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OBLICZA WOJNY

TOM 10 • NARZĘDZIA WOJNY

ŁÓDŹ 2023 • ISBN 978-83-8331-461-7 • s. 45-75

<https://doi.org/10.18778/8331-461-7.04>

A SURVEY OF PARTHIAN MILITARY ARCHITECTURE

Summary. This article provides a synopsis of Parthian military architecture by an initial examination of Arsacid military requirements for the defence of their empire. Following an overview of Central Asian circular systems, Parthian architectural innovations, Seleucid-Hellenic influences, and the tripartite system, Parthian military architecture in the empire's northeast and Central Asian territories (Margiana, Hyrcania, Aria, Bactria), Iran and the Persian Gulf, Mesopotamia and Syria are analysed. The article concludes with a discussion of possible defensive wall systems during the Parthian era.

Keywords: Arsacids, Architecture, Central Asia, Iran, Mesopotamia

Parthian military architecture was reflected in the regional miscellany of the Arsacid empire (e.g., Mesopotamia, Media, Central Asia), often combining an overall Parthian system with local styles. Despite their nomadic steppe background, the Arsacids regularly adopted the urban architectural methods of the regions they conquered.¹ Prior to their arrivals into Iran, the Arsacids were already acquainted with Central Asian circular defense systems. Parthian military architecture began early with the Arsacid ascendancy in the eastern Iranian realms, notably Parthava (Parthia). Parthian military architecture expanded to the west from Nysa into northern Iran (esp. Hecatompylos), Media (esp. Rayy, Ecbatana), and into Mesopotamia,² with Ctesiphon founded following the Parthian capture of Seleucia.

¹ M.J. OLBRYCHT, *Parthians cities and strongholds in Turkmenistan*, "International Journal of Eurasian Studies" 2014, vol. 2, p. 117.

² R. RANTE, *The Iranian city of Rayy: urban model and military architecture*, "Iran" 2008, vol. 46, p. 209.

The fortifications of the spā d (Parthian army) were generally dispersed along the wide frontiers of the empire with critical cities and fortresses stationed with military garrisons.³ Fortress construction of strategic locations was designed to secure the empire in three ways: (1) regional defense against foreign invasions,⁴ (2) military consolidation within the empire and regional defense against internal political challengers, and (3) defense of strategic metropolitan centers and trade arteries. Strategic fortified cities could also serve as military bases, as seen for example with Mithradates (Mehrdad) II's (r. 121–91 BCE) utilisation of Nisa, Merv, and Rayy and Bactrian fortified towns for blocking Saka and Yueh-chi attacks from Central Asia.⁵

Central Asian Circular Fortification Systems

One of the major military impacts of the proto-Iranian arrivals into Iran was the introduction of Central Asian style circular fortification systems (for fortresses and settlements), which represents a different architectural tradition to that realised by the Greeks and Romans.⁶ The earliest types of circular type settlements have been traced to c.1500 BCE Bactria, possibly in relation to the spread of Zoroastrianism in that region.⁷ The circular design for defense against flanking attacks was later

³ M.J. OLBRYCHT, *Parthian military strategy in wars against Rome*, [in:] *Military Archaeology. Weaponry and warfare in the Historical and Social Perspective, Materials of the International Conference 2–5 September 1998*, eds. G.V. VILINBACHOV, V.M. MASSON, St. Petersburg 1998, p. 139.

⁴ H. KHANALI, R. REZALU, I.H. AZANDARYANI, *Motaleat-e tabighi rahaye tejari va nagshe ghe-la-e nezami bar pishraft tejarat-e manteghe-i va fara-mantaghe-i shomal-e gharb-e Iran dar doreye Es-lami (ba motale-e moredi shahrestan-e kosar dar ostan-e Ardabil)* [Comparative study of trade routes and the role of military fortresses on the advance/promotion/development of regional and transregional trade in northwestern Iran in the Islamic era (with a case study of Kowsar city in Ardabil province)], "Pazhoheshaye Bastanshenasiye Iran" 2014 [1393], no. 10, p. 193; M.J. OLBRYCHT, *Some remarks on Hellenistic influence upon the fortification of northeastern Iran in the Arsacid period*, "Folia Orientalia" 1993, vol. 29, p. 132.

⁵ N. OVERTOOM, *Reign of Arrows: Rise of the Parthian Empire in the Hellenistic Middle East*, Oxford 2020, pp. 252–254.

⁶ P. GHASEMI, *Tal-e Khandaq ("Moated Mound") a military structure in ancient Fars*, "Near Eastern Archaeology" 2012, vol. 75, no. 4, p. 249.

⁷ G.A. KOŠELENKO, V.A. GAIBOV, *The Avestan Vara and the early towns of Central Asia*, "Parthica" 2014, vol. 16, pp. 69–91.

used by the Sakas of Central Asia,⁸ who passed on this military architecture to the (Saka origin) Arsacids.⁹ The circular defense system which the Parthians used¹⁰ may have originated as a method of defending against enemy flank attacks,¹¹ for which the Parthians also developed polygonal and oval architectural systems.¹² Merv in Central Asia and Hatra in Mesopotamia were two prominent examples of Parthian era cities with the circular design. During the classical era, circular type cities also featured streets/lanes, with the later Sassanians continuing to develop circular systems such as those at Ardashir Khurra and Ādur-Gushnasp.

Parthian-era Architectural Innovations

The Parthians introduced the *iwan*, dome, and stucco into Iranian architecture. An *iwan* is a barrel-vaulted chamber, open-fronted on one (or more) sides of a courtyard.¹³ In contrast to Greek architecture in which the pillars were essential (with walls added later), the Parthian *iwan* had the walls built first with pillars added as decorative motifs.¹⁴

Another Parthian innovation was in new types of vaulting systems. Although the use of corridors is seen in pre-Parthian and Mesopotamian architecture (brick-based barrel vaults were already present 1500 years earlier at Susa), the innovative Parthian corridors provided buttress support for the vaulting systems by constructing side walls in order to counter the challenge of heavy lateral pressure forced by the vaulting itself.¹⁵ More specifically, the challenge of brick vaulting's

⁸ J. SÁNCHEZ-GRACIA, K. FARROKH, *Traiano Pártico: Las victoriosas campañas de Trajano en Persia, 114–117 d.C.*, Zaragoza 2018/2019, p. 174.

⁹ A. MATUFI, *Tarikh-e-Chahar Hezar Sal-e Artesh-e Iran: Az Tamadon-e Elam ta 1320 Khorsbeedi, Jang-e-Iran va Araqb*, Tehran 1378 [1999], p. 149.

¹⁰ U. ELLERBROCK, *The Parthians: The Forgotten Empire*, New York 2021, p. 126.

¹¹ R. GHIRSHMAN, *The Art of Ancient Iran*, New York 1964, p. 35.

¹² K. FARROKH, G. KARAMIAN, H. KARAMIAN, *Military Architecture and the Four-Spābbed System for Defense of the Sassanian Empire (224–651 CE)*, "Historia i Świat" 2021, no. 10, pp. 122–123.

¹³ R. SCHMITT, *Hatra*, [in:] *Encyclopaedia Iranica* 2003, vol. 12, fasc. 1, pp. 58–61.

¹⁴ Г.А. КОШЕЛЕНКО, *Парфянская фортификация*, "Советская Археология" 1963, № 2, pp. 57–73; E.J. KEALL, *The Parthians (247 BC–226 AD)*, [in:] *The Penguin Encyclopedia of Classical Civilizations*, ed. A. COTTERELL, London 1993, p. 175.

¹⁵ E.J. KEALL, *Architecture II. Parthian period*, [in:] *Encyclopedia Iranica*, vol. 2, fasc. 3, London 1986, pp. 327–329.

heavy slanted thrust was addressed by placing flanking corridors, helping bolster the main vault by moving out the thrust by a series of parallel side walls.

The Parthians also contributed to dome architecture, as seen with the Nisa citadel featuring a square building with a rounded dome with a diameter of 17 m.¹⁶ The Nisa structure was a new type of architectural innovation disconnected from the Hellenistic tradition and closer to a Near Eastern system.¹⁷ Both iwans and this type of dome architecture were manifestations of an older East Iranian tradition of Central Asian (or greater Eurasian) architecture, as seen in 8th century BCE domed buildings in Tagisken and 5th century BCE buildings in ancient Chorasmia's Balandy (c. 2nd century BCE) and Koi Krylgan-Kala (4th to 2nd century BCE), located in modern-day Kazakhstan.¹⁸ The Parthians, of Central Asian Saka (Scythian) origin, inherited this architectural tradition and brought it into Iran. These systems continued to evolve within Iran into the Sassanian era, as seen at palaces such as Firuzabad and Sarvistan, where the iwan-dome systems have been integrated.¹⁹ Dome architecture reached Mesopotamia in Parthian times, as indicated by the display of domes and iwans on the triumphal arch of Emperor Lucius Septimius Severus.²⁰ Another Parthian-era contribution was the application of stucco decorations for buildings,²¹ with examples seen at Nisa (plants, lion, Goryth, moon, archery gear, rosettes) and Hatra's mask motifs.²²

Parthian Military Architecture and Hellenic Influences

Following the overthrow of the Achaemenid Empire by Alexander, the succeeding Seleucids established cities to consolidate their conquests. Although Hellenic poleis were rare within Iran during the Seleucid era as vast

¹⁶ U. ELLERBROCK, *op. cit.*, p. 126.

