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THE DEFENCES OF HATRA: A REVALUATION THROUGH THE ARCHIVE OF THE ITALIAN EXPEDITION

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Abstract
This study deals with the defences of Hatra, an important city of the Iraqi Jazirah in the IIInd and IIIrd centuries AD. The data in this paper are both published and unpublished, and originate with the Italian expedition at Hatra. The main features of the fortifications are described with a special attention on the analysis of the unearthed gates (North, East and part of the West). At the end of the descriptive section a new chronological hypothesis is proposed.

KEYWORDS: Hatra, Fortifications, Military Architecture, Chronology, GIS.

The impressive fortifications of Hatra consist of a line of multiple defences: watchtowers; a ditch; an antemural; a main wall with towers; massive structures (towers and massive walls) added to the main curtain; an inner wall. The four main gates corresponded to the cardinal directions from which principal avenues lead to the core city temenos (Figure 1.1).

1. ARCHAEOLOGICAL INVESTIGATIONS AND STUDIES ON THE FORTIFICATIONS

W. Andrae was the first archaeologist to study the defence topic in detail, at the beginning of the twentieth century. The German Assur expedition conducted a site survey published in two fundamental volumes (1908, 1912) providing a general map of the site, which is still used by the academic community. A long chapter was dedicated to the fortifications with the definition of all the main parts.1

During the 1950s Iraqi archaeologists conducted preliminary soundings in the northern gate area. W. Al-Salihi investigated it entirely in 1971. This excavation involved the gate, which includes the principal and secondary entrance, and a large part of the nearby main and inner wall (180 x 30m). The work was published but unfortunately only in Arabic, in a long article in 1980. In 1979 M. Subhi Abdallah directed the investigation of the eastern main gate, reported partially by J. Ibrahim in 1986 in English and in Arabic in 1996. After the gate, excavations focused on the external eastern part of the main curtain for an extensive area extending from the north-eastern corner to the south-eastern one. There is still no accurate publication of these works, which predated heavy restoration in the area of the eastern gate.2

In 1990 a Polish expedition directed by M. Gawlikowski investigated and mapped the south-eastern corner of the defences, producing a detailed analysis of this sector, which was published over several articles (Gawlikowski 1990, 1994, 2009). Moreover, a smaller defensive quadrangular curtain was brought to light following soundings in the urban area (Figure 1.2).

2. A NEW METHODOLOGICAL APPROACH TO THE FORTIFICATIONS

These different archaeological investigations of the defences have produced a large but variable amount of information; this has been gathered within a database containing both published (textual and graphic) and unpublished information collected by the Italian expedition, directed since 1987 by R. Ricciardi Venco. The large Italian expedition corpus is important from a qualitative and quantitative point of view (2500 images, notebooks and commented plans) in order to check the published data. The relational database type chosen is linked to a GIS of the defences, which was produced from the topographic data (1987-1989) created by the Italian expedition (Figure 1). The integrated system allows a general revaluation of the defences, which will be briefly discussed in this paper.

The main pseudo-circular defensive wall has colossal dimensions, being approx 2km in diameter and 6km in circumference. Its irregular layout is probably due to the ground morphology.3 The main wall has been subdivided into 156 parts according to individual elements (e.g., towers, massive structures, etc.). The investigated areas are limited to the eastern and northern gates and to the eastern front of the curtain, representing only 29% of the total. In these zones the wall is in mud-brick with a stone socle of 2/3 courses with a constant width of 3/3.5m (Figure 2). The best preserved and excavated parts are preserved up to 2 or 3m high and display traces of plaster on the surface. It has been estimated that the original height of the curtain was approx 8/9m, judging by an analysis of eight stairways.4 The top walkway, which perhaps had a crenellated parapet, was probably 2.5m wide. The top of the towers, located at

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1 I would like to thank R. Ricciardi Venco for the assistance in the preparation of this paper.
2 Andrae 1912, 24-59.
3 The unpublished restorations probably made in 1989 are clearly detectable in the Italian photographic documentation.
4 For this topic see: Ibrahim 1986, 117.
regular intervals of approx 30m, was presumably an enlargement of the walkway. W. Andrae supposed that further enlargements were provided in the north-western curtain part, where several bases for pilasters following the inner side curtain were found.5

An attempt to explain the use of the walkway can be made for the northern gate area, where four stairways are set against the main curtain. They are placed at a distance of approx 30m, allowing a rapid transit without the need for building stairways within the towers.

