excavations of Egypt Antiquities Service

### **Petra: Nabataean Bath**

Loc: Arabia (Jordan)

Purpose: religious?

Date: Nabataean (Wenning: 4th quarter of 1st C B.C. or early 1st C A.C., McKenzie: 1st C B.C.); part of entrance to bath may have been dismantled when Propylaea steps built (Joukowsky, 1994, p. 311)

B Type: Variant on row type (Wenning)

B Size:

B Rooms: at least 4 rooms

Plans: B: Manderscheid (1988) abb. 294, McKenzie () Pl. 75; Area: Stern et al., p. 1182; Joukowsky (1994) Figs. 2 and 4 (aerial photos)

Ref: Avraham Negev. "Petra," in Stern et al. (1993) v. 4, p. 1182, 1186; Wenning (1987) pp. 226-27; Judith McKenzie, The Architecture of Petra (Oxford: Oxford University Press, 1990); Martha Sharp Joukowsky, "1993 Archaeological Excavations and Survey of the Southern Temple at Petra, Jordan," ADAJ 38 (1994) pp. 293-332

Comment: just south of Temenos Gate; partially excavated (but not published) in 1967-68; underground entrance (down staircase); sandstone ashlar masonry; circular room (diameter 5.12 m) with 8 engaged half-columns, apse-shaped niches, a stone flagged floor, and a stone dome with circular

window; square room also has dome with circular window at top; basins; plaster mouldings; walls decorated with red and yellow painted stucco and colored marble facings; not clear if structure between bath and Temenos Gate is part of bath building; one of earliest monumental buildings in city; bath may predate aqueduct system; Wenning suggests because of its proximity to four temples, it may have had a religious purification function; Joukowsky thinks bath "may have been part of the Southern Temple Complex" (1994, p. 327)

#### **Petra**

Loc: Arabia (Jordan)

Purpose:

Date: Nabataean

B Type:

B Size:

B Rooms:

Plans:

Ref: Rolf A. Stucky, Yvonne Gerber, Bernhard Kolb, & Stephan G. Schmid. "Swiss-Liechtenstein Excavations at ez-Zantur in Petra 1993: The Fifth Campaign." ADAJ 38 (1994) 271-292.

Comment: on Lower Terrace; bath inferred from hypocaust connected with cisterns; "This costly bath installation of the Roman type shows that the Nabataeans were not willing to renounce the luxury that was common in contemporary Roman villas in Italy" (Stucky et al., 1994, p. 275).

#### **Petra: Byzantine Bathhouse**

Loc: Arabia (Jordan)

Purpose:

Date: Byzantine

B Type:

B Size:

B Rooms:

Plans: Area: Negev (1993) p. 1182

Ref: Avraham Negev. "Petra," in Stern et al. (1993) v. 4, p. 1182, 1186

Comment: c. 175 m east of monumental gateway

#### **Philadelphia (Amman)**

Loc: Arabia (Jordan)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans: B in City: Segal (1988) fig. 4 & 5

Ref:

Comment: Segal (1988): "North-east of this meeting point [the cross-roads of the city's 2 main streets] stood the Bath...which was found in such ruins that no attempt was ever made by archaeologists to even describe it" (p. 10)

**Philippopolis** (Es Schuhba/ Shahba)

Loc: Syria (Syria: in Hauran)

Purpose:

Date: 2nd half of 3rd C, after Philip the Arab

B Type: Imperial type?

B Size: 2,620 sq. m.

B Rooms:

Plans: B: Nielsen (1990) fig. 259, Burns (1992) p. 217 (rooms labelled differently than by Nielsen) & Segal (1988) fig. 162; B in city: Segal (1988) fig. 154

Ref: Nielsen (1990) C.383; Segal (1988) pp. 80-81

Comment: Nielsen: not excavated; well constructed; not finished; interior walls decorated with marble and alabaster; domes lined with painted plaster

**Philoteria** (Beth-Yerah/ Khirbet el-Kerak)

Loc: Judaea (Israel: on south bank of Sea of Galilee)

Purpose:

Date: 4th-5th C A.C.; repaired (possibly in 6th C); Islamic period settlement above ruins of bath

B Type: Angular row type

B Size: 400 sq. m.

B Rooms: F, T, C

Rel to F: over part of wall

F Type:

F Size:

Plans: B: Maisler et al. (1952) fig. 1

Ref: Nielsen (1990) C.347; B. Maisler, M. Stekelis, & M. Avi-Yonah. "The excavations at Beth Yerah (Khirbet el-Kerak) 1944-1946," IEJ 2 (1952) 218f; Ruth Hestrin, "Beth Yerah," in Stern et al. (1993) v. 1 pp. 255-59

Comment: rubble benches, mosaics, bath-tubs, round pool; water brought in clay pipes from aqueduct; also 2nd-3rd C A.C. fort: "The original bath (4th or 5th C A.C.), which rested on the wall of the fort...could not have been erected as long as the fort was used for its original military purpose" (Maisler et al., 1952, p. 223).

**Ptolemais** (Acco)

Loc: Syria (Israel: in Galilee on Mediterranean Sea)

Purpose:

Date: Roman

B Type:

B Size:  
 B Rooms:  
 Plans:  
 Ref: Zeev Goldman, "Acco: Excavations in the Modern City," (part 2) in Stern et al., (1993) v. 1, p. 25.  
 Comment: below later bath; grayish-white plaster

**Ptolemais (Acco)**

Loc: Syria (Israel: in Galilee on Mediterranean Sea)  
 Purpose:  
 Date: Byzantine or Early Islamic  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Zeev Goldman, "Acco: Excavations in the Modern City," (part 2) in Stern et al., (1993) v. 1, p. 25.  
 Comment: plastered walls were pink as a result of adding crushed pottery to plaster

**Qala'at el Mishnaqa:** see Machaerus

**Qala'at al Mudiq:** see Apamea

**(Qalandia)**

Loc: Judaea (West Bank?: north of Jerusalem)  
 Purpose:  
 Date: Byzantine  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Tsafirir et al. (1994) p. 206, m.r. 169141  
 Comment: "Byzantine bath-house"

**Qalunyaia:** see Colonia Emmaus

**(Tell Qasile, Ramat Aviv)**

Loc: Judaea (Israel: within modern Tel Aviv on north bank of Yarkon River)  
 Purpose:  
 Date: early Byzantine  
 B Type:  
 B Size:  
 B Rooms: C etc.  
 Plans:  
 Ref: Amihai Mazar, "Excavations in Area C," in Stern et al. (1993) v. pp. 1207-1216, esp. 1212; Tsafirir et al. (1994) p. 244, m.r. 131167  
 Comment: arched hypocaust

