Maura Sala

THE EB II-III (3000-2300 BC) FORTIFICATION SYSTEMS AT KHIRBET AL-BATRAWY (NORTH-CENTRAL JORDAN)

1. THE RISE OF THE CITY: THE ERECTION OF FORTIFICATIONS IN EARLY BRONZE II

Rome "Sapienza" Expedition at the Early Bronze Age (henceforth EBA) site of Khirbet al-Batrawy, in the north-western periphery of the city of Zarqa (*Fig.* 1)¹, revealed an EB II-III (3000-2300 BC) major city, characterized since its rise by a mighty fortification system, accomplishing the role of the town as a stronghold



dominating the Upper Wadi az-Zarqa Valley, at the gate of the Syro-Arabian Desert. The erection of fortifications took place in EB II (around 3000 BC), establishing the urban status of the centre². This work was a significant enterprise for the community, in which external groups should be involved, along with specialized workers and animals: the food supplies for workers, as well as the catching of raw materials (straw, clay, wood, stones), the organization of the work and some structural details (such as the partition in between the various stretches of the city-wall), point to the existence of an established inner social hierarchy, and of a central ruling institution, which planned and accomplished the construction of the fortifications.

The defensive system consisted primarily of a massive stone wall, built all around the edge of the rocky hill, and strengthened at the corners and in other strategic spots by towers and protruding bastions³, which was progressively

enlarged through the centuries by means of additions of outer walls, outworks and related structures, until the final destruction of the city at the end of EB IIIB. Namely, the northern side of the site (Area B North) was strongly fortified, because of the presence of a shallow saddle making it the easiest access to the city, and revealed an articulated defensive system composed of a total of three juxtaposed fortification lines. A terraced series of city-walls was progressively erected on the northern slope of the hill, gradually strengthening the defense of the site in its main gate area.

2. THE EB II (3000-2700 BC) MAIN CITY-WALL AND CITY-GATE

The main fortification structure, erected in EB II, was a 2.9-3.2 m wide stone wall, built directly over the bedrock and traced all around the perimeter of the hill, from which bastions and towers protruded at irregular intervals, depending on both the morphology of the edge of the *khirbet* and on structural and defensive purposes. It consisted of a stone basement made of huge limestone boulders in the lower courses (some exceeding 1.5 m in length), with a battering outer foot, big blocks on the outer faces, and a central core made of medium size unworked stones, tied up with mortar and limestone chops⁴. The stone foundation reached the height of 2 m; over it a 4.5 m high mudbrick superstructure stood, made of light greyish mudbricks, making the whole defensive work 6.5 m high.

The city-wall was built in separated stretches of 6-8 m of length⁵, according to a building technique common to other EB II-III defensive systems in Southern Levant, as at Tell el-Mutesellim⁶, Tell Ta'annek⁷, Khirbet Kerak⁸, et-Tell⁹, Tell es-Sultan¹⁰, Bab

¹ Lat. 32°05′ N, Long. 36°04′ E. Systematic excavation and restoration works are conducted at Khirbet al-Batrawy by Rome "Sapienza" Expedition to Palestine & Jordan, under the aegis of the Department of Antiquities of Jordan. A special thanks is addressed to all the personnel of the Department of Antiquities for its invaluable support and effective cooperation.

² The EB II-III city of Batrawy represents a rare example of an early urban centre arisen in a fringe area of the ancient Near East in the 3rd millennium BC, capable of controlling a vast territory which integrated sedentary agricultural production, herding, trade and control of commercial routes: NIGRO 2009a; ID. 2010; ID. 2011; ID. 2006b; ID. 2008; ID. 2012.

³ NIGRO 2009a, pp. 662-663; ID. 2006b, pp. 25-36. Due to the triangular shape of the hill, the most sensitive defense points were the corners, where huge tower-fortresses were erected: in the northwestern corner (Area C), a rectangular tower (Tower C1) made of big limestone boulders was built directly on a rock terrace (NIGRO 2006b, pp. 26-27, figs. 1.29-33); in the south-western corner, a huge tower (Tower D1) controlled the Zarqa Valley, offering a panoramic overview (NIGRO 2006b, pp. 32-33,

figs. 1.39-42); finally, a third massive tower defended the eastern corner of the city, dominating the landscape and the tracks from/to the east (NIGRO 2006b, p. 31).

