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A PPNB Settlement at aṣ-Ṣifiyya in Wādī al-Mūjib

Introduction

In the spring of 1994 the presence of a large Pre-Pottery Neolithic settlement at Wādī al-Mūjib, adjacent to the bridge of the King's Highway (FIG.1), was brought to the attention of the Department of Archaeology at Mu'tah University following ploughing and bulldozing activities by the owner of the land .

The site was , and indeed is still further endangered by seepage of a water pool dug in the upper slopes of the site as well as a net of several water pipes scattering all over the site surface.

A series of damage to the site took place : rock debris from scooping the surface of the upper slopes of the site partly covering and cutting the cultural layers, dirt roads were erected at the site through bulldozer works. These bulldozer activities left behind tracks running in different directions, exposing cultural layers by sections up two meters high in some areas.

In March 1994, preliminary investigations lasting twenty days, were initiated in order to estimate the extent of the site, the thickness and the state of preservation of the archaeological layers, the nature of the damage incurred, and the potential for more extensive excavations.

The initial investigations revealed a predominantly Neolithic settlement that can provisionally be dated (on the basis of the technotypological criteria of the chipped stone tool assemblage and the style of architectural constructions) to the late Pre-Pottery Neolithic B period which spans the years from ca. 6500 BC - 6000 BC.

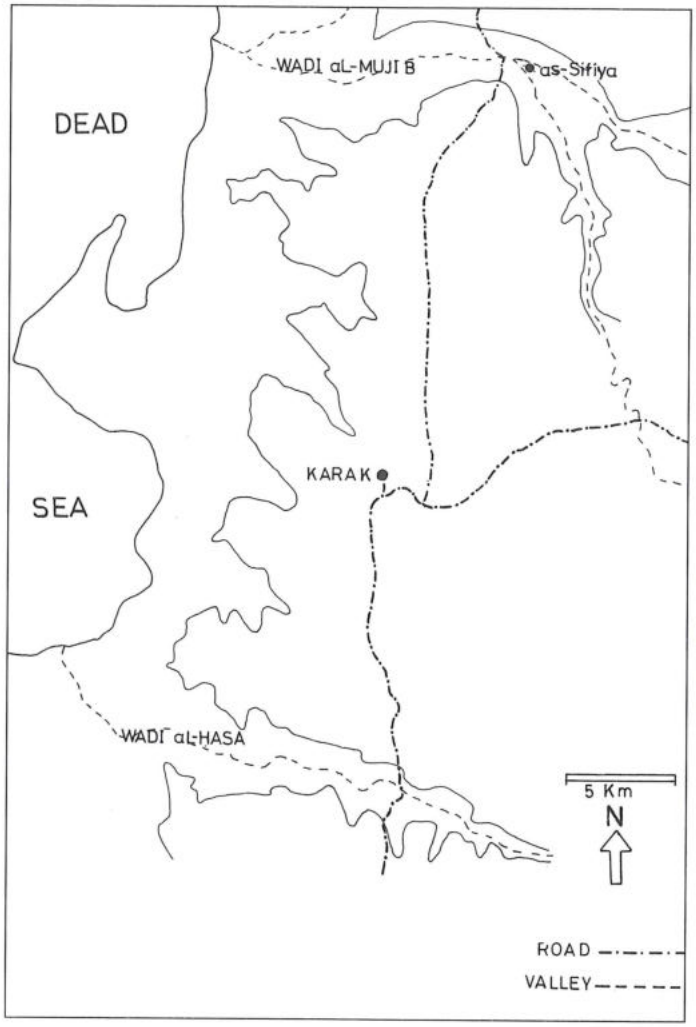
Despite the importance of the site, it was never mentioned earlier by any surveyor or archaeologist who passed through the area during the last decades.

A full investigation has become imperative as the expansion of the agricultural activities on the site were advanced and caused more damage to its cultural layers.

Site Setting

Aṣ-Ṣifiyya is situated high on the eastern slopes where Wādī al-Mūjib and its tributary Wādī as-Salāyṭa meet at an elevation of ca. 210m asl Wādī al-Mūjib is located in a quite wide and rising sharply slope on all sides.

