KHIRBET AL-BATRAWY: AN EARLY BRONZE AGE CITY AT THE FRINGES OF THE DESERT

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Résumé – Les découvertes récentes effectuées par la mission archéologique de l'Université de Rome « La Sapienza » sur le site de Khirbet al-Batrawi fournissent de nouvelles données pour l'interprétation historique de la culture de l'âge du Bronze ancien en Jordanie et au Levant Sud. Est-il possible de parler de « cité » et de phénomène « urbain » pour le Sud levantin à cette période ? L'étude de cas fournie par le site de Batrawi, intégrant un système de fortifications imposant, un temple monumental ainsi qu'un palais encore en cours d'étude, mais ayant déjà livré des objets précieux ou symboliques, permet d'alimenter les discussions sur ce débat complexe et éventuellement de nuancer ces notions conceptuelles à la lumière des nouvelles données disponibles.

Mots-clés - Bronze ancien, Batrawi, urbanisme, Wadi az-Zarqa, Jordanie.

Abstract – Recent discoveries at Khirbet al-Batrawy by Rome "La Sapienza" University Expedition to Jordan provide a new set of data to cope with the historical interpretation of the Early Bronze Age culture in Jordan and the Southern Levant. Did exist the "city" and was there an "urban" phenomenon in Southern Levant? The case study of Batrawy, with its impressive fortifications, a monumental temple, and a palace containing goods, precious and symbolic items, still in course of exploration, might contribute to a wide and complex debate, suggesting to deep and continue the investigation, and possibly to adapt our paradigms to varying specificities of cultural evidence.

Key-Words - Early Bronze Age, Batrawy, urbanism, Wadi az-Zarqa, Jordan.

ملخّص – تقدم لنا الاكتشافات الحديثة التي قامت بها بعثة جامعة « La Sapienza » في الأردن معلومات مهمة تساعد في تفسير وفهم ثقافة فترة العصر البرونزي المبكر في منطقة الأردن وجنوب بلاد الشام. هل وجدت ''المدينة'' وهل كان هناك ظاهرة ''خضر'' في جنوب بلاد الشام؟ قد تسهم الاكتشافات المشجعة في حالة موقع البتراوي في هذا الجدل ورما تؤدي الى اعتماد نموذج البتراوي المستند الى المادة الحضارية المكتشفة والتي تشمل محصينات ضخمة. معبد كبير. قصر ضخم يحتوى على السلع والمواد الرمزية والثمينة والتى ما زالت في طور الدراسة.

كلمات محورية – عصر برونزي مبكر. بتراوي. تمدّن، وادي الزرقا، الأردن.

PREMISE: JORDANIAN ARCHAEOLOGY AND THE QUEST FOR THE CITY

Recent archaeological research and studies focused on the historical interpretation of Early Bronze Age culture in Jordan within the wider scenario of Southern Levant, coping with theoretical and, often, terminological matters such as the definition of the degree of complexity exhibited by the Early Bronze

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Age Jordanian society, the achievement or not of an "urban status", the identification of settlement patterns and their development, the existence of a hierarchy of sites and consequently in social organization². This renewed flow of studies was basically rooted on settlement analysis, that is on an overall re-evaluation of available territorial data on a large regional scale through mediated collections of data (JADIS and other databases)³. In some cases, the outcome of such researches was not a deepening of investigation and the development of a more careful sensitivity towards local archaeological contexts and their specificities, but, on the contrary, fixing the standards of a certain degree of cultural development, as like as economists establish entities and values which accomplish socio-economic ranks, usually concluding that, since Jordanian EBA culture did not fulfilled such standards, it could not be considered an "early urban culture". An example may perhaps let focus the problem more neatly. Dimension of sites was used as an indicator of their status (from village to city). The minimum dimension that was fixed for a site to be considered as a city was 25 to 35 ha. Only a few sites in 3rd millennium BC Southern Levant might satisfy such size. A series of historical interpretation were, thus, inferred from this observation without taking into consideration the geomorphologic/resources setting of each single site. Actually, beyond settlement patterns analysis, many other pieces of evidence remained under-used in such studies. For example, information concerning landscape and its exploitation, funerary contexts, as well as material culture (general inventories of sites often have a low degree of representativeness since specialists do not manage all periods diagnostic items).

Does exist, however, another approach towards a more comprehensive evaluation of the problem, which seems to be suggested, as often happens in archaeology, by ongoing research on the field, and which, eventually, traces back the problem to a more concrete examination of the data increasingly offered by material culture close examination.

THE KHIRBET AL-BATRAWY CASE STUDY: FROM RURAL VILLAGES TO FORTIFIED CITY

The discovery of Khirbet al-Batrawy (**fig. 1**)⁴, and its systematic excavations in the last eight years (2005-2012), as well as the contemporary territorial study of the Upper and Middle Wadi az-Zarqa carried on by Rome University "La Sapienza"⁵, provided a distinguished example of how historical interpretations should target to an overall integrated reconstruction of the past, taking into consideration paleo-environmental conditions as well as human adaptability and socio-economic developments. As preliminary as the present step of research is, one might state that paradigms and terms used are

^{2.} The appropriateness of applying the terms "urbanism", "urbanisation" and "city" to define the Palestinian and Transjordanian phenomenon is up to now a matter of discussion (CHESSON & PHILIP 2003; SAVAGE *et al.* 2007; GENZ 2010), and it has been recently questioned, suggesting caution in employing such paradigms in the Southern Levantine context, because of the restricted and local character of its experience in comparison with the Mesopotamian and Egyptian urban outcomes. Alternative explanatory models, such as "rural complexity" (FALCONER 1994), "heterarchy" (PHILIP 2001, p. 163-168; 2003) and "corporate villages" (HARRISON & SAVAGE 2003), have been advanced to frame and describe the increase of territorial integration and social complexity which affected the Southern Levant during the late 4th-3rd millennium BC, without implying the birth of the city. However, evidence from current archaeological excavations at the two southern Levantine key-sites of Tell es-Sultan/ ancient Jericho and Khirbet al-Batrawy suggests to deepen and continue studies on the rise of urbanization in Palestine and Transjordan during the 3rd millennium BC as a local development of the Early Bronze Age culture (NIGRO 2009, p. 657-658). New discoveries (including e.g. the Megiddo J4 temple and Wadi Feinan mines) show how Palestinian and Transjordanian culture during the Early Bronze Age witnessed a historic-archaeological phenomenon with distinguished local characters: "urbanism" in this region of the ancient Near East was a local experience with its own regional features (MIROSCHEDJI 1989; 2006; LIVERANI 1999, p. 227-231; GREENBERG 2002; FISCHER 2011).

^{3.} See for instance SAVAGE et al. 2007.

^{4.} Lat. 32°05' N, Long. 36°04' E. NIGRO 2007; 2009; 2010a; 2010b; 2010c; NIGRO (éd.) 2006; 2008; 2012.