¹⁷ A. INVERNIZZI, *A note on architectural traditions in Arsacid Parthia: the round hall at Nisa*, [in:] *The Parthian and Early Sasanian Empires: Adaptation and Expansion*, eds. V.S. CURTIS, M. AL-RAM, T. DARYAEE, Oxford 2016, p. 83.

¹⁸ U. ELLERBROCK, *op. cit.*, p. 127.

¹⁹ N. SPATARI, *L'enigma delle Arti Asittite: Nella Calabria Ultramediterranea*, Mammola 2002, pp. 265–267, 275–291.

²⁰ U. ELLERBROCK, *op. cit.*, p. 127.

²¹ M.A.R. COLLEDGE, *The Parthians*, New York 1967, p. 135.

²² U. ELLERBROCK, *op. cit.*, pp. 127–128.

territories within Iran were governed by de-facto independent dynasties established prior to the Seleucids,²³ some Seleucid strongholds were built in the regions of Hamedan, Borojerd, and Kermanshah.²⁴ At the same time, the observance of local architectural forms became more prominent in Western Iran and Mesopotamia (with the possible exception of Rayy). Seleucid fortified bases and urban centers in Iran and Central Asia were not simply a case of applying the Greek system, but also one of adoption and integration with local (pre-Parthian) Iranian styles, resulting in what is described as ‘Perso-Hellenic’ architecture.²⁵ In terms of military architecture, it was in Central Asia and the northeast Iranian marches where Hellenic techniques were integrated during the early Parthian era as seen with ramparts which, while following a general Hellenic system, later integrated with the Parthian introduction of Iranian architectural techniques such as vaulted corridors within massive walls and slits for firing arrows. Hellenic influences for wall defense in Central Asia, Parthava, and Hyrcania are seen in the use of platforms, moats, and towers.²⁶ Platforms were built at a substantial distance from the actual wall frontage, as seen with the wall at Merv, built around 8.5 m away from the façade. With respect to towers there is the example of the Parthian city of Old Nysa, with its Hellenistic type towers serving as focal resistance nodes; one of the towers had a chamber (3.45 x 6 m) capable of accommodating artillery systems. Building massive fortifications against powerful sieges (notably by siege engines) appears to be a Hellenic influence, as seen at Ai-Khanoum, Balkh, Merv, and Delbarjin in Central Asia and at Rayy in Media.²⁷ Another Hellenic introduction was square bricks, in contrast to Achaemenid era rectangular bricks. The dimensions of these square bricks were in the 40–43 x 40–43 x 10–15 cm range (e.g., wall of Gorgan, Old and New Nisa, Hecatompylos).²⁸ Hellenic civil engineers in Central Asia also

²³ V.G. LUKONIN, *Political, social and administrative institution: taxes and trade*, [in:] *Cambridge History of Iran*, ed. E. YARSHATER, vol. 3, no. 2, Cambridge 1983, pp. 714–715.

²⁴ M. BEHROOZI, *Siyasat-e shahr-saziye Selookian dar sarzaminhaye maftobeh*, “Pazhohesh-haye Bastan-shenasiye Iran” 1397 [2018], vol. 8, no. 17, p. 111.

²⁵ K. JAKUBIAK, *The origin and development of military architecture in the province of Parthava in the Arsacid period*, “Iranica Antiqua” 2006, vol. 41, p. 127.

²⁶ M.J. OLBRYCHT, *Some remarks on Hellenistic...*, pp. 134–135.

²⁷ R. RANTE, *op. cit.*, p. 203.

²⁸ M.J. OLBRYCHT, *Some remarks on Hellenistic...*, pp. 133–134.

applied square and rectangular designs with perpendicular street patterns, as seen at Merv as introduced by Antiochus I, who also established the city of Dura-Europos with the same street plan system. However, it must be noted while the Hellenic arrivals facilitated such designs into the region, square-rectangular designs were already well-established within Iran,²⁹ pre-dating the Greco-Macedonian invasions. Iranian and Hellenic architectural integration also occurred in Anatolia (e.g., Cappadocia, Commagene), the Near East (e.g., Palmyra), the Bosphorus and Caucasus (e.g., Georgia, Armenia, and Calabria in southern Italy).³⁰

The Tripartite System

The Parthian tripartite system of city-fortresses consisted of a *sharestan*, *kohandezh*, and *savad*.³¹ The *sharestan* was the 'inner city' where warriors, petty nobles and governmental administrators resided; the *kohandezh* was a citadel usually constructed on a higher platform to enhance surveillance of areas outside the fortress and/or city and the interior.³² As the chief quartering sector for primary military leaders and high-ranking nobles,³³ the *kohandezh* was built to repel attacks in case other parts of the fortress or city fell to the enemy. The *savad*, or *suburb*, was inhabited by non-military and non-governmental personnel (e.g., farmers, craftsmen). This tripartite system was present in Central Asia (e.g., Balkh, Ai-Khanoum, Merv), Parthava, Hyrcania, and Rayy below northern Iran.³⁴

²⁹ A. MATUFI, *op. cit.*, p. 240.

³⁰ T. SULIMIRSKI, *The Scyths*, [in:] *The Cambridge History of Iran*, vol. 2: *The Median and Achaemenian Periods*, ed. I. GERSHEVITCH, Cambridge 1985, pp. 149–199; I. BABAEV, I. GAGOSHIDZE, F.S. KNAUSS, *An Achaemenid "Palace" at Qarajamirli (Azerbaijan) Preliminary Report on the Excavations in 2006*, "Ancient Civilizations from Scythia to Siberia" 2007, vol. 13, no. 1–2, pp. 31–45; K. FARROKH, *An Overview of the Artistic, Architectural, Engineering and Culinary exchanges between Ancient Iran and the Greco-Roman World*, "AGON: Rivista Internazionale di Studi Culturali, Linguistici e Letterari" 2016, no. 7, pp. 68–76, 80–86.

³¹ A. MATUFI, *op. cit.*, p. 150; R. RANTE, *op. cit.*, pp. 196–204.

³² K. FARROKH, *Shadows in the Desert: Ancient Persia at War*, Oxford 2007, p. 174.

³³ J. SÁNCHEZ-GRACIA, K. FARROKH, *op. cit.*, pp. 172–173.

³⁴ R. RANTE, *op. cit.*, p. 209.

Military Architecture in North and Northeast Iran and Central Asia

Parthian military architecture in north and northeast Iran and Central Asia drew upon established systems as a result of military experiences against nomadic invasions.³⁵ The Parni of the Dahae confederation (henceforth known as Parthians) had consolidated in Parthava (Parthia) by the 3rd century BCE, and further consolidated into Hyrcania in northern Iran, Aria to the east (roughly modern-day western Afghanistan), and Margiana in Central Asia by the 2nd century BCE.

When the Parthians first entered Parthava, they engaged in construction of local military architecture. The key Parthian archaeological site of Nysa (in the southern regions of modern-day Turkmenistan; registered as a UNESCO World Heritage site³⁶) was divided into two sections: New Nysa and Old Nysa.³⁷ New Nysa was a city on the plains with a fortified structure built upon a hilltop known as ‘Old Nysa.’³⁸ The original Parthian capital may have been at Mithradakert (Old Nysa), one of the earliest known Parthian fortified cities built by Mithradates (Mehrdad) I (r. 167 or 165–132 BCE)³⁹ as a sanctuary city.⁴⁰ The fortification’s walls were 20–25 m high⁴¹ and 10 m thick,⁴² with the clay bricks 40–42 cm long and 10–12 cm thick.⁴³ Forty-four towers built in spans of 25–30 m have been identified at Old Nysa.⁴⁴ There was an elevated platform

³⁵ K. JAKUBIAK, *A Persian response. The organization of Defence in Mesopotamia under the Parthians and Sassanians*, [in:] *Understanding the Past: Papers offered to Stefan K. Kozlowski*, eds. J.M. BURDUKIEWICZ, K. CYREK, P. DYCZEK, K. SZYMCZAK, Warsaw 2009, pp. 155–163.

³⁶ *Parthian Fortresses of Nisa, UNESCO World Heritage Convention*, <https://whc.unesco.org/en/list/1242> (access: 27 V 2022).

