

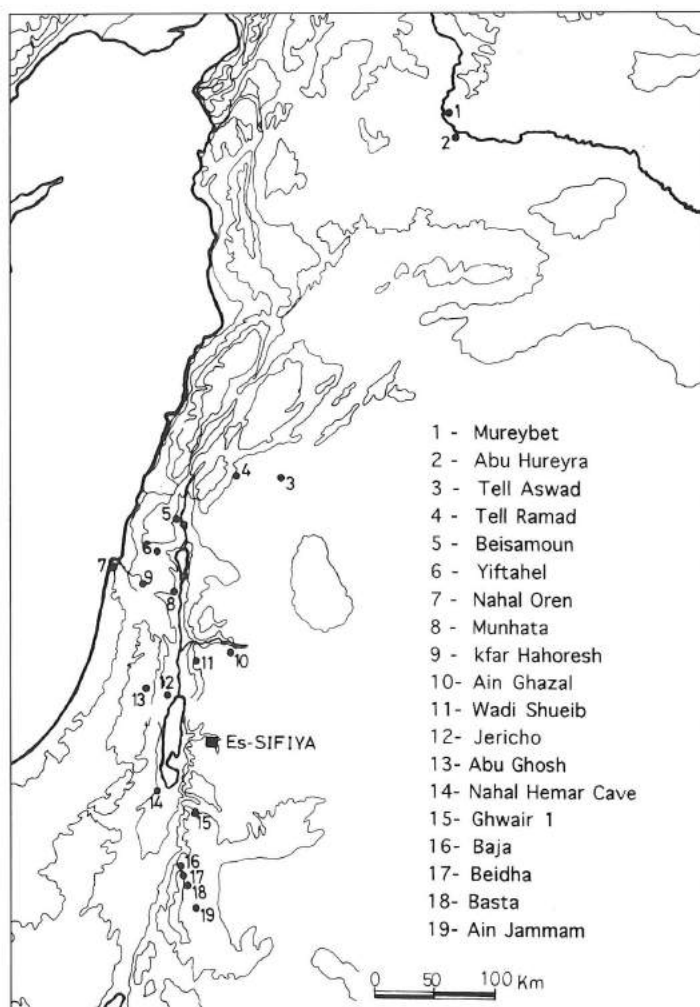
The Neolithic Burial Practices in Wādī al-Mūjib during the Seventh Millennium BC

Introduction

The Levant is one of the richest areas in the Ancient World with evidence for prehistoric burial customs. Among these, the hundreds of graves from the Late PPNB period reflect a wide variety of ritual traditions and practices (Mahasneh 1989: 214-215).

Aş-Şifiya, whose burials are under discussion in this paper, is situated on the northern bank of Wādī al-Mūjib (FIG. 1) on a cone-shaped terrace adjacent to a fertile floodplain and a series of water springs running all year round. The present site, which was discovered in 1993 through agricultural activities implemented by the landlord, measures ca. 120 dunums with its apex about 12m above the valley floor, at 230m above sea level. Due to the continuous destruction of the site surface, four intensive seasons of excavations from 1994 to 1997 were conducted and directed by the author (Mahasneh 1996; 1997a; 1997b; 1998) and under the auspices of Mu'tah University. These excavations have sampled an area of 550m². In a 3.5m deep stratigraphy of cultural deposits near the upper slopes of the site, two building phases were distinguished. Both are dated to the LPPNB, which is fully confirmed through radiometric dating to the seventh millennium BC (7930) (\pm ISGS-3279; Delta 13C:25.2).

The investigated area revealed a series of closely spaced stone building-units. Each contains a central room flanked with small quadrangular and oblong rooms furnished with plaster floors. There was a remarkable consistency in the internal plan of the dwellings through time. The bulk of the uncovered material culture (architecture, chipped and ground stone industry and the burial customs) show strong similarities to the remains from other early Neolithic sites recorded in southern Jordan, such as Baṣṭa (Nissen 1990: 87-94; Nissen *et al.* 1987: 79-120; 1991: 13-40; Gebel 1988: 90-95; Gebel and Starck 1985:90; Gebel *et al.* 1988: 101-134), 'Ayn Jammam (Gebel 1992: 1-6; Bisheh *et al.* 1993: 121-122; Waheeb 1996: 340-344), Ghwair 1 (Najjar 1992: 19-29; 1994: 75-86; Najjar *et al.* 1990: 27-30), Ba'ja (Gebel and Bienert 1997a: 9-11; 1997b: 14-18; Bienert and Gebel 1997: 13-14; Gebel *et al.*



1. Geographic map showing aş-Şifiya and other PPNB Sites.

1998: 215-250) and the later levels of Bayḍa (Kirkbride 1960; 1962; 1966; 1967; 1968; 1978).

The Human Remains

The archaeological excavations in the Levant during the past few decades have extended insights into structures of the early Neolithic human societies. The site of aş-Şifiya, with its rich sample of burials and skeletons, contributes

to these insights. It offers the finding of single and group burials, as well as primary and secondary children, adolescents and adults burials in a variety of contracted and flexed positions. Grave goods were found associated with these burials. Some skulls are separated from the post-cranial bones. The human bones were found quite fragmentary in some burials; another aspect of bad preservation is the calcareous incrustations on the bones that, with rare exceptions, did not allow the taking of precise measurements. For that reason, a precise morphological study is very difficult. However, the dental remains await a proper study after a thorough cleaning process.

The human skeleton materials reported here include twelve burials with fifteen individuals (see TABLE 1). All of these burials were uncovered within the living area of the site and came from Area B (Squares B2, B7 and B8) and Area C (Squares C6, C10, C11, C12 and C13). The burials in Area B were very well preserved compared to those of Area C, which suffered great disturbances from bulldozer impacts.

Burial no. 1: one of the sub-floor or channel-like sub-structures of aş-Şifiya used for drainage purposes. It penetrates beneath the walls and floors of several rooms and heads toward the slope of the site. The length of this channel is 19m. The main part of the channel is located in Sq. B7, in which a human skeleton of 25 years old with the head oriented southwards was found (FIG. 2). The skull was in place and well preserved. The extremities were flexed. The body was laid on its right side, the lower extremities appear to be bent towards the front with the hands placed between the knees. The body is less com-



2. Substructure (channel like) burial, almost complete.

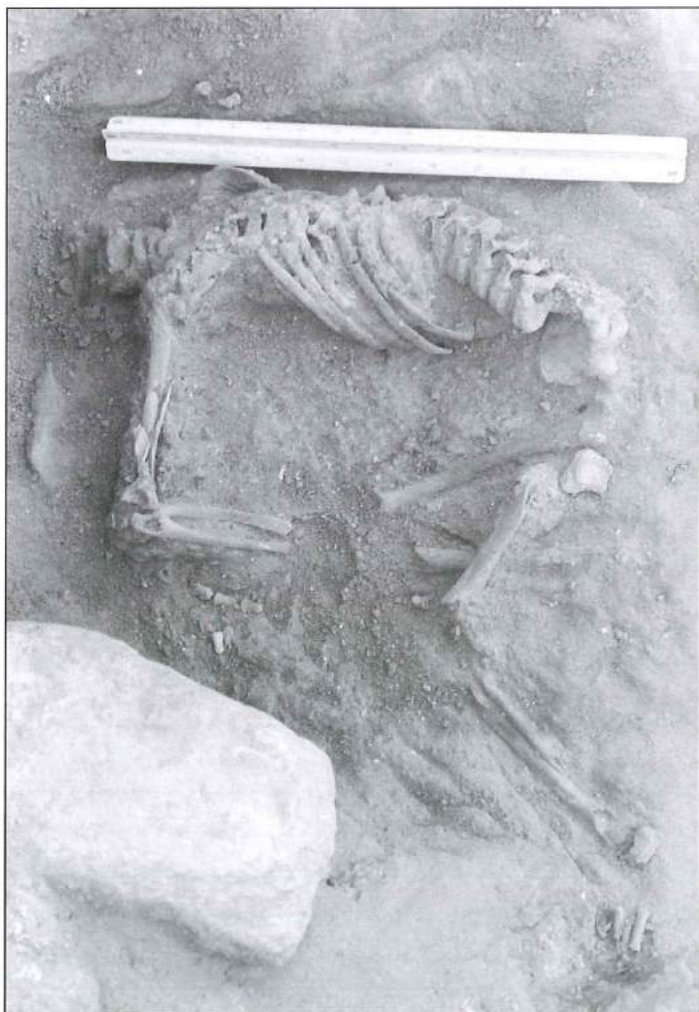
Table 1. Distribution of burials and burial goods at aş-Şifiya.

Burial No	Square Locus	Skeletal Remains	Sex, Age	Burial Goods
1	B7,12	Complete	Unknown, c.25yrs.	3pendants,5 beads
2	B8,7	Without skull	Unknown ,c. 5-7yrs.	No
3	B8,8	Without skull	Female, c. 35yrs.	4beads
4	B8,9	Double burial without skulls	Unknown, Unknown	1 pendant / palette, 10 beads, 1 flint nodule polisher
5	C6,13	Complete	Male, c. 16 yrs.	1 pendant, 4 beads, 2 ring fragm.
6	C12,8	Complete	Female, 30-35 yrs.	4beads, 2 pendants
7	C12,10	Without skull	Female, 20-25 yrs.	4 pendants, 2 beads, 1 shell
8	C10,6	Without skull	Male, 35 yrs.	No
9	B2,14	Skull	Unknown, over 40 yrs.	1 basalt polisher
10	C13,10	Three skulls	Unknown , unknown	No
11	C11,8	Skull	Male,30-40 yrs	No
12	C10,7	Skull	Male, c. 24 yrs	No

plete, but the ribs are, and the pelvis had been disturbed. Therefore, it is difficult to determine the sex. The channel substructure was not wide enough to accommodate the dead, so it was widened before deposition in order to accommodate the corpse. We believe that the channels or the sub-floor structures of aş-Şifiya were used as burial grounds, while the structures of the upper phase were not in full use. A similar burial practice was recorded from Bašta (Nissen 1990: 89; Nissen *et al.* 1991: 17).

Burial no. 2: was found in Sq. B8, and represents an infant (FIG. 3) who died in the age range of 5 to 7 years. The skeleton is well preserved but the skull is missing. The body was laid on its right side, the extremities were stretched and bent to the front.

Burial no. 3: is a skeleton of a young female in a flexed position found in Sq. B8 (FIG. 4), she died at around 35 years old. A large stone was positioned on top of the lower part of the deceased, apparently causing considerable damage to the bones of the lower extremities as well as



3. An infant burial with the skull missing.



4. An adult burial with the skull missing.

the left arm; the skull had been detached.

Burial no. 4: the remains of two adults were found in a single burial pit in Sq. B8 (FIG. 5). Both are in flexed positions and the skulls are missing. Both skeletons were heavily disturbed. Most of the bones were fragmentary and scattered randomly all over the burial pit. Some of the bones were missing, and most of the bones present were broken. The missing elements of both skeletons may indicate loss during transport from the location of death to aş-Şifiya for the final burial. The human remains in this burial were associated with the rib of a non-domestic animal (*Bos*). Such a burial practice was previously documented in a PPNB context of Kefar Hahores (Goring-Morris 1991: 83), probably related to ritual beliefs.