The preserved square towers (T) are approx 120 in number.6 The 28 surveyed ones, placed in the eastern and northern parts of the curtain, correspond to 23% of the total. The structures were probably all hollow, with an internal chamber investigated in 10 cases.7 The towers were built at the same time as the curtain and using the same techniques. The majority of the outer faces of the towers are 5-7m wide; the exceptions reach up to 7-10m across. Splayed arrow-slits are visible in a limited number of cases and these are placed at a height of 50-100cm from the outside level (Figure 2b), permitting only a low shot to the archer. It seems, according to the few data available, that there is no regular scheme behind their arrangement.8

The poor condition of the towers prevents an assessment of their original height. It could be assumed that it was approx 8/9m and the top would correspond to the battlements, as was supposed graphically and textually by W. Andrae and M. Gawlikowski.9 Therefore, it is likely that every tower had two, or perhaps three, floors. The entrances at the ground floor were constructed with door jambs and arches in stone.10 In some investigated cases, rooms (measuring 3 x 4m across) filled with the collapsed rubble of the upper floors and fragments of storage jars (T38) were found.11

The massive towers (TM) are 26 rectangular structures measuring approx 6.5 x 8.5m across. They are built with a core of rubble and mortar faced with regular stone blocks (35/40 x 35/40 x 50cm).12 On the ashlars are engraved marks, which could have the function of masons’ marks, assembly signs or apotropaic value symbols.13 These massive towers are particularly well preserved and stand more than 7-8m high (ex. TMXIX, nearly the northern gate). W. Andrae reckons they had an original height of 15m judging by the amount of debris.14 M. Gawlikowski assumes a top higher than 8.6m, which he suggests to be the value for the walkway curtain, due to the discovery of a mortared floor in correspondence of TMXXXIX chamber.15 A total height of 10/11m, including the massive tower core and the top room, appears plausible. A hypothetical artillery chamber in mud-brick must have existed for defending soldiers and artillery machines against projectiles, humidity and rain.16 Massive towers were added after the main curtain construction, in some cases incorporating the remains of ancient towers.17

The massive walls (MW) are 16 and they show the same construction technique as the massive towers (i.e., dimension and setting of blocks). The length of the massive walls is around 18/19m, although 4 structures, defined by W. Andrae as ‘conduits’, are longer (approx 40m).18 The thickness of the constructions is approx 4m.19 A particular case concerns the southeast corner where a structure shows a triangular shape protruding 3.50m from the line of the main wall.20

The tower-tombs (TT) incorporated in the main wall are 8 in number (Figure 2b). They are typologically similar to those located in the city’s necropolis.21 The structures contain multiple rooms and floors and are constructed from ashlars with marks. The main curtain is set against these structures, which protrude from the wall. This proves that the main wall was constructed later than the tower-tombs. None of these constructions contain dated inscriptions on blocks found in situ; hence, it is impossible to determine their absolute chronology.22 According to their preservation...