**(Qasr Ain es-Sol/Qasr `Ain es-Sil)**

Loc: Arabia (Jordan: 2 km northwest of Qasr Azraq)  
 Purpose: part of "homestead for small agricultural estate"  
 (Bisheh, 1989b, p. 154)  
 Date: Umayyad (pottery)  
 B Type: Row (linear)  
 B Size: c. 100-200 sq. m. (my estimate)  
 B Rooms: F, 2 Cs, A?  
 Plans: F&B: Kennedy (1982) p. 129; Bisheh (1989) fig. 3  
 Ref: Bisheh (1989); Bisheh, G., "'Ain el Sil," in Homès-  
 Fredericq & Hennessy (1989b); Parker (1986) p. 20;  
 Kennedy (1982) pp. 128-132;  
 Comment: bath excavated, rest of qasr cleared; bathing rooms  
 run north-south on west wall of qasr; square and  
 round hypocaust tiles; rectangular and round flue  
 pipes; benches along walls of F; basin; F floor  
 plastered; drain in west wall of F; behind firebox  
 of central C was unroofed storage and service area;  
 another storage area presumed to be beside other C;  
 "what is particularly remarkable about Qasr `Ayn  
 al-Sil is the introduction of an urban amenity to  
 what was primarily an agricultural estate" (Bisheh,  
 1989, p. 93); it has been suggested that this was  
 originally a Roman Fortlet but there is no evidence  
 of Roman occupancy

**(Qasr Amra/ Qasr al-Amra)**

Loc: Arabia (Jordan)  
 Purpose: bathing suite in "hunting lodge"/ "desert castle"  
 Date: Umayyad; Nielsen: A.D. 705-15; Creswell: 711-715  
 B Type: Angular row type  
 B Size: Nielsen: 160 sq. m.; my estimate of complex -  
 hydraulic structures (e.g., well): c. 227 sq. m.  
 B Rooms: A-T-C  
 Plans: B: Yegül (1992) fig. 429; Creswell (1989) p. 106  
 Ref: Nielsen (1990) C.287; Yegül (1992) p. 341; Creswell  
 (1989) pp. 105-117  
 Comment: audience hall + bathing rooms + hydraulic  
 structures (well, water lifting machinery,  
 reservoir); well preserved; A tunnel-vaulted, F  
 cross-vaulted, C domed; frescos; mosaics, marble on  
 walls; individual-sized heated basins; dome fresco  
 of constellations in caldarium is mirror image;  
 Creswell says frescos inspired by "Hellenistic" art  
 (but Creswell never mentions Roman influences, only  
 Hellenistic ones); unroofed service court next to  
 furnace; water from well and raised by animal-power

**(Qasr al-Hayr East/ Qasr al-Hair ash Sharqi): Bath in  
 Greater Enclosure**

Loc: Syria (Syria: in desert between Palmyra & Damascus)  
 Purpose:

Date:  
 B Type:  
 B Size: c. 155.8 sq m.  
 B Rooms:  
 Plans: plan unclear "due to later destructions and rebuildings of the area" (Creswell, 1989, p. 158)  
 Ref: Creswell (1989) pp. 158; Grabar et al. (1978) pp. 54-56  
 Comment: 2 long rooms of unknown function were converted into bath soon after they were built; "impossible to suggest...the arrangement or number of its [the baths'] rooms" (Grabar et al., 1978, p. 55); oriented toward interior of Enclosure; brick hypocaust; wall flues; in renovation size of heated rooms reduced; fire-box moved in renovation; perhaps marble floors

(Qasr al-Hayr East/ Qasr al-Hair ash Sharqi): Extra-Muros Baths

Loc: Syria (Syria: in desert between Palmyra & Damascus)  
 Purpose: public  
 Date: Umayyad, c. A.D. 730; many renovations over centuries of use; abandoned c. 10th C; periodically inhabited by squatters thereafter

B Type:  
 B Size: c. 1159 sq. m. (my estimate)  
 B Rooms: Grabar et al., (cited in Creswell) suggest Medieval Islamic terminology is more appropriate to this bath than Roman terminology: 1 maslah (an undressing area close to latrines and usually clearly separated from the rest of the bath), 2 wastani barrani (unheated area close to the warmer parts and used for undressing in winter), 2 wastani juwwani (warm room often used for depilation), 1 hararah (hot room nearest the furnace usually provided with small bathtubs for bathers to dip into one at a time after sudation)  
 Plans: B: Yegül (1992) fig. 427; Creswell (1989) p. 161  
 Ref: Yegül (1992) pp. 339-41; Creswell (1989) pp. 159-60; Grabar et al. (1978)  
 Comment: 60 m NNW of NW corner of Lesser Enclosure (which Grabar et al., 1978, suggest is a caravanserai); maslah is largest room and has 2 pools and had glass windows; service areas next to furnace: largest may be for fuel storage; mudbrick walls on stone foundations in service area; charred olive pits suggest olive waste used as fuel; water tank over furnace; benches; one bench had four spaces for shoes; sit-down latrine; floor of Room B relaid four times; decoration: marble and painted walls; "the presence of an elaborately designed court/hall at Qasr al-Hayr illustrates the importance accorded

to a bath-related social function in early Islamic society" (Yegül, 1992, p. 341); bath underwent several stages (original stage most elaborate)

**Qasr el `Areija:** see Mezad `Arugot

**(Qasr El-Heir el Gharbi/ Qasr al-Heir West)**

Loc: Syria (Syria: 37 miles west of Palmyra)

Purpose:

Date: A.D. 724-27

B Type: row

B Size: c. 532 sq. m. (my estimate)

B Rooms: largest room is unheated with basin, 2 other unheated rooms, 3 heated rooms (2 with basins)

Plans: B: Creswell (1989) p. 143; Schlumberger Pl. 17 & 18 (hypocaust)

Ref: Nielsen (1990) p. 97 n. 16; Creswell (1989) pp. 141-43; Daniel Schlumberger. Qasr El-Heir el Gharbi. Institut français d'archéologie du Proche-Orient Byrouth-Damas-Amman. Bibliothèque archéologique et historique CXX, Paris: 1986.