The stratigraphical evidence in Area B indicates that the unoccupied and the ruined buildings of aş-Şifiya village were used as a burial ground (after the main room in Sq. B8 was abandoned). It is probable that the human remains of this burial were buried in the rubble or the fill that had been accumulated over the floor of the main

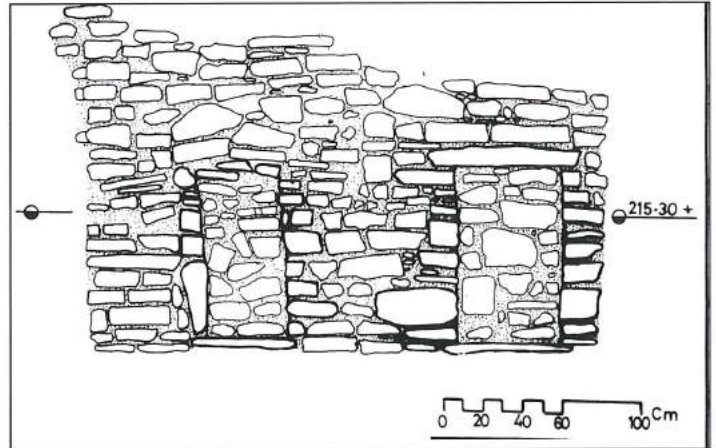


5. Two adults buried together, their skeletal remains are disarticulated.

room in Sq. B8, mainly adjacent to the eastern wall of this room. In this wall there are two small doorways leading into two small rooms flanked by the main room on the eastern side. These two doorways (FIGS. 6 and 7) were sealed off by small rectangular stones in order to prepare the burial place.

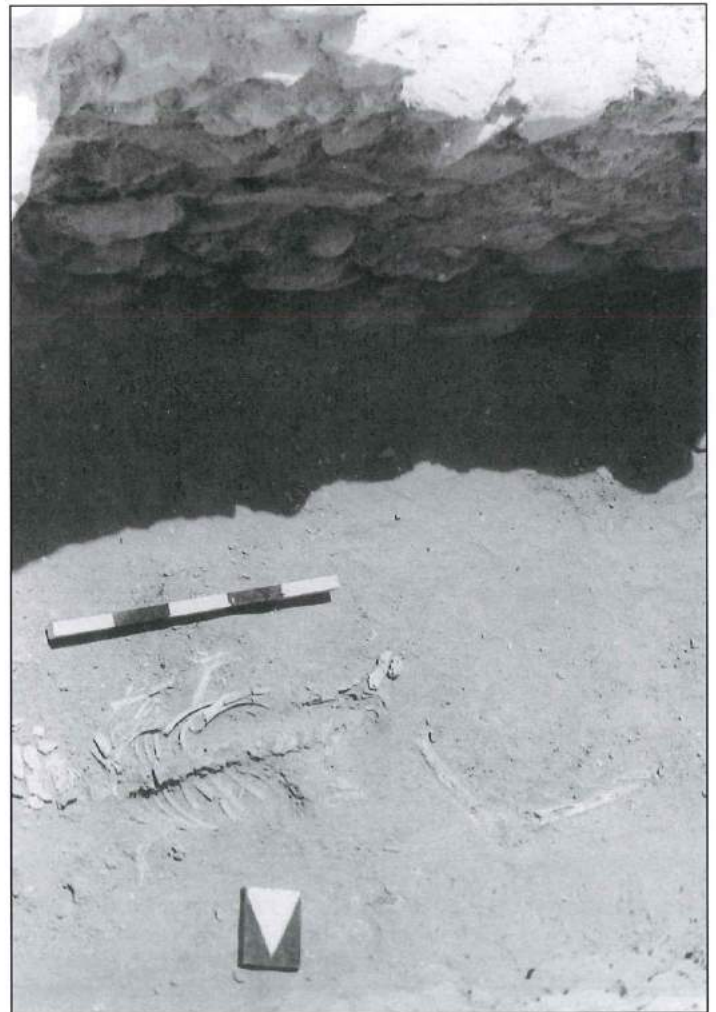


6. Photograph of two small doorways leading into two small rooms that were sealed off.



7. The two small doorways leading into two small rooms that were sealed off.

Burial no. 5: was found less than 1.3m below the surface, on a plastered floor in a small room in Sq. C6. The body (FIG. 8) was on its right side in a semi-stretched position. The burial orientation is east-west. The poor preservation



8. An adult burial lying on the right side.

of the bones and the presence of the sediments on top of the individual resulted in serious crushing and destruction of the bones. Evidence in tooth eruption and numerous unfused bone sections indicate that this individual was an adolescent around 16 years old.

Burial no. 6: the remains of a male older than 30 years were found in a burial pit in a house courtyard in Sq. C12 (FIG. 9). The body was laid down in a tightly contracted position on its right side with its backbone extremely bent. The skull was intact like the rest of the skeleton, but the bones are in poor preservation due to bulldozing impacts. One of the elbows rests between the legs while the other rests below the right leg. The hands (disturbed) may have been placed in front of the face, typical for a Late PPNB burial.

Burial no.7: was found in a shallow pit in Sq. C12 (FIG. 10). The body was laid down in a tightly contracted position on its left side, with its backbone extremely bent. One of the elbows rests on the right leg, and the other between



9. An adult burial in crouched position.



10. An adult burial in crouched position with the skull missing.

the contracted legs. The skull is missing, and the pelvis indicates that this skeleton belongs to a female beyond the age of 20 years.

Burial no. 8: the recovered portion of this burial consists of the entire lower body. This burial is situated in a pit in a house courtyard in Sq. C10. It is in a flexed position and resting on its right side (FIG. 11). The preliminary infield measurements of the greater sciatic notch and the sub-pubic angle indicate a male individual of ca. 35 years.

The human remains of the aş-Şifiya burials nos. 2, 3, 4, 7 and 8 lack the skulls (see TABLE 1). The burial practice of exhuming the skulls from the skeletons was very common in this period and was recorded at the most important PPNB sites, such as Başa (Nissen *et al.* 1987:95), Bayda and Jericho (Kirkbride 1960: 40), 'Ayn Ghazāl (Rollefson *et al.* 1989: 23), Wādi Shu'ayb (Simmons *et al.* 1989: 38), Abū Ghosh (Perrot 1967: 267), Baysamūn (Ferembach and Lechevallier 1973: 224; Bar-Yosef 1992: 25), Nahal Oren (Noy *et al.* 1973: 79), Hacilar (Mellaart 1970: 6) and Catal Huyuk (Mellaart 1964: 64).



11. An adult burial, the skull is missing and the upper limbs are badly disturbed.



12. A subfloor skull burial associated with a basalt stone polisher.

Skull Burials

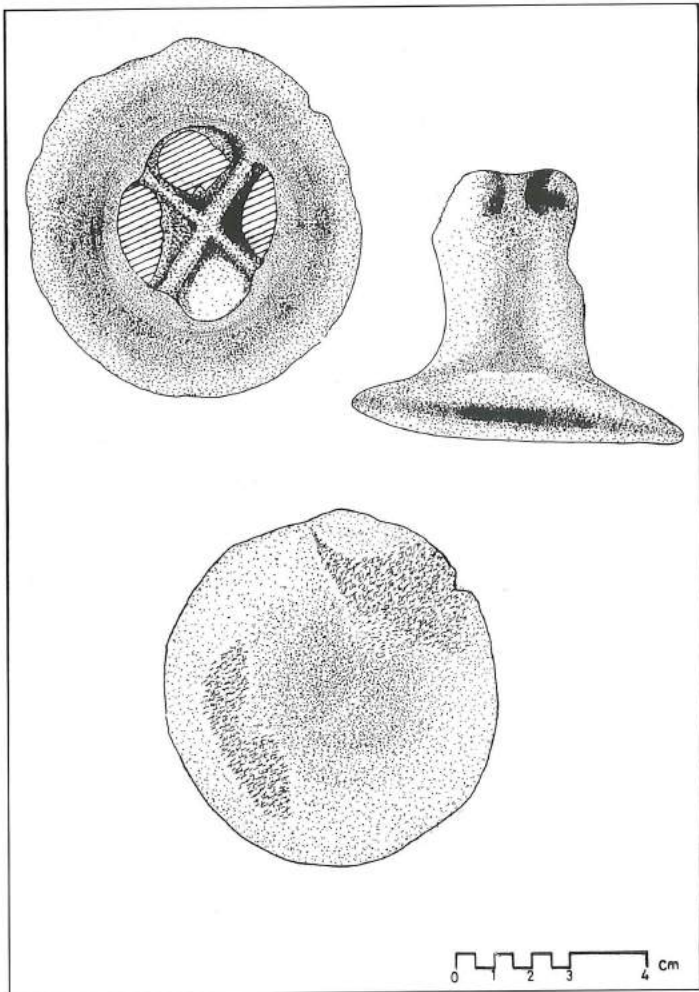
Four skull burials with six skulls were uncovered at aş-Şifiya. It is likely that the headless burials of aş-Şifiya were the source of these skull deposits. This is not only the case of aş-Şifiya skull burial, the headless burials discovered at most of the PPNB sites are probably the complementary skeletal remains of the skulls.

Burial no.9: is a sub-floor skull burial, deposited in a shallow pit surrounded by a small stone circle and coated with soft soil. It had also been covered with a hard layer of white plaster related to the upper phase of the structure. The skull was placed near the junction of the western wall and the plastered floor of the main room of Sq. B2 (FIG. 12). No mandible or cervical vertebrae were found attached to the skull, the skull age is over 40 years. A stone polisher with handle was recovered inside the burial pit and associated with this skull. This tool is made of locally available fine-grained basalt (FIG. 13). It has a strange form, the top is rounded and subdivided by two crossed grooves into four rounded knobs, creating a tetrafoil de-

sign. A clear waist is present in the middle. The disc base of this tool shows striations on its working surface which indicates that it was used in a circular manner, where traces of red stain are preserved. This stone tool has to do with the profession of the dead. It has parallels recorded from the sites of Bayđa (Kirkbride 1966: fig. 7.2) and Abū Sālim in Negeb (Marks and Scott 1976: fig. 12).

Burial no.10: is a cache of three adult skulls, deposited together in a shallow pit beneath a room floor in Sq. C13 (FIG. 14). Two skulls are facing down while the third cranium is badly damaged. No mandibles were found attached to these skulls and none of them showed any evidence of surface treatment. A similar cache was reported from 'Ayn Ghazāl (Rollefson 1983: pl. IV.1; Rollefson and Simmons 1986: 152, fig. 12).

Skull burials without mandibles similar to those of aş-Şifiya Burial 10 were recorded at the sites of 'Ayn Ghazāl, Başa, Jericho, Nahal Hemar Cave, Tall Ramad, Cayonu and Hacilar (Bienert 1991: 19).



13. Basalt polisher with handle.

Burial no. 11: is an isolated skull found in a shallow pit in Sq. C11 (FIG. 15). The skull is badly damaged due to a large stone resting directly on top of it. After the stone removal, all the parts of the skull were exposed including the mandible and the cervical vertebrae. This skull belonged to a male individual of 30-40 years.