The entire area of the site has recently been disturbed



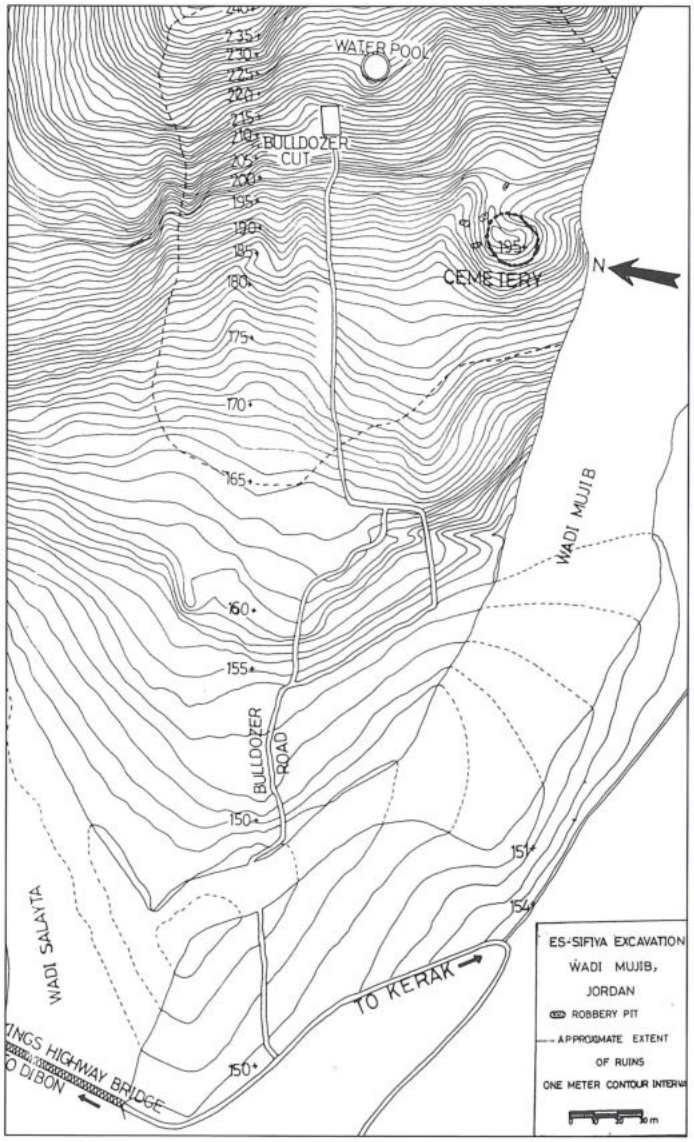
1. Map showing the location of aṣ-Ṣifiyya.

by current agricultural terracing, ploughing, burials and irrigation systems. These activities make it difficult to assess the real size of the aṣ-Ṣifiyya settlement. However, the distribution of the surface artefacts and cultural material extends over approximately 118 dunams, although it is likely that the architectural remains cover about 20 dunams (FIG. 2). The recent bulldozer damage has shown that the settlement of aṣ-Ṣifiyya has extensive architecture, which is in good condition with walls standing to a

height of two meters in some areas.

The immense area of the aṣ-Ṣifiyya settlement makes it ranking in size with the main Neolithic sites such as Mureybet (Van Loon 1966:215), Tall Abū-Hurayra (Moore 1975:56 and 1978:164), Tall Aswad and Tall Ramad in Syria (Mellaart 1975:59; Mahasneh 1989:229), Beisamo, Munhatta (Singh 1974:55) and Jericho in Palestine (Kenyon 1979:29), Wādī Shu'ayb (Simmons *et al.* 1989:29), 'Ayn Ghazāl (Kafafi 1990:134; Rollefson 1983a and 1983b; Rollefson and Simmons 1985a and 1985b), al-Bayḍa (Kirkbride 1960:141), al-Baṣṭa (Gebel *et al.* 1988:107), Ba'ja (Gebel 1988:85) and 'Ayn Jammām (Bisheh *et al.* 1993:121) in Jordan.

The environment of aṣ-Ṣifiyya presents an excellent record for determining the subsistence economy and demography of a stable settlement that lasted for at least about half a millennium. The present ecological setting in Wādī al-Mūjib which could be considered as one of the largest drainage passages in Jordan, provides perennial sources of water. The natural habitat of this wadi explains its importance for the understanding of the early village/ herding economy in less severe early Holocene environment. Therefore, the site of aṣ-Ṣifiyya is of extreme importance for understanding the later development during the Neolithic period.