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5 Andrae 1912, 45, figs 43-44.
6 The result is reached using the Italian expedition topography and Andrae’s plan, which was also utilised for towers and massive structures enumerating (Arabic and Roman numbers). Six towers, which belong to three main east, north and south gates, are not included.
7 T3, T9, T38bis, perhaps T67 and T106, T111, T115, T122, T123, T124.
8 Contra Gawlikowski 1994, 152.
9 Andrae 1912, 31, fig. 26; Gawlikowski 1994, 148, fig. 2, 152.
10 Doors with arches were discovered in: T115 (Gawlikowski 1994, 151 fig. 6), T34, T37. Some cases show round arches (e.g. T38bis), others pointed arches (e.g. T34).
11 Al-Salhi 1980, 163.
12 The most of TM and MW are localised in the northern and eastern parts of the city, probably because they were built on the principal enemy attack itinerary. Some towers are bigger that the described ones (9 x 9 m): TMI, TMXVII, TMXIX, TMXXXIX, TMXLII, TMXLIII.
13 The mason’s marks hypothesis seems the most plausible, agreeing in principle to M. Gawlikowski’s affirmations (Gawlikowski 1994, 158). However, it is impossible to exclude that these signs could have also some apotropaic values following the proposal of W. Ainsworth (1892: 256-259). The supposition of assembly marks must be probably rejected due to the fact that it is impossible to recognize any sign of regularity of occurrence in the unrestored buildings. See also: Bashir 2002.
14 This assumption was proposed for TMI: Andrae 1912, 36.
15 ‘On top of the battery, an even, mortared surface bears two sets of hollow for tric-trac, being a proof that this was the floor of the artillery chamber, necessarily level with the chemin de ronde. A stump of a wall of this room still subsists at a corner’ (Gawlikowski 1994, 180). This massive tower could also have been restored after the 1980s investigations.
16 The strings used for the artillery-machines (ballista type) are generally in animal sinews or horsehairs. These materials are very sensible to humidity. For the Hatra’s ballista discovered near TMXIX see: Baatz 1977. Many stone projectiles with different weights and dimensions have been found nearby the main wall and in the city (Al-Salhi 1980, 166, fig. 15). Unfortunately a metrological research on the stone balls has not yet been completed.
17 TMIII, TMX, TMXV, TMXIX, TMXX, TMXXIV, TMXXIX, TMXXXII, TMXL, TMXLII.
18 Conduct east (MWIII); conduct south; conduct south-east; conduct north. Also MWXXXVIII must be included in this group.
19 Andrae 1912, 27; Gawlikowski 1994, 155.
20 For a plan and a good picture of this corner see: Gawlikowski 1994, 148, fig. 1, and 150, fig. 10.
21 TTII, TTVII, TTIX, XXII (?), TTXVII, TTXXXVII, TTXXI, TT120 (?). The uncertainty is due to the unsure attribution of these constructions. For Hatra’s funerary buildings see: Dorna Metzger 2000.
22 An inscribed block, which was probably related to the structure, was found near TTII [416]. The interpretation, particularly of the date, is extremely disputed (cf. Bertolino 1995, 56-57). In any case, as regards this paper the moment the tombs changed their function is more critical than...
tion and the amount of debris, it was hypothesized that they
could have interrupted the walkway by reaching a height
of approx 15m.23 This assumption is probably correct, al-
though it seems difficult to reconstruct a constant height.24
An interesting aspect deals with the adaptation of some
windows of these buildings to the new defensive function,
for example TTXXVII.25 A similar change of function can
also be ascribed to two tower-tombs (buildings N and O),
which are located in front of the northern and eastern gates
and were reused as watchtowers.

Some tower-tombs placed on the eastern side of the city
were investigated during the 1980s by Iraqi expeditions
and some sarcophagi and related funerary objects were
found.26 This proves that even if their primary function
changed, the structures retained their original purpose until
the city’s destruction.

It was suggested by W. Al-Salihi that the custom of in-
cluding mausolea in the curtain wall was a Greek tradition
(Philo of Byzantium).27 This hypothesis is uncertain
because there is no reference to the precise location of this
kind of mausoleum-tower in the relevant passage.28 Fur-
thermore, no Hellenistic city in either the east or the west,
show the insertion of monumental tombs. The only possi-
ble comparison, which is of later date in any case, is Pal-
myra, where some tower-tombs were incorporated into the
Diocletianic fortifications.29 A plausible hypothesis, which
is relevant in both cases, is that the tower-tombs were only
incorporated for practical reasons, probably to prevent any
enemies from using them to gain strategic elevation.