Burial no. 12: during the excavation, the skull of this burial emerged in a protected setting, in a vertical posture against a stone wall facing south. The skull is deposited in a shallow pit below a plaster floor in Sq. C10 (FIG. 16). An interesting feature was the presence of a still-open metopic suture in this skull, which proves that it belonged to an individual aged no more than 24 years. The mandible and the cervical vertebrae are still attached to this skull.

Similar skulls with the mandible and sometimes with the cervical vertebrae attached, were reported at the sites of 'Ujrat al-Mehed in southern Sinai (Hershkovitz *et al.* 1994: 62), Abū Ghosh, Jericho, Baṣta, Catal Huyuk, Cayonu and Hacilar (Bienert: 1991: 19).

Burying the skull separately from the skeleton is a practice that occurs in the Ancient Near East as early as



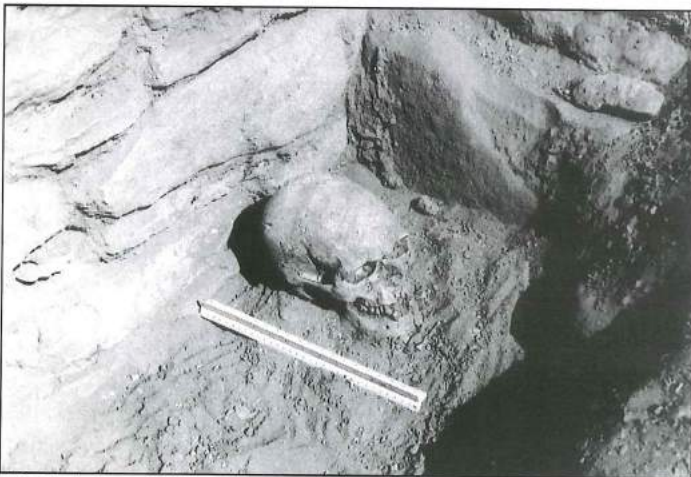
14. A cache of three adult skulls with no mandibles.

the Natufian period (Bienert 1991: 9; 1995: 76; Cauvin 1972: 27; Mellaart 1975: 37). Detached skulls were found at the sites of Hayonim Cave (Bar-Yosef and Goren 1973: 53, fig. 3) and 'Ayn Mallāḥa (Anati 1963: 173; Perrot 1960: 18; 1996b: fig. 7; Fiedel 1979: 124) in Palestine. Perrot (1966b: 445) believes that decapitation at 'Ayn Mallāḥa took place through mechanical cutting directly after death, because the mandible and the first two cervical vertebrae were still attached.

The practice of retaining separated skull burial continued into the Aceramic Neolithic period (Kenyon and Holland 1981: 9, 287, pl.36). However, in the Aceramic Neolithic period, the importance was placed on the common custom of detaching the heads from the bodies and keeping them in a separate place (Schick 1988: 31; Kenyon 1957: 60; 1979: 35). Kenyon through her excavations at Jericho uncovered two groups of human skulls under the floors of building structures, dated to the PPNA period (Kenyon and Holland 1981: 53, 287, pl. 36). A group of skull burials dated to the PPNA was reported at Murayb'āt in the Euphrates Valley. Here three skulls were placed near the junction of the wall with a floor of a



15. A skull burial with mandible and cervical vertebrae.



16. An intact skull burial with mandible and cervical vertebrae.

house, covered with a hard layer of clay (Van Loon 1966: 213; 1968: 275, pl. 5A; Cauvin 1978: 127, fig. 13; Ozbek 1976: 161).

Preserved skull burials with no evidence of surface treatment, similar to those found at aş-Şifiya, were reported from many PPNB sites in the Ancient Near East. Kenyon (1954: 4; 1956a: 186) discovered human skulls

buried under the floors of several houses. Several isolated skulls were recorded at Baysamūn (Ferembach and Lechevallier 1973: 224). A group of skulls deposited together in a shallow pit was discovered at 'Ayn Ghazāl (Rollefson and Simmons 1985: 48, fig. 8; 1986: 153, fig. 12). Skull burials were also uncovered at the sites of Tall Abū Hurayra (Moore 1975: 61; 1978: 167), Tall Murayb'āt (Cauvin 1974: 49), Tall Aswad (de Contenson 1972: 79), Hacilar (Mellaart 1961: 74), Catal Huyuk (Mellaart 1962: 51) and at the site of Cayonu where seventy skulls were found buried in one of the buildings identified later as the "skull building" (Schirmer 1988: 140).

The excavation of aş-Şifiya did not yield any plastered skulls. None of the discovered skulls showed any evidence of surface treatment. However, in some sites of the PPNB period, skull burial was conducted in different forms and became one of the main cultural characteristic of the period (Bienert 1991: 10; 1995: 78; Mellaart 1975: 61; Cauvin 1972: 6-64; 1978: 128-132; Singh 1974: 44; Bar-Yosef 1992: 25). Ten skulls coated with plaster were uncovered at Jericho beneath house floors (Kenyon 1956b: pl. 21; Strouhl 1973: 231). The plaster was modeled into a human face. Kenyon (1959: 5) described these plastered skulls as the earliest known portraits in the direct line of ancestry of modern art. One of these skulls still had the mandible attached (Kurth and Rohrer-Ertle 1981: 436). Two plastered skulls were found at Baysamūn (Ferembach and Lechevallier 1973: 224). Three caches of plastered skulls were found at Tall Ramad (de Contenson 1967: fig. 18; 1971: 281; 1985: fig. 2-8; de Contenson and Van Liere 1966: 170; Cauvin 1972: 58). The excavations at 'Ayn Ghazāl in the summer of 1988 uncovered a plastered skull, similar to the Jericho examples (Simmons *et al.* 1990: 107).

Kenyon (1956a: 186), Strouhal (1973: 244), Cauvin (1978: 133) and Pecontal-Lambert (1988: 22) believe that the plastered skull burial is connected with the practice of ritual ancestor worship, with the skull symbolising the deceased member of a family. However, Yakar and Hershkovitz (1988: 63) in addition suggest that this burial practice indicates for sedentism and land ownership.

Bienert (1991: 17) believes that the skull excarnation prior to the burial, a process during which both mandibles and the cervical vertebrae were removed or got absent, could have been achieved in two ways. First, the skull became disconnected from the mandible after the corpse was buried for a while, and then the skull was exhumed and reburied in a separate location leaving behind the mandible attached to the skeleton. Examples of headless human burials that had the mandible were recorded at the sites of Abū Ghosh (Lechevallier 1976: fig. 47), Jericho (Kenyon and Holland 1981: 286; Cornwall 1981: 397), 'Ayn Ghazāl (Rollefson and Simmons 1988: pl. 4), Bašta, Catal Huyuk, Cayonu and Hacilar (Bienert 1991: 19). Second,

the corpse may have been exposed outside the settlement, in a protected place where no wild animals can affect the body, and that insects and worms excarnated the corpse. Then the skull was retrieved for secondary burial in the settlement.

Burial Goods

The burials of aş-Şifiya are associated with artefacts and ornaments. It is important to note here that the provision of burial goods does not show any rules. The adornments of the adorned skeletons were found on all parts of the body, of both males and females of all ages (see TABLE 1), and they were placed on the dead at the time of burial. Such as in the case of individual beads, ornaments generally are not represented as e.g. necklaces but as possible sewn-on-objects. Burials were not necessarily furnished with goods.

The main raw material used for ornaments was shell of marine molluscs from the Red Sea and the Mediterranean, shaft and tubular bones, fossils, coral, flints, soft limestone, unbaked clay and various non-local minerals which appeared in limited quantities and were identified as greenstone (malachite), turquoise and blackish minerals.

Forty-five pieces of ornaments made of various materials were recorded with aş-Şifiya burials and identified as beads and pendants (TABLE 2). The definition of these objects as beads or pendants is based on the nomenclature proposed by Beck (1928: 11), beads are perforated along the axis and pendants are perforated at one end. Beads are relatively small objects while pendants are bigger. The ornaments of aş-Şifiya burials can be divided according to their natural material into three groups:

1. Sea Shell Beads and Pendants

A number of shells of different marine molluscs were encountered, pierced and unpierced. Their natural habitat is known: they are from the Red or the Mediterranean Seas, both of which are within comfortable reach of aş-Şifiya.

The most commonly used marine mollusc was small *Conidae* followed by *Nerita sp.*, *Cowrie*, mother-of-pearl and *Dentalia* shells. Burial no. 6 was accompanied with four small *Conidae* of various sizes. They have been pecked and abraded to produce fairly flat beads (FIG. 17: 1-4). Parallels to these shell beads were recorded from Başta (Gebel 1988: fig. 11 no. 9; Gebel *et al.* 1988: fig. 14 nos. 2-4; Nissen *et al.* 1987: fig. 14 nos. 4-5). Also an unpierced *Conus* bead and a broken ring made of *Conus* shell (FIG. 17: 5-6) were found associated with burial no. 5.

A row of fine polished *Nerita sp.* shells (FIG. 17: 7-9) was found in the area of the left wrist of the dead in burial no. 5. They have their apexes abraded which created holes probably allowing for mounting them on strings. Examples similar to *Nerita sp.* shell beads were recorded from Başta (Gebel 1988: fig. 11 no. 12; Gebel *et al.* 1988: 116), Bayda

(Kirkbride 1960: fig. 2a) and at Abū Nukhaylah, a desert site in southern Jordan (Kirkbride 1978: 7).

Two *Cowrie* shells (FIG. 17: 10-11) were found associated with burial no. 7. Their toothed parts have the interstice on the ventral side of the shell. Parallels were recorded from Bayda (Kirkbride 1966: pl. 16-b) and Başta (Nissen *et al.* 1987: fig. 18 nos. 1-2).