2. The Contour Map of aṣ-Ṣifiyya.

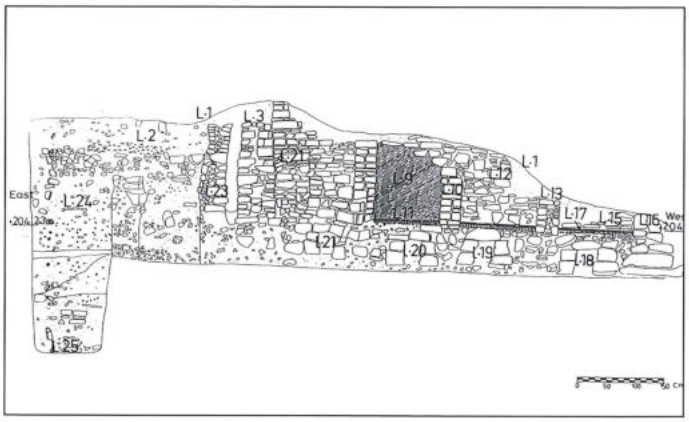
The Excavation Goals

Prior to our arrival to the site, an area approximately 160 sq.m was cut and cleared by a bulldozer for irrigation purposes, exposing the occupational layers of a Neolithic culture.

The initial objectives for the 1994 season had two goals: The first one was to carry out a preliminary survey in order to assess the extent of the Neolithic occupation. This was achieved through an intensive survey of the prospective area of the old settlement and through investigations of modern cuts at various locations at the site. Although it was nevertheless possible to conduct an intensive surface survey, as it was intended, the density of tomato plantation which covered each square meter in the southern part of the site made our tast in this part of the site more than a difficult one. The second goal was mainly to conduct a preliminary small salvage excavation in the bulldozer-cut area where cultural layers were exposed. Despite the fact that we were neither prepared nor fully equipped for a full-scale excavation, we trimmed and cleared the longest bulldozer-cut section (about3 11 m) where rectangular structures and plaster floors were attested. This trimming provided us with information about the archaeological stratigraphy of aṣ-Ṣifiyya.

The Architectural Remains

The small-scale excavation which was carried out in March 1994 focused mainly on trimming and clearing the longest part of the bulldozer cut section. This bulldozer - cut section is oriented approximately east-west and revealed a thick PPNB occupational level along the entire length of the section. Red-stained floors, stone walls and sub-floor structures are exposed clearly for a length of 8 m and vary in thickness from about 80 cm at the west side of the section to about 2.3m at the east side (FIG. 3).



3. The Section of the bulldozer-cut area.

We started to remove the top soil (Locus 1) and below that a sedimental layer (Locus 2) was exposed. This sediment contained large quantities of burnt limestone chunks, fragments of plaster , loamy matrix , ashes, animal bones, lithic tools, and artefacts washed in from the upper slope . At the top of the section the sediment has been damaged by recent agricultural activities and truncated by the present topography of the site.

The exposed architectural remains consist of plaster floors and stone walls which are the remains of a building unit. The bulldozer's work was responsible for wiping out most of the features of this building unit and, unfortunately, very few structures were left behind.

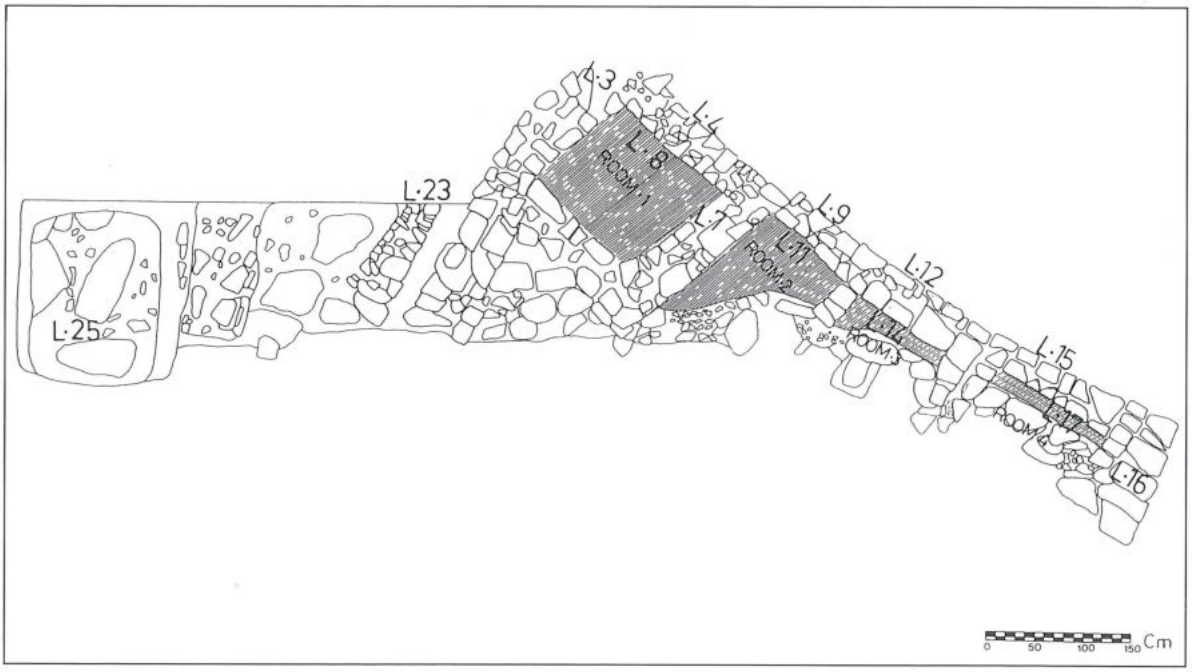
The remains of four small rectangular rooms which vary in size can be recognized easily (FIG. 4). The walls (Loci 3-6) represent the first room which has a structure of comparatively good condition where the remains of four walls are still preserved at different leights. In the west wall Locus 6 of this room is a narrow passage (Locus 7) completely preserved including the entire door frame with some additional structures above the lintel. This doorway measures 50 cm high x 40 cm wide and connects room 1 with the neighbouring room 2.