Comment: 30 m north of palace; water brought by conduit and stored in cistern; marble used in heated rooms, unheated rooms plastered to imitate marble

**(Qasr el Mushah)**

Loc: Arabia (Jordan)

Purpose: for travellers (on pilgrimage or official business)

Date: early Islamic: Umayyad? (maybe Byzantine)

B Type: row

B Size: c. 142 m (my estimate)

B Rooms: A-F-T-C

Plans: B: King (1989) fig. 3; Area: King (1989) fig. 1

Ref: G. R. D. King, "Mushash (Qasr el)," in Homès-Fredericq & Hennessy (1989); Bisheh (1989)

Comment: lacks lavish decoration of Qasr Amra or Hammam As-Sarakh; walls not of uniform thickness; marble floors; large A; benches and places for clothes in A; plastered bench in T; flue pipes in C; furnace not excavated

**Qasr Umm Baghgheq:** see `En Boqeq

**(Qasr el-cUweinid)**

Loc: Arabia (Jordan: 15 km southwest of modern Azraq)

Purpose: Military

Date: Servian c. 200 (inscriptions); possibly abandoned 4th C (pottery)

B Type: see comment

B Size: " "

B Rooms: " "

Rel to F: " "

F Type: irregular quadrangle  
 F Size: c. 0.25 ha (Parker, 1986, says size average for Arabian castellum)  
 Plans: F: Parker (1986) p. 18  
 Ref: Parker (1986) pp. 17-19; D. L. Kennedy, Archaeological Explorations on the Roman Frontier in North-East Jordan (Oxford: BAR International Series 134, 1982); David Kennedy, "The Roman frontier in Arabia (Jordanian sector)," JRA 5 (1992) 473-89  
 Comment: Bath building has not been found. Evidence for bath is based on an inscription commemorating the construction of a castellum and balneum by the legio III Cyrenaica ("Castellum et <s> praesidium Severianum . Vexillatio leg(ionis) III Cyrenic(ae) (sic) baln(eum) Mucia[no] et Fab[ian]o [co](n)s(ulibus) extruxit", Kennedy 1982: 125). The "reference to the construction of a bath (balneum) at such a remote fort is striking testimony to the creature comforts available to the Roman soldiers on the Arabian frontier" (Parker 1986: 17-18). Kennedy (1992: 480) doubts inscription was originally from here given the paucity of water; J. P. Oleson (personal communication Feb. 95) saw no evidence of a bath here.

**(Qastal)**

Loc: Arabia (Jordan: south of Amman)  
 Purpose:  
 Date: Umayyad?  
 B Type:  
 B Size:  
 B Rooms:  
 Plans: Area: Carlier (1989) fig. 1  
 Ref: P. Carlier. "Qastal (el Balka)," in Homès-Fredericq & Hennessy (1989)  
 Comment: "the remains of the bath (consisting mainly of the heater-block) are still to be studied" (Carlier, 1989, p. 464); "an underground bath (sirdab) is also expected in the SW corner of the courtyard" (Carlier, 1989, p. 462)

**Quailibah:** see Abila

**(Khirbet Qumram)**

Loc: Judaea (West Bank)  
 Purpose:  
 Date:  
 B Type:  
 B Size:  
 B Rooms:

## Plans:

Ref: Ehud Netzer, "Jericho: Hellenistic to Early Arab Periods," in Stern et al. (1993), v. 2, pp. 681-691, esp. 682

Comment: baths in Herod's 1st palace at Jericho similar to those at Khirbet Qumram

Qweilbeh: see Abila

Kh. Rafat: see Ataroth I

## (Rama)

Loc: Judaea (Israel)

Purpose:

Date: 3rd-4th C; transformed into another public building in the 5th-6th C A.C.

B Type: Angular row type

B Size: 550 sq. m., incl. P 690 sq. m.

B Rooms:

Plans: B: Manderscheid (1988) abb. 312

Ref: Nielsen (1990) C.348

Comment:

Ramat Aviv: see Tell Qasile

## (Ramat Hanadiv/ Khorvat 'Eleg/ Khirbet Umm el-'Aleg)

Loc: Judaea (Israel: on slopes of Mt. Carmel, 10 km NE of Caesarea Maritima)

Purpose: public?

Date: end of 1st C B.C.; F pool added in second phase; destroyed c. A.D. 70

B Type: row

B Size: 90.75 sq. m. (bathing room + furnace)

B Rooms: F-T-C, P, large pool (I think this "pool" is a reservoir), adjoining open courtyard possibly palaestra or service courtyard

Plans: B: Hirschfeld (1995) fig. 8; Area: Hirschfeld (1995) fig. 3

Ref: Yizhar Hirschfeld. "Bath-house at Khorvat 'Eleg," Balnearia 1.1 (1993) 5; Yizhar Hirschfeld, "The Early Roman Bath and Fortress at Ramat Hanadiv Near Caesarea," The Roman and Byzantine Near East (JRA Supplementary Series no. 14, Ann Arbor, MI: 1995) pp. 29-55.

Comment: nearby fort built in the late 1st C B.C. (village in late 4th C B.C.); Romans destroyed fort and village after Jewish revolt; must be Jewish community because abandoned c. A.D. 70; bathtub in C; monolithic hypocaust pilae; doors to T and C unaligned to conserve heat; small bathing pool in F like basin in Humeima's F but larger; "Before the pool was added [in the F it] probably served as an

A" (Hirschfeld, 1995, p. 34); spring water carried via aqueduct to pool to bath; also small bath in northwest corner of fortress.