³⁷ *Nysa, British Museum*, <https://www.britishmuseum.org/collection/term/x109972> (access: 27 V 2022).

³⁸ M. CANEPA, *Seleukid sacred architecture, royal cult and the transformation of Iranian culture in the middle Iranian period*, “Iranian Studies” 2015, vol. 48, no. 1, p. 90.

³⁹ M. CANEPA, *op. cit.*, pp. 90, 92.

⁴⁰ A. INVERNIZZI, *The culture of Parthian Nisa: between steppe and empire*, [in:] *After Alexander. Central Asia before Islam*, eds. J. CRIBB, G. HERRMANN, Oxford 2007, p. 164.

⁴¹ G. HERRMANN, *The Iranian Revival*, London 1977, p. 34.

⁴² V.M. MASSON, *Das Land der tausend Städte*, Wiesbaden-Berlin 1987, p. 122.

⁴³ U. ELLERBROCK, *op. cit.*, p. 129.

⁴⁴ M.J. OLBRYCHT, *Some remarks on Hellenistic...*, p. 135.

designed to better resist attacks by powerful siege engines. The palace of Nysa also featured four *iwans* surrounding a central courtyard.⁴⁵

Margiana was a historical territory centered around an oasis of Merv, with Parthian control consolidated during Phraates (Farhad) II's reign (c. 132–127 BCE).⁴⁶ Merv's origins date to the late first millennium BCE,⁴⁷ with the Achaemenid dynasty having also built a fortress at the city. That small citadel (50 x 50 m) was situated on a large mound (known as Erk Qala) around which a circular defense wall was later built.⁴⁸ Merv was then conquered by Alexander and renamed Alexandria Margiana, which was itself destroyed by the later attacks of the Saka of Central Asia. The city was then rebuilt by the Seleucid king Antiochus I (r. 281–261 BCE),⁴⁹ who installed a wall in c. 280 BCE and redesigned the urban layout according to a geometric pattern.⁵⁰ The Seleucid walls now protected the southern parts of Erk Qala, with the previous settlement having become the citadel of a larger, walled urban center. The new citadel, known as Gyaur Qala, was safeguarded with defensive walls at its southern sectors⁵¹ with Merv's Seleucid-era defense wall placed on a three-meter-high ground base, itself two m in front of the façade.

After the Parthian king Mithradates I defeated the Greco-Bactrian king Eucratides (r. 171–145 BCE)⁵² leading to the Parthian conquest of Merv, the Parthians built their own wall in c. 2nd century BCE, followed by additional wall construction in the 1st century CE.⁵³ Merv had the tripartite military architecture system of a *kobandezh*, a *sharestan*, and a *savad*, built mainly of mud-brick and sun-burnt bricks, with walls still standing 30 m high. The *sharestan* and *kobandezh* ramparts, built during the Hellenic era, were designed to resist siege engines. The Parthians applied significant military architectural upgrades as seen by the reinforcements and expansions of Gyaur Qala's outer walls at the entrance gate.⁵⁴

⁴⁵ G. HERRMANN, *op. cit.*, p. 23.

⁴⁶ K. JAKUBIAK, *The origin and...*, p. 132.

⁴⁷ Z.I. USMANOVA, *New material on ancient Merv*, "Iran" 1992, vol. 30, p. 55.

⁴⁸ G. HERRMANN, V.M. MASSON, K. KURBANSAKHATOV, *The international Merv project, preliminary report on the first session (1992)*, "Iran" 1993, vol. 31, pp. 40–41.

⁴⁹ M. BEHROOZI, *op. cit.*, p. 109.

⁵⁰ U. ELLERBROCK, *op. cit.*, p. 136.

⁵¹ R. RANTE, *op. cit.*, p. 196.

⁵² JUSTIN, *Epitome*, XLI, 6.

⁵³ I. SYVÄNNE, K. MAKSYMUK, *The Military History of the Third Century Iran*, Siedlce 2018, p. 48.

⁵⁴ U. ELLERBROCK, *op. cit.*, p. 136 (fig. 7.13).

A total of 72 Parthian-era settlements have been identified in the contiguous Merv Oasis areas. One such settlement was the square fort of Gobekly Tepe, with towers on each corner and walls surrounding an inner central building built on a large base.⁵⁵ The Parthian-era wall was approximately 7 m wide with a maximum height of 6 m; there was an internal corridor approximately 3.5 m wide, with its ceiling most likely vaulted.⁵⁶ Gobekly Tepe's perimeter wall was 2.8 m wide with other walls standing today approximately 13 m high.⁵⁷ Wall construction involved a *paksha* layer set upon a foundation of compacted earth followed by alternate mud brick layers (bricks: 42 x 42 x 12 cm) with *paksha* set above.⁵⁸ Other notable fortresses in Margiana are Kyrk Teperese, Eliming Tappeh, Chilburj, and Durnali. Encompassing 12.3 ha, Kyrk Teperese had a fortified entrance and an oval-shaped citadel.⁵⁹ Built with square towers, the small square fort of Eliming Tappeh (100 m long on each side) encompassed just over one hectare. The trapezoid-shaped fort of Chilburj (longer sides measuring 260 and 230 m in length, both shorter sides 200 m)⁶⁰ had towers every 17–20 m, with walls having an inner gallery providing garrison troops practical access to arrow slits built into the walls. The bricks at Chilburj measured at 41–42 x 10–11 cm. Another Parthian-founded site in the Merv area is the walled fort of Durnali, with several square projecting towers built in spans of 10–17 m.⁶¹

Nysa's close vicinity to Central Asia made it vulnerable to Saka raids, obliging the Parthians to transfer their capital further west to Hecatompylos (also known as Shahr-e Qumis near modern Damghan) in Hyrcania, northern Iran. Significantly enlarged by the Parthians in the 2nd century CE, [the citadel at] Hecatompylos had stepped vaults with rounded and pointed arches (sites IV and VI), with a height of over 2 m at the apex of the pointed arches.⁶² Captured by the Parni possibly sometime in 237 BCE, Hecatompylos is often cited as the

⁵⁵ St.J. SIMPSON, *Merv, an archaeological case-study from the Northeastern frontier of the Sasanian empire*, "Journal of Ancient History" 2014, vol. 2, no. 2, pp. 9, 10 (fig. 8).

⁵⁶ G.A. KOŠELENKO, *The Fortifications at Gobekly-depe*, [in:] *After Alexander. Central Asia before Islam (Proceedings of the British Academy, 133)*, eds. J. CRIBB, G. HERRMANN, Oxford 2007, p. 272.

⁵⁷ K. JAKUBIAK, *The origin and...*, p. 136.

⁵⁸ G.A. KOŠELENKO, *The Fortifications ...*, p. 272.

⁵⁹ K. JAKUBIAK, *The origin and...*, p. 134.

⁶⁰ *Ibidem*, pp. 138–140 (see also fig. 8).

⁶¹ M.J. OLBRYCHT, *Some remarks on Hellenistic...*, p. 135.

⁶² G. HERRMANN, *op. cit.*, p. 37.

early Parthian capital, with the site of Asaak (at Astauene in northeast Iran), established by Arsaces I, as another possible capital.

During his battles against Parthian king Artabanus I (also known as Arsaces II), the Seleucid king Antiochus III (r. 211–191 BCE) first captured Hecatompylos, followed by the city of Tambrax in Hyrcania, and finally besieged the city of Syrinx which was defended by (1) a three-tier moat system,⁶³ with each moat supported by a double row of palisades; (2) a defensive fore-wall (*proteichisma*) situated outside of the main walls;⁶⁴ and (3) city defenses designed to withstand siege engines.⁶⁵ The Greek besiegers succeeded in capturing the city by filling the moats and breaching Syrinx's wall.⁶⁶ It is possible that Syrinx had been built for the Parthians under the direction of Greek engineers⁶⁷ as the city did have a settled Greek minority.⁶⁸ Other Parthian archaeological sites in northern Iran include the stone fortress of Shir Qaleh in Semnan Province, whose original platform is dated to Parthian times. Notable surviving features at Shir Qaleh are three partially intact large rounded towers, defensive walls, and an archway ingress. Shir Qaleh became critical for the protection of trade lanes along the Silk Road.

Mithradates I's defeat of Eucradites also led to the Parthian capture of much of Afghanistan, Tapuria (modern Mazandaran region in northern Iran) and Traxiane (encompassing parts of northeast Iran, Central Asia and Afghanistan).⁶⁹ Notable was the capture of Herat in Afghanistan – a city of tactical importance for Iranian empires since Achaemenid times – which facilitated Parthian expansion eastwards.⁷⁰ While major research has yet to be conducted on Herat's Parthian-era military architecture, Alexander is known to have built a citadel there which remains to this day.⁷¹

To the west of Aria was *Parthava* (Parthia) and to the northeast of Aria was *Bāxtriš* (Bactria) with its capital city in northeast Afghanistan known as *Bāxtra*

⁶³ G.M. COHEN, *The Hellenistic Settlements in the East from Armenia and Mesopotamia to Bactria and India*, Berkeley 2013, p. 222.