Room 2 is formed of walls Loci 6, 9 and 10 and is located to the east of room 1. Room 3 is framed by walls Loci 10, 12 and 13, while room 4 is located in the west edge of the section and consist of walls Loci 13, 15 and 16 (see FIG. 4). The northern walls of rooms 2-4 are destroyed and have disappeared through recent bulldozer activities. The remaining walls of rooms 3 and 4 are preserved only to a height that has left no traces for the doorway passages.

The walls of these four small rooms have the same building technique. The occupants of aṣ-Ṣifiyya took advantage of the fact that the soft limestone flaked off in pieces of comparatively equal thickness, thus providing them with building material. These stone slabs have rectangular shapes. All the walls are built of two facing rows of rectangular stone slabs laid horizontally and providing the exterior façades of the walls. Wedge stones were used between the rows of these rectangular stones, creating walls still preserved to a considerable height of 1.5 m (Locus 4).

The walls which are exposed in the bulldozer cut section are associated with plaster floors (Loci 8,11,14 and 17). The plaster floor of room 1 (Locus 8) is the only one which escaped the bulldozer destruction, while the floors of the other three rooms are destroyed and only little remains are still *in situ* and can be seen vividly in the section. The preliminary result of analysis indicates a considerable variability with regard to the relative composition of the lime plaster and crushed chalk/limestone. Lumps of what seems to be sun-dried or perhaps even fired reddish clay were noticed in some quantity in the excavated area.

These plaster floors were built of a hard matrix 'bale' with gravel and small pebbles, laid down and then coated by a thin plaster, The floors were then burnished and given a coat of red paint. The entire stone walls also received an interior coating of mud plaster and were finished by a thin sheet of white plaster. Only some patches of plaster are still adhering to the stone walls. However, the south wall of room 2 (Locus 9) (see FIG. 3) is still completely coated with white plaster. The plaster of the walls received the same finishing treatment as the plaster floors and is covered with red paint. There is an accumulation of several re-plasterings which were attested very well on the walls as well as, on the floors of these four rooms. The walls and the plaster floors of aṣ-Ṣifiyya are



4. The Top-plan of the bulldozer-cut area .

identical in form and building technology to those found at 'Ayn Jammām (Gebel 1992:3-6), al-Baṣṭa (Gebel *et al.* 1988: Fig. 6; Nissen *et al.* 1987:88 and Nissen *et al.*, 1991:15), al-Bayḍa (Kirkbride 1966:14) and 'Ayn Ghazāl (Banning and Byrd 1984:15; Rollefson 1983:12; Rollefson and Suleiman 1983:471-478) in Jordan, and Yiftahel (Garfinkel 1985) in Palestine.

Below the plaster floors there is a layer of rows of large stone boulders and rubble in between , among these boulders sub-floor structures (Loci 18-21) are exposed underneath the floors of the four rooms and running in a north-south direction (see FIG.3). All the sub-floor structures or the channel-like sub-structures are entirely filled with very fine soil.

Each sub-floor structure consists of two parallel rows of large slabs and in each row two courses of limestone were constructed. These sub-floor structures are sealed with flat stone slabs. The average measure of these channel-like sub-structures is about 30 cm wide and 50 cm high. The floors of these structures were built of finely dressed stones. No evidence for mortar or plaster has been uncovered on the interior faces of these sub-floor structures.

Since these four sub-floor structures are located beneath the floors of the four rooms and running in north-south directions, we were unable to excavate them. However, a two metre rod was inserted inside one of these structures and the end was not reached . The channel-like sub-structures of aṣ-Ṣifiyya have counterparts at the two sites of al-Baṣṭa (Gebel *et al.* 1988:116; Nissen *et al.* 1987:89 and Nissen *et al.* 1991:14) and 'Ayn Jammān (Gebel 1992 : 3). This type of structures which is unparalleled elsewhere in the Levant outside these three sites, was probably used as a water-channel system for drainage since it is filled with a soft silt.