**(Ramat Rahel)**

Loc: Judaea (Israel: 3.5 km south of old city of Jerusalem)

Purpose: Military?? (see comment)

Date: 2nd half of 3rd C; church and monastery built in mid-5th C continued to use bath; destroyed in early 7th C by fire

B Type: ? (location of doors uncertain)

B Size:

B Rooms: open courtyard maybe palaestra

Rel to F:

F Type:

F Size:

Plans: Area: Aharoni (1993) p. 1267 (unlabelled)

Ref: Benjamin Isaac. The Limits of Empire: The Roman Army in the East. Oxford: Clarendon Press, 1990; Yohanan Aharoni, "Ramat Rahel," in Stern et al. (1993) v. 4, pp. 1261-67; Yohanan Aharoni, Excavations at Ramat Rahel: Seasons 1959 and 1960 (Roma: 1962); Yohanan Aharoni, Excavations at Ramat Rahel: Seasons 1961 and 1962 (Roma: 1964)

Comment: on top of hill; site would have controlled access to Jerusalem; bathhouse and aqueduct which supplied it built by Roman legion; Roman Tenth Legion occupied Jerusalem and Ramat Rahel in 3rd C; "the camp installations of the Roman Tenth Legion...comprised an elegant block of living-quarters with a peristyle, and a bathhouse...and apparently other temporary and simpler structures" (Aharoni, 1964, p. 121); bath = "double row of adjoining rectilinear rooms" (Aharoni, 1962, p. 69); heated rooms on east (!); tubuli; tiles in bath-house with stamp of Roman Tenth Legion; mosaic floors; rectangular basins; basins connected with terracotta piping; drainage pipes under mosaic floors; bath built on top of older building (reproducing its orientation); I haven't seen any mention of a fort proper

**(Rehovot-in-the-Negev/ Khirbet Ruheibeh, Ruhayba)**

Loc: Arabia (Israel: in Negev)

Purpose:

Date: B: Byzantine; town: founded by Nabataeans; largely abandoned by A.D. 700

B Type:

B Size:

B Rooms:

Plans: B: Tsafir et al. (1988) fig. 5; Shereshevski

(1991) Plates 46.2 and 47 (not labelled); B in C: Shereshevski (1991) Map 7  
 Ref: Yoram Tsafrir, Joseph Patrich, Renate Rosenthal-Hegiabottom, Israel Hershkovitz, and Yehuda D. Nevo. Excavations at Rehovot-in-the-Negev. Vol. 1: The North Church (Qedem 25, Jerusalem: 1988); Yoram Tsafrir and Kenneth G. Holum, "Rehovot-in-the-Negev," in Stern et al. (1993) v. 4 pp. 1274-1277; Creswell (1989) pp. 115-16  
 Comment: near well; circular room; same vaulting system as at Qasr Amra: tunnel-vault, cross-vault, dome; wall grooves; Woolley and Lawrence (cited in Shereshevski) say it resembled bathhouse at Eboda; never excavated; destroyed at beginning of 20th C; described in detail by Musil

**(Rosh Pinna, Kh. Jeouni)**

Loc: Judaea (Israel: Upper Galilee)  
 Purpose:  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Tsafrir et al. (1994) p. 216, m.r. 200264  
 Comment: Tsafrir et al.: "bath(?)"

Ruhayba: see Rehovot-in-the-Negev

Khirbet Ruheibeh: see Rehovot-in-the-Negev

**(Rujm ed-Deir)**

Loc: Judaea (West Bank: west of En-Gedi)  
 Purpose:  
 Date: Late Roman or Byzantine; repaired in Moslem period  
 B Type: mikveh  
 B Size:  
 B Rooms:  
 Rel to F: below corner of fort  
 F Type:  
 F Size: 4 x 8 m  
 Plans: B: Amit (1989/1990) fig. 162  
 Ref: David Amit, "Yatta, Survey," ESI 9 (1989/1990) 165-166  
 Comment: only part is rock-cut (rest mixture of cement and stones); pool lined with thick plaster

Khirbet Sabiye: see Caphar Saba

**(Sahir al-Baqar)**

Loc: Arabia (Jordan: Slaysil region, near Petra)  
 Purpose: associated with Nabataean temple and house

Date: temple: c. 1st-4th C A.C.  
 B Type: ?  
 B Size: ?  
 B Rooms: ?  
 Plans: n/a  
 Ref: Manfred Lindner & Elisabeth Gunsam. "A newly described Nabataean temple near Petra: The 'Pond Temple'". SHAJ V (1995).  
 Comment: site at crossroads of caravan routes; not excavated; authors postulate thermae on basis of surface finds of round and square suspensura bricks and tubuli; thermae near house and 50 m from temple; spring next to temple may have been sacred

**Salihiyeh:** see Dura Europos

**Es Schuhba:** see Philippopolis

**Scythopolis:** see Nysa-Scythopolis

**es Sebbe:** see Masada

**Seia:** see Sia

**Sepphoris:** The Roman Bathhouse

Loc: Judaea (Israel)

Purpose:

Date: Roman; used into Byzantine times; renovated (in Byzantine times?)

B Type:

B Size:

B Rooms:

Plans: B in city: Netzer & Weiss (1995) fig. 1 (no. 5)

Ref: Ehud Netzer & Zeev Weiss, "New evidence for late-Roman and Byzantine Sepphoris," The Roman and Byzantine Near East (JRA Supplementary Series no. 14, Ann Arbor, MI: 1995) pp.162f; see pg. 166

Comment: on west side of main colonnaded street; also houses and "Roman structures" containing ritual baths (Netzer & Weiss, p. 164)

**(Tel Sera`, Tell esh Shari`a)**

Loc: Judaea (Israel): northwestern Negev

Purpose:

Date: Roman/Byzantine (latest stage 5th - 6th C: pottery & coins)

B Type:

B Size:

B Rooms:

Plans:

Ref: Eliezer D. Oren. "Sera`, Tel," in Stern et al., (1993) v. 4, p. 1335; Tsafir et al. (1994) p. 245,

m.r. 119088

Comment: well preserved

**(Sergilla/ Serdjilla)**

Loc: Syria (Syria)

Purpose: civic

Date: A.D. 473 (mosaic inscription: IGLS IV 1490)

B Type: Ring type (looks like row to me)

B Size: 375 sq. m.

B Rooms:

Plans: B: Charpentier (1994); Charpentier (1995) figs. 5-7; Yegül (1992) fig. 416.2 & 417; Area: Tchalenko (1953) Pl. CXL, Burns (1992) p. 215

Ref: Nielsen (1990) C.385; Yegül (1992) p. 329-33; Gérard Charpentier, "Les bains de Sergilla," Syria 71 (1994) 113-42; Charpentier (1995)

Comment: "one of the best-preserved bathing structures from the entire Roman realm"; built for town by wealthy citizen and wife (mosaic dedication Yegül, 1992, fig. 418); at major cross-roads of town; Tchalenko (1953) speculates that bath stood at center of social life of town and whole region; large basilical room not F but large public room for village (e.g., audience room); separate entry ways to public and service areas; fuel storage area (not directly adjacent to furnace); caretaker/attendant area; internal and external latrines; cistern; Yegül's view of this as bath-inn is wrong (Charpentier, 1995, p. 229); Charpentier (1995: 228) believes the baths at El Barà, Sinsarah, Muggleyya, Frikia and Sergilla form a local group: "Ces bâtiments s'organisent systématiquement sur un plan rectangulaire, avec le même nombre de salles disposées selon un schéma identique..." (description of similarities follows)