⁴ Nigro 2006b, pp. 175-178, 194-196; Id. 2007, p. 352; Id. 2009a, pp. 663-665; Id. 2011, pp. 64-66; 2008, pp. 77-80, 251-255; Id. 2012, pp. 32-37; Nigro - Sala 2009, pp. 375-377.

⁵ Nigro 2006b, pp. 176-177.

⁶ LOUD 1948, p. 66, figs. 152-154, 391.

⁷ LAPP 1969, p. 9, fig. 2.

⁸ MAISLER et al. 1952, pp. 170-172, pl. 9.

⁹ Callaway 1980, pp. 113-114, figs. 75, 85.

¹⁰ Kenyon 1957, pp. 174-175, pl. 36; Ead. 1981, pp. 100, 213, 262, 374, pls. 83a, 201; Nigro 2006a, pp. 370-371.

edh-Dhra'¹¹, and Numeira¹², in order to prevent dangerous effects of earthquakes; but it is also possible that each stretch corresponded to the wall portion attributed to a team of workers during the construction¹³.

In season 2012, a monumental rectangular structure was uncovered built

against the outer face of the Main City-Wall. The latter was a massive tower (Tower T.830), made up of 1.65 m wide walls, built with huge limestone boulders, especially in the lower stone courses (*Fig.* 5). Tower T.830 was erected on the uppermost terrace of the fortifications, and perpendicularly abutted 5.5 m from the Main City-Wall in north-east direction. The compari-



son with the EB II fortifications of Tell Ta'annek is particularly striking, where the earliest city-wall, resting on the bedrock, was similarly fronted by a huge rectangular tower¹⁴.

The main city-gate in the EB II city-wall was opened on the northern side, in



the easiest spot to access to the hill (*Fig.* 2)¹⁵: it was a simple passage (L.160), 1.6 m wide, flanked by reinforced door-jambs and outer protruding buttresses, with a monolithic capstone and a step marking the entrance, as it was presumably used only by pedestrians and donkeys (onagers) of caravans, entering the city through the gritty chalk street (L.144) which

flanked the wall. In fact, some meters east of the gate, in the lower stone courses of the city-wall, there was a pierced block interpreted as a lock to bind animals¹⁶. The simple layout of the city-gate finds several comparisons in contemporary EB

II defensive architecture of the region, such as at Khirbet Kerak¹⁷, et-Tell¹⁸, Arad¹⁹, Khirbet ez-Zeragon²⁰, and, later on, also at Bab edh-Dhra²¹.

The gate and the whole city were severely damaged by a strong earthquake²² at the end of EB II²³: two earthquake cracks on jambs possibly caused the collapse of the gate capstone; the gate was thus blocked and a new one should be opened westwards at the beginning of EB IIIA. Such a dramatic event provoked also the collapse of the city-wall mudbrick superstructure²⁴, and seriously damaged the 2 m high stone foundations, which still exhibit cracks and inner collapses.

3. THE EB IIIA (2700-2500 BC) DOUBLE FORTIFICATION LINE

The earthquake which interrupted the life of Batrawy at the end of EB II was followed by an overall reconstruction of the defenses, which marked the passage to the EB III.

The EB II gate was blocked (W.157)²⁵; the Main City-Wall was refurbished in elevation partially using medium size stones instead of mudbricks for an elevation of 1 m, while the upper section of the structure was built with reddish mudbricks

¹¹ RAST - SCHAUB 2003, pp. 280-283.

¹² RAST - SCHAUB 1980, p. 42, fig. 15.

¹³ WRIGHT 1985, p. 177; NIGRO 2006a, pp. 371-372.

¹⁴ LAPP 1967, pp. 3-7.

¹⁵ Nigro 2007, p. 352; Id. 2008, pp. 83-88; Id. 2009a, p. 664. Roughly 45 m west of the eastern corner, on the southern side of the site, a ravine in the edge of the hill indicated the location of a second gate (a postern: Nigro 2006b, p. 32, figs. 1.37-38).

¹⁶ Faunal remains from Batrawy show a notable presence of donkeys, explainable as transport animals of caravans reaching the city from the Syro-Arabian Desert towards the Jordan Valley (ALHAIQUE 2008).

¹⁷ The south-east gate in Wall A, possibly blocked at the beginning of EB III (GREENBERG - PAZ 2005, pp. 84, 86-89, fig. 8, 10-14; GREENBERG *et al.* 2006, pp. 239-245, plans 6.2, 6.4-5).