⁶⁴ POLYBIUS, *The Histories*, X, 31.

⁶⁵ W. TARN, *The Greeks in Bactria and India*, Cambridge 1951, p. 20.

⁶⁶ N. OVERTOOM, *op. cit.*, p. 127.

⁶⁷ W. TARN, *op. cit.*, pp. 20–21.

⁶⁸ G.M. COHEN, *op. cit.*, p. 222.

⁶⁹ STRABO, *Geography*, XI.11.20.

⁷⁰ U. ELLERBROCK, *op. cit.*, p. 31.

⁷¹ *Ibidem*, p. 25.

(Bactra; also *Zariaspa* [Iranian: golden horse]; later known as *Balkh*). Bactra's circular military architecture system of defensive walls was over one kilometer in diameter, with the settlement's original foundations traceable to the 6th century BCE. The city's primary military architecture was possibly begun or augmented during the Achaemenid era. Alexander's subsequent conquest of the city was followed by a Persian-Hellenic synthesis in architecture as seen by the Greek system of laying out an extensive grid-design built around former Achaemenid citadels which, keeping their military role, now acted as fortified 'upper cities'.⁷² The Achaemenid fortress of Bala Hissar was integrated with later Greek fortifications (notably at the lower city, which the Greeks rebuilt). While the Greeks combined the elevated fortress with the actual city below, the use of elevated platforms for city-fortress designs were already known by the former Achaemenids as seen, for example, in their construction of a 30-meter platform at ancient Kandahar.

Mention can be made of the military architecture of Ai-Khanoum (sometimes known as 'Alexandria on the Oxus.' Located in northeast Afghanistan, Ai-Khanoum was originally an Achaemenid fortress city destroyed by the Greco-Macedonians who later rebuilt it in c. 329–327 CE.⁷³ Ai-Khanoum's three sides (2 miles approx.) were well defended, with walls featuring prominent towers and a citadel on the southeast edge of the acropolis (height: 10 m; base: 20 x 11 m),⁷⁴ with the city's primary gate in the northern wall. Ai-Khanoum's royal palace had an Iranian-Achaemenid architectural plan, which the city combined with a Hellenic amphitheatre and temples.

Parthian Military Architecture in Iran and the Persian Gulf

As noted by Jakubiak: "In modern Iranian territories, almost no military architecture is known outside the Gorgān plain. Only a few structures, such as Tepe Ćoraĝi and Kārkon near Hamadan and Malāyer, for example, may have

⁷² M. CANEPA, *Afghanistan' as a cradle and Pivot of Empires: reshaping Eastern Iran's Topography of Power under the Achaemenids, Seleucids, Greco-Bactrians and Kushans*, [in:] *The Limits of Empire in Ancient Afghanistan*, eds. R.E. PAYNE & R. KING, Wiesbaden 2020, p. 61.

⁷³ R. MAIRS, *The Founder's shrine and the foundation of Ai Khanoum*, [in:] *Foundation Myths in Dialogue*, ed. N. MAC SWEENEY, Philadelphia 2015, pp. 103–128.

⁷⁴ L. MARTINEZ-SÈVE, *The spatial organization of Ai Khanoum, a Greek city in Afghanistan*, "American Journal of Archaeology" 2014, vol. 118, p. 268.

been erected during the Parthian period.”⁷⁵ The aforementioned sites notwithstanding, the location and excavation of Parthian military architecture within Iran has been challenging. Ancient Praaspa of Media Atropatene, for example, which is known to us from classical sources in reference to Mark Antony’s failed 36 BCE campaign in northwest Iran, has yet to be precisely located and excavated. Nevertheless, recent archaeological studies have discovered a significant number of Parthian fortifications in western Iran (notably in the regions of Hamedan, Nahavand, and Harsin) with Parthian-era structures also having been discovered in southern Iran and the Persian Gulf region.

The city of Rayy, located along the northern area of the Iranian plateau, was conquered by Mithradates I and later renamed Arsakia. Rayy’s surviving fortress site featured the tripartite military architecture with respect to its *sharestan* and *kohandezh*, showing a number of parallels with Central Asian Parthian-era cities and fortresses.⁷⁶ The *sharestan*’s surface area was around 15 ha and its defensive wall was originally polygonal, with an approximately 3,6 ha triangular *kohandezh* (built-in with two terraces). Around the *kohandezh*’s hill perimeter was a defensive wall made of square bricks, itself encircled by a canal. At the southern section of the rampart, the exterior wall mudbricks (each measuring 45 x 45 x 15 cm) were arranged in a fluted pattern, a system known by engineers in Media and Central Asia.⁷⁷ The internal (façade) mudbricks of the southern wall are 38 x 38 x 10–12 cm; the rampart’s core is made of large mudbricks that range from 40–45 x 40–45 x 12–15 to 50 x 50 x 12 cm. Rayy’s fortifications were constructed to withstand siege engines – towers were built into the rampart⁷⁸ and the wall was reinforced with a buttress 4,5 m thick, built of mudbricks of 33 x 33 x 8 cm. Archers were evidently placed on top of the rampart.

The ancient city of Ecbatana is identified in the region of Hagmatana Hill (Tappēh Hagmatāna),⁷⁹ which together with the hills of Moṣallā and Sang-e Shir is located in the city district of modern-day Hamedan (provincial capital of Hamedan province, western Iran). The Parthian archaeological layers discovered

⁷⁵ K. JAKUBIAK, *A Persian response...*

⁷⁶ R. RANTE, *op. cit.*, pp. 191–192, 198, 200, 202.

⁷⁷ *Ibidem*, pp. 193, 194 fig. 6.

⁷⁸ R. RANTE, *op. cit.*, p. 209.

⁷⁹ S.C. BROWN, *ECBATANA*, [in:] *Encyclopedia Iranica*, 1997, vol. 8, fasc. 1, pp. 80–84.

at Hamedan city have revealed no Hellenic or older archaeological data to date.⁸⁰ In c. 147 BCE, Mithradates I captured Ecbatana,⁸¹ a key strategic site linking the ancient Royal Road (founded in the Achaemenid era) with the Silk Route of Central Asia.⁸² Moşallā Hill featured a Parthian stone and brick stronghold at a sharp 80 m high summit with towers and a rectangular citadel.⁸³ Another Parthian stronghold at Hamedan is at Hagmatana Hill (with an area of 7–10 ha), featuring an outer wall and stout square towers.⁸⁴ Other Parthian sites include the one discovered in Nahavand county in Hamedan province, as reported by Tasnim News on April 30, 2017; however, no official details were provided as to the site's military architecture.⁸⁵ A year after that report, the Iranian archaeologists Jafarizadeh and Saraghi published a seminal study identifying forty-eight small Parthian strongholds in the Nahavand region characterised by elevated platforms and various circular, oval, square, and rectangular designs.⁸⁶ Two examples of these are at Tappeh Baba Ghassem (design: circular, diameter: 150 m, elevation from ground: 25 m) and Tappeh Gian (design: rectangular, dimensions: 20 x 10 m, elevation from ground: 0.5 m).

Archaeologists Mohammadi-Far, Chehri, and Hemati-Azandaryani examined the archaeological site in Harsin, in the east of Kermanshah province in western Iran, and reported of at least three Parthian forts in the region though they did not report extensively on their military architecture.⁸⁷ Qaleh Yazdigird

⁸⁰ U. ELLERBROCK, *op. cit.*, p. 138.

⁸¹ STRABO, *Geography*, 11.13.1, 16.1.16; TACITUS, *The Annals* 15.31.

⁸² U. ELLERBROCK, *op. cit.*, p. 138.

⁸³ S.C. BROWN, *op. cit.*, pp. 80–84.

⁸⁴ R. BOUCHARLAT, *Tappeh Heghmataneh va Ekbatan-e Bastan*, [in:] *Heghmataneh: Majomoe-ye Maghalat-e Hameyesh-e yek roozeh Bastanshenasi e Heghmataneh*, ed. Y. MOHAMADI-FARR, Tehran 1392 [2014], pp. 229, 231, 236, 242.