**(Sinsarah)**

Loc: Syria (Syria: just southwest of Sergilla)

Purpose:

Date: 5th C

B Type:

B Size: small

B Rooms:

Plans: B: Charpentier (1995) fig. 5

Ref: Charpentier (1995)

Comment: in village; Charpentier (1995: 228) believes the baths at El Barà, Sinsarah, Muggleyya, Frikia and Sergilla form a local group: "Ces bâtiments s'organisent systématiquement sur un plan rectangulaire, avec le même nombre de salles disposées selon un schéma identique..." (description of similarities follows); basilica

room smaller than at Sergilla

**(Sha'arah)**

Loc: Syria (Syria)  
 Purpose:  
 Date: 2nd - 3rd C  
 B Type: Ring type  
 B Size: 170 sq. m.  
 B Rooms:  
 Plans:  
 Ref: Nielsen (1990) C.384  
 Comment: Nielsen: not excavated

**Sha'ar Ramon:** see Maliatha

**Shahba:** see Philippopolis

**Tell esh Shari`a:** see Tel Sera`

**Shuni (Kefar Shuni)**

Loc: Judaea (Israel: northeast of Caesarea)  
 Purpose: "public bath"  
 Date:  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Biblical Archaeology Review 21.1 (1995) p. 45  
 Comment:

**(Sia, Seia)**

Loc: Syria (Syria: in Hauran 3 km southeast of Qanawat)  
 Purpose:  
 Date: temple: phase I: 50 B.C. - A.D. 50, phase 2: 50 - 106, phase 3: 106 - 200; B: "Roman" ("its dating is limited to Butler's general statement that `this building was in all probability erected during the period of Roman domination in the Hauran'", Negev, 1988, p. 181)  
 B Type:  
 B Size:  
 B Rooms:  
 Plans: Area: Burns (1992)  
 Ref: Burns (1992) pp. 220-222; Negev (1988) p. 181  
 Comment: c. 150 m from Nabataean temple; [maybe Nabataean bath-temple complex like at Wadi Ramm]; "It is hardly likely that a religious centre of such magnitude, serving pilgrims coming from afar, would not offer appropriate bathing facilities" (Negev, 1988, p. 180)

**Sussita:** see Hippos

**Tel Tamar:** see cEn Haseva

**Thana:** see Thornia

**Thoana:** see Thornia

**Thornia (Greek: Thana/ Thoana, Modern: Tuwaneh)**

Loc: Arabia (southern Jordan)

Purpose:

Date: Roman

B Type:

B Size:

B Rooms:

Plans:

Ref: Zbigniew T. Fiema, "Tuwaneh and the Via Nova Traiana in Southern Jordan," ADAJ 37 (1993) 549-50

Comment: "Roman bathhouse"

**Tiberias (Tiberias):** Main city bath? (adjoining cardo & marketplace)

Loc: Judaea (Israel: on west bank of Sea of Galilee)

Purpose: civic

Date: 4th C A.C. (pottery); many repairs; "fundamental change" in 6th C; "used continuously until the city was destroyed in eleventh century" (Stern et al., 1993)

B Type:

B Size: 1,300 sq. m.

B Rooms:

Plans: B: Stern et al., 1993, p. 1465 (top) (unlabelled); Area: Stern et al., 1993, p. 1464 & 1465 (top & bottom)

Ref: Stern et al. (1993) v. 4, p. 1464-67

Comment: unusual subterranean pool perhaps connected to Jewish purity laws; marble-lined bathtubs; coloured mosaics; bath "frequently referred to in Talmudic literature" (Stern et al., 1993, p. 1466)

**Tiberias (Tiberias):** Bath-house at Hammath Tiberias (just south of Tiberias)

Loc: Judaea (Israel: on west bank of Sea of Galilee)

Purpose:

Date:

B Type:

B Size:

B Rooms:

Plans: Area: Stern et al. (1993) p. 1464

Ref: Stern et al. (1993) v. 4, p. 1464

Comment: I assume it's connected with the hot spring (Hammath)

**(Toprak-en-Narlidja)**

Loc: Syria (Syria?: near Antioch)  
 Purpose:  
 Date: Mid 5th C  
 B Type: Angular row type  
 B Size: 180 sq. m.  
 B Rooms:  
 Plans: B: Nielsen (1990) fig. 257  
 Ref: Nielsen (1990) C.386  
 Comment:

**Khirbat et Tubeiqa:** see Beth-Zur

**Tuwaneh:** see Thornia

**Khirbet Umm el-'Aleq:** see Ramat Hanadiv

**Khirbet Umm el-Fulus:** see Pardessiya

**Umm Qais/ Umm Qeis/ Um Qeis:** see Gadara

**Umm ar-Rasas:** see Kastron Mayfa`a

**(Umm Rihan)**

Loc: Judaea (Israel: between Caesarea and Scythopolis)  
 Purpose: civic  
 Date: Roman/Byzantine  
 B Type:  
 B Size:  
 B Rooms:  
 Plans:  
 Ref: Shimon Dor, "The survey of western Samaria," in Stern et al., (1993) v. 4, p. 1314.  
 Comment:

**`Usays:** see Jebel Seis

**(Wadi Ramm)**

Loc: Arabia (Jordan: in Hisma)  
 Purpose:  
 Date: Nabataean?  
 B Type:  
 B Size:  
 B Rooms: at least 4 rooms  
 Plans:  
 Ref:  
 Comment: circular room; wall flues; beside domestic structure; near temple; to be probed and surveyed in 1996 by Barbara Reeves and Dennine Dudley

**Yotvata:** see ad-Dianam

Ez-Zara: see Kallirrhoe

El Zar'ah: see Kallirrhoe

Zenobia/Birtha (Halebiye)

Loc: Syria (Syria: on Euphrates)

Purpose: public

Date: 6th C

B Type:

B Size:

B Rooms:

Plans: B: Chrpentier (1995) figs. 10 & 11 & 13; B in C:  
Burns (1992) p. 123

Ref: Charpentier (1995); Kennedy & Riley (1990) p. 118;  
Burns (1992) pp. 122-24