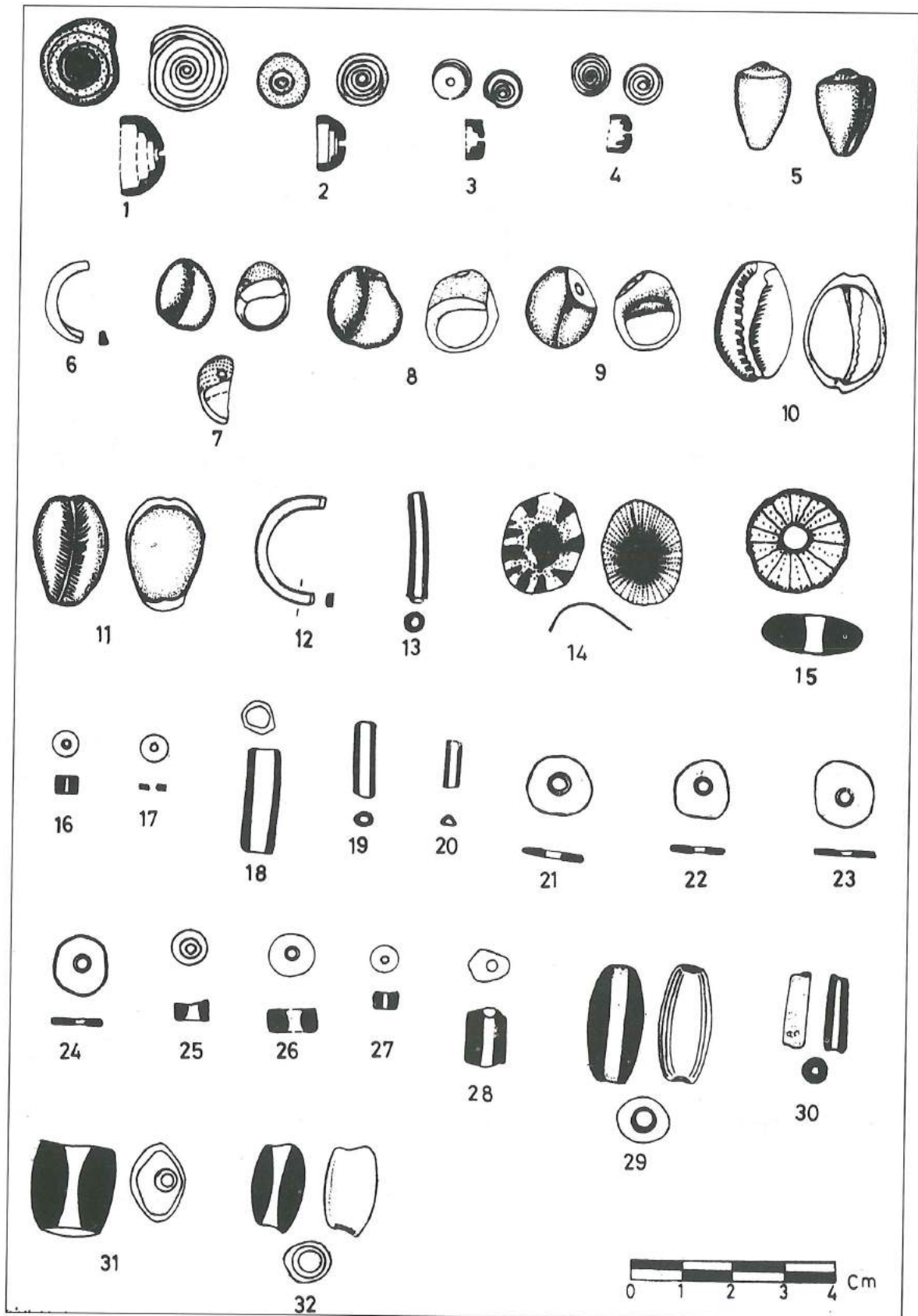
The mother-of-pearl was carefully worked for the use of pendants and rings. A small triangular mother-of-pearl pendant (FIG. 18: 5) and a use-polished broken ring (FIG. 17: 12) were found associated with burial no. 5. Similar to these mother-of-pearl ornaments were reported at Başta (Gebel *et al.* 1988: fig. 14 no. 5; Nissen *et al.* 1991: fig. 5 nos. 6-7). We have to add here that unworked lumps of mother-of-pearl were found at the excavated areas of aş-Şifiya.

A use-polished dentalium bead (FIG. 17: 13) was found with burial no. 3. It has parallels uncovered at Bayda (Kirkbride 1966: fig. 5:11). A small unpierced *Cellana radiata* shell (FIG. 17: 14) was found associated with burial no. 7.

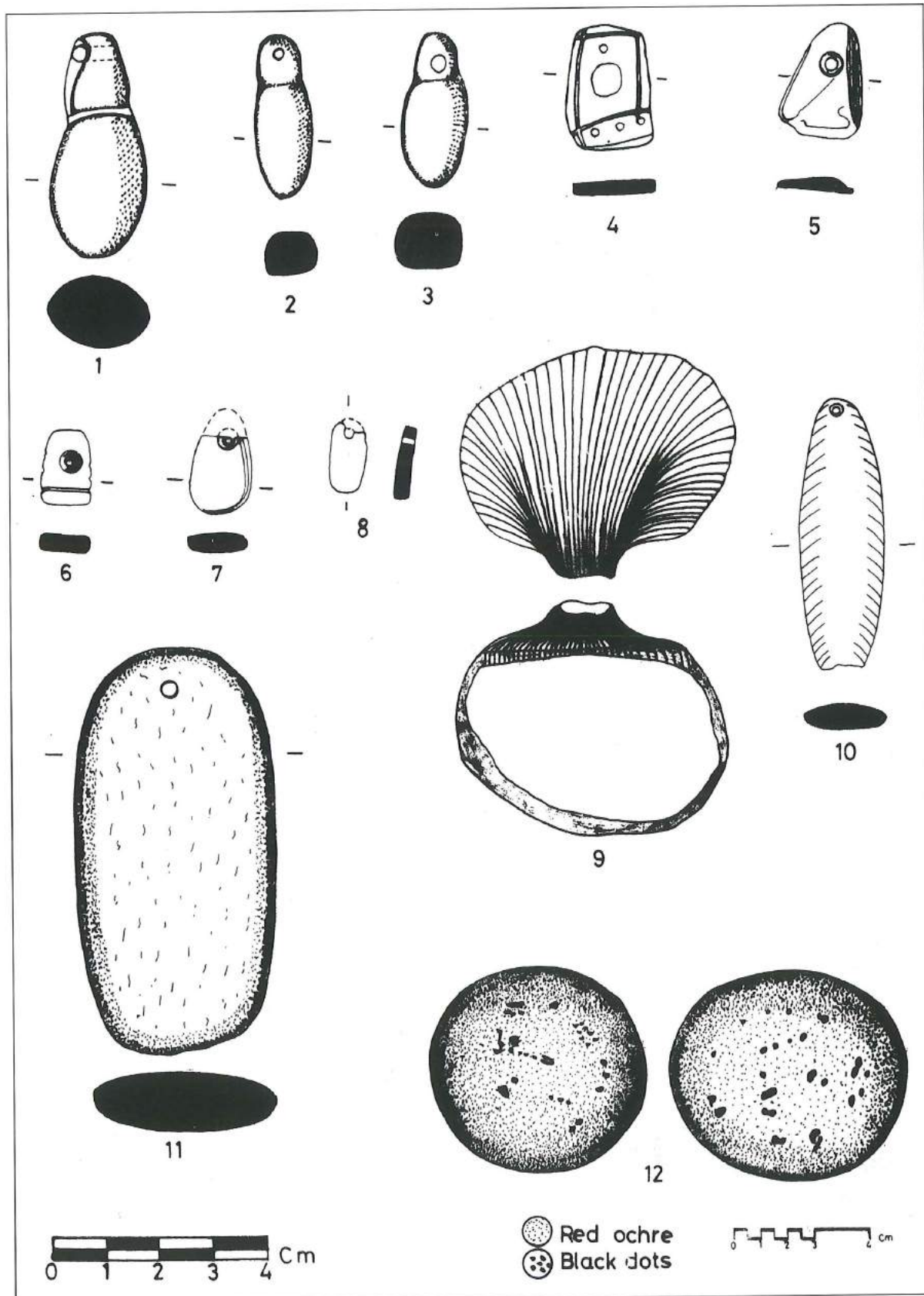
Beside the sea shell ornaments of aş-Şifiya's burials, shell fossils were used to adorn these burials too. Three use-polished pendants of *Tridachna* sub-fossil from the cliffs along the northern area of the Red Sea (FIG. 18: 1-3) were found associated with burial no. 1. They vary in shape and size, the upper narrow part of each pendant is separated by a groove from the lower bean-shaped part. An oblique channel of a biconical perforation is conducted in the upper narrow parts of these pendants. This artefact type seems to be recorded at aş-Şifiya the first time. A large sub-fossil of *Anadara sp.* (FIG. 18: 9) was found associated with burial no. 7, the apex was chipped off and provided the perforation in order to be used as a pendant. In burial no. 3, a fossil from the *Echinoidea* family (FIG. 17: 15) was found, naturally perforated and used as a bead. Two small cylindrical beads made of Red Sea coral were found associated with burial no. 4, the first one (FIG. 17: 16) has a biconical drilling, while the second one (FIG. 17: 17) has a non-conical drilling.

2. Bone Beads

Seven bone beads were used as ornaments to adorn the dead of aş-Şifiya. A bone bead made from an unidentified tubular bone (FIG. 17: 18) was found associated with burial no. 1. Two other tubular bone beads were found with burial no. 3. One is burnt, highly polished and has an oval section (FIG. 17: 19), while the other has a triangular section with the cutting facets still visible (FIG. 17: 20). Associated with burial no. 1, four small use-polished polygonal flat bone beads were found (FIG. 17: 21-24). They have central monoconical perforations; the outer fractures probably result from perforation due to the thin section of the beads. These beads have counterparts at Bayda (Kirk-



17. Beads: 1-4. Perforated *Conidae*; 5. Unperforated *Conidae*; 6. *Conidae* ring; 7-9. Perforated *Neriate* sp.; 10-11. Cowries; 12. Mother-of-pearl ring; 13. *Dentalium*; 14. *Cellana Radiata* shell; 15. Fossil from the *Echinoidea* family with natural perforation; 16-17. Coral from the Red Sea; 18-20. Tubular bones; 21-24. Polygonal flat bones; 25. Greenstone; 26-30. Fine grained limestone; 31-32. Fine grained mineral.



18. Pendants: 1-3. Subfossil *Tridachna* from the Red Sea; 4. Limestone; 5. Mother-of-pearl; 6. Oil Schist; 7-8. Greenstone; 9. Subfossil *Anadara* sp.; 10. Flint; 11. Clay; 12. Polisher made of flint nodule.

bride 1966: pl. 17-A), Baṣṭa (Nissen *et al.* 1987: fig. 18: 32-35) and 'Ayn Ghazāl (Rollefson 1986: 51).

3. Mineral Beads and Pendants

Eight stone beads and five stone pendants were found associated with aṣ-Ṣifiya's burials. In burial no. 6, two pendants made of soft limestone and flint were found: The soft limestone pendant/palette (FIG. 18: 4) has a rectangular shape, decorated with an incised frame along the edges of all sides, divided again into a quadrangular larger and a rectangular smaller part. In the quadrangular part an incised circle and a biconical perforation were placed, the rectangular part has three biconical drillings. The flint pendant (FIG. 18: 10) is a unique piece of an elongated polished honey-colored flint with biconical drilling. The long edges are slightly convex and retouches damaged the end of this pendant.

Three small pendants were found in burial no. 7. The pendant (FIG. 18: 6) is made of a material rich with bitumen and highly fossiliferous chalky-marl (oil schist). In the upper part of the pendant, there is a biconical drilling and three preserved incisions or grooves nearby on the narrow side. The two greenstone pendants are fragmentary, only the lower parts were found (FIG. 18: 7-8). They are broken at their perforations, the smaller piece shows a uniconical drilling while the larger one has a biconical drilling.