⁸⁵ *Kashfe mohavateye Tarikhi az Douran-e Ashkanian dar Nahavand*, "Tasnim News", April 30, 2017, <https://www.tasnimnews.com/fa/news/1396/02/10/1392938/%DA%A9%D8%B4%D9%81-%D9%85%D8%AD%D9%88%D8%B7%D9%87-%D8%AA%D8%A7%D8%B1%DB%8C%D8%AE%DB%8C-%D8%A7%D8%B2-%D8%AF%D9%88%D8%B1%D8%A7%D9%86-%D8%A7%D8%B4%DA%A9%D8%A7%D9%86%DB%8C%D8%A7%D9%86-%D8%AF%D8%B1-%D9%86%D9%87%D8%A7%D9%88%D9%86%D8%AF> (access: 30 V 2022).

⁸⁶ M. JAFARIZADEH, N. SARAGHI, *Olgohaye esteghrariye doreye Ashkani-e Dasht e Nahavand*, "Pazhoheshhaye Bastanshenasi" 1397 [2018], vol. 12–13, pp. 25–39.

⁸⁷ Y. MOHAMMADI-FAR, R. CHEHRI, E. HEMATI-AZANDARYANI, *Baresi va tablil olgoeye esteghrar-e mohavateye Ashkani-e mantagheye kohestni-e shahrestan-e Harsin*, "Pazhoheshhaye Bastanshenasi" 1397 [2018], vol. 12–13, p. 195.

(located in the western area of Kermanshah province close to the international border with Iraq, has foundations dated to the Parthian era.⁸⁸ Qaleh Yazdigird's overall plan consists of a stronghold, an upper castle, a lookout post, a defensive wall, a royal pavilion, and a palace garden. Many of the structures (i.e., the upper lookout post) and the encircling defensive wall exhibit Parthian-era military architecture. The upper castle had been integrated into defensive systems also tasked for defending the local water supply.⁸⁹ The defensive wall was notably stout, due to the three kilometers of open ground on the southeast side of the basin. Additional fortifications were built into the escarpment edge, resulting in a significant area (35–40 square kilometers) being within a protected zone.

The primary construction materials were mortar and stone, with masonry works also seen using the vertical design (located at castle's main defensive walls). The same vertical design is seen at the archway of Qaleh Zahak in northwest Iran as discussed further below. Of interest are baked bricks on stucco walls and ornamented halls⁹⁰ with these bricks, resembling those at Qaleh Zahak. Qaleh Yazdigird's bricks have also been 'autographed' by their builders.⁹¹ Qaleh Yazdigird had vaulted corridors typical of Parthian and later Sassanian military architecture⁹² and a series of well-placed lookout posts that were built to provide an excellent view of any deployments by potential attackers. The main defense wall features large numbers of reinforcement towers containing guard chambers.

One of these towers is nine meters in width along with a curtain wall of approximately 20 m built between this tower and the one next to it. Another tower has what appear to be many 'arrow' portholes on the ridge wall along its span. The top of each opening has two baked bricks set in an inverted 'V' resulting in an upward arrow shape. It is unclear as to whether these were archery portholes, as (1) they are too small for firing arrows through, as the outer slot is no more than 10 cm wide, (2) the 9-meter thickness of the walls, and (c) low ground elevation. These factors significantly limit an archer's ability to aim and shoot accurately against outside targets. One possible thesis is that these portholes were for observation purposes.

⁸⁸ E.J. KEALL, *Qal'eh-i Yazdigird: an overview of the monumental architecture*, "Iran: British Journal of Persian Studies" 1982, vol. 20, pp. 51, 59.

⁸⁹ *Ibidem*, p. 56.

⁹⁰ *Ibidem*, pp. 61, 64.

⁹¹ *Ibidem*, plates XIIIc–XIIIId.

⁹² *Ibidem*, p. 65, plates VIIIA–VIIb.

Media Atropatene was located primarily in Western Iran, extending to the western regions of northern Iran below the Caspian Sea. The capital of Media Atropatene in the latter part of the 1st century CE was the fortified city of Praaspa, possibly located south of Lake Urmia or near modern Maragheh. Cassius Dio reports that Praaspa's 'walls were strong and well-manned by defenders.'⁹³ Apart from Dio's general description, along with Plutarch's even more general report of '*Phraata, a large city...*'⁹⁴, not much additional information is available as to Praaspa's military architecture. Praaspa's defenses were most likely powerfully constructed, given its ability to successfully repulse Mark Antony's siege of the city in 36 BCE.⁹⁵ Its defensive system was possibly characteristic of Parthian military architecture in general, such as thick and powerful walls with corridors, towers built in regular intervals (providing overlapping arcs of archery fire against attackers), and well-positioned archery slits.

Qaleh Zahak (Hashtroud county, East Azerbaijan province, northwest Iran) was a Parthian mountain fortress which possibly first served administrative functions and later became a Zoroastrian temple. Qaleh Zahak's strategic location was critical due to its close proximity to Iran's northwest borderlands adjacent to Armenia and Anatolia. Only a single structure remains standing at Qaleh Zahak, an *iwan* constructed with a hybrid system of vertical bricks at the crown and radial bricks at the haunch of the archway. Bazz castle (also Castle of Babak) near Kalibar city in East Azerbaijan province was founded in the Parthian era. Situated atop a large mountain, Bazz castle is built in mountainous terrain and integrates the area's geographic features into the military architecture of the stronghold in order to maximise defense.⁹⁶ Bazz castle's four features are (1) an elevation of approximately 2,500 m, (2) narrow and deep crevices (around 300 m deep) surrounding it which channeled attacking troops into rocky passes, exposing them to archers and counterattacks.

Another prominent Parthian era fortress is Qaleh Owlтан in northwest Iran's Ardabil province. Qaleh Owlтан's foundations comprise 320,000 square m; the fortress has parapet battlements and rounded towers with archery slits.

⁹³ CASSIUS DIO, *Roman History*, XLIX [49], 25.3.

⁹⁴ PLUTARCH, *Lives, Anthony*, 38.1.

⁹⁵ K. FARROKH, J. SÁNCHEZ-GRACIA, *La invasión de Persia por los Árabes*, "Historia de la Guerra" 2021, no. 19, p. 10.

⁹⁶ K. FARROKH, *The Armies of Ancient Persia: The Sassanians*, Barnsley 2017, pp. 227–228.

The fortress of Takhte Suleiman (also known as Shiz) is also located in Iran's northwest, in West Azerbaijan province. Its primary structures date to the Sasanian era, except for a small Parthian-era fortification built on the northern rim of the local lake.⁹⁷ A fifth Parthian-era castle of note in Iran's northwest is Qaleh Qeshlaaq in the Mah Neshan city district of Zanjan province. The largest Parthian archaeological site in Zanjan, Qaleh Qeshlaaq is a fortress-city with its wall built with irregularly spaced towers.⁹⁸ Tower construction used lime mortar, gypsum, sand tones with mud mortar; large bricks were used for the towers' upper sections. The fortress' embankment is approximately oval in shape. The location of the embankment was strategic as the approaches to it are steep and rocky slopes, making direct assaults hazardous for attackers. Qaleh Qeshlaaq's defensive walls are generally built of heavy stones fitted together; however, the wall section along the flank where the approach to the fortress is least steep is built of mortar and stone. Two notable military architectural features at Qaleh Qeshlaaq are a 'triple tower' and a 'crooked arrow' walkway ('bridge of Qaleh Qeshlaaq')⁹⁹. The 'triple tower' is a single tower in which three circular towers are built as three partially overlapping circles. It is possible that this design was intended to provide a wide range of archery fire (left, center, right). The elevated 'crooked arrow' walkway, flanked on either side by an approximately 1-meter high wall, is built of cut stones, mortar, and stones from the nearby river.

Following their conquest by Alexander¹⁰⁰ in 331 BCE and the subsequent Seleucid era, Susa and Šami (Shami) in southwest Iran's Khuzestan province witnessed Hellenic architectural influences such as Palmetto roofings, flat tiles, junction plates, and walls decorated with Hellenic motifs.¹⁰¹ While more archaeological studies are warranted to examine Susa's military architecture during the Seleucid and succeeding Parthian eras, it most likely would have had robust

⁹⁷ D. HUFF, *Takt-E Solaymān*, [in:] *Encyclopedia Iranica*, 2002, <https://www.iranicaonline.org/articles/takt-e-solayman> (access: 3 VI 2022).

⁹⁸ A. AALI, A.R. KHOSROWZADEH, *Qaleh Qeshlaaq: Mohaveteye Bozorge Ashkani dar Mah Neshan-e Zanjan*, "Pazhoheshha-ye Bastanshenasi Iran" 1389 [2010], vol. 2, no. 3, pp. 76, 79.

⁹⁹ *Ibidem*, pp. 81, 83–86.

¹⁰⁰ R. BOUCHARLAT, *Susa iii. The Achaemenid Period*, [in:] *Encyclopedia Iranica*, 2009, <https://www.iranicaonline.org/articles/susa-iii-the-achaemenid-period> (access: 15 VI 2022).