To the east of room 1, the remains of a stone wall can be clearly seen. Both walls Locus 3 of room 1 and the free standing wall Locus 23 are separated from each other by a small space of 20 cm wide and 80 cm high (see FIG. 3). This narrow area is filled with cobbles, pebbles and with a large quantity of silt. This discovery might indicate that there was a surface drainage system at aṣ-Ṣifiyya beside the sub-floor one.

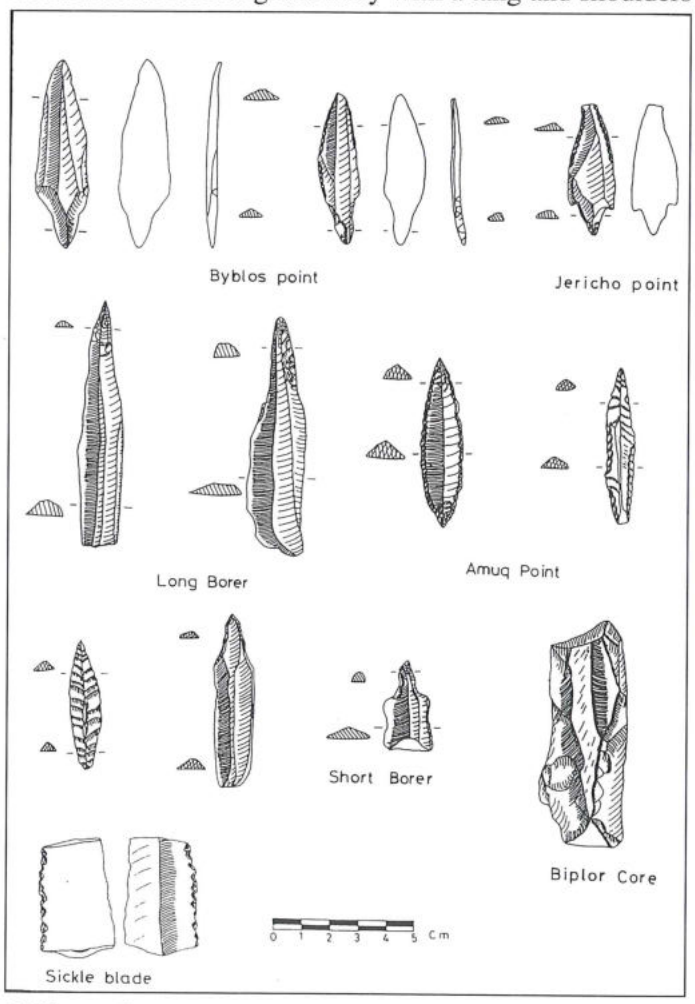
In the easternmost corner of the bulldozer-cut section , a small trial trench was opened in order to obtain more information about the stratigraphical sequence of the site. The trial trench resulted in uncovering a dumping pit . After removing the top soil, the first sign of human activity was uncovered: a greyish layer (Locus 24) with quite densely packed fire-cracked stones, heavy admixture of ashes, pieces of mortar material, chunks of plaster, building debris, flint artefacts, fragments of stone tools and massive chipping debitage. This large amount of finds suggests that stone tools and artefacts were manufactured at the site.

The bedrock (Locus 25) was reached at a level around 4m deep (see FIG. 3) This indicates that the upper architectural remains appear 2.30m above bedrock. No material culture in this dumping pit could be dated before the middle of the seventh millennium BC was found. Therefore, one initially could conclude that the uncovered structures in the bulldozer-cut section belong to a single period which can be dated to the late PPNB.

The Lithic Industry

The collection of the chipped stone artefacts from the excavated section appears to indicate a homogeneous assemblage which reflects the distinctive elements of the chipped stone industry of this period (Mahasneh 1989 : 203). It is dominated by the use of the bipolar technique. The retouched blades show distinct patterns of edge retouch. Amongst the artefacts the use of heat-treated pink /purple flint is to be noticed as practised at the site. However, the diagnostic tools of the aṣ-Ṣifiyya flint industry are the arrowheads.

