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# Renewed Excavation of the PPNB Site of Beisamoun, Hula Basin

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## Introduction

The Hula Basin, located in the northern part of the Jordan Valley, enjoys a moderate Mediterranean climate. This region has played an important role in the prehistoric occupation of the central Levant since its rich ecosystem offered people the possibility of long-term occupation of one area. As part of the central Jordan Valley, it would have served as a conduit for East-West and North-South migration/exchange of populations and/or materials. Thus, the Hula Basin is particularly suitable for exploring environmental exploitation systems and cultural as well as biological transmission over time as well as between groups inhabiting the same region. The site of Beisamoun in the Hula Basin is a key PPNB location that can provide important information on these issues.

The major occupation phase at Beisamoun dates to the Pre-Pottery Neolithic B but Pottery Neolithic and Bronze Age deposits are also present, as attested to by archaeological finds and recent rescue excavations conducted by one of us (H. Kh.).

Since the early 1950s the area of the PPNB site was extensively investigated as fish-breeding ponds were dug into the underlying Neolithic settlement and partly destroyed the archaeological layers. The subsequent drainage of these ponds enabled A. Assaf (Curator of the Mayan Baruch Museum of Prehistory of the Hula Basin) to collect a large PPNB assemblage and to demar-

cate the extent of the site to an area of 10 ha. In 1969, a French team supervised by M. Lechevallier (CNRS) began mapping the structures discernible at the bottom of the different ponds, and this was followed in 1972 by a 70 m<sup>2</sup> salvage excavation (Lechevallier 1978). This area yielded a rectangular structure with a well preserved plaster floor. It was associated with several graves, numerous artefacts and, among other unexpected findings, two plaster skulls. No radiometric dating was undertaken.

During the summer of 2007, a two-week long exploratory field season was held from 24 August to 7 September in order to test a large area at the north-western part of the site (at the location of the modern fish pond number 11). A surface of 3000 m<sup>2</sup> was mechanically cleaned. Within this area, one sector of 76 m<sup>2</sup> was excavated from 0.20 m to 0.50 m in depth (Sector E) and three long trenches were opened (Trenches 1, 2, 3).

## Sector E Stratigraphy

Four levels were recognized in Sector E:

- Level 0 (from 10 to 30 cm deep) comprises a black, modern sediment very rich in archaeological finds dating to the PPNB. This level is superficial in the south-western part of the sector but deepens towards the north-eastern side.
- Level I is a brown-greyish sediment, rich in finds and contains the uppermost stone structures.