Comment: city part of Palmyrene domains until A.D. 273;  
small garrisoned city; baths near crossing of main  
streets; bath built by Justinian (Procopius Aed.  
2.8.25); the presence of a p is unusual for small  
public baths in this period so Charpentier (1995:  
232) suggests it might have served a military  
purpose for the town's garrison; Charpentier  
sugests similar to earlier baths at Barade and  
later baths at Qasr el Hair el Sharqi (see his fig.  
11)

(Horvat Zikhrin): Bath in Area E

Loc: Judaea (Israel): Roman-Byzantine village in western  
Samaria

Purpose: in Byzantine house

Date: Byzantine (possibly originated in Roman period);  
used for non-bathing purposes in Early Islamic  
period

B Type:

B Size:

B Rooms:

Plans: Area: Fischer (1993) fig. 48

Ref: Moshe Fischer, "Horvat Zikhrin - 1987/1989," ESI 12  
(1993) pp. 40-44; Tsafrir et al. (1994) p. 262,  
m.r. 146163

Comment: C resting on square brick pillars; clay flue pipes;  
arched doorway between C and another, mosaic-paved,  
room

(Horvat Zikhrin): Bath in Area F

Loc: Judaea (Israel): Roman-Byzantine village in western  
Samaria

Purpose:

Date: Byzantine; F & T also renovated in Byzantine period

B Type:

B Size: 150 sq. m.

B Rooms: C, T, F

Plans: B in Area: Fischer (1993) fig. 50 (B no. FIII)  
Ref: M. Fischer, "Khirbet Zikhrin - 1984/1985," ESI 4  
(1985) pp. 117-119; Moshe Fischer, "Horvat  
Zikhrin - 1987/1989," ESI 12 (1993) pp. 40-44;  
Tsafrir et al. (1994) p. 262, m.r. 146163  
Comment: mosaics; 1 m x 1 m plastered bathtub in F; nearby  
building might have been involved in running baths

**Zur Nathan:** see H. Migdal

## APPENDIX C

## Humeima's Bath-house in the Umayyad Period

It is likely that Humeima's bath-house continued to be used into the early Islamic period (c. 660-750). Unfortunately, however, there is no direct archaeological evidence to support this assertion. Most of the bath-house was cleaned out to floor level by a local inhabitant earlier this century (Oleson 1990: 152). As a result, although Umayyad sherds were found within it, the context is completely contaminated. In addition, there were no alterations to the building which can be classified as "definitively" Umayyad. Nor do the early Islamic documents relating to Humeima explicitly state that there was a hammam (bath) associated with the Abbasid's qasr (R. Schick, personal communication, 1995). Thus there is no direct archaeological or literary evidence to support the continued usage of the bath-house into the early Islamic period. Conversely, there is also no direct evidence that the bath-house was out of use in this period. In the course of this chapter, I will present indirect evidence which I believe suggests that the bath-house was in use in the Umayyad period. Since the evidence for this assertion is not conclusive, I have chosen to present it as an appendix.

My belief that the Abbasid family reused the Roman bath-house at Humeima revolves around the observation that hammams were an essential part of Umayyad period habitations (Grabar 1987: 145; Kennedy 1985: 8; Sourdell-Thomine 1971: 139). A hammam is an Islamic bath, more commonly known in Western society as a "Turkish bath" or, in French, as a "bain maure". The early hammams contained the same types of rooms as Roman baths, and they also resembled Roman baths in

their method of heating and decoration.<sup>1</sup> There is no doubt that the models for the earliest hammams, as with so much in early Islamic architecture, were the regional Roman and Byzantine structures extant after the Muslim conquest.<sup>2</sup>

The Muslims started building hammams soon after their conquest of the Roman Near East.<sup>3</sup> Islamic texts "mention the construction of baths in the first towns founded after the conquest" (Sourdel-Thomine 1971: 139).<sup>4</sup> In addition to urban baths, travellers could also access baths at caravan stops (e.g. Qasr al-Hayr East and Qasr el Mushah). Rural dwellers had access to private baths: archaeological remains of Umayyad period baths have been found on both simple farms (e.g. Qasr `Ain es-Sil) and at palatial estates (e.g. Khirbet al Maffjar, Qasr Amra, Khirbet al-Minya, Hammam as-Sarah). According to Grabar (1987: 145), "Next to mosques and living or formal units, the most common feature of early Muslim estates was the bath". In the Umayyad period these estates were commonly located in the desert (see King 1992).

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<sup>1</sup>Heating: Kennedy 1985: 10-11, Sourdel-Thomine 1977; decoration: Creswell 1989: 114; Sourdel-Thomine 1977. Because of the similarities in design, excavators usually apply the Latin labels to the rooms of a Umayyad bath. On one group of excavators' decision to use the Medieval Islamic labels rather than the Roman labels, see Grabar et al. 1978: 94-95.

<sup>2</sup>"The Arabic conqueror of Alexandria, Amr, relates that, among other things, he found 4,000 baths there" (Nielsen 1990: I.99 n. 23). On the influence of the conquered lands' architecture on early Moslem architecture see Creswell 1989 (esp. pp. 3-6 & 142-44), and Almagro 1992 & 1995; on Roman baths as models for Islamic baths, see Grabar 1987: 146, Almagro 1992: 356, Sourdel-Thomine 1977, and Nielsen 1990: I.152.

<sup>3</sup>And also of the Sasanian Empire (Morony 1984: 269-70).

<sup>4</sup>"We have very little archaeological evidence about early Islamic urban bath-houses, although we know from abundant literary evidence that they existed" (Kennedy 1985: 10). Remains of an urban bath have been found at `Anjar. (All baths referred to in this appendix are described in Appendix B.)

Given the prevalence of baths in Umayyad society, and especially on their aristocratic estates, it seems reasonable that there would have been a hammam associated with the Abbasid qasr at Humeima.<sup>5</sup> Access to such a bath would seem especially important when one considers that because of Humeima's isolation, there were no other nearby towns to provide the family with alternative bathing facilities.

The members of the Abbasid family were aristocrats and hence accustomed to luxuries. However, because of its isolation and placement in the bleak and barren Hisma, the environment of Humeima had relatively little to offer in the way of luxuries. But one luxury Humeima might have been able to offer the Abbasids was an ample supply of water to run a bath--the source of this water being the Nabataean aqueduct.

