The Ubaid Period in Iraq

Recent excavations in the Hamrin region

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Part i

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Introduction

It has been more than a half century since H.R. Hall and L. Woolley revealed at the small site of Tell Al-Ubaid [1] near Ur, the type of distinctive painted pottery which was subsequently found at many sites and was given the title of "Al-Ubaid", a term also used to denote the period and the culture associated with it.

The Ubaid pottery found at the earliest levels at Eridu (XIX-XV) is the earliest pottery yet found in Southern Mesopotamia; it was first called "Eridu Ware" by the excavators of the site (Lloyd and Safer 1948). This ware was followed in levels XIV-XII by another distinctive ceramic style called Hajji Muhammad, after the type site near Warka where it was first found (Ziegler 1953), this was followed by the "traditional" style of Ubaid pottery in levels XII-VI. This pottery had been found before at Al-Ubaid, Ur (Woolley 1955) and Warka (U.V.B. VI, 1932). Joan Oates (1960) has proved that both Eridu and Hajji Muhammad were only an earlier phase of a homogeneous assemblage which shows a gradual transformation and displays an unbroken continuity, thus warranting the term Ubaid 1, 2, 3 and 4 respectively. So the whole Ubaid period is divisible into four phases (Ubaid 1-4) and this study follows this terminology.

The second phase of the Ubaid period (Ubaid 2) is widely distributed in Mesopotamia, it is most concentrated in the Uruk region as well as at Uruk and Hajji Muhammad itself (Adams 1981:58), it is also found at Eridu (VIX-XII) and further north at the site of Ras Al-Amiya near Kish (Stronach 1961) and at Mandali (Oates 1969) and in the Hamrin region in east-central Iraq. Close parallels are to be drawn with Susiana B and Khazineh in Khuzistan (Hole, Flannery and Neely 1969).

During Ubaid 3 and 4 the Ubaid culture seems to have spread widely throughout Mesopotamia and for the first time we find that both southern and northern Iraq were culturally united. The Ubaid influence was also apparent in Khuzistan (Bayat and Mehmeh phases), northwestern Iran, Syria and the eastern province of Saudi Arabia (Masry 1974).

This wide-spread distribution of the Ubaid culture is an interesting pheonmenon which justifies more investigation, so that further discoveries of this culture can be made and our understanding of its developmental phases increased. But as more discoveries have been made further archaeological problems have become inevitable, in particular when the

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[1] H.Hall and L.Woolley 1927, Ur Excavations, vol.1, Al-Ubaid.

evidence is proved either defective or incomplete. The evidence which was obtained from the Ubaid sites in Iraq was not always satisfactory due to the limited and restricted amount of excavation conducted, this failed to produce materials which could help to resolve some archaeological problems involved with the Ubaid period and its development phases. Therefore the necessity of finding a site which might be promising, has become most urgent and important.

The impressive discoveries from Choga Mami in the Mandali area in the eastern edge of the alluvial plain of Iraq, had thrown light on the importance of this part of Iraq in the prehistoric periods. The excavations there provided a significant sequence running from Samarra period in the 6th millennium B.C. until the Ubaid period through a new Transitional Samarra-Ubaid phase which was unknown before. Encouraged by these important discoveries we decided to excavate the site of Tell Abada in the Hamrin region, not far to the north of Choga Mami. Abada was selected for excavation because of the enormous quantity of surface sherds of the Ubaid period and in particular because among these were many in the style of Eridu and Hajji Muhammad (Ubaid 1 and 2). Moreover the location of the site in an archaeologically unexplored area in the central east of Iraq along the foothills between Iraq and Iran, seemed to be most promising and encouraged hopes of producing evidence to elucidate the relationship between northern and southern Iraq during the Ubaid period on the one hand, and the relationship, if any, between Iraq and Iran on the other.

The work at Tell Abada was a part of a wide rescue operation conducted by the Iraqi State Antiquities Organization in the Hamrin region where about seventy archaeological sites were to be inundated by a dam, now already constructed.

This study considers the Ubaid period in Iraq focusing mainly on the Hamrin region where some sixteen Ubaid sites were excavated. It discusses the environmental situation and investigates the resource potential of the area. It describes, in general, the Ubaid assemblages from each site and investigates the relationships between them; it describes in detail and analyzes the Ubaid assemblage from the largest of these sites, Tell Abada, and tries to distinguish its role in the region and to establish its chronological position. It makes a careful comparative and analytical study of a wide range of materials, in particular the pottery, from all of the Ubaid sites in the region. It discusses the distribution of the Ubaid sites in the Hamrin region and considers the implications of such distributions in this part of Iraq. It also investigates settlement patterns and considers various aspects involved with community patterns of the Ubaid people in the region.

The study is mainly based on the results of the excavations conducted by the writer at two of the largest Ubaid sites in the Hamrin region: Tell Abada, where extensive excavation revealed more than 80% of the total area of the site, thus exposing almost the whole plan of a village settlement with an extensive inventory of various kinds of materials, and Tell Rashid where only limited excavation was conducted.

The excavations at Tell Abada started in the middle of December 1977 and lasted until the end of July 1978 without any interruption, while the excavations at Tell Rashid took place between the middle of April and the middle of May 1978. The work at both sites was the responsibility of the writer alone, but was facilitated and financed by the Iraqi State Organisation of Antiquities to which the writer belonged.

Archaeological data concerning other Ubaid sites in the Hamrin region were mainly obtained through systematic visits by the writer to these sites in the course of excavations and the study by him of their site material, stored in the Iraqi Museum in Baghdad. But in some cases published or unpublished preliminary reports of excavations were relied upon.

CHAPTER I

Geographical and Environmental Setting

An understanding of the present morphology of the study area (the Hamrin region) is pertinent to our main concern of understanding and reconstructing the ancient landscape of the region during the Ubaid period. So it is presented here as a prelude. It is relevant, first, to consider the geology of the area.

Geology

Iraq is divisible into three geological regions (MacFadyen 1966, 5):

1 - the Iraqi portion of the Arabian shield, covering some 57% of Iraq.
2 - The Foothills of the Zagros ranges, covering some 18% of the country.
3 - The Mesopotamian plains which cover some 25% of Iraq.

Our concern is with the second region in the northeast of Iraq where the strata have been strongly folded during Tertiary times to form a series of north-west to south-east hills and mountain ranges, which continue southward beyond the frontier in western Iraq (ibid, 5). The region consists of beds of gravel, conglomerate and sandstone; all of these products were accumulated during the erosion of the mountains. It also contains low parallel hill ridges and rather extensive valleys and plains, in which various streams have cut their valleys (Buringh 1960, 37). The Middle Diyala basin, which includes the Hamrin region, lies within this area. It consists of a series of low anticlines which merge into a folded complex to the north and east. In each there are outcrops of the Fars series consisting of closely interbedded marls and sandstones, overlaid by the Bakhtiari beds. The outcrops of the Fars beds are most striking in the Jebel Hamrin where they give rise to long parallel ridges of sandstone outcrops. The hills surrounding the Hamrin basin are predominantly Bakhtiari outcrops consisting of compact gravel and conglomerate beds, interspersed with beds of clay and silt. The synclines are filled with alluvium to a considerable depth, formed by erosion from the surrounding hills (Macdonald and partners 1959, Report No.4).

Topography and River Systems

The Hamrin basin is an almond-shaped area measuring some 40 x 15 km. It lies in the Middle Diyala region in the east-central part of Iraq between Jebel Hamrin, [1] the westernmost ripple of the Zagros mountains and the ridges of Jebel Jubbah Dag which run roughly parallel to the north of it (Figs. 1, 2).

The folded sediments of the Jebel Hamrin cut off the middle Diyala including the Hamrin region - from the greater Mesopotamian alluvial plain. The Diyala river, flowing in a south-westerly direction, cuts the basin into two parts. The river has a constant steep slope of about two metres per kilometre and it has adjusted its regime by flowing in numerous small channels within a wide gravelly bed. This gives rise to the characteristic braided reaches which are a feature of the area. When the river cuts through the low ranges of hills the river channel is narrower and is bounded by cliffs of conglomerate and compact gravel. The two main tributaries which join the Diyala river in the middle Diyala basin are the Wand on the left bank and the Narin Chai on the right. The last river has a very different character from the Diyala, it is a deep cutting stream, lying as much as nine metres below the plain. It is shallow, measuring about ten metres at its greatest width and can be forded at different spots (Gibson 1981); the catchment area is comprised of low gravel and sandstone hills which are very sparsely covered with vegetation. In summer it is almost dry and is excessively salty. In its lower reaches the Narin Chai has an average slope of 50 cms. per kilometre and has eroded a meandering channel up to six metres deep along the north-east foot of the Jebel Hamrin. This river drains an area of about 200 square kilometres of gravel hills. Like the Narin Chai, it has eroded a wide deep bed in the plain south of the town of Saadiya (Macdonald and partners 1959, Report No.4, 3).

Communications (Fig. 3)

The Hamrin region is crossed by the historical Khurasan road which connects Iran to Iraq and provides access to Baghdad and the Tigris-Euphrates routes. At the town of Saadiya another road forks to Jalawla where it crosses the river and then passes north up the bank of the River Diyala to Derbendi Khan, and passes through the fertile Shehrizor plain to Sulaimaniya

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[1] This is a low range of hills (alt. 300-400 m.) running from Fatha on the river Tigris to Mansuriyat Al-Jabal on the Diyala, thence merging into the higher Persian foothills of the Pusht-i-kuh near Mandali. The Jabel Hamrin which is prolonged some distance westwards of the Tigris as Jebel Makhul, clearly demarcates upper (or northern) from lower (central and southern) Iraq (Guest 1966, 3).

in northern Iraq. [2] From Jalawla another road runs north-west along the railway line linking Qara Tepe at the north end of the basin to Kirkuk and Mosul. (Macdonald and partners 1959; Postgate 1979, 593-594).

Climate

1 - Temperature and Humidity

The climate is semi-arid and is similar to that in the plain to the south. The area lies on the fringes of what is usually regarded as a rain-fed zone of Iraq (Oates and Oates 1976b, 103). Summer is characterized by heat, occasionally accompanied by dust storms and occasional severe frosts occur in winter which is generally cold.

The mean monthly temperature and humidity, as recorded at the nearby town of Khanaqin, are set out in Table 1. This shows that the summer temperatures are generally very high and coincide with low humidity, consequently summer evaporation is very high as is the transpiration rate of vegetation. During winter the temperatures are low and frosts are not infrequent.

2 - Rainfall

The mean annual rainfall at Jalawla is 244 mm. At Al-Mansour, immediately to the west of the Hamrin basin, the mean annual rainfall is 248 mm., compared to 148 mm. at Baghdad. Both stations are relevant to the Hamrin region. The mean monthly values are set out in Table 2.

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[2] This is the Assyrian plain 'Zamua' (Postgate 1979, 594).

Table 1

Mean monthly temperature and humidity data for Khanaqin.

Month	Temperature (F) 1938-57 Mean Max.	Mean Min.	Mean	Relative Humidity (%) 1939-57 06HRS	09HRS	15HRS	Mean of Day.
Jan	59.4	40.1	49.6	82	72	52	70
Feb	62.6	42.3	52.3	78	68	45	64
Mar	69.1	46.9	58.1	75	61	41	59
Apr	81.9	55.4	68.5	63	45	30	46
May	95.0	66.0	80.8	43	27	19	30
Jun	105.4	72.7	87.8	28	17	12	19
Jul	110.8	78.1	94.6	26	18	12	19
Aug	109.8	77.0	93.6	27	18	13	19
Sep	102.7	69.8	86.4	28	20	12	20
Oct	92.1	61.2	83.1	36	27	18	27
Nov	76.3	51.6	65.7	59	52	36	49
Dec	63.3	43.2	53.2	80	71	51	67

Source: Diyala and Middle Tigris project, Report No.2, Macdonald and partners 1959.

Table 2

Mean monthly rainfall in the Middle Diayala Basin for the Period 1937-1956

Month	Jalawla	Al-Mansour
Jan.	36.1	37.8
Feb.	46.7	40.5
Mar.	44.9	43.0
April	28.4	19.9
May	6.1	12.2
June	-	-
July	-	-
Aug.	-	-
Sep.	-	-
Oct.	2.7	15.0
Nov.	27.6	32.5
Dec.	51.0	56.2
Total	243.5	248.1

Source: Diyala and Middle Tigris project, Report No.3, Macdonald and partners 1959.

Population

The main population centre in the area is the town of As-Saadiya which has a population of 6,630. [3] Several small villages are scattered throughout the region. The population depends almost entirely on agriculture for their livelihood. Details of the density of population living in and around the region are based on the 1957 census. The data from the new census which took place in 1969 are not available yet.

Vegetation (Fig. 4)

Iraq can be divided into several geographical regions according to variation in vegetation. Guest (1966) has outlined the following vegetational regions and zones:

Region (Approx. area in sq. km.)	Zone	Approx. Altitude limits in m. above mean sea level
A.Desert Region (350,000-400,000)	1.Desert Zone	250-400
	2.Sub-desert Zone	0-1000
B. Steppe Region (65,000)	3.Dry-steppe Zone	100-350
	4.Moist-steppe Zone	200-800
C. Mountain-Forest region (30,000)	5.Forest Zone	500-1800
	6.Thorn-Cushion Zone	1700-3000
D. Alpine Region (100?)	7.Alpine Zone	2750-3730

The second vegetational region (the Steppe Region) stretches from north and northeast of the Jebel Hamrin line to the foothills and lower slopes of the mountain ranges. This region divides into two distinctive zones, the Dry-steppe zone and the Moist-steppe zone (Fig. 4). Our study area lies within the former zone (the Dry-Steppe Zone) which forms a belt of short sparse grassland with scattered shrublets characteristic of the vegetation of the Jebel Hamrin, the lower stretches of the upper plains to the north and north-east of the Jebel and the low foothills along the eastern frontier between lower Iraq and Iran. The general elevation of the area is 100-350 m. above mean sea-level, the elevation of the Hamrin basin varies between 80-105 m., compared to 35 m. for Baghdad and 200 m. for Khanaqin. Rain cultivation is frequently possible, but in certain years it may fail unless partial irrigation can also be given. On the otherhand in good years the crop return is high because the soil has not been exhausted (ibid, 71). No clear differences

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[3] Source: Ministry of Economics, Principle Bureau of Statistics, Iraq 1958.

were noticed from one part of the Hamrin region to another except in the higher Jebels east of the area where a more varied and abundant hill vegetation makes its appearance. The main divisions which can be seen are hills, flat lands, and marsh areas. The Hamrin basin contains no hills, it is just bounded by them (Fig. 5). The vegetation cover on the Jebel lands is extremely sparse, as might be expected since most of the low rainfall is lost by run-off, and the soils are shallow and frequently gravelly. Occasional low bushes (unnamed) are almost the only perennial plants but after the rains a thin cover of small grasses is sufficient to provide pasture for sheep and goats. The sloping gravelly land is transitional in appearance to the flat lands and although vegetation is still sparse, some Centaurea Achillea sp., Heliotropium sp., Verbascum sp, Anchusa strigosa., Capparis-spinosa, and small herbs are found. This land is represented by that part of the region between the surrounding hills and the flat land of the Hamrin basin.

The non saline flat (or slightly sloping) land is of particular interest since it comprises most of the cultivable land in which the majority of the Ubaid sites were established.

Soils and Soil Analysis

Very few studies concerning the analysis and classification of the soils in this part of Iraq have been conducted. Most reliable are those undertaken by the 'Hunting Technical Services' for the Diyala and Middle Tigris project (Macdonald and partners, 1959). Another study was that by Buringh for the Ministry of Agriculture, which was published in 1960 (Soils and Soil Conditions in Iraq, Baghdad, 1960). The following relies heavily on these two sources.

1 - Land Structure (Fig. 5)

Though the Middle Diyala, in which the Hamrin region lies, is separated from the plain of Iraq, its soil material is of the same origin. The rivers together with local soil movement have formed plains between the parallel ridges of folded sediments. The deposits are of similar texture to those of the lower Diyala area (Adams 1965). The soils are of similar texture to those of the plains; they contain a very large proportion of calcium carbonate, and they include many examples of gilgai depression soil.

The proximity of thick soil beds in the Fars hills has provided a group of soils of various depths overlying gypsum. There is much gravel in the area, some transported and some, the Bakhtiari gravels, in situ. Some soils rest on thick gravel layers, and many on the periphery of the plain have gravel on

the surface. These gypsum and gravel dominated soils are not found on the Mesopotamian plain except when it abuts on the older hill deposits.

2 - Ground Water and Salinity

The Hamrin region soils differ from the lowland soils of Iraq in that salinity is far less widespread. There are localised saline areas but in general rainfall and irrigation with good drainage seem able to prevent salination of the soils. The ground water is kept deep by natural drainage and neither weathering nor irrigation have led to the accumulation of salts in the upper soil profile. An increase in irrigation without the provision of a drainage system would lead to a rise in the water table and where this was excessive salination would become a dominant influence in the lower Diyala. At present, however, the general process is one of leaching over most of the area.

3 - Texture

The texture most frequently found in the Hamrin region is silty clay loam with many silty loams and silty clays. The texture of the top soils is mainly silty loam and a large proportion of the profiles are the result of wide-spread deposition of soil eroded from hills fringing the area. The fine-textured soils are usually found away from the fringes of the hills, at lower levels. Material coarser than silty loam occurs, but usually in the deeper horizons. There are many areas of extremely well developed gilgai soils, with poor soil structure and irregular micro-relief. These soils occur in depressions with no effective drainage outlet.

The results of analyses of different selected samples show a high silt content in the soils; the silt in these analyses is 0.002 mm. to 0.05 mm. in size but even with this range of silt size the silt percentage of the soils is unusually high.

4 - Soil Groups (Fig. 6)

The separation of the soil groups is based mainly on salinity, texture and structure, in addition to the depth of soil. Several soil classes have been differentiated, these are:

1) Normal soils. This class is divided into two groups:

a) Chand soils.

A group of coarser textured soils varying from light loams and light silt loams to loamy sands and sand. They are non-saline or of low salinity. The most common colour for these soils is dark brown or yellowish brown. The consistency is usually soft, slightly hard, occasionally hard when dry, and friable when moist. These soils are generally porous and absorb water easily. This type of soil occurs mainly in the wide, deep areas called chand which run almost parallel to the Diyala river in two separated parts in the south-eastern part of the Hamrin basin; the first chand is close to Tel Abada and the other is close to Tell Rashid (Fig. 6).

There are no particular vegetation patterns associated with these soils. The cover can vary from moderately dense to sparse. Centaurea sp., Prosopis farcta, Alhagi maurorum are common, but others such as Artemisia, Capparis, Glycyrrhiza, Teucrium, phragmites, Aeluropus are found and many other herbs, plants and grasses.

b) Qara Tepe soils.

This group of soils consists of the finer textured well structured, non saline or slightly saline soils. The texture of the top 100 cm. falls predominantly into the sillty clay. silty clay loam, and heavy silt loam groups. The parent material is partly fine textured outwash from the surrounding hills and partly sediment brought down from the Diyala and Wand rivers.

The area covered by this group of soils is located to the north-west of the large marsh area, and around the township of Qara Tepe (Fig. 6). The only Ubaid site which lies close to this area is Tell Bustan.

The natural vegetation is generally fairly abundant for such a dry region, mainly consisting of low shrubs and weeds spaced from one foot to several yards apart.

Table 3

Laboratory Results (Chand soils).

Depth cm.	PH paste	E.C mmos/	Perm. cm/hr	Mechanical Analysis Sand %	Silt %	Clay %	Lab Tex.	Lime %	Gypsum %	me/100g Sol. Na	Exch. Na
0-40	8.0	0.4	1.6	61	29	10	SL	32.9	<0.1	0.2	0.1
40-105	8.0	0.3	6.0	80	14	6	LS	33.4	<0.1	0.2	0.1
105-135	7.7	0.7	0.4	26	53	21	SiL	33.2	<0.1	0.4	0.3
135-150	7.9	0.6	2.0	55	32	13	SL	33.0	<0.1	0.3	0.3

Source:Diyala and Middle Tigris project, Report No.2, Macdonald and partners 1959.

Table 4

Laboratory Results (Qara Tepe soils).

Depth cm.	PH paste	E.C. mmos/ cm.	Perm. cm/hr	Mechanical Analysis Sand %	Silt %	Clay %	Lab. Tex.	Lime %	Gypsum %	me/100g Sol. Na	Exch. Na
0-20	7.3	0.8	0.5	14	58	28	SiCL	0.2	0.1	-	
20-35	7.8	0.4	0.7	13	52	35	SiCL	0.1	0.1	0.1	0.2
35-88	7.8	0.7	0.6	12	51	37	SiCL	0.1	0.2	0.2	0.2
88-150	7.5	0.5	0.5	17	50	33	SiCL	0.1	0.2	0.2	0.2

Source:Diyala and Middle Tigris project, Report No.2, Macdonald and partners, 1959.

Table 5

Laboratory Results (Kanaan soils).

Depth cm.	PH paste	E.C. mmos/ cm.	Perm. cm/hr	Mechanical Analysis Sand %	Silt %	Clay %	Lab. Tex.	Lime %	Gypsum %	me/mg. Sol Na.	Exch. Na.
0-25	8.2	31.0	5.0	10	67	23	SiL	25.4	12.9	48.0	13.0
25-50	8.5	16.5	0.4	16	59	25	SiL	28.0	1.9	24.5	8.5
50-100	8.6	15.7	0.3	20	56	24	SiL	30.1	1.2	20.5	8.6

Source:Diyala and Middle Tigris project, Report No.2, Macdonald and partners, 1959.

2) Saline Soils

This class of soil is divided into three groups, these are: Beled Ruz soils, Abbas soils and Kanaan soils.

The first two groups are not represented in the Hamrin region, so our concern will be with the third group only, i.e.:

Kanaan soils:

These soils can be either moderately saline or saline. In texture and stratification they are equivalent to the Chand soils. Consistencies are usually soft to slightly hard and occasionally hard when dry to friable when moist. Colour ranges

from yellowish brown to dark yellowish brown. As mentioned above, almost all these saline soils are close to the two marsh areas; the wider and larger of these areas lies at the northern end of the Hamrin basin (Fig. 5). Some of the Ubaid sites, for example, Maddhur, Bustan and Rubeidheh, are found close to this area. The other marsh area is located to the west of the Diyala river. The Ubaid sites of Songor are located nearby.

The vegetation on these soils varies with salinity. On the moderately saline soils Prosopis farcta is the most common species, while Aeluropus, plantago, Suaeda, Hordeum, Artemisia and Capparis also occur. The cover is usually described as moderately dense to very sparse. Suaeda and Aeluropus are most commonly associated with the saline soils and occasionally Alhagi maurorum, Cressa eretica and Hordeum marinuum occur. The cover is described as moderately dense to sparse.

Marsh Land

As can be seen in Fig. 6, the marsh land areas are located in two places in the north-western part of the Hamrin region. The area in the vicinity of Qara Tepe is a complex of some of the saline soil types already described. These marsh lands serve as the main grazing land for the flocks of sheep and herds of cattle and camels from the villages which surround them. The flocks graze on the various salt-tolerant grasses, plants and sedges that form a comparatively dense cover over much of these areas. The area is also the home of wild pigs and a variety of birds.

The second marsh area is smaller and located to the west of the Diyala river, nearly in the middle section of the Hamrin region.

The soils of these two areas are generally fine textured river alluvium and jebel outwash. They are similar to the Kanaan soils but salinity is generally higher.

The vegetation pattern of the marsh lands can be related to the salinity and the wetness of the soil; varying from the Suaedu Aeluropus complex already noted on the edges, through rush fringes, through a grass-rush association (Aeluropus sp. and Juncus bufonius) to the wettest places where sedges (Scirpus matrimus) and reeds (phragmites Communis) predominate. As mentioned earlier a number of Ubaid sites were found in the vicinity of the two areas (Fig. 6).

3) Fine textured soils

This class of soils is divided into two groups, Tabra soils and Musari soils. The principle area of the first group lies outside the Hamrin region, so we are only concerned with the second group.

Musari soils

These soils are non saline to slightly saline, with a fairly poor structure. They are the most common soils in the Hamrin region. Their range of texture and salinity is similar to soils in the Qara Tepe and Tabra groups, but tends to be intermediate between them. The Musari soils are predominantly formed from fine grained irrigation and Diyala flood deposits and locally derived hill wash material. The texture of soils in the Musari group ranges generally from heavy silt loams to silty clay. The consistency of dry soil is generally hard to very hard in the surface layers, becoming firm to very firm where slightly moist, below 100-150 cm. The moist colours are similar to those of the Qara Tepe group of soils, being predominantly brown, dark brown to dark grey brown. The dry colour, however, is generally lighter, ranging from light grey to pale brown or brown.

This group of soils is the most common in the area and is the analogue of the similar group in the lower Diyala and Adhaim area. Most of the Ubaid sites in the Hamrin region, particularly those located in the south-western part of the basin, are associated with this type of soil (Rashid, site no.3.A, Abada, Ayash and Al-Khubari), also K. Qasim, Hasan, Abu Husaini and Haizalon on the otherside of the region (Fig. 6).

The vegetation on the Musari soils is dominated, as is that on most of the Middle Diyala soils by shok (Prosopis farcta). Its occurence was recorded in over 90% of the sites investigated. Other common plants were Centaurea spp., various sedges and Alhagi maurorum aghul, each of which occurred at

approximately 40-50% of the sites investigated.

Conclusion

In this chapter the geographical and environmental characteristics of the study area (the Hamrin region), have been briefly described. Most likely to effect the pattern of the distribution of the Ubaid sites in the area are the different soil types.

The Hamrin region contains soils which can be classified as Normal soils, Saline soils and Fine-textured soils (the Musari soils). The fact that the majority of the Ubaid sites in the Hamrin region were associated with the Fine-textured soils is of particular interest. Another group of Ubaid sites is associated with the two marsh areas in the north-western part of the Hamrin region. The implications of this distribution will be discussed in Chapter V.

Table 6

Laboratory Results (Musari soils).

Depth cm.	PH paste	E.C. mmos/ cm.	Perm. cm/hr	Mechanical Analysis Sand %	Silt %	Clay %	lab. Tex.	Lime %	Gypsum %	me/100g Sol. Na.	Exch. Na.
0-50	7.9	0.6	0.5	12	50	38	SiCL	29.7	<0.1	0.2	0.3
50-100	7.9	0.6	0.5	10	55	35	SiCL	29.5	<0.1	0.2	0.3
100-150	7.9	0.5	0.5	15	58	27	SiCL	33.8	<0.1	0.2	0.2

Source:Diyala and Middle Tigris project, Report No.2, Macdonald and partners, 1959.

CHAPTER II

Tell Abada: New light on the Ubaid Period

The site

Tell Abada lies to the east of the Diyala river in the south-eastern part of the Hamrin region, some 12 km. southeast of the town of As-Saadiyah, in a vast plain along the Zagros foothills. This fairly large site occupies a central position among the prehistoric sites found on this side of the region. [1] (Fig. 7;Pl. 1).

It is an oval-shaped mound approximately 190 m. long and 150 m. wide, which rises about 3.50 m. above the surrounding plain (Fig. 8). But the base of the site, as revealed by our excavations, is 2.50 m. below the present ground surface (Fig. 9).

There were no recent surface disturbances from ploughing or burial owing to a local belief that the tell was haunted.

The Excavations

All the surface material was collected from the entire surface of the mound and the surrounding area; it was cleaned, numbered, classified, drawn and registered according to its location. We divided the whole surface of the tell into 10 m. squares separated from each other by 1 m. wide baulks. Each square was divided into four subdivisions. Excavation started on the squares which occupy the central part of the mound, then it was extended to cover almost the entire area of the tell. Our ultimate aim was to expose both horizontally and vertically as large an area as possible.

Two deep soundings, one in the centre of the mound, the other on its northern slope, were dug down to virgin soil to confirm the stratigraphy. More than 80% of the total area of the tell was excavated.

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[1] Three prehistoric sites belonging to the Ubaid period have been excavated in this area: Tell Rashid, Tell Ayash and Tell As-Saadiyah. Ubaid occupations were found at Telul Al-Khubari and another small site (No.3a) near Tell Rashid (Fig. 6; Chapter IV).

Section A

Stratigraphy and Architecture

The excavations at Tell Abada have revealed three distinct building levels occupying a vertical depth of about 6 m. (Fig. 9). These were numbered I, II and III from top to bottom respectively. Each level contained several subphases as attested by the presence of successive floors and renovations within each level.

Level III

Level III was the earliest level and had been founded directly upon the virgin soil. The excavations in this level were not as extensive as in the other two levels, however, over half of the area of this level was excavated.

The main part of this level seems to have occupied the western sector of this mound where two large, multi-roomed buildings were found in a very well-preserved condition (Fig. 10; Pl. 2).

Building A

Building A with its regular tripartite plan consists of a long rectangular hall measuring 8 x 2.40 m. flanked by small rooms on either side. The outer walls have been reinforced with buttresses along the north-eastern and north-western sides. A buttress-like projection is to be seen in the middle of its south-western wall, while its south-eastern wall lacks any external feature. Although the walls had been preserved to a height of about 50 cm., no obvious access was found to the building, but the main entrance is likely to have been in its north-eastern wall. The deviation in the eastern wall suggests that this building was built subsequent to the construction of the adjacent building (B).

Building B

This is a large building of unusual plan, the external western wall was reinforced with four small buttresses, and a buttress-like projection is to be seen at the south-western corner. The northern wall runs at an oblique angle along rooms (1-4) and is then set back beside rooms 15 and 18. In the middle of the eastern wall there are the remains of walls which must have formed other compartments.

The building consists of 19 rooms of different sizes but all generally small, ranging in measurement between 80 x 50 cm. and 2.5 x 1.8 m. The floors and walls, both inside and out, in both buildings A and B were heavily coated with a thick layer of gypsum plaster giving them an extraordinary white appearance. Several renovations with successive floors are to be seen in these two buildings which imply that they were in use for a relatively long period of time.

The following evidence would seem to suggest that both buildings were associated with the manufacture of pottery: the presence in both buildings of large storage jars; large quantities of red ochre, together with grind-stones still bearing its traces (Fig. 72); a number of plano-convex discs - especially in building B - varying in diameter from 10 - 40 cm. (Fig. 91) (perhaps moulds of some sort); floors and walls heavily coated with gypsum; a small basin coated with a very thick layer of gypsum in room 14 of building B; together with two large pottery kilns nearby and large quantities of sherds and debris, all this would suggest that both buildings were probably associated with the manufacture of pottery.

Building C (Fig. 11)

Another level III building was excavated in the central area of the mound. Large parts of this building seem to have been destroyed, so that no regular plan could be recovered and what remains is apparently a group of small rooms (1-11) with a large courtyard (5). To the north of the building there is a large circular kiln (no.3) measuring 2 m. in diameter (Section C).

The buildings of this level were constructed of long slabs of sun-dried mud, measuring 50 x 25-27 x 7-8 cm. and laid in alternate courses (as heads and stretches) along the axis of the wall. The floors were of beaten clay. The walls, of both buildings A and B were plastered inside and out with jus, the walls of building C were plastered with clay on the inside only.

Some 50 - 70 cm. of fill separated level III and level II throughout all the excavated parts of the mound. This undoubtedly implies that the village had been abandoned for sometime before the foundation of the level II village.

Level II (Fig. 13; Pl. 3)

This level was completely excavated over the whole site. Perhaps the most important discoveries are the very interesting building plans and the tremendous variety of pottery and artifacts.

Ten well preserved independent building units have been excavated together with the streets and squares separating them. Traces of walls which could have been parts of other substantially demolished buildings were found immediately to the north, west, and south of the well-prerved buildings. These buildings are of different sizes but most of them are of the same general architectural plan.

Building A (Fig. 14; Pl. 4)

Situated at the center of the settlement, measuring 20 x 12.5 m., this building had twenty nine buttresses constructed along its exterior walls at each internal wall junction, with larger ones at the corners.

The general plan of the building is tripartite. The middle sector of the building consists of a big hall (1) measuring 10.2 x 3 m., flanked by a series of smaller rooms. The wall which runs across the middle of this hall dividing it into two parts (Fig. 15:1,2) was a later addition, another wall was also added to form room (3). Other additions are six benches each 30 cm. high and separated from each other by about 20 cm. Four of these were attached to the northern wall of the central hall (1), the fifth adjoins them but is attached to the western wall, while the sixth bench is attached to the eastern wall. The other subdivisions are the western with its T-shaped courtyard (23), and the eastern, which contains courtyard (17).

The main entrance to building (34), 80 cm. in width, is on its southwest corner. It leads to a small rectangular antechamber (32) giving access to the central unit via two doors; the one to the right leads directly to the large central courtyard (2,1) and the other to room (8). The access to the second unit of the building is via room (30) which leads to room (29) which in turn gives access to the T-shaped courtyard (23) and other rooms in this unit.

The building had witnessed some later additions which can clearly be seen on Fig. 15. Of interest is the external wall behind the building, possibly meant for terracing.

Many renovations had been carried out, and three successive floors made of beaten clay are to be seen in all the rooms of the building. The walls had been coated several times with clay plaster and some of them plastered with gypsum, particularly in rooms 24, 28 and 27. Roofs were presumably made of wooden beams covered with reed matting and plastered with a layer of mud. This was attested by reed impressions and massive charred beams which had apparently fallen from the roof. A great many of such traces were found on the floor of the long room (1), evidently indicating that this part of the building was roofed, so that it

was a hall not an open courtyard, as one might otherwise have thought. Wooden or reed doors were probably used pivoting on stone sockets which can still be seen in situ in several rooms such as 33, 22, 16 and 28. Thresholds made either of stone or clay have been found laid in front of some rooms such as 6 and 9.

Building B (Fig.16)

This building is situated to the east of building A, formed by 104-108. The plan is tripartite with a very symmetrical shape based on a central cruciform hall (194), measuring 10 m. in length, and two lateral, smaller, cruciform courts perpendicular to it (111 and 119), identical in shape and position. The entrance to the building is on the southwest side and leads to a small square room (118) which serves as the antechamber giving access in three different directions; to the main central court (104) to the right, to a large L-shaped room (114, 115) to the left, and to the cruciform lateral court (111) via rooms (117 and 116). The presence of a central access in the middle of the north-eastern wall resulted in the creation of two small rooms (107 and 110) both projecting from the north-eastern wall of the building; room (109) on the north-western corner corresponds to room (108) on the north-eastern corner. No doors have been found to the last four rooms which might have been used for storage purposes.

A glance at the method of communication between rooms in this building shows a great similarity with building A, the main entrance to the building being in almost the same position as that in building A, where it opens into antechamber (118) (33 in building A) and gives access to the main central court 104 (1,2 in A), and to rooms 114, 115 (30 in A) with the difference that room 114 here is much larger. There is another (opposite) access to the lateral cruciform hall 111 via the rooms 117 and 116 (T-shaped court 23 via rooms 30, 29 in building A), as for the third unit of the building the access to the court 119 is from the main central courtyard 104 via 126 and 123 (corresponding to courtyard 1 through 21 and 22 then via 16 to 17).

Building C (Fig. 17,C)

This building is situated to the south of building B at the south-eastern corner of the settlement, formed by rooms 158-173. The general plan seems to have been based on a central court, measuring 7.4 x 2.4 m., flanked by a group of rooms 158-160, 164 -165 to the northwest, and 166-173 to the southeast. The rooms 161-163 seem to have been added later. The central court is surrounded by double walls to the west, south and east. Some parts of the building are badly preserved such as rooms 165 and 173, while other parts to the east of the central court have been entirely destroyed. Other parts which might have existed

to the southeast, would also have been destroyed owing to their location at the edge of the tell. Much pottery and other artifacts were found in this domestic building.

Building D (Fig.17, D)

This building is situated to the northeast of building C, it is the smallest building in the site. Nevertheless, it is very interesting because it represents the most simple manifestation of the tripartite plan with cruciform court (148), measuring 6 m. in length and 2.8 m. in width. The entrance to the building is by a door in its north-eastern corner leading to a small room (157) which gives access to the central cruciform hall (the opening which appears as a door in the middle of the north-western wall at the end of the cruciform hall seems not to have existed in the original plan). Some parts of rooms 152, 155, and 156 seem to have been exposed to wearing. The material found inside the rooms consists of ordinary domestic items. A hearth was found in the middle of room 152, a big jar together with two stone querns were found in the small room 153 which was almost certainly a storage room, 151 and 155 seem also to have been storage rooms. Large pieces of mud with impressions of reed were found in different places of the central cruciform hall, an indication that this part of the building had been roofed with timber and reed matting, covered with mud.