Evidence for a ditch (D), detectable either by the ground
morphology in the unexplored areas or antemural (A) is
extremely restricted. The evidence for the ditch is mainly
from the area of the northern gate and eastern front. The
distance between the main wall and the ditch seems almost
constant (approx 10m), allowing for good troop transit.
The moat is lined with two walls, a retaining one on the side
of the city, which is preserved up to 4m high in the
northern gate zone, and an outer wall which is unfortu-
nately badly preserved. The width of the ditch investigated
in the northern gate area was approximately 8m.30 This
information is confirmed by the German general city survey
(Andrae’s plan). In the south-eastern corner, an enlarge-
ment was probably built because the moat here reaches
35m in width.31

The retaining inside wall was only detected by the north-
ern gate and was composed of heterogeneous materials
(marmar, an alabaster/gypsum stone, and limestone) and
sources (ashlars and re-used column drums).32 The ditch
follows the profile of the massive towers in certain parts,
which is clear evidence that it was constructed afterwards,
either totally or in part.

Antemural information mainly comes from the southeastern
corner. The structure here follows the same line of the
ditch counter city wall and is built with a core of rubble
and mortar, faced with ashlars courses with marks. Almost
the total length of the external facing fell into the moat,
thus revealing the core of the structure. M. Gawlikowski
supposed that the antemural was approx 2.5m high using
the blocks found in the area.33 It is unknown if a complete
antemural originally surrounded the city. However, it can
be affirmed that some parts were lacking in certain peri-
ods (external northern gate zone).34 In the area of T115 the
antemural shows a small exedra (width 3.80m) which pro-
trudes 4.20m over the moat.35

There are also a few other modest structures built of rubble
and mortar which follow the outline of the older towers.36
These walls might have been constructed in order to sup-
port forays by the defenders.

The inner wall appears in the unexcavated parts like a
slight embankment which follows at a distance of 10m the
main wall (Figure 2a). In the investigated areas (eastern
and northern gates and soundings in the south-eastern cor-
nor), it shows a construction technique similar to that of the
main curtain. Scholars think that this wall should have had
a defensive function, shown partially by M. Gawlikowski
with an evaluation of its original height based on a stair-
way ramp.37 However, it must be noted that in the unin-
vestigated parts the inner wall embankment seems lower
than the main wall. Moreover, in several excavated parts
the inner wall is preserved only to the socle or to the first
or second course of mud-bricks.38

The quadrangular defensive curtain was partially ex-
plored with soundings by the Polish expedition in 1990
(Figure 1.2).39 The towered wall, built in the same man-
ner as the main curtain, was subsequently dismantled and
incorporated into the urban layout. M. Gawlikowski states
that this defensive wall should belong to the Trajanic pe-

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148, fig. 1.
23 See: Al-Salihi 1980, 167, fig. 18.
24 Gawlikowski 1994, 152, 179.
25 For a plan of the northern gate area see: Al-Salihi 1980, 185.
26 See the south-eastern corner plan of the Polish expedition: Gawlikowski-Ki 1994, 148, fig. 1. In addition to the exedra in correspondence of T67-
T68, the antemural shows a little rectangular tower detected by W. Andrae
and visible by the members of the Italian expedition during the 1990s.
27 Seven walls of this kind are placed near the towers: T3; T5; T7; T10A;
T13; T17A; T120.
28 Gawlikowski 1994, 153. It is the same method described for the height
reconstruction of the main curtain.
29 See for example Gawlikowski 1994, 151, fig. 6.
30 Gawlikowski 1990, 120-121; Gawlikowski 1994, 162-178; Gaw-
likowski 2009, 17.
riod as it corresponds better to a passage in Dio Cassius where the city is defined as ‘neither big or prosperous’ during the siege by Trajan. 40

The four main gates (Figure 3) are placed almost in correspondence to the cardinal points of the main wall system. Only the northern and the eastern ones were archaeologically investigated and are partially published. These main entrances are extremely important because they have inscriptions which allow the dating of the entire curtain wall. In the early 1990s, an Iraqi expedition started to investigate the inner part of the western gate but no report was published. 41

The eastern, northern and southern gates are composed of two rectangular towers, which project more than those of the curtain, and flank an entry (main doorway). The towers, which are built in mud-brick on a stone socle, delineate an open space (main court). The western gate shows particular features which will be discussed in detail. In all the gates there is an added bent structure on the exterior, constructed in mud-brick on a stone socle, which gives a barbican appearance to the whole. This part ended with another entry (external doorway). In this way, there are two courts in each gate complex, the first one delineated by the bent wall, and the second major one enclosed by the towers.