Three types of arrowheads or projectile points (FIG. 5) were attested : The Jericho large point , and which has a tang and wings, which is common during the early PPNB period, is very rare in the late PPNB (Burian and Friedman 1978:58 ; Crowfoot-Payne 1983:679; Rollefson 1983a: 4). The Byblos point represents the second type of arrowheads. It has an elongated body with a tang and shoulders



5. Flint artefacts.

between the body and the tang. The Amuq point is the third type which has an elongated leaf-shaped body and is pointed at both sides. Byblos and Amuq points are common at aṣ-Ṣifiyya during the late PPNB, unlike the Jericho point which , as stated above, was only common during the early PPNB, but rare to absent in the late PPNB (Baryosef 1981 : 599 ; Gopher 1985 : 56 - 59; Mortensen 1970: 17-26).

Flint borers of both squat and elongated forms were attested at aṣ-Ṣifiyya (FIG.5). The sickle blades of aṣ-Ṣifiyya belong to the common type of the PPNB, with fine denticulation done by semi-abrupt retouch, usually on the ventral face (Burian and Friedman 1979 : 13).

The chipped stone industry of aṣ-Ṣifiyya bears a strong resemblance in forms and technology with those recorded at the PPNB sites of al-Baṣṭa (Gebel *et al.* 1988 : Figs. 9-11), Ba'ja (Gebel 1988: Figs 9-10), 'Ayn Ghazāl (Rollefson and Abu Ghaneima 1983 : 46 - 469) and Jericho (Crowfoot - Payne 1983 : Figs. 292-327).

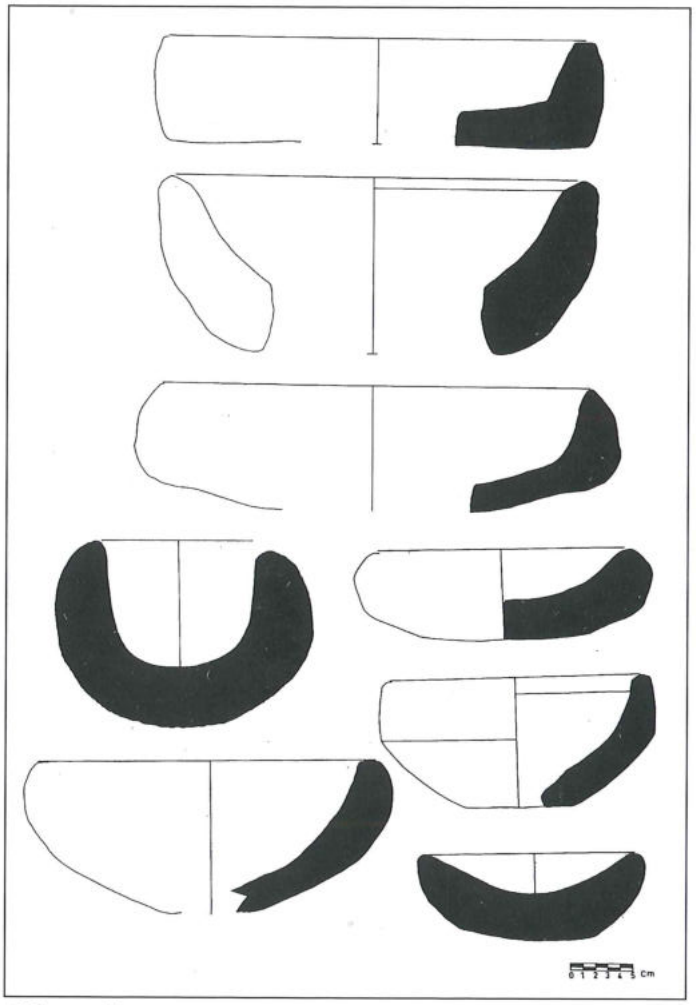
Heavy duty ground stone objects such as querns were found scattered throughout the site. They are chiefly of limestone and basalt boulders and give evidence of hard and prolongated use. These querns are minimally modified and left unshaped on their exterior surfaces which have been hollowed out (FIG.6). The rarity of such objects may point to the general preference of wood rather than stone for the making of these vessels.

Grinding stones of various hardness, such as pestles, rubbing stones, stone hammers and grinding slabs (FIG. 7) are recorded. Chiselling, pecking, grinding or polishing and flaking were used in forming these tools. One complete stone weight was found. It is made of basalt and perforated off-centre at the narrowest point. The perforation is biconical in section. The shape tends to be trapezoid with rounded edges. Only few small finds are recorded. Six fragments of sandstone bracelets were found. They range in diameter from 4 cm to 7 cm A small fragment of sandstone palette was also uncovered (FIG. 8).