Building E (Fig. 18; Pl. 5)

This building is situated to the southeast of building A, and is formed by rooms 52-62. It is of tripartite plan with a high level of architectural organization, comprising three cruciform elements 52, 62 and 53; the large central courtyard (52) measures 9.30 x 2.50 m. The entrance to the building is through a door at the end of the western wall where there was a stone sill, leading into a cruciform room (53) measuring 6 x 3.8 m. At the eastern end of the central court there are two opposite rooms; one in its southern wall leads to room 58, the other in its northern wall leads to what appears to be a long rectangular room (56) parallel to another similar room (55); in fact these two parallel rooms, which can be seen in the south-eastern corner of the building, have a very interesting feature. The floors in room 55 are paved with large mud-bricks, these slope up towards the outer wall and are perhaps the foundations of a staircase which the plan itself suggests may have been situated here (Pl. 3:a). The building had been subjected to several renovations and additions as seen from the many successive layers of clay plaster on its walls. Other short walls have also been added to strengthen the eastern wall of the building from outside, particularly at the projected parts of the staircase at the north-eastern corner. The partition between rooms 62 and 60 did not originally exist but was added later, resulting in the creation of room 60. Originally the

southern cruciform room (62) exactly matched its northen counterpart (53).

As was the case with building A, three successive floors are to be seen throughout this building. Mud lumps with reed impressions, presumably from the flat roof, were found in both room 53 and room 62, being direct evidence that these two rooms were roofed. No such evidence was found in the large central court. This coupled with the presence of a fire place with burnt bones in it and a clay tripod bearing traces of heavy burning are a good indication that this large central court was open and not roofed. Different kinds of household objects were found in all the rooms, suggesting that this building was also a private dwelling.

Building F (Fig. 19)

This building is situated to the east of edifice A, it seems to be a fairly large building of tripartite plan, but the structure had obviously undergone considerable changes which resulted in the removal of substantive parts along its western side. Other later alterations took place in its central court and other eastern parts. The long central court (45), measuring about 10 m. in length, was originally of cruciform shape and what appears in the latest plan as room 47 was in fact its western wing. The eastern unit of the building originally consisted of a cruciform room (35) to which a double wall had been added creating rooms 38, 37 and 40. The western unit of the building presumably comprised a cruciform room (48) flanked by a number of rooms on either side. This court and the associated rooms corresponded to court 35 and other rooms on the opposite side. The eastern wall of the structure has been stepped back in a very regular and attractive way. The main entrance to the building was at the northern corner leading to room 37, which was originally part of the cruciform court as mentioned above. Another entrance seems to have been opened later in the stepped wall in room 43, leading into the long central court 45.

To the north there is a boundary wall running from west to east separating the building from ones to its north. The presence of a large pottery kiln in the area to the west of room 48 might explain the removal of some parts of the building.

This house is reminiscent of one from Tepe Gawra XV (Tobler 1950 XV, sqs. K.J.4-5).

Building G (Fig. 20)

This building is situated between three buildings, edifice A to the east, building F to the south and building H to the west.

No definite plan for the building can be reconstructed in its present state, nevertheless, the basic plan probably consisted of a central courtyard (81) flanked by a series of rooms on either side. The entrance to the building was probably in the north-western corner leading to room (79) which gives access to the central courtyard (81). It seems obvious that a good deal has been removed and almost certain that the construction of the boundary wall and the addition of the enclosure wall which surrounds the northern area behind edifice A, has resulted in the removal of some parts of this building to the south and east. Also the construction of building H to the west must have resulted in the removal of adjacent parts in the building. Other rooms seem to have been randomly added in later times, for example, 86, 87, 88, 88a and 42. Another alteration is the doubling of the walls along the western and southern sides of the long central court, a similar doubling was noticed in building C where the walls of the central court have been doubled.

Three ovens for bread making were found in the open area of room 81. A big storage jar was found in room 80, it was placed against the corner and fixed with gypsum, it was probably used either to store water or flour, both used for making bread in the nearby ovens. In rooms 83 and 84 a large number of perforated stones together with some grinding stones, have been found. A number of still unbaked vessels were found in room 82, these were probably prepared to be baked in the nearby kiln in 88a. Large numbers of sherds were found in room 75 and in room 76, which may have originally housed the staircase. Nothing except wasters and black ashes were found in rooms 85, 86 and 42 which seem to have been intended for storage purposes.

Building H (Fig. 21)

This building is situated to the north of building F, and north-west of both buildings A and G. It is formed by rooms 63 - 74 and 77; it seems obvious that the space into which the building has been squeezed determined its plan. This would explain the non-existence of the rooms which theoretically would have flanked the cruciform court (71) along its eastern side. It is an incomplete tripartite or rather bilateral plan with two main parts or elements, a cruciform courtyard, measuring aout 11 m. in length, with 63 and 67 being its eastern and western wings respectively, and a number of other rooms (65, 67, 68,69,70 72, 74 and 77) arranged in three parallel rows along the western side of the court. The building has three entrances all situated along its south-western side. The first entrance is in the western corner, it leads to a long room (70) measuring 3.6 x 90 cm. The second entrance is south of the first and gives access to a small rectangular room (74) which in turn gives access to the large cruciform court (71). The third entrance is next to the second one on the same wall and gives direct access to the large court (71). The projecting part where the two last entrances occur, seems to have been added later and the only

entrance to the building was originally the second one that leads to room 73, which acts as an antechamber to both the large courtyard to the east and to the rooms to the west. Two small semi-square rooms (64 and 65) both situated at the rear of the large courtyard (71), might have been used for storage purposes, just as room 69 in the middle of this western side may also have been used for storage. A long wall running from east to west was constructed behind the northern wall of the building, some part of that wall seem to have been destroyed in the area adjoining room 68 and it could have extended further in the same direction, before turning southward and terminating near room 77 where there is a door leading to the enclosed area behind the house. This wall may have been erected to segregate the house from the adjoining northern area (but the same phenomenon was noticed with the enclosure wall of building A), or it could have been part of another building demolished later on. The walls have been plastered with a clay layer both inside and out and many successive floors were found throughout the house. The inventory represents a variety of household objects with a massive quantity of sherds.

Building I (Fig. 22)

For the first time in this level we find a plan quite different from those we have been discussing. This building is situated to the west of the last building and comprises rooms 89-103. Here we no longer see a plan based on a central courtyard flanked by a series of rooms on both sides, but, four parallel rows of rooms and courtyards; the first row which is in the south east of the building represents a very long yard, measuring 14.70 m. in length and 2.30 m. in width. A small basin 60 x 40 x 20 cm. has been built against the southern wall of this area. It was lined with bitumen so was almost certainly used for keeping water. This courtyard connects with a second row of rooms by a door measuring 70 cm. in width leading to a rectangular room (103) (2.60 m. x 1.40 m.). Rooms 91, 90 and 89 communicate with each other by a series of central doorways. Room 89 at the end of this row is the largest (2.40 x 2.10 m.) with a small basin 50 x 50 x 25 cm. constructed in its eastern corner and lined with limestone. Behind this room there is an empty rectangular space connecting with the first courtyard. The third row is accessable through room 91; a door in its northern wall leads to a long courtyard or corridor (94), measuring 8.50 x 1.80 m., which occupies the eastern half of this row. A door in its western wall leads to room 98 (1.50 x 1.30 m.) and two other small rectangular rooms, 99 and 102. The last of these (102) projects to the southwest beyond the end of the previous two rows. The fourth row lies at the northwest of the building and consists of three small rooms occupying the middle area of the row, 95, 96 and 97, flanked by two long corridors or vestibules, 93 to the northeast measuring 6 m. in length and 1.30 m. in width, and 101 to the southwest. Room 97 is larger than the other two adjoining rooms, it measures 1.80 x 1.60 m. while the other two measure 1.30 x 0.70 each. Four buttresses were constructed on the external south-western wall which appears

to have been the facade of the building.

The building was surrounded by four long walls on the eastern, northern and western sides respectively. The southern wall is actually a part of the previously mentioned boundary. These walls virtually separate the building from the adjoining buildings.

The plan of this building is very different from the others, and it must therefore have been constructed to fulfill a different function. The presence of the very long courtyard (100) containing a bitumen-lined basin with a floor full of black ashes and a midden and what may have been traces of dung, would suggest that this yard was a sheepfold and the basin inside was for keeping drinking water for domestic animals, the connecting room 103 could have been for keeping fodder on which to feed the sheep, or possibly for accomodating the shepherds or guards. The large, wide courtyard (100A) could also have been used to keep cattle and other animals in. In the second row, there are four other rooms (89-92), the door which leads from 91 to 90 was provided with a stone sill some 20 cm. high. The floor of room 90 was at the same level as the sill. Another stone sill 22 cm. high was found in front of the door into room 89 which is again at a level higher than room 90. All the floors and walls in these last three rooms were coated with clay 2 cm. thick, these rooms might have served as storage rooms, possibly for some perishable material, although no remains of such materials have been found.

The discovery of the series of small open compartments (93, 95-102) may provide important evidence of a type of storage facility. All the compartments were very well preserved, despite having sustained some damage in places. The walls were standing to their original height of 70- 80 cm. This was proved by the fact that all the upper faces of these walls had been coated with the same plaster clay coming from inside, overlapping the upper faces and turning down again to the other side. The floors in all these rooms were thickly covered with straw and reed, this was attested by the large number of impressions still clearly visible. This may indicate that some of these rooms were used to store either grain, as was attested by the presence of grain impressions, or fuel stuff such as timber, camel-thorn, straw, reed or dung; after having been filled with such material these rooms would have been covered with reeds or mats and then covered with clay, this same method of storage is still in use.

In courtyard 94, a bench made of mudbrick libn and coated with clay, measuring 2.10 m. long, 20 cm. wide and 30 cm. high, was found attached to the eastern wall. Only a few sherds were found in this building. Although the same type of mudbrick was used in the construction of this building, the building method was different, here the mudbrick was laid longitudinally along the

axis of the wall, the width of the brick representing the width of the wall (Fig. 23).

Building J (Fig. 24)

Building J is situated at the uppermost north-western corner of the mound, and is the second in size after building A. It is formed by rooms 127-147. It conforms to the prevailing plan of the time, the tripartite, with a cruciform central courtyard flanked by a series of rooms on either side.

The main central courtyard (140) extends across the width of the building and measures 11 m. in length and 2m. in width. This courtyard seems to have been divided into separate rooms, 141, 146 and 147, by doubling its north-eastern and south-western walls and erecting partition walls across them. Rooms 134 and 142 represent the eastern and the western wings of the main central courtyard. This unit connects with the eastern unit via room 134 which gives access directly to the lateral cruciform courtyard 128; and a group of rooms on both its northern and southern sides. Rooms 138 and 139 communicate with each other by a door between them, while no access was found to rooms 135-137 which were presumably used for storage purposes.

The western unit represents the third element of the plan which must have consisted of a cruciform courtyard 145 (which corresponds to 128 on the other side), flanked by one room (143) on the north side (which corresponds to room 133 of the eastern unit). A number of rooms probably flanked the courtyard on its southern side, corresponding to rooms 130-132 and 135-139 of the eastern unit; these do not exist now and must have been removed when the building underwent alterations like the doubling of walls round the main courtyard (140, 142, 134, 146 and 147). Some walls have been trebled as is the case with room 134. A variety of household tasks seem to have taken place in courtyard 145, a shallow circular pit filled with black ashes and bearing traces of heavy burning was found near its southern wall; this must have been a hearth or fire place for heating in cold winters and for cooking as well; some large pebbles or boulders with burning traces were found near the pit, these were presumably placed around the fire place to carry the cooking pot. A large quantity of black ash and midden remains together with much pottery were found in this court.

Although some buttresses have been constructed on the western and southern walls, it seems obvious that the builders have failed to maintain the balanced symmetry of the internal plan as well as the outside walls.

To the north of the building there is a wall extending parallel to the north wall of rooms 129, 133, 134, 140; which then

turns up at a sharp angle to the northwest for about 4 m. and is intercepted by another long wall extending from east to west. These walls may have belonged to another building which was completely demolished in later times.

Level I (Fig. 25)

Level I is the uppermost level at Tell Abada, in which seven architectural units of coherent plan have been excavated. All show considerable continuity from the previous level II. Although some level II buildings (eg. B, G and I) have disappeared here, other buildings are to be found almost in the same places, here numbered as those of level II.

The surviving buildings seem to have undergone some modification and alteration. A very interesting feature, seen in this level for the first time, is the remains of a water-channel system; evidence for a new method of grain storage was also found here. The materials used in building and the method of construction were exactly the same as in level II.

Building A (Fig. 26)

This building was founded directly on top of building A of the previous level whose walls were used as a basis for foundations for the walls of this building. Since the plans of the two buildings are almost identical, we will confine this section to the changes which were introduced by the inhabitants of level I (to this building).

The same tripartite plan is to be seen here, with buttresses constructed along the outer wall. No obvious means of access to the building was found, and the main entrance in level II which was located in the south-western facade was completely blocked by a low mudbrick revetment heavily plastered with clay. This feature was also found at the Ubaid site of Tell Maddhur (Chapter 4). The new position of the entrance was probably on the north-eastern wall, but no evidence for it has been found since large parts of that sector were badly damaged. The internal communications remain basically the same except for some minor changes. In the eastern unit a wall was added along the western side of rooms 4, 9, 10, 11, 12 and another along the southern side of rooms 12 and 16, these walls blocking the entrance to the main central court (1) from room 9 and that between rooms 16 and 19 (21 in building A L.II). In the main central court the rooms marked 2 and 3 (in A, II) have now been removed and new rooms have been set up in the southern half, (3) at the rear of the court. Another rectangular room has been inserted (2) which gives access to the main central court through a door with projecting jambs in its northern wall. Other alterations can be seen in the western unit of the

building, all the doors which which existed in this unit of building A level II have been blocked-up so that we no longer see any means of access between these rooms. In the corner of the north-eastern wing (29) of the T-shaped court, a bench 60 cm. high has been built of mudbrick coated allover with clay plaster. The successive floors, several clay plaster coats on the walls, and the construction of a secondary wall against the buttressed wall along its south-eastern and western sides, all bear testimony to subsequent subphases in the life of the building.

Twenty six child burial urns were found below the floors. Pottery and other domestic objects were also found throughout the rooms. Lastly it should be pointed out that all the courts and large-sized rooms have been coated with clay plaster both inside and out, but the smaller rooms (21, 22, 8, 4, 9, 10, 11, 12, 14 and 15) were coated with gypsum plaster from inside, a probable indication of their being used as storage rooms.

Building C (Fig. 25)

This building was built directly on top of building C of level II below. It is formed by rooms 40-51. The plan is irregular and no balanced symmetry is recognisable from the outside walls. It consists of a central court (40) extending across the width of the building and measuring 7 x 2 m. The long walls of the court project further to the northeast resulting in the creation of a wide recess in the north-eastern side and the presence of two small square rooms (41, 42) on each side of the recess. The court is flanked by a number of rooms on either side.

No entrance to the building was found. Two child burial urns were discovered below the floor of room 44. All the objects found in the rooms indicate its secular nature. The walls have been plastered with fine clay.

Building D (Fig. 25)

This is of small, simple and regular plan, revolving around a cruciform central court (30) flanked by three rooms (33, 35 and 38) along its north-eastern side, and four rooms (34, 36, 37 and 39) along its south-western side. Room 38 which previously served as an antechamber (154 in building D of level II) now appears to be an independent room, while the opening in the wide recess at the western end of the central court, has also been closed. No entrance was found for the building. One burial urn of a child was found below the floor at the eastern end of the main court. The building was undoubtedly a private dwelling.

Building E (Fig. 25)

This building was built directly on top of the walls of building E of the previous level. It is formed by rooms 52-64. The plan was based on a central courtyard (52) measuring 9.3 x 2.5 m. extending across the width of the building. On either side of the central court there were subordinate cruciform courts. 55 originially matched 64, but later the addition of a partition wall joining rooms 54 and 62 resulted in the creation of room 61. Rooms 54 and 62 exactly match room 35 and 58 respectively on the opposite side. A small partition wall was erected across the width of the northern wing of the lateral cruciform court 55, resulting in the creation of room 56. Room 63 in the south-eastern corner of the building is matched by two rectangular rooms 59 and 60, both form a projected corner in the opposite side of the building. This projected corner is believed to have contained the base for a staircase.

The single entrance into building E of level II which was in the north-western corner no longer existed in level I. The same is true for the other interior doorways.

A very interesting feature to be seen in this building is a new type of granary, quite different from anything known previously. A small area of floor not exceeding 1.5 x 1 m., usually in the main courtyard, is marked out and covered with straw or reeds and surrounded with standing mats tied together by means of strings or frond leaves. This mat container is filled with grain, covered with reeds or straw and sealed with a layer of clay, clay was also used to seal the edges between the mats and the floor. Evidence for this type of granary was found in more than one building of this level. An almost identical method for storing grain is still used in the south of Iraq, particularly in the Amara region. Such structures are called Baryat shilib. [2]

All the inner walls of the building have been plastered with a layer (2 cm. thick) of levigated clay. Four child burial urns were found, one below the floor of room 63, and the other three below the floor of the main courtyard.

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[2] In Iraqi Arabic this means the mat in which the grain is being preserved.

Building F (Fig. 25)

As was the case with other buildings of level I, this building was also found directly above the building bearing the same letter in level II below. Unlike the earlier building, this one had a regular though not well-balanced plan. The single entrance into the building was at the north-western corner leading to a large L-shaped room which served as an antechamber, this particular shape was caused by the presence of room 67 in the north-eastern half of the room, the area on the opposite side of the court had been divided into two regular rectangular rooms (81 and 82) each measuring 2.10 x 1.50 m. The central L-shaped court extended across the width of the building. It measures about 10 m. in length and 2.50 m. in width and reaches about 5 m. along its extended end at the nothern side. Three doorways were placed opposite to each other in the middle of the building, these are to be seen in rooms, 71, 70 and 68, the latter two giving access to the central court where another doorway leads to it from room 79 at the south-eastern corner of the building. A recess is to be seen at its eastern side, this was caused by the echeloned wall at the back of the building along rooms 66, 69, 71, 72 and 79.

The remains of one of the new type of silos, exactly like that of the last building (E) were found at the northern end of the central court, bearing impressions of reeds and straw and the remains of carbonized grains. Impressions of mats were also found nearby.

Fifteen burial urns all belonging to children were excavated at different places below the floors of this building. The material found indicated the domestic function of the building. The inner walls were coated with clay plaster. A shallow pit which was heavily burnt, with some black ashes inside, was found in the south-eastern corner of room 71, which probably served as a kitchen.

Building H (Fig. 25)

This building is situated to the north of the last building and has been built on top of building H of level II, formed by rooms 83-94. The exterior line of the building seems to be of trapezoid shape, the interior is based on a long central court (83), measuring about 11 m. in length and about 2.40 m. in width. The court extends across the width of the building, with its southern end projecting further in front of the facade, forming what appears to be a central projectd bay. This court is flanked by four rooms on its eastern side (84-8), and by five rooms on its western side. The only entrance into the building, located in the southwestern corner, leads to a large rectangular room (94) measuring 6 x 2 m. which seems to have served as an antechamber and gives access to 89/90 then to 91 which has

another doorway opening into the central court. Room 93 in the north-western corner of the building had its floor paved with stone and its walls coated with a thick layer (3 cm. thick) of gypsum plaster. Two extra large pottery vessels were placed in its western wall, one in the north-western corner, another in the south-western corner. This coupled with the presence of a basin for water nearby outside encourages us to believe that this room was used as a bathroom. This belief was strengthened by the very dark colour of the soil beneath and around this room, which may have been caused by the filtration of the used water.

The remains of a granary of Baryat Shilib type were found in the southern half of the central courtyard. Lastly it sould be pointed out that the partition wall which divides the central court into two parts (83 and 88) was added later, it runs westward resulting in the creation of what are now rooms 89 and 90; and then crosses room 94, terminating at the south-eastern corner of the neighbouring building. One burial urn of a child was found below the floor of the central court.

Building J (Fig. 25)

This building has retained almost all the features of building J in the previous level. However, some new features are also to be seen. It is a large building of tripartite plan consisting of a central part represented by rooms 107-109, originally one central court, flanked on each side by a cruciform court perpendicular to it, 95 matching 110, and rooms 100 and 106 corresponding to rooms 113 and 114 respectively on the opposite side. The area occupied by rooms 101-107 is matched by an open area on the other side; while 98 corresponds roughly to (125), an L-shaped room conmmunicating with 126 through a doorway at the end of its northern wall. A series of small rooms (116-120) have been constructed along the northern wall adjoining rooms 111 and 113 ranging in size between 1.5 x 1m. - 1 x 50 cm. Such small dimensions are certainly suggestive of storage compartments. To the east of these small rooms is room 115 which leads to the area numbered 129 via a long corridor. The northern wall which runs along rooms 115-120 and the area of 129 may have been part of another building situated in that sector of the mound but completely destroyed and removed at a later time. The location of this supposedly removed building at the north-western edge of the mound may support our belief. Some buttresses were constructed along the south-eastern wall and western wall, another two buttresses are to be seen at the end of the northern wall behind room 100.

Remains of two granaries of the new Baryat Shilib type were found, one in each of the cruciform courts 95 and 110, both in the eastern part of the courts and close to their southern side.

Two burial urns were found below the floors of rooms 102 and 103, and seven burial urns were found in the area situated to the north-west of the building.

Building K (Fig. 25)

To the west, southwest and south of the last building, in squares F7-8 and G8, was a structure formed by rooms 121-124, 128 and 130-147. No coherent plan could be discerned for this structure, since a lot of its details had been destroyed. The surviving walls may represent the front of an originally large building sprawling between building F and J. The main entrance into the building is in the middle of the north-western wall where two buttresses were constructed at its northern end which joins the western wall of building J. This entrance opens directly into a large area (135) containing the remains of what could have been rooms matching each other roughly, such as 136 which matches 141 on the opposite side, and 131 matching 139. A triangular shaped room (130) corresponds to a trapezoid shaped room (140) on the other side, while 133 corresponds to room 142. To the southeast of that area there are a series of three rooms adjoining each other 134, 137 and 138. The areas numbered 143-147 might originally have been enclosed by walls belonging to this building. Rooms 132 and 128 also belong to this building, reflecting its random plan. Opposite the building on the north-western side is a series of small rooms (121-123), which might have been used for storage. The series probably extended to the western side to include other rooms which must have been demolished due to their position at the edge of the tell. These small compartments are separated from our building by a wide, large area (124) which contained no traces of constructions. It should be noted that this confused building was constructed subsequent to the neighbouring building J, possibly at the end of the life of level I.

Water pipes (Figs. 25, 27; Pl. 6)

A very important and interesting feature found in level I was the water-channel and pipes forming part of a water distribution network. The artificial water channel was discovered during excavation of the area to the north of building H in square 15 and 16. The surviving part of the water channel was 50 cm. wide and lined with a very thick layer of juss which projects inwards from both sides to form what looks like a vault over the channel. This channel extends about 4 m. to the north to join cylindrical pottery pipes (each measuring 50 cm. in length and 20 cm. in diameter). Only four of these pipes remain in situ, while fragmentary remains of others were traced along a distance of about half a kilometre in the same direction to the north. At the southern end the gypsum part of the channel leads into a wide oval-shaped stone lined basin measuring about 2.50 m. in length, 1.50 m. in width and about 1 m. in depth. The edges of the basin were sealed by juss and

strengthened by pebbles (Fig. 27). It seems reasonable to assume that this channel was used to draw water from the big wadi or chand not far to the north of the site, to be collected in this basin for drinking and other domestic purposes.

To the west of both buildings E and F and about half way between them in square H9, we found further pottery conical-shaped pipes (Fig. 27). Three of them were complete (50 cm. in length, 30 cm. in diameter) and set into one another in situ. These were apparently part of a very long water pipe channel, as we found more in a fragmentary condition in situ along a distance of bout 200 m. in a straight line in a westerly direction. It seems most probable that this channel extended further to join the Kurderreh river which lies not far away.

A small drainage course is to be seen at the rear of courtyard 15 of building A (Fig. 25), this was small and short (about 40 cm. in length and 25 cm. in width), and lined thickly with lime. It is quite obvious that this course was designed for water drainage and was connected directly to the basin on the northern side, behind the wall of room 15.

Section B

The Burials (Fig. 28)

No cemetery has yet been found at Tell Abada, nor did we discover any possible cemetery site in our extensive survey of the vicinity of the site. The only inhumation so far discovered is a simple old Babylonian grave, but it is reasonable to assume that there must have been a cemetery somewhere on the plain in the surounding area which contained adults' graves or tombs. However, some 127 urn burials of children were found below the floors of the houses. These urn burials were only associated with levels II and I, no single urn burial was discovered belonging to level III below. The location of these urn burials can be seen in Fig 28. It seems a reasonable assumption that urn burials were rare thoughout the early part of the Ubaid period and did not become common till the beginning of level XIV at Tepe Gawra (Tobler 1950, 107). This particular method of burying children was practised at other contemporary sites such as Nineveh level 3 (Thompson and Mallowan 1933, Pl. XLIX 31-32), at Arpachiyah (G.22) (Mallowan and Rose 1935, 39), at Nuzi, L-X (Starr 1937, Pl. 29, B.C.E.) and at other Ubaid sites in the Hamrin region.

This method seems to have continued in use during the subsequent Uruk period as attested by discoveries from Warka (U.V.B. 1935, Pl.17) and Tell Qaling Agha in northern Iraq (Hijara 1973, Pl.5). In this section the stratigraphic distribution of the urns, the types of burial including urn

types and burial methods, and the physical remains will be dealt with.

Stratigraphic Distribution

1 - Level I

A total of 74 urn burials were found below the floors of this level. These urns were associated in most cases with buildings. However, other groups were found scattered and unassociated with any building in other parts of the site. These might have been placed within other buildings in the area which have since disappeared. On the other hand, the location of these urns, not far away from the adjoining buildings, may indicate association with them. The largest group of these urns was found beneath the floor of building A, where about 26 urn burials had been dug in the fill of level II below. Another group consisting of 19 urn burials was found below the floor of building F, while 4 only were unearthed in building E, and 3 in building B. Two were found in building C and one only in building D. Building G contained only one, building H and building J both contained 2. A group of some 7 urn burials were found in the area to the northwest of the last building, and another group of 6 urn burials were found in the middle of the site, one urn burial was found outside building B in the south-eastern corner. In all cases the urns had been dug into the fill of level II below.

2 - Level II

The remaining urn burials, 53 in all, belonged to level II and had been dug beneath the floors of the buildings to different depths, some reaching the gap which separates level II from Level III below. As was the case with building A level I, building A in this level had the largest number of urn burials; a total of 34 were found beneath its floor. This figure together with the total of 26 found in building A of level I, brings the number of burials associated with this one building to 57, nearly half of the total number discovered at the site. This concentration of urns in one place may have some significance and will be discussed later. The other 19 burials which belong to this level were distributed as follows:

5	urn	burials	associated	with	building B
1	"	"	"	"	" C
1	"	"	"	"	" D
1	"	"	"	"	" F
4	"	"	"	"	" G
2	"	"	"	"	" H
1	"	"	"	"	" I
4	"	"	"	"	" J

Types of urn burials and methods of interment

A variety of large deep jars and pots have been employed as urns for burials in both levels at Abada, but the most popular, which seems to have been made particularly for this purpose, is the type with a U-shaped section (Figs. 131-133; Pl. 7) which accounts for about two thirds of the urns found. These urns are usually simply painted with a broad single band or bands around the external upper rim with some decoration consisting of half circles or small triangles running over the flat rim itself. In other cases it would seem that any kind of large jar or pot, such as double mouthed jars and spouted jars (Fig. 189) were employed for this purpose.

Interment methods greatly varied, but most commonly the urns were covered with a lid which could be either a big sherd (part of a big bowl), or a complete bowl, usually of a particular type decorated with a bold sweeping design (Figs. 29:a; 164). Sometimes the urns were covered with the same type of jar as that containing the burial and sealed with clay, as was the case with urns 28, 50 and 70. Another method was very interesting and rather puzzling. The urns or jars were sealed with clay which appeared later to have been baked and sometimes further unbaked clay or gypsum plaster was added over the baked layer (Nos. 17, 28, 40 and 47).

The mouths of the urns were sealed with a thick layer of clay or gypsum (Fig. 29b), in a few cases the dead child was covered with a layer of smooth earth and no cover or plaster was found. Some child burial urns were made of unbaked clay with the mouth being sealed with clay plaster 3 cm. thick, the plaster only seems to have been baked later and covered with a lid, as represented by no. 47, or with a plate (no. 7) or just with earth (16, 41 and 42).

The people of Abada had another kind of interment rite for very young babies or probably the still born ones; this was to place the dead baby in a circular or oval shaped pit and cover it with a bowl. Examples are to be seen with nos. 33, 54, 56, 76 and 80. Superimposed interment seems to have been practised in a few limited cases, as we have noticed two urn burials were placed one over another in level II (no. 32 was superimposed on 30).

All urn burials were carefully placed in regular pits which were dug for this purpose, sherds were placed between the urn and the sides of the pit for support. Some urns were placed over a round base made of clay, e.g. no. 8 of level I.

An important group of 20 urn burials (61-80) were found on a floor lined with gypsum which represents the earliest floor to

be found directly over the gap separating levels III and II. All these 20 urn burials are of the same type which consists of a large open-mouthed pot, simply decorated with a painted band over the rim and covered with a plate, some of them were clay sealed. This particular place with such numbers of urn burials may represent the first cemetery dedicated for the burial of dead children in the village of level II.

No grave goods of any type were associated with the dead children, save in three cases. In urn no. 67 a few beads were found, of different materials and shapes, perhaps from a necklace worn by the dead child. In no. 68 a clay figurine of human shape was found with the dead child (Fig. 41:c). Both these two burials were associated with building A of level II. In the third example we found a small cup associated with burial no. 5 of building A of level I (Fig. 30).

Conclusion

As we have already seen a total of 127 burials were unearthed at the site, only four of these represent simple inhumations, while the rest are urn burials. All contained skeletons of dead children, most of the urn burials having been dug below the floor of the houses. They were associated with almost every building, in particular the large central building had the largest number: 57. Such a concentration in one place is noteworthy and may cast light on the importance of the building in terms of both its characteristic position among other buildings in the site, and the length of time it had survived.

As can be seen from Table 1 there was no established direction for the heads, nor did we find - except in a very few cases - any funerary furnishings associated with the dead child. The custom of not supplying urn burials belonging to children, nor graves of any variety containing infants or children, with funerary furnishings seems to have been common in the Ubaid period and was attested at Tepe Gawra as well (Tobler 1950, 115). So the presence of exceptional cases at Abada is possibly significant and could be interpreted in terms of social and economic classification; the dead children who were wearing necklaces and provided with some furnishings, may have belonged to rich or influential families. Also the presence of some ordinary inhumations may seem odd at a time when urn burials were the most comon method of furneral.

Table 1 - Urn burials found at Level I (Fig. 28) [3]

Burial no.	Type	Posi-tion	Direc-tion	Loca-ion
1.	Urn burial, large, deep bowl, roughly made, plain pottery.	Contract-ed hands on knees	SE-NE	B.A;R.1, A, K 9
2	Urn burial, large pot lidded with a particular type of bowl.	"		B.A;R.24 A, J 9
3	Urn burial, large, deep pot (painted), originally broken and repaired with clay plaster.	Contract-ed hands on chest	E-W	B.A;R.25 J 9
4	Urn burial, large spouted jar (painted) covered with earth.	Contract-ed	N-S	B.A;R.8 J 9
5	Urn burial, medium sized rounded jar, placed upside down with its lower parts broken, to insert the dead child, lidded with plate; associated with small cup.	Contract-ed hands on chest		B.A;R.1 K 9
6	Urn burial, large globular jar (painted), the mouth sealed with gypsum plaster 2 cm. thick.	Contract-ed		B.A;R.10 K 9
7	Urn burial, unbaked clay, lidded with plain plate.	"		B.A;R.10 K 9
8	Urn burial, large pot, roughly made, little painted. Covered with earth and lidded with a particular type of plate.	"	S-N	B.A;R.1 K 8

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[3] The following abbreviations are used in the table: B.= Building; R.= Room; a capital letter followed by a figure refers to squares on Fig. 28.