^{5.} NIGRO et al. 2008, p. 214-220; SALA 2008a.



Figure 1. General view of the Early Bronze Age site of Khirbet al-Batrawy from north, with the restored EB II-III Main City-Wall and EB II city-gate (© Rome "La Sapienza" Expedition to Jordan).

conventional, and they were chosen because they may describe evidence in a way it can be understood by a wider number of readers. Terms like "city", "urban" and "state" (the latter definitely inappropriate), are used in a mere relative perspective. Actually, an exact terminological definition of the involved phenomena seems up today impossible, since studies and, above all, discoveries are gradually but deeply modifying our knowledge of Early Bronze Age culture.

In this perspective, one may suggest some indicators of a socio-economic and political organization which transcends rural one-level economy and point to a different system centred on the fortified city ruling over a relatively wide territory. The existence of a main building, a "palace", within the fortified settlement, testifies to central gathering of goods (basically agricultural products, barley, olive, oil, fruits, but also metal, salt, ochre, bitumen, wool, wood). It yielded specialized containers for food and other stuff storage and transportation (jars and *pithoi*), calculi, sea-shells, pottery disks, hinting at the existence of a computing system, imported or imitated Egyptianizing status symbols (mace-heads, palettes, lotus vases, hieroglyphics signs upon jars), potter's wheels just introduced as technological improvement for standardized ceramic production, all evidence suggesting a central administration. Moreover, this institution also regulated relationships with the pastoral and nomadic component of this society, which had an important role in extending the palace control over the territory surrounding the city and long-distance trade routes crossing the Syro-Arabic desert.

FROM VILLAGE TO TOWN: Syncecism in early 3RD millennium BC Upper Wadi az-Zarqa

The first contribution offered by the case study of Khirbet al-Batrawy deals with the rise of the "city". The first realm of investigation is that of settlement pattern analysis. Upper and Middle Wadi az-Zarqa exhibit a very clear picture (**fig. 2**): during EB IA several groups of nomads pastoralists settled in the valley along the river ⁶, giving birth to a new rural system of villages and hamlets, with a central

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place serving as religious pole of the valley (Jebel Mutawwaq)⁷, and several dolmen fields especially in the nearby of the latter ⁸. During EB IB the main villages grew, and exchanges and population increase in the valley. A central village, Jneneh⁹, located by the easiest ford through the river, became one of the largest one. Hamlets arose also on the western hills within the curve of the Zarqa river, where olive tree cultivation is suitable. During Early Bronze II a synœcistic process took place ¹⁰: people living in Jneneh and in the other villages concentrated on a single top-hill site dominating the ford: Khirbet al-Batrawy. Sites of Upper and Middle Wadi az-Zarqa were deserted and only a few rural settlements were still along the banks of the river (Ruseifeh, Tell es-Sukhne North, Tell el-Bireh; **fig. 3**) ¹¹; farms were spread on the hilly area within the turn of the river (up to Masarrah) ¹².

An average estimation of population flew into the newly erected city (1,600 people, more than the sum of people inhabiting the EB IB villages spread over Upper Wadi az-Zarqa) suggests that the newborn urban experience attracted also groups of semi-nomads which were not stably settled in the Upper Wadi az-Zarqa before, and presumably lived in the steppe east of Batrawy, as well as agriculturalists previously living at the turn of the river in Middle Wadi az-Zarqa (to the north). This points to the catalyzing role accomplished by the rising city, which controlled and made productive cultivable land capable to feed an increasing number of inhabitants, creating a flourishing enclave in the area from Ruseifeh to el-Bireh.

The "urban" society at Batrawy apparently had a variegated constitution. Four components may be identified: peasants and agriculturalists; shepherds; semi-nomadic specialists (merchants, metallurgists); urban workers (craftsmen, builders, carpenters, potters, priests, members of the palace elite, soldiers). The latter two groups represented the new emerging body of Early Bronze Age "urban" society: full time specialists and "citizens". What was the unifying glue of such a complex community?

THE TEMPLE AS IDENTITARIAN INTEGRATING INSTITUTION

The different social components of the 3rd millennium BC city of Batrawy found an integrating centre in the temple, which, hence, was not only a major architectural feature of the newborn city, but also a shared symbol of the community. At Batrawy, a monumental sacred building was built on the easternmost terrace of the hill, dominating the pass between the desert and the Wadi az-Zarqa valley (**fig. 4**) ¹³. It was built on a terrace not concealed by the surrounding city-wall, in order to be seen from long distance in the underlying valley and far away to the east ¹⁴. The temple was at least 8 m high and due to its location was a much visible benchmark of the Wadi az-Zarqa landscape. The religious institution did not accomplish an economic role in Batrawy: no storerooms nor productive devices were uncovered nearby the temple, except limited installations basically destined to cult activities (see below). It, nevertheless, yielded a fundamental ideological function, that is to integrate in a unique social body the different components of the new complex "urban" community, including also groups not living inside the city itself, but in its district. It has to be stressed that, when the site and the temple of Jebel Mutawwaq were abandoned at the end of EB I, the new religious centre for the people living in Upper and Middle Wadi az-Zarqa became the broad-room temple in Batrawy.

10. NIGRO 2009, p. 658-661; 2010c, p. 432-433.

14. The location of the temple quarter on the easternmost terrace is also known in the contemporary site of Labwe in southern Syria, where a couple of monumental buildings has been identified (AL-MAQDISSI & BRAEMER 2006, p. 121-122, fig. 3, 10-11).

^{7.} FERNÁNDEZ-TRESGUERREZ VELASCO 2008.

^{8.} NIGRO et al. 2008, p. 220-228.

^{9.} The 3 ha village of Jneneh was identified by K. Douglas on a flat terrace overlooking the west bank of the Wadi az-Zarqa, roughly 1.5 km south-west of Khirbet al-Batrawy (DOUGLAS 2006, p. 50-51, fig. 1.4, 2.16, maps 4-5).

^{11.} NIGRO (éd.) 2006, p. 4-8; NIGRO et al. 2008, p. 215-217; SALA 2008a, p. 361-370.

^{12.} SALA 2008a, p. 373-374.

^{13.} NIGRO 2009, p. 665-666; 2010c, p. 438.

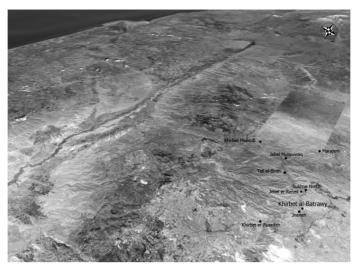


Figure 2. Early Bronze Age sites along the Upper and Middle Wadi az-Zarqa, within the territory under the control of the ancient city of Batrawy (© Rome "La Sapienza" Expedition to Jordan).