¹⁰¹ R. BOUCHARLAT, *Greece VII. Greek art and architecture in Iran*, [in:] *Encyclopedia Iranica*, 2002, vol. 11, fasc. 3, pp. 329–333.

fortifications – however, the exact types remain undetermined (e.g., whether these had Central Asian Parthian-era influences). The edifices at Susa show Parthian architectural influences,¹⁰² and the Šami sanctuary east of Susa also bears distinct Parthian architecture including historiated capitals, monumental sculpture, Iranian type columns, and large statues, as well as many Greek iconographic elements (e.g., Heracles).¹⁰³

The Arg-e Bam (Bam citadel) located near Kerman city in Iran's southeast province of Kerman, was originally built in approximately 500 BCE¹⁰⁴ during the early Achaemenid era, followed by Hellenic-Seleucid occupation. The military archaeology of Bam during the subsequent Parthian era is notable as it is the only fortress-city inside Iran with strong architectural parallels with Rayy. The Parthians also built a qanat system in the citadel's southeast in the 2nd century BCE.¹⁰⁵ Strong cultural ties between the northern Persian Gulf (southern Mesopotamia, southwest Iran's Khuzistan and Persis regions, and southeast Iran) and the southern Persian Gulf (eastern and southern Arabia) regions¹⁰⁶ have been in place for millennia, notably in Parthian times. Kohor Langarchini (modern Nakhle Ebrahimi) along Iran's southeast coastline of Hormozgan province (above the Strait of Hormuz), where the remains of a brick fortress built in a 1/5 ha area have been excavated,¹⁰⁷ is the largest Parthian archaeological site excavated to date along the northern PG region. Also located in Hormozgan province is Kish Island (in Bandar Lengeh county's Kish region) with archaeological evidence of a large Parthian settlement.¹⁰⁸ Qeshm Island (the largest island in the PG) located off the coast of Hormozgan province, hosts Parthian-era architecture in the Kuh Mozi district, as shown by the remains of stone walls.¹⁰⁹

¹⁰² U. ELLERBROCK, *op. cit.*, p. 139.

¹⁰³ R. BOUCHARLAT, *Greece VII...*, pp. 329–333.

¹⁰⁴ K. FARROKH, *Shadows in the Desert...*, p. 270.

¹⁰⁵ R. RANTE, *op. cit.*, pp. 207–208.

¹⁰⁶ A.R. KHOSROWZADEH, *Mohavateha va esteghrerharhaye Ashkani-ye jazireye Qeshm*, "Pazhoheshha-ye Bastanshenasi Iran" 1392 [2014], vol. 3, no. 5, pp. 81, 91, 95.

¹⁰⁷ A.R. KHOSROWZADEH, M.I. ISMAILI-JELODAR, AND M. RAVAI, *Bastanshenasi-ye savabel-e shomaliye Khaliye Fars, ba moror-e pazhobeshay-e Ashkani va Sassani-ye savabele jonoobi*, [in:] *Majmoeye Maghalat-e Hashtad Sal Bastanshenasi Iran*, eds. Y. HASSANZADEH, M. MIRI, Tehran 1391 [2012], p. 217.

¹⁰⁸ M. GIBSON, *The City and Area of Kish*, Miami 1972, p. 59.

¹⁰⁹ A.R. KHOSROWZADEH, *Mohavateha va...*, p. 85.

The semi-autonomous Kingdom of Characene (in what is now regions of southern Iraq and Kuwait) was vital for the Arsacids,¹¹⁰ but pledged itself to Emperor Trajan during his invasion of the Parthian Empire in 116 CE. Following Trajan's retreat, Characene was fully absorbed into the Parthian empire with a Parthian prince (Mehradad or "Mithradates") given rulership of Characene just before 131 CE.¹¹¹ Characene's influence over the southern PG¹¹² obliged the Parthians to rely on that kingdom for extending their authority over the PG. The Characenes inherited the Seleucid fleet and the former Seleucid PG maritime trade routes. As the Parthians lacked naval capabilities, the Characenes provided three military capabilities for the Arsacids:¹¹³ (1) naval squadrons capable of amphibious operations with land units, (2) naval transport of Parthian cavalry across southern Iraq's channels and swamps leading into the PG, and (3) protection of commercial shipping routes linking Mesopotamia and Iran to trade centers in the PG and Indian coastal regions. The Parthian military presence in the PG was facilitated by the Characene navy. Parthian authority on the southern PG shores was consolidated by the mid-1st century CE,¹¹⁴ followed by Oman's entrance into Parthian jurisdiction by 142 CE.¹¹⁵

Dozens of Seleucid Parthian and Sassanian sites have been excavated between Kuwait and Bahrain.¹¹⁶ One of these is Taj (in eastern Arabia), which features a large Seleucid-Parthian archaeological area with a stone wall surrounding a 40-hectare area constructed in the 1st to 2nd centuries CE, as well as a Parthian-era stone barrier or wall remaining at Failaka island near Kuwait.¹¹⁷ Parthian strongholds, with a square design with rounded towers on corners, have also been discovered in other southern PG regions such as Ed Dur (Umm

¹¹⁰ L. GREGORATTI, *A Parthian port on the Persian Gulf: Characene and its trade*, "Anabasis" 2011, vol. 2, p. 224.

¹¹¹ A.R. KHOSROWZADEH, *Hozure- Partian dar manategh-e jonoobi-ye Khalij-e Fars (sharq va jonoob-e sharq-e shebhe jazireye Arabistan) bar asas-e madarek-e bastan-shenakhti be dast amadeh mohavate-haye parti-ye savabel-e jonoobiye Khalije Fars*, "Motalleat-e Bastanshenasi" 1391 [2012], vol. 2, no. 4, p. 77.

¹¹² E. HAERNICK, *The shifting pattern of overland and seaborne trade in SE Arabia: foreign pre-Islamic coins from Mleiha*, "Akkadica" 1998, vol. 106, p. 32.

¹¹³ L. GREGORATTI, *op. cit.*, p. 213.

¹¹⁴ A.R. KHOSROWZADEH, *Hozure- Partian dar...*, p. 77.

¹¹⁵ D.T. POTTS, *The Parthian presence in the Arabian Gulf*, [in:] *The Indian Ocean in Antiquity*, ed. J. READE, London 1996, p. 279.

¹¹⁶ D.T. POTTS, *The Arabian Gulf in Antiquity (2 volumes)*, Oxford 1990, pp. 30–48.

¹¹⁷ A.R. KHOSROWZADEH, M.I. ISMAILI-JELODAR, M. RAVAIE, *op. cit.*, p. 216–217.

al Quwain, UAE),¹¹⁸ with these types of forts appearing in Mesopotamia by the 2nd–3rd centuries CE.¹¹⁹ The Parthian military presence in Bahrain is seen with two fortresses with a square plan and rounded towers¹²⁰ built between the 2nd to 3rd centuries CE, and the Qal’at al-Bahrain fortress having a late Parthian architectural phase.¹²¹ Notable is the discovery of trilobe iron Parthian/Scythian style arrowheads at Falaika Island (near Kuwait), Janussan, Karrana (in Bahrain), Mleiha (in Sharjah, UAE), Shakura, and Ed Dur (in Umm al Quwain, UAE).¹²² Trilobe iron Parthian/Scythian style arrowheads in the Southern PG were either (1) imports from the Iranian mainland (northern PG), as almost the same designs are evident at Parthian era sites in Iran’s Kohor Langarchini and Tappeh Yahya, or (2) may have been locally produced based on Parthian designs.

Mesopotamia and Parthian Military Architecture

The Parthians were faced with the constant threat of Roman attacks into Mesopotamia as seen by the invasions of Emperors Trajan (r. 98–117 CE), Lucius Verus (r. 161–169 CE), and Septimius Severus (r. 193–211 CE). In Mesopotamia, the Parthian (and later Sassanian) strategic calculus was in three zones:¹²³ northern Mesopotamia (cities such as Hatra and Nisibis), central Mesopotamia (Ctesiphon and Seleucia with Nippur in the center-south regions) and southern Mesopotamia, contiguous with Iran’s Khuzestan and PG regions.

Located in the Iranian-designated province of Khavaran, Hatra in Northern Mesopotamia was an important juncture in the Parthian defense of its western marches facing Rome¹²⁴ raising the possibility that the city may have been

¹¹⁸ O. LECOMTE, *Ed-Dur, les occupations des 3e et 4e s. ap. J.-C.: contexte des trouvailles et matériel diagnostique*, [in:] *Materialien zur Archäologie der Seleukiden- und Partherzeit im südlichen Babylonien und im Golfgebiet*, ed. U. FINKBEINER, Tübingen 1993, pp. 195–217.

¹¹⁹ A.R. KHOSROWZADEH, *Hozure- Partian dar...*, pp. 75–76.