9	Urn burial, large pot painted, lidded with plate (painted), covered with clean earth.	Contract -ed hands on chest	N-S	B.A;R.26 J 9
10.	Urn burial, large globular jar (paint-ed) sealed with clay plaster which was later baked.	"	NE-SW	B.A; on the floor of R.27 J 8
11	Urn burial, large conical bowl (paint-ed) covered with smooth grey earth and sealed with clay.	Contract -ed right side	N-S	B.A;R.28 J 8
12	Urn burial, large globular jar (painted) sealed with gypsum plaster, 3cm. thick.	"	NE-SW	B.A;R.28 J 8
13	Urn burial, large pot (painted), covered with clean ashes and sealed with gypsum plaster, 4 cm. thick.	"	N-S	B.A;R.27 J 8
14.	Urn burial, medium sized, globular jar fixed with sherds around, covered with earth.	Contract -ed left side	"	B.A;R.21 J 8 K 8
15.	Urn burial, wide mouthed pot (painted) lidded with a half of another jar (painted).	"	"	B.A;R.5 K 8
16	Urn burial, small oval-shaped pot (unbaked clay) covered with earth.	Contract -ed right side	"	B.A;R.29 J 8 K 8
17	Urn burial, large pot (painted) sealed with clay plaster which seems to have been baked (2 cm. thick), another gypsum plaster was added later.	Contract -ed left side	SE-NW	B.A;R.21 J 8

18	Urn burial, large pot (painted) sealed with clay plaster.	"	NE-SW	B.A;R.21 J 8
19	Urn burial, large pot (painted) covered with double mouthed jar, fixed with clay plaster.	Contract -ed	"	B.A;R.22 K 8
20	Inhumation, Old Babylonian grave			To the left of B.H. J 7
21	Urn burial, large pot (painted), covered with painted bowl.	Contract -ed right side.	N-S	B.A;R.28 K 8
22.	Urn burial, large pot (painted) mouth sealed with clay plaster (2 cm. thick).	"	"	B.F;R.68 F, I 8
23.	Urn burial, large jar (painted) lidded with a dish.	Contract -ed left side.	"	B.F;R.66 I 8
24.	Urn burial, large wide pot (painted), lidded with large sherd.	"	NE-SW	B.F;R.73 I 8
25.	Urn burial, medium sized pot (painted), covered with earth, lidded with plate.	"		B.F;R.65 I 8
26	Urn burial (painted) covered with half pot, skeleton confined.			B.F;R.70 I 8
27	Urn burial, large pot (painted), lidded with special dish.	Contract -ed	E-W	B.F;R.27 I 8
28	Urn burial, large pot (painted) lidded with another similar pot, sealed with clay, later baked heavily, another clay plaster added.	"	"	B.A;R.9 K 8
29	Urn burial, small oval-shaped bowl, painted on rim only sealed with clay.	Contract -ed left side	N-S	B.F. I 8

30	Urn burial, large pot (painted) lidded with a part of a dish.	"	"	To the north of B.F. J 8
31	Urn burial, small oval-shaped jar, roughly made, probably contained an unborn little child.			B.F;R.31 I 8
32	Urn burial, upper half of globular jar, placed over no.30 in the same pit.	Confused		B.F;R.69 J 8
33	Simple inhumation, oval-shaped pit, 50 x 40 cm., 30 cm. in depth, lidded, with large bowl	Contract -ed left side hand on chest.	N-S	B.F;R.71 J 8
34.	Urn burial, large pot (broken). Fine small beads associated. Covered with earth.	Contract -ed on left side.	E-W	B.F. I 9
35	Urn burial, large pot, plain pottery, sealed with clay plaster (2 cm. thick) lidded with sherds. The inner side of the pot coated with gypsum plaster.	"	"	B.F;R.66 J 8
37	Urn burial, large pot (painted) mouth and around the rim sealed with clay plaster, later heeavily baked, another clay plaster was then applied.	Contract -ed on left side hands on knee	N-S	B.F;R.69 J 8
38	Urn burial, large wide pot, covered with earth, mouth sealed with gypsum plaster (3 cm. thick). which goes regularly around the rim as well.	Confused		B.E;R.52 I 10
39	Urn burial, large pot sealed with gypsum plaster.	Confused		B.A;R.17 L 9

40	Urn burial, large pot (painted), sealed with baked clay plaster and another unbaked one.	Contract -ed right side.	E-W	B.A;R.15 L 9
41	Urn burial, unbaked pot, skeleton covered clay plaster.	"	NE-SW	B.A;R.15 L 9
42	Urn burial, unbaked pot (incomplete). Lidded with sherds, sealed with clay plaster.	Confused		B.F;R.79 I 9 I 8
43.	Urn burial, big pot, plain pottery, roughly made, lidded with sherds.	Contract -ed	S-N	B.F;R.68 I 9
44	Urn burial, impressed jar, lidded with sherds.	Confused		B.F;R.68 I 9/I 8
45	Urn burial, large pot (painted), sealed with clay plaster (2 cm.) thick.	Contract -ed	SW-NE	B.F;R.65 I 8
46	Urn burial, small carinated jar.	Confused		B.F;R.65 I 8
47	Urn burial, unbaked pot, mouth sealed with later baked clay plaster.	Confused		B.A;R.15 K 9
48	Urn burial, large pot (painted), lidded with plain roughly made dish (both heavily broken).	Confused		B.A;R.3 K 9
49	Urn burial, large pot (painted), lidded with plate of the usual type.	Contract -ed on left side.	SW-NE	B.A;R.2 K 9
50	Urn burial, large pot (painted), lidded with another, similar but smaller pot (both broken).	Confused		West of B.F. H 8
51	Urn burial, large pot (painted), sealed with clay plaster, later baked.	Contract -ed on left side	SW-NE	B.E;R.52 J 10
52	Urn burial, large pot	Contract	SW-NE	B.E;R.52

	(painted), lidded with the particular type of dishes.	-ed on right side.		I 10
53	Urn burial, large globular pot (painted) sealed with clay plaster (2 cm. thick) fixed with sherds on sides.	Contract -ed on left side, hands on knee	NE-SW	H 9
54.	Simple inhumation, oval-shaped pit, 30 x 25 x 20 cm. Covered with oval-shaped bowl.	Contract -ed	S-N	West of buildings E, F H 9
55	Urn burial, plain pottery pot, lidded with plate (broken).	"	NE-SW	West of buildings E, F H 9
56	Simple inhumation, rounded pit 30 cm. diameter, 20 cm. depth, covered with plate (smashed).	"	"	West of buildings E, F H 9
57	Urn burial, pot, plain pottery, lidded with plain and roughly made dish (both broken).	Confused		B.H;R.84 H, J 7
58	Urn burial, pot sealed with clay plaster, lidded with plate (broken).	Contract -ed on right side.	N-S	Near kilns 7-10 L 10
59	Urn burial, large jar (painted).	Contract -ed	NE-SW	Near kilns 7-10 L 10
60	Urn burial, large jar (painted) lidded with plate, sealed with gypsum plaster.	"	"	B.B;R.120 M 10
	******** Level II *********			
61	Urn burial, large pot lidded with sherds.	Contract -ed	N-S	B.A;R.27 K 9
62	Urn burial, large pot (painted) lidded with plate (both broken).	"	NE-SW	B.A;R.22 K 9

63	Urn burial, large pot (painted), lidded with plain plate (broken).	"	"	B.A;R.16 K 9
64	Urn burial, pot (painted) lidded with plate.	"	"	B.A;R.2 K 9
65	Urn burial, pot, sealed with clay plaster.	"	N-S	B.A;R.1 K 9
66	Urn burial,large pot (painted) lidded with sherds	" on left side.	NE-SW	"
67	Urn burial, pot (painted), lidded with plate (both broken). Fine small beads associated.	Confused		"
68	Urn burial, pot (painted) lidded with sherds. Figurine associated.	Contract -ed left side	N-S	"
69	Urn burial, large pot (painted) lidded with plate (broken).	"	"	B.A;R.29 K 8
70	Urn burial, pot (painted) lidded with sherds.	"	NE-SW	B.A;R.1 K 8
71	Urn burial, pot, lidded with similar pot (painted, both broken).	Confused		"
72	Urn burial, large pot (painted), placed within similar but larger pot, lidded with plate (broken).	Contract -ed on right side	S-N	B.A;R.4 K 8
73	Urn burial, pot lidded, with sherds.	Contract on left side	N-S	B.A;R.1 K 8
74	Urn burial, pot (painted), lidded with plate (both broken).	Confused		B.A;R.1 K 8
75	Urn burial, pot (painted) lidded with plate of plain pottery	"		B.A;R.12 K 8

	(broken).			
76	Simple inhumation shallow oval-shaped pit covered with plain plate.	Contract -ed left side.	NE-SW	B.A;R.18 L 9
77	Urn burial, pot lidded with sherds (broken).	Confused		B.A;outside to the east L 9
78	Urn burial, pot, plain, pottery, lidded with roughly made plate (broken).	"		B.A;R.18 L 9
79	Urn burial, pot (painted) lidded with sherds.	"		B.A;R.29 K 9
80	Simple inhumation, small pit, dead child lidded with plate.	Laid straight towards north.		B.A;R.7 K 9
81	Urn burial, large pot (painted) lidded with large plate (both smashed).	Confused		B.F;R.68 I 9
82	Urn burial, large jar, lidded with sherds and sealed with clay plaster.	Contract -ed left side.	NE-SW	B.F;R.82 I 9
83	Urn burial,large pot (painted) lidded with plate, sealed with clay plaster.	Contract -ed	"	B.A;R.1 K 8
84	Urn burial, large pot lidded with flat dish, sealed with gypsum plaster.	"	"	B.A;R.1 K 8
85	Urn burial, pot (painted) lidded with plate, sealed with clay plaster.	Contract -ed left side.	N-S	B.A;R.7 K 8
86	Urn burial, pot (painted) sealed with clay plaster (2 cm. thick).	"	NE-SW	B.A;R.6 K 8
87	Urn burial, large jar	"	N-S	"

	(painted) sealed with clay plaster (2.5 cm. thick).			
88	Urn buiral, jar (painted) placed upside down and sealed from all sides with clay plaster which was later baked.	Contract -ed	NE-SW	B.J;R.98 H 6
89	Urn burial, large jar (painted), lidded with sherds.	Contract -ed left side.	E-W	B.J;R.104 G 6
90	Urn burial, pot, lidded with sherds (broken).	"	NE-SW	North of B.J; F 6
91	Urn burial, pot, lidded with sherds.	"	"	" F 5
92	Urn burial, jar (painted) sealed with clay plaster.	"	"	B.J;R.1-3 H 6
93	Urn burial, pot (painted) lidded with sherds, sealed with clay plaster which appears to have been baked later.	Contract -ed on right side	"	B.J;R.102 H 6
94	Urn burial, pot, sealed with clay plaster (1.5 cm. thick) (broken).	Confused		North B.J. F 5/6
95	Urn burial, pot lidded with sherds.	Contract -ed right side.	N-S	"
96	Urn burial, upper half of double-mouthed jar placed upside down, lidded with sherds.	"	SW-NE	North B.J. G 5
97	Urn burial, pot lidded with sherds, plain pottery.	"	N-S	"
98	Urn burial, pot (plain pottery), lidded with half plate (both badly made and broken).	Confused		" Level I

99	Urn burial, pot lidded with sherds.	"		B.J; F 6
100	Urn burial, pot (plain pottery) lidded with sherds.	"		"
101	Urn burial, pot (painted) lidded with plate (both broken).	Contract -ed left side.	SE-NW	East B.A M 10
102	Urn burial, pot, lidded with sherds.	"	N-S	"
103	Urn burial, pot (painted) plastered with baked clay (heavily broken).	Confused		B.A;R.7 K 9
104	Urn burial, pot, lidded with sherds.	"		B.A;R.1 K 9
105	Urn burial, pot lidded with sherds.	"		" K 9
106	Urn burial, pot plastered with clay.	Contract -ed on left side.	N-S	B.A;R.25 K 9
107	Urn burial, pot plastered with baked clay all around.	"	NE-SW	B.C;R.44 L 11
108	Urn burial, short spouted jar (smashed).	Confused		"
109	Urn burial, jar (painted) lidded with sherds.	Contract -ed left side.	NE-SW	B.E;R.63 J 10
110	Urn burial,pot, lidded with sherds.	Contract -ed on left side.	NE-SW	North B.A K 7
111	Urn burial, pot, lidded with sherds (smashed).	Confused		East B.A M 10
112	Urnburial, pot, lidded with plate and and plastered with clay (broken).	Contract -ed right side.	N-S	B.D;R.30 K 11

113	Urn burial, sealed with clay plaster (smashed).	Confused		B.B;R.113 L 9
114	Urn burial, pot (painted) lidded with sherds (broken).	Contract -ed right side.	NE-SW	B.B;R.112 L 9
115	Urn burial, bowl lidded with sherds belonging to a plate.	Confused		B.D;R.38 J 11.
116	Urn burial,pot (painted), sealed with plaster (2 cm. thick).	Contract -ed right side	N-S	North B.H I 6
117	Urn burial, pot, covered with earth.	Confused		B.H; H 7
118	Urn burial, lidded with sherds.	"		B.G;R.79 J 7
119	Urn burial, large pot (painted) lidded with large sherd.	Contract -ed left side.	NE-SW	B.F;R.65
120	Urn burial, small pot lidded with sherds.	Confused		West B.A H 9
121	Urn burial. large pot roughly made, lidded with painted dish.	Contract -ed on left side.	NE-SW	"
122	Urn burial, large jar (painted) lidded with a plate, (broken and repaired with bitumen in Antiquity).	"	N-S	B.A;R.28 J 8
123	Urn burial, large jar lidded with plate (both smashed).	Confused		B.A;R.21 J 8
124	Urn burial, pot (painted) sealed with gypsum plaster (2 cm. thick).	Contract -ed right side	SW-NE	B.A:R.27 J 8
125	Urn burial, jar, roughly made lidded with sherds.	Confused		B.A;R.26 J 8

126	Urn burial, pot, lidded with plate (smashed).	"	East B.C M 11
127	Urn burial, large jar, lidded with sherds (smashed).	"	East B.D L 11

In general, the childrens' bodies were contracted, though one example was fully extended on its back. However, some skeletons were found in a confused condition so that the original position and direction could not be recorded.

The similarity of the urns employed to contain the dead children may indicate that this type of jar or pot was especially made for this purpose and the fact that these urns have never been found in a non-funerary context, gives support to this argument. The presence of some variant types may have been due to a temporary lack of the traditional type at the time the child died. The large, flared bowls decorated with bold sweeping designs which were used as lids to cover some urn burials seem to have been made particularly for this function. This type of bowl is not found in any other context. It is very interesting to note that the same phenomenon was noticed by Mallowan at Arpachiyah where identical bowls were found covering some urn burials (Mallowan 1935, 46), thus we have a positive evidence of direct contact between Ubaid people at both Abada and Arpachiyah.

Several interment methods applied to urn burials were recorded but the most interesting one was the sealing of the mouth of the urn on the body all around with clay plaster which seems later to have been baked. This astonishing method may have been connected with a ritual custom carried out in particular conditions, or may have reflected a belief that the sealing of the urn burials with baked plaster would provide more protection and prevent the deterioration of the dead child, or may simply have been meant to stop the smell.

It can be seen in (Table 2A) [4] that the standard age of death ranges between 0-6 months to 2 years only, infant mortality has important implications in terms of health conditions and deficiency diseases, a situation which seems to be very understandable in all primitive conditions.

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[4] I am indebted to Dr. H.Ishida of Osaka University, Japan, for studying the osteological remains from Tell Abada, he kindly provided me with the information contained in Tables 2A-2B.

Lastly the absence of any grave or urn burials belonging to the earliest level III, is not a strange matter since this level has not been excavated throughout and the possiblity of the presence of such graves or urn burials cannot be ruled out.

Table 2A

Age of death in Ubaid infants at Tell Abada

Age*	Number of individuals	Percentage
0.5	15	57.7
1	7	26.9
2	4	15.4
Totals	26	100.0

* 0.5 = 0 - 6 months, 1 = 6 - 15 months, 2 = 15 - 24 months.

Table 2B

Ubaid infants: Measurements of long bones for aging of the infants at Tell Abada

		no.19	no.25	no.20	no.3	no.101	no.45	no.19	no.11	no.65	no.28
Clavicula	R	45	59	42	63.5	-	61	-	-	-	41.5
	L	44	56	43	65	-	63	-	-	-	39.5
Humerus	R	68	103	$64	102	117	108.5	-	72	102	64
	L	67	-	64	101.5	-	108	-	71	-	61
Ulna	R	68.5	-	61	85.5	101	-	-	-	86.5	58.5
	L	68.5	-	60	87.5	-	97	-	65	85	59.5
Radius	R	54	73	53.5	77.5	91	82	-	55	75	52.5
	L	54.5	76.5	54	75	-	82	-	54	-	52.5
Femur	R	79	152	74.5	132.5	154	136	102	-	123	71.5
	L	79	-	75.5	135	154.5	139.5	-	86	123	72.5
Tibia	R	69.5	-	66.5	108	125	118.5	-	-	-	63.5
	L	69	-	-	-	127	119	62	70	-	64
ula	R	65	96	63.5	-	121	109	-	67.5	-	61.5
	L	64	-	63	96.5	-	111	-	65	-	61.5
(see le 2B):		0.5	1	0.5	1	2	2	1(?)	0.5	1	0.5

le 2B continued

		no.23	no.4	no.100	no.2	no.8	no.87	no.13	no.5	no.75	no.101B
ıvicula	R	47	41.5	46	-	45	-	52	52	-	64
	L	47	-	-	-	-	-	-	48	-	62
ıerus	R	-	62.5	66	67	64.5	71.5	80	77	-	-
	L	64.5	64	67	65.5	64	72	79.5	79.5	-	116
ıa	R	-	60	60	63	-	64	72	74.5	-	-
	L	60	60	56.5	-	60	64.5	-	-	-	-
ladius	R	-	51.5	50.5	-	51.5	-	-	65.5	-	95.5
	L	-	51.5	51.5	-	-	-	62	62.5	-	-
'emur	R	-	73	76.5	80.5	75.5	-	100	101.5	122	-
	L	-	74	77	82	76	-	101	-	-	-
ibia	R	-	64.5	65.5	64.5	65	-	84	81.5	-	-
	L	-	66	65	68.5	66	-	-	-	100	-
ibula	R	-	61	61.5	61.5	-	-	78	-	-	-
	L	-	61.5	-	61.5	61	-	-	79.5	93	-
ge		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	2

Table 2B continued

		no.22	no.201	no.202	no.203	no.204	no.205
Clavicula	R	-	46	-	58.5	60	57
	L	-	-	-	62.5	-	-
Humerous	R	80	71	64	-	-	-
	L	-	-	-	105	-	-
Ulna	R	-	-	57.5	-	-	-
	L	-	66	58.5	-	-	-
Radius	R	-	-	-	-	-	-
	L	-	-	52	-	-	-
Femur	R	89	-	72.5	-	144	104.5
	L	-	-	74.5	-	142.5	-
Tibia	R	-	-	65.5	-	-	83
	L	83.5	-	62	-	-	-
Fibula	R	-	-	-	-		78
	L	-	-	-	-		76
Age		0.5	0.5	0.5	1	2	1

Section C

Fire Installations

One of the most interesting features that was revealed during the excavations at Tell Abada, was the presence of a considerable number of fire installations distributed throughout the three excavated levels of the site. These fire installations included kilns, ovens and hearths. We use the term "kiln" for those commercial installations used for pottery making; "oven" for those which were used for domestic purposes such as making bread; and "hearth" for those in the form of shallow pits used for cooking and heating. The fire installations from Abada vary in size, shape and function. They can be classified as follows:

1 - Kilns with two chambers built above ground level, including kilns nos. 1, 7, 8, 9 and 10 (Figs. 31, 36, 37, 38; Pl. 8:a), no.1 was found at L.III, the others belong to L.I. This kind of kiln consists of two chambers a lower firing chamber and an upper baking chamber. The firing chamber is usually provided with an opening or stoke-hole to feed the kiln with fuel, also to provide the draught necessary for the combustion process. The two chambers are separated by a grate which is usually provided with a number of rounded holes or flues. The upper chamber was probably dome shaped. Evidence for this can be seen in the surviving portions. There must have been a hole in the dome to serve as a chimney. An opening for loading the kiln with the pots to be baked, must have been made in the wall of the dome; this opening was no doubt closed by a special piece of pottery or clay hatch and might have been sealed with clay to secure the temperature inside the baking chamber (Fig. 36).

2 - Kilns consisting of a double-chamber, with the lower part or firing chamber sunk below ground level and the depth varying from one to another. A perforated grate was usually placed on top of the firing chamber at ground level, the fuel opening or stoke-hole was at ground level, normally attached to one end of the chamber and sloping down diagonally to the interior of the firing chamber. The upper part or baking chamber was built over the grate. This kind of kiln is represented by kilns nos. 12-13 of Level I (Fig. 39:a-b).

3 - Kilns with a single chamber built at ground level, varying in size and shape and either built directly over the ground e.g nos. 2, 4 (Figs. 32:a, 34), or just a little below ground level, no. 3, (Fig.33). No grate is to be found and it seems that both pots and combustible material were put together in one chamber which functioned both as fire chamber and baking chamber. Some kilns of this kind were very well constructed of pise as in kiln no.3 and 4, both have domed roofs with a chimney in the top and an opening for fuel in one side.

4 - Single chamber kilns consisting of a prepared base on which the unbaked pots and the fuel were piled. A temporary domed roof was then laid over the pile, probably perforated with holes to provide the necessary draught. Nos. 14, 15, 17 and 18 (Figs.39:c; 40:a,c,d) are examples of this type.

5 - Kilns with a unique system of ventilation, no.16 (Fig. 40:b). This type of kiln has not been matched elsewhere so far. A similar system is to be found in the kiln of Sialk III, I (Ghirshman 1938, Fig.5). The Sialk kiln has another feature in common with kiln no.7 at Abada; the grates in both kilns are of the same size and are provided with 18 rounded holes or flues distributed throughout their surfaces. These common features in the kilns of both Abada and Sialk III, I may suggest contemporaneity between Sialk III,I and Abada I.

6 - Other fire installations such as ovens, hearths or fire places (Fig. 32:c,d), were found in different places at the site, some of them inside the rooms or courts of houses. These were obviously being used for domestic purposes. In this connection it should be pointed out that although we have sufficient evidence concerning the function of almost all of these kilns, the possibility that "the same installation may have been used for a number of different purposes" (Crawford 1981) should be taken into consideration. The large, wide bench which was constructed inside the firing chamber of kiln no.6 could provide an example of a structure for such multi-purpose use. It may have been used to stand the unbaked pots on before firing, but also for standing pottery trays with food or bread to be cooked or baked when the kiln was not being used for pottery baking. This cannot be true with the more specialized kilns such as no.s 1,2,3,7,8,9,10 and 11, which were only used for pottery baking.

It is interesting that the shape and size of the kilns vary considerably within each level and, as we have seen at Abada, a very simple type of kiln coexists with more developed and specialized ones. Thus the systematic course of development proposed by Delcroix and Huot (1972) is invalid.

To sum up, a considerable number and a wide range of pottery kilns were found at the site, ranging between very simple and highly sophisticated ones. Special places or quarters were set aside to house the large and specialized kilns which produced a very remarkable and brilliantly executed pottery in huge quantities. All this bears testimony to the industrial specialization which had already been established at the village and without which no such great accomplishments could have been achieved.

Section D

Figurines

Man has long been familiar with making figurines, the earliest figurines reported so far are those which depict females with their most feminine characteristics much emphasized. These are made of clay or stone and date back to the upper palaeolithic; they have been found at many sites in western Europe (Braidwood 1967, 71). In Mesopotamia figurines have been found in many sites such as Karim Shahir which dates back to the 9th millennium B.C., and Jarmo where about 5,000 fragments of figurines representing animals and human beings were found; the last site is dated to the 7th millennium B.C. (Braidwood and Howe et al. 1960, 44, 53 Pl.23, 8). Figurines continued to be produced during the Hassuna period, and from the Samarra period remarkable figurines appear, e.g at Tell Es-Sawwan (Yasin 1970. Figs. 39-42) and Choga Mami (Oates 1968, 5). The same tradition was followed during the Halaf period and sites of the Ubaid period have yielded many specimens of figurines. The new discoveries from Tell Abada have greatly enriched the repertoire of this category of object. The upper two levels at the site have produced a fairly large number of figurines of baked clay; one example was made from gypsum (Fig. 42:e). Gypsum figurines are extremely rare in prehistoric Mesopotamia, a gypsum human figurine is reported from Tell Es-Sawwan L.II (Oates 1969a, 147;Pl.XLI,C) which dates back to the Samarra period. No other examples have been reported from any Ubaid sites. A total of 105 figurines were found four of which are of human shape while all the rest depicted animals; this group included some small theriomorphic vessels:

1 - Anthropomorphic Figurines (Fig. 41)

Human figurines seem to have been rare at Abada, nevertheless, four interesting ones were found (Fig.43), two in level I (a,c) and two in level II (b,d). Three of these figurines (a,c,d) represent females, two of them (c,d) are depicted in a squatting position and they were roughly modelled in stylized form with some parts of the body overemphasized. This type of figurine has long been assumed to be a representation of the "Mother Goddess", the use of this description which implies a religious significance was based on the fact that some of such figurines were often found in particular contexts such as graves, in association with the dead, or in shrines or temples as was the case with Tell Es-Sawwan (Al-Wailly 1965, 22) and Çhatal Hüyük (Mellaart 1967). At Tell Abada, the presence of one of these figurines associated with a dead child in urn burial no.68 may also seem to indicate a ritual function for such female figurines but no persuasive evidence can ever support this view (Oates 1978b). Male figurines seem to have been rare and only one was found in level II. The dearth of male figurines seems to be in accordance with the evidence from other

prehistoric sites where male figurines are extremely rare. [5] They are "rare in Mesopotamia and equally rare in Anatolia and Iran" (Oates 1966, 147).

2 - Animal Figurines

Animal figurines were very common at Abada (Figs.42-48). A big variety of identifiable animals were represented but sheep and dogs seem to have been most popular. [6] Amorphous examples were also found. The presence of a high proportion of figurines representing sheep probably reflects the economic importance of these animals. Level II yielded the most beautiful example of an animal figurine which may represent a sheep (Fig. 45:a). It is of fired clay, elaborately modelled and decorated with brown bands running diagonally around the body and the neck. The eyes are indicated by reserved circles inside paintd rings. The mouth is depicted by means of V-like slashes in front of the face. Both ears are missing so are some of the face parts and legs. The painted bands probably represent a dye in the wool of a sheep; a custom which is still widely practised in Iraq today by the shepherds to distinguish their sheep from others. The large numbers of figurines which depict dogs is of special interest for although there is no economic benefit from these animals themselves, their importance as guards, looking after domesticated animals, must have been great (Figs.45:a,i; 48:b,k). Representations of cows and bulls (Bukrania) appear in many figurines at the site, and also feature as designs on pottery (Fig. 224:3, 5). Their frequency probably indicates the economic and religious importance of this animal in the economy and the beliefs of the people in Mesopotamia and the Middle East generally from the Halaf period onwards, though this assumption has been questioned by Oates (1978b, 22). An interesting piece (Fig. 43:g) represents a very well modelled baked clay figurine of a bull with hollow body consisting of two equal parts stuck together one of which is missing, the entire surface was polished and some anatomical details are apparent as shown on the back, the belly, the legs and the tail. Most interesting is the phallus of the bull which seems to be attached on the rear part of the lower belly just below the hind legs. A very interesting figurine came from level I (Fig. 42:b), this was evidently intended to depict a snake with cylindrical body and tapering head, the eyes are represented by small reserved rings

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[5] Only one male figurine was found at Tell Es-Sawwan (Oates 1966b, 47). A single example of a male figurine was found at level X at Tepe Gawra (Tobler 1950, 165; Fig.10), and one from Qaling Agha (Hijara 1970, 35).

Two male figurines were found at Eridu cemetery, and a fragmentary male figurine has come from Warka (Oates 1966b, F.N.8).

[6] Figurines depicting dogs were reported from Jarmo (Braidwood and Howe et al. 1960, Pl.16) and a high proportion of dog figurines were found at Sarab (Hole 1977. 199).

with painted circles inside. The spoted body of the snake is shown in black paint over the the head and body. This figurine is made of baked clay and the other half of the snake is missing. It should be mentioned that a snake pattern also appears on painted pottery from the site (e.g. Fig. 132:d). Today snakes are very common in the area where the site is located. The figurine shown in (Fig. 48:b) found in level III represents a bird with body tapering towards the rear to indicate the tail, the end of which is missing, as is the head. The bird was depicted standing on what appears to be a pedestal with a flat base. This bird figurine could be matched with another bird figurine of better modelling found at Tell Rashid and dated to the Ubaid period (Fig.231:d), a fragment of another bird figurine was also found in level III (Fig. 48:c).

3 - Zoomorphic Vessels (Fig. 49)

Some very attractive examples were found in both levels III and II, made of pottery and bearing painted or incised decoration. (Fig. 49a) represents what must have been the spout of a zoomorphic vessel, the eyes are indicated by two small appliqued pellets. The wool of the sheep is indicated by rather deep incisions to be seen on the neck and the upper part of the head.

(Fig. 49:b) shows an interesting zoomorphic vessel which may represent a hedgehog with hollow body. The body is painted in brown with small spots indicating the bristles. Another zoomorphic vessel was found in level II (Fig. 49:c) perhaps representing a dog with a short tail. The mouth, which was represented by means of wide grooves, was provided with three small holes serving as a spout.

The zoomorphic vessel to be seen in (Fig. 42:h) is an animal figurine, probably a sheep, with a concave base in the shape of a small cup.

No conclusive evidence was found at Abada to resolve the problem of the purpose of the animal figurines, we still do not know if they were votive offerings, objects of worship or merely toys.

Table 3

The occurrence of various types of figurines at Abada

Type	level I	level II	level III	Total
Animal figurines	55	34	4	93
Human figurines	2	2	-	4
Zoomorphic vessels	-	4	1	5
Total	57	40	5	102

Section E

Clay, Baked Clay, and Ceramic objects

The objects described in this section are made of clay, or are ceramic and include spindle whorls, bent nails, cones, "ladles", utilitarian clay objects, pot lids and miscellaneous ceramic objects.

Spindle Whorls

The excavations at Tell Abada have produced some one hundred and forty three spindle whorls, most of them made of baked clay, one example only was made of limestone. They were distributed throughout the three levels of the site as follows:

Level III	15
Level II	63
Level I	65
Total	143

A wide range of types was discovered, some of them bear incised decoration, others have been decorated with black or brown paint. Different sizes of whorls were found ranging in diameter from 1.3 to 4.3 cm., their thickness varied between 0.5 and 3.3 cm. Th types can be classified into:

Type 1 - Conical spindle whorls (Figs. 50:a,b;52:b, d-f, h-j)

Type 2 - Conical spindle whorls with concave base

These are similar to the above mentioned type, but the base here is either slightly or deeply concave (Figs.50:g, h; 51:a, b, g ;52:c, g)

Type 3 - Biconical spindle whorls (Fig. 51:h)

Type 4 - Ornamented Spindle Whorls

Some of the spindle whorls have been ornamented with either painted or incised decoration. Whorls with painted decoration are illustrated in (Figs.53:d-f; 54:k). Some examples bear impressed decoration consisting of small oval-shaped dents around the surface (Fig. 50:b; 51:d, i). Two examples bear punctured decoration consisting of tiny squares in holes arranged in rows upon the surfaces (Fig. 54:c,f).

Spindle whorls bearing incised and impressed decoration were common at Ubaid and earlier sites; like Tepe Gawra XIII, Ras Al-Amiya, and Hassuna.

Type 5 - Discoidal spindle whorls (Fig. 50:c)

These are disc-shaped whorls with oval section, slightly convex surfaces and rounded sides, pierced with a single hole in the middle. Only one example was found at the site. Lentoid and discoid whorls were reported from Ras Al-Amiya (Stronach 1961, Pl. XLII, 4,5); generally this type of spindle whorl is very scarce in the prehistoric sites.

Type 6 - Dome-shaped spindle whorls (Fig. 52:a)

No similar whorls were reported from Ubaid sites in Iraq, however, one punctuate dome-shaped type was found at Ali Kosh (Bayat phase) (Hole et al. 1969, Fig.90,f).

Type 7 - "Chariot-wheel" spindle whorls (Fig. 53)

These are circular, convex ceramic discs, ranging in diameter between 4.5-6.5 cm. All are beautifully painted on their upper surfaces with designs consisting of a variety of bands. This type of whorl is extremely scarce in Iraqi sites and it was found only at Telul Eth-thalathat in northern Iraq (Egami 1959, Pl. 62,10,11). The latter examples bear similar designs to the Abada ones (b,c). However they were common in

Iran where they were found at Tepe Jowi and Bandibal (Le Breton, 1947, Figs.18,32:12,13), and Tepe Sabz in the Mehmeh and Bayat phases (Hole et al. 1969, Fig. 89).

Type 8 - Perforated sherd discs (Fig. 54)

These are chipped-sherd discs which were made from body sherds of Ubaid painted pottery from both level II and I. Each has a central hole and trimmed edges. It is not quite certain whether these sherds were meant to be used as spindle whorls, nevertheless, there is no reason to rule out such usage for these discs which were "present throughout the Near East by 5500-6000 B.C." (Hole et al. 1969, 205). We did find identical sherds that lacked a perforation, these must either have been in process of preperation, or used for a different purpose altogether, for example as lids on mouths of jars. Similar perforated sherd discs were found at Tepe Sabz and Ali Kosh (ibid, 205), and Choga Safid (Hole 1977, 219).

In conclusion, a wide variety of spindle whorls were found at Abada; types 1, 2 and 3 are of the traditional type of spindle whorl which have a wide spread distribution at prehistoric sites and in particular at Ubaid sites in Iraq and the middle East. However, types such as no.4 - the "chariot-wheel" spindle whorl are rather anomalous in the Ubaid context in Iraq and were more common in Susa and Deh Luran plain sites.

Table 4

Occurence of spindle whorl types and their percentage at Abada

Type	Level 3	Level 2	Level 1	Total	%
1-Conical-shaped spindle whorls	11	42	54	108	75
2-Conical-shaped with concave base	1	4	1	6	4
3-Ornamented conical shaped spindle whorls	-	4	2	6	4
4-Ornamented conical shaped whorls with concave base	1	2	5	3.5	
5-Biconcial-shaped spindle whorls	-	2	1	3	2.5
6-Discoidal-shaped spindle whorls	1	-	-	1	1
7-Domed-shaped spindle whorls	1	2	1	3	2.5
8-Perforated sherd discs	1	2	3	6	4
9-Chariot-wheel spindle whorls	-	5	1	6	4
Total	15	63	65	143	100

Sling balls (Fig. 55)

These are biconical or oval shaped objects made of clay, some of them are sun dried, others are baked. They were either straw or grit tempered and vary considerably in size, the smallest one measures 3.5 cm. in length and 3.5 cm. in middle diameter, the biggest measures 5.6 cm. in length and 3.5 cm. in middle diameter. They were very common in both levels II and I. 62 were found in level I and 74 in level II. None was found in level III. although these objects have traditionally been described as sling balls or missiles, their real function is uncertain. It seems hardly conceivable that they were used as sling balls or missiles since the heaviest of them are still too light to cause any great damage. For this purpose the people could easily have used pebbles or stones which were widely available. My inclination is to consider these objects solely as toys for children, though evidence for this assumption is not available yet.

These objects were known from many Ubaid sites in Iraq such as Eridu, Warka, Tello (Perkins 1949, 85), also from Telul Eth-thalathat (Egami 1959, Fig.62:7,8). Sling balls were reported from Choga Mami (Oates 1969a, 131). Similar objects were reported from Tepe Sabz (Hole et al. 1969, 213), Choga Safid (Hole 1977, 233)

Bent Nails (Fig. 56)

These objects are made of baked clay with large convex heads and curved or sharply bent shafts. They are widely known from almost all Ubaid sites and are considered to be a diagnostic Ubaid characteristic. They were found at Eridu, Al Ubaid, Ur-Ubaid, Warka, Ras Al-Amiya and Choga Mami. In the north of Iraq they were found at Tepe Gawra XIX-XII, Arpachiyah and Telul Eth-thalathat. Bent nails are reported also from the Deh Luran plain (Hole et al. 1969, 210) and Susiana (Le Breton 1947, Fig.23:6).

Various suggestions regarding their function have been made since their first appearance at Eridu; some believe that they were "mullers" since the convex heads sometimes show signs of wear or abrasion (Tobler 1950, 90). Others think they are "model bull's horns and have some votive significance allied to the bukranium" (Mallowan 1935, 90; 1967, 21-22); or that they were "sickle hand protectors for reapers (Hall and Woolly 1927, 48-49); or "hooks" for picking up low growing crops (Hall 1930, 202) although the possibility of their being rubbers for grinding paint was not excluded (ibid, 202). The excavators of the Deh Luran sites suggested their use as "anvils" for pottery making by the "paddle-and-anvil technique" (Hole et al. 1969, 210). Lloyd thinks that they were used for fixing reed matting to the face of the mud brick wall (1978, 47).

Our excavations at Tell Abada have produced a large number of these objects, 97 in all, more than have been found from all other Ubaid sites; 47 of them came from level II and 50 from level I. They show a considerable variation in size, degree of curving and decoration. They range in length from 7.5 to 11.5 cm. and in diameter from 2.5 and 9 cm., the convex heads differ in size from one to another; the smallest head has a diameter of some 3 cm. the biggest measures about 9 cm. some examples have painted decoration in black or red paint (Figs. 56:b, c, d, f, i, j; 57:a, f).

The most interesting feature which characterizes some of the bent nails from Abada is that they have animal protomes in which the bent end was modelled in the shape of a ram; the ears and eyes were indicated by applied pellets (Fig. 57:k), another bent nail was modelled in the shape of a human figurine (Fig. 58:j). It should be pointed out that this last feature is unique to Abada and has not been attested in any other site so far.

The large number of bent nails found at Tell Abada has provided us with a better opportunity to consider their disputed function and many general observations can be drawn from the study of these objects:

1 - The shaft length ranges between 7.5 and 15 cm. throughout all the 97 specimens found in the site, such length can fit comfortably in the palm of both men and women.

2 - The painted decoration is confined to the shaft only and none whatsoever was noticed on the head which implies that this part of the object had no direct function.

3 - All the specimens had convex heads, most bearing signs of wear and abrasion which seems to be heavy in some examples where the head has been worn down or even flattened in some cases (Fig.59:b,c,h); this is an important indication that they were used to mull or grind.

For these reasons we are inclined to adopt Tobler's suggestion. Support for this theory comes from both Stronach who believed that they were mullers used for rubbing or grinding (1961, 107) and from Oates who mentions a number of bent nails found at Al Ubaid well at Choga Mami "which showed definite signs of wear as though they had been used as mullers" (1969a, 131).

Ceramic Cones, "Ladles" (Fig. 58)

These objects consist of a conical shaft or handle with a ladle-like cup on top. This type of object has been found both in Samarra and Ubaid contexts. At Abada both the long-handled drinking cup type (Fig. 58:a, b) and the "Golf-tee" (c) were found, the former type was found in stone at Tell Es-Sawwan; [7] at Choga Mami this type was also found in Samarran levels, while the latter was associated with transitional material (Oates 1968, Pl. XII,11-14), and it is also known from Ubaid levels at Ur (Woolley 1955, Pl.15), and Tepe Gawra (Tobler 1950, 169). Most examples from these sites and from Abada are painted with bands encircling the handles as well as the cups (c). The last example is the only one in which the handle is bent. All three ladles mentioned above (a-c) were found in level III at Abada; two other long handled ladles come from level II (d,e).

Utilitarian Clay Objects

The items described under this category comprise objects of some domestic function such as miniature vessels, lamp lids and tripods; the first items (miniature vessels) were made of baked clay but the latter (lamp lids and tripods) were probably made of unbaked clay which became baked in the course of usage.

1 - Miniature vessels (Fig. 59)

Five small vessels were found, two from level I (a,d) and three from level II (b,c,e), the first one (b) is a very small bowl measuring 3.3 cm. in diameter with rounded base and asymmetrical sides. The clay was tempered with grit and no surface treatment is noticeable. (c) is another small bowl measuring 3.8 cm. in diameter, of rather conical shape with slightly incurved walls, it was made of fine clay and seems to have been nicely modelled. The last one (e) is a very small pot measuring only 1.3 cm. It is oval-shaped with rounded base and sharply incurved walls which were fine grit-tempered and well modelled.