Figure 3. General view of the site of Khirbet al-Batrawy on the eastern side of the Upper Wadi az-Zarqa Valley, from north-east (© Rome "La Sapienza" Expedition to Jordan).



Figure 4. Khirbet al-Batrawy: the restored EB II-III broad-room temple in Area F, on the easternmost terrace of the hill, from west (© Rome "La Sapienza" Expedition to Jordan).

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Like the earliest Chalcolithic and Early Bronze Age sanctuaries of Palestine and Transjordan ¹⁵, the temple of Batrawy was a broad-room building, with the entrance on the long southern side, and a niche just inside the entrance in its original (EB II) layout; a row of pillars supported the roof along the main axis of the building (**fig. 5**) ¹⁶. A forecourt, on the southern side, hosted a circular platform with a central slab with a small cup-mark. Aside the platform there was a betyl. Architecture and cult installations point to a pursued continuity in respect of pre-existing local religious tradition, as it is also suggested by cup-marks visible in the bedrock, which may indicate that the place was used for religious activities already in EB I ¹⁷.

After the earthquake that brought to a sudden end the EB II city of Batrawy around 2700 BC¹⁸, the temple was reconstructed with some significant additions and inner transformations ¹⁹. Two protruding *antae* were added to the façade wall, which was emboldened in order to support the roof without the row of pillars; in the *cella*, the focus of the cult was moved to the short western side, where a new horse-shaped niche, preceded by a wide platform and a couple of betyls was built. Such a transformation is similar to what is attested to in Bab edh-Dhra'²⁰, where the temple shows striking similar plan and cult installations (**fig. 6**). Another important comparison to be recalled is, of course, the temple at 'Ai/et-Tell in Palestine²¹, a site which has several enlightening similarities with Batrawy.

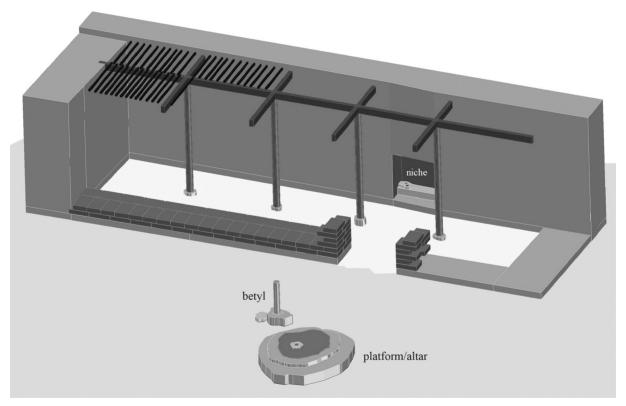


Figure 5. Reconstruction of the original (EB II) layout of the temple of Khirbet al-Batrawy; to be noted, the niche facing the entrance and the row of pillars supported the roof (© Rome "La Sapienza" Expedition to Jordan).

- 15. SALA 2008b with previous bibliography.
- 16. NIGRO (éd.) 2008, p. 276-284, plan III; NIGRO & SALA 2009, p. 377, 380-38.
- 17. NIGRO 2009, p. 660.
- 18. NIGRO 2009, p. 664, 666-667; 2010c, p. 437.
- 19. NIGRO (éd.) 2008, p. 285-293, plan IV; NIGRO & SALA 2009, p. 381-383.
- 20. RAST & SCHAUB 2003, p. 157-166, 321-335, fig. 8.2, 10.57; SALA 2008b, p. 179-186, 283-290.
- 21. SALA 2008b, p. 125-139, 250-257.

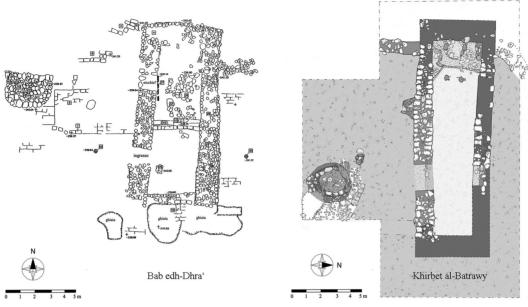


Figure 6. Plans of the EB III temples and related installations at Bab edh-Dhra⁺ (to the left; after RAST & SCHAUB 2003, fig. 10.57) and Khirbet al-Batrawy (to the right) (© Rome "La Sapienza" Expedition to Jordan).

STATING THE CITY: THE CITY-WALL AND THE GATE

If the temple may be considered a mean to build up social identity and unity of the new "urban" integrated community, another communal enterprise was at the origins of the city, which is the erection of the city-wall (fig. 7). The latter, encompassing the whole city by adapting its perimeter and basement to the natural conformation of the steep cliffs of the hill, basically constituted the city and made it visible as a major impressive feature of the surrounding landscape²². It also was a technical and economic endeavour, made possible by the capability of gathering large amount of raw materials (limestone boulders, mud, straw, mortar hawwara, wood, but also water) and by a skilled organization of labour and techniques (with the employ of specialized workers). The earliest EB II city-wall consisted of a solid basement with huge limestone boulders, up to 2 m high, upon which a mudbrick superstructure stood. The wall was 3.2 m wide and followed the outer edge of the flat top of the hill (fig. 8). The main gate, the entrance to the city, opened at the middle of the northern side of the site, where a shallow saddle made easier the access to the steep flanks of the mound (fig. 9). It was a simple passageway 1.6 m wide and 3.2 m long, roofed with a stone lintel and a series of wooden beams ²³. The city-wall was composed of juxtaposed separated stretches, roughly 6 m long, in order to prevent the effects of earthquakes, and perhaps, also corresponding to the work of a team of workers in an established lap of time (a week?). It is very difficult to calculate the amount of stone and mud (water and straw) necessary to build up the city-wall, and contextually, the number of workers employed for achieving this task. The time element, as well as the direct or indirect availability of materials, basically influence such estimate. If one conjectures a duration of 6 months for the erection of the city-wall, taking into consideration the hypothetical volume of the structure (up to 6.5 m high), at least 400 workers (a quarter of the whole city population) can be surmised to have taken part to the construction works. During this works seasonal labourers should be provided by nomads and semi-nomads tribes living in the steppe and desert east of Batrawy, and this might explain how these components were involved in the "urban" process.

^{22.} NIGRO 2009, p. 663-665; 2010c, p. 434-437; NIGRO (éd.) 2006, p. 25-37.

^{23.} NIGRO (éd.) 2006, p. 175-178; 2008, p. 77-88; NIGRO & SALA 2009, p. 375-377.



Figure 7. General view of the EB II-III triple fortification line on the northern slope of Khirbet al-Batrawy, from north-east (© Rome "La Sapienza" Expedition to Jordan).



Figure 8. Khirbet al-Batrawy: general view of the EB II-III Main City-Wall, from east; to the right, EB IIIA Outer Wall W.155 and EB IIIB Scarp-Wall W.165; in the left background, the eastern pavilion of EB IIIB Palace B, with oven T.413, erected inside the Main City-Wall (© Rome "La Sapienza" Expedition to Jordan).