¹²⁰ *Ibidem*, p. 63, fig. 5.

¹²¹ F. HØJLUND, *The dating of the coastal fortress at Qal’at al-Bahrain: Sasanian or Islamic?* “Arabian Archaeology and Epigraphy” 2006, vol. 17, pp. 238, 241, 242–244.

¹²² P. DELRUE, *Trilobite arrowhead at ed-Dur (U.A.E., Emirate of Umm al-Qaiwain)*, “Arabian Archaeology and Epigraphy” 2007, vol. 18, p. 241.

¹²³ K. JAKUBIAK, *A Persian response...*, pp. 155–163.

¹²⁴ K. MAKSYMUK, *The capture of Hatra in light of military and political activities of Artashir I*, “Historia i Świat” 2017, no. 6, p. 89.

a fulcrum in the Parthian *limes* system.¹²⁵ Hatra featured two concentric and near-circular fortification walls¹²⁶ (separated between 300–500 m), along with a multiple fortification system of four gates (north, south, east, and west), 11 bastions, 26–28 large towers, and 120–160 smaller towers with many splayed arrowslits.¹²⁷ The city's defenses may have also included some type of ditch. Hatra's city center had a sacred precinct or rectangular temenos (with an area of 435 x 320 m)¹²⁸ that had *iwan* buildings.¹²⁹ Surrounded by a wall, the temenos was divided by segregating walls into numbers of courts. Hatra's formidable fortifications proved decisive in defeating the sieges of Trajan in 116 CE and Septimius Severus in 198 and 199 CE.

Located 51 km to the northeast of Hatra and 40 km from Ashur, Khirbeth Jaddalah was a strategic fortified palace, with the following characteristics¹³⁰: (a) Its primary wall was built of mud brick foundation and blocks of limestone, similar to those at Hatra, and had curtain walls with rectangular stone towers with smoothed corners and regularly spaced small rectangular buttresses (1,95 x 1,95 m). In addition it had regularly spaced arrowslits built into the walls and towers and a possible ditch.

Nisibis was another strategic city in northern Mesopotamia. The Armenian king Tigranes the Great strengthened Nisibis' military architecture,¹³¹ with its powerful brick defensive walls proving largely resistant against Roman

¹²⁵ S. HAUSER, *Ecological Limits and Political Frontiers: The 'Kingdom of the Arabs' in the Eastern Jazirah in the Arsacid Period*, [in:] *Landscapes. Territories, Frontiers and Horizons in the Ancient Near East. Papers Presented to the XLIV Rencontre Assyriologique Internationale. Venezia 7–11 July 1997, II: Geography and cultural landscapes*, eds. L. MILANO, S. DE MARTINO, G.B. LANFRANCHI, Padova 2000, pp. 192–193; L. GREGORATTI, *Hatra on the west of the east*, [in:] *Hatra. Politics, Culture And Religion Between Parthia And Rome*, ed. L. DIRVEN, Stuttgart 2013, pp. 49–50.

¹²⁶ R. SCHMITT, *op. cit.*, pp. 58–61.

¹²⁷ U. ELLERBROCK, *op. cit.*, p. 147; E. FOIETTA, *The defenses of Hatra: a revaluation through the archive of the Italian expedition*, [in:] *Broadening Horizons 4: Conference of young researchers working in the Ancient Near East, Egypt and Central Asia, University of Torino, October 2011 BAR International Series 2698*, eds. G. AFFANI, C. BACCARIN, L. CORDERA, A. DI MICHELE, K. GAVAGNIN, Oxford 2015, p. 295.

¹²⁸ U. ELLERBROCK, *op. cit.*, p. 147, as per SCHMITT, pp. 58–61.

¹²⁹ R. Schmitt who also cites the temenos at 440 x 320 m. R. SCHMITT, *op. cit.*, pp. 58–61

¹³⁰ E. FOIETTA, *Khirbet Jaddalah and its land. A study of the military landscape in the eastern part of the kingdom of Hatra (2nd–3rd cent. AD)*, "Thiasos" 2021, vol. 10, no. 1, p. 261.

¹³¹ N. PIGULEVSKAYA, *Shahrhaye Iran dar Roozegare Partian va Sassanian*, transl. into Persian by E. REZA, Tehran 1337 [1998], pp. 77, 80–81.

siege engines, as reported by Cassius Dio.¹³² After Artabanus II (r. 12–40 CE) seized control of the city in the early 1st century CE, it was granted to Izates II of Adiabene.¹³³ Nisibis fell under Roman control in 165 CE during Lucius Verus' campaign against the Arsacids. The city was also the site of the last major Roman-Parthian battle, in which Artabanus IV defeated the Roman emperor Macrinus in 217 CE.

Another key city in northern Mesopotamia along the Tigris River was Assur which fell under Parthian influence in c. 113 BCE (with a possibly earlier but temporary Parthian presence in c. 141 BCE). The primary Parthian structures at Assur are the palace with *iwān* structures and temple buildings built around 117 CE, during the time of Trajan's campaigns.¹³⁴ Assur's use of mudbricks is consistent with architectural materials used in Mesopotamia since ancient Assyrian times.

The major strategic cities of Central Mesopotamia were Ctesiphon and Seleucia. When Mithradates I defeated the Seleucid king Demetrius II (r. 146–139 BCE) in 139 BCE, the Parthians moved their capital further west into Mesopotamia, setting up their military camp on the eastern banks of the Tigris River in the 120s BCE, across from the city of Seleucia on the western side of the river. This camp later became the city of Ctesiphon, the primary winter residence of Parthian monarchs from Mithradates I to the fall of the dynasty in the early 3rd century CE. Seleucia remained virtually untouched by Mithradates I, most likely recognising the commercial importance of the city. According to Strabo, Ctesiphon's founding was due to the Arsacid realisation that it was not politically suitable for the Parthians to militarily enter the city of Seleucia itself;¹³⁵ Pliny states that the Parthians founded Ctesiphon in order to draw Seleucia's populace into the Parthian city.¹³⁶ By the time of Gotarzes I (r. 91 to 88–87 or 80 BCE) commercial goods arriving at Ctesiphon were being ferried across the Tigris into Seleucia. By approximately 58–57 BCE Ctesiphon was capital of the Parthian Empire and a major nexus of the silk route trade, connected to both the Persian Gulf commerce and linking the commerce of Iran, Central Asia, and China to the Roman Near East.

¹³² CASSIUS DIO, *Roman History*, XXXVI (36), 6.2–3.

¹³³ JOSEPHUS, *Antiquities*, XX, 3.68.

¹³⁴ K. SCHIPPANN, *Assyria iii. Parthian Assur*, [in:] *Encyclopaedia Iranica*, 1987, vol. 2, fasc. 8, pp. 816–817.

¹³⁵ STRABO, *Geography*, XVI, 1.16.

¹³⁶ PLINY, *Natural History*, VI.122.

Despite its importance, not much is known of the military archaeology of Ctesiphon during the Parthian era; however, it is possible that the city's plans were based on a circular design.¹³⁷ Ctesiphon's original construction may have also been partly influenced by pre-Parthian Mesopotamian military architectural methods.¹³⁸ Ammianus Marcellinus reports that the defensive walls of Ctesiphon were first built by Prince Pacorus¹³⁹ in c. 39 BCE, but this may have occurred at a later date. The overall consensus is that Ctesiphon's formidable fortifications were constructed during Pacorus (Pakrad) II's reign (r. c. 78–110 CE). Most likely Ctesiphon would have had a multiple fortification system like Hatra, featuring powerful walls inbuilt with towers and watchtowers, fortified gates, and possibly ditches and/or moats. Ctesiphon fell to three Roman emperors during the second century: Trajan in 116 CE, Lucius Verus in 165 CE, and Lucius Septimius Severus in 198 CE. Ctesiphon's defensive walls were rebuilt after the Roman withdrawals¹⁴⁰ and the succeeding Sassanians enlarged the city following their full consolidation in 228 CE. The city's military architecture became formidable in Sassanian times, evading capture by the Roman emperor Julian (r. 361–363 CE) in 363 CE.¹⁴¹

Nippur, in Iraq's center-south region, witnessed two phases (c. 70–80 CE and c. 93 CE) in the construction of a Parthian fortress on the ruins of the ancient temple of Enlil. Nippur was part of Valaksh (Vologases) I's (r. 51–78 CE) 'Southern Strategy' to stabilise southern Mesopotamia and protect Parthian maritime trade through Characene.¹⁴² While the site at Nippur was selected for its higher platform, large amounts of additional earth were bought there during construction. Studies of Parthian military architecture at Nippur reveal an effective defense wall (as indicated by the south quadrant constructed during the 2nd phase) integrated with projecting rounded and square towers and various chambers (barracks?) constructed to the rear of the south quadrant wall.¹⁴³ Another Parthian-era structure of note is at Mount BabyI at Babylon, modern central Iraq (approximately 52–53

¹³⁷ U. ELLERBROCK, *op. cit.*, p. 142.