The first vessel from level I (a) is a tall beaker some 13 cm. in length and 9 cm. in diameter with thick walls slightly flaring outwards. No particular shape could be determined for its base due to its poor condition, the base of the beaker was coated on the inside with a thick layer of gypsum obviously to water-proof it. It was made of grit-tempered clay and not very well modelled. The second one (d) is a miniature jar 2 cm. in diameter, with a flat base and meandering edge, the general form

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[7] Sumer XXI (1965), Fig.66.

and manufacture are fair.

2 - Lamp lids (Fig. 60)

These objects are conical with a kidney-shaped base. A groove runs laterally from the edge of the base to the top of the cone. The bases vary from 5.5 to 9 cm. across and the height from 2.5 to 5.5 cm.

A total of 22 of these clay objects was found distributed in both level II, where we found 7 of them, and level I, where 15 were found. In all these examples the concave part of the cone or the groove is heavily burnt and sooty, a very clear indication that these objects were used as lids for lamps. The concave part held the wick which goes down into the container which must have been filled with oil. It is significant that some of these lids were found in association with a number of small jars (13 in level II, 5 in level I); they are heavily burnt around the mouth and obviously served as lamps. [8]

3 - Tripods (Fig. 61)

These clay objects which were found in both levels II and I, are big lumps of clay rolled into cylindrical shape and flat at either end with slightly concave sides. Six examples were found and all bear obvious traces of heavy burning. They apparently were used for cooking. This assumption was strengthened by the presence of some of them near hearths in the houses of level II.

Potlids (Fig. 62:a)

Only one pot lid was found in level II, it is saucer-like with a diameter of 5.5 cm. and 1.5 cm. thick, made of well fired pottery and excellently modelled. There is a ridge around the surface parallel to the slightly flaring walls obviously for fitting over the mouth of a pot or jar. A small hole was made in the centre for suspension.

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[8] Primitive lamps of similar technique are still being used in some remote Iraqi villages today where an empty small jar, can, or bottle, containing petrol is used. The mouth is sealed with compressed date fruits, clay or a lid of some sort; in each lid there is a small hole serving as a holder for the upper part of the wick which goes down to the bottom of the container where it is provided with petrol. This primitive method of lighting was widely used in almost every house in modern Iraq up until the late thirties of this century.

The sides of the lid were painted with dark purple paint, while the upper surface was decorated with three painted bands.

Miscellaneous Clay objects (Fig. 62:b-h)

These miscellaneous objects can be described as follows:

b) A regular and thin piece of plano-convex shape, measuring 11.3 cm. in length and 5.5 cm. in width. The upper face is convex and painted with black along the lower edge. The other face is flat with a slight groove running along the whole edge opposite to the painted part. This object might have been a tool for polishing, sharpening or for some other function.

c) A hollow, curved, cylindrical object of almost square cross-section with two almost square holes on the upper surface, it is of unknown use but it ir reminiscent of the kernos fragment from Tepe Gawra (Tobler 1950, Pl.LXXX,b).

d) An oval-shaped rattle made of well baked clay with small hole in the upper painted end for suspension. Small pebbles were placed inside to create the rattling sound. This kind of object was found at Tepe Gawra XVII (ibid, Pl.LXXXII.,no.1).

e-h) A series of wheel-models of different kinds are illustrated here (e) represents a biconical wheel with rounded hole running across the hub of the wheel; (f) is discoidal with a serrated edge and a hole in the centre; (g-h) represents a plain discoidal wheel.

Boat models (Fig. 63)

One of the interesting features which could be considered characteristic of the Ubaid period in southern Iraq is the presence of a variety of models of boats or canoes as at Eridu (Safer et al.1981, Fig.III), Al-Ubaid (Hall and Woolley 1927, Pl.XLVIII, 532), Al-Uqair (Lloyd 1943, Pl.XVIII 13), and Tell El'Oueili (Huot 1980, 109). At Tell Abada two ceramic boat models were recovered from level I; the first one (a) represents a boat with flared bows, measuring 15 cm. in length and 3.5 cm. in width. One of its upper rims is painted brown, this has been matched by a brown band on the upper opposite side. This boat model is very similar to wooden boats being used in Iraqi rivers today, called Balam.

The second boat-model (b) is smaller than the previous one, (9.5 x 5 cm.) and has incurved bows. This type of boat is closely comparable to one called Mashhoof which is used in the marsh

area in Iraq today.

Section F

Ornaments (Fig. 64)

Human concern for adornment has always been accompanied by interest in acquiring ornaments since the earliest times. Archaeological records show that ornaments of various kinds appeared at almost all prehistoric sites, and Ubaid sites are no exception. On the contrary they produced an appreciable collection of a wide range of ornaments. At Tell Abada these included pendants, bracelets, rings, studs, and beads, the material used in producing these ornaments varied from ceramic, baked clay stone, frit to metal. All are dealt with in this section.

Pendants

A total of 6 pendants of different types were found, these can be classified as follows:

1) Pin-shaped pendants (Fig. 64:c)

2) Whetstone-shaped pendants (Fig. 64:a)

3) Drop-shaped pendants (Fig. 64:b)

4) Pendant flakes of transparent stone with a small hole pierced at one edge for suspension (Fig. 64:d, e, g)

Studs (Fig. 64:g-i)

These are peg or nail shaped objects with flat or discoidal bases and tapering heads. They are generally small and made of clay, marble or fine quality stone. Studs are widely known from many prehistoric sites in Iraq; they were found at Hassuna (Lloyd and Safar 1945, 269;Pl.26,8,16), Mattarah (Braidwood 1952, 21-22; Pl.XII 19), Jarmo (Braidwood and Howe 1960, 46) and at Shimshara (Mortensen 1970, Fig.43). They are reported also from the Deh Luran plain (Hole et al. 1969, Fig. 102,h) and Sialk (Ghirshman 1938, Pl.11, 26-31).

They are also known from many Ubaid sites such as Tepe Gawra where stone studs were found at Levels XVI, XII and XII (Tobler

1950, 199; Pl.XCIIa,11-13), Eridu (Thompson 1920, Pl.IX), Al Ubaid (Hall and Woolley 1927, Pl.XIII,6-7), and Uqair (Lloyd and Safar 1943, 149). Studs made of stone and clay were found at Choga Mami, both from Al Ubaid well and Samarra levels (Oates 1969a, 131-132; Pl.XXX a,b), and Ras Al-Amiya (Stronach 1961, Pl.XLIII,8,9).

At Abada three studs were found, all made of a very fine polished stone. One was found in level I (h) and two were found in level II, (g,i).

The function of these objects is not really known; it has been suggested that they were used as nose and lip-plugs (Childe 1952, 39), a similar suggestion was made by Woolley who described them as nose-studs (Hall and Woolley 1927, 153, Pl.XIII,6,7). They have been considered as pestles by some authors (Ghirshman 1938, 130). Others say that they might have been used as ear studs or "they may have had some obscure amuletic significance" (Tobler 1950, 199), and they were interpreted as "labrets" by the excavators of the Deh Luran plain (Hole et al. 1969, 235; Fig. 102). Recent evidence drawn from the Choga Mami figurines coupled with the evidence obtained from some burials at Ali Kosh (ibid, 235) would suggest that "these are the actual ornaments that adorned the Choga Mami ladies in the style depicted on the figurines" (Oates 1969a, 130).

2 - Conical shaped beads of polished black stone (Fig. 64:j)

3 - Frit beads (m,n,s) representing a type of discoidal-shape

Some 51 examples of different sizes were found.

4 - Reel-shaped beads (Fig. 64:l)

5 - Disc-shaped beads (Fig. 64:o, u)

6 - Cylindrical beads (Fig. 64:q)

7 - Tabular beads (Fig. 64:r, t)

These are made of frit, with an elongated cylindrical body, round in cross-section. Two of these beads are partially painted in black (r,t). These three beads are part of the necklace found in burial 67.

8 - Ring-shaped beads (Fig. 67:d-c).

Table 5

Occurrence of bead types throughout levels at Tell Abada

Type	Level I	Level II	Level III	Total
1- Engraved beads	1	-	-	1
2- Conical beads	-	1	-	1
3- Reel-shaped beads	1	-	-	1
4- Discoidal beads	38	13	-	51
5- Disc-shaped beads	1	3	-	4
6- Cylindrical beads	1	-	-	1
7- Tabular beads	1	2	-	3
8- Ring-shaped beads	4	7	-	11
Total	47	26	-	73

Section G

Clay Tokens

The objects included under this category consist of clay pieces modelled in various forms, spheres, cones, discs, rods and

other geometric shapes. Such objects used to be called "gaming pieces" or "pieces of an enigmatic purpose". In this section, these objects will be described as "clay tokens" [9] for reasons to be discussed later on. Clay tokens have been widely known and are "actually found in most Middle Eastern sites and over a long span of time, from the ninth to the second millennium B.C. (Schmandt-Besserat 1977, 3).

The tokens from Tell Abada include four basic types, these are: a - spheres, b - cones, c - discs, d - rods, in addition to a few other types, each type includes some subtypes as we shall see below:

a) Spheres (Fig. 66)

These are balls of different sizes ranging between 0.6 - 3.0 cm. in diameter, modelled of fine clay, some examples show an irregular shape. The majority of the spheres are made of clay (a-k, p-y). However, balls of other materials - four only - (l-o) were also found. Spheres at Abada constitute the most popular shape, forty two out of ninety tokens i.e. 47% are spheres. They can be divided into five subtypes according to size and surface markings, these are as follows:

1 - Pellets (Fig. 66:a)

These are tiny or very small balls with maximum diameter of about 0.5 cm. These pellets resemble subtype I1 of Schmandt (ibid, 5).

2 - Small spheres (Fig. 66:g-k)

3 - Large spheres (Fig. 66:p-s)

4 - Truncated spheres (Fig. 66:t-v)

5 - Incised truncated spheres (Fig. 66:w-y)

These are similar to the above-mentioned ones but bear surface markings in the shape of incisions on the convex part. These incisions are either four parallel lines, two of which lie on the top and one each side (w), or five parallel diagonal lines on the convex surface (x), or one diagonal line or groove

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[9] This term was first used by Pierre Amiet (1966).

on the convex side (y). They resemble the incised 3/4 spheres found at Choga Safid and Susa (ibid, 8).

b) Cones and related shapes (Fig. 67)

Clay objects of conical shape were also common at Abada, they constitute 36% of the total percentage of clay tokens. This type can be divided into six subtypes with many variations within each, such as short examples, slightly convex sides, round and oval or shightly concave base, round or pointed tips. These subtypes are as fcllows:

1 - Small cones (Fig. 67:e-h).

2 - Large cones (Fig. 67:a-d, i-n)

3 - Incised cones (Fig. 67:o)

4 - Bent cones (Fig. 67:p-q)

5 - Squat cones (Fig. 67:r-t; Fig. 68:e-g)

6 - Cones with pinched tops (Fig. 68:c)

7 - Other related shapes (Fig. 68:a, b)

[10]

c) Discs (Fig. 69)

The discoidal clay pieces from Tell Abada can be divided into 7 subtypes in accordance with their thickness and their surface markings. These are:

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[10] These pieces closely resemble the ones classified under III12 of Schmandt which are similar to ones found at Tepe Asiab, Ganj-Dareh, Tell Aswad, Tell Ramad, Suberde, Can Hassan, Tell Es-Sawwan, Tepe Gawra, and Susa (ibid, 16).

1 - Small discs (a) [11]

2 - Large discs (b-c)

3 - Lenticular discs (d)

4 - Plano-convex discs (e) [12]

5 - Incised discs (f) [13]

6 - High discs (g)

7 - Incised high discs (h)

d) - Rods (Fig. 68:g-l)

These objects are made of fine clay and three subtypes can be recognised, they are as follows:

1 - Elongated coil (i). This resembles the "elongated pellets" of Schmandt (ibid, 17).

2 - Rods with cylindrical cross-section and rounded ends measuring 7 - 8 mm. in diameter and 3 - 3.5 cm. in length. (g-h).

3 - Curved rods rolled and modelled between palm and fingers, the prints of which can be very clearly seen on the rod (j-l). Similar rods were found at Tepe Gawra XIII (Tobler 1950, Pl. LXXXVI,b).

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[11] This subtype of discs was found at Beldibi, Ganj- Dareh Tepe, Tepe Sarab, Can hassan, Choga Safid, Tepe Yahya, Susa and Tepe Hissan; it resembles subtype II3 of Schmandt (ibid, 11).

[12] This subtype of disc was classified as 1/4 by Schmandt, examples of which have come from Tepe Asiab, Kanj Dareh, Tepe Sarab, Can Hasan, Jarmo and Kish (ibid, 8).

[13] Incised discs were classified under subtype II4 by Schmandt and were similar to ones from Ganj Dareh and Susa (ibid, 11).

e - Proto-Tablets (Fig. 70:a-d)

These are tablet-shaped pieces of carefully finished fine baked clay; three of them (a-c) are of elongated oval shape, and (b) bears a line in the shape of a groove running along the centre of the surface. (d) is a small square tablet 3 x 3 cm., with two flat faces and slightly rounded edges, it was very well modelled and no distinguishing marks are to be seen on the surface. It is worth mentioning that this piece is the only one with an angular shape in the whole collection.

The most important piece is the one illustrated in plate (a) which came from level I, (Building A;R.7) unfortunately the piece is broken and a considerable part of it is missing but the surviving part measures 4.5 x 3 x 1.3 cm. It bears on one of its faces markings of two kinds; the first are crescent shaped signs probably performed by deliberately applied finger nail prints, the second are short horizontal strokes. These signs are very well arranged within four parallel vertical lines and a single nail print to aside of one of the flat edges, and considerable attention seems to have been paid to executing the signs.

Table 6
Occurrence and percentage of clay tokens at Abada

Type	Spheres					Cones								
Subtype	1	2	3	4	5	1	2	3	4	5	6	7	8	9
Level II	7	11	5	2	1	4	7		2	3				
Level I	3	7	3	1	2	5	4	1		2	1	1	1	1
Total	10	18	8	3	3	9	11	1	2	5	1	1	1	1
Gross total			42						32					
Percentage			47						36					

	Discs							Rods			Varia			Total
Subtype	1	2	3	4	5	6	7	1	2	3	1	2	3	
Level II		1	1		1	1	1		2	1				50
Level I	1	1		1				1			1	2	1	40
Total	1	2	1	1	1	1	1	1	2	1	1	2	1	90
Gross total			8						4			4		90
Percentage			9						4			4		

Section H

Ground and Polished stone Industries

Our excavations at Abada have revealed that stone was widely employed in manufacturing substantial numbers of objects. Both ground and polished objects are found though the latter are represented in a much smaller percentage than the former. These stone objects can be classified in three main categories as follows:

1 - Vessels
2 - Grinding and pounding tools
3 - Other stone artifacts

Other small items such as beads, pendants and spheres have been discussed under other headings (Sections F and G).

Vessels (Fig. 71)

Stone vessels are known to have come to light from several prehistoric sites since the 7th millennium B.C., they were reported from Jarmo (Braidwood and Howe 1960, 45; Pl.12:12-16), Ali Kosh - Ali Kosh phase - (Hole et al. 1969, Fig.42), Shimshara (Mortensen 1970, Fig.38), Tell Es-Sawwan (Al-Wailly 1965, 123), Choga Mami (Oates 1969a, 131), Umm Dabaghiya (Kirkbride 1973, Pl.VIII,b) and Tell Soto (Merpert et al. 1977, Pl.XXXI) and Yarim Tepe (Merpert 1971, Fig. 7,b).

In the Ubaid period stone vessels were found at many sites such as Al-Ubaid (Hall and Woolley 1927, Pl.XLVI,3), Eridu (Safer 1947, 104), Tepe Gawra (Tobler 1950, 208-209), Arpachiyah (Mallowan 1935, 76; Fig.44,10) and Nuzi (Starr 1937, 13). At Abada they were extremely rare and only nine examples were found, nevertheless, many interesting forms were represented, and the major material used in manufacturing these vessels was marble which was highly polished in some examples; five forms of bowls could be identified, these are:

1 - Bowls with carinated shoulder (Fig. 71:a, b)

2 - Bowls with out-turned and diagonally faceted rim, rounded body, thick sides and flat base, made of white marble (c).

3 - Deep bowls with incurved sides and simple direct rim. Body is rounded with flat base, made of white marbel (d).

4 - Bowls with out-turned or "beaded" rim. Various shapes were represented (e-h).

5 - Miniature vessels (Fig. 86:f). One example only representing a very small bowl measuring 1.7 cm. in height and 2.3 cm. in rim diameter. It was crudely made in greyish stone.

Grinding and Pounding Tools

1 - Grinding Tools

Most of these grinding stones were found within their original contexts either inside the rooms or courtyards where they had usually been used for purposes which could have been either domestic, such as grinding grains for preparing food, or industial, such as preparing red ochre, most probably for painting pottery as attested by the presence of two grinding stones still bearing its traces. The fact that these stones were found in such places and not discarded or used for other purposes would clearly imply that they have been used for a rather long time through the life of the village; an implication which indicates the important role these tools have played in the daily life of the people and their subsistence.

Different types of grinding stone were represented, these are:

a) Flat-topped stones (Fig. 72:a)

This type of grinding stone was represented at the Deh Luran plain through Bus Mordeh and Khazineh phases (Hole et al. 1969, 171) and Choga Safid (Hole 1977. 201); Shimshara (Mortensen 1970, Fig.46a) and Telul Eth-thalathat (Fukai 1981, Pl.40,5).

b) Saddle-shaped grinding stones (Fig. 74:b,c)

Saddle-shaped grinding stones were found at Jarmo (Braidwood 1952, fig.14), Hassuna (Lloyd and Safer 1945, Fig. 7), Yarim Tepe (Munchajev and Merpert 1973, Pl.XII,6), Shimshara (Mortensen 1970, Fig.46,6), Choga Mami (Oates 1969a, 131) and Telul Eth-thalathat (Fukai 1981, Pl.40,6).

c) Basin-shaped Mortars (Fig. 73:a, b)

Similar stones were found at Jarmo (Braidwood and Howe 1960, Pl.20.1), Tepe Guran (Mortensen and Flannery 1966, Figs.9,10), Choga Safid (Hole 1977, 201). Similar tools with either shallow or deep basins were reported from Ali Kosh and Tepe Sabz (Hole et al. 1969, Fig.74:c,d).

d) Bowl Mortars (Fig. 73:d)

Similar mortars were found at Tepe Gawra XIII (Tobler 1950, Pl.CLXXIX,57), and it is interesting to mention here that mortars of similar shape are still being used in some parts of Iraq today.

e) Pebble Mortars (Fig. 73:c, e, f)

It would have seemed difficult to interprete these objects as mortars if we had not seen traces of red ochre on some examples; the same observation was made for a similar object at Ali Kosh and Tepe Sabz "Mohammad Jaffer phase" (Hole et al 1969, Fig.77,a,b) and Choga Safid (Hole 1977, Fig.84,c,a). Mortars of similar type were found at Jarmo (Braidwood and Howe 1960, Pl.20, no.3).

f) Boulder Mortars (Fig. 74)

Similar objects are found at Jarmo (Braidwood 1951, fig.11), Ali Kosh, Tepe Sabz (Hole et al. 1969, Fig.76) and Choga Safid (Hole 1977, Fig.82,3; Fig.83). Mortars of boulder type were also found at Abada (Fig. c) which is similar to an example from Choga Safid (ibid, Fig.83,c).

Table 7

Occurence of Grinding Stones at Tell Abada

Type	Level III	Level II	Level I	Total
Flat-topped stones	2	3	4	9
Saddle-shaped stones	2	2	1	5
Basin-shaped Mortars	1	3	2	6
Bowl Mortars	-	1	1	2
Pebble Mortars	-	10	5	15
Boulder Mortars	-	4	6	10
Total	4	23	19	47

2 - Hand stones (Figs. 75-76). These can be classified into the following types:

a) Flat hand stones (Fig. 75:a, b)

b) Sand stone abraders (Fig. 76: e, f)

This type of abrader was reported only from Choga Safid (Safid through Choga Mami transitional phases) (Hole 1977, 215).

c) Pounders and grinders

This category of hand stones includes three main types, these are as follows:

1) Spherical hammer stones (Fig. 76:a, b).

This type of pounder was most common at Abada, as it was in many prehistoric sites in Iraq such as Tepe Gawra (Tobler 1950, Pl.XCVI,b), Al Ubaid (Hall and Woolley 1927, Pl.XIV,6), Choga Mami (Oates 1969a, 131) and Jarmo (Braidwood 1952, Fig.14).

2) Cubid pounders or rubbing stones (Fig. 76:c)

3) Stubby grinders (Fig. 76:d)

d) Pestles

Two types can be distinguished as follows:

1) Cylindrical pestles (Fig. 75:c)

2) Conical pestles (Fig. 75:d)

Table 8

Occurence of different types of hand stone at Abada

Type	Level III	Level II	Level I	Total
Flat hand stones	1	2	3	6
Sand stones, abraders	1	2	3	6
Spherical hammer stones	7	33	28	68
Cubid pounder or rubbing stones	-	3	4	7
Stubby grinders	-	2	1	3
Cylindrical pestles	-	3	2	5
Conical pestles	-	2	1	3
Total	9	47	42	98

Section I

Other Stone Artifacts

The Abada tool kit is tremendously large, and a numerous variety of stone artifacts were represented and were produced in different varieties of stone, some of which were locally available, other such as alabaster and steatite must have been imported from elsewhere, most probably from nearby Iran.

The flint industry of Abada will be described and discussed in Appendix 2. The stone artifacts which will be dealt with in this section are as follows:

Hoes (Fig. 77)

These tools are fairly large in general and relatively heavy, ranging from 13 - 23 cm. in length, and made of river cobbles (a) or large flakes struck from cobbles, the edges of which have been unifacially retouched so that the cobbles form pear-shaped hoe blades (c-d). Others were made of bifacially retouched flint flakes, bearing some traces of bitumen around the edges, an indication of hafting. These tools which seem to have been multi-purpose, were the earliest tools to be invented by Homo erectus in the lower palaeolithic (Abbevillian and Acheulian stages) in Africa, Europe, the Far East and the Middle East, where Acheulian industries have been found in Turkey, Iraq and Iran (Waechter 1976, 83-89).

The same general type of hoes seems to have persisted through man's prehistory up to the Ubaid period where it has been reported from many sites such as Al Ubaid (Hall and Woolley 1927, Pl. XIII i; LXVII), (Hall 1930, 232; Fig.202), Al Uqair (Braidwood 1952, Pl.XXIX), Reijibeh (Woolley 1955, Pl.12,c), Eridu (Thompson 1920, Pl.VII B), Tello (Genouillac 1934, Pl.8:2), Ras Al-Amiya (Stronach 1961, 106;Pl.XVIII:22) and lastly at Abada and Tell Rashid.

Unretouched Hoes (Fig. 78:c, d)

These tools are similar to the aforementioned ones, but are unretouched around the edges. Nevertheless, they have been carefully pecked and ground to facilitate gripping by hand, while the bits were left in their original state.

Ground-stone Chisels (Fig. 78:a, b)

These tools are made of fine-grained limestone with an elongated and almost parallel-sided body. The bit is very bevelled ending in a sharp cutting edge, extant length ranges between 8.3 - 9 cm. and the width between 2 - 2.8 cm. Similar chisels were reported from Ali Kosh (Hole et al. 1969, Fig.84:a-b and 192).

Polished Celts (Fig. 79, 80)

This popular type of tool was common at Abada where some thirty examples were found mainly in levels II and I. Several types of polished celts were represented, these are as follows:

1 - Celts with rounded butt and slightly curved sides (Fig. 79:c, f).

2 - Celts with adze type bits (Fig. 79:a, b, d, e) and (Fig. 80:c, e, f, h, i, k).

3 - Celts with straight butt and either symmetrical bit (Fig. 80:g) or adze-type bit (Fig. 79:a).

4 - Celts with pointed butt and symmetrical bit (Fig. 80:d, j).

5 - Perforated celts (Fig. 80:b).

Polished celts identical to the first four types mentioned above were found in many sites in Iraq and the nearby area; in Jarmo (Braidwood 1952, Fig.14), Hassuna (Lloyd and Safer 1945, 269), Yarim Tepe (Muchajev 1973, Pl.XIII), Ali Kosh (Hole et al. 1969, 189; Fig.82), Choga Safid (Hole 1977, 209), Shimshara (Mortensen 1970, Fig.43,f), Choga Mami (Oates 1969a, 131), Al-Ubaid (Hall and Woolley 1927, Pl.XLVII), Ur Al-Ubaid (Woolley 1955, Pl.14), Al-Uqair (Braidwood 1952, Pl.XXIX lower left), Eridu (Thompson 1920, Pl.VIII), Hajji Muhammad (Ziegler 1953, Pl.35: d,e), Tello (Genouillac 1934, Pl.8:3a-b), Tepe Gawra (Tobler 1950, 202), Ras Al-Amiya (Stronach 1960, 106), Umm Dabaghiyah (Kirkbride 1972, Pl.VII; 1973, Pl.IXc) and Tell El'Oueli (personal observation).

Small regular stones with circular depression on either side (Fig. 81)

These tools are almost circular or oval in shape with small circular depressions in the middle of either side, some are made of limestone or river pebbles. The use of such stones is not quite certain and while they have been interpreted as hammerstone by some excavators (Mortensen 1970, 56), others have refrained from giving any comment on the possiblity of their function (Hole et al. 1969, 199), but it seems most likely that these objects were "presumably for holding some tools such as a bow drill" (Oates 1969a, 131).

Bored stones (Fig. 82)

These weighty bored stones which are thought to have served as digging stick weights or loom weights are known from many sites such as Jarmo (Braidwood and Howe 1960, 45), Hassuna (Braidwood 1952, Fig.7), Telul Eth-thalathat (Egami 1959, Fig.57:10), Al-Uqair (Lloyd 1943, 149; Pl.XVI, lower left). They are also reported from Tepe Sabz (Hole et al. 1969, 196-198) and Choga Safid (Hole 1977, 212-213).

Rubbing stones (Fig. 83:a-d)

All examples bear obvious traces of rubbing.

Stirring rods (Fig. 83:e-g)

These are elongated limestone river pebbles with one end often damaged or broken and smeared with asphalt. It is very obvious that these stone rods have been used to stir boiling asphalt as it was being prepared for use as a mastic. These rods range in length between 12 - 17 cm. No similar objects were reported from Iraqi sites, but they were found at Ali Kosh, Tepe

Sabz (Hole et al. 1969, 192) and Choga Safid (Hole 1977, 210) in the Deh Luran plain in Iran.

Whetstones (Fig. 83:h-j)

These tools are made of round, oblong or elongated pebbles scarred with whet marks resulting from use as stones for sharpening some blade tools.

Similar tools described as slicing slabs were found at Ali Kosh and Tepe Sabz (Hole et al. 1969, 192-196) and Choga Safid (Hole 1977, 210), they were also known from Shimshara (Mortensen 1970, 53).

Door Sockets (Fig. 84:a, b)

These are large and heavy stones, roughly circular in shape made of limestones or large cobbles bearing a socket or some circular depression to fit the swivel-part of the door which accounts for the rotary marks seen on the socket. Several of these door sockets were found in situ in both levels II and I at Abada.

Door sockets were common and found in many sites in Iraq and other areas.

Grooved stones (Fig. 84: c, d)

This kind of tool was represented by two examples only, both made of flat elongated fine black stone; the smaller one bearing two grooves about 2 mm. deep, one on the middle of either surface. The second stone (d) bears only one groove 3 mm. deep made on its slightly concave surface. Such grooved stones might have been used to sharpen some bone implements or could have been, as they used to be called, "shaft smoothers" or "arrow shaft straighteners", possibly also "bead polishers".

Grooved stones are known to have been found in Iraq since the upper palaeolithic period when they were reported from Zarzi (Garrod 1930, Fig.11), and from the proto-neolithic layer at Shanidar Cave (Solecki 1963, Fig.7d) and Zawi Chemi Shanidar (Solecki 1964, 406). They were also reported from Karim Shahir and Jarmo (Braidwood and Howe 1960, 53,45); stones with multiple grooves were known at Tepe Gawra (Tobler 1950, 207).

Mace-heads (Fig. 85)

These tools were made of fine quality of stone and hafted by means of a shaft hole to a wooden sitck; nine specimens were found at Abada, all bearing traces of bitumen around the hole, which obviously was applied to strengthen the fixing of the mace to the handle. Different stones have been worked into mace-heads and the most popular variety seems to have been marble which was either white or grey with white veins; greenstones and fine-grained limestones have also been employed. A variety of shapes were produced such as flat and ovoid (a,b,g), spheroid (c), barrel-shaped (d,e,h) and discoidal (f).

Scepters or mace heads are known from many sites in Iraq since as early as Jarmo (Braidwood and Howe 1960, 45), and they were common during the Ubaid period; they were found at Eridu (Thompson 1920, Pl.VIII), Al Ubaid (Hall and Woolley 1927, Pl.XIII3), Uqair (Lloyd 1943, Pl.XXIV) and they were abundant at Tepe Gawra where about forty were found (Tobler 1950, 203). Some of the Gawra examples such as those illustrated in (Pl. XCVII no.s 2,3,4) are very comparable to the Abada ones such as (g,c,e) respectively, they were also found also at Oueli southeast of Larsa in southern Iraq.

Stone "phallus" (Fig. 86:a)

One example from level I represents an object of phallus-like appearance made of fine-grained black stone. It is closely comparable to similar examples made of bitumen from the same level at Abada (Fig. 93:a).

Stone phalluses which might have had some sort of significance were common at some early prehistoric sites such as Jarmo (Braidwood and Howe 1960, Pl.21, no.11), Tepe Guran (Mortensen 1964, Fig.21), Ali Kosh (Hole et al. 1969, Fig.87), Tell Es-Sawwan (Al-Wailly 1965, Fig.66) and Choga Mami (Oates 1969a, 131). It is obvious that Abada's phallus is more comparable to the examples from Tell Es-Sawwan and Ali Kosh in that the distal end of the penis is pointed, unlike the Jarmo and Guran examples where the glans is very well shown.

Marble Tablets (Fig. 86:b-d)

These are small, rectangular, oval and circular pieces of marble with highly smoothed and polished surfaces. Two varieties of marble were employed, pink and greyish and bearing white veins. Five specimens of these pieces were found. No real function for them could be detected but one possibility, given their thickness, is that they are pieces prepared for the

cutting of pendants and beads. This assumption may be strengthened by the presence of some marble pendants at the site (Fig. 64:a, c) and further support for this assumption could come from the object (d) which represents a small unhollowed bowl-shape made of pink marble, presumbably prepared to be hollowed for use as a bowl.

Palettes (Fig. 86:e)

One almost complete example and fragments of two other palettes were found at Abada. The first one is of a rectangular shape with open ends and very short side-walls, made of fine-grained and well-polished limestone, showing considerable signs of wear and erosion referring to extensive and long use. Traces of red paint are still present on the upper surfaces representing unequivocal evidence of use as a painting palette.

Similar objects were found at Tepe Gawra (Tobler 1950, 207; Pl.XCII a).

Varia

This category includes stone objects of different shapes most of which are of unknown or doubtful function, they are as follows:

Stone Discs (Fig. 87:,d,e)

These are circular or oval-shaped discs with flat or biconvex surfaces made up of flat river pebbles or cobbles. No particular function was indicated since they showed no traces or signs of any kind. The same observation is aplicable to the object (b) which represents an oblong pebble with biconvex surfaces.

Small cones (Fig. 87:g)

The object illustrated here is the lower part of a small cone with tapering end, the operative end broken off, made of veined marble, it was probably used as a muller.

Pecked stone balls (Fig. 87:c)

These are completely spherical balls, pecked from limestone in a very regular shape, the average diameter of these objects ranges between 3 - 6 cm. No obvious traces indicating some

particular function could be seen, but judging from the large numbers of such stones found at the site, one may surmise that they were used as hunting implements similar to the South American bolas. [14] Similar stone balls were found at Jarmo (Braidwood and Howe 1960, 46), Ali Kosh and Tepe Sabz (Hole et al. 1969, 46), Choga Safid (Hole 1977, 214-215), and Tepe Gawra (Tobler 1950, Pl.XCVII b).

Table 9

Occurence of stone objects at Abada

Types	Level III	Level II	Level I	Total
Retouched Hoes	1	2	1	4
Unretouched Hoes	-	1	2	3
Ground-stone chisels	-	1	1	2
Polished celts	3	14	13	30
Stones with circular depressions	4	6	5	15
Bored stones	9	46	33	88
Rubbing stones	5	7	36	18
Stirring rods	-	3	2	5
Whetstones	2	5	3	10
Door sockets	2	6	5	13
Grooved stones	1	1	-	2
Mace heads	-	5	4	9
Phalluses	-	-	1	1
Marble Tablets	-	3	2	5
Palettes	-	2	1	3
Stone Discs	-	4	5	9
Small cones	-	-	1	1
Pecked stone balls	20	71	65	165
Total	47	177	150	324

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[14] Bolas are stone balls wrapped in hide and joined by leather thongs, when thrown at a running animal the bolas immobalizes the animal by becoming wrapped around its legs. (Waechter 1976, 84).

Section J

Bone Artifacts

A total of 49 artifacts of animal bone were recovered at Tell Abada, in addition to a large number of fragments of obviously worked bones.

Various types of worked bone were represented, the largest percentage of which are awls (82%), the remainder consist of perforators, scrapers and spatulas.

1 - Awls (Figs. 88, 89, 90:a, b)

Awls of different types are the most traditional bone tools which have had a wide distribution throughout most prehistoric sites in the Middle East since the 9th millennium B.C., they were found in abundance at Zawi Chemi Shanidar (Solecki 1964, 408), and appeared in considerable frequency in most Ubaid sites in Iraq.

At Tell Abada a total of fourty one awls were found, generally the function of these tools was for piercing, perforating and drilling, four main types of awls can be classified here as follows:

a) - Metapodial awls (Fig. 88:a-g, i; 89:a-c)

b) - Flat splinter awls (Fig. 89:d-h; 90:a, b)

c) - Small spear-like awls (Fig. 90:c, d)

d) - Incised awls (Fig. 88:h)

A single example from level II is made from tubular bone with a highly polished surface bearing decoration in the form of six short grooves diagonally arranged in two rows countering each other. This type of decoration is closely comparable to one on a bone tube from Tepe Gawra (Tobler 1930, Pl.CLXXII, 13). Awls ornamented with incised zigzags were reported from Choga Mami (Oates 1969a, 132).

3 - Spatulae (Fig. 90:c, h, i)

These are long and flat pieces of bone with parallel sides and wide, rounded ends, usually with polished surfaces. The length of these tools ranges from 6.5 - 11.5 cm. and the width from 1 - 1.8 cm. Spatulae were represented in both level II and I at Abada. The spatula (e) is an interesting example which represents a straight bone rounded at both ends one of which is perforated; this example is similar to one from Shimshara (Mortensen 1970, Fig.49 d). Perforated spatulae were found at Hassuna and Sialk I (Braidwood 1952, Figs. 7,6), spatulae were also common at Zawi Chemi Shanidar (Solecki 1964, 408), Hassuna (Lloyd and Safar 1945, 288; Pl.X,2), Yarim Tepe (Merpert and muchajev 1971, Fig.6-h), Ali Kosh (Hole et al. 1969, Fig.93 d), Choga Safid (Hole 1977, 221; Pl.53 j-l). They are also reported from Choga Mami (Oates 1969a, 132), Uqair (Lloyd 1943, Pl.XXIX) and Tepe Gawra (Tobler 1950, 214).

4 - Scrapers (Fig. 90:f-g)

These are relatively large, flat, polished surfaced bones with narrow rounded ends. This kind of tool may have been used in making pottery or obsidian tools or perhaps for detaching hides. The example (f) is provided with a groove running along one edge probably for making the ends of some tools tapered and sharp. No comparable examples were reported from other sites.

Table 10

Occurence and Percentage of Bone Artifacts at Tell Abada

Type	Level III	Level II	Level I	Total	%
Awls	3	19	18	40	82
Ornamented awls	-	1	-	1	2
Spatulae	-	2	4	6	12
Scrapers	-	1	1	2	4
Total	3	23	23	49	100%

Section K

Other Artifacts

In this section we will deal with different objects made of various materials such as gypsum, bitumen and plant fibre.