To rejoin the external doorway the incomers had to cross a bridge, defended by some small rooms, and accomplish a turn of 90°, resulting in a significant defensive advantage (Figure 3).

The eastern gate has two niches added to the bent wall just inside the external doorway. 42 In the northern niche a statue of Heracles, similar to one discovered in the northern gate, was found. 43 A statue, probably representing a priest, was recovered in front. 44 On the south wall of the main courtyard a shrine/niche built with quadrangular stone blocks bonded with mortar and covered by a semi-dome was discovered. In this niche was found a relief with the representation of an eagle relief and a dated inscription [336] (AD 150/151) similar to that in the eastern gate. 45 The Iraqi archaeologists supposed that two altars 46 and a little statue of Heracles-Gnd’, 47 which were found in the main court, were placed in the same niche. 48 In the southern niche could have been located a statue discovered nearby, possibly representing Sanatruq II. 49 Behind the middle pilaster, which divides the two niches, was found a little alcove built at the same time of the towers. Many religious epigraphs are engraved over the blocks and plaster of the gate walls, but unfortunately none are precisely dated. 50 The Iraqi archaeologists found in the rubble of the main doorway an inscription [335] on a stone block in which Narsu is mentioned, but without titles. 51 Inside the main doorway, which is 2m wide, large passing holes for the bolt were present on the lateral walls (Figure 3).

The northern gate is more complex than the others and has a secondary major gate on the same axis as the main one. A doorway is placed between two ‘square’ towers edified on the base of the conservation entirely in stone with engraved mason’s marks. The secondary main gate shows traces of two damaged stone walls on the eastern and western sides which belong to the same phase as the gate (Figures 3-4). The inner wall is set here against the two towers, proving

47 Venco Ricciardi 2000, 93, n. 31.
48 The niches are large 2.90m and they protrude 0.90m from the bent wall. See the Iraqi plan: Ibrahim 1986, pl. 92.
49 There is very few information about this statue, see: Ibrahim 1996, 27, fig. 4.
50 Ibrahim 1996, 34; Al-Salih 1991b, 35.
51 For an excavation picture see: Ibrahim 1986, pl. 92. For the inscription, see Kaizer 2006, 144-145.

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41 For the only difference between the two gates is the bent wall orientation. See Figure 3.
42 For the discovery, dimensions, and style analysis of the sculpture: Al-Salih 1973a.
44 For the inscription see: Aggoula 1991, 155; Kaizer 2006, 142-143.
46 For the small statue in gypsum-alabaster stone (32,5 x 12,5 x 10cm) see: Al-Salih 1973b; Al-Salih 1982.
47 This supposition has been proposed in pictures taken by the Iraqi archaeologists: Al-Salih 1980, 160, fig. 3-4.
48 It was supposed by W. Al-Salih that this statue was located at the top of the secondary northern gate. From the information gained by the statue’s catalogue at the end of the same article (1980) and by an excavation photograph, it seems that the sculpture was found in proximity of the southern niche (Al-Salih 1980, 179, fig. 9a).
49 For the northern gate plan with the location of the inscriptions see: Bertolino 1995, tav. XV.

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that it is later.

Each tower has 4 arrow-slits of different forms (trapezium isosceles and trapezium rectangle in plan) which allow different archers’ shots. In the secondary gate area two blocks and a lintel with inscriptions were found. They named probably Sanatruq II, last King of the city, as the builder or restorer of the gate.\(^{58}\)

The **western gate** was already considered different from the others by W. Andrae because its rooms/towers were placed inside the main wall in his general and detailed plans\(^{59}\) (Figure 3), whereas the other main gates have protruding towers beside the doorway.\(^{60}\) For this reason W. Andrae supposed that the western bastion, which is a huge main wall protrusion placed north of the gate, would be a defensive substitute for the protruding towers (Figure 1). The German expedition did not archaeologically investigate the main wall, and our understanding of the structure and its relationships remain very hypothetical.