In burial no. 4, a perforated pendant or palette made of unbaked clay was found (FIG. 18: 11). The material disintegrates easily in water, only one side of the pendant is preserved. This piece imitates reddish sandstone palettes known from southern Jordanian Late PPNB sites such as Baṣṭa (Gebel 1988: fig. 11 no. 15). In the same burial a polisher was found (FIG. 18: 12). This polishing tool is an almost perfectly spherical flint nodule bearing on all surfaces the stain of red ochre, intensive ochre patches and stripes are attested, burnishing traces and unidentified blackish dots are irregularly distributed on the surface.

Burial no. 4 is the richest in stone beads. Eight beads of different materials were found; a green cylindrical use-polished bead with biconical drilling (FIG. 17: 25); turquoise cylindrical use-polished bead with biconical drilling (FIG. 17: 26); a fine-grained limestone use-polished flattish bead (FIG. 17: 27), which is polygonal in section and irregular multi-faceted on the exterior were created as a result of abrading technique; a fine-grained elongated greyish limestone use-polished bead (FIG. 17: 28), with an irregular section, rounded edges and bidirectional drilling; a fine-grained elongated pinkish limestone bead with biconvex longitudinal section and bidirectional drilling (FIG. 17: 29); a burnt limestone tubular bead with parallel-sided longitudinal section (FIG. 17: 30), it has an irregular surface probably from fire contact; two blackish fine-grained mineral use-polished beads with narrow and

broad biconvex longitudinal sections and biconical drillings (FIG. 17: 31-32).

The greenstone beads and pendants which are among the burial stone beads, have similar counterparts reported at the major PPNB sites dated to the seventh millennium BC, such as Baṣṭa (Gebel *et al.* 1988: fig. 14; Nissen *et al.* 1987: fig. 18 nos. 23-30), Bayḍa (Kirkbride 1966: fig. 5 nos. 5-8; 1968: 271), 'Ayn Ghazāl (Rollefson 1984: 10, fig. 3; Rollefson and Simmons 1986: Table 10), Jabal Na'ja in the Black Desert (Betts 1985; Garrard *et al.* 1987), Nahal Issaron (Goring-Morris and Gopher 1983: 156-157), Nahal Hemar Cave (Bar-Yosef 1985; Bar-Yosef and Alon 1988: pl. 6), Jericho (Wheeler 1983: 786-787; Talbot 1983: 790, figs. 360-361), Abū Ghosh (Lechevalier 1978: 82), Munḥaṭa (Perrot 1964: fig. 5 no. 14), Nahal Oren (Noy *et al.* 1973: 88, fig. 7 no. 17) and Tall Ramad (de Contenson 1971: 283).

No study has been published yet on the use of green minerals. However, a first assessment to criteria has been made by A. Hauptmann to identify the various sources (forthcoming final publication of Baṣṭa, Volume 1). J. Mellaart (1975: 65) had assumed that Syria represents the main source of green minerals, but J. Muhly (1973: 208-210) believes that it is impossible to determine the precise source of the material from which the archaeological finds were made. In general terms, the green minerals may be connected with copper bearing strata. These are found at specific areas in the southern Levant, at Wādī Faynān and Timnā' (Hauptmann 1991: 399; Rollefson *et al.* 1989: 15).

The copper bearing green minerals closest to aṣ-Ṣifiya are at 175km distance, in Wādī Faynān. In the closest seventh millennium BC sites, D. Kirkbride (1966: 53) through her excavations at Bayḍa, recorded lumps of greenstone minerals. This site also revealed evidence of bead manufacture on an industrial scale. Large numbers of beads at different stages of production were discovered at some structures of Stratum II. These structures were defined by Kirkbride (1966: 24) as workshops specialised in bead production.

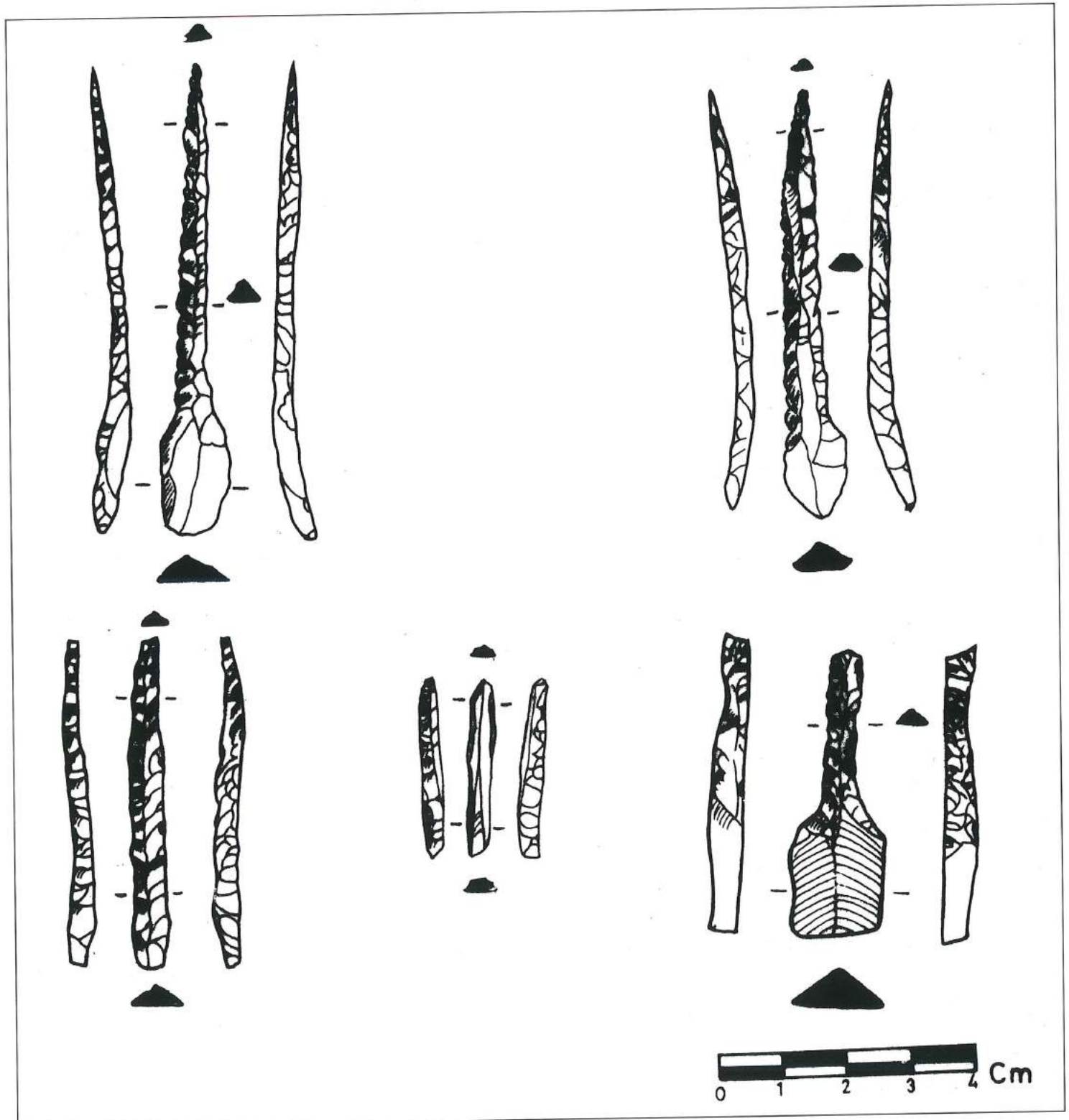
The fact that the greenstone items are found in settlements at 175km distance from the original source, clearly prove long distance trade contacts with the extreme south Wādī 'Arabah. Garfinkel (1987: 79) believes that, since the distribution of exotic minerals in an excellent source of information on both communications between pre-historic settlements and on stratification of the social organization, only manufactured items have been recorded in the previously mentioned settlements. He thinks that they give a hint that the produced greenstone items were traded throughout the Levant as finished goods rather than as lumps of raw material.

Bar-Yosef (1985: 12) stated that no archaeological evidence has been found that the greenstone beads were manufactured on any of the Neolithic sites excavated in

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the southern Levant. However, the excavations at Yiftahel (Garfinkel 1987: 80), Baṣṭa (Nissen *et al.* 1991: 26) and aṣ-Ṣifiya revealed clear evidence that lumps of raw greenstone material were imported and processed there into ornaments and other items. Unfinished products also occur

at aṣ-Ṣifiya fair amount of greenstone lumps was uncovered associated with crumbs, splinters and unfinished items. The presence of a group of elongated fine flint borers or drills (FIG. 19) may have served these industrial activities.



19. Elongated flint borers.

These drills were made on blades and abruptly retouched from ventral along the main ridge of the blade; no retouching is seen on the ventral sides. These drills have delicate sections. The tip of a complete drill may range from 30-40mm in length, and by means of biconic drilling techniques (drilling from both sides of the bead or the pendant) it may make a hole some 70mm long. The tips are 2-3mm, wide, and so may drill particularly narrow holes. Points are broken or blunted as a result of use, and sections are trapezoid or triangular.

The long borers are common in the southern Levantine LPPNB tool kits and seem to be absent in LPPNB tool kits of the northern Levant (Gopher 1994: 488). We have them attested at Bayda (Mortensen 1970: type B10, fig. 23 a-b; Kirkbride 1966: fig. 12 no. 3), Baṣṭa (Gebel *et al.* 1988: fig. 11 no. 10; Nissen *et al.* 1987: fig. 11 no. 4), Sites A-D in Wādī Fidān (Raikes 1980: 44 and fig. 7), Nahal Issaron in the southern Negeb (Goring-Morris and Gopher 1983: fig. 5 nos. 1-2), Jericho (Crowfoot-Payne 1983: fig. 321 no. 10), and Yiftahel (Garfinkel 1987a: 87 and 1987b: 209).

Conclusion

The late Epi-palaeolithic Natufian communities seem to have partially concentrated the burials close to or within their camp areas (al-Wad, Hayonim and Eynan). Watkins (1992: 68) believes that the burials of the Natufian period were not strictly associated with houses but with the village and the community. Recently the burials of 'Aynān were reinterpreted in this context and are no longer believed to have been made below the floor of the house or in the abandoned house (Perrot *et al.* 1988).

In the Neolithic period, the dead as well as detached skulls were associated with the house; they began to be found on or under the floors of the houses. From the PPNB period we are familiar with this practice of burying the dead close to the house, on or under floors or in reserved spaces within a room. The skulls which have been separated from the rest of the skeletons, were placed in a house when it was being finally abandoned and obliterated. H. Gebel (pers. comm.) believes that a substantial part of the undisturbed complete burials are burials in the house ruins of abandoned settlement parts, including the channels underneath and even on top of ruined walls or inside walls (e.g. one baby burial at Baṣṭa); intramural skull deposits may have resulted from disturbed burials, e.g. through later burials, accidental exposures, etc. from which only the skulls were removed and reburied in a protected setting, while the postcranial bones were left and got astray in the layers.

The burial pattern at aṣ-Ṣifiya confirms to a wider pan-Levantine Pre-Pottery Neolithic mortuary cult that emphasized sub-floor burials and decapitation. Throughout the life of the Neolithic settlement, the inhabitants of aṣ-

Ṣifiya buried their dead in shallow pits beneath the floors of their houses or in the yards outside or in the rubble of the collapsed and deserted houses. Aṣ-Ṣifiya shows that primary and secondary individual and group interments in flexed positions, either with or without skulls which could be deposited alone or in groups, were practiced.