¹³⁸ A. MATUFI, *op. cit.*, p. 149.

¹³⁹ AMMIANUS MARCELLINUS, *The later Roman Empire*, XXIII, 6.23.

¹⁴⁰ J. KRÖGER, *Ctesiphon*, [in:] *Encyclopedia Iranica*, 1993, vol. 6, fasc. 4, pp. 446–448.

¹⁴¹ K. FARROKH, G. KARAMIAN, H. KARAMIAN, *op. cit.*, pp. 141–142.

¹⁴² E.J. KEALL, *Parthian Nippur and Vologases' southern strategy: A hypothesis*, "Journal of the American Oriental Society" 1975, vol. 95, no. 4, pp. 620–632.

¹⁴³ *Ibidem*, p. 627, fig. 6.

miles south of modern Baghdad). Constructed during the later Parthian era, Mount Babyl's military architecture resembles the earlier-built Nippur fortress, with rounded towers projecting from its primary curtain wall.¹⁴⁴

Dura Europos and Palmyra

Syria was of vital strategic importance for the Parthians, as Roman domination of this region allowed their armies to directly deploy eastwards into Parthian-controlled Mesopotamia. Given Syria's potential to serve as a Roman base for invading Mesopotamia and Iran, the city of Dura Europos (located along the Euphrates River in eastern Syria close to the Iraqi border) was a gateway into the Mesopotamian heartland. Conquered by Mithradates II in c. 113 BCE from the Seleucids, Dura Europos became a Parthian foothold in eastern Syria guarding the entrance to Mesopotamia. The city became even more critical for the Parthians after Rome annexed Syria and Palestine with Pompey's arrival in 63–62 BCE.

Originally a Greek city built in c. 300 BCE¹⁴⁵ during the reign of Seleucus I Nicator (r. 305–281 BCE),¹⁴⁶ Dura Europos' military architecture featured formidable walls with powerful towers and three gates in the city's primary wall.¹⁴⁷ By the mid-1st century BCE, the Parthians had built a palace-like structure with three Parthian-style iwans at the city's citadel.¹⁴⁸ Dura Europos changed hands many times: it fell to Emperor Trajan in 116 CE but was soon after handed back to the Parthians by his successor Emperor Hadrian (r. 117–138 CE). The city was again annexed by Rome following Lucius Verus' campaigns in 164 CE. The Romans were finally expelled from Dura Europos in c. 256 CE by the Sassanian successors of the Parthians.¹⁴⁹

Palmyra in Syria combined Iranian and Hellenic architectural elements,¹⁵⁰ even though the city was not a part of the Parthian Empire. Three distinct

¹⁴⁴ K. JAKUBIAK, *A Persian response...*

¹⁴⁵ U. ELLERBROCK, *op. cit.*, p. 143.

¹⁴⁶ M. BEHROOZI, *op. cit.*, pp. 305–281.

¹⁴⁷ K. JAKUBIAK, *A Persian response...*

¹⁴⁸ U. ELLERBROCK, *op. cit.*, p. 144.

¹⁴⁹ *Oracula Sibyllina*, XIII, 89–102.

¹⁵⁰ U. ELLERBROCK, *op. cit.*, p. 156.

Iranian influences in Palmyra were (a) local reliefs with respect to the Parthian system of frontality, as seen for example in the 1st-century CE Parthian-style Palmyran reliefs (e.g., the *Triad of Baal-Shamin*),¹⁵¹ (b) tombstones and funerary-type reliefs such as the *Relief of Maliku*¹⁵² in which the deceased figure (Maliku) is portrayed in Iranian dress while reclining, and (3) Iranian-style cavalry which proved their mettle against the rising Sassanians in the 3rd century CE.

The Question of Defensive Walls

Northeast Iran's Gorgan Wall, near Gorgan in Golestān Province, was believed to have had its origins in the Parthian era following excavations in 1971.¹⁵³ A 2006 scientific paper by Nokandeh et al. published dating information (optically stimulated luminescence and radiocarbon) of brick forges (alongside the wall), samples from the wall, etc. indicating that the wall itself is dated to the later Sassanian era (5th to 6th centuries CE).¹⁵⁴ While the present wall structures are scientifically proven to be Sassanian in origin, the existence of some type of Parthian-era fortifications in these regions cannot be categorically dismissed, as sophisticated military architecture was extant in regions such as Margiana, Parthava, Hyrcania, and Aria. The Parthians understood the strategic dangers of attacks from Central Asia into their empire's northeast marches.¹⁵⁵ The Parthians built a system of forts along the northeast access routes as seen in architectural plans of four Parthian-built fortresses along what later became the Great Wall of Gorgan: Qaleh Daland, Qaleh Yasaqi, Qaleh Kharabeh, and Qaleh Gug.¹⁵⁶ This suggests that the Parthians intended to build fortified protection against nomadic invasions (possibly a Roman-style *limes* system¹⁵⁷). There is no evidence that this type of system had its origins during the Alexandrian conquests and subse-

¹⁵¹ The Louvre Museum, inventory no. AO 19801.

¹⁵² The Louvre Museum, inventory no. AO 2000.

¹⁵³ M.Y. KIANI, *Pāytabkhā-ye Ashkānian*, [in:] *Pāytabkhā-ye Īrān*, ed. M.Y. KIANI, Tehran 1374 [1995], pp. 240–241.

¹⁵⁴ J. NOKANDEH et al, *Linear Barriers of Northern Iran: The Great Wall of Gorgan and the Wall of Tammishe*, "Iran" 2006, vol. 44, pp. 161–168.

¹⁵⁵ O. LECOMTE, *op. cit.*, p. 311.

¹⁵⁶ K. JAKUBIAK, *The origin and...*, pp. 142–143.

¹⁵⁷ O. LECOMTE, *op. cit.*, p. 311.

quent Hellenic era.¹⁵⁸ Consistent with fortresses in Margiana and Parthava, the designs of these four fortresses were primarily rectangular or square.

In 2019 archaeologists identified the remains of an unknown wall in western Iran's Sarpol-e Zahab district. Known as the 'Gawri Wall,' the structure stretched along the modern-day Iran–Iraq border on an approximately north-south axis for about 115 km (comparable in length to Hadrian's Wall). Construction would have required considerable manpower, material resources, and time, given Alibaigi's report of the structure's 'estimated volume of approximately one million cubic meters [35,314,667 cubic feet] of stone.'¹⁵⁹ The wall is generally estimated to have been four meters wide and three meters high. The wall's surviving structures suggest that these may have been an assortment of buildings (or barracks) and turrets. Alibaigi reports that the structure 'would only have been possible from the Parthian period (third century BC) onwards.'¹⁶⁰ Within the context of the reigns of Mithradates I, Phraates II, and Mithradates II, the construction of the Gawri Wall would have been strategic as the Parthians were still battling the Seleucids for control of Mesopotamia during the 2nd century BCE. Such a wall could have acted as a defensive line protecting the Iranian homeland in case the Parthians lost control of Mesopotamia. This thesis may be verified pending results of scientific dating (optically stimulated luminescence and radiocarbon) on the archaeological data of the Gawri Wall.

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¹⁵⁸ K. JAKUBIAK, *The origin and...*, p. 142.

¹⁵⁹ S. ALIBAIGI, *The Gawri Wall: a possible Partho-Sasanian structure in the western foothills of the Zagros Mountains*, "Antiquity" 2019, vol. 93, no. 370, <https://doi.org/10.15184/aqy.2019.97>

¹⁶⁰ *Ibidem*.

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PRZEGLĄD PARTYJSKIEJ ARCHITEKTURY WOJSKOWEJ

Streszczenie. Niniejszy artykuł przedstawia zarys informacji na temat architektury wojskowej Partów na podstawie wstępnych badań dotyczących wymogów wojskowych dynastii Arsacydów w zakresie obrony ich imperium. Po dokonaniu przeglądu środkowoazjatyckich systemów obronnych na planie koła, partyjskich innowacji architektonicznych, wpływów Seleucydów i Hellenów oraz trójdzielnego systemu fortyfikacji (miasto-cytadela-podgrodzie), autor analizuje architekturę wojskową Partów na północno-wschodnich i środkowoazjatyckich terytoriach imperium (Margiana, Hyrkania, Aria, Baktria), w Iranie i Zatoce Perskiej, Mezopotamii oraz Syrii. Artykuł kończy się dyskusją na temat możliwych typów systemów murów obronnych wykorzystywanych w epoce Partów.

Słowa kluczowe: Arsacydowie, architektura, Azja Środkowa, Iran, Mezopotamia