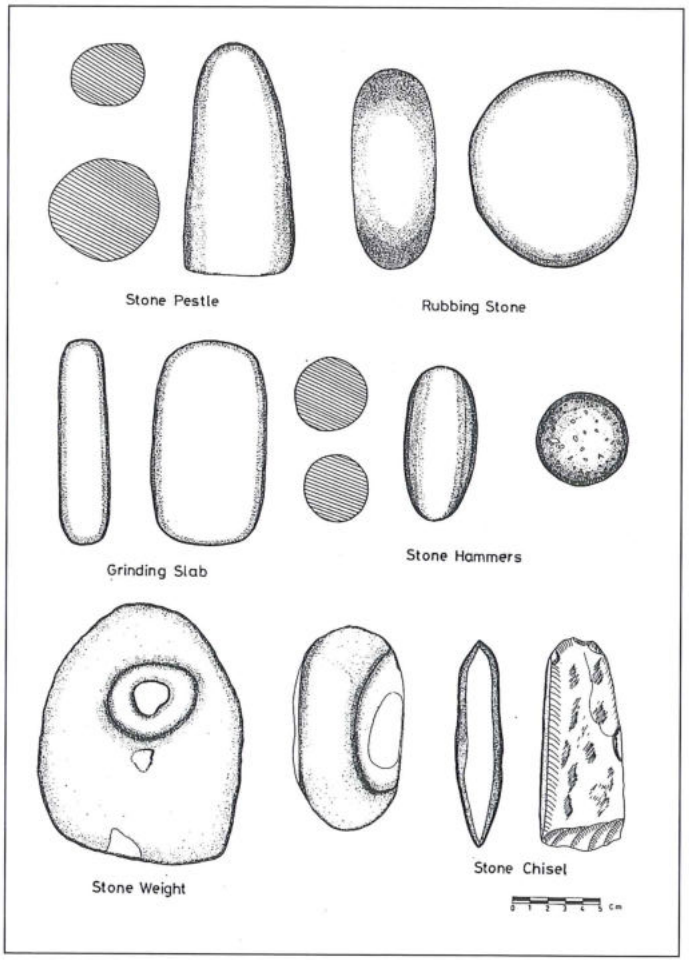
The ground stone industry of aṣ-Ṣifiyya has parallels at many PPNB sites,for example Jericho (Dorrell 1983 : Figs. 224 -226 and 228), al-Bayḍa (Kirkbride 1966 : Fig. 7) and al-Baṣṭa (Nissen *et al.* 1991 : pl. 111 ; Nissen *et al.* 1987: Figs 13 and 15 ; Gebel *et al.* 1988: Fig. 13).

The Economy

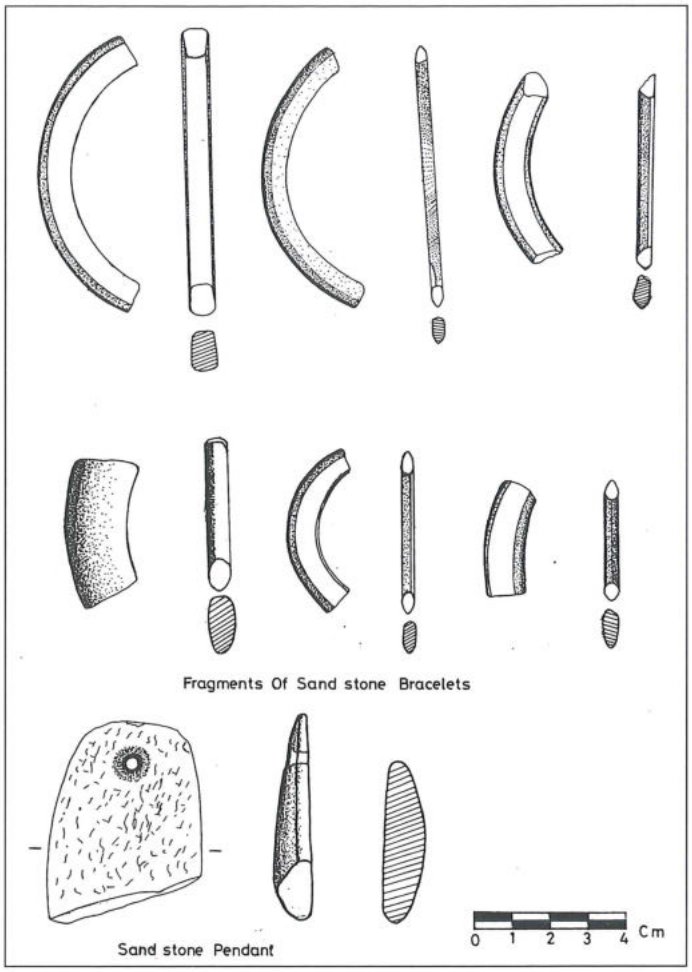
The situation of aṣ-Ṣifiyya presents an excellent record for determining the subsistence economy of a stable settlement that lasted for, and as long as, half a thousand years. The present day ecological setting shows a small wooded