An Iraqi expedition started to investigate part of the western gate at the beginning of the 1990s. The excavation, as it can be understood by the Italian documentation, was limited to the main court and to the interior of the northern tower. The walls of the gate were all in ashlar stone blocks in the preserved parts, unlike the others main entrances but similar to the northern secondary gate. The two towers/rooms show the occurrence of arrow-slits, revealing a defensive function. There are four arrow-slits in the northern investigated tower, two of which pointed directly to the main court. The inner face to the city of a stone wall with buttresses is visible to the north of the gate from the Italian photographic records and it seems damaged at the north end.

If Andrae’s hypothesis of the relationship between the western gate towers and main wall is correct, it would be possible for this gate to have belonged to an earlier phase than the main curtain, which would be set against the southern tower of the gate.\(^{61}\) In other words, the main curtain dating would furnish an **ante quem** limit to the construction of the gate. The western entrance maintained its function in all periods.

3. A NEW CHRONOLOGICAL HYPOTHESIS FOR THE DEFENCES (FIGURE 5)

The quadrangular curtain wall, even if it is not precisely dated, is surely earlier than the main curtain owing to the fact that it does not maintain its function and was used as a source of building material for successive houses. This defensive wall was probably constructed, in agreement with M. Gawlikowski,\(^{62}\) before the siege by Trajan (ante AD 117), as the city’s description written by Dio Cassius might suggest.

The western stone gate is different in technique to the eastern and northern main gates which are built in mud-brick on a stone socle. This is unusual because they are all generally considered as belonging to a “unitary” main curtain project, which include the principal gates and dated with a fair degree of certainty to the reign of Nasru (AD 128/129-138/9).\(^{63}\) If the relative chronology proposed for the western gate was correct, this entrance would have been built before the main curtain and reused in the main rampart.

The technical comparisons between the western gate and the secondary northern gate (stone masonry and arrow-slits), and their setting with respect to the main wall, might suggest the contemporaneity of these two structures. However, it is impossible, according to the few data available, to ascertain the period of time elapsed between the main gate and the secondary northern gate. It would be suggestive to read the little evidence of the destroyed walls of the secondary northern gate and the two stone gates (western gate and northern secondary gate) as a unitary project interrupted for some unknown reasons. However, only new field surveys and soundings, especially in the western gate area, could clarify this question.\(^{64}\)

The construction of the vast main curtain in mud-brick on a stone socle using a local technique was followed by a long period of peace. During that time, the house placed to

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\(^{58}\) The inscriptions engraved on the blocks are: [333], [334]. The one engraved on the door lintel is: [341]. None were discovered in the masonry by the archaeologists. M. Gawlikowski and W. Al-Salih affirm that the secondary gate was constructed during Sanatruq II’s reign at the same time as the engraving of the inscriptions. J. Ibrahim disagrees as the text mentions a Sanatruq with the title of “pious”, which might not correspond to the last King of Hatra. Moreover, he states that the lintel inscription was not found in situ, so it would be impossible to reach an easy conclusion (Ibrahim 1986, 121). The author supposes, furthermore, that the inner wall and the secondary gate could be in chronology anterior to the main gate and the main curtain, due to their lower conservation (Ibrahim 1986, 122).

\(^{59}\) The main wall is mentioned as ‘hauptwall’ in Andrae’s texts and plans.

\(^{60}\) See Andrae’s general plan and the description of the western gate: Andrae 1912, 32-33.

\(^{61}\) If the arrow-slits discovered in the northern tower existed in the same position in the southern one, the western slits would have been blocked by the main curtain and the southern slits would not have any function.

\(^{62}\) Gawlikowski 1994, 162-178. The tower-tombs location could be another indication of this. In fact these structures are placed outside the hypothetical limits of the ancient curtain (Gawlikowski 1994, 163).