¹⁸ The Citadel Gate at Site A (Callaway 1980, pp. 63-65, figs. 38, 41); the Postern Gate (Callaway 1980, pp. 72-73, figs. 48-49, 51), and the Lower City Gate (Callaway 1980, pp. 114-115, figs. 74-75) at Site L, all afterwards closed during advanced EB II or EB III.

¹⁹ AMIRAN - ILAN 1996, pp. 20-22.

²⁰ The city-gate in the Lower City (DOUGLAS 2007, p. 9, figs. 3, 6-12: phase 4g-a, EB II), closed in EB III (DOUGLAS 2007, pp. 35-38, figs. 5, 19-20: phase 1).

²¹ The EB III West Gate in Fields IV and XIII, also blocked during the EB III (RAST - SCHAUB 2003, pp. 272-280).

²² Nigro 2007, pp. 349, 352; lb. 2008, p. 87; lb. 2009a, pp. 666-667.

²³ Many other EBA Palestinian and Transjordanian sites were apparently destroyed in the same period by a similar agent, as attested to by earthquake evidence at Tell el-Mutesellim (FINKELSTEIN et al. 2006, pp. 49-50), Pella/Tell el-Husn, Tell Abu Kharaz and Tell es-Sa'idiyeh (BOURKE 2000, pp. 233-235), et-Tell (Callaway 1980, p. 147; Id. 1993, p. 42), Jericho/Tell es-Sultan (Kenyon 1957, pp. 175-176, pl. 37a; EAD. 1981, p. 373, pls. 200-201, 343a; NIGRO 2006a, pp. 359-361, 372-373). Also at Khirbet ez-Zeraqon, EB II ended in a fierce conflagration (phase 3; DOUGLAS 2007, pp. 27-28), though it is not surely ascribable to an earthquake.

²⁴ The collapsed mudbricks of the city-wall superstructure left a compact yellowish-grey layer of crushed material all around the defenses (NIGRO 2008, p. 75; ID. 2012, pp. 29-30; NIGRO - SALA 2009, p. 374; NIGRO - SALA 2010, p. 240).

²⁵ NIGRO 2007, pp. 349-350, fig. 8; ID. 2008, pp. 73-74, 89-90, figs. 3.14-15, 3.38-40.

up to 8 m high, and was crowned with a parapet walk and a wooden coronation, as suggested by the presence of staircases (see below); the original stretches in which the city-wall was subdivided, were intermingled one to the other at the varying elevation of 1 to 2 m (this indicating in several spots the height upon which the wall was reconstructed).

In Area B North, at the most exposed side of the site, the defensive system was reinforced: a 1.6-1.8 m wide Outer Wall (W.155) was added around 1.7 m off of the Main City-Wall and ran parallel to it²⁶, doubling the line of fortifications²⁷. The street along the city-wall was repaired and became a corridor (L.143) in between the outer and the inner city-wall. Wall W.155 exhibited an outer battering face made up of polygonal boulders (laid in superimposed intermingled courses), and an inner face made of big blocks regularly displaced, with a filling of small stones and limestone chops. Towards the west, the Outer Wall turned sharply northwards, neatly diverging from the Main City-Wall, due to the presence of Tower T.830. Finally, Outer Wall

W.155 was further reinforced outside by adding a huge curvilinear Outwork (W.185), built up in a similar building technique, with a diameter of around 12 m (Fig. 3)²⁸, comparable to those known from coeval Khirbet Kerak and Khirbet ez-Zeragon²⁹.



The addition of outer walls at the beginning of

EB III, i.e. the doubling and thickening of the defensive system, is a feature common to several Southern Levantine sites, as Tell el-Mutesellim, Tell Ta'annek, et-Tell, Tell es-Sultan, and Khirbet Yarmouk³⁰. At Khirbet al-Batrawy (like at et-Tell and Tell Ta'annek), the addition involved only the more exposed (northern) side of the site, since on the western and southern flanks of the triangular hill the steep cliffs made it impossible (and useless) to construct additional fortification lines. The city-wall strengthening at Batrawy clearly shows the progressive growth of the urban centre, in the period of major flourishing of the city, which apparently destined to its defenses a large part of its resources.



Two staircases (W.181 and W.1067), made of stone slabs³¹, were built into the inner face of the Main City-Wall and protruded 0.3-0.5 m from it (Fig. 4)32. Such architectural devices offered guick access to the upper part of the city-wall, thus demonstrating the existence of an upper passageway. A similar architectural

device is known, in an even more monumental way, from Tell el-Far'ah North³³.