Figure 9. Khirbet al-Batrawy: EB II city-gate L.160, from north; note the step marking the entrance, the plastered floor over the bedrock and the battering boulders at the foot of the city-wall (© Rome "La Sapienza" Expedition to Jordan).

REINFORCING THE CITY: THE DOUBLE AND TRIPLE LINE FORTIFICATIONS

Excavations in Area B North at Batrawy have brought to light a considerable part of the northern fortifications of the city for a length of around 50 m on the east-west axis and 20 m on the north-south one. Here, after the EB II gate went out of use due to the strong earthquake which ended the life of the earliest city (the Main City-Wall was, thus, rebuilt with a different technique), an Outer Wall (W.155) was added to the Main Inner Wall in order to strengthen the defence with a second advanced line (fig. 10)²⁴. This wall was made of big blocks on its outer face, medium size stones in the inner southern curtain, and an inner filling made of limestone chops and small stones. It had a slightly battering face and left a passage 1.8 m wide, street L.143, all around the Main Inner City-Wall. A curvilinear Outwork (W.185) was added to the Outer Wall, possibly a huge tower, similar to round towers known at the site of Khirbet Kerak (fig. 10)²⁵. In the final stage of life of the city, a third fortification line was added to the defence system, by obliterating the curvilinear Outwork, and emboldening the northern side of the city by means of a Scarp-Wall (W.165), leaning on the outer face of the Outer wall (fig. 11) ²⁶. The latter sharply turned northwards to the west, and the Scarp-Wall thus ended against it with a Round Buttress (W.825; fig. 12). For this reason, a further structure protruded from the Scarp-Wall itself, called Transversal Wall (W.177) and gradually turned westwards recreating a third advanced defensive line (exterior Wall W.827) ahead the protruding Outer Wall.

Stratigraphy of fillings inside the blocked city gate, within the EB II-IIIB street, and across the triple line of fortification allowed to fix the successive steps of development of the city ²⁷. After a violent fire destruction, which marked the end of the EB IIIA city, the last city of Batrawy was given an articulated defensive system, also including a huge abutting bastion in the western spur, protecting the new EB III gate, and a series of rectangular towers all around its perimeter. Such monuments let infer the existence of a central authority responsible for the city defence. Their impressive architecture did accomplish the basic task of stating the "urban" status, making the city a dominant element of the landscape of Upper Wadi az-Zarqa and beyond, towards the east and the desert.



Figure 10. Khirbet al-Batrawy: the EB IIIA (2700-2500 BC) double line of fortifications, with the Main Inner City-Wall, Outer Wall W.155 and adjoined curvilinear Outwork W.185, from north (© Rome "La Sapienza" Expedition to Jordan).

24. NIGRO (éd.) 2008, p. 89-99; NIGRO 2009, p. 667; 2010c, p. 438-439; NIGRO & SALA 2009, p. 375.

25. At Khirbet Kerak a series of round towers were inserted in the EB III city-wall (Fortification C; GREENBERG & PAZ 2005, p. 94-96, fig. 1-2, 5-6; GREENBERG *et al.* 2006, p. 249-267).

26. NIGRO (éd.) 2008, p. 100-101; NIGRO 2009, p. 668-669; 2010c, p. 440; NIGRO & SALA 2009, p. 374-375.

27. NIGRO (éd.) 2008, p. 66-76; NIGRO & SALA 2009, p. 373-374.



Figure 11. Khirbet al-Batrawy: the EB IIIB (2500-2300 BC) triple line of fortifications, from west: to the left, EB IIIB Scarp-Wall W.165 with Transversal Wall W.177; in the middle, EB IIIA-B Outer Wall W.155, gradually turning northwards; to the right, the EB II-III Main City-Wall (© Rome "La Sapienza" Expedition to Jordan).



Figure 12. Khirbet al-Batrawy: EB IIIB (2500-2300 BC) Transversal Wall W.177 and Scarp-Wall W.165, ending against the outer face of EB IIIA-B Outer Wall W.155 with Round Buttress W.825, from north-west (© Rome "La Sapienza" Expedition to Jordan).

THE PALACE OF BATRAWY

During the last three years, the 5th, 6th and 7th seasons (2009, 2010, 2011) of excavations were concentrated on the huge building uncovered just inside the triple line of fortifications in Area B, which was found in a extraordinary preservation state, due to a fierce conflagration which brought to a sudden end its life at the end of EB IIIB ²⁸. The building was erected on a series of steps of the bedrock on the northern slope of the acropolis (**fig. 13**). The area excavated so far, of around 800 sqm, includes two symmetrical pavilions separated by a passageway 1.4-1.8 m wide (L.1050), which actually was an entrance opened in the street (L.1060) running inside the city-wall (facing this passage, two symmetrical flights of steps allowed to climb upon the Main City-Wall). Each pavilion consisted of a rectangular hall (roughly 8 x 5 m), with other large rooms behind it. Dimensions of rooms and the width of walls speak for the palatial rank of this building, which was carefully built up on the regularized bedrock,

28. NIGRO 2009, p. 670; NIGRO (éd.) 2008, p. 101-102.

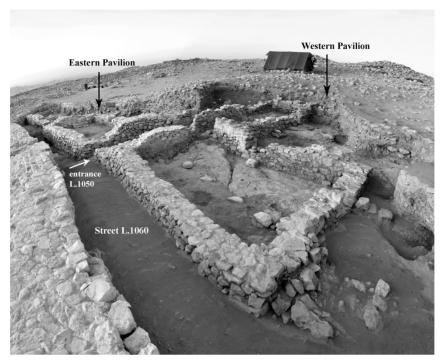


Figure 13. Khirbet al-Batrawy: general view of EB IIIB Palace B, erected inside the EB II-III Main Inner City-Wall, from north-west (© Rome "La Sapienza" Expedition to Jordan).

with limestone blocks and well detached stones forming solid structures still preserved at a height of 1.5 m (the ground floor was made of stones and wood, while the upper storey of mudbrick supported by a wooden frame). Plastered floors and walls, wooden beams employed as chains in walls, as well as pillars supporting the ceilings and employed in the roofing, were also brought to light, showing a refined and differentiated building technique, characterized by wise adaptation and exploitation of the terrain. Architectural elements, such as raised thresholds made with plastered mudbricks, niches, wooden balconies, and pillar bases made with regularly worked flat stones, as well as benches, hydraulic devices and other installations, show a careful finishing, confirming the high rank of the building.

The Eastern Pavilion consisted of two rectangular halls and a staircase leading to an upper storey, and it was opened through a pillared entrance towards the central passageway (**fig. 14**). This entrance communicated with the large southern rectangular hall (L.1046), only partially excavated so far. A door (L.1066), opened in the middle of the northern side of this hall, gave access to the main northern rectangular hall, L.430²⁹. A huge semicircular oven (T.413) paved with re-employed basalt stones, leaning against the eastern wall of this block, probably was connected with the activities (communal food production?) of this pavilion of the Palace ³⁰.