6. Stone objects.



7. Stone tools.



8. Small finds.

area dominated by wild trees as well as cultivated cereals and vegetation. Lavish perennial water sources, flow from the nearby springs, scattering throughout the valley bed of Wādī al- Mūjib, the flood plains adjacent to the site led to the cultivation of einkorn wheat (Triticum Monococcum), and two-row barley (Hordeum Distichum) are attested here. The cereal cultivation made aṣ-Ṣifiyya identical to al-Bayḍa (Helbaek 1966:64), 'Ayn Ghazāl (Rollefson and Simmons 1985 : 17) and al-Basṭa (Gebel *et al.* 1988 : 132).

The small but well preserved remains of fauna uncovered from the excavation include goats, sheep, capra sp., gazelle, Bos sp., sus scrofa as well as smaller elements such as red fox, hare and birds. The faunal analysis have shown that sheep and goats were domesticated while the rest of the species were hunted.

The overall composition of the admittedly small assemblages compares well with those of al-Basṭa (Nissen *et al.* 1991:29), al-Bayḍa (Perkings 1966:66) , 'Ayn Ghazāl (Köhler - Rollefson 1988:89), Beisamon (Davis 1982:10) and Jericho (Clutton - Brock 1979:115). However, the specific proportions of the species differ, which may reflect differences in animal exploitation patterns.

The floral and faunal analysis have shown that the occupants of aṣ-Ṣifiyya were responsible for erecting the earliest village farming community in Wādī al-Mūjib area. The local economy of aṣ-Ṣifiyya, which was mainly based on food production, contributed to a certain degree in constructing large building units in order to fulfill the domestic needs of the aṣ-Ṣifiyya settlers at that time. The fertile habitat gives rise to the early village mixed farming economy and aṣ-Ṣifiyya provides important information for the understanding of the development of this type of settlement.

The paleoeconomic data which were obtained from the bulldozer excavation have shown a typical Neolithic economy, consisting of self-sufficient farmers, with sheep and goats being herded, but still obtaining part of their food by hunting and gathering.

Conclusion

Aṣ-Ṣifiyya is one of the early village settlements situated next to a chain of strong springs flowing lavishly along the Wādī al-Mūjib valley bed. This perennial source of water certainly was the reason for the site location. From the first reconnaissance at the site, aṣ-Ṣifiyya is considered to be, together with al-Basṭa, Ba'ja, 'Ayn Jammām, Wādī Shu'ayb and the later levels of al-Bayḍa and 'Ayn Ghazāl, among the largest late Pre-Pottery Neolithic B (6500 - 6000 BC) settlements encountered so far in Jordan.

The distribution of the surface artefacts and tools extends over approximately 118 dunams, although it is likely that the architectural remains are confined to the upper slopes of the site and cover about 20 dunams. The recent bulldozer damage has shown that the settlement obtains an extensive and substantial architecture, with walls standing to a height of 1.75m. The slope-setting of the site is most likely responsible for the excellent conditions of architectural preservation. The sediments of the site reveal a fair amount of chipped and ground stone artefacts, animal bones and ashy deposits.

The most interesting discovery exposed in the bulldozer-cut section at aṣ-Ṣifiyya were the architectural structures. Part of the building unit is restored and consists of four small rectangular rooms. Three were destroyed and one almost remained in good condition which measures 1.10m x 1.20m. These small rooms might be used for storage purposes. The main large room which represents the major architectural element in this building unit was probably destroyed by and disappeared through the recent bulldozer activities.

The building techniques observed in aṣ-Ṣifiyya are the same as reported from late PPNB al-Basṭa and 'Ayn Jammām in Southern Jordan. The dressing of stone faces and the use of wedge stones between the rows of carefully placed stones are characteristic. The plaster floors, the sub-floor structures, and the channel-like sub-structures uncovered at aṣ-Ṣifiyya are identical in plan and building techniques with those found at al-Basṭa.

The chipped lithic industry fully reflects al-Basṭa, Ba'ja and 'Ayn Jammām with the primary production and

tool kit. The ground stone industry including querns, stone bowls, pestles, pounders and grinding slabs shows close affinity with that of al-Bayḍa, Basta, Ba'ja and 'Ayn Jammān.

The test investigations which were conducted at aṣ-Ṣifiyya in 1994 have clearly indicated the potential of the site for further excavations and investigations into late PPNB ways of life in the region of Wādī al -Mūjib. The data presented above indicate that this site was formerly a large settlement which was occupied for a long period covering the second half of the seventh millennium BC.

Acknowledgement

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