Gypsum Objects (Figs. 91, 92)

Gypsum was employed to produce some artifacts, as mentioned below.

1 - Plano-convex Discs (Fig. 91)

These are gypsum discs with one face plane and the other convex, they are of different sizes, ranging in diameter between 10 - 40 cm. These discs could have been moulds of some sort, probably for making dishes; and their presence in the buildings of level III which we thought was dedicated to pottery manufacture, might give support to this idea of their function.

2 - Cones (Fig. 92:b, c)

Two conical-shaped objects were found, the large one (b) in level II, measuring 13 cm. in length and 8 cm. at the widest diameter, and the other one (c), which was found in level I, measuring about 10 cm. in length and about 4 cm. in diameter. Both objects are broken near their widest diameter so their original shape cannot be determined, and they may have been a part of some installation inside rooms.

3 - Spheres (Fig. 92:d)

This gypsum sphere is one of the large variety of tokens, and was found in association with other clay tokens in building A of level II (see Section G).

4 - Vessels (Fig. 92:e)

Gypsum is not the most suitable material for making vessels because of its crumbly texture, so it is not surprising that only one example representing a small almost conical-shaped bowl was found. This had a rounded and extra thick base which had been flattened upwards to form the sides with a thin, straight rim.

5 - (Fig. 92:a)

This is the most interesting object, representing a bench of rather rectangular shape measuring 30 cm. in length and 20 cm. in width, with four short, rounded legs. The surface was smoothed all over. This very weighty bench was found placed

against the southern wall of room 11 of building A, level II, and must have been used as a shelf to stand some valuable objects on.

Bitumen Objects (Fig. 93:a-c)

Bitumen and its versatility was manifested in various aspects at Abada, as being a practical and efficient material. It was involved in sickle making as an adhesive for fixing serrated flint blades to hafts, attested by many flint pieces still bearing bitumen traces. It was also used to fill cracks in pottery, this was clear from some examples of big jars which had been repaired with it. A lump of bitumen was found below a stone threshold in room (16) of bulding A, problably also serving an adhesive purpose.

Some objects which were made of bitumen were also found; the most interesting is (a) which is phallus-shaped. Whether it was meant to represent a phallus or a cone with rounded base is really not certain, but bearing in mind the commoness of phallic representation in many neolithic sites in Iraq and the Middle East [15] it is not unlikely that this example was another such. In fact this object is almost similar to a stone phallus from the same level at the site (Fig. 86:a).

Another object which was made of bitumen (b) is of truncated conical shape with a wide rounded hole in the middle. The lower edge of the wider side is pinched all round. The object looks like a spindle whorl, but its real function is not clear. (c) represents a big lump of bitumen shaped in the form of a biconcave disc, of unknown use.

Basketry and Matting Industry

Reeds and rushes were among the material used for roofing houses at Abada, this was attested by large lumps of clay, apparently fallen from rooves, bearing reed impressions. However, wide patches of clay with impressions of basketry or matting were found at both levels II and I. It is noteworthy that both reed and bulrush grow wild today in the vicinity of Tell Abada, and the same may have been the case in ancient times.

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[15] See page 82.

Matting (Fig. 94:a)

Sample (b) as shown impressed on a clay lump was almost identical to a kind still being manufactured and widely used in Iraq today [3] and for exactly the same purpose as that used at Tell Abada.

The material used in making this type of mat was reed which had been longitudinally split with each splint measuring 3 - 6 mm. and woven according to the over-two, under-two twill technique; the same technique had long been known in Mesopotamia since the 7th millennium B.C. as shown by the discoveries at Jarmo (Braidwood 1952, Fig.14; Adovasio 1977, 223-230), and Hassuna (Lloyd and Safar 1945, Fig.38); it was known also at Ali Kosh and Tepe Sabz "Mohammad Jaffer - Mehmeh phase" (Hole et al. 1969, Fig.95) and Choga Safid (Hole 1977, Pls.51,52). It is worth mentioning that the earliest evidence of matting or basketry comes from Shanidar Cave in northern Iraq, in layer B1 which dates back to the ninth millennium B.C.

Basketry (Fig. 94:a)

A patch of gypsum (6.2 x 9.3 cm.) containing an impression of coils has come from level II at Abada, the coils seem to have been made of some fibrous material and joined with each other apparently by wrapping. According to Hodges "In wrapped coil-work the join is made by passing a wrapping completely around adjacent parts of the coil, many different wrappings may be used" (1976, 132).

Although no traces of textiles were found, the possiblity of their existence cannot be ruled out in the light of the abundant presence of spindle whorls at the site.

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[3] This type of matting is called baryah in Iraqi Arabic.

CHAPTER III

The Pottery of Tell Abada

An enormous quantity of pottery was recovered from the stratigraphic excavations at Tell Abada. Most pottery was found in a precise context, although a large number of sherds were found in the fill of each level. A total of some 176,840 potsherds were counted in the field, this figure includes a considerable number of whole vessels, rims and bases and reconstructable sherds, but the greatest number were body sherds some with painted or incised/impressed decoration and some being plain. The later were eliminated in our analysis of the pottery types and excluded in calculating the percentage of each type. The actual analysis was based on the presence of complete types and sherds which allow some understandable reconstruction; only representative forms are illustrated. The quantity of each category is shown in Table 1 and Fig. 95, Schema A. From this table one can also see that the pottery at Tell Abada can be broadly divided into four main categories according to technical characteristics, these are: painted pottery, impressed and incised pottery and plain pottery. Each of these categories will be dealt with level by level, starting from the earliest level on the site.

Section A

The Pottery of Level III

One of the most interesting discoveries at Abada was the recovery of Ubaid I Ceramic types in the earliest level associated with a number of vessels which resemble both Choga Mami Transitional Samarra/Ubaid I types and more classical Samarra pottery. These ceramic types are also found in association with more conventional Ubaid 2 pottery. [1]

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[1] For the purpose of typology in the current work I am adopting the terms first used by Dr. Joan Oates in her succinct analysis of Eridu pottery ("Ur and Eridu, The Prehistory", IRAQ XXII, 1960). Dr Oates has clearly shown that what have been previously called Eridu, Hajji Muhammed, Ubaid and late Ubaid phases, are in fact part of a homogenous culture and "The four phases might best be designated as Ubaid 1-4" (Oates, op.cit., 40). Since then these new terms "Ubaid 1-4" have been widely accepted and used by most Near Eastern archaeologists.

Table 1

Number of sherds and complete vessels found at the sequence of Tell Abada.

Painted Pottery	No. Recovered	Frequency %
a - Black on buff	55,327	52.03
b - Black on cream	30,036	28.25
c - Brown on buff	11,110	10.45
d - Brown on cream	6,184	5,82
e - Red on buff	1,104	1.03
f - Red on cream	2,556	2.41
Total	106,317	99.99

Category	No. Recovered	Frequency %
1 - Painted pottery	106,317	60.86
2 - Impressed pottery	36,893	20.86
3 - Incised pottery	23,878	13.50
4 - Plain pottery	9,7 52	5.51
Gross total	176,840	99.99

1. Transitional Pottery (Figs. 97-99, 100:a)

Among the pottery from the earliest level at Abada are a number of examples which display similarities both to Samarra and to early Ubaid (Ubaid I) ceramic types, a feature that warrants the term "Transitional", a term first used by Joan Oates in describing the pottery found in the uppermost excavated levels at Choga Mami for the same reasons (Oates 1969a, 136;1972, 49;1984, 256). Transitional pottery was also found at Choga Safid in Khuzistan (Hole 1977). At Abada this type of pottery is generally buff often with a cream or orange slip. The paint ranges between dark green, black and dark brown. The paste is well levigated and fine grit tempered. In general the pottery is hard and very well fired. Some of the Abada examples have an obvious connection with Samarra in technique and also maintain very strong affinities with early Ubaid pottery (Ubaid I and 2) in Southern Iraq. The deep, hemispherical bowl (Fig.98:a) is reminiscent of Napfe bowl from the type site (Herzfeld 1930, Nr. 120), the fringe inside the rim is a very characteristic motif on Samarra pottery from the type site (Herzfeld 1930), Baghouz (Du Buisson 1948), Tell Es-Sawwan (Ippolitoni 1970-71), and Choga Mami (Oates 1969). Another version of the same pattern is to be seen on another carinated bowl found in the same level at Abada (Fig. 98:b). Another bowl is decorated with multiple truncated zigzags outside and a wavy line hanging from small triangles in the upper rim, below which, inside the rim, are two other sinnuous lines (Fig. 98:c). This is also a typical Samarran motif found at Samarra, Baghouz and Tell Es-Sawwan.

The wide-mouthed pot with rounded belly and slightly flaring rim (Fig. 97:b) is similar to the Flacher Topf (Herzfeld 1930, p.57). A variety of typically Samarran motifs were found (Fig.99). The chevron, a distinctive Samarran pattern, is most frequent at Abada, and both right and left pointing chevrons were represented. [2] Vertical and diagonal steps (f,g), a rhombus (a), two rows of hatched triangles separated by zigzags in reserve (h) are reminiscent of Baghouz (Du Buisson 1948, Pl.XXII:9), wavy lines and solid triangles alternate with each other in opposition (d).(Fig.99:e) this pattern consists of a combination of a solid diagonal cross and four cross-hatched triangles, it is reminiscent of a similar design from Bakun B11 and Bakun A (McCown 1942, Fig.12:22,24). A basically similar

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[2] Both right and left pointing chevrons were found at Matarrah (Braidwood 1952, Figs.14; 15; 16:11), Tell Es-Sawwan (Al-A'dami 1968, Pl.VI;VII;IX;XIV); Ippolitoni 1970-71, Fig.T:16,17), Baghouz (Du Buisson 1948, Pl.XXIX, XXI), and Choga Mami (Oates 1969a, Pl.XXI: b; Pl.XXXII:11,12).

Interestingly some of the Samarran sites have failed to produce left pointing chevrons on the outside of pots. This fact was noticed at each of Samarra (Tulane 1944:59), Hassuna (Lloyd and Safer 1952, Fig.16:17), and Shimshara (Mortenson 1970).

motif was found at Samarra (Herzfeld 1930, Abb:218). The most distinctive example is the pot illustrated in Fig. 100:a which is very reminiscent of Choga Mami (Oates 1969a, Pl.XXXII:5). Another example which could be considered "Transitional" is Fig.102:c where the relationship to Samarra can be seen in the general shape which is closely comparable to Tiefe Topfe (Herzfeld 1930, 64), while the overall exterior pattern is more related to the Ubaid 2. The hemishperical bowl (Fig.102:d) bears an exterior decoration consisting of a multiple horizontal chevron similar to Samarra (Ippolitoni 1970-71, Fig.R:7). More interestingly, this bowl is reminiscent of an example from Ali Kosh in Deh Luran (Hole et al. 1969, Fig.44:a). The carinated bowl illustrated in Fig.101:a is an interesting combination of Ubaid I/2 in terms of form and exterior decoration, and Samarra-influence in terms of interior pattern, which represents two bands of angular meanders arranged alternatively, forming a running denticulated band. It is noteworthy that meanders are a very distinctive Samarran motif; the base interior is decorated with what must have been a deer or ibex design of which only the long curved horns have survived. An ibex design in the center of open bowls is a common feature of Samarra pottery from Baghouz (Du Buisson 1948, Pl.26-28), Samarra (Herzfeld 1930), and Tell Es-Sawwan (Ippolitoni 1970-71, Fig.o). A similar design which was described as a 'defecating ibex' was found at Choga Mami as an exterior pattern (Oates 1969a, 134; Pl.XXXI:a). Another bowl similar in shape to the last one is Fig. 101:c, its relation to Samarra is shown by the base interior decoration. The interior of the bowl is decorated in brown paint with impaled divided caducenses, as the "wand of Aesculapius" (Herzfeld 1941, 60; Fig.110), this motif was found on a bowl from Choga Mami (Oates 1969a, Pl.XXXII:1) and Eridu XIV (Safer et al. 1981, Fig.90.16). [3] The outside is decorated by diagonal bands running between two horizontal bands, this resembles Choga Mami Transitional (Oates 1968, Pl.XII, 1,3), indeed Abada example (c) is closely comparable in shape to Choga Mami (no.1). Of special significance is the bowl Fig. 101:b which closely resembles a bowl from Choga Safid (Hole 1977, Fig.50:b), in both examples shapes, outside and inside decoration are almost identical.

Sherds seen in Fig.101:d-g can be paralleled with Samarra and Ubaid I styles. The painted triangles associated with multiple zigzags (d) are reminiscent of Choga Mami (Oates 1968, Pl.VII:20,21) while the pendant half loops below are a very common pattern throughout the Ubaid period. Beside Samarra painted ware this level has also produced a few sherds in Samarra-like painted-and-incised style, all are parts of jars. The fabric is grit-tempered but generally a bit coarser than the painted ware. No actual slip has been applied, but the execution is still very good and the finishing is pretty fair. All sherds are buff and very well fired. The paint is either reddish, brown, or very dark green. A variety of incised

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[3] A similar motif was found at Bakun AIII (McCown 1942, Fig.13:121), Tepe Jaffarabad and Susa I (Le Breton 1947, Figs.15:9-10;47:6).

decoration is found, such as chevrons (Fig. 99:k); horizontal and vertical zigzags (Fig. 99:j, k); cross-hatching (Fig. 99:e; Fig. 99:j); diagonal rows of short strokes (Fig. 97:c) and grain-shaped incisions arranged diagonally in a herrring-bone pattern (Fig. 99:i). This type of decoration is very common at Tell Es-Sawwan (Ipolitoni 1970-71, Fig.F:6,9,11; Fig.I:1). [4] Rectilinear and wavy lines were also used. One piece bearing impressed decoration consists of fine horizontal rows of triangular jabs on the upper rim of a jar (Fig. 97:d).

Five jars are shown in Fig. 97:a, c-f: a globular jar with flaring rim (c) bearing painted decoration of chevron design on the neck outside and incised decoration on the shoulder and body. Another jar (d) with globular body and out-turned rim is of special interest since it was decorated with impressed, painted and incised designs. The jars (e,f) are globular with collared neck and plain rim both bearing decoration on the neck and incised decoration upon the shoulders. [5] Decorated low and high-collared jars are characterisitic of early Eridu levels and both Samarra and Hassuna (Oates 1960, 42).

2. The Ubaid I Pottery

As adumbrated earlier, level III at Abada has produced, in addition to the pottery which has been termed "Transitional", a number of pottery types which could be matched with the Ubaid I pottery as it is known from the main Ubaidian site in Southern Iraq (i.e. Eridu XIX-XV). Here it should be pointed out that no identical pieces were found. Nevertheless the similarity between the two groups is close in terms of technique, manufacture, style of design, and general form. At Abada the Ubaid I pottery is buff, well fired, often with buff or cream slip. The fabric is relatively thick measuring about 6-8 mm. and tempered with either grit or fine chaff. The paint is usually dark brown to black or red, sometimes thickly applied giving a glossy appearance. The monochrome painting technique bespeaks a great skill which enabled the potters to manufacture thin pottery with extreme care and apparent taste. A very wide range of geometric decorative motifs were employed such as: chevrons, checkered patterns, zigzags, lozenges, cross-hatching, wavy and straight lines, triangles, circles, herring-bone patterns and a variety of reserve decoration. No naturalistic decoration was found, this was also the case with the Ubaid I pottery at Eridu. Jars, beakers and a variety of bowls are the most common types at Abada. The bowl Fig. 102:a is closely comparable with a bowl from Eridu XVI (Safar et al. 1981, Fig.92:2). The large wide bowl Fig. 102:b, with its elaborate interior decoration, is

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[4] Similar designs were also found at Matarra (Braidwood 1952, Fig.14:8) and Shimshara (Mortensen 1970, Fig.83:f).

[5] Collared jars with painted and incised decoration were found at level IV at Hassuna (Lloyd and Safar 1945, Fig.14:2,3).

reminiscent of some bowls from Eridu XVIII-XIV bearing an attractive painted decoration on their base interior, indeed the checkerboard pattern inside the base of this bowl very much resembles a bowl from Hajji Muhammad. (U.V.B. 1938, Pl.36). Identical decoration on the base interior is to be seen on a bowl from Arpachiya (Mallowan and Rose 1935, Fig.58:4).

The beakers (Fig. 100:b-d; Fig. 103:b) resemble examples from Eridu XVI (Safar et al. 1981, Fig.96:20-22). The jar (Fig. 103:c) is somewhat similar in shape to one from Eridu XIX-XIV (Safer et al. 1981, Fig.72:29A). This jar bears a very characteristic decoration of Ubaid I style, denticulated bands, which can be seen as a typical motif on Samarran pottery and from which the decoration was most likely derived. This denticulated pattern was found at Eridu XVI (Saf r et al. 1981, Fig.96:3; Fig.95:2). The upper half of a high-necked jar (Fig.103:a) is ornamented with a very fine and delicate pattern. The wide open-mouthed bowl (Fig.104:a) is similar in form to examples from Eridu XIX-XII (Saf r et al. 1981, Fig.72:27c). The sides of the bowl are decorated from inside with a broad simple band around the rim followed by two rows of joint triangles running around the sides, the base interior is decorated with perpendicular bands forming small regular squares with decorated zigzags arranged diagonally between two horizontal bands on the outside. Another graceful bowl of Ubaid I style from Abada is Fig.104:b which represents a combination of form and decoration both typical of the Ubaid I type. The two bowls illustrated in Fig. 105 bear the most aesthetic and intricate decoration though they are not very characteristic of Ubaid I. They bear elements that could be assigned to the Ubaid I style, the reserve wavy line running around the rim interior of (Fig.105:a) is reminiscent of a Halaf bowl from Arpachiya (Mallowan 1935, Pl.LXVII:b) while the denticulated pattern is a distinctive pattern of Ubaid I at Eridu. The shallow open-mouthed bowl Fig.106:d, displays a very interesting and extremely elaborate combination of cruciform and centrifugal patterns. The elaborate interior decoration of shallow bowls with a cruciform pattern is one of the most convincing similarities between Samarra and Ubaid I (Oates 1960, 42).

The small and slightly carinated bowl (Fig.106:b) bears a very distinctive decoration: the joined somewhat triangular shapes running around the rim interior, leaving what looks like a large flower in reserve, is very reminiscent of bowls from both Eridu XVII (Safar et al. 1981, Fig.1:17) and Choga Mami (Oates 1969a, Pl.XXXII:2). The Abada example with its solidly painted triangles is more akin to Eridu than Choga Mami's hatched ones. Another hemishperical bowl (Fig. 106:c) is painted with distinctive decoration consisting of a very elaborate pattern covering most parts of the exterior between three horizontal bands running around on each side. Sherds of the same fabic and technique illustrated in Figs. 107-109 show more patterns which can be attributed to the Ubaid I style and can be paralleled by Ubaid I sherds from Eridu. Of special interest is Fig. 107:f, this pattern, which consists of small triangular

shapes in reserve, is very reminiscent of a sherd from Eridu XIX (Safar et al. 1981, Fig.100:10). Reverse decoration was not uncommon on the Ubaid I sherds at Abada (Fig. 108:k-n), the same is true of the Ubaid I repertoire at Eridu (Oates 1960, 35). Another interesting sherd from this level is Fig. 109:b which is decorated with a metope of cross-hatched pattern between horizontal bands. This piece is identical with a sherd from Eridu XVIII and XVII (Safar et al. 1981, Figs.99:10; 98:13,23).

3. The Ubaid 2 Pottery (Hajji Muhammad) (Figs. 110-112)

As already mentioned level III at Abada also produced some pottery in the Ubaid 2 style. This pottery was not abundant and only a few types were represented, some of which continued to be produced during the subsequent levels. Generally speaking this type of pottery is very similar to the well known Hajji Muhammad pottery, some pieces are identical to it and bear all its characteristic features in terms of technique, painting and decorative patterns, as we shall see when dealing with the pottery of level II. It is worth mentioning that no complete specimen of this type of pottery was found in this level, [6] but some significant sherds were available. Bowls and jars seem to have been the most common, each of these two classes was found in a variety of forms. Three types of bowls were represented, these are: (1) wide-mouthed bowls with curved walls and out-flaring rim (Fig.110:b,c,d,i); (2) wide-mouthed bowls with straight or slightly incurved walls (Fig. 110:a,f,h); (3) bowls with slighly out-curved walls and straight simple rim (Fig. 110:e,g). All these types of bowls were decorated in a very distinctive Ubaid 2 or Hajji Muhammad style with typical painted patterns both inside and out. The interiors of the bowls are covered with a variety of patterns quite familiar in the Hajji Muhammad repertoire. The exteriors are less highly decorated and often the decoration consists of only one or two bands (Fig. 110:a,e,g,f), sometimes combined with curvilinear lines in between (Fig. 110:c). Other examples are covered with solid paint (Fig.110:b) which sometimes leaves triangles in reserve (Fig.110:d). The most distinctive characteristic combination of Hajji Muhammad vessel form plus pattern is shown in Fig.110:d which was decorated with a criss-cross of diagonal bands with tiny squares in between, the latter pattern is identical to examples from Eridu XIV (Safar et al. 1981, Fig.100:7; Fig.90:3-5) and Hajji Muhammad (Ziegler 1953, Pl.32a). This last example has exterior decoration very similar to the Abada example (Fig. 110:d). A criss-cross or oblique grid pattern was also found at Ras Al-Amiya (Stronach 1961, Pl.XLIX:2) and Choga Mami (Oates 1984, Fig.6:11-12), another interesting combination of form and pattern which could be attributed to Ubaid 2 is found on the large wide-mouthed bowls with base interior decoration of a sun-burst pattern (Fig.

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[6] The examples illustrated in Fig. 110:a-j were selected for their representative characteristics of the Ubaid 2 pottery from level III at Abada.

110:h, j). These are identical with examples from Hajji Muhammad (Zeigler 1953, Pl.16a), Eridu XIV (Saf r et al. 1981, Fig.91:7,9) and Ras Al-Amiya (Stronach 1961, Pl.L:7). The interior decoration consists of horizontal rows of herring-bone pattern interrupted by solid lozenges (Fig. 110:a), is identical with examples from Hajji Muhammad (Ziegler 1953, Pl.1,13,27,34), and Ur Ubaid I (Woolley 1956, Pl.50:23). Reserve decoration seems to have been common in the Ubaid 2 repertoire at Abada, the bowl Fig. 110:b bearing a nice example of such decoration where the sides of the bowl were covered inside with brown paint leaving a curvilinear pattern in reserve. The interior pattern of bowl Fig. 110:e which consists of small checkers is identical to specimens from Eridu XVIII-VIII (Safar et al. 1981, Fig.99:2,3,20; Fig.98:37; Fig.1:1,5; Fig.95:7,3; Fig.94:10,13; Fig.93:1; Fig.92:12,19; Fig.91:o; Fig.89:23; Fig.83:8). Hemispherical bowls with allover pattern were also found (Fig. 106:a).

Jars of Ubaid 2 style from this level are represented by various forms and sizes, probably the most distinctive type is the jar with a projecting ledge inside the rim (Fig.112:b). Jars with a ledged rim are known at Eridu XVIII and continued to appear regularly until level VIII (Safar et al. 1981, 177). Similar jars were found at Hajji Muhammad (Ziegler 1953, Pl.29:a,b), and Ras Al-Amiya (Stronach 1961, Pl.III:2,8,9; Pl.LIV:1,2,3,6). Small jars with globular body, short neck and out-turned rim (Fig.112:c,d,f) were found. A series of fairly large jars was also present (Fig.112:e). Most common are those with globular body, short neck and out-turned rim (Fig.111:a-d); indeed (b) is similar to examples from Eridu XIX-XIV (Safer et al. 1981, Fig.72:29) and resembles examples from Ras Al-Amiya (Stronach 1961, Pl.LIV:8,9). Jars with apparently globular bodies and heavily out-turned rim occur (Fig. 111:g,h). Fig. 111:e is a jar with a carinated body and straight, slightly out-turned rim, beautifully decorated in dark brown with an attractive pattern. Jars with carinated shoulders and out-turned rim (Fig.111:f) are reminiscent of a type from Hajji Muhammad (Ziegler 1953, Pl.29:f) and Ras Al-Amiya (Stronach 1961, Pl.III:7). In all of these examples the patterns have been nicely executed with lustrous paint in an allover style, a distinctive feature of the Ubaid 2 pottery.

4. Plain Pottery (Figs. 113-114)

Plain potery was represented by only 5% of the total volume discovered throughout the three occupational levels of the site. Consequently the quantity of plain pottery in level III is small. Only a few complete examples along with a very small quantity of sherds were found. However, some of those specimens are of great importance from the chronological standpoint. Two large coarse jars (Fig.113:a-b) resemble a characteristic Hassuna type which is also known from the earliest levels at Eridu (XIX-XIV), (Safar et al. 1981, Fig.72:30). It is interesting to notice that jar (Fig. 113:a) has a small concave base which was a characteristic feature of some vessels from Sialk I

(Ghirshman 1938, Fig.9:6). Of interest are a variety of large and thin carinated bowls made of a very well levigated clay, with a greenish-yellow mien (Fig.113:d-g). It is obvious that this type of bowl (Fig.113:d) is closely related to that known from Ubaid I and 2 levels at Eridu (XIX-XIV) (Safar et al. 1981, Fig.72:24A) or "type 10, the most distinctive pottery form from Hajji Muhammad levels" (Oates 1960, 38; Pl.IV). This type of bowl which was also found at Hajji Muhammad (Ziegler 1953, Pl.15:e) is more or less identical with the Samarra carinated plates "Schussel type a2" (Herzfeld 1930, 12).

The very large coarse ware jars (Fig. 114:a-b) ranging in diameter from 45-55 cms. were probably used for storage purposes particularly for liquids which may have been involved with pottery making, this was suggested by the presence of a layer of bitumen lining the interior of jar (b). These large jars were found in the building which we thought was used for pottery manufacture.

Section B

The Painted Pottery

1 - The Painted Pottery of Level II

The conventional Hajji Muhammad or Ubaid 2 ware which occurred in some quantity in the previous level (III), becomes predominant in level II; however, some vessels which appear to belong to the Ubaid 3 ceramic style also occur. Some types which appeared in level III such as the wide-mouthed, carinated bowls (Fig.110), hole-mouthed globular jars (Fig.111) and the jars with a ledge inside the rim (Fig.112:b) continue in level II.

In general the fabric is buff, occasionally with green cast, pale green, cream, red or pink. The pottery has been tempered with chaff or straw in most cases, the fine ware is grit-tempered. A slip or wet-smoothing has commonly been used on both outside and inside surfaces. Some pieces appear to have been burnished.

The pottery was handmade, monochrome-painted. The paint is black, purple-black, brown, red and orange, each colour may be seen in various shades and this could obviously be due to the

degree of firing and thickness of paint. [7]

A very wide range of decorative patterns were used, a full range of which are illustrated according to their association with the vessel types.

A large quantity of vessel forms were represented. These broadly include a variety of bowls, jars, beakers and chalices, each type is represented by a large number of specimens. Isolated examples of other shapes were also found. Since many of these types were found complete or in accurately reconstructable pieces we have only illustrated these. Numbers and percentages of each type based on the calculation of both complete pieces and significant sherds are charted in Tables 2-3 and Figs. 95-96.

a) Bowls

Bowls were very common at this level at Abada. Various forms were represented, these can be broadly classified into fifteen types as follows:

1 - Bell-shaped bowls (Fig. 115)
2 - Hemispherical bowls (Figs. 120-121)
3 - Hole-mouthed bowls with almost straight or slightly flared sides (Fig. 127:c-g).
4 - Large, deep, hole-mouthed bowls with various profiles (Fig. 129).
5 - Boat shaped bowls (Fig. 134:a-c)
6 - Hole-mouthed bowls with straight sides (Fig. 135)
7 - Large, wide-mouthed bowls with flaring rim (Fig. 139:a-d)
8 - Small, thin-walled bowls with flat base and flaring rim (Fig. 141:a-c).

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[7] In most cases the paint was thickly applied giving a lustrous appearance. Six samples of pigments from painted pottery underwent qualitative analysis by non-dispersive X-ray analysis in the scanning electron microscope. The results were as follows: one (A) being red, and the remainder being dark grey/brown/black. In each case the main component contributing the colour was iron, - the other elements detected being standard clay mineral components, aluminium, silica, potassium, silt, calcium etc. Sample (F) contained a small proportion of manganese (estimated less than 5%) but cannot be considered as a manganese dioxide based black pigment. Sample (B) showed a low trace of chromium.

Sample A. Fe - Iron - only. Haematitie based colour
Sample B. Fe with traces of chromium. Magnetite
Sample C. Fe only. Magnetite brown/black
Sample D. Fe only. " "
Sample E. Fe only. " "
Sample F. Fe with estimated less than 5% Manganese. Magnetite

9 - Large, deep, carinated bowls (Fig. 143:a,c)
10 - Small, wide-mouthed carinated bowls (Fig. 144)
11 - Large, deep bowls with bulging body, concave shoulders and slightly out-turned rim (Fig. 146)
12 - Concave-shouldered bowls (a very fine version of the above-mentioned type) (Fig. 148)
13 - Small, deep, hole-mouthed bowls (Fig. 150)
14 - Large, wide-mouthed bowls with interior patterns (Fig. 152-157)
15 - Pedestal bowls (Fig. 158)

Type 1: Bell-shaped bowls (Fig. 115).

The rim diameter is at least twice the height and ranges from 11 - 16 cm. The bowls are distinguished by their thin, highly fired walls, the thickness of which is between 2 - 4 mm. at mid-section. These bowls were very common at both levels II and I at Abada as they were at other Ubaidian sites in Iraq (Fig. 267). The decoration of these bowls shows a rich variety of motifs which seem to have involved almost the entire exterior surface of the bowl. A full range of these motifs is illustrated in Figs. 116-117. Interior decoration is usually confined to a plain band running around the upper rim.

Type 2: Hemispherical bowls (Figs. 120-121).

These range in diameter from 12.5 - 16 mm. A variety of rim types are represented: rounded (Fig. 120:d), bevelled (Fig. 120:e), flat (Fig. 120:c,f,g), plain, beaded (Fig. 120:a), or slightly incurved (Fig 121:d, v). Two fabrics occur, a very thin, hard fired and a very well levigated ware (Fig.121:a,b,d,h,i,). The thickness of the former ware ranges between 2 - 2.5 mm., the latter between 3.5 - 4 mm. The type of bowl illustrated in Fig. 120:a, b, d is known from Hajji Muhammad (Ziegler 1953, Pl.28:d) and Ras Al-Amiya (Stronach 1961, Pl.XLIV:5). Indeed (Fig. 120:a) closely matches the example from Hajji Muhammad while (Fig. 120:b) is more comparable to that from Ras Al-Amiya. Various decorative motifs were used such as solid circles encircled by dots (Fig. 121:g-i). Bowl (Fig. 121:c) bears a very interesting decoration consisting of two different lozenges one on each side of the bowl. A full range of the painted motifs can be seen in Figs. 122-123.

Type 3: Hole-mouthed with almost straight, or slightly curved sides (Fig. 127:c-g).

Most bowls of this type are extremely fine, thin walled hard-fired and very well levigated. Bowls (d,e) were decorated

with Halaf-like patterns [8] which seem to have continued to be used during the Ubaid period. [9] Other bowls were decorated with patterns familiar in the Ubaid period (c,e,f,g,i). Comparable shapes appear at Deh Luran - Susiana Black-on-Buff pottery - (Hole et al. 1969, Fig.55) and other sites in Iraq (Fig. 267).

Type 4: Large, deep, hole-mouthed flat based bowls (Fig.129)

All these bowls were found associated with child burials. Diameters range between 28 - 47 cm. and height from 25 -48 cm. The bowls' profiles can be classified as follows:

1 - Rounded sides and diagonal flattish rim (a, b, d)
2 - Rounded body and straight rim (c, e)
3 - Rounded body and beaded rim (f).
It is noteworthy that this bowl is the only specimen of its kind with no parallels known from other Ubaid sites.
4 - Out-turned sides and flat base (g,h).
The decoration on most of these bowls is confined to the upper third of the body and consists of designs usually associated with hanging loops, a motif familiar to Hajji Muhammad (Ziegler 1953, Pl. 37b:78-81). Wavy lines and reserve decoration were also found. A full range of patterns associated with this type of bowl is illustrated in Fig. 130.

Type 5: Boat-shaped bowls (Fig. 134:a, c)

These peculiar vessels are boat-shaped with a U-shaped section and either straight-out-turned sides (a) or concave sides with flaring rims (b, c). The bases are almost flat. This type of vessel seems to have first appeared during the Halaf period at Arpachiya (Hijara 1980, Pl.LXXVI, layers 13-12, No.529).

It was found at T.Gawra XVIII-XX and described as being a scoop which "may have been used in that manner to obtain liquids or other substances from skins or any kind of large

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[8] Lozenge shapes filled with dots (Fig. 127:d) can be seen on Halaf sherds from the type site (Oppenheim 1943, Pl.III:16;Pl.XLII:17). The solid circle rung by small dots (Fig.127:e) is similar to one on a Halaf bowl from Arpachiya (Mallowan and Rose 1935, Pl.XVIII; Fig.58:4; Fig.76:2), and T.Gawra (Tobler 1950, Pl.LXVIIa:16; Pl.LXIXb:20).

[9] The last motif was found at Ras Al-Amiya (Stronach 1961, Pl.LIX:2; Pl.XLVI:4), Eridu XII (Safar et al. 1981, Fig.88:4), T. Ubaid (Hall and Woolley 1927, Pl.XVI:1641), Ur Ubaid I (Woolley 1956, Pl.48:19) and Nuzi (Starr 1937, Pl.48:HH).

container" (Tobler 1950, 137; Pls.LXXIII:e; CXXIII:112; CXXV:145,147). Similar examples were found at H.Muhammad (Ziegler 1950, Pls.21b;22:b) and Ras Al-Amiya (Stronach 1953, Pl.LI:13). Abada's examples are closest to those from Hajji Muhammad.

Type 6: Wide-mouthed bowls with straight sides (Fig. 135)

These are rounded bowls with almost straight sides with simple rims. The bases seem to have been either flat or slightly rounded. They are very well-finished, and beautifully painted with attractive geometric motifs, some of which appear for the first time in this level and were not represented at any Ubaid site before. The range of variation in the painted designs is illustrated in Fig. 136.

Type 7: (Fig. 139:a-d)

These are large wide-mouthed bowls with flaring sides and rims ranging in diameter between 20 - 40 cm. Bases seem to have been rounded in most cases, flattish bases were also found (c). A variety of decorative motifs are associated with this type of bowl, most of which are known from other Ubaid sites, such as running lozenges either solid (c) or blank (d), and hanging triangles interrupted at intervals (b) [10] and running fishes (a) [11] This type of bowl is similar to some examples of type 13 of Ras Al-Amiya (Stronach 1961, Pl.XLVII) 6 and 7 are closely comparable to d and e respectively). A full range of motifs associated with this type of bowl is to be seen on Fig. 140.

Type 8: Small, thin-walled bowls with flaring rims and flat bases (Fig. 141:a-c).

This type of bowl is similar in profile to the above-mentioned type, having flaring sides and flaring rims, but is distinguished by an almost flat base and thin walls the thickness of which ranges between 2.5 - 4 mm. at mid-section. Rim diameter ranges between 12 - 16 cm. The bowls display patterns more akin to the Ubaid 2 style. A full range of the decorative motifs which are found in association with this type can be seen in Fig. 142.

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[10] This kind of pattern is known from Tepe Gawra XX-XVII (Tobler 1950, Fig.83,84,85,97).

[11] A fish pattern appeared on Samarran pottery from the type site as an isolated element (Herzfeld 1930, Pl.XVII:259), and at Tepe Gawra XVII (Tobler 1950, Pl.LXXV:C). A very interesting and beautiful pattern representing multiple rows of running fishes was found on a piece of a jar from the Ubaid context at Choga Mami (unpublished).

Type 9: Large, deep carinated bowls (Fig. 143:a, c).

Two kinds of profiles are represented; in bowl (a) the walls tend to lean inwards immediately after the carination, while in (c) they rise vertically above the carination and then gradually flare towards the rim. The diameter of the rim is a little greater than the height of the bowl and the base is flat. These bowls are decorated with an allover style. The pattern on (a) is reminiscent of a Halaf motif from Arpachiya (Mallowan and Rose 1935, Pl.XV). The pattern on bowl (c) is reminiscent of Ur Ubaid I (Woolley 1956, Pl.46:a).