The main entrance to the Western Pavilion (**fig. 15**) was from the west (L.1150), even though its main room (L.1040) also opened on the central passageway L.1050, and to the south towards a rectangular storeroom (L.1120) and to another huge hall (L.1110). The northernmost space of the Pavilion (L.1040) was a rectangular hall ($7.8 \times 5 \text{ m}$), with a row of four pillars arrayed on its main east-west axis set along

^{29.} NIGRO 2007, p. 352-353, fig. 14; NIGRO (éd.) 2008, p. 148-162.

^{30.} Evidence of such sovra-familiar activities of food production and consumption comes, for instance, from EB IIIB Building B1 at Tell es-Sultan/ancient Jericho (MARCHETTI & NIGRO 1998, p. 39-49; 2000, p. 130-138; NIGRO 2006, p. 18-20), and from the oven for fish fumigation at Sidon (DOUMET-SERHAL 2011, p. 75-76).



Figure 14. Khirbet al-Batrawy: the eastern pavilion of EB IIIB Palace B, with semicircular oven T.413, from east; in the background, the western pavilion (© Rome "La Sapienza" Expedition to Jordan).

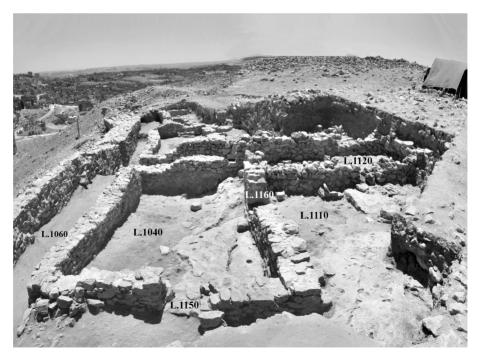


Figure 15. Khirbet al-Batrawy: general view of the western pavilion of EB IIIB Palace B, from west; in the background, the eastern pavilion (© Rome "La Sapienza" Expedition to Jordan).

the edge of the bedrock, which formed the flooring of the southern raised half of the hall (four round cup-marks and a drain were also cut into the bedrock)³¹.

Two main doors opened at the centre of both the southern and western side of the hall, each 0.9 m wide and preceded by a step made of standard 0.52 m long mudbricks. Such doors, with well refined jambs and wooden lintels, exhibit the monumental attainment of the Palace architecture. In the last days of life of Batrawy, Hall L.1040 was used to store agricultural products and other properties of the Palace. All around its walls was arrayed a series of 20 *pithoi* (**fig. 16**), mainly containing carefully sieved barley (**fig. 17**) and other dried and liquid stuff (or, in one exceptional case, red ochre). In between these huge vases, characterized by their dimensions (up to 1.2 m high, 100-120 l of capacity), and by their neck refined on the wheel, a number of other ceramic vessels had been accumulated. The pieces —often in couples— of a tablet service were indentified, including luxury red-burnished jugs and juglets (**fig. 18**), bowls and vats, *amphoriskoi*, a water jug with a beaker aside (**fig. 19**), small jars, and a pattern-combed metallic jar. A unique vessel (KB.10.B.1054/11) was characterized by a high grooved trumpet-shaped pedestal, a hole-mouth globular body and a couple of vertical handles. It had a carefully burnished red-slipped surface and it has been interpreted as a ceremonial vase, like a big cup or a chalice. Another distinct group of vases was formed by miniature vessels, including cups and small jars, some with incised net decoration ³².

Next to the southern wall of the hall, two jars were retrieved, which exhibited a peculiar applied and incised decoration: one (KB.11.B.1054/4) had a sinuous punctuated snake on the shoulder, while the other (KB.11.B.1054/1) had a register subdivided into *metopae* separated by a herringbone motive with, on the opposite sides of the vase, a snake and a scorpion (both animals are known from coeval glyptic in Palestine, and snakes are also attested to in the EB I sanctuary of Jebel Mutawwaq in Wadi az-Zarqa)³³. Moreover, in a *cachette* cut in the bedrock aside the second pillar base from the east, a



Figure 16. Khirbet al-Batrawy: storage *pithoi* aligned along the walls in the north-eastern corner of pillared Hall L.1040, from south-west (© Rome "La Sapienza" Expedition to Jordan).

31. The westernmost base (B.1168) was a rectangular limestone slab connected to a built up installation flanking the door; the second one (B.1166) was a round flat stone; the third one (B.1108), with a roughly rectangular shape, was encircled by small stones; while the fourth one (B.1106), set into a circle of limestone chops, had a roughly circular shape.
32. For a preliminary presentation of the finds from pillared Hall L.1040 see NIGRO 2010a, p. 71-110; NIGRO 2010b.
33. FERNÁNDEZ-TRESGUERREZ VELASCO 2008, p. 30-32.

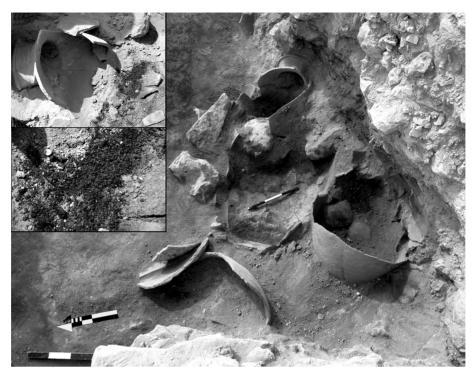


Figure 17. Khirbet al-Batrawy: storage jars and *pithoi* in the north-western corner of pillared Hall L.1040, with detail of the carbonized seeds inside them (© Rome "La Sapienza" Expedition to Jordan).



Figure 18. EB IIIB red-burnished and polished vessels from Palace B; note in the background ceremonial vessel KB.10.B.1054/11, characterized by a high grooved trumpet-shaped pedestal, a hole-mouth globular body and a couple of vertical handles (© Rome "La Sapienza" Expedition to Jordan).