4. THE EB IIIB (2500-2300 BC) TRIPLE FORTIFICATION LINE

Also the EB IIIA city underwent a dramatic destruction, testified by a thick burnt layer of ashes, broken yellowish mudbricks and charred material, which gave back some Khirbet Kerak Ware fragments³⁴. At the beginning of EB IIIB the fortifications of Batrawy were again refurbished and strengthened, by adding a third 1.2 m wide Scarp-Wall (W.165): the latter was made of big stones and irregular blocks with an outer battering face, leaning on a rubble filling put against the outer face of Outer Wall W.155. Scarp-Wall W.165 incorporated the dismantled EB IIIA curvilinear Outwork W.185, and ran parallel to the Outer Wall, ending against it to the west (in square BnII4), where the Outer Wall sharply turned northwards, with a Round Buttress (W.825), around 2.65 m wide and protruding 0.7 m at its bottom (like Scarp-

²⁶ It was set directly into the bedrock by regularizing a natural step with a filling of limestone pebbles and chops mixed with clayey soil (named F.173 west of city-gate L.160, and F.803 east of the city-gate).

²⁷ NIGRO 2007, pp. 350-351; lp. 2008, pp. 92-95; lp. 2009a, p. 667; lp. 2011, p. 68; lp. 2012, pp. 38-40; NIGRO - SALA 2009, p. 375; NIGRO - SALA 2010, p. 244.

²⁸ NIGRO 2008, pp. 98-99; ID. 2012, pp. 41-43.

²⁹ At Khirbet Kerak a series of round towers was inserted in the EB III city-wall (Fortification C; GREENBERG - PAZ 2005, pp. 84, 94-96, figs. 1-2, 5-6; GREENBERG et al. 2006, pp. 248-267, fig. 6.1), while at Khirbet ez-Zeragon a massive curvilinear defensive outwork, 7.50 m long × 3.80-4.80 m wide (W.14), was added outside the main city-wall of the Lower City at the beginning of EB III (DOUGLAS 2007, p. 30, figs. 4, 14-18, 26, plans 6-9: phase 2).

³⁰ For Tell el-Mutesellim: LOUD 1948, pp. 70-76, figs. 158, 392-393; Tell Ta'annek: LAPP 1967, pp. 7-10; ID. 1969, pp. 9-14; 'Ai: CALLAWAY 1980, pp. 147-158; Tell es-Sultan: NIGRO 2006a, pp. 369-372; Khirbet Yarmouk: DE MIROSCHEDJI 1990, pp. 57*-59*. Namely, at et-Tell and Tell Ta'annek the intermediate space between the inner and outer walls should work as a corridor.

³¹ The stone slabs worked as shelves supporting wooden planks.

³² NIGRO 2007, p. 350; ID. 2008, p. 96; ID. 2009, p. 668; ID. 2011, pp. 69-70; ID. 2012, pp. 44-45; NIGRO - SALA 2009, p. 377; NIGRO - SALA 2010, p. 248.

³³ DE VAUX 1962, p. 216, pl. 216b.

³⁴ Nigro 2008, p. 73; Id. 2009a, p. 668; Id. 2011, pp. 68-69; Id. 2012, pp. 28-29; Nigro - Sala 2009, p. 374; NIGRO - SALA 2010, p. 240. The occurrence of violent destructions during the EB III also in other Palestinian sites (like at et-Tell, Tell el-Khuweilfeh, and Tell el-Hesi; SEGER 1989), as well as the increasing monumentality of EB III defensive systems (see above), suggest the instable political situation and the weakness of such EBA urban communities, especially in centres like Batrawy located at the border between different (sometimes antagonist) social groups/landscapes; and that Southern Levantine urbanism was in some way correlated to war to acquire territorial control and gather goods, which had been concentrated within the walls of the cities (NIGRO 2009b).

Wall W.165, also Buttress W.825 had a battering face)³⁵. A new street (L.134 to the west/L.159 to the east) was paved by razing the collapse layer in between the Main City-Wall and the Outer Wall³⁶.