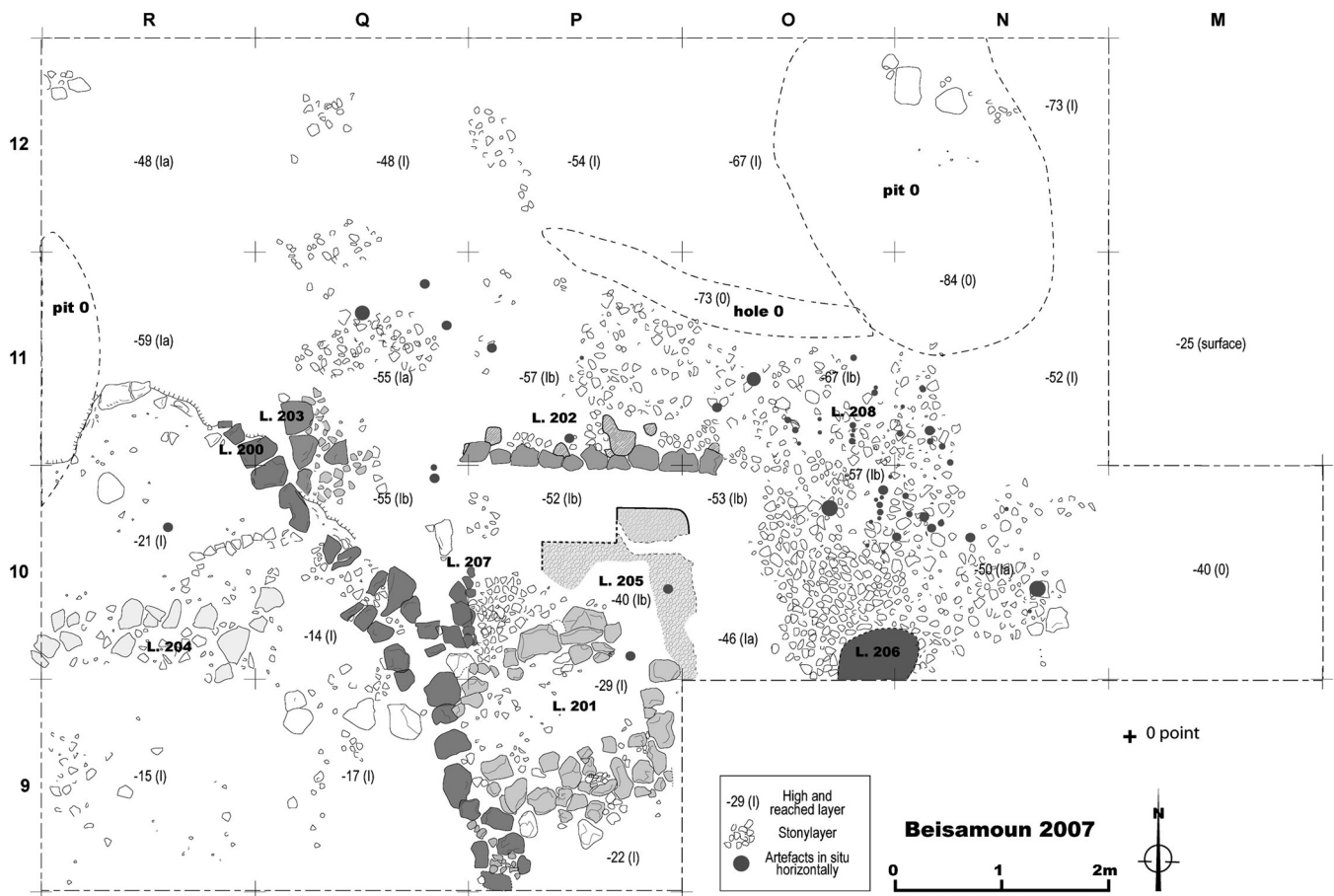


Fig.1 General map of the 2007 season at Beisamoun, Sector E (drawing: Marjolaine Barazani, CRFJ).

- Level Ia is a fine-grained brown-yellowish sediment, relatively poor in finds but has yielded the second level of structures. It is underlain by the earlier occupation layer,

- Level Ib, which was found at the end of the excavation season, under a floor level associated with Layer Ia that covered a large area of the sector. This is a fine-grained sediment similar to that found in Layer Ia but very compact and richer in charcoal and ochre specks. Six charcoal samples from Layers I, Ia and Ib have been submitted for dating.

Within these levels, nine loci were recognised and partly excavated (Fig. 1). At least two phases of construction were recognized, and both probably relate to the very end of the PPNB.

From the earlier occupation layer found so far, we have exposed five loci. Three of them are segments of walls:

- Locus 203 is a wall comprising two rows of stones oriented NNW-SSE. This wall was exposed for one meter and then underlies Locus 200.

- Locus 202 is oriented east-west and is made up of stones and mud bricks. It is preserved for 2.4 m in length.

- Locus 207 is a wall of two-courses oriented perpendicularly to the previous one.

- Locus 205 is a sort of platform made of a 20 cm thick, hard calcified white material showing a stair pattern on its west side and a curved pattern on the north-east edge (Figs. 1 and 2). A bloc-sample of this locus was taken and is being examined by F. Berna (Boston University). It may represent the remains of a poorly preserved plaster floor. Its northern limit is strictly parallel to wall 202, probably part of the same structure.

- Lastly, Locus 208 is a stony area strewn with numerous items discovered in a flat position, on or between the stones. They are the testimony to an unplastered floor level.

Four loci are part of a second phase of occupation.

- Locus 200 is a wall of two-ranges, oriented NW-SE, and currently exposed only for 5.30 m (Figs. 1 and 3).

- Locus 201 is an oval structure made of two or three rows of stones adjoining wall 200.

- Locus 204 comprises two rows of stones which are visible on the surface of the excavated area.

- Lastly Locus 207 is an oval pit that penetrates Layers I and Ia, destroying part of floor 208.

Both phases of construction are directly on top of each other, suggesting that there was no major interruption in occupation between them. We have investigated the later



Fig. 2 View of Loci 202 and 205 from the east, Sector E.



Fig. 3 View of Loci 200 and 201 from the south, Sector E.

period less than the earlier one. This may appear as a paradox but, in fact, the later structures are preserved only in the SW corner of Sector E, an area enlarged only during the second week of the excavation.