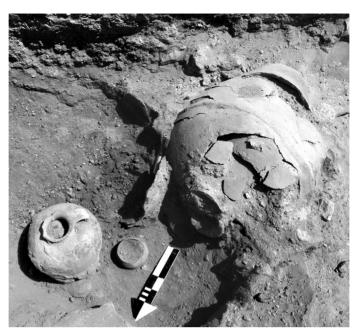


Figure 19. Khirbet al-Batrawy: *pithos* KB.10.B.1040/7, smashed in the north-eastern sector of pillared Hall L.1040, with a water jug and a beaker at its foot (© Rome "La Sapienza" Expedition to Jordan).

group of four copper axes was found (fig. 20), belonging to two distinguished types ³⁴: the one with elongated and sometimes expanded tang and expanded blade, and the flag type with a square hollow to fix the handle. While the latter axe showed on the blade evident use marks, the former three were apparently not used, probably accomplishing a symbolic function as power insigna. Just aside the cachette the paw of a bear was also found, possibly belonged to a bearskin, an exotic garment or furbishing treasured in the Palace. The tip of a copper dagger was finally found in the same hall. A fifth axe, of the simple elongated type, was found in nearby Hall L.1110, not far from the door connecting it with Hall L.1040. The presence of these copper items and their collection in the cachette points to the concentration of valuable objects in the Palace, just before it was dramatically destroyed



Figure 20. The four copper axes retrieved in a *cachette* in pillared Hall L.1040 (© Rome "La Sapienza" Expedition to Jordan).

by a fierce fire. In the layer of the collapse filling another peculiar item was found, that is a carefully worked basalt disk serving as potter's wheel; a second specimen of the same tool was found in the nearby rectangular storeroom L.1120, again showing that not only food reserves ³⁵ and precious items, but also symbolic and technologically advanced tools had been lastly concentrated within the Palace.

34. NIGRO 2010a, p. 73-74; 2010b, p. 568-570.

^{35.} The food storage has been long recognized as the main (if not exclusive) function of the Palestinian and Transjordanian public palatial buildings (lastly, GENZ 2010).

South of pillared Hall L.1040 two large rooms were excavated so far (**fig. 21**). To the east, along central corridor L.1050, an elongated storeroom was disengaged (L.1120, 2.3-2.6 m wide and around 6.3 m long), full of jars, hole-mouth jars and other ceramic vessels. The entrance (L.1158) was from the north. The southern end of the room was occupied by a wooden shelf, fixed to the eastern wall, while small circular installations were on the opposite north-western side of the room.

Just south-west of pillared Hall L.1040 there was another large room, measuring 6.5 x 3.7 m on the north-south axis. Two big pillars supported the roof of this hall, placed along the main east-west axis, upon a 0.3 m step in the bedrock: like pillared Hall L.1040, also Hall L.1110 had, thus, two different floor elevations in the northern and southern halves, corresponding to the regularized step in the bedrock. In the south-eastern corner a huge *pithos* was set into a stone-built bench in the wall: it was possibly a water reservoir, placed in the highest point of the hall. At the middle of the eastern side, a bench or a seat made of stone slabs was set, partly exploiting the central step of the bedrock (**fig. 15**). Starting from that point a series of medium size jars, including hole-mouth and flaring rim jars with small cups at their feet, was arrayed in a double east-west row against the side of the step across the hall (**fig. 22**). A special concentration of goods was near the seat, including a small jar containing more than 600 beads of carnelian, amethyst, sea-shell, rock-crystal, vitreous paste and bone, belonged to a four strings necklace ³⁶. In the nearby, another bracelet made of a bone ring and pierced sea-shells was also found. On the floor of the hall, in the lower terrace, two sickles made of flint blades fixed on a curving wooden shaft were found, together with the already mentioned copper axe.

On the upper terrace, in the same hall, not far from the central pillar base, another series of prestigious pottery vessels was found, including a large red-burnished jug (KB.11.B.1128/49), characterized by a highly polished body with net-burnishing on the shoulders, and a somewhat rare Egyptianizing vessel, belonging to the so-called "Lotus Vase" type (KB.11.B.1128/76), which finds a comparison, for instance, in the vessels of the Egyptianizing *cachette* from the Temple of level J-4 at Megiddo/Tell el-Mutesellim ³⁷, or in the vessels from the so-called EB IIIB Sanctuary A at 'Ai/et-Tell ³⁸.

SIGNIFICANCE OF THE PALACE OF BATRAWY FINDS

The exploration of the Palace of Batrawy is still going on, and it is thus impossible to draw out a comprehensive historical-archaeological interpretation of it and of its numerous and variegated finds. Many of them, especially paleobotanic and other special stuff specimens, are presently undergoing chemical-physical analyses and bionsensor examination. However, some preliminary observations may be put forward, concerning the significance of this building and its content.

The location on the flank of the acropolis, near the main access to the city, the dimensions of the building itself and of its pavilions, the monumentality of its architecture with pillared halls and walls up to 1 m wide, made of regularly cut and set up stones, and the abundant use of plaster and wood in structures, exhibit the palatial rank of the building —as well as its spatial and functional subdivision into independent but communicating sectors. This preliminary observation is further corroborated by the finds within the Palace, including, on one hand, a large quantity of barley (a capacity up to 2 t in around 20 huge *pithoi* expressly made with the use of the wheel for storage in the Palace, as also applied labels seem to indicate), which points to foodstuffs centralization, and, on the other hand, a variegated ceramic inventory characterized by ceremonial, table, and luxury vessels. The hoard of copper axes suggests not only the inclusion of Batrawy in the exchange and production network of this metal in Southern Levant during the 3rd millennium BC, but also indicates the intrinsic and symbolic value conveyed by these

^{36.} NIGRO 2012.

^{37.} FINKELSTEIN *et al.* (éd.) 2000, p. 66, 170-174, fig. 8.6, 8.8; FINKELSTEIN & USSISHKIN 2003. Note that the dating of the monumental Temple in stratum XVIII/level J-4 was shifted down to EB II according to the present author (NIGRO 2010d, p. 335-337).

^{38.} Marquet-Krause 1949, pl. LII:1534,1536,1541, LXV:1534,1536, LXXVI:1541; Callaway 1972, p. 321, fig. 76:3-5.



Figure 21. Khirbet al-Batrawy: general view of EB IIIB Palace B, erected inside the EB II-III Main Inner City-Wall, from south; note in the background the two symmetrical flights of steps which allowed to climb upon the Main City-Wall (© Rome "La Sapienza" Expedition to Jordan).



Figure 22. Khirbet al-Batrawy: general view of destruction layer inside Hall L.110, with *in situ* smashed vessels and objects arrayed in a double east-west row against the regularized central step in the bedrock, from west (© Rome "La Sapienza" Expedition to Jordan).

items, as well as the jar with the four strings necklace found just below the stone-built seat in Hall L.1110 confirms the impression that the Palace was inhabited by the ruling elite exercising its authority over the city. Vessels imitating Egyptian shapes, a fragmentary palette, an amethyst bead, and some hieroglyphics applied on *pithoi* also point to a certain Egyptian cultural influence, perhaps to be related with the wide commercial links of Batrawy. Animal remains testify to the large presence of donkeys or onagers in Batrawy ³⁹, an animal which was at the basis of the economy of this early commercial city, being used as means of transportation by caravans crossing the steppe and the desert to the east and descending into the Wadi az-Zarqa Valley and down to the Jordan. Renowned wall paintings at the Omayyad castle of Qusair 'Amra, in the Jordanian desert only some kilometres to the east, still remember us that herd of donkeys inhabited the desert and where hunted and captured until a few centuries ago. They possibly were one of the positive resources of the Batrawy "urban" specificity.