\(^{63}\) The inscriptions on the eagle niches provide a *terminus ante quem* for the construction of the gates and, perhaps, the main curtain wall. For this reason they are dated before AD 151, although it is impossible to provide an absolute date for the niche which was added to the tower. The main curtain wall is usually dated to Nasru’s reign as the inscription [1027 = Ibr. IX] was found on the eastern gate lintel; for another similar one [335] discovered in the northern gate and for a statue found under the voussoirs of the fallen arch of the northern gate main entrance similar to the Nasru’s one discovered in temple V. The chronology used for the city Lords and Kings in this paper follows that proposed recently by M. Sommer (2004).

The chronology of Nasru’s reign is heavily disputed. M. Gawlikowski states that the main wall was built between AD 138 and AD 152 because in [1027 = Ibr. IX] an ‘inner stone wall’ is mentioned which is interpreted by him that the temenos enclosure was completed in or before AD 138 (Gawlikowski 1994, 158, 182). It is also possible that the ‘inner stone wall’ was not the temenos wall but was instead the hypothetical stone project preserved only at the two stone gates.

\(^{64}\) The building technique of the curtains in mud-brick on a stone socle (quadrangular wall, main wall, inner wall) cannot be used as a chronological clue, because this is the most usual method of construction in Hatra. The decreasing size of the curtains bricks, however, could furnish some support to the chronology: quadrangular wall (40 x 40 x 11cm), main wall (38 x 38 x 11cm), inner wall (33/34 x 33/34 x 10cm).
the south of the eastern gate was probably constructed as it blocked any rapid transit along the wall street.

In AD 197-199 the city was besieged twice by Septimius Severus. Prior to this event the defences were reinforced and the bent structures of the gates were perhaps added at this period. During the reign of Sanatruq II, the last King of Hatra, massive towers and walls were constructed with the purpose of repairing and reinforcing the defences. After this project the inner wall, which is stratigraphically later than the main wall and the house close to the eastern gate, was built as a final barrier against the Sasanians. The inner wall preservation is worse than the main wall, perhaps indicating that it was never completed. Some parts were totally constructed (e.g. northern gate zone), others only started (e.g. only socle occurrence) and others left completely free.

If the assumption proposed for the western and the secondary northern gates is correct, Sanatruq II would have engraved the inscriptions with his name in the secondary northern gate in order to reclaim credit for a point of access probably built by an older city Lord.

Despite the strengthening of the defences and a new alliance with the Romans, the city of Hatra fell into Sasanian hands in AD 241 after a long siege.

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66 Outside the main wall of the city there is a circumvallation wall which was reasonably interpreted by W. Andrae, M. Gawlikowski, S. Hauser and D. Tucker as a siege work built by the Sasanians. For the siege structures and a ‘possible’ siege camp detected using satellite images see: Hauser and Tucker 2009.
Fig. 1 Hatra’s general plan and detail of the eastern part (GIS)

Fig. 2 a) Eastern main curtain sector. In foreground T121. In background TT120, T119 and TMXLIII. It is visible also the inner wall (right picture part); b) north-eastern corner of the main curtain. In foreground T18 and in background TTIX
Fig. 3 Main gates plans: for the eastern and northern gates -GIS and Andrae's detail plans- (Andrae 1912, 30 fig. 25; Andrae 1912, 34 fig. 32); for the western and southern gates -Andrae’s detail plans- (Andrae 1912, 32 fig. 27; Andrae 1912, 34 fig. 31)
Fig. 4 Northern gate from west. It is possible to identify the destroyed stone wall of the secondary gate (right picture part)

### Chronological hypothesis

<table>
<thead>
<tr>
<th>Quadrangular defensive curtain</th>
<th>Before Trajan's siege AD 117</th>
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<tbody>
<tr>
<td>Western main gate</td>
<td>Before the main curtain</td>
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<td>Nasru's reign AD 128/129-138/139</td>
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<td>Main curtain + Eastern, Northern, Southern gates</td>
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<td>Gate bent structures</td>
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<td>Gate bent structures</td>
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<td>Inner wall</td>
<td>Before the Sasanian's siege AD 241</td>
<td>Inner wall project</td>
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**Stone structures**

Fig. 5 Scheme of the chronological hypothesis