## Tools

Preliminary observations of the flint assemblage from the 2007 season at Beisamoun (more than 7000 artefacts) indicate that the flint industry is domestic and most of the knapping activities took place on-site, which is typical of large, permanent sites. This conclusion is based on the variety of the lithic material (cores, waste, debris and tools) and of the chipped stone technologies (blade, bladelet, flake and bifacial tools). Despite the stratigraphic distinctions, the flint assemblage seems to be homogenous in raw material acquisition and mode of production. Technologically, the high frequency of bidirectional blade technology that is characteristic of the PPNB (*e.g.* Abbès 2003; Khalaily 2006) is noteworthy. The assemblage also includes a classic naviform blade technology made on high quality purple flint. As for the tools, two types of sickle blades are present: sickle blades that display fine denticulation, mainly on the ventral face

and high luster on their working edges, together with deep denticulated sickle blades that have been shaped on bidirectional products; a few unpolished axes and long Amuq points that have been shaped by pressure retouching were also recovered.

Based on these techno-typological observations, it is possible to attribute the assemblage to the later stage of the PPNB period. This attribution is also based on the appearance of bladelet technology and standardized tools such as deep denticulated sickle blades and pressure retouched Amuq points that are characteristic of the Early PN Yarmukian culture (Rollefson 2003; Gopher *et al.* 2001).

Knapping industries are also represented by fine-grained basalt cores and flakes as well as obsidian pieces. Fourteen of them were collected during this season (three blade fragments, four bladelet fragments and seven debris). All belong, *a priori*, to the same raw material, a homogeneous, grey translucent obsidian with small black inclusions.

Fragments of grinding stones, numerous mullers, a few bowls, and discoidal items made out of limestone or vesicular basalt, were also found.

Twenty-three artefacts manufactured from animal elements (bone and antler) were found. Most of them derive from Level Ia. Two main tool categories were recognised in the sample – pointed tools and cutting ones. Most are made of bone. Metapodials were selected for awls and ribs for flat knives. Obvious technical reasons have guided these choices. Several techniques have been recognized – percussion, sawing, shaving, grinding – while at least two methods of debitage were practiced: fracturing and bipartition. These technical choices are usual in PPNB contexts, and some are inherited from the Natufian (Le Dosseur 2006). A bigger sample is needed to discuss the possible unique features of the Beisamoun bone tool kit.

## Fauna

The new excavations at Beisamoun have yielded a small (*ca.* 400 bones from Layers I and Ia) but interesting sample of well preserved animal bones, the majority of which comprise remains of what have tentatively been identified as wild species: *Bos cf. primigenius*, *Sus scrofa fer.*, as well as *Gazella gazella*. The caprine (*Ovis/Capra*) remains comprise a minority of the identified finds (Table 1). The majority of caprine bones are undetermined as to species, but goats, and no sheep, have been positively identified to date. At least one slightly twisted goat horn core of an animal, tentatively identified as *Capra cf. hircus*, was found in Layer I, but the status of the caprines from the other layers cannot be absolutely determined at this stage of the analysis.

The low frequency of caprine remains found in this sample is unusual for PPNB assemblages from the south-

Table 1 Fauna species identified at Beisamoun.

Species	Ducos Surface		Davis Excavation		This Study Layer I		This Study Layer Ia	
	N	%	N	%	N	%	N	%
Gazelle ( <i>Gazella gazella</i> )	38	4.0	11	14.5	4	8.0	7	16.0
Bezoar goat ( <i>Capra aegagrus</i> )	22	2.0	-	-	-	-	-	-
<i>Capra</i> sp.	-	-	41	52.5	2	4.0	-	-
Mouflon sheep ( <i>Ovis orientalis</i> )	34	3.5	-	-	-	-	-	-
Caprines ( <i>Capra/Ovis</i> )	77	8.0	-	-	7	14.0	-	-
Aurochs ( <i>Bos primigenius</i> )	-	-	1	1.0	23	46.0	18	41.0
Domestic cattle ( <i>Bos taurus</i> )	475	49.0	-	-	-	-	-	-
Hippopotamus sp.	3	0.3	-	-	-	-	-	-
Donkey ( <i>Equus cf. asinus</i> )	5	0.5	2	2.5	-	-	-	-
Boar/Pig ( <i>Sus scrofa</i> )	188	19.5	21	27	14	28.0	19	43.0
Fallow deer ( <i>Dama mesopotamica</i> )	11	1.0	-	X	-	-	-	-
Medium mammals	107*	11.0	-	-	-	-	-	-
Wild cat ( <i>Felis silvestris</i> )	-	-	2	2.5	-	-	-	-
<b>Total</b>	<b>960#</b>	<b>100</b>	<b>78</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>44</b>	<b>100</b>