The Palace of Batrawy and early urban origins in Jordan during the 3^{rd} millennium bc

Data brought about by the discovery of Khirbet al-Batrawy and its burnt Palace, including those which will be hopefully provided by further studies, analyses and excavations, allow to consider this site as an example of early "urbanism" in Jordan: monumental architecture (with basic spatial/functional distinctions within the city: palace/temple/defensive towers); massive defensive works (which also give evidence for labour organization and social complexity); technological innovation (pottery differentiation/ standardization through the introduction of the wheel); centralization of goods (carefully sieved seeds of barley testifying to a centrally controlled agricultural production; red ochre lumps); trade of luxury and symbolic goods (ornaments: precious stones and sea-shells from long distance); economic and symbolic role attributed to copper items; material evidence of Egyptian influence (connection?); sheep and goats breeding as a basic component of the Batrawy economy, together with donkeys taming for caravans in long-distance trade (as illustrated by faunal remains: around 50% of samples are donkeys).

The above mentioned elements speak for the establishment of a hierarchy in the access to means of production (basically water, land, and animals), and in the gathering of goods and in their accumulation and distribution, which reflect a hierarchy in social organization, trade routes and landscape control. Moreover, data provided by a series of surveys in Upper Wadi az-Zarqa show that settlement pattern was directly related to the rise of the city, and that the city was apparently in direct connection with contemporary villages — if not in a dominion relationship— during its flourishing. The exact nature of this relationship may be only inferred, in the absence of written records. For example, pattern-combed jars retrieved in sites of the Batrawy countryside, which also appear in the Palace, might be interpreted as a proof of goods (olive oil?) centralization and of a sort of control of agriculture production. Nonetheless, such a degree of social complexity seems unproved. What is the most suitable definition for the Batrawy "urban" phenomenon?

Around 2300 BC a final destruction provoked such a devastation that the city never recovered. A century later, the mound of Batrawy was chosen by a new small rural community to settle again (just over the regularized ruins of the previous city). This was the last occupation of Batrawy ⁴⁰. Then the wind remained the only inhabitant of this rocky hill until the 3rd millennium AD.

BIBLIOGRAPHIE

ALHAIQUE (F.)

- 2008 Appendix A: "Faunal remains", NIGRO (éd.) 2008, p. 27-358.
- AL-MAQDISSI (M.) & BRAEMER (F.)
- 2006 "Labwe (Syrie): une ville du Bronze ancien du Levant du Sud", *Paléorient* 32/1, p. 113-124.

CALLAWAY (J. A.)

1972 The Early Bronze Age Sanctuary at Ai (et-Tell). A Report of the Joint Archaeological Expedition to Ai (et-Tell). I (Colt Archaeological Institute Publications), Londres.

CHESSON (M. S.) & PHILIP (G.)

- 2003 "Tales of the City? 'Urbanism' in the Early Bronze Age Levant from Mediterranean and Levantine Perspectives", *JMA* 16, p. 3-16.
- DOUGLAS (K.)
- 2006 "Occupational History of the Early Bronze Age in the Upper Wadi az-Zarqa", NIGRO (éd.) 2006, p. 49-62.
- DOUMET-SERHAL (C.)
- 2011 "Sidon, une ville célèbre de la côte levantine", *L'Archeo-Théma* 15, p. 75-79.

FALCONER (S. E.)

- 1994 "Village Economy and Society in the Jordan Valley: A Study of Bronze Age Rural Complexity", G. M. SCHWARTZ & S. E. FALCONER (éd.), Archaeological Views from the Countryside. Village Communities in Early Complex Societies, Washington, p. 121-142.
- FERNÁNDEZ-TRESGUERREZ VELASCO (J. A.)
- 2008 "The 'Temple of the Serpents'. A Sanctuary in the Early Bronze Age 1 in the village of Jabal Mutawwaq (Jordan)", *ADAJ* 52, p. 23-34.
- FINKELSTEIN (I.) & USSISHKIN (D.)
- 2003 "The Cache of Egyptianized Vessels from Megiddo: A Stratigraphical Update", *Tel Aviv* 30, p. 27-41.

FINKELSTEIN (I.), USSISHKIN (D.) & HALPERN (B.) éd.

2000 Megiddo III. The 1992-1996 Seasons (Tel Aviv Monograph Series 18), Tel Aviv.

FISCHER (P.)

2011 "The Early Bronze Age Societies of Tell Abu al-Kharaz, Central Jordan Valley", M. S. CHESSON (éd.), Daily Life, Materiality, and Complexity in Early Urban Communities of the Southern Levant. Papers in Honor of Walter E. Rast and R. Thomas Schaub, Winona Lake, p. 23-40.

GENZ (H.)

2010 "Thoughts on the Function of 'Public Buildings' in the Early Bronze Age Southern Levant", D. BOLGER & L. C. MAGUIRE (éd.), The Development of Pre-State Communities in the Ancient Near East. Studies in Honour of Edgar Peltenburg (BANEA Publication Series 2), Oxford/Oakville, p. 46-52.

GREENBERG (R.)

- 2002 Early Urbanizations in the Levant. A Regional Narrative (New Approaches to Anthropological Archaeology), Londres/ New York.
- GREENBERG (R.) & PAZ (Y.)
- 2005 "The Early Bronze Age Fortifications at Tel Beth Yerah", *Levant* 37, p. 81-103.
- GREENBERG (R.), EISENBERG (E.), PAZ (S.) & PAZ (Y.)
- 2006 Bet Yerah: The Early Bronze Age Mound I: Excavations Reports 1933-1986 (Israel Antiquities Authority Reports 29), Jérusalem.

HARRISON (T. P.) & SAVAGE (S. H.)

2003 "Settlement Heterogeneity and Multivariate Craft Production in the Early Bronze Age Southern Levant", *JMA* 16, p. 33-57.

KAFAFI (Z.)

2008 "Early Bronze Age I Settlers and Transhumance In the Wadi az-Zarqa Basin: Stations on the Way from the Jordan Valley to the Badia Region", *Adumatu* 18, p. 27-40.

LIVERANI (M.)

- 1999 Antico Oriente. Storia società economia (4th ed.), Bari/Rome.
- Marchetti (N.) & Nigro (L.)
- 1998 Scavi a Gerico, 1997. Relazione preliminare sulla prima campagna di scavi e prospezioni archeologiche a Tell es-Sultan, Palestina (Quaderni di Gerico 1), Rome.

MARCHETTI (N.) & NIGRO (L.)

2000 Excavations at Jericho, 1998. Preliminary Report on the Second Season of Excavations and Surveys at Tell es-Sultan, Palestine (Quaderni di Gerico 2), Rome. MARQUET-KRAUSE (J.)

1949 Les fouilles de 'Ay (et-Tell), 1933-1935, entreprises par le Baron Edmond de Rothschild. Le résurrection d'une grande cité biblique (BAH 54), Paris.