The intact burials indicate primary burials, and were best preserved. However, the scattered disarticulated bones might indicate the existence of secondary skull burials, and were found in a poor condition of preservation. Some evidence hints that some corpses were buried or exposed in protected settings until the flesh had deteriorated. The skulls were often then detached and buried separately while the remaining bones were carelessly reburied. Both burial principles, primary and secondary, were not practiced only at aṣ-Ṣifiya, they are evident during the PPNB period in the Levant. Hershkovitz and Gopher (1993: 18-20) concluded that 20-50% of the Neolithic burials were secondary. In Jericho, out of 491 individuals uncovered, 63% were primary and 37% secondary burials, Kurth and Rohrer-Ertl (1981: 434) believe that all the individuals found within Jericho were first interred in primary burials, but later exhumed from their graves, the skulls detached and the remains reburied. The detached skulls were put in special places, usually beneath the floors of dwellings.

Rollefson (1986: 45-51) has shown that the PPNB of 'Ayn Ghazāl opened only a small area of the burial pit in order to reach the skull and rebury it elsewhere, the rest of the skeleton remaining untouched. This is also evident at Yiftahel and Jericho. This behavior seems understandable since only the skull removal was of interest. Hershkovitz and Gopher (1993: 20) suggest that since most burials, primary and secondary, were associated with floors, either in dwellings or courtyards, it would seem strange that the Neolithic people would open plastered floors or courtyards to remove the skeletons in order to rebury them under another-or even the same-floor.

The burials of aṣ-Ṣifiya were discovered in various positions, of which the most characteristic is the flexed position, with the dead lying on the side. The variation in posture confirmed that in Neolithic aṣ-Ṣifiya no one type of burial posture was practiced. Most of the undisturbed burials had skeletons with flexed extremities, sometimes even distorted from their original burial position. The bodies in all cases were laid on their left or right sides. The lower extremities appear bent towards the head with hands placed close to the hips. Sometimes the burial is too fragmentary and partially disturbed to determine the position of the skeleton, and that is evidenced in the case of burial no. 4.

Only a few of the houses of aṣ-Ṣifiya have burials beneath their floors. If burials of the descendants of a single family were found beneath successive houses, this could be an indication that ownership of dwellings and the plot on which they stood was maintained within the same fami-

ly from one generation to the next. However, given the duration of house occupation, the number of burials appears very small.

The grave-site phenomenon in the PPNB period can be attributed to an extended occupation, or to the repeated use of the same site over the years. This is evident from the replastering of dwelling floors, modifications in architecture, wall repairs and locations of graves in abandoned structures. The longer the site was occupied, the greater the chance that at least some of the occupants would die and be buried within the living areas as was the custom.

None of the burials of aş-Şifiya were found outside the living area of the site, although no burials and almost no scattered human bones were found in Area A. All the uncovered burials were found in Areas B and C. The burial layers are generally shallow in both Areas and this led to poor skeletal preservation. All of the uncovered burials are attributed to the later phase of occupation at the site. Only remnants and scattered patches of poor quality architecture and plastered floors could be traced. It became obvious that several burials had been destroyed by the bulldozing of the overlying layers. From all evidence, we can postulate that there are more burials in both Areas B and C.

Considering the size of the area of excavations (550m²), the total number of 15 individuals revealed at the site of as-Sifiya is comparable with quantitative distributions in other PPNB sites in the Levant.

Aş-Şifiya burials were accompanied with grave goods, rounded, oval and cylindrical beads, pendants and rings were cut from greenstone, yellow and red limestone, flint, fossils and sea shells. Many of these exotic materials are presented in their raw form and as processed artefacts. This suggests that aş-Şifiya was part of the trade network

which flourished during the seventh millennium BC through the Rift while manufacturing was conducted at the site. The intensive presence of the green minerals and Red Sea shells was due to the proximity to the sources.

The uncovered burial goods of aş-Şifiya emphasize that the occupants of the site practiced a wider range of crafts which resulted in making delicate beads, rings and pendants. All these ornaments were distinctive in form and in some cases were made of scarce raw materials. It seems reasonable to expect that the goods were made by part-time, particularly skilled specialists in workshops, in which the various working stages (cutting, polishing and boring) were conducted.

Finally, the main aspects of the aş-Şifiya burials hint to common inherited ideology with other Levantine Neolithic groups. First, the burials are associated with dwellings. Second, children and adult skulls were removed for secondary burials, the exhumation and reburial occurred before or after the initial burial. Third, offerings and burial goods are found with the dead.

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Table 2. Aş-Şifiya, Areas B-C: inventories/ associated finds of Burials 1, 3, 4, 5, 6, 7 and 9.

Burial (Square, Locus)	Artefact type/Raw Material	Description incl. Measurements
Burial 1 (B7, Locus 12) FIG. 18:1	pendant (subfossil Tridacna, from Red Sea)	use-polished pendant with a perforation, its upper narrow part separated by a groove from the lower bean-shaped part, oblique channel of biconical perforation (c. diam. 2mm) from the narrow side at the upper part; total length: 43.2mm, max. width of lower part: 20.1mm, max. thickness of lower part: 13.0 mm.
FIG. 18:2	pendant (subfossil Tridacna, from Red Sea)	use-polished pendant with a perforation in its upper narrow part, separated by a "neck" from the lower beshaped part, biconical drilling (c. diam. 2mm) from the broad side of the upper part; total length: 29.2mm, max. width of lower part: 13.6mm, max. thickness of lower part: 11.3mm.

FIG. 18:3	pendant (subfossil Tridacna, from Red Sea)	use-polished pendant with a perforation in its upper narrow part, gradually flows over into the lower bean-shaped part, biconical perforation (c. diam. 2mm) from the broad side of the upper part; total length: 32.0mm, max. width of lower part: 10.8mm, max. thickness of lower part: 9.2mm.
FIG. 17:18	bead (tubular bone)	bead made from an unidentified tubular bone length: 21.3mm, max. diam. 7.3mm.
FIG. 18:21-24	4 beads (bone?)	use-polished polygonal flat beads with central monoconical perforation, outer shape probably fractured before perforation; thicknesses: 1.5-1.9mm, diameters: 9.5-13.1mm.
Burial 3 (B8, Locus 8)		
FIG. 17:13	bead (Dentalium, from Red Sea)	use-polished bead; length: 22.0mm, max ext. diam.: 3.8mm.
FIG. 17:15	bead (fossil from the Echinoidea family) found in Wādī al-Mujib	use-polished perforated bead made of a fossil sea-urchin, perforation is natural; length: 9.9mm, max. diam.: 20.8mm, min. diam. perforation: 5.1mm.
FIG. 17:19	bead (bone)	burned use-polished bead made of a very small tubular bone oval section; length: 14.9mm, max ext. diam.: 3.7mm.
FIG. 17:20	bead (bone)	use-polished bead made of a very small tubular bone with triangular section, cutting facets still visible; length: 9.4mm, max ext. side: 2.7mm.
Burial 4 (B8, Locus 9)		
FIG. 18:11	pendant? palette?? (clay)	perforated pendant or palette made of unbaked/sundried reddish clay material disintegrates easily in water, tempered with chaff, one side completely preserved (imitates reddish sandstone palettes known from Southern Jordanian LPPNB sites); length: 75.5mm, width (upper part): 38.2mm, thickness (upper part): 12.3mm.
FIG. 17:16-17	2 beads (coral, from Red Sea)	cylindrical coral beads (1x flattish: biconical drilling, 1x compact/barrel-shaped: almost quadrangular section from abraded sides, non-conical drilling) flattish piece; length: 1.4 ext. diameter: 5.1; barrel-shaped piece, length 4.7mm, side: 5.3mm; diam. perforation: 0.8mm.
FIG. 17:25	bead ("greenstone")	cylindrical use-polished bead with biconical drilling (0.8mm), compact/barrel-shaped; length: 5.0mm, max. ext. diam.: 7.3mm.
FIG. 17:26	bead (turquoise)	cylindrical use-polished bead with biconical drilling (1.1mm), compact/barrel-shaped; length: 9.4mm, max. ext. diam.: 5.2mm.
FIG. 17:27	bead (fine-grained limestone)	use-polished flattish bead, polygonal in section, irregular multifaceted on exterior (resulting from an abrading technique), biconical drilling (0.8mm); length: 1.8mm, max. ext. "diam.": 5.5mm.

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FIG. 17:28	bead (fine-grained greyish limestone)	elongated use-polished bead with irregular triangular section and rounded edges, bidirectional drilling (1.2mm); length: 11.5mm, max. side: 8.5mm.
FIG. 17:29	bead (fine-grained pink limestone?)	elongated use-polished bead with biconvex longitudinal section, bidirectional drilling (1.2mm); length: 23.1mm, max ext. diam.: 10.1mm.
FIG. 17:30	bead (burnt limestone)	“tubular” bead with parallel-sided longitudinal section, irregular surface probably from fire contact; length: 14.3mm, max. ext. diam.: 4.9mm.
FIG. 17:31	bead (blackish fine-grained section, mineral)	use-polished bead with a narrow and a broad biconvex longitudinal biconical drilling (1.3mm); length: 17.6mm, max. ext. dimension: 12.5mm, min. ext. 16.9mm.
FIG. 17:32	bead (blackish fine-grained mineral)	elongated use-polished bead with biconvex longitudinal section, biconical drilling (1.9mm); length: 17.9mm, max. ext. diam.: 10.0mm.
FIG. 18:12	polisher (flint nodule)	almost perfectly spherical flint nodule bearing on all surface the stain of red ochre, intensive ochre patches and stripes are attested, bur-nishing traces, unidentified blackish dots irregularly distributed on surface; max. diam.: 84.6mm, min. diam. 79.2mm.
Burial 5 (C6, Locus 13)		
FIG. 18:5	pendant or palette (mother-of-pearl)	triangular use-polished pendant/ palette with biconical drilling (directions resulted in oval shaped perforation); height: 22.0mm, max. width: 15.7mm, thickness: 3.7mm.
FIG. 17:5	bead? (Conidae)	unperforated bead? length: 17.5mm.
FIG. 17:6	ring (Conidae)	use-polished ring made from a section of a Conidae; ext. diam.: 16.2mm, pres. ring width: 1.7mm, max pres. thickness: 3.1mm.
FIG. 17:7-9	3 beads (Nerita sp.)	3 beads (2 with use-polish, one burnt; one with intact apex; 2 with abraded apex, of which one is obliquely abraded); length: 14.5mm (with complete apex), 16.2mm, 17.2mm.
FIG. 17:12	ring (mother-of-Pearl)	use-polished ring; max. pres. ext. diam.: 21.1mm, pres. ring width: 2.4mm, max. pres. thickness: 2.0mm.
Burial 6 (C12, Locus 8)		
FIG. 17:01-4	4 beads (Conidae)	4 use-polished beads made from the apex parts of conus shells, slightly abraded apex caused “perforation”, 1 piece burnt; apex di-ameters: 17.0mm, 10.4mm, 7.8mm, 7.8mm.
FIG. 18 :4	palette/pendant (limestone)	rectangular palette; decoration by an incised frame along the edges of all sides, divided again into a quadrangular larger and a rectangular smaller part: in the quadrangular part an incised circle and a biconical perforation was placed, the ractangular part has 3 biconical drillings; length: 22.6mm, max width: 16.1mm, max. thickness: 4.1mm.