\* Includes Ducos's small ruminant and small bovid categories (Ducos 1978: 264)

# Total is 960 and not 962 as noted in Ducos (1978: Table 4)

x = present, no number specified

ern Levant, since by the MPPNB caprines comprise 40-50% or even more in other Jordan Valley assemblages (Horwitz and Ducos 2005). The high cattle frequencies in the new Beisamoun sample closely resembles the PPNC assemblages from Hagoshrim and Tel Te'o in the Jordan Valley, where cattle frequencies comprise 30% or more of the identified fauna relative to frequencies of caprines and gazelles, and the LPPNB sites in this region with frequencies of circa 25% cattle (Horwitz and Ducos 2005). These researchers have suggested that such high proportions indicate that by the PPNC in the southern Levant, cattle were domesticated or in the course of this process. A cursory examination indicates that in size and robusticity the Beisamoun cattle are similar to wild forms, but this is a feature that needs to be examined in greater detail.

The new Beisamoun assemblage differs in the range of taxa represented and their relative frequencies compared to the samples previously recovered from this locality and analyzed by Davis (1978) and Ducos (1978) (Table 1). These differences may stem from the smaller size of the new sample, differences in past human activities undertaken in this particular part of the site, or even chronological differences between the assemblages.

### Botanical Remains

Soil samples from Layers I, Ia and Ib were checked for botanical remains (Fig. 4). Within Layers I and Ia, paly-

nomorphs reflect a humid and poorly oxygenized milieu of fossilization of the different identified micro-remains. This might be a result of recent botanical pollution during the time of the fish-breeding ponds. In contrast, Layer Ib shows a spectrum typical of dry conditions, with a high proportion of Chenopodiaceae in the pollen spectrum. However, very few taxa were identified in this layer and this result may be due to differential preservation of the fossils rather than a testimony to a dry climate. These first botanical samples taken at Beisamoun cannot as yet be interpreted in terms of palaeoenvironment, but this issue will be pursued as micro-remains preservation improves as the excavation of the archaeological layers deepens.

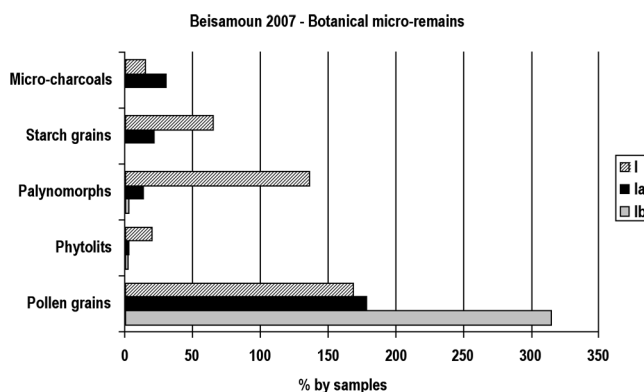


Fig. 4 Percentage of botanical micro-remains in three soil samples from Sector E, Layers I, Ia and Ib.

## Trenches

Besides the exploration of Sector E, we also opened three long trenches (0.6 m wide and 10-15 m long) using a mechanical excavator. Two of them are oriented north-south (Trenches 1 and 2) and the third one is oriented east-west (Trench 3). They have provided a long archaeological sequence with at least three different stratigraphic units preserved from 0.20 m to 1.20 m depth. This occupation sequence seems mainly to be associated with the Late PPNB. Like Sector E, the sub-units I, Ia, and Ib are also present in the trenches, except in the east side of Trench 3 where the stratigraphic sequence differs. Four thick walls were found in Trench 2 parallel to each other, oriented east to west. In Trench 3 one wall and two very well-preserved plaster floors were discovered. At the base of all trenches, a dense black organic layer was found, probably the deposit of the now extinct Hula Lake.

## Conclusion

Recent excavations in the Levant have reshaped our knowledge of the Late PPNB, in particular the megasite phenomenon. However, in the western part of the Jordan Valley and in the Jordan Valley itself, the end of the PPNB is still unclear. The results of the first season of renewed excavations at Beisamoun demonstrate the preservation of a promising and undisturbed part of a LPPNB village. This is an excellent opportunity to clarify the issue of the end of the PPNB in this central area of the Levant.

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