The question of whether or not there was a functioning bath at Humeima in the early Islamic period ultimately depends on whether the Nabataean aqueduct was still in operation. At other Umayyad sites, baths were supplied by wells (e.g. Hammam as-Sarah, Qasr Amra) but at Humeima the ground water is so deep that it is extremely unlikely that wells have ever existed there (Oleson Forthcoming [b]). Moreover, although there would have been many functioning cisterns at Humeima in the Umayyad period, unless these were filled by the aqueduct, they probably could not have

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<sup>5</sup>In the early Islamic literature, Humeima is not actually referred to as an "estate" but rather as a "residence" (manzil) (or as a "village") (Schick forthcoming). The Abbasid's residence (labelled Qasr in Figure 2) was a large (61 x 50 m) multi-roomed structure with a central courtyard. Floral wall frescos and ivory furniture inlays have been revealed during the qasr's excavation, as well as a private external mosque to the southeast (Oleson et al. 1993 & 1994).

supplied enough water to keep a hammam in operation.<sup>6</sup> Thus, in order for a functioning bath-house to have existed on the site in the Umayyad period, the aqueduct would have to have remained in operation. Without it, there simply would not have been enough water.<sup>7</sup>

Unfortunately it is not clear whether or not the aqueduct was in operation in this period. The present archaeological record can neither confirm nor deny this possibility (Oleson, personal communication, April 1996). An ancient story that the aqueduct was filled with olive oil for an Abbasid party (Oleson, personal communication, April 1996) suggests that the aqueduct channel may have remained unbroken in the early Islamic period. However, this story has an air of fantasy surrounding it (reminiscent of "streets paved with gold") and may reflect an imagined prosperous past rather than true conditions at the Abbasids' qasr. At present, therefore, it is not known if the Nabataean aqueduct was still in use in the Umayyad period. Without the aqueduct, a bath-house could not have functioned at Humeima.

Assuming for the moment that the aqueduct continued to

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<sup>6</sup>Unlike wells and spring-fed aqueducts which tap perpetual sources of water, the cisterns at Humeima could only be filled during the winter rains and floods. Consequently, they held a limited and sparse quantity of water. The average cistern held only 91 cu m of water and the largest could only hold 250 cu m. In contrast, Humeima's aqueduct, flowing at a rate of 6.19 cu m/hour, delivered 148.56 cu m of water to the settlement every day (i.e., more water than the average cistern held). If the aqueduct was no longer functioning, the yearly supply of water would be limited. Top priority for the limited cistern water would have to have been for human and animal consumption and agricultural needs, followed by the conservative use of water for washing people and clothes. Without an aqueduct, there probably would not have been enough water to wash in the relatively wasteful fashion typical of bath-houses.

<sup>7</sup>On the hydraulic systems at Humeima, see Eadie & Oleson 1986 and Oleson 1990 & forthcoming.

function, there are two possibilities for the origin of a bath at the site. The first possibility is that the Abbasid family could have built a new bath in or near the qasr. There are many regional parallels for the building a Umayyad period qasr with a hammam. Sometimes these hammams were located inside the qasrs (e.g. Khirbat al Maffjar, Qasr al-Hayr East: Bath in Greater Enclosure) and sometimes they were located outside (e.g. Hammam as-Sarah, Jebel Seis, Qasr el-Heir el Gharbi). Hammams located outside a qasr could be as distant as 2 km away.<sup>8</sup>

The second way in which the Umayyad period inhabitants of Humeima could have secured a hammam is that they could have reused the extant bath-house. Extant Roman/Byzantine bath-houses were reused in the Umayyad period at other Near Eastern locations including Bostra, Hammat Gader, Nysa-Scythopolis, and Tiberias. Moreover, at Khirbet el-Minya, the Umayyad inhabitants reused a Byzantine bath-house located 200 m to the northwest of their qasr--the same distance and orientation as Humeima's bath-house is from the qasr.

Let us now weigh these two possibilities for securing a hammam. A bath physically attached to Humeima's qasr at first appears to be the best option because such a bath would have been closer to the living quarters and perhaps more private.<sup>9</sup> However, a disadvantage to such a bath is that it would have had to be built from scratch. This construction would have required skilled workers who may have been expensive and who may not have been available on the site. Moreover, another disadvantage to building a new

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<sup>8</sup>Like Hammam as-Sarah, the hammam of Qasr el-Hallabat; on their association see Khouri 1992: 27-30.

<sup>9</sup>Privacy was an issue at Khirbat al Maffjar where, even though the hammam was attached to the qasr, a private entrance-route was constructed for the owner.

hammam is that it would have to have been provided with a source of water.

As I mentioned above, the only really viable source of water for a hammam at Humeima was the Nabataean aqueduct. Humeima's aqueduct stopped c. 200 m short of the gasr. If a new hammam had been built adjoining the gasr, the aqueduct would have to have been extended in order to supply it with water. Like the building of a hammam, this process would have required skilled workers (and may have been expensive). This option was apparently rejected by the Abbasid family as there is no evidence that they attempted to extend the aqueduct (Oleson, personal communication, April 1996). Of course, water for a hammam at the gasr could instead have been carried from the aqueduct-fed reservoirs in containers. However, it seems very inefficient to carry large quantities of water over 250 m; especially when there was a pre-existing bath-house already linked to the aqueduct.

Regarding the options of building a new bath or reusing an old one at Humeima, it is interesting to consider the response of the Crusaders in an analogous situation. The Crusaders wished to set up bath-houses in their conquered Arab cities:

...the Crusader balnea (baths) were the Arab hamamas. In this case not only was the installation a costly one that required professional builders, but in all cases in which its water supply depended on the ancient aqueducts which brought water into the city from natural sources, the position of the balnea was fixed because building new ones would have meant construction of new supply installations. In other places the balnea were linked to local wells and rainwater reservoirs and as such were in fixed locations. Only when population growth increased demand beyond capacity, which did occur in some thirteenth-century Crusader cities, were new balnea erected (Praver 1977: 186).

For the Crusaders, it was preferable to reuse the existing bath-houses than to build new ones. Such was probably also the case for the Abbasid family at Humeima.

If a new hammam were to have been built near Humeima's qasr, the Abbasid family would have had to have gone to the trouble and expense of building the bath and providing it with a supply of water. This would not have been necessary if they instead reused the Roman period bath-house. The Roman bath-house was already built and although it was now centuries old, such an age was not unusual for a functioning bath-house (Louis 1971: 145). It may have required some renovations, but these would have been insignificant compared to the difficulties associated with constructing a hammam from scratch. More importantly however, if the aqueduct was still functioning, the Roman bath-house was already provided with an adequate supply of bath-water. Lastly, as regards the question of building a new bath or reusing an old one, the excavators at Humeima have been unable to find any trace of a hammam attached to the qasr, or nearer to it than the Roman bath-house (Oleson and Foote, personal communications, 1996).