FIG. 18:10 pendant (flint) unique piece of an elongated polished honey-coloured flint pendant, biconical drilling (1.0mm) long edges slightly convex, retouches (damage) took the end of the piece; pres. length: 52.0mm, max width: 16.5mm, max. thickness: 5.2mm.

**Burial 7
(C12, Locus 10)**

FIG. 18:6 pendant (oil schist) upper part of a pendant with biconical drilling and three (preserved) incisions/grooves nearby on the narrow side. The material is a bitumen-rich, highly fossiliferous chalky-marl (oil schist) recently identified by Affonso and Pernicka (1997); pres. length: 15.3mm, pres. width: 10.0mm, pres. thickness: 6.0mm.

FIG. 18:7-8 2 pendants ("greenstone") 2 lower parts of pendants made of copper containing minerals, broken at their perforations (smaller piece with uniconical drilling, larger one with biconical drilling); pres. lengths: 16.3mm and 13.2mm, max. widths: 12.2mm and 7.2mm, max. thicknesses: 3.6mm and 5.5mm.

FIG. 18:9 pendant (subfossil *Anadara* sp.?) pendant made of a larger bivalve with chipped off apex (which provided the perforation); pres. length: 45.5mm.

FIG. 17:10-11 2 beads (cowries) 1 use-polished cowrie bead with removed body, 1 use-polished complete cowrie; lengths: 24.2mm, 23.0mm.

FIG. 17:14 shell (*Cellana radiata?* from Red Sea) collected shell of Patellidae; length: 20.0mm.

**Burial 9
(B2, Locus 14)**

FIG. 13 polisher with handle (basalt) unique polisher with decorated handle, working surface with reddish pigments, top of vertical handle bears a tetrafoil design (2 pecked grooves cross at right angle), preservation: flakings around obverse of working surface and near top of handle; max. width of working face: 93.4mm, min. width of working face: 85.1mm, dimension working surface-top of handle: 71.8mm, "waist" of handle: 39.0-35.9mm, top of handle: 49.0-pres. 38.4mm.

Bibliography

- Anati, E. 1963. *Palestine Before the Hebrews*. New York: Alfred A. Knopf.
- Bar-Yosef, O. 1985. *A Cave in the Desert, Nahal Hemar*. Cat. no. 258. Jerusalem: Israel Museum.
- _____. 1992. The Neolithic Period. Pp. 10-39 in A. Ben-Tor (ed.), *The Archaeology of Ancient Israel*. Translated by R. Greenberg. Massachusetts: West Hanover.
- Bar-Yosef, O. and Alon, D. 1988. Nahal Hemar Cave: The Excavations. *Atiqot* 18: 1-30.
- Bar-Yosef, O. and Goren, N. 1973. Natufian Remains in Hayonim Cave. *Poléorient* 1: 49-68.
- Beck, H. 1928. *Classification and Nomenclature of Beads and Pendants*. Oxford: Society of Antiquarians of London.
- Betts, A. 1985. Black Desert Survey, Jordan: Third Preliminary Report. *Levant* 17: 29-52.
- Bienert, H-D. 1991. Skull Cult in the Prehistoric Near East. *Journal of Prehistoric Religion* 5: 9-23.
- _____. 1995. The Human Image in Natufian Aceramic Neolithic Period of the Middle East. Pp. 75-103 in W. H. Waldren, J. A. Ensenyat and R. C. Kennard (eds.), *Ritual, Rites and Religion in Prehistory, IIIrd Deya International Conference of Prehistory*. British Archaeological Reports - International Series. 611(1). Oxford: B.A.R.
- Bienert, H-D. and Gebel, H. 1997. Baja-Investigations into one of the Earliest Settlements in Jordan. *Occident and Orient: Newsletter of the German Protestant Institute of Archaeology-Amman Office* 2(1): 13-14.
- Bisheh, G., Farajat, S., Palumbo, G. and Waheeb, M. 1993. The Cultural Resources Management Project in Jordan: Archaeological Rescue Survey of the Ras an-Naqab-Aqaba

- Highway alignment 1992. *ADAJ* 37: 119-134.
- Cauvin, J. 1972. *Religions néolithiques de Syro-Palestine*. Paris: CNRS.
- _____. 1974. Troisième campagne a Tell Mureybet (Syrie) en 1973. Rapport préliminaire. *Les Annales Archéologiques Arabes Syriennes* 24: 47-58.
- _____. 1978. *Les premiers villages de Syrie-Palestine du IXeme au VIIeme Millenaire avant*. Lyon: CNRS et l'Université de Saint-Etienne.
- de Contenson, H. 1967. Troisième campagne a Tell Ramad, 1966: rapport préliminaire. *Les Annales Archéologiques Arabes Syriennes* 17: 17-24.
- _____. 1971. Tell Ramad: A Village Site of Syria of the 7th and 6th Millennia B.C. *Archaeology* 24: 178-285.
- _____. 1972. Tell Aswad: fouilles de 1971. *Les Annales Archéologiques Arabes Syriennes* 22: 75-84.
- _____. 1985. La région de Damas au néolithique. *Les Annales Archéologiques Arabes Syriennes* 35: 9-29.
- de Contenson, H. and Van Liere, W. 1966. Séconde campagne a Tell Ramad, 1965: rapport préliminaire. *Les Annales Archéologiques Arabes Syriennes* 16: 167-174.
- Cornwall, J. 1981. The Pre-Pottery Neolithic Burials. Pp. 395-456 in K. M. Kenyon and T. Holland (eds.), *Excavations at Jericho*. Vol. 3. London: The British School of Archaeology in Jerusalem.
- Crowfoot-Payne, J. 1983. The Flint Industries of Jericho. Pp. 622-759 in K. M. Kenyon and T. A. Holland, *Excavations at Jericho*. Vol. 5. London: British School of Archaeology in Jerusalem.
- Ferembach, D. and Lechevallier, M. 1973. Découverte de deux cranes sumodeles dans une habitation du VIIeme millénaire a Beisamoun, Israel. *Paléorient* 1(2): 223-230.
- Fiedel, S. J. 1979. *Intra and Inter-Cultural Variability in Mesolithic and Neolithic Mortuary Practices in the Near East*. Unpublished Ph. D. Dissertation. Ann Arbor Microfilm.
- Garfinkel, Y. 1987a. Bead Manufacture on the Pre-Pottery Neolithic B Site of Yiftahel. *MiteKufat Haeven, Journal of the Israel Prehistoric Society* 20: 79-90.
- _____. 1987b. Yiftahel: A Neolithic Village from the Seventh Millennium B.C. in Lower Galilee, Israel. *Journal of Field Archaeology* 14(2): 119-212.
- Garrard, A., Betts, A., Byrd, B. and Hunt, C. 1987. Prehistoric Environment and Settlement in the Azraq Basin: An Interim Report on the 1985 Excavation Season. *Levant* 19: 5-26.
- Gebel, H. G. 1988. Late Epipaleolithic-Aceramic Neolithic Sites in the Petra Area. Pp. 67-100 in A. N. Garrard and H. G. Gebel (eds.), *The Prehistory of Jordan: The State of Research in 1986*. British Archaeological Reports-International Series 396(1). Oxford: B.A.R.
- _____. 1992. *Neolithic Ain Jammam, Near Ras an-Naqb*. Unpublished Report Submitted to the Department of Antiquities of Jordan, Amman.
- Gebel, H. G. and Bienert, H-D. 1997a. Excavations at Baja, Greater Petra Area, Southern Jordan. *Neo-Lithics: A Newsletter of Southwest Asian Lithics Research* 1/97: 9-11.
- _____. 1997b. The 1997 Season at Baja, Southern Jordan. *Neo-Lithics: A Newsletter of Southwest Asian Lithics Research* 3/97: 14-18.
- Gebel, H. G. and Bienert, H-D. et al. 1998. Baja Hidden in the Petra Mountains. Preliminary Results of the 1997 Investigations. In H. G. Gebel, Z. Kafafi and G. O. Rollefson (eds.), *The Prehistory of Jordan, II. Studies in Early Near Eastern Production, Subsistence and Environment*. Vol.4. Berlin: Ex Oriente.
- Gebel, H. G. and Starck, J. M. 1985. Investigations in the Stone Age of the Petra Area (Early Holocene Research): A Preliminary Report on the 1984 Campaign. *ADAJ* 29: 89-114.
- Gebel, H. G., Muheisen, M. and Nissen, H. 1988. Preliminary Report on the First Season of Excavation at the Late Acercamic Neolithic Site of Basta. Pp. 101-134 in A. N. Garrard and H. G. Gebel (eds.), *The Prehistory of Jordan: The State of Research in 1986*. British Archaeological Reports-International Series 396(1). Oxford: B.A.R.
- Gopher, A., Goring-Morris, A. and Gordon, D. 1994. Nahal Issaron: The Lithics of the Late PPNB Occupation. Pp. 479-494 in H. G. Gebel and S. K. Kozlowski (eds.), *Neolithic Chipped Stone Industries of the Fertile Crescent. Studies in Early Near Eastern Production, Subsistence and Environment* 1. Berlin: Free University of Berlin.
- Goring-Morris, N. 1991. A PPNB Settlement at Kfar Hahoresh in Lower Galilee: A Preliminary Report of the 1991 Season. *Mitekufat Haeven, Journal of the Israel Prehistoric Society* 24: 77-101.
- Goring-Morris, N. and Gopher, A. 1983. Nahal Issaron: A Neolithic Settlement in the Southern Negev. *IEJ* 33: 149-162.
- Hauptmann, A. 1991. From the Use of Ore to the Production of Metal. In J. P. Mohen (ed.), *Découverte du Metal*. Paris: Picard.
- Hershkovitz, I. and Gopher, A. 1993. Paleodemography, Burial Customs and Food-Producing Economy at the Beginning of the Holocene: A Perspective from the Southern Levant. *Mitekufat Haeven, Journal of the Israel Prehistoric Society* 23: 9-47.
- Hershkovitz, I., Bar-Yosef, O. and Arensburg, B. 1994. The Pre-Pottery Neolithic Populations of South Sinai and Their Relations to Other Circum-Mediterranean Groups: An Anthropological Study. *Paléorient* 20(2): 59-84.
- Kenyon, K. 1954. Jericho, Oldest Walled Town. *Archaeology* 7: 2-8.
- _____. 1956a. Jericho and its Setting in Near Eastern History. *Antiquity* 30: 184-197.
- _____. 1956b. Excavations at Jericho 1956. *PEQ*: 67-82.
- _____. 1957. *Digging up Jericho*. New York: Frederick A. Praeger.
- _____. 1959. Earliest Jericho. *Antiquity* 33: 5-9.
- _____. 1979. *Archaeology in the Holy Land*. London: Ernst Benn Limited.
- Kenyon, K. and Holland, T. 1981. *Excavations at Jericho*.

- Vol.3. London: The British School of Archaeology.
- Kirkbride, D. 1960. The Excavation of a Neolithic Village at Seyl Aqlat, Beidha Near Petra: Interim Report. *PEQ*: 136-145.
- Kirkbride, D. 1962. Excavations of the Pre-Pottery Neolithic Village at Seyl Aqlat, Beidha. *ADAJ* 6/7: 7-12.
- Kirkbride, D. 1966. Five Seasons at the Pre-Pottery Neolithic Village of Beidha in Jordan. *PEQ*: 8-72.
- _____. 1967. Beidha 1965: An Interim Report. *PEQ*: 5-13.
- _____. 1968. Beidha: Early Neolithic Village Life South of the Dead Sea. *Antiquity* 42: 263-274.
- _____. 1978. The Neolithic in Wadi Rumm: Ain Abu Nekheilah. Pp. 1-10 in R. Moorey and P. Parr (eds.), *Archaeology in the Levant: Essays for Kathleen Kenyon*. Warminster: Aris and Phillips.
- Kurth, G. and Rohrer-Ertl, O. 1981. On the Anthropology of the Neolithic to Chalcolithic Human Remains from the Tell es-Sultan in Jericho, Jordan. Pp. 407-499 in K. M. Kenyon and T. A. Holland (eds.), *Excavations at Jericho*. Vol.3. London: British School of Archaeology in Jerusalem.
- Lechevallier, M. 1978. *Abou-Gosh et Beisamoun: deux gisements du VII millenaire avant l'ere chretienne en Israel. Memoires et travaux de recherches préhistoriques Français de Jerusalem*, no. 2. Paris: Association Paléorient.
- van Loon, M. 1966. First Results of the 1965 Excavation at Tell Murybet Near Meskene. *Les Annales Archéologiques Arabes Syriennes* 16: 211-217.
- _____. 1968. The Oriental Institute Excavations at Mureybet, Syria: A Preliminary Report on the 1965 Campaign, Part 1: Architecture and General Finds. *Journal of Near Eastern Studies* 27: 265-290.
- Mahasneh, H. 1989. *The Settlement Patterns in the Levant During the Neolithic Period*. Unpublished Ph. D. Dissertation Submitted to the University of Pennsylvania, Philadelphia, PA. USA.
- _____. 1996. Es-Sifiya: A Pre-Pottery Neolithic B Site in Wadi el-Mujib, Jordan. *Dirasat, The Journal of the University of Jordan* 23(1) : 135 - 151.
- _____. 1997a. A PPNB Settlement at Es-Sifiya in Wadi el-Mujib. Pp. 227-234 in *SHAJ* 6. Amman: The Department of Antiquities of Jordan.
- _____. 1997b . The 1995 Season at the Neolithic Site of Es-Sifiya, Wadi Mujib, Jordan. In H. G. Gebel, Z. Kafafi and G. O. Rollefson (eds.), *The Prehistory of Jordan, II. Studies in Early Near Eastern Production, Subsistence and Environment*. Vol. 4. Berlin: Ex Oriente.
- _____. 1998. Spatial and Functional Features of Area B in Es-Sifiya. In H.G. Gebel and H-D. Bienert (eds.), *Symposium: Central Settlements in Neolithic Jordan. Studies in Early Near Eastern Production, Subsistence and Environment*. Vol. 5. Berlin: Ex Oriente.
- Marks, A. and Scott, T. 1976. Abu Salem: Type Site of the Harifian Industry of the Southern Levant. *Journal of Field Archaeology* 3: 43-60.
- Mellaart, J. 1961. Excavations at Hacilar: Fourth Preliminary Report, 1960. *Anatolian Studies* 11: 39-75.
- _____. 1962. Excavations at Catal Huyuk: First Preliminary Report, 1961. *Anatolian Studies* 12: 41-65.
- _____. 1964. Excavations at Catal Huyuk 1963: Third Preliminary Report. *Anatolian Studies* 14: 39-119.
- _____. 1970. *Excavations at Hacilar*. Edinburgh.
- _____. 1975. *The Neolithic of the Near East*. London: Thames and Hudson.
- Moore, A. 1975. The Excavation at Tell Abu Huryra. *Les Annales Archéologiques Arabes Syriennes* 25: 115-127.
- _____. 1978. *The Neolithic of the Levant*. Unpublished Ph. D. Dissertation Submitted to Oxford University.
- Mortensen, P. 1970. Preliminary Study of the Chipped Stone Industry from Beidha: An Early Neolithic Village in Southern Jordan. *Acta Archaeologica* 41: 1-54.
- Muhly, J. 1973. Copper and Tin: The *Distribution of Mineral Resources and the Nature of the Metals Trade in the Bronze Age*. New Haven: The Connecticut Academy of Arts and Sciences.
- Najjar, M. 1992. Tell Wadi Feinan/Wadi Araba: A New Pottery Neolithic Site from Jordan. Pp. 19-28 in S. Kerner (ed.), *The Near East in Antiquity: German Contributions to the Archaeology of Jordan, Palestine, Syria, Lebanon and Egypt*. Vol. 3. Amman: Al-Kutba Publishers.
- _____. 1994. Ghwair 1, A Neolithic Site in Wadi Feinan. Pp. 75-86 in S. Kerner (ed.), *The Near East in Antiquity: German Contributions to the Archaeology of Jordan, Palestine, Syria, Lebanon and Egypt*. Vol. 4. Amman: Al-Kutba Publishers.
- Najjar, M., Abu Dayya, A., Suleiman, E., Weisgerber, G. and Hauptmann, A. 1990. Tell Wadi Feinan: The First Pottery Neolithic Tell in the South of Jordan. *ADAJ* 34: 27-56.
- Nissen, H. 1990. Basta: Excavations of 1986-1989. Pp. 87-94 in S. Kerner (ed.), *The Near East in Antiquity: German Contributions to the Archaeology of Jordan, Palestine, Syria, Lebanon and Egypt*. Vol. 1. Amman: Al-Kutba Publishers.
- Nissen, H., Muheisen, M. and Gebel, H. G. 1987. Report on the First Two Seasons of Excavations at Basta (1986-1987). *ADAJ* 31: 79-120.
- _____. 1991. Report on the Excavations at Basta 1988. *ADAJ* 35: 13-40.
- Noy, T., Legge, A. and Higgs, E. 1973. Recent Excavations at Nahal Oren, Israel. *Proceedings of the Prehistoric Society* 39: 75-99.
- Ozbek, M. 1976. Étude anthropologique d'ossements humains néolithiques du VIII millenaire a.c. provenant de Mureybet, Syrie. *Les Annales Archéologiques Arabes Syriennes* 26: 161-180.
- Pecontal-Lambert, A. 1987. Approche ethnologique d'un aspect du comportement (magico-religieux) de néolithiques du Proch-Orient. *Paléorient* 3: 15-26.
- Perrot, J. 1960. Excavations at Eynam (Ein Mallaha). Preliminary Report on the 1959 Season. *IEJ* 10: 14-22.

- _____. 1964. Les deux premières compagnes de fouilles a Munhata (1962-1963): Premières résultats. *Syria* 41: 223-345.
- _____. 1966a. La troisième campagne de fouilles a Munhata (1964). *Syria* 43: 49-63.
- _____. 1966b. Le gisement Natoufien de Mallaha (Eynan), Israel. *l'Anthropologie* 70: 437-483.
- _____. 1967. Abu Ghosh. *IEJ* 17: 266-267.
- Perrot, J., Ladiray, D. and Soliveres-Massei, O. 1988. Les hommes de Mallaha (Eynan). *Mémoires et Travaux du C.R.F.J.*, 7. Paris: Association Paléorient.
- Raikes, T. D. 1980. Notes on Some Neolithic and Later Sites in the Wadi Araba and the Dead Sea. *Syria* 41: 223-345.
- Rollefson, G. 1983. Ritual and Ceremony at Neolithic Ain Ghazal (Jordan). *Paléorient* 9 (2): 29-38.
- _____. 1984. Ain Ghazal: An Early Neolithic Community in Highland Jordan. *BASOR* 255: 3-14.
- _____. 1986. Neolithic Ain Ghazal (Jordan): Ritual and Ceremony. *Paléorient* 12(1): 45-51.
- Rollefson, G. and Simmons, A. 1985. The Early Neolithic Village of Ain Ghazal, Jordan: Preliminary Report on the 1983 Season. *BASOR* Supplement 23: 35-52.
- _____. 1986. The Neolithic Village of Ain Ghazal, Jordan: Preliminary Report on the 1984 Season. *BASOR* Supplement 24: 145-164.
- _____. 1987. The Life and Death of Ain Ghazal. *Archaeology* 40: 38-45.
- _____. 1988. The Neolithic Settlement at Ain Ghazal. Pp. 393-421 in A. N. Garrard and H. G. Gebel (eds.), *The Prehistory of Jordan: The State of Research in 1986*. British Archaeological Reports - International Series 396(2): 393-421. Oxford: B.A.R.
- Rollefson, G., Kafafi, Z. and Simmons, A. 1989. The 1988 Season at Ain Ghazal: Preliminary Report. *ADAJ* 33: 9-26.
- Schick, T. 1988. A Neolithic Cult Headdress from the Nahal Hemar Cave. *The Israel Museum Journal* 7: 25-33.
- Schirmer, W. 1988. Zu den Bauten des Cayonu Tepesi. *Anatolia* 15: 130-159.
- Simmons, A., Kafafi, Z., Rollefson, G. and Moyer, K. 1989. Test Excavations at Wadi Shueib, a Major Neolithic Settlement in Central Jordan. *ADAJ* 33: 27-42.
- Simmons, A., Boulton, A., Butler, C., Kafafi, Z. and Rollefson, G. 1990. A Plastered Skull from Neolithic Ain Ghazal, Jordan. *Journal of Field Archaeology* 17: 107-110.
- Singh, P. 1974. *Neolithic Cultures of Western Asia*. New York: Harcourt Brace Jovanovich.
- Strouhal, E. 1973. Five Plastered Skulls from the Pre-Pottery Neolithic B Jericho: Anthropological Study. *Paléorient* 1(2): 231-247.
- Talbot, G. 1983. Beads and Pendants from the Tell and Tombs. Pp. 788-801 in K. M. Kenyon and T. A. Holland (eds.), *Excavations at Jericho*. Vol. 5. London: British School of Archaeology in Jerusalem.
- Waheeb, M. 1996. Archaeological Excavations at Ras an-Naqab-Aqaba Road Alignment: Preliminary Report (1995). *ADAJ* 40: 339-348.
- Watkins, T. 1992. The Beginning of the Neolithic: Searching for Meaning in Material Culture Change. *Paléorient* 18(1): 63-75.
- Wheeler, M. 1983. Green Stone Amulets. Pp. 781-787 in K. M. Kenyon and T. A. Holland (eds.), *Excavations at Jericho*. Vol. 5. London: The British School of Archaeology in Jerusalem.
- Yakar, R. and Hershkovitz, J. 1988. Nahal Hemar Cave: The Modelled Skulls. *Atiqot* 18: 59-63.