Type 10: Small carinated bowls (Fig. 144).

These are relatively small, with a sharp carination of the lower third of the bowl. The diameter ranges between 12 - 18 cm. and the depth between 5 - 7 cm. The walls tend to be either straight (a-c), or curve slightly inwards (d,g), or slightly outwards (e,f). The base is usually flat.

These nice, fully decorated carinated bowls have no comparable counterparts elsewhere as far as the form is concerned, but bowl (Fig. 144:f) is reminiscent of examples from Tell El Oueili (Lebeau 1983, Pl.6:4,5). The decoration on these bowls is known from other contemporary sites in Iraq and Iran [12] The range of variation of painted patterns is to be seen on Fig. 145.

Type 11: (Fig. 146).

These are large, deep bowls with bulging bodies, concave shoulders and out-turned rims. The bases are most probably rounded. The fabric is ordinary, generally buff with cream slip. The rim diameter ranges between 22 - 30 cm. The depth is between 15 - 20 cm. Decoration on these bowls finds its closest counterparts among the Hajji Muhammad repertoire; [13] most

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[12] The pattern on bowl (a) resembles that from T. Uqair (Lloyd and Safer 1943, Pl.XXB:14), and Serik (Oates 1968, Pl.VI:2). The pattern on (b) is known from Sialk III (Ghirshman 1938, Pl.XLVIII A9), (c) is reminiscent of Giyan VA (Contenau and Ghirshman 1935, Pl.42:12). A similar motif to (d) was found at Bakun BII (McCown 1942, Fig.11:60), (e) is known from Bakun AIV (Langsdorff and McCown 1942, Pl.47:8).

[13] A) The solid horizontal zigzag (Fig.146:b) is similar to Hajji Muhammed (Ziegler 1953, Pl.15:a). B) The combination of a criss-cross pattern and solid zigzag (Fig.146:g) is closely comparable to Hajji Muhammed (ibid, Pl.6:c). C) Two bands crossed diagonally in a reserved rectangular shape is reminiscent of Hajji Muhammad (ibid, Pl.22:b,c) and resembles Ras Al-Amiya (Stronach 1961, Pl.XLVI:5).

common seems to have been the zigzag pattern depicted in different forms (a,b,c,d,h) and (Fig. 147). Very interesting is the zigzag (a) combined with diagonal bands and snake motifs. Equally interesting are the multiple striped chevrons vertically arranged one above another.

Type 12: (Fig. 148).

These bowls are very similar to the last type, but the fabric is extremely fine, very well levigated, thin and hard-fired. The examples are beautifully decorated with motifs generally common to the Ubaid 2 style with Halaf influence such as rows of circles (b) which can be found at Hajji Muhammad (Ziegler 1953, Pl.37d:136), Ras Al-Amiya (Stronach 1961, Pls.XLII:8; LIX:1,3), Arpachiya (Mallowan and Rose 1935, Figs.64,65) and Tell Halaf (Oppenheim 1943, Pl.XI:6). Comparable patterns were also found at Nuzi (Starr 1937, Pl.48: JJ2,KK) and Tepe Sabz (Hole et al. 1969, Fig.62:g). Bowl (d) was nicely decorated with dot-tipped star placed within a square in reserve. This motif was found at Hajji Muhammad (Ziegler 1953, Pl.37d:141) and other Ubaid sites in Iraq. The close-style pattern so characteristic of the Ubaid 2 style appears on bowl (a) where the pattern is neatly executed in a way which is more reminiscent of the Ubaid I ceramic style. The reserve pattern seen on bowl (f), which consists of two pairs of bands crossing each other diagonally leaving four triangles in reserve, is reminiscent of Samarra (Herzfeld 1930, Fig.79), Baghouz (Du Buisson 1948, Pl.XXVIII:2a), and a Samarran sherd at Hassuna (Lloyd and Safar 1945, Fig.16:21) and Hajji Muhammad (U.V.B. 1937, Pl.37a). A full range of the variation of the painted motifs is shown in Fig. 149.

Type 13: (Fig. 150:a-e).

These are small, deep, bowls with either rounded or flattish bases. The sides are either slightly flared (b-d) or slightly inturned (a,e). These bowls are decorated with allover patterns the most attractive of which consists of vertical zigzags in reserve (d). This pattern is somewhat reminiscent of Ur Ubaid I (Woolley 1955 , Pl.50:17). The wavy line in reserve (e) is similar to one from Hajji Muhammad (Ziegler 1953, Pl.37:125). A full range of the painted designs are shown in Fig. 151.

Type 14: Open, carinated bowls with interior and exterior decoration (Fig. 152-157).

These are generally large, open bowls with flaring sides which join the base in some kind of carination. The base itself being either flat or slightly rounded. At Abada, as was the case at Ras Al-Amiya, the interior patterns on these bowls "mostly share the shape and the patterns of similar vessels from Hajji Muhammad" (Stronach 1961, 113), also this type of vessel "is one

of the most characterisic and abundant vessels of the Khazineh and early Mehmeh phases" (Hole et al. 1969, 144; Fig.56,57).

At Abada this type of bowl was common. Several examples with different profiles were found and relatively deep and shallow bowls were represented. Like the ones from Hajji Muhammad and Ras Al-Amiya, some examples have a rim diameter of nearly 50 cm. These bowls bear painted decoration both inside and out.

Exterior decoration generally consists of a single broad band or bands running around the upper rim, and sometimes found in association with other decorative elements (Fig. 153:a; Fig. 156:a,d). Some examples were densely covered with paint leaving geometric shapes in reserve (Fig. 152:a,b). Of special interest is the exterior pattern on bowl Fig. 152:b which shows triangles in reserve. This pattern is very similar to Hajji Muhammad (Ziegler 1953, Pl.14; Pl.15:c) and Ras Al-Amiya (Stronach 1961, Pl.XLVIII:2). The pattern on bowl Fig. 154:b which consists of two rows of triangles running horizontally around the upper half of the bowl, is reminiscent of decoration on a Halaf bowl from Arpachiya (Mallowan and Rose 1935, Pl.XV).

Interior decoration is rather interesting. In each example the pattern covers the entire surface inside the bowl. The interior of the rim is covered with a variety of painted designs such as the grid pattern of oblique bands leaving tiny squares in reserve (Fig. 153:a-c). This pattern is the most characteristic feature of Hajji Muhammad style (Oates 1960, 35; Adams 1981, 302). Identical patterns on similar types of bowls were found at Hajji Muhammad (U.V.B. 1937, Pl.36; Ziegler 1953, Pls.14,15) and Eridu XIV (Safar et al. 1981, Fig.90:3-5), Ras Al-Amiya (Stronach 1961, Pl.XLIX:2) and Choga Mami (Oates 1984, Fig. 6:11, 12). This pattern was also found at Tepe Sabz (Hole et al. 1969, Pl.56:d,e;Pl.57:p). The star-shaped pattern in reserve bands (Fig. 153:a) is reminiscent of an example from Eridu XIV (Safer et al. 1981, Fig.91:4). Decoration on the rim interior of bowl Fig. 154:a which consists of zones of concentric circles is reminiscent of a pattern on Halaf bowls from T.Gawra XIII (Tobler 1950, Pl.CXIII:28). Bowls decorated with the 'sunburst' or 'rosette' (Fig. 152:b) seem to have been very popular in level II at Abada. Identical bowls were found at Hajji Muhammad (Ziegler 1953, Pl.16:a), Eridu XIV, XIII (Safar et al. 1981, Fig.91:7,9;Fig.89:20) and Ras Al-Amiya (Stronach 1961, Pl.XLVIII,2; Pl.XLIV:1,2). It is interesting that the first example from Ras Al-Amiya is very similar to that from Abada in terms of shape and pattern. Similar patterns were found at Serik (Oates 1968, Pl.BI:5) and Tepe Sabz (Hole et al. 1969, Fig.56:b,d). This particular pattern seems to have continued till later Ubaid times when it was found at Tell Al-Ubaid (Hall and Woolley 1927, Pl.XVI) and Ur Ubaid (Woolley 1955, Pl.46:1). The bowl Fig. 154:c bears an attractive decoration consisting of a series of wavy lines displayed in opposing directions within four quarters on the base interior and surrounded by a solidly painted band. This pattern is very similar to one from Ras Al-Amiya (Stronach

1961, Pl.L:7) and resembles an example from Tepe Jowi (Le Breton 1947, Fig.23:a). The pattern on the base interior of bowl Fig. 152:a is reminiscent of a Halaf design from Arpachiya (Mallowan and Rose 1935, plXVII,b; Fig. 55:a). The interior decoration on Fig. 155:a is reminiscent of a design on a similar bowl from Eridu XIV (Safar et al. 1981, Fig. 90:3). The pattern on the base interior of bowl Fig. 153:b in which the circle is equally divided into two different designs is very interesting. The interior decoration on Fig. 156:a is very reminiscent of the striped leaf-shaped pattern on a bowl from Serik (Oates 1968, Pl.IX). It is useful to refer here to the discovery of a bowl which is the first of its kind found so far in an Ubaidian site (Fig. 156:c). It is characterised by the presence of a projecting ledge running inside the upper part just below the rim. Whether this ledge served a particular function, supporting a lid for instance, or was merely a decorative addition is not known. Of particular interest are those bowls decorated with a variety of hanging loops on the upper interior rim (Fig. 157) as similar bowls were found at Ras Al-Amiya (Stronach 1961, Pl. LI.1, 6, 9), Hajji Muhammad (Ziegler 1953, Pl.12), Eridu XIII (Safar et al. 1981, Fig. 88:5) and Choga Mami (Oates 1984, Fig. 5:12).

Type 15: (Fig. 158)

Pedestal bowls are very rare among the Ubaid pottery from Abada, however, two interesting examples were found. (a) is wide-mouthed, thick-walled with out-turned sides and a grooved upper rim. The pedestal itself is broken, but it seems obvious that the base exterior is decorated with a wheel-shaped pattern. The entire surface outside was covered with greenish black paint leaving large triangles in reserve running around the periphery. The upper grooved rim was also painted. The inner walls bear red traces of some sort. Decoration on both the exterior walls and lower face is of Ubaid 2 tendency which was attested at Hajji Muhammad (Ziegler 1953, Pl.21:a,b; Pl.25:e). Fig.158:b is a unique bowl of another type of pedestal, a high, projecting ring.

b) Jars (Level II)

Various jars were found in level II at Abada. These were carefully made and beautifully decorated with a variety of painted patterns. Geometric designs were predominant, but natural representations were also present. Reserve decoration was widely practiced. A full range of the decorative motifs associated with jars from this level are illustrated with the related types.

Jars from this level can be divided into nine types as follows:

1 - Lugged jars (Figs. 168-171:a-f)
2 - Handled jars (Fig. 171:g-j)
3 - Interior-ledge-rim jars (Figs. 174-175)
4 - Necked jars (Fig. 177-179)
5 - Small carinated jars (Fig. 185)
6 - Spouted jars (Fig. 188)
7 - Large, storage jars (Fig. 190:a-e)
8 - Globular jars with short neck and out-turned rim (Fig. 191:a-e)
9 - High-necked jars (Fig. 191:f)

Type 1: Lugged jars (Figs. 168-171:a-f).

These are globular-shaped jars of various sizes, provided with four small lugs usually distributed at regular intervals on the upper shoulder of the jar. The lugs are perforated either horizontally or vertically. All the specimens are distinguished by a very short, out-turned, neck. Bases may be either flat or rounded, the latter seems more probable with the large specimens. These jars were neatly painted with a variey of designs some of which were known from Hajji Muhammad and other Ubaid sites. [14] Indeed the combination of zones of different motifs seen on some jars (Fig. 170:a-d; Fig. 171:a-d,f) is reminiscent of T.Gawra XIX-XVI in terms of execution and style of painting, but Abada's specimens are neater and the paint more lustrous. 'V'-shaped motifs in a free field (Figs. 168:a, f; 170:b) are reminiscent of Ras Al-Amiya (Stronach 1961, Pl.LVIII:10), T.Gawra XVII (Tobler 1950, Pl.LXXIVb:14-16) and Choga Mami (Oates 1984, Fig. 5:4). The last motif together with that on Fig. 171:f are both of Halaf inspiration and can be paralleled at Arpachiya (Mallowan and Rose 1935, Fig.64:2 and Fig.60:2).

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[14] The painted motif on Fig. 168:b is similar to H.Muhammad (Ziegler 1953, Pl.37:65-67) and Ras Al-Amiya (Stronach 1961, Pl.LVIII:14) and Choga Mami (Oates 1984, Fig. 4:6). Impaled oval-shaped patterns in reserve (Fig. 168:d) are identical to H. Muhammad (ibid, Pl.37d:134). Hanging loops (Fig. 170:a,c) is another common pattern at H. Muhammad (ibid, Pl.37b:78,79). Opposing rows of alternating triangles (Fig. 169:a) are known from H. Muhammad (ibid, Pl.37b:55), Ras Al-Amiya (Stronach 1961, Pl.LVII:22), T.Gawra XIX, XVIII (Tobler, Pl.LXICb:16;Pl.LXXb:12), and T. Ubaid (Hall and Woolley 1927, Pl.XVIII:1807). An identical motif was found in the Halaf well at Choga Mami (unpublished).

Type 2: Handled jars (Fig.171:g-j).

These are large jars with a globular body and short, out-turned neck similar to the last type but provided with looped handles set either on the upper shoulder or immediatly below the neck. Loops in most cases were painted with horizontal or diagonal stripes. Some examples had no decoration. Striped handles were first found in the Samarra period at Baghouz (Du Buisson 1948, Pl.X XIII) and reported from T.Gawra XIII (Tobler 1950, Pls.CXXX:223). They are also known from the Bayat phase at Tepe Sabz (Hole et al. 1969, Fig.63:h).

Type3: Interior-ledge-rim jars (Figs. 174-175).

These are large, globular, hole-mouthed jars with a ledge inside the rim presumably for supporting a lid. The ledge was sometimes pierced, probably to be connected by string to the lid which was probably perforated also. This type of jar is known from Eridu XVIII-VIII (Safer et al. 1981, Fig.72:73), H.Muhammad (Ziegler 1953, Pl.29a,b), Ras Al-Amiya (Stronach 1961, Pl.LIV: I-J,6), Arpachiya (Mallowan and Rose 1935, Fig.38:1) and Choga Mami (Oates 1984, Fig. 6:5) and other Ubaid sites (Fig. 267).

Ledged jars made their first appearance during the Ubaid period in Iraq and some contemporary sites in Iran such as Tepe Sabz (Mehmeh phase) in Deh Luran (Hole et al. 1969, Fig.58) which suggests they may be a typical Ubaidian feature. Designs associated with this type of jar are common within the Ubaid 2/3 repertoire (Fig. 176).

Type 4: Necked jars (Figs. 177-179).

These are globular jars with a short everted neck springing directly from the shoulder. The base could either be rounded or slightly flattened. The decoration on these jars shows a wide variety of patterns some of which reflect Halaf influence such as that on (Fig. 177:f, g). The motif on (Fig. 178:f) is identical to one on a Halaf jar from T.Gawra (Tobler 1959, Pl.CXVI:57). Of interest is the large jar (Fig. 177:a) which is decorated with a beautiful design showing a representation of a natural and geographic nature: birds flying in an open space above what may be hills behind which flows a river, indicated by wavy lines. The outer rim of the jar is grooved. [15] The jar, (Fig. 178:n) is remarkably decorated with a cross-hatched circle within a circle in reserve; next to it there is another pattern which

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[15] This type of rim is very rare at Abada; only two examples were found, in addition to the above-mentioned one (Fig. 266:d).

looks like a lanceolate motif in reserve.

Type 5: Small carinated jars (Fig. 185).

These are relatively small jars with an elongated body, flat base and short out-turned neck. The upper two thirds of the body is painted dark brown. The decoration consists of rectilinear and curvilinear patterns. Reserve decoration was also used.

Type 6: Spouted vessels and spouts (Fig. 188).

Spouted vessels of various types occurred in this level at Abada. Many types of detached spouts were found. [16]

Various sizes of spout were found. The lengths range between 4.5 - 8 cm. Shapes vary also, the most popular type seems to have been the Trumpet-shaped spout (a,f,h,j-l). [17] Cylindrical spouts (b,c,d) and tabular ones (e) were also found. Spouts were either entirely or partially painted. Some examples were in plain ware (c,k) but these could have belonged to painted vessels.

Spouted vessels seem to have first appeared during the Halaf period (Mallowan and Rose 1935, Fig.79:5), and continued to be used during the Ubaid period where they were found in a number of sites (Fig. 267).

Type 7: Large storage jars (Fig. 190:a-e).

These are very large, globular or oval-shaped jars with short out-turned necks and either rounded or flat bases. The body diameter exceeds 50 cm. in most cases. These jars are nicely decorated with allover painted designs, sometimes covering the entire exterior from rim down to base (Fig. 190:b).

Extra large, very thick, coarse, heavily tempered with chaff, and cursorily painted examples were also found.

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[16] The only reconstructable spouted vessel represents a deep bowl with a trough spout (Fig. 188:g). Bowls with trough spouts in both plain and painted pottery are known from the Muhammad Jaffer and Sabz phase in Deh Luran (Hole et al. 1969, Fig.43:o-r; Fig.44:c).

[17] It is essential to point out that this type of spout is usually associated with Lenticular or "Tortoise-shaped" vessels.

Type 8: Globular jars with short neck and out-turned rim (Fig. 191:a-e).

These are generally large globular jars similar to type 4 but possessing a short straight neck and prominent out-turned rim. Jars of similar type were found at Ras Al-Amiya (Stronach 1961, Pl.LIV:8) and as was the case with the later site, Abada's examples exhibit early looking designs. The arrangement of triangles (Fig. 191:a) was known as early as the Samarra period [18] and Halaf; [19] it is also found at H.Muhammad, [20] Eridu XIV [21] and Sialk III. [22] The running cross-hatched lozenges in reserve (Fig. 191:b) are reminiscent of a Halaf design from Arpachiya. [23]

Type 9: High-necked jars (Fig. 191:f).

This is the only example that comes under this heading. It is the upper part of a nicely painted jar with a relatively long, out-turned neck and apparently globular body. It is reminiscent of a jar from H.Muhammad (Ziegler 1953, Pl.29:c), more interesting is that the the jar from Abada is decorated on its neck with a typical H.Muhammad design (ibid, Pl.37b:71,72) and thus shows a classic combination of both form and pattern of the Ubaid 2 style.

2 - The Painted Pottery of Level 1

The upper level at Tell Abada produced a large quantity of painted, impressed/incised, and plain pottery. Numbers and percentages of each type calculated from both complete and reconstructables sherds are charted in Table 2-3 and Figs. 95-96, Schemas 2-3.

The painted pottery from this level displays all the typical features of the Ubaid 3 phase from well known Ubaid sites elsewhere. A very wide range of forms and decoration were represented. Close-style decoration still occurs in considerable quantity. A perfunctory and concise style also appeared. New forms now appear while other shapes present in earlier levels continue to be produced.

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[18] - McCown 1942 (Fig.12:86)
[19] - Mallowan and Rose 1935 (Fig.87:a).
[20] - Ziegler 1953 (Pl.37a:22).
[21] - Safar et al. 1981 (Fig. 91:6).
[22] - Ghirshman 1938 (Pl.LXXXIId).
[23] - Mallowan op. cit. (Fig.72:3).

In general the fabric is very good. Fine grit was commonly used for tempering. Chaff or straw tempered ware were also found. Slip and wet-smoothing are not uncommon. The paint is black, light or dark brown, red and green. A large proportion of thin, very hard, over-fired ware was found. The Hajji Muhammad or Ubaid 2 ceramic style occurs on a limited scale.

a) Bowls

Bowls were numerous at this level and many types are present. Types 1-9 of the last level continued to be produced, while types 10-15 are no longer found. However, new types were emerging (Types 16-24). In general bowls from this level at Abada can be classified as follows:

1 - Bell-shaped bowls (Fig. 118)
2 - Hemispherical bowls (Figs. 124-125)
3 - Bowls with almost straight and flared sides (Fig. 127:a,b)
4 - Large, deep bowls (Figs. 131-133)
5 - Boat-shaped bowls (Fig. 134:d,e)
6 - Hole-mouthed bowls with straight sides (Fig. 137)
7 - Large, wide-mouthed bowls with flaring rim (Fig. 139:e, f)
8 - Small, thin-walled bowls with flat base and flaring rim (Fig. 141:d,e)
9 - Large, deep carinated bowls (Fig. 143:b)
16 - Deep, hole-mouthed bowls with broad ornamented rim (Figs 131:f, i; 160-162)
17 - Bowls with flat base and sharply incurved rim (Fig. 163:a-b)
18 - Bowls with rounded sides and flat base (Fig. 163:d-h)
19 - Wide-mouthed bowls with bold sweeping interior design (Fig. 164).
20 - Deep, carinated bowls (Fig. 165)
21 - Basins (Fig. 166:a,b)
22 - Hole-mouthed bowls with rounded or flat base (Fig. 166:c,e)
23 - Miniatures (Fig. 167:a,c)
24 - Miscellaneous Bowls (Fig. 167:d-i)

Type 1: Bell-shaped bowls (Fig. 118).

These are similar to those of the last level, but they are more common here and are represented by two versions; a thin, hard fired group of very well levigated fabric which constitutes the larger proportion, and ordinary fabric. Of special interest is the very thin-walled bowl (e) with a rounded base decorated with a maltese cross placed within a circle. The position of this decoration on the base may support the idea that these bowls were viewed in an inverted position (Tobler 1950, 134).

Type 2: Small, deep hemishperical bowls (Figs. 124-125).

This type of bowl was the most numerous. It is hole-mouthed with curved sides and either flat or rounded base. A variety of patterns were used to decorate these bowls Fig. 125:a, b bear patterns identical to examples from H. Muhammad (Ziegler 1953, Pl.37a:24,28). Others are decorated with simple curvilinear and/or rectilinear patterns. A beautiful combination of both naturalistic and geometric elements occurs on Fig. 125:c. This type of bowl seems to have been widespread and very common at other Ubaid sites (Fig. 267).

Type 3: Straight-sided bowls (Fig. 127:a,b).

These are similar to the same type from the last level, but the fabric in these two examples is better levigated and hard-fired. Exterior and interior surfaces are very well smoothed. On the other hand, bowl (a) is poorly painted with a motif reminiscent of H.Muhammad (Ziegler 1952, Pl.37a:43). The other bowl (b) also bears a pattern similar to one from H.Muhammad (ibid, Pl.37b:51).

Type 4: Large, deep bowls (Figs. 131-133).

These are rather large, deep, thick-walled pots with a diameter ranging from 20 - 50 cm. hole-mouthed and with a flat diagonal rim which sometimes bears simple decoration (Fig. 131:a,c, e-g; Fig. 132:a-f). The base is flat in most cases, though rounded bases also occurred. Most of these large bowls were simply decorated with single or double bands running around the upper rim and the lower part of the pot. Curvilinear decoration (Fig. 133:a) and a snake motif (Fig. 132:d) were also found.

Type 5: Boat-shaped bowls (Fig. 134:d,e).

These have a flat base and straight sides, similar to ones from the last level (Fig. 134:a-c), but the decoration here is rather naive and simple. Bowl (d) is reminiscent of an example from T.Gawra XVIII (Tobler 1950, Pl.XXIII:c). Bowl (e) was fully covered with black paint on the exterior.

Type 6: Hole-mouthed bowls with straight sides (Fig. 137).

These are similar to examples from the last level. Some patterns associated with these bowls are reminiscent of the Halaf repertoire, such as lines of connected solid circles

(a) [24] and hatched lozenges (b). [25] An attractive design is to be seen on bowl (c). The design on bowl (f) is similar to H. Muhammad (Ziegler 1953, Pl.3:k) and Tepe Jowi (Le Breton 1947, Fig.23:7). The serrated circle (b) is reminiscent of Al-Ubaid (Hall and Woolley 1927, Pl.XVI:1621).

Type 7: (Fig. 139:e,f).

These are large, wide-mouthed bowls with an almost rounded base and flared sides; they are similar to examples from the last level but with less attractive decoration.

Type 8: (Fig. 141:d,e)

These are similar to the above-mentioned type but are of very fine fabric, hard fired and thin-walled. As was the case with their counterparts in the last level (Fig. 141:a-c), they are painted in an allover style with beautiful designs of Ubaid 2 appearance.

Type 9: (Fig. 143:b).

This hole-mouthed, large, deep, carinated bowl is similar to an example from level II (Fig. 143:a) but is decorated in a simpler style.

Type 16: Deep bowls with broad overhanging decorated rims (Figs. 160-162; Fig. 131:f,i).

This type of bowl can be separated into three subtypes based on differences in size, shape and rim form. A - Relatively small, almost hemispherical with rounded bases (Fig. 160:a,b; Fig. 161:d,f,g; Fig. 162:a-d,g-h,j). In all these specimens the rims were nicely ornamented with a variety of motifs and reserve decoration seems to have been the favourite style. Of special interest is the bowl (Fig.160:a) for it is the only one of this type bearing interior decoration. The diameter of these bowls ranges between 10 - 15 cm. B- Medium sized bowls (Fig. 161:a-e) which are similar to the last subtype in terms of general shape and the broad decorated rim, but differ in both size and exterior decoration. The size is a bit larger ranging between 17 - 20 cm. The exterior decoration consists of a simple broad band running horizontally around the upper half of the bowl. C- The last subtype of these bowls is large with a flat base and

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[24] Oppenheim 1943, Pl.XLVII:1.
[25] Mallowan and Rose 1935, Figs. 63:1;71:7-9;72:1-5.

walls expanding toward a wide mouth. The diameter ranges between 35 -40 cm (Fig. 160:c,e; Fig. 162:e,f,i; Fig. 131:f,i). The width of the decorated rim reaches up to 5 cm. in some examples. Within this group we may include (Fig.131:f) a large pot the diameter of which is about 50 cm., with flat base and bulging belly and constrained shoulders. This can be considered an aberrant specimen because it is the only one with a similar broad rim which bears no decoration.

This type of bowl seems not to have been common at other Ubaid sites, and only a few specimens were found. At T. Eth-thalathat a very similar bowl was found (Egami 1959, Fig.18:10; Fig.68:a). Comparably ornamented rims were found at Tepe Giyan (Contenau and Ghirshman 1935, Pl.40:11).

Type 17: Incurved bowls (Fig. 163:a-b).

This type is hole-mouthed with flat base and slightly curved sides expanding upward, then sharply incurved at the top forming a rounded edge around the mouth and ending in a thin rim. The decoration is confined to the rounded, incurved edge. This type of bowl is generally rare at other Ubaid sites and the only comparable specimens were found at T.Eth-thalathat (Egami 1959, Fig.18:3,4) and Nuzi (Starr 1937, Pl.42:H1,2; K1,2; L1,2). Similar bowls with less incurved rims were found at Tell Halaf (Oppenheim 1943, Pl.XXXI:7) and other sites (Fig. 267).

Type 18: Bowls with rounded sides and flat bases (Fig. 163:d-h).

This type is a curved-sided bowl with a flat base, the rim diameter of which is greater than its height. Various types of rims were represented such as rounded (e), simple (d,g,h) and bevelled (f). Patterns associated with this type of bowl are generally simple and the same design is displayed both inside and out.

Type 19: Wide-mouthed bowls with bold sweeping designs (Fig. 164).

These are wide-mouthed with either flat or rounded bases. The sides are almost straight or slightly curved. This type of bowl is distinguished by a bold sweeping design on its rim interior. In some examples this was associated with halves of solid circles around the upper rim and a painted ring in the middle of the base interior. Exterior decoration consists of a simple band in a combination of rectilinear and curvilinear patterns. This type of bowl is closely comparable with examples from the Ubaid levels at Arpachiya (Mallowan and Rose 1935, Fig.32). Of special interest is the fact that these bowls were found only in association with burial urns at both Abada and

Arpachiya where they were used to cover the mouth of the urn.

Type 20: Carinated bowls (Fig. 165).

In most cases these bowls were made of a very well levigated fabric, with thin walls and highly fired. The rim diameter is between 13 - 17 cm. with either straight sides (c.d.f), or slightly concaved ones with flaring rims (a,b,e). The base is usually flat, however, the possibility of a ring base cannot be excluded since it is represented in bowl (g). [26] Most bowls of this type were associated with a particular design in various aspects, this consists of a cypress-like motif which seems to have been known at other Ubaid sites in Iraq such as H.Muhammad (Ziegler 1953, Pl.37d:146,147), T. Ubaid (Hall and Woolley 1927, Pl.XVI:1826,1838-9,1841) and Ur Ubaid I (Woolley 1956, Pl.46:9).

Type 21: Basins (Fig. 166:a,b).

These are large, deep vessels the depth of which ranges between 22 - 38 cm., the base is flat and the rim is slightly out-flaring. Bowl (a) shows a sharp carination above the base, while in (b) the sides are gently curving upward. The first example is nicely decorated with dark green paint with an allover pattern. The second one (b) is decorated at regular intervals.

Large, deep basins were found at Tepe Sabz (Sabz phase), our second specimen is similar to one from the latter site (Hole et al. 1969, Fig.47:c).

Type 22: Small, hole-mouthed bowls with rounded or flat base (Fig. 166:c-e).

The sides are generally incurved. Both fabric and manufacture are poor but the bowls are nicely decorated with a variety of motifs.

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[26] Ring bases of similar type were known from Tell Ubaid (Hall and Woolley 1927, Pl.XLIV:254), T.Gawra XIII (Tobler 1950, Pl.CXXVII:137), and the Deh Luran plain (Mehmeh and Bayat phases) (Hole et al. 1969, Fig.51:i,l). Ring bases were known earlier from the Halaf period at T.Gawra (Tobler 1950, Pl.CXI:17; Pl.CXIII:23).

Type 23: Miniatures (Fig. 167:a,b,c).

Miniature vessels are known at this level at Abada and are found in both painted and plain pottery. This type of small vessel was of uncertain use [27] but they may have been used as containers for cosmetics. The rim diameter of these miniatures ranges from between 3.5 - 4.5 cm. Of interest is (Fig. 167:a) because it bears two small holes perforated on both sides of the upper shoulder just below the rim. These holes were presumably for suspension. The walls are thick and not well finished. The hole-mouthed bowl (b) has been poorly made with the least decoration. The very small bowl (c) with flat base and straight flaring sides is simply decorated with small solid circles on the upper half.

Type 24: Miscellaneous bowls (Fig.167:e-i).

These types are only represented by a single example. The small bowl (Fig. 167:d) which is made of a very fine fabric, thin walled and hard fired, is reminiscent of Hajji Muhammad (Ziegler 1953, Pl.23:a). Another interesting bowl of this type is (Fig. 167:e) a pointed based bowl with sides expanding toward a wide mouth, the bowl was perforated twice on the upper part, below the rim on one side only. Fig. 167:f is a small bowl of a very fine fabric and peculiar shape. The sides of the bowl are short and slightly out-turned. The rim is painted, and the base is flat on the outside and was provided with angled wall-base juncture; a feature of some Halaf bowls from Arpachiya (Mallowan and Rose 1935, Fig.63) and Tell Halaf (Oppenheim 1943, Pl.X:13-5,19-21,24-25). The entire exterior surfaces and the upper part of the rim are covered with dark brown paint. The base exterior is decorated with an allover pattern of three broad parallel bands within a circle running around the base interior. It seems highly likely that this small bowl was a lid for a particular vessel, the inner ledge could have served to secure stability when placed over the mouth of the vessel, the middle hole was for suspension.

b) Jars (Level 1)

Jars in this level were numerous and varied. Types previously known from the last level (Types 1-7) continued to be found here. Other types such as (8,9) have disappeared. New distinctive types appeared, (Types 10-15), some of which, and in particular the lenticular jars, were important when estimating

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[27] These very small vessels are thought to have been used as crucibles or as painter's mixing bowls, or may have been put to votive and ceremonial uses (Mallowan and Rose 1935, 72). Others have thought that they may have been toys (Tobler 1950, 131).

the date of this level. Various decorative motifs were used with some new and unique examples which appear for the first time in the Ubaid period, Fig. 186:c shows one of these. Some jars had retained the allover decorative style while others were distinguished by decoration usually confined to the upper third of the jar. Isolated motifs often appear against an empty background (Fig. 182:a-d; 184). Other jars bear a very simple decoration consisting of a broad band or bands around the neck or the shoulder (Figs. 189:c,d; 190:f-h; Fig. 195:a-c), or are entirely covered with black paint (Fig. 194:e), sometimes having only limited space in reserve (Fig. 195:d). Reserved decoration continued to be used but on a lesser scale. Below are the main types of jars in this level:

1 - Lugged jars (Fig. 173:b)
2 - Handled jars (Fig. 173:a)
3 - Interior-ledge-rim jars (Fig. 173:c,d)
4 - Necked jars (Figs. 181-182)
5 - Small carinated jars (Fig. 186)
6 - Spouted jars (Fig. 189)
7 - Large storage jars (Fig. 190:f,g,h)
10 - Lenticular jars (Fig. 192)
11 - Small globular jars (Fig. 193:a-b)
12 - Small squat jars (Fig. 193:c,e)
13 - Miniature jars (Fig. 194)
14 - Oval-shaped jars (Fig. 195:b-d,f,i)
15 - Rare Types (Fig. 191:g;Fig. 195:a,e)

Type 1: Globular jars with small lugs (Fig. 173:b).

This type which was common in level II is found infrequently in this level, the few occurrences were similar to ones from the last level.

Type 2: Handled globular jars (Fig. 173:a).

This type was known from the last level as was attested by the presence of some decorated handles (Fig. 171:g-j). The handle in this example is not painted. This particular example is interesting since it is the first time at the site that we see the neck and the upper rim of the jar left unpainted, and the decoration confined to the upper shoulder only. A similar feature was noticed at T.Gawra XVI (Tobler 1950, no.159).

Type 3: Interior-ledge-rim jars (Fig. 173:c-d).

This type which was common in the last level continued to appear in this level but only on a small scale. Of interest is the large, globular, hole-mouthed jar with pierced ledge inside the rim (Fig. 173:d). The base is flat, and the upper half of the body was decorated with a foliage pattern similar to examples from T.Gawra XIII (Tobler 1950, Pl.CL:469) and Arpachiya (Mallowann and Rose, 1935, Fig.34:3).

Type 4: Necked jars (Figs. 181-182).

These are similar to those from the last level. A variety of motifs were associated with these jars. Of interest is the pattern on Fig. 181:c which is similar to one from Giyan VA (Continau and Ghirshman 1935, pl,43:17), and Tell Mismar (Schmidt 1978, Fig.3:a). The jars illustrated in Fig. 182 are distinguished by their unusual type of decoration. This consists of some isolated motifs painted against a background free but for circles distributed in regular intervals along the shoulder. [28] The jars Fig. 182:c,d are decorated with what looks like a representation of a bull's head or "Bukranium" the popular motif of the Halaf period.

Type 5: Small carinated jars (Fig. 186).

These jars which range in size between 10 - 12 cm, are characterized by a pronounced carination either in the middle of the body or in the lower part above the base. Jar (b) is beautifully decorated with a rosette of 13 petals painted in a reserved circle alternating with a variety of motifs. The greater part of the body is covered with dark brown paint. The jar (b) is almost identical to one from Arpachiya (Mallowan and Rose 1935, 186:Fig.37:5). The most interesting example is Fig. 186:c which is nicely decorated with four large stars in reserve. This kind of star has not been known at any site before. However, stars, of different kinds, appeared on pottery from Tepe Jowi (Le Breton 1947, Fig.24:17-18). The jar (Fig. 186:g) is reminiscent of one from T.Eth-thalathat (Egami 1959:Fig.19:6).

Type 6: Spouted jars (Fig. 189).

These are large, hole-mouthed jars with a globular body and either rounded or flat bases. This type is distinguished by a short, cylindrical spout erected diagonally on the upper shoulder just below the rim. Decoration on these jars is simple and consists of curvilinear and rectilinear patterns confined to the upper part of the shoulder. Another simple band is painted around the lower half of the body.

Spouted vessels are known from the last level of the site and are reported from other Ubaid sites in Iraq.

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[28] Decorative circles of a similar kind appeared since the Halaf period at Arpachiya (Mallowan and Rose 1935, Fig.67:2); they continued to appear during the Ubaid period at Hassuna XII-XIII (Lloyd, Safar 1945 and Pl.XXI:a) and T.Ubaid (Hall and Woolley 1927, Pl.46:2-4,28).

Type 7: Large storage jars (Fig. 190:f-h).

These are rather large jars with a diameter reaching up to 50 cm. in some examples. The body is generally globular with rounded or flat base and short-out-turned neck. Decoration in all cases is confined to the upper third of the body and consists of simple broad bands sometimes combined with a wavy line running around the shoulder. No examples with allover decoration were found in this level.

Type 10: Lenticular jars (Fig. 192).

One of the most interesting features at level I at Abada is the presence of a particular type of vessel called "lenticular" or "tortoise-shaped" jars. This type of jar was found at Eridu XIII-VIII and the contemporary levels of T.Gawra XIX-XVII. A lenticular jar identical to (b) was found at Ras Al-Amiya (Stronach 1961, Pl.LVI:4). This type has also been found at some of the Ubaid sites in the Hamrin region (Chapter IV).

Type 11: Small globular jars (Fig. 193:a-c).

These are relatively small jars with a globular body ranging in diameter between 12 - 16 cm. with flat or rounded bases and out-turned necks. The jar (Fig. 193:a) is distinguished by a very small hole-mouth. The decoration is confined to the shoulder.

Type 12: Small squat jars (Fig. 193:c-e).

These are small, hole-mouthed jars with a squat body, flattish base and out-turned neck. Decoration is confined to the upper half of the body. The jar (d) is reminiscent of a small jar from T.Gawra XVII (Tobler 1950, Pl.CXXIII:116).

Type 13: Miniature jars (Fig. 194).

These are very small vessels which may have been used for various purposes, probably for keeping cosmetics of some sort. Of interest is Fig. 194:a a small hole-mouthed jar of pear-shaped body and slightly rounded base. The most interesting feature of this miniature jar is the little protuberant spout on the lower part of the jar. The spout is designed in the shape of an animal's snout, probably a kid, judging from the painted details. The details of mouth and eyes are indicated by symbols in reserve. The entire surface of the jar except the lowest part and the base is decorated with vertical wiggly and straight bands. The very small jar (c) is similar in shape and decoration

to one from Arpachiya (Mallowan and Rose 1935, Fig.36:7). Jar (e) was entirely covered with black paint, its dimple base and the concave base of (b) should be noted. Both features are more common to Iran than Iraq. [29] Very interesting is the spouted jar in miniature (Fig. 189:b).

Type 14: Oval-shaped jars (Fig. 195:b-d,f-i).

These are small jars with nearly oval-shaped bodies and flat bases. Two have a relatively high neck (b,d), others have an out-turned (f,h,i) or collared neck (g). These jars were decorated with simple broad bands, or entirely covered with solid paint leaving a horizontal band in reserve (d). The last example is reminiscent of one from Arpachiya (Mallowan 1935, Fig.36:4-5).

Type 15: Rare forms (Fig. 191:g;Fig. 195:a,e).

Only three examples are to be described under this heading. The first one, jar (Fig. 191:g), is a hole-mouthed carinated jar with short straight neck and small flat base, decorated on the upper half of the body with a nice pattern in reserve. The general appearance of this pattern is reminiscent of Giyan VA (Contenau and Ghirshman 1935, Pl.41:a). But this particular example has never been found at another site. The other example is the small jar (Fig. 195:a) with pointed base and relatively high neck. It was decorated with a single band around the neck. This type is similar to one in plain pottery from T.Gawra XVI (Tobler 1950, Pl.CXXVI:158). The third example (Fig. 195:e) is a hole-mouthed, thick-walled jar with squared shoulders and an almost straight short neck with paint around the neck and the middle of the body.

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[29] Dimpled-base ware was found at Sialk 1 (Ghirshman 1938, Pl.XXXVIII: 1513,1568,1687;Pl.XXXIX), Khazineh red pottery at Deh Luran (Hole et al.1969, Fig. 46:b) and Mehmeh phase (ibid, Fig.65:b,f,g).

Concave bases were found at Choga Safid (Safid and Surkh) phases (Hole 1977, Figs.48-9). They were also found at Jaffarabad in the Susiana sequence (Le Breton 1947, Fig.9:6).

Table 2

Occurrence and percentage of painted bowl forms

at Abada (Levels II, I). [see also Fig. 95:b]

Types	Level II No. Recovered	Frequency %	Level I No. Recovered	Frequency %
1	66	8.74	40	8.64
2	97	12.85	63	3.61
3	37	4.90	21	4.54
4	48	6.36	27	5.83
5	5	0.66	2	0.43
6	87	11.52	61	13.17
7	65	8.61	44	9.50
8	43	5.70	30	6.48
9	56	7.42	36	7.77
10	65	8.61		
11	81	10.73		
12	32	4.24		
13	28	3.71		
14	41	5.43		
15	4	0.52		
16			37	7.99
17			8	1.73
18			16	3.46
19			24	5.18
20			12	2.59
21			11	2.38
22			9	1.94
23			16	3.46
24			6	1.30
Total	755	100.00	463	100.00

Table 3

Occurrence and percentage of painted jar forms

at Tell Abada (Levels II, I). [see also Fig. 96]

Types	Level II No. Recovered	Frequency %	Level I No. Recovered	Frequency %
1	38	10.08	13	5.83
2	21	5.57	6	2.69
3	33	8.75	5	2.24
4	112	29.71	51	22.87
5	46	12.21	22	9.87
6	27	7.16	18	8.07
7	57	15.11	38	17.04
8	40	10.61		
9	3	0.80		
10			5	2.24
11			23	10.31
12			7	3.14
13			18	8.07
14			12	5.38
15			5	2.24
Total	377	100.00	2	99.99

c) Beakers

1) Beakers (Level (II) (Figs. 196:198).

A group of complete beakers with very elaborate and distinctive decoration were found at this level at Abada. The shape of these beakers is basically the same, but they can be classified according to their profiles into the following types:

1 - Relatively large carinated beakers with small flat base, slightly concave sides and out-flared rim (Figs. 196, 197, 198:b,f).

2 - Beakers with rounded body, concave shoulders, flat base and out-flared rim (Fig. 198:a,c,d).

3 - Beakers with straight sides and flat base (Fig. 198:e).

The fabric is generally buff. Cream and reddish brown fabric

was also found. Slips were commonly used. All the examples were distinguished by their allover patterns which were beautifully and successfully executed, and adapted well to the shape of the beakers. Reserve decoration seems to have been the favourite style associated with these beakers; a variety of geometric designs in reserve were used, some of which were very complicated (Fig. 198:b). Natural motifs were also represented, such as the graceful representation of a snake in reserve (Fig. 197:b). One of the most attractive beakers from Abada is (Fig. 196:a). This was decorated in black on cream with an allover pattern consisting of vertical panels of different motifs including elements in reserve.

Beakers first appeared at Eridu XVIII-XII (Safar et al., Fig.72:32). These resemble examples from the earliest level at Abada (Fig. 100:b-d). Both Eridu examples and Abada III ones are different in shape from the current examples. Close parallels can be drawn from T.Gawra XIII (Tobler 1950, Pl.CXXIX). Indeed, beaker Type 1 at Abada is closely comparable to Gawra XIII (ibid, Pl.CXXIX:202). The style of decoration associated with these beakers at both Abada and T.Gawra is actually the same, both sharing the predominancy of the allover and richly painted patterns.

2) Beakers (Level I) (Figs. 199-201)

Beakers of various shapes were found at this level. Most were well finished and nicely decorated with a variety of patterns. However none of the beaker types of the last level were found here. The new types of beaker which appeared can be classified as follows:

Type

4 - Beakers with almost straight, slightly everted sides and wide flat bases (Fig. 199:a).
5 - Beakers with sinuous sides and flat bases (Fig. 199:b).
6 - Beakers with straight sides and wide flat bases (Fig. 199:d-e).
7 - Beakers with ring bases and straight sides (Fig. 199:c).
8 - Conical-shaped beakers (Fig. 200:c).
9 - Beakers with slightly concave shoulders and out-turned rims (Fig. 200:d-e).
10 - Barrel-shaped beakers (Fig. 200:f).
11 - Cylindrical footed beakers (Fig. 201).

Perhaps the most interesting example of these beakers is the tall cylindrical footed beaker (Fig. 201). This unique example is decorated with vertical panels on which trees and human beings are depicted. On one panel we see a bearded man climbing a tree; on another a man is portrayed in a walking or probably a dancing attitude. There are no comparable beakers from any earlier sites. The beaker (Fig. 200:f) is reminiscent of a

beaker from Uruk (U.V.B.6, Pl.16:cp), and Fig. 199:b is somewhat similar in form to one from Arpachiya (Mallowan 1935, Fig.33:10). The conical-shaped beaker (Fig. 200:c) is very reminiscent of beaker types from Tell Bakun A (Langsdorff and McCown 1942, Pl.23) both in form and in style of decoration, which covers the whole body, even the base.

Decorative motifs were many, including animal representations (Fig. 200:d). The representation of ibex as a decorative motif on pottery is known since the Samarra period at Choga Mami (Oates 1969, Pl.XXXi:a), and was used during the Ubaid period at Uqair (Lloyd and Safer 1943, Pl.XIXa). This motif was very common at Sialk III (Ghirshman 1938, Pls.LXX,LXXI,LXXXI,LXXXII,LXXXIII).

d) Cups

1) Cups (Level II (Fig. 202)

These small vessels can be classified into four types as follows:

1 - Carinated cups with straight sides and flat bases (Fig. 202:a,c,g).
2 - Small carinated sups with slightly concave sides and flat base (Fig. 202:b,d).
3 - Small, carinated cups with slightly incurved sides (Fig. 202:e-g).
4 - Small cups with gently curved sides and slightly concave shoulders (Fig. 202:h).

The size of these cups varies from 7 cm. in rim diameter for the smallest example (f) to 14 cm. for the largest one (a), the depth ranges between 6 - 8.50 cm.

All the specimens were very well made of fine fabric, and carefully painted in allover designs with different kinds of motifs. Reserve decoration seems to have been the favourite. Chequerboard patterns (d,e) are identical to examples from T.Gawra XIII (Tobler 1950, Pl.XXVII:173; Pl.CXXIX:202) and Sialk III (Ghirshman 1938, 1938:Pl.LXXVIa:19-20,d:13-15; Pl.LXXVII c:8). The network of very small squares occupying the major part of the exterior body (Fig. 202:g) is very interesting for both its simplicity and the neat way in which it was executed. These cups are not be matched by any other examples from other Ubaid sites in Iraq. The only examples they could be paralleled with are from Susiana (Le Breton 1947, Fig.38:17-20).

2) Cups (Level I) (Fig. 200:a-b; Fig. 203).

Cups of various shapes continued to be found in this level. Only (Type 1) of the last level was represented here (a), while some new types appeared, these are as follows:

5 - Small cups with almost straight sides gently curved over the base (Fig. 200:a-b; Fig. 203:b,c,f,i,j,k).
6 - Small cups with slightly concave shoulders (Fig. 203:g).
7 - Small cups with small discoid base (Fig. 203:e)
8 - Small cups with out-curved sides (Fig. 203:h).

Like the cups of the last level, these cups were decorated with a variety of patterns some of which show a very elaborate and highly artistic design (Fig. 203:a-b). At the same time cups bearing only simple decoration appeared such as Fig. 203:d,e,k).

Section C

1 - The Plain Pottery of Level II

As we have noted earlier only a small proportion of plain pottery was found at Tell Abada throughout its sequence. However, an interesting collection of plain ware was found in Level II. The fabric is generally buff, sometimes with greenish or redish appearance. Chaff or straw was frequently used for tempering. Very fine, hard fired and thin-walled specimens were represented, as well as heavy, coarse and ill-manufactured examples. A variety of bowls and jars were represented. The number and percentage of each type is given in Table 4.

a) Bowls

Several types of bowls in plain pottery were found, these could be classified as follows:

1 - Wide-mouthed carinated bowls (Fig. 204:a-f).
2 - Straight-sided bowls (Fig. 204:g-o).
3 - Small, hemispherical bowls (Fig. 204:p-r).
4 - Large, wide-mouthed bowls with flaring rim (Fig. 139:g-y).
5 - Small, thin-walled bowls with flaring rim (Fig. 141:f-k).
6 - Small, carinated bowls (Fig. 144:h-n).
7 - Unusual bowls (Fig. 204:s-u).

Little can be said about these plain bowls, probably the most interesting type is Type 1, which represents a relatively

large carinated bowl made of a very well levigated fabric of buff grey or cream colours, with cream slip and smooth surfaces. The walls are very thin, ranging in thickness from 2mm. to 4mm. at the carination point, and were highly fired. This type of bowl is the same kind as those from level III at Abada (Fig. 113:d-g) and similar to the painted carinated bowl from level II (Figs. 152-157) which finds its closest parallels at Samarra and H.Muhammad. Bowls with straight-sides and either rounded rims (Fig, 204:g-j) or bevelled rims (Fig. 204::k-n) match painted examples from the same level (Fig. 127:e-g). The small carinated bowls (Fig. 144:h-n) are a plain version of a painted one from the same level (Fig. 144:a-f). Of interest are three unusual specimens (Fig. 204:s-u). All were of poor fabric, heavily tempered with chaff and roughly made. The uneven-sided bowl with a small hole in the middle (Fig. 204:s) may have been a lid for some sort of vessel. The large rounded bowl (Fig. 204:t) with thick, short wall and flat base bears heavy traces of burning resulting in a network of cracks throughout the base and walls. This bowl may have been used for cooking purposes. The third example (Fig. 204:u) is a bowl of clumsy manufacture with thick and slightly incurved walls. In the middle of the base interior there is a cylindirical projection with a flat upper surface. The precise purpose of this bowl is not clear. [30] No comparable example has been reported for the last type from any other site so far.

b) Jars (Level II)

Plain jars from this level were found in small quantities, and represented the following types:

1 - Small globular jars (Fig. 205:b,d-h; Fig. 206:e,f).
2 - Carinated jars (Fig. 205:a,h,i).
3 - Elongated jars (Fig. 205:c; Fig. 206::a,c).
4 - Large, globular jars with lugs (Fig. 207:a-g).
5 - Large storage jars (Fig. 207:h-o,q-u).
6 - Square-shouldered jars (Fig. 206:d).

Type 1 was the commonest one. They are somewhat similar to examples from Ras Al-Amiya (Stronach 1961, Pl.LIII:6,3). The large carinated jar (Fig. 205:a) is similar in shape to a pointed jar from Tell Ubaid (Hall and Woolley 1927, Pl.XLIV:515), both jars have four small lugs over the upper shoulder.

The elongated jar (Fig. 206:a) is reminiscent of a jar from Ras Al-Amiya (Stronach 1961, Pl.LV:2). The square shouldered jar

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[30] The closest comparable example can be seen in modern Iraq today where identical bowls with glazed interior surfaces are used as water bowls placed inside birds' cages, the middle projecting part serves as a handle.

(Fig. 206:d) is very similar to Ras Al-Amiya (Stronach ibid., Pl.LV:1). A series of large globular jars with short necks and out-turned rims (Fig. 207:a-g) are provided with small lugs around their shoulders. A variety of lugs was represented, (Fig. 207:d) being unique in its shape. The large storage jars have almost globular bodies exceeding 50 cm. in diameter, with short necks, out-turned necks and rounded bases (Fig. 207:h-o). Very coarse examples with heavy fabric were also found. Different profiles of such jars were found (Fig. 207:q-u).

Table 4

Occurrence and percentage of plain bowls and jars at Tell Abada (Level II).

Bowls (Type)	No. Recovered	Frequency %	Jars (Type)	No. Recovered	Frequency %
1	27	11.16	1	48	21.52
2	31	12.81	2	51	22.87
3	45	18.60	3	34	15.25
4	66	27.27	4	60	26.91
5	53	21.90	5	27	12.11
6	17	7.02	6	3	1.34
7	3	1.24			
Total	242	100.00	Total	223	100.00

2 - The Plain Pottery of Level I

As with level II, level I at Abada produced little plain or unpainted pottery. It constitutes a small proportion of the total volume of the pottery in which painted ware is dominant. Most of the plain ware is roughly made and the fabric is generally poor with coarse tempering material such as straw or white particles. Nevertheless, some examples of interest were found. These include a variety of bowls, jars and miniatures. The number and percentage of each type is given in Tables 5 and 6.

a) Bowls

Only a few types occur in both painted and plain pottery; these are, the hole-mouthed bowls with almost straight or slightly curved sides, and the Bell-shaped bowls. These two types are of a fine fabric and are represented by sherds only (Fig. 207:p-p8). Wide-mouthed bowls with a sharply incurved rim (Fig.163 :c) resemble examples in painted pottery (Fig. 163:a,b). Another type common to both painted and plain is the large deep pot (Fig. 163:e-g,i,j). Most of these large pots were used as burial urns for children. Some miniature bowls were also

represented (Fig. 208:a-k).

b) Jars

Jars in plain pottery from this level are not numerous. Nevertheless a considerable collection of this category was found. Three main types are represented, these include a variety of small jars, miniature jars and double-mouthed jars.

1) Small jars (Fig. 209:a-c).

A total of 18 small jars which range in body diameter from 7 - 10 cm. were found in this level. These show different profiles and all were roughly made. All of these small jars were heavily blackened with smoke deposit and other traces of burning, this suggests that they were being used as lamps. They were found in association with lids (Fig. 60).

Table 5

Occurrence of bowls in plain pottery at Level I.

Type	No. Recovered	Frequency %
Hole-mouthed bowls with straight sides	16	17.39
Bell-shaped bowls	9	9.78
Incurved-rim bowls	1	1.08
Large deep pots	29	31.52
Miniatures	37	40.21
Total	92	100.00

Table 6

Occurrence of jars in plain pottery at Level I

Type	No. Recovered	Frequency %
Small jars	16	33.33
Miniature jars	26	54.16
Double-mouthed jars	6	12.50
Total	48	99.99

2) Miniature jars (Fig. 208:e,i-k; Fig.209:except j; Fig.210:g).

A very interesting collection of miniature jars was found. The very small jar with the two large projecting lugs (Fig. 208:e) may be a model of a larger jar for its relatively large lugs would have served no function on such a small jar. The squat discoidal body of Fig. 208:j was nicely pinched all around. Another interesting jar is (Fig. 209:f) with its sealed perforated mouth which looks like a salt bottle; whether it was really used for this purpose or to keep some other kind of valuable material is not known. Another miniature of special interest is (Fig. 209:g), this small globular jar bears on its shoulder three enigmatic marks done with black paint. It seems likely that such peculiar marks cannot be explained as mere decoration, consequently this jar may have been used for some ritual or ceremonial purpose. Lastly a very interesting miniature is the one which represents a double-mouthed jar (Fig. 210:g).

3) Double-mouthed jars (Fig. 210:a-f).

Six examples of various shapes [31] were found. These generally have a globular body and double hole-shaped mouths on the top of it. The two mouths are either separated from each other by some distance (a,c,e,f) or directly joined together (b). The base is either flat (a) or rounded (b). Considerable attention seems to have been paid to their manufacture. This type of jar seems to have been known since the Halaf period as it was reported from both Tell Halaf (Oppenheim 1943, 92;

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[31] This type of jar was interpreted as a "flower base" (Mallowan and Rose 1935:71). Oates (1982c:207) has associated it with the drinking scene on a seal from Tell Brak (ibid: Pl.XIV,d), as the deliberate lips at the exterior of the two mouths would have facilitated the use of a drinking tube. In my view the function of the double-mouths may have been for both decorative and practical purposes as it could have been used as a handle to carry these jars!

Fig.135,Pl.LXXVI:516; Pl.CIII:1-3) and Arpachiya L.XI. (Hijara 1980, 181).

Double-mouthed jars were known, though rarely, in northern Ubaid sites in Iraq like Tepe Gawra XIII (Tobler 1950, pl CXXXI:221), Telul Eth-thalathat (Egami 1959, Pl.LX), Arpachiya (Mallowan and Rose 1935, Fig.41,18) and Nuzi (Starr 1937, Pl.42), it was also found at Tell Brak (Oates 1982c, Pl.XVII, b). Such jars seem to occur much later in the south. [32]

Section D

Impressed and Incised Pottery (Pl. 9:a,b)

Another important category of pottery found in large amounts is that class of vessels whose surface was decorated with a rather different decorative technique, either with impressed or incised ornament. The first technique is represented with a frequency of 20.80%, the second of 13.5%. Since this type of pottery is abundant and identical in both levels II and I we will deal with it as an integrated unit. Examples bearing a combination of both painted and incised decoration were also found at both levels. The fabric is the same for both types and can be described as being poor compared to the painted and fine plain pottery from the two levels of the site.

1 - Impressed Pottery

The technique of decorating the surface with impressions covering either the entire surface of the vessel, or only a limited part of it, is executed in different ways, these include:

1) Shallow or deep finger-tip impressions:

This technique was implemented by pressing the wet surface with a finger-tip, leaving either shallow or deep rounded or semi-circular shapes covering all or part of the exterior surfaces of the vessels. This seems to have been the most common technique used by the Abada potters (Fig. 211:a-c; Fig. 212:h; Fig. 213:l). This type of impressed ware is very reminiscent of pottery from Dalma Tepe (Hamlin 1975, Pl.Ic), it was also found

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[32] Mallowan refers to a double-mouthed jar found at Al Ubaid published in 'Hall and Woolley, UEI, Al Ubaid, Pl.60:type 94' (Mallowan and Rose 1935, 71) but I was unable to trace the pot in question.

at Nuzi (Starr 1937, Pl.45:M,Q) and Tell Halaf (Oppenheim 1943, Pl.LXXXVIII:17,18).

2) Jabbed finger nail impressions:

This technique was done by pressing the surface with a finger nail in a vertical or oblique position, leaving shallow crescent-shaped impressions arranged in horizontal rows (Fig. 212:i). A similar technique was attested at Dalma Tepe (Hamlin 1975, 118).

3) Barbotine:

This is an applique technique executed by setting small clay pellets over the exterior surface of the vessel (Fig. 211:d). This example is reminiscent of a jar from Dalma Tepe (Hamlin 1975, Fig.8:A). A similar technique was known at Al Ubaid (Hall and Woolley 1927, 164).

4) Jabbed small holes:

These are either shallow or deep small holes done by jabbing the wet surface of the vessel with a bone implement or little twig (Fig. 212:j; Fig. 213:j). A similar technique was noticed at Dalma Tepe (Hamlin 1975, 118). These jabbed holes were arranged either in oblique rows or randomly distributed over the surface.

5) Reed impressions:

This was done by pressing the base of a single reed into the wet surface leaving small rounded or oval shapes usually arranged in regular rows (Fig. 212:a,l). A similar technique was used at Dalma Tepe (Hamlin 1975, Pl.IIb) and Matarra (Smith 1952, Pl.VI:7).

6) Small straight slits:

This decoration was done by pressing the wet surface with what may have been a bone tool such as a needle or an awl, resulting in relatively deep slits throughout the surface. These slits are usually arranged in oblique or herring-bone patterns. This type of decoration was reported from Dalma Tepe (Hamlin 1975, 118). Examples of this type are to be seen on (Fig. 212:c,d).

7) Triangular or pear-shaped impressions:

This technique was probably done by using a square-headed tool pressed obliquely so as to make such shapes on the surface of the vessels (Fig. 212:k; Fig. 213:i,n). These shapes were either arranged in vertical lines or in combination with multiple zigzags and horizontal lines.

8) Hemispherical impressions:

This decoration is a result of pressing the surface with a round-ended tool or twig held obliquely so as to leave hemispherical dents (Fig. 212:b,f). These shapes were arranged in regular horizontal or oblique rows.

9) Small-rectangular impressions:

This simple technique was done by pressing the wet clay with a square or rectangular-ended tool held straight, leaving small rectangular shapes arranged in double or multiple rows around the body (Fig. 213:k).

The distribution and occurence of each of the above-mentioned designs is shown in (Table 7), here we should point out that although it is not easy to determine whether sherds belong to bowls or jars, it seems, generally, obvious that the majority belong to jars.

Vessel types

A variety of shapes were represented in the impressed ware of both levels II and I at Abada, these include:

1 - Squat jars (Fig. 211:a)

The impressed decoration consists of shallow finger tip impressions concentrated and confined to the whole under-base and the lower part of the body where it takes the form of a broad wavy band.

2 - Hole-mouthed globular jars (Fig. 211:c)

This jar has an out-turned rim and flat base. It is decorated with small shallow finger tip impressions covering all the exterior surface. On the upper half of the body there is a

handle or lug in the form of a concave disc.

3 - Oval-shaped jars with short neck and out-turned rim (Fig. 211:d)

This jar is beautifully decorated in applique technique with small pellets attached to the entire surface of the jar.

4 - Shallow, hemishpherical bowls with thick walls (Fig. 211:b)

This example bears deep finger tip impressions done all over the exterior surface. There is a hole in the middle of the thick base.

5 - Small jars (Fig. 212:a-d,f)

These jars have an almost rounded body and short out-turned rim. Bases are most probably rounded. These small jars are decorated with different types of impressions.

Table 7

Distribution and occurrence of the Impressed pottery sherds at Level II and I at Abada

Type	Level II	Level I	Total
1	2,610	1,116	3,726
2	2,538	2,667	5,202
3	2	-	2
4	2,701	2,917	5,618
5	2,516	3,310	5,826
6	2,936	2,333	5,269
7	1,878	2,589	4,567
8	2,786	1,219	4,005
9	1,495	1,180	2,675
Total	19,462	17,431	36,893

2 - Incised Pottery

The technique of decorating vessels with incisions has a very long tradition which goes back to the Hassuna period as it was found at Hassuna (Lloyd and Safar 1945, Figs.4,10). It was common in the Samarra period at Matarrah (Smith 1952, Fig.15), Shimshara (Mortensen 1970, Figs.70-71) and Tell Es-Sawwan (Ippolitoni 1970-71, Figs.F,G,H). During the Halaf period it was found on a very limited scale at Tell Halaf (Oppenheim 1943, Pl.LXXXVIII:13).

In the Ubaid period it was found at T.Gawra XIII (Tobler 1950, Pl.CXXI: 217-18,220), Nuzi (Starr 1937, Pls.44-46), Choga Mami and Serik (Oates 1968, Pl.V:7).

This type of pottery which is decorated with incisions was common in both levels II and I at Abada. The fabric in general is coarse and the manufacture is poor, this fact may account for the absence of complete examples. However, some fine fabric was also found. Chaff or straw was the main tempering material. The incised decoration forms different designs. The distribution and frequency of each design is shown in Table 8, regardless of whether it was originally on bowls or jars, since it is rather difficult to distinguish between sherds belonging to either category. It should be pointed out that the number of occurrences of each design given in the table is based on the total body sherds found with that particular design, bearing in mind that several sherds with the same design could well have belonged to one vessel.

The incised patterns can be classified according to their technique into the following types:

1) Short fairly deep strokes diagonally arranged in a herring-bone pattern (Fig. 214:a).
2) Long and deep strokes diagonally arranged in a herring-bone or zigzag pattern (Fig. 214:h,i).
3) Short, slight strokes diagonally arranged in a herring-bone pattern (Fig. 214:d).
4) Large, deep and irregular strokes (Fig. 214:j).
5) Horizontal rows of finely incised chevrons (Fig. 214:f).
6) Deeply ribbed decoration with corrugations on both sides seems to have covered the entire surface. Within the horizontal grooves there is a secondary decoration consisting of tiny diagonal incisions (Fig. 213:a). This precise and extremely fine technique is so elaborate that it seems to represent a fully developed style.
7) The decoration on (Fig. 213:b) follows the same pattern as the last one, but here the surface is heavily corrugated with deeper grooves and diagonal incisions represent chevrons pointing right. Very shallow incisions appear on (Fig. 213:e).
8) The same grooved technique is shown on (Fig. 213:f) but

here the secondary incisions consist of curved small ones.

9) Impressed rope pattern (?) covering the entire exterior surface and the base (Fig. 213:d).
10) Wide zone consists of deep horizontal grooves (Fig. 213:c).
11) Short, slightly incised strokes vertically or diagonally arranged in horizontal rows (Fig. 213:g).
12) The decoration on (Fig. 213:m) consists of long fairly deep incisions arranged in parallel diagonal rows.
13) Long, fairly deep incisions diagonally arranged in a vertical herring-bone pattern (Fig. 214:e).
14) Two or more horizontal zones of simple shallow grooves running around a vessel (Fig. 214:k).
15) Decoration on (Fig. 214:c) is very similar to the last style and associated with running horizontal zigzags.
16) Composed decoration of two zones consisting of horizontal and relatively deep grooves, and running multiple zigzags (Fig. 214:b).
17) The decoration on Fig. 213:h consists of a combination of two bands of horizontal grooves with wavy grooved lines in between.
18) Long, slightly curved incisions broken in the middle, arranged in a herring-bone pattern (Fig. 214:l).

It seems certain that the incised pottery from both levels II and I at Abada represented a large number of forms of which bowls and jars constitute the majority. Most interesting is the bowl (Fig. 214:a) which was decorated on both surfaces with fine and fairly deep short strokes diagonally arranged in horizontal herring-bone patterns. This type of incised design is a distinctive characteristic of the Samarra and Hassuna standard incised ware. [33] This design seems to have been revived again during the Ubaid period at Abada where it was widely used and had a neater and more attractive appearance. The same design is also attested at Nuzi (Starr 1937, Fig.46) and Serik (Oates 1968, Pl.V:7), it should be pointed out that samples from outside Abada were never incised on the interior. Globular jars with short out-turned necks (Fig. 214:b,f) were another type at Abada.

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[33] Lloyd and Safar 1945 (Figs.3,4,9,13,15); Smith 1952 (Fig.7:14); Mortensen 1970 (Fig.71:d).

Table 8

Distribution and occurrence of incised pottery in Levels II and I at Abada.

Type	Level II	Level I	Total
1	3,126	2,310	5,436
2	2,009	2,025	4,034
3	898	705	1,603
4	716	612	1,328
5	660	521	1,181
6	427	317	744
7	518	401	919
8	448	428	876
9	366	222	598
10	410	390	800
11	512	431	943
12	616	563	1,179
13	338	384	722
14	715	696	1,411
15	298	366	664
16	305	285	590
17	288	267	555
18	110	185	295
Total	12,770	11,108	23,878

3 - Incised/Impressed-and-Painted Pottery

Levels II and I at Abada have produced a considerable amount of pottery bearing combined decoration consisting of incised or impressed and painted patterns. This combined technique which dates back to the Hassuna period [34] did not persist into the subsequent periods. [35] In the Ubaid period this technique seems to have flourished again to judge by the appearance at Abada of a variety of vessels with impressed/incised-and-painted decoration. The painted elements in this combined decoration consist for the most part of simple broad bands covering the neck and the rim of jars on the outside (Fig. 215:a-e,g) or on both the outside and the inside of the rim (Fig. 215:c). Similar broad bands are to be seen painted on other parts of the body in some examples (Fig. 215:h-j). Fig. 215:f was decorated initially with an incised design then covered entirely with black paint leaving triangles in reserve.

Incised/impressed designs consist of the following elements:

1) Small jabbed or punctured holes diagonally arranged in a herring-bone pattern (Fig. 215:a), or in two horizontal zones (Fig. 215:e).
2) S-shaped incisions (Fig. 215:b). These are fairly deep incisions probably done by a fine pointed tool and nicely arranged in multiple horizontal rows around the body.
3) Oval or pear-shaped incisions problably produced by using a small round-headed tool, arranged in double or multiple horizontal rows (Fig. 215:d).
4) Short straight slits (Fig. 215:c,f,g,i) diagonally arranged in horizontal rows.
5) Rectilinear and curvilinear patterns consisting of straight grooves combined with chevron patterns (Fig. 215:h) or a combination of straight grooves and wavy lines (Fig. 215j).
6) Cross-hatched decoration (Fig. 216) this is a pattern of fairly deep cuts criss-crossing over a large zone of the vessel. This type of incised decoration seems to have been associated with a particular type of large open-mouthed bowl (a-e).

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[34] This combined incised and painted technique was well attested at Hassuna (Lloyd and Safar 1945, Figs.3,9,13,14,18).

[35] In the Samarra period this pottery was found at Matarrah (Smith 1952, Fig.14:8), Tell Es-Sawwan (Ippolitioni 1970-71, Figs.I-K), Baghouz (Du Buisson 1948, Pl.XXII:11). and Shimshara (Mortensen 1970, Fig.74). It was also found at Nineveh 1 and 2 (Thompson and Mallowan 1933, Figs.XXXV, XXXVI). In the Halaf period this type of pottery was only found in very limited quantities at the type site (Oppenheim 1943, Pl.LXXXVIII).

Shapes

Vessels decorated with combined incised-and-painted decoration can be divided into two main categories; jars and bowls. The first category includes a variety of hole-mouthed jars with globular body and short, out-turned neck (Fig. 215:b-c). Fragments of jars (Fig. 215:f,g) could belong to this type of jar. Of interest is the small globular, spouted jar (Fig. 215:a).

The second category includes large, wide, open-mouthed carinated bowls (Fig. 216) similar in shape to the large carinated bowls from level II at the site (Figs. 152-157). The present bowls are distinguished by a particualr type of painted and incised decoration; this consists of wide, thick, broad painted bands covering the rim interior, combined with incised cross-hatched decoration covering the entire base interior (Fig. 216:a,b,c,d) or covering the lower half of the inside walls downwards to cover the entire base interior (Fig. 216:e). Of special interest is the bowl Fig. 216:d because its exterior walls are decorated with the same pattern of incisions. Wide open-mouthed bowls with a combination of painted and incised cross-hatched decoration on the base interior were found at Choga Mami and Nuzi.

Table 9

Distribution of the patterns on incised/impressed-and-painted pottery at Levels II and I at Abada.

Type	Level II	Level I	Total
1	46	38	84
2	34	25	59
3	51	32	83
4	39	40	79
5	66	41	107
6	22	-	22
Total	258	176	434

Section E

Halaf Pottery (Figs. 217-220)

A total of some 42 late Halaf polychrome sherds were found in Level II at Abada. Only three sherds were found at level I. Selected sherds and reconstructed forms are to be seen on Figs. 217-220. In general the pottery is fine, hard and very well fired, the fabric is buff to reddish and very well levigated, occasionally tempered with a very fine grit. Buff and cream slips were used. The surfaces were very well smoothed. The paint is either red and black combined together in the same pattern, or red, brown and orange individually used. It is outside the scope of this research to deal in detail with Halaf pottery. Therefore our concern will be concentrated on the significance of this discovery in terms of chronology. Further discussion of the issue will be found in the next chapter.

Conclusion

The excavations at Tell Abada have produced a very large quantity of pottery throughout the three excavated levels. Pottery from each level has been dealt with separately. Illustrations of the complete specimens and significant sherds, together with a wide range of patterns associated with each vessel type, are shown in Figs. 97-226. The general distribution of the vessel types is shown in Figs. 266 and 267. The chronological occurrence of the most distinctive types is shown in Figs. 268 and 269.

Level III, the earliest, revealed some quantity of Ubaid I ceramic types (Figs. 102-106) associated with a number of vessels which resemble both Choga Mami Transitional Samarra/Ubaid type and more classical Samarra pottery. These ceramic types were also found in association with more conventional Ubaid 2 pottery.

Ubaid I pottery was not abundant at this level but some examples with distinctive Ubaid I features were found, these are similar to examples from Eridu XVII and Choga Mami.

Of special interest is the occurrence of "Transitional pottery" as it increases our knowledge of this new material which was first identified at Choga Mami (Oates 1969a) and found later on at Choga Safid in Khuzistan (Hole 1977). Abada examples (Fig. 100:a; 101:b) resemble ones from both nearby Choga Mami and Choga Safid. Other examples (Figs. 97-99) bear some resemblance to the Samarra style.

This level has also produced a number of Ubaid 2 ceramic style pieces (Figs. 110-112) which resemble examples from Eridu XIV-XII, Hajji Muhammad and Ras Al-Amiya, and are similar to the pottery from level II above. Indeed the occurrence of Hajji Muhammad or Ubaid 2 pottery in level III is significant in chronological terms. But does this imply that level III belongs to the same date as the above levels which produced the same type of ceramic style i.e. Ubaid 2. To answer this question we need to evaluate the situation of level III and to consider the available evidence concerning the Ubaid 2 ceramic style, as pertaining both to vessel forms and the associated patterns, from both levels III and II.

We have already noticed from our discussion of the Ubaid 2 pottery from these two levels that both levels share a particular vessel form and particular patterns, these are:

1 - Open, carinated bowls with both interior and exterior decoration (Figs. 110, 152-156), of interest are those bowls decorated with centrifugal patterns on the base interior combined with a perpendicular or oblique grid pattern leaving tiny squares in reserve on the rim interior (Figs. 110:d; 153:a-c).

2 - Interior-ledge-rim jars (Figs. 112:a, b; 173-174).

3 - Necked jars (Figs. 112:c-f; 177-179).

4 - A wide range of reserve decoration, a distinctive feature of Ubaid 2 and early Ubaid 3, is common on various bowls and jars from both levels.

However level II is distinguished by:

1) The presence of hemispherical bowls decorated with wavy lines or bands in reserve (Fig. 120:a, b, d), this particular combination of form and pattern is a genuine distinctive feature of Ubaid 2 which was found at Hajji Muhammad (Ziegler 1953, Fig. 28:d), Ras Al-Amiya (Stronach 1961, Pl.XLIV:5) and Choga Mami (Oates 1984, Fig.7:10).

2) Zigzags in reserve, sometimes actually scratched into the paint (Figs. 142:1, 2; 149:12) are another distinctive feature of the Ubaid 2/3 style found at several sites belonging to that period. The presence of these two distinctive Ubaid 2/3 features, especially the first one in level II at Abada, has an important bearing in terms of chronology because this distinctive type of vessel has only a limited chronological distribution and was common at Hajji Muhammad, Ras Al-Amiya and

Choga Mami, which belong to the end of Ubaid 2. Since this particular type is absent from level III, and because this level has a simultaneous occurrence of Ubaid I and Transitional pottery (none of which was found in the levels above), together with the fact that a gap of about 70 cm. deposit separates level III from level II; we would argue in favour of making level III earlier than the end of Ubaid 2 to which level II obviously belongs.

The great bulk of pottery found at both levels II and I belongs to the Ubaid 2/3 ceramic style ornamented with distinctive patterns common to both Hajji Muhammad and the Ubaid 3 phases. In addition to the reserve decoration mentioned above, the majority of pottery from level II has shown a great variety of close-style patterns, a feature usually associated with the Ubaid 2 style. Geometric patterns were predominant, nevertheless some remarkable naturalistic patterns were also represented (Figs. 221-224).

Of interest is the "Mouflon" head depicted in a semi-naturalistic style (Fig. 224:3). This motif closely resembles examples from Arpachiya (Mallowan and Rose 1935, Fig. 75:14) and Ras Al-Amiya (Stronach 1961, Pl.XIV:19); most interesting is the representation of a cow in a fully naturalistic style (Fig. 224:5).

Vessel types and patterns from level I continued to be the same for the most part as those of the preceeding level (II), but certain ones so characteristic of level II are no longer apparent, such as the large, open bowls decorated with centrifugal patterns on the base interior, associated with perpendicular grid patterns with tiny squares in reserve (Type 14) and hemispherical bowls with reserve wavy lines (Type 2; Fig. 120:a-d). On the other hand, new types have now appeared, of particular interest are the "Lenticular jars" similar to examples from Eridu XIII-XVIII, Tepe Gawra XIX-VII, and Ras Al-Amiya. The significance of the appearance of this type of vessel will be discussed within the context of other Ubaid sites in the Hamrin region (Chapter IV). Other new types were also represented (Fig. 267). The appearance of new vessel types was accompanied by the appearance of new decorative patterns such as the rounded motifs standing in a free field (Figs. 182, 184) and a star pattern in reserve (Fig. 186:c). New also is the representation of ibex (Fig. 223:1, 2). Ibex patterns were known from Uqair (Lloyd and Safar 1943, Pl.XIXa), Sialk III (Ghirshman 1938) and Giyan (Contenau and Ghirshman 1932).

Since level I at Abada was directly built on top of level II, the two levels cannot be far apart in time, and since level II has produced much pottery in the Hajji Muhammad style closely comparable both to the pottery from the type site itself and to Ras Al-Amiya, and since furthermore level I contains a larger proportion of Ubaid 3 types and also many parallels with Ras

Al-Amiya and Tepe Gawra XIX-XVII, levels II and I should probably be dated sometime towards the end of Ubaid 2 and the beginning of Ubaid 3. Indeed level I is likely to be contemporary with Ras Al-Amiya and therefore approximately Eridu XII/XI.

CHAPTER IV

The Ubaid Sites in the Hamrin Region

In addition to the extensive evidence for Ubaid life found at Tell Abada, Ubaid occupation was found in a number of other sites in the Hamrin basin (Fig. 227). The information about each of these sites, as presented below, is based both on personal observation, including visits to these sites during the course of excavation and study of the excavated material, in particular the pottery, in the Iraqi Museum, and on the published reports.

I shall start with the cluster of Ubaid sites in the east of the Hamrin region - Tell Abada and five other sites - and then move to those in the west. The number seen to the right of each site name refers to the number of the site as originally fixed on the general map of the Hamrin basin (Iraq, XLI, 1979, 158). This is to maintain consistency with the published literature.

1 - Tell Rashid (3)

This is a small oval-shaped mound measuring some 54 m. long and 30 m. wide; it rises about 2.50 m. above the surrounding plain (Fig. 228). It lies some 12 km. to the south of Tell Abada, close to the eastern flank of the Jebel Hamrin along the Zagros Foothills (Fig. 227).

While the work at Tell Abada was in progress we also conducted some excavations at Tell Rashid as part of the Hamrin Salvage Project. The Tell was selected for excavation because its surface collection was closely comparable to that from Tell Abada, so one could assume that it would provide an opportunity to obtain more information about this phase of Ubaid occupation.

The excavations were conducted by means of a large trench measuring 20 x 15 m. covering the entire middle section of the mound (Fig. 228). The excavations revealed four successive levels, the deposits of which occupied a depth of about 5 m. from the top of the Tell down to the virgin soil. The levels were numbered I-IV from the top. A summary of information about each of these levels is given below:

Level IV

This level seems to have been the earliest to be founded on the site. It was built directly on virgin soil and was reached through a deep sounding (Fig. 228) measuring 1.50 x 1.50 m. The structural remains of this level as they appeared in this sounding consisted of a few foundations of mudbrick walls with clay plaster, apparantly part of some structure which extends under the unexcavated area. The few sherds which were found near the wall were of Ubaid 2/3 style (Fig. 239) and similar to the type of pottery which was also found in the upper levels of the site.

Level III

This appears to be the best preserved level at the site. The small building illustrated in (Fig. 229; Pl. 8b) has a tripartite plan and a buttressed facade. The latter feature is reminiscent of a building from Abada II. The entrance to the building is located in the northwestern corner and leads to a large hall 4 x 1.5 m. (1) which leads in its turn to the central courtyard measuring 5 x 1.8 m. (2) giving access to other small rooms to the south (3,4).

Two burial urns containing children were found below the floor of room (3). To the southwest of the last building there is another large construction the eastern flank of which was presumably built against the southern side of the former building. The entrance to the building is in the middle of the northern wall and leads directly to the large central courtyard. The common area outside the two buildings was surrounded by a curved wall with two exits, one in each corner (13). This seems to have been added at a later date. The plan of this building is incomplete since other parts of the southern walls still extend under the unexcavated area of the tell, but it is obvious that the general plan was tripartite. In the northern half of the trench and facing the above mentioned buildings there were remains of another building consisting of a large rectangular room (15) with a large entrance in its northern wall. This entrance seems to have been blocked up at a later date. There is another almost square room (14) to the west of the last room and both these rooms give access to what must have been a large courtyard (16) which was subsequently demolished with the rest of the building. The walls in this level were preserved up to a height of about 1m. and were built of mudbrick measuring 52 x 28 x 8 cm. and plastered with a layer of levigated clay.

Level II

The remains of this level were confined to the southern sector of the tell only. No structural remains whatsoever were found in the northern half of the mound. A group of four rectangular rooms was found (Fig. 230) which seem to have been part of a complete building the other parts of which are still to be discovered in the unexcavated area of the tell. The walls were constructed of mudbrick and coated with clay plaster. The type of mudbrick and the building method are similar to the last level.

Level I

This is the latest level to be found in the mound and seems to have been badly damaged due to its location on the top of the tell. A few remains were found consisting mainly of a curved mudbrick wall extending from north to east (Fig. 230). This curved mudbrick wall could have been part of a large enclosure wall. A number of hearths were found associated with this wall. They were filled with ashes and burnt debris, and were presumably used for cooking purposes.

Artifacts

A very limited number of artifacts were found. These were mainly of clay and stone. Clay artifacts (Fig. 231) include a variety of animal figurines, the most interesting of which represents a bird (Fig. 231:d) with pedestal base, two projecting wings and a long slender neck. The eyes are nicely indicated by two circular applied pellets. Spindle whorls, some of which bear impressed decoration (b,c) were also found. So too were tokens or gaming pieces, slingballs, nail-shaped cones and possible lids of lamps with a smoke deposit, and traces of burning. Identical specimens were discovered at Tell Abada (II and I) (Fig. 60).

The stone industry (Fig. 232) was represented by some polished hand axes (e), hoes (c), pestles (a) and other grinding tools (g). The flint industry was represented by a variey of tools the most interesting of which are the serrated blades, with traces of bitumen still adhering to their blind edges, an indication that these blades were fixed to a wooden haft and used as scythes or sickles for reaping wheat and barley (Pl. 10:a). A few pieces of obsidian were also found.

Pottery

Our brief excavations at Tell Rashid have brought to light a great deal of pottery throughout the four levels of the site. Painted, incised, impressed, and painted-and-incised ware constitute the greater proportion of the total pottery of the site. Plain pottery was found in very small quantities. All the complete and reconstructable specimens together with some representative sherds are illustrated in Figs. 233-244. Impressed and incised ware is illustrated in Fig. 245.

The amount and the percentage of the various categories of pottery are given in Table 1. Vessel types and their general distribution throughout the Ubaid sites in the Hamrin and in Iraq, in general, are illustrated in Figs. 266 and 267.

1 Painted pottery (Pls. 10b, 11a)

The main bulk of the pottery of Tell Rashid has come from levels III and II, since the earliest level was only encountered through a restricted deep sounding pit which produced very few sherds, and because level I, the uppermost one, had lost much of its pottery due to erosion by both human and natural agencies. As the pottery from the site sequence is virtually identical throughout, with no substantial differences in manufacture, form, or decorative style observed, it will be dealt with as one homogenous collection and will be presented according to vessel type and not according to findspots. The assemblage includes a variety of bowls, jars and beakers. As a rule in our classification vessel types similar to Abada's types are given the same number, while new numbers are given to the new types not represented at Abada.

a) Bowls

This type of vessel seems to have been common at Tell Rashid and was represented by a variety of shapes. Most common is the hemishperical bowl with curved walls and rounded base. Of special interest is (Fig. 234:b); both form and decoration of this bowl are similar to examples from Hajji Muhammad, Ras Al-Amiya, Choga Mami and Tell Abada. Of interest also are the bowls (Fig. 234:c,d) both were decorated with allover patterns, (d) bearing decoration closely comparable to Hajji Muhammad (Ziegler 1953, Pl. 37b:63).

Bell-shaped bowls were also represented. Of interest is (Fig. 233:a) which bears a unique decoration possibly depicting a mythical creature.

Large, wide, open-mouthed bowls with decorated interior bases, some bearing the characteristic sun-burst decoration, were found (Fig. 233:c-h). Other types of bowls, their occurrence and percentage, are to be found in Table 2.

b) Jars (Fig. 237)

Jars at Tell Rashid were represented by a variety of types. These are types 1-6 and 8, a description of which is to be found in Table 3.

c) Beakers (Fig. 238)

Beakers decorated with allover patterns were represented by three types, these are:

1 - Small carinated beakers with flat base, concave sides and out-flared rim (a-b). This type is similar to Abada's beakers (Type 1) and Tepe Gawra XIII (Tobler 1950, Fig.202).
2 - Beakers with almost straight sides and slightly out-turned rim (d-e).
3 - Carinated beakers with straight sides, slightly out-turned simple rim and flat base (c).

Table 1

Numbers of different categories of sherds found in the sequence at Tell Rashid.

Category	No.Recovered	Frequency %
1 Painted pottery	1,678	70.95
2 Impressed pottery	316	13.36
3 Incised pottery	239	10.11
4 Painted-and-incised pottery	24	1.01
5 Plain pottery	108	4.57
Total	2,365	100.00

Table 2.

Occurrence of vessel types (Bowls) at Tell Rashid.

Type	L.IV	L.III	L.II	L.I	Total	Frequency %
1 - Bell shaped bowls (Fig. 233:a,b)	-	2	3	1	6	6.67
2 - Hemispherical bowls (Fig. 234)	2	5	6	4	17	18.89
4 - Large deep bowls (Fig. 235:b,d)	-	3	2	-	5	5.56
9 - Carinated bowls (Fig. 235:a)	1	2	3	-	6	6.67
14 - Long, open carinated bowls with interior and exterior decoration (Fig. 233:c-h)	7	12	16	11	46	31.11
16 - Deep, braod rim bowls (Fig. 236)	-	6	4	-	10	11.11

Table 3

Occurrence of vessel types (Jars) at Tell Rashid.

Type	L.IV	L.III	L.II	L.I	Total	Frequency %
1 - Lugged jars (Fig. 237:a, b)	-	7	2	1	10	15.87
2 - Handled jars (Fig. 237:c-e)	-	5	4	2	11	17.46
3 - Interior-ledge-rim jars (Fig. 237:f; 242:l)	-	6	6	3	15	23.80
4 - Necked jars (Fig. 237:h)	1	4	5	3	13	20.64
5 - Small carinated jars (Fig. 237:g)	-	1	1	-	2	3.18
6 - Spouted jars (Fig. 237:k, k)	-	2	3	-	5	7.94
8 - Globular jars with short neck and out-turned rim (Fig. 237:i)	-	3	4	-	7	11.11
Total	1	28	25	9	63	100.00

2 - Incised/Impressed Ware (Fig.245; Pl. 11b)

Pottery distinguished by incised or impressed decorative techniques was abundant throughout the sequence at Tell Rashid. Specimens bearing combined decoration of incised/impressed-and-painted elements were also present. The percentage of each is shown in Table 1. The technique and manufacture of this category of pottery is identical to that of Tell Abada. However, some methods used at Tell Rashid were not noticed at Abada, for example Fig. 245:e,l,m. The first seems to have been produced by pressing a rounded tool, which could have been a stick or bone with pointed head, on the wet surface of the vessel. The impressions on Fig. 245:l could have been done by pressing a reed splinter against the wet surface of the vessel. Fig. 245:m might have been produced by pressing the wet surface deeply with the finger tips. There were only a few specimens bearing decoration combining impressed and painted patterns (Fig. 245:o,p).

3 - Halaf pottery (Fig. 246)

The upper three levels at Tell Rashid and in particular level III, have produced a number of polychrome sherds of late Halaf period very similar to those from Tell Abada (Figs. 217-220), the significance of this occurrence will be discussed later on.

Vessel types and patterns

The pottery found at Tell Rashid shows no apparent differences throughout the sequence and the whole collection was actually homogeneous. Various types of vessels were represented. Most common were Type 2 (Hemispherical bowls) and Type 14 (Open, carinated bowls with exterior and interior decoration). Of special interest is the bowl Fig. 234:b which resembles examples from Abada II (Fig. 120:a, b). This type of bowl represents a special combination of form and pattern, which is a characteristic feature of Ubaid 2/3 and was also found at Hajji Muhammad (Ziegler 1953, Fig.28:d), Ras Al-Amiya (Stronach 1961, Pl.XLIV:5) and Choga Mami (Oates 1984, Fig.7). Another type of interest is that of large, open bowls bearing exterior and interior patterns (Type 14) (Fig. 233:c-h). Bowls similar to (g) and (h) were also discovered at Abada II (Fig. 152:b), Hajji Muhammad (Ziegler 1953, Pl.37d:138), Eridu (Safar et al. 1981, Fig.91:7,9) and Ras Al-Amiya (Stronach 1961, Pl.XLVIII:2). This particular vessel type and pattern is generally of Ubaid 2/3 style. Beakers (Fig. 238:a, b) are similar in shape with examples from Abada II and share the same decorative style.

A wide range of decorative motifs were used, the vast majority of which are geometric. Naturalistic patterns were found on a very small scale (Fig. 244). Reserve decoration, a distinctive feature of Ubaid 2/3 ceramic styles, was most common and constitutes more than 70% of the total painted sherds. The pattern on Fig.238:b is similar to examples from Serik (Oates 1968, Pl.X:21). Fig. 234:e and Fig. 240:n are also similar to examples from Serik (Oates, ibid., Pl.X:8;Fig.X1:15). Other patterns such as Fig. 239:b; Fig. 242:i; Fig. 242:l) find their parallels with specimens from Hajji Muhammad (Ziegler 1953, Pl.37b:67; Pl.37c:100).

The allover painted style, a characteristic feature of Ubaid 2 was also implemented on some specimens. Fig. 234:d and h bear decoration closely comparable to Hajji Muhammad (Ziegler ibid., Pl.37b:63; Fig.37:b:71).

In general the closest parallels to Tell Rashid in the types and patterns are to be found at Tell Abada II and I and all fall within the range of the Ubaid 2/3 ceramic style.

2 - Site No. 3A [1]

This very small site lies about 3 km. to the east of Tell Rashid. It was extensively damaged and eroded due to continuous ploughing by heavy tractors, so that it is very difficult to determine the original size of the site.

A small quantity of Ubaid sherds were scattered over the surface, together with some animal figurines, grinding stones, spindle whorls, clay sling balls and flint blades. The assemblage as a whole, and the pottery in particular, is like that of Tell Abada and Tell Rashid (Pl. 12).

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[1] This site was not located during the general survey for the Hamrin region, thus it was not referred to in the general Hamrin map (IRAQ, vol. XLI, 1979). Since no original name was given to it we use the number that refers to the nearby site of Tell Rashid (3) plus A for this site.

3 - Tell Ayash (17)

Excavator: W. Al-Jadir

Reference: 'A report on the excavation of Dept. of Archaeology, College of Arts, University of Baghdad' Sumer, vol.XXXV, 1979, pp.560-568.

This tell lies about 7 km. to the northwest of As-Saadiya town and close to the eastern bank of the Diyala river. The distance from Abada to the south is about 6 km. It is oval-shaped, measuring 85 x 60 m. and rises about 2.25 m. above the plain.

The excavations, which were carried out by means of small squares, revealed four building levels and the remains of more than ten settlement floors, all belonging to the Ubaid period. Architectural features were noticed in the building remains of levels III and IV, but were more clear in the former. The walls were provided with buttresses and were constructed of mudbrick measuring 50 x 24 x 7 cm. The general plan seems to have been tripartite (Al-Jardir 1979, Fig.1). [2] The plans, buttresses, and the type of mudbrick are similar to both Abada and Tell Rashid.

The Ubaid pottery from Tell Ayash was not abundant in all levels and only four complete specimens were found. Most interesting is the lenticular jar (ibid., Fig.5). Of interest also is a jar of zoomorphic form painted in red (Fig.7). Vessel types from Tell Ayash and their comparative distribution are shown in Fig. 267.

Other finds at Tell Ayash include the head of a human figurine (Fig. 8), the most characteristic feature of which is the applique "coffee-bean" eyes which are reminiscent of the Choga Mami's head (Oates 1968, Pl.1).

The Ubaid assemblage from Tell Ayash, despite its limited quantity, shows similarity to that from Tell Abada II and I in terms of manufacture and technical style. The presence of some closely comparable Ubaid pottery, like the distinctive lenticular jars at both Abada I and Ayash, would support the assumption of their contemporaneity (Fig. 268). The Ayash discoveries, on the basis of both ceramic and architectural evidence, can be dated to the beginning of the Ubaid 3 phase.

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[2] The numbering of the figures here is that given in the above-mentioned reference.

4 - Telul Al-Khubari (15)

Excavator: F.M. Dawoud.

Reference: 'An Account of Excavation Operations at Al-Khubari Tells' Sumer XXXV, 1979, p.598.

This Tell lies about 8 km. west of As-Saadiyah town and 10 km. east of the Diyala river. It is oval-shaped, some 50 km. in diameter and 2.50 m. high. The Ubaid occupation was encountered in a sounding dug in the southern part of the tell to a depth of about 7 m. The last level (the fifth) was of the Ubaid period. Parts of walls of mudbrick measuring 60 x 30 x 12 cm. associated with some painted sherds were found. Impressed, incised-and-painted sherds were also found as well as a few sherds of late Halaf period. In general the Ubaid pottery from this tell is similar to that from Abada II and I, Rashid, and site No.3A. The site seems to have been contemporary with the above-mentioned Ubaid sites and can be dated to the beginning of the Ubaid 3 phase. The pottery is illustrated in Pl. 13.

5 - Tell As-Saadiyah (Fig. 227:5)

Excavator: Prof. Kozlowski, University of Warsaw.

Reference: Excavations in Iraq, 1979-1980, IRAQ, vol.XLIII, Pl.187.

This is the last site of the Ubaid period to be excavated on the eastern side of the Diyala river. It lies about half a kilometre upstream from the modern town of As-Saadiyah. It measures some 60 x 40 m. and rises about 3.50 m. above the ground. Six building levels were distinguished, the earliest three belonging to the Ubaid period. Parts of four houses were excavated with mudbrick walls standing no more than 40 cm. high. Urns containing children were found below the floors. The small finds included clay bent nails, animal figurines, flint and obsidian tools. The painted pottery could be attributed to the Ubaid 4 period. A little incised pottery was also found. [3]

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[3] I have had no chance to see the pottery from this site, nor that of Tell Bustan (No.49) and Er-Rubeidheh (No.69), as these sites were excavated while I was here, and no reports have yet been published.

6 - Tell Songor A (42)

Excavator: H.Fujii

Reference: 'Preliminary report of excavations at Gubba and Songor' Al-Rafidan, Journal of Western Studies, vol.II 1981.

Songor consists of three tells, A,B and C, located near the junction of two rivers, the Diyala and the Narin which runs to the north of Jebel Hamrin.

The first tell, Songor A, is an oval-shaped mound measuring some 190 x 140 m. and about 3 m. in height. At the northern and southern ends of the tell, some buildings thought to have belonged to the Samarra or Transitional period were uncovered (Fig. 247). The well preserved building (no. 1) had been constructed directly upon the virgin soil. This building is similar to the Samarra house plan from Choga Mami (Oates 1969a, Pl.XXIV). In the central area a group of round-shaped pits, measuring 1.6-2.2 m. in depth from the ground surface, were recovered. These pits were filled with late Halaf pottery in large quantities and a small number of Ubaid sherds. Late Halaf pottery was also found in the northern area directly below the surface. The painted pottery (Egami 1981, Figs.31,32) which was attributed to the Sammara period by the excavator is thought to be of Transitional period (Oates, personal communication).

The Ubaid period at Songor A was only represented by a group of five graves excavated in the southern area. These graves produced some Ubaid pottery in painted and plain styles (Figs. 248, 249; Pl.13). The painted pottery is of fine fabric tempered with sand and straw. The paste is buff or light yellowish brown. Cream slip was sometimes applied. The paint is dark brown or dark green. A variety of jars and bowls were represented. These are as follows:

Bowls

Type 1: Bell-shaped bowls (Fig. 248:1-3)

Type 14: Open, carinated bowls with exterior and interior decoration (Fig. 249)

Jars

Type 5: Small carinated jar (Fig. 248:4-6)

Type 10: Lenticular jars (Fig. 248:8)

Type 12: Small squat jars (Fig. 248:7).

Of interest is the lenticular jar (Fig. 248:8) which is similar to examples from Abada I, Ayash, Eridu XIII-VIII, Tepe Gawra XIX-XVII, and Ras Al-Amiya. The large, wide-mouthed bowls with base interior patterns (Fig. 249) are reminiscent of specimens from Tell Abada, Rashid, H.Muhammad and Ras Al-Amiya.

Vessel types and their comparative distributions are shown in Figs. 266 and 267.

Generally speaking the ceramic assemblage from Songor A shows a very interesting combination of Ubaid features, most interesting of which is the presence of the lenticular jars. Of interest also is the similarity of some types to some from Arpachiya. The Ubaid pottery from Songor A reflects a similar situation to that of Abada II, I and Rashid, which comprise elements of both northern and southern Ubaid sites. On the basis of the closely comparable pottery from both Songor A and Abada II and I, the Songor A materials can be dated to the Ubaid 2/3 phase.

7 - Tell Songor B (42)

This tell is situated about 100 m. from Songor A. It has an oval shape measuring some 60 x 50 m. with a height of about 2 m. Four levels were excavated, the earliest of which (IV and III) belong to the Halaf period. Level II is said to be a mixed level of both Halaf and Ubaid materials. It is chiefly composed of two buildings (Fig. 250); B1 measured 23 x 10 m. and 70 cm. wide, and is built of tauf. The floors were of gypsum mixed with pebbles. The other building, B2, is symmetrically constructed with cross-shaped rooms flanked by other smaller rooms. It is built of tauf about 80 cm. thick. Several rooms were uncovered between B1 and B2.

The uppermost level I on the south slope of the site mainly contained pottery kilns, one of which (Fujji 1980, Pl.20:i) is similar to that from Abada I (Pl.8a).

The Ubaid pottery from Songor B is the same in both levels II and I (Fig. 251, 252;Pl. 15b) and consists of various types of bowls, jars and beakers. These are as follows:

Bowls

Type 1: Bell-shaped bowls (Fig. 252:2-4)

Type 2: Hemispherical bowls (Fig. 251:1)

Type 4: Large, deep bowls (Fig. 251:1)

Type 5: Boat-shaped bowls (Fig. 251:7)

Type 9: Large, deep carinated bowls (Fig. 251:6).

Type 14: Large, open bowls with exterior and interior decoration (Fig. 251:5).

Jars

Type 1: Lugged jars (Fig. 252:2)

Type 3: Interior-ledge-rim jars (Fig. 252:3, 4)

Type 5: Small carinated jars (Fig. 252:5)

Type 8: Jars with short neck and out-turned rim (Fig. 252:6-8)

The comparative distribution of these vessel types is shown in Figs. 266 and 267. In general the Ubaid pottery from Songor B is identical to that of nearby Songor A and similar to the Ubaid pottery from Tell Abada II,I and other Ubaid sites located in the eastern sector of the Hamrin region. As was the case with Songor A similarity to both southern and northern Ubaid pottery is apparant. This was attested by the presence of some characteristic bowls (Fig. 251:5) similar to specimens from Eridu, Hajji Muhammad and Ras Al-Amiya, while Fig. 252:6 are similar to examples from Arpachiya. As can be noticed from Fig. 267 other specimes find their parallels in both southern and northern Ubaid sites. In the light of the striking similarity between the Ubaid pottery of Songor B and that from other Ubaid sites in the Hamrin region, particularly Abada, in terms of technique, forms, and painted style, it seems obvious that the Songor B assemblage should to be dated to the Ubaid 2/3 phase.

8 - Tell Songor C (42)

Songor C lies about 100 m. to the northeast of Songor B. It is a small tell measuring some 40 x 30 m. and about 1 m. in height. The depth of occupation measures only 1.6 m. from top to virgin soil. Two levels belonging to the Ubaid period were identified, both were in poor condition. Level I consists of only one unit of buildings comprising about 18 small square rooms (Fig. 253). No coherent plan can be detected for this building which was built of tauf about 70 cm. thick. Door sockets, ovens and hearths were found inside the building. No architectural remains were found at Level II. Only two floor levels mixed with ash were recovered here.

The Ubaid pottery from Songor C (Fig. 254;Pls. 16-18) is indistinguishable from that of Songor A and Songor B and also similar to the Ubaid pottery from other Ubaid sites in the

Hamrin region such as Abada and Rashid. It also bears a great similarity to the Ubaid pottery from both northern and southern Ubaid sites. Of interest is the presence of the characteristic lenticular jars (Fig. 254:9) which are reminiscent of similar jars from Eridu XIII-VIII, Tepe Gawra XIX-XVII and Ras Al-Amiya, also simlar to ones from Abada I, Ayash and Songor A. Of interest too is the small hemishpherical bowl painted in allover style with wavy lines in reserve (Pl. 16:13) which is very similar to examples from Hajji Muhammad, Tell Rashid and Ras Al-Amiya. Therefore it is reasonable to attribute the assemblage of Songor C to the Ubaid 2/3 phase. The classification of the vessel types is as follows:

Bowls

Type 2: Hemispherical bowsl (Pl. 16:13).

Type 7: Large wide-mouthed with flaring rim (Fig. 254:14)

Type 9: Large, deep bowls (Fig. 254:13; Pl.18:b)

Type 13: Small deep bowls (Fig. 254:11)

Type 14: Open, carinated bowls with interior and exterior patterns (Fig. 254:12; Pl. 16:b, 17:a)

Jars

Type 1: Lugged jars (Fig. 254:1, 3, 4)

Type 3: Interior-ledge-rim jars (Fig. 254:10)

Type 5: Small carinated jars (Fig. 254:7)

Type 9: High-necked jars (Fig. 254:2)

Type 10: Lenticular jars (Fig. 254:9)

The comparative distribution of the vessel types is shown in Figs. 226 and 227.

Having briefly described the material assemblages from Tells Songor A, B and C, a few comments pertinent to the Ubaid occupation need to be made. At Songor A the Ubaid occupation was only represented by some pottery found in five graves excavated in the southern area. No architecture nor any other traces of settlement were found. So it seems obvious that these graves must belong to another Ubaid settlement nearby. At Songor B the Ubaid occupation was only found at level I (the uppermost) which only consisted of a group of pottery kilns. Ubaid pottery is said to have been found at level II which was described as being a mixture of both Halaf and Ubaid pottery (Pl.15:a,b); but the mixture was not found at a stratified level or in a sealed context but rather came from a pit dug between two buildings, B1 and B2 both of which belong to the Halaf period. No other Ubaid

occupation was found at this tell, so it is reasonable to assume that these pottery kilns must have belonged to an Ubaid settlement nearby.

Songor C is the only site among the Songor group in which the Ubaid occupation was well documented by both architecture and pottery. Therefore it would seem plausible to assume that the Ubaid people had established their village at Songor C, built their pottery kilns at nearby Songor B, and burried their dead at Songor A. Both the last two sites are within a stone's throw from Songor C.

9 - Tell Maddhur (64)

Excavator: British Expedition to Iraq.

References: 1)M. Roaf 'The Hamrin Sites' in Fifty years of Mesopotamian Discovery. ed. J. Curtis, British School of Archaeology in Iraq, 1982.
2)Tell Maddhur, A Summary report on the excavation ed. M.Roaf (unpublished).

Tell Maddhur lies in the north-eastern part of the area to be flooded in the Hamrin basin. It is a small mound rising about 2.50 m. above the surrounding plain and the visible mound covers an oval area about 100 m. from east-west and about 80 m. from north-south. The earliest occupation level at the tell (1) was only excavated in three small soundings and no walls were found. The pottery was similar to that of the later three Ubaid levels, and in fact there was very little change throughout the Ubaid occupation in the site. The most important discovery was in level 2 where a very well preserved house with intact windows and doors was revealed. It is a small building about 14 m. square with a tripartite plan consisting of a central cruciform hall flanked by rooms to the north and south (Fig. 255). The walls were constructed of large rectangular mudbricks (53 x 28-30 x 8-10) and (53 x 14.5-15 x8-10) cm. The same kind of mudbrick was used at Tell Abada and Rashid. The outside walls were stepped out wherever they were met by an internal wall. The only entrance to the house was at the northeast corner, leading through an anti-chamber into the central hall (R.7) which is 11 m. long and 4 m. wide. This is apparantly cross-shaped with two arms as trancepts towards the eastern end. By counting the number of brick courses belonging to the collapsed north wall, the excavator estimated that the original height was more than 3.5 m. The massive charred beams, probably of palms, on the floor of the room, and the fragments of clay with impressions of timber beams and of reed, are thought to have been part of the roof. This seems to substantiate similar evidence found at Tell Abada that the large central hall in this type of building was originally roofed. The building was reinforced by a heavily plastered low mudbrick revetment built at the base of the outer

wall. This feature which was also found in the upper levels of the site, was found too at the house of Level I at Abada (Fig. 26). A shelf of mudbrick and an intact window above it were found in the southwall of room 3. Other windows were found in room 11. The narrow parallel rooms to the east of room 3 (rooms 4, 5) most probably belonged to the staircase leading up to the roof, similar arrangements were found at Tell Abada. A pit was cut down into the north wall of room 9, apparantly from level 3 above, and a child was buried in this pit covered by sherds from a large deep bowl.

Level 3 has produced a large building (Fig. 256) with a very solid curving revetment wall made out of pise. This had a battered outer face and in places stood over a metre high. The entrance of the building was at the north and the door sill was made of gypsum plaster. The details of the internal plan were badly damaged but it seems that it may have been tripartite. In another sector of this layer, F6, a small building was found with rooms in one phase of which an egg-shaped oven had been built; similar ovens were found at Tell Abada. In the south and west there was a solid pise revetment.

Level 3/4 is considered by the excavator to be an early phase of level 4 rather than being a distinct level intermediate between levels 3 and 4. The building remains consist of a rectangular room which had been re-used in level 4 together with its pise revetment. The walls were made out of mudbricks 53 x 23 x 9 cm. in size. The floor of this room was covered with smashed pots. (Fig. 257).

The artifacts found consisted mainly of pottery, clay, nail-shaped cones, grindstones, hoes, flint and obsidian blades, spindle whorls, a few animal figurines and a very large number of clay sling balls. Carbonised grains were found. These were identified as 6-row hulled barley.

The Pottery

As we have suggested earlier the pottery from Tell Maddhur was homogeneous throughout the excavated levels. Plain pottery far outnumbered the painted ware and a variety of bowls, jars and cups were found. Both rounded and ring-bases were represented. Of interest are the double-mouthed jars from level 2 (Fig. 258:9). This type of jar is well known from the northern Ubaid sites like Arpachiya, Tepe Gawra XIII, T. Eth-Thalathat, and Nuzi. It was also found at the Ubaid sites of the Hamrin region like Abada and K.Qasim. Incised decoration (Fig. 258:1,2) was popular throughout the Ubaid levels at Maddhur. A variety of techniques were employed. These resemble some of the incised decoration occurring at other Ubaid sites in the Hamrin region (i.e. Abada, Rashid, Ayash and Abu Husaini). Other parallels from outside the Hamrin region are to be found at Nuzi and the nearby

site of Kudish Saghir (Starr 1937).

Exceptional types of surface decoration such as applied knobs were also found (Fig. 261:1).

The painted pottery was not as common as the plain pottery at Tell Maddhur. The paint was usually black, often over-fired to green and sometimes under-fired to brown or red. Parallels in form and decoration are to be drawn from the Ubaid sites in the Hamrin region as can be seen from Fig. 266. Obvious comparisons can also be made with the Ubaid sites outside the Hamrin basin and in particular Tell Uqair (Fig. 267). Vessels were represented in different forms and a variety of painted patterns were used. Most interesting is the large, extraordinary painted jar (Fig. 261:8) found at the Ubaid house of level 2. It is of straw tempered greenish ware painted in black. The upper half of the jar was decorated with a beautiful design: vertical panels depicted animals with long curved horns (perhaps ibex) and human figures separated by other panels filled with geometric elements, or by double vertical lines bordered by multiple horizontal lines.

It was suggested that the Ubaid occupation at Maddhur belongs to the late Ubaid period (Roaf 1982, 41). To verify such an attribution, some facts concerning the pottery from Maddhur need to be examined:

1 - The ceramic evidence as represented by the painted pottery, as far as shapes and decorative style are concerned, differs considerably from those sites which can be firmly attributed to the Ubaid 2 and 3 horizon like Abada, Rashid and the Songor sites.

2 - The percentage of painted pottery constitutes a basic difference between Maddhur and the other the Ubaid sites in the region which belong to the Ubaid 2 and 3 phases. The painted pottery is predominant at these sites, while it is scanty at Maddhur.

3 - Although the incised decoration was common at Maddhur, it never reached the sophisticated level represented at Abada and Rashid. The variety of techniques used at the latter sites far exceeded those of Maddhur.

4 - The presence at both Abada (Fig. 216) and Choga Mami (Oates 1984, Fig.5:6) of that type of large, open carinated bowl bearing cross-hatched incisions on its base interior, and its absense from Maddhur is good evidence for making the last site later in date than the former sites which belong to the Ubaid 2/3 phase.

Therefore the archaeological evidence from a comparison of the pottery would support the attribution