Additional, tangential, support for the continued use of the (Roman) bath-building in the Umayyad period is provided by the observation that this region of the site was, indeed, in use in the Umayyad period. In 1995, excavation commenced on a structure located c. 15 m to the southeast of the bath.<sup>10</sup> This structure, which was originally constructed in the Roman period, was renovated in the Umayyad period. This renovation indicates that the Umayyad period inhabitants were active in the region of the site containing the bath-house. It is even possible that Room G in the bath-house (added in the last stage) dates

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<sup>10</sup>The excavation of this structure, designated as Field E122, is being directed by Khairieh `Amr as part of the Humeima Excavation Project. I am grateful to K. `Amr and J. P. Oleson for allowing me to reference this unpublished structure.

from this period.<sup>11</sup>

Another argument to support the continued use of Humeima's bath into the early Islamic period is that the early Islamic name of the site may itself refer to a bath.<sup>12</sup> In Nabataean times, the site was called Hawar, meaning "white".<sup>13</sup> This name, transliterated into Greek as *Ἀῤαρά*/Auara (also Hauare and Hauanae), was retained in Roman and Byzantine times (Ptol. *Geogr.* 5.17, *Notitia Dignitatum*, [Or. 34.25], the Beer Sheba Edict, The Peutinger Table, Stephen of Byzantium 25 & 144). In the early Islamic literature (reviewed in Schick forthcoming), the site was still called by a name related to the concept "white". However, the standard Arabic word for "white" (*bayda*) was not used; nor (in the written documents at least) was the Arabic word used which is cognate with Nabataean "Hawar" (*hwr*). Instead, the site's early Islamic name was apparently based on a less common Arabic word for "white" (*hmm*). In addition, the word chosen was put into its

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<sup>11</sup>The walls of Room G were more roughly constructed than the other walls in the bath. Likewise, the Umayyad period renovations to E122 were rougher than the original construction. Although the walls of Room G were better constructed than the Umayyad period walls in E122, it is still possible that both renovations date from the Umayyad period but that better care was taken with the bath renovations.

<sup>12</sup>The possibility (to be discussed below) that "Humeima" means "Little Bath" was first suggested to me by Rebecca Foote. To the best of my knowledge, this interpretation of the site's name has never before been published. Ultimately, the argument will need to be developed by someone who reads Arabic, which I do not. The preliminary argument which follows developed in conversation with Rebecca Foote and Robert Schick, who both read Arabic and are familiar with the Arabic literature relating to Humeima. I am especially indebted to Robert Schick for much of the linguistic analysis.

<sup>13</sup>The Nabataean name for the site is explained in Ouranios' *Arabika* (Jacoby 1958: 675, frag. 1b); see above, Chapter 1.

diminutive form (humeima).<sup>14</sup>

After a gap of more than a millennium, we cannot be sure of how the site came to be called "Humeima" in the Islamic documents. However, one intriguing possibility is that the name reflected the presence of a bath. Although "white" is a possible meaning for hmm, a more common meaning is "black", to blacken through heat" and, hence, "hot, feverish, hot water, bath". The word hmm, written in English works as hammam, is the common Arabic word for "bath".<sup>15</sup>

At Humeima, the Roman-built bath-house, although small, must have been a significant structure situated, as it was, in the midst of the hot and arid Hisma desert. It is possible, therefore, that the bath made a significant enough impression on the Islamic immigrants for them to choose a label for this site which reflected, at the same time, the native (Nabataean) name for the site ("white") and the presence of a hypocausted bath-house. Working on this assumption, it would further follow that the diminutive form of the label was used not to qualify the native meaning (as in "Little White Place") but rather to qualify the concurrent/alternative meaning ("Little Bath").

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<sup>14</sup>The Arabic dictionaries I could access at the University of Victoria did not list "hmm"'s low frequency definition "white". However, every twentieth century scholar who has explained the meaning of the site has stated that it means "white" (e.g., Musil 1926: 59, Stein 1938/39 in Kennedy 1982: 273, Bowersock 1983: 173). For example, Stein explains that "The word hawwara, in Aramaic and Arabic meaning 'white', is synonymous with the word Homaima used for the designation of the place on account of the white colour of its rocks and soil" (in Kennedy 1982: 273). In contrast, no modern scholar has attempted to explain why a diminutive form was used (even though Musil 1926: 64 explained the diminutive form of gara used for nearby Qwera).

<sup>15</sup>Other meanings of the root "hmm", spelt differently in English, include "pigeon" and "close friend" (see Wehr 1980: 203-204).

Moreover, the hypothesis that "Humeima" means something other than just "Little White Place" is supported by the concurrent survival of the Nabataean name "Hawar" into the twentieth century. Musil (1926: 59), who visited the site at the beginning of this century, related that the locals often interchanged the name "Homejma" ("Humeima") with the name "Hawwâra". "Hawwâra" ("Hawar") is probably the label by which the natives have referred to this site since Nabataean times; whereas, "Humeima" is a related but different label which was used by incoming Islamic nobles to describe an acquired piece of property.

The name "Humeima" might have been chosen by the purchasing Abbasid family to reflect both the native name of the site and the presence of the small Roman bath. If this bath was still operational (or could be made operational) it probably became the hammam for the residents of the qasr.

In summary, because hammams are so significant in Islamic culture, and because they are so prevalent at Umayyad period habitations, and especially on aristocratic estates, I believe the Abbasid family would have had a hammam at Humeima. Moreover, since no archaeological evidence has been found for a new hammam, one attached to the qasr, and since it seems unlikely that such a structure would ever have been constructed, I believe the Abbasid family would have chosen to reuse the Roman bath-house as their hammam. Essential to this argument is the belief that the aqueduct which fed the Roman bath-house was still functioning in the Umayyad period. Archaeology can neither confirm nor deny this belief. However, tangential support for the reuse of the bath-house is provided by the observation that the region of the site containing the Roman bath was in use in the Umayyad period. The continued functioning of the Roman bath might also be reflected in the early Islamic name for the site, "Humeima", the diminutive of the word "hammam" whose most common meaning is "bath".

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