MIROSCHEDJI (P. de)

1989 "Le processus d'urbanisation en Palestine au Bronze Ancien : chronologie et rythmes", P. de MIROSCHEDJI (éd.), L'urbanisation de la Palestine à l'âge du Bronze ancien. Bilan et perspectives des recherches actuelles. Actes du Colloque d'Emmaüs (20-24 oct. 1986) (BAR IS 527), Oxford, p. 63-79.

MIROSCHEDJI (P. de)

2006 "At the Down of History: Sociopolitical Developments in Southwestern Canaan in Early Bronze Age III", A. M. MAEIR & P. de MIROSCHEDJI (éd.), "I Will Speak the Riddles of Ancient Times". Archaeological and Historical Studies in Honor of Amihai Mazar on the Occasion f His 60th Birthday, Winona Lake, p. 55-78.

NIGRO (L.)

2006 of Italian-Palestinian "Results the Expedition to Tell es-Sultan: at the Dawn of Urbanization in Palestine", L. NIGRO & H. TAHA (éd.), Tell es-Sultan/Jericho in the Context of the Jordan Valley: Site Management, Conservation and Sustainable Development. Proceedings of the International Workshop Held in Ariha 7th-11th Feb. 2005 by the Palestinian Department of Antiquities and Cultural Heritage - Ministry of Tourism and Antiquities, UNESCO Office - Ramallah, Rome "La Sapienza" University (Rome "La Sapienza" Studies on the Archaeology of Palestine & Transjordan 2), Rome, p. 1-40.

NIGRO (L.)

2007 "Preliminary Report of the Second Season of Excavations by the University of Rome 'La Sapienza' at Khirbat al-Batrāwī (Upper Wādī az-Zarqā')", ADAJ 51, p. 345-360.

NIGRO (L.)

2009 "Khirbet al-Batrawy: a Case Study of 3rd millennium BC Early Urbanism in North-Central Jordan", F. AL-KHRAYSHEH (éd.), *SHAJ* X, Amman, p. 657-677.

NIGRO (L.)

2010a In the Palace of the Copper Axes/Nel Palazzo delle Asce di Rame (Rome "La Sapienza" Studies on the Archaeology of Palestine & Transjordan, Colour Monographs 1), Rome.

NIGRO (L.)

2010b "Quattro asce di rame dal Palazzo B di Khirbet al-Batrawy (Bronzo Antico IIIB, 2500-2300 a.C.)", *Scienze dell'Antichità* 16, p. 561-572.

NIGRO (L.)

2010c "Between the Desert and the Jordan: Early Urbanization in the Upper Wadi az-Zarqa - the EB II-III fortified town of Khirbet al-Batrawy", P. MATTHIAE *et al.* (éd.), *Proceedings of the 6th ICAANE*, 5-10 May 2008, "Sapienza", Università di Roma, 2, Wiesbaden, p. 431-458.

NIGRO (L.)

2010d Tell es-Sultan/Jericho in the Early Bronze II (3000-2700 BC): the rise of an early Palestinian city. A synthesis of the results of four archaeological expeditions (Rome "La Sapienza" Studies on the Archaeology of Palestine & Transjordan 5), Rome.

NIGRO (L.)

2012 "An EB IIIB (2500-2300 BC) Gem stones Necklace from the Palace of the Copper Axes at Khirbet al-Batrawy, Jordan", *Vicino Oriente* XVI, p. 227-244.

NIGRO (L.) éd.

2006 Khirbet al-Batrawy. An Early Bronze Age Fortified Town in North-Central Jordan. Preliminary Report of the First Season of Excavations (2005) (Rome "La Sapienza" Studies on the Archaeology of Palestine & Transjordan 3), Rome.

NIGRO (L.) éd.

2008 Khirbet al-Batrawy II. The EB II citygate, the EB II-III fortifications, the EB II-III temple. Preliminary report of the second (2006) and third (2007) seasons of excavations (Rome "La Sapienza" Studies on the Archaeology of Palestine & Transjordan 6), Rome.

NIGRO (L.) éd.

2012 Khirbet al-Batrawy III. The EB II-III triple fortification line and the EB IIIB quarter inside the city. Preliminary report of the 4th and 5th seasons of excavations (2008-2009), (Rome "La Sapienza" Studies on the Archaeology of Palestine & Transjordan 8), Rome.

NIGRO (L.) & SALA (M.)

 2009 "Preliminary Report of the 4th Season (2008) of Excavations by the University of Rome "La Sapienza" at Khirbat al-Batrāwī (Upper Wādī az-Zarqā')", *ADAJ* 53, p. 371-384.

- NIGRO (L.) & SALA (M.)
- 2010 "Preliminary Report of the 5th Season (2009) of Excavations by the University of Rome 'La Sapienza' at Khirbat al-Batrāwī (Upper Wādī az-Zarqā')", ADAJ 54, p. 237-254.
- NIGRO (L.) & SALA (M.)
- 2011 "Preliminary Report of the 6th Season (2010) of Excavations by the University of Rome 'La Sapienza' at Khirbat al-Batrāwī (Upper Wādī az-Zarqā')", ADAJ 55, p. 85-100.
- NIGRO (L.), SALA (M.) & POLCARO (A.)
- 2008 "Preliminary Report of the 3rd Season of Excavations by the University of Rome 'La Sapienza' at Khirbat al-Batrāwī (Upper Wādī az-Zarqā')", ADAJ 52, p. 209-230.

 $P\text{HILIP}\left(G.\right)$

2001 "The Early Bronze I-III Ages", B. McDonald, A. Russel & P. BIENKOWSKI (éd.), *The Archaeology of Jordan*, Sheffield, p. 163-232. $P\text{HILIP}\left(G.\right)$

- 2003 "The Early Bronze Age of the Southern Landscape: A Landscape Approach", *JMA* 16, p. 103-132.
- RAST (W. E.) & SCHAUB (R. T.)
- 2003 Bâb edh-Dhrâ': Excavations at the Town Site (1975-1981), Reports of the Expedition to the Dead Sea Plain, Jordan, II, Winona Lake.

SALA (M.)

2008a "Appendix B. Along the river: 2007 Survey of Upper and Middle Wadi az-Zarqa", L. NIGRO (éd.) 2008, p. 359-397.

SALA (M.)

- 2008b L'architettura sacra della Palestina nell'età del Bronzo Antico I-III (Contributi e Materiali di Archeologia Orientale XIII), Rome.
- SAVAGE (S. H.), FALCONER (S. E.) & HARRISON (T. P.)
- 2007 "The Early Bronze Age City States of Southern Levant. Neither Cities nor States", T. E. LEVY *et al.* (éd.), *Crossing Jordan. North American Contributions to the Archaeology of Jordan*, Londres/ Oakville, p. 285-297.