A further north-south oriented Transversal Wall (W.177), 1.2-1.5 m wide, stretched towards the north from Scarp-Wall W.165, for a length of around 9 m. It apparently delimitated a roughly rhomboidal blind room (L.824), joining with a fourth advanced defensive structure added to the north, northwest-southeast oriented, which in turn ran parallel to the Outer Wall in its western section, and was named Exterior Wall W.827. The latter, the most external defensive structure of the city, laid in the lower terrace of the whole defensive system, and was reinforced at the junction with W.177 by means of a buttress (W.826). It had a thickness of 1.65 m, and showed another offset (W.841) on its northern face, and an inner offset

(W.842) towards the Outer Wall. The impressive fortification system of Batrawy thus reached the overall width of around 20 m (*Fig.* 5).

Anyhow, the reinforced EB IIIB fortifications did not prevent Khirbet al-Batrawy from its last destruction, which marked the end of the life of the 3rd millennium BC city. The city was set on fire, and the ves-



tiges of such a dramatic event were clearly visible on structures, finds and in stratigraphy³⁷: a 0.6 to 1.2 m thick layer of ashes, burnt beams, broken reddish-yellow mudbricks, and charred materials was excavated both inside and outside the Main City-Wall.

The *khirbet* remained abandoned for a century or somewhat more, and the ruins of the fortifications progressively collapsed³⁸, until a new rural community sparsely resettled the hill during the EB IV³⁹. This community was responsible of the erection of a stepped stone embankment on the northern slope of the site,

regularizing the fallen city-walls, and basically aimed at sustaining the contemporary dwellings erected inside the hill⁴⁰. The remains of the EBA fortification works were then obliterated by a hard layer of dust which accumulated over centuries of abandonment, after Khirbet al-Batrawy was definitively deserted around 2000 BC.

Maura Sala Sapienza Università di Roma Dipartimento di Scienze dell'Antichità maura.sala@libero.it

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³⁵ Nigro 2007, p. 351; Id. 2008, 100-101; Id. 2009a, p. 668; Id. 2011, p. 69; Id. 2012, pp. 46-52; Nigro - Sala 2009, 374-375; Nigro - Sala 2010, pp. 240-244.

³⁶ Nigro 2006b, pp. 188, 192; Id. 2008, p. 69; Id. 2012, p. 52.

³⁷ Nigro 2008, p. 101-102; Id. 2009a, p. 670; Id. 2011, p. 73; Id. 2012, p. 52; Nigro - Sala 2009, p. 374; Nigro - Sala 2010, p. 240.

³⁸ The collapse of the latest defensive structures is represented by thick oblique fillings (more than 2 m thick to the west) of fallen stones of various size mixed in ashy soft soil and rubble (NIGRO 2008, pp. 68-69; ID. 2012, pp. 17-24).

³⁹ Nigro 2009a, pp. 670-672; SALA 2012.

⁴⁰ Nigro 2007, p. 349; Id. 2008, pp. 102-103; Id. 2012, pp. 53-54; Nigro - Sala 2009, p. 374; Nigro - Sala 2010, p. 240.

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Riassunto

La città del Bronzo Antico di Khirbet al-Batrawy, una fortezza dominante l'Alta Valle dello Wadi az-Zarqa alle porte del deserto siro-arabico, fu munita sin dalla sua fondazione nel Bronzo Antico II (intorno al 3000 a.C.) di un poderoso sistema di fortificazioni, che sancì lo *status* urbano dell'insediamento.

Le fortificazioni, costituite da un possente muro in pietra rafforzato in punti strategici da torri e bastioni aggettanti, furono ricostruite almeno due volte durante il Bronzo Antico III, a seguito delle distruzioni che colpirono la città, e furono ampliate con aggiunte successive di muraglioni esterni e barbacani. In particolare, il lato settentrionale del sito (Area B Nord) fu fortemente munito, per la presenza di una sella che lo rendeva il più facile accesso alla città. Gli scavi hanno qui portato alla luce tre successive linee di fortificazione, risalenti dal Bronzo Antico II fino alla distruzione finale della città nel Bronzo Antico IIIB.



Fig. 1 – General view of the Early Bronze Age site of Khirbet al-Batrawy, with the EB II-III triple line of fortifications and the EB II city-gate on the northern side, from north.





Fig. 3 – Khirbet al-Batrawy: EB IIIA Outwork W.185, north of Outer Wall W.155 (in the middle), from north; in the background, the EB II-III Main City-Wall.





Fig. 5 – Khirbet al-Batrawy: the EB IIIB lines of fortifications, from north-west: in the left foreground, EB IIIB Exterior Wall W.827; in the middle, EB IIIA-B Outer Wall W.155, gradually turning northwards; in the right background, Tower T.830 abutting from the EB II-III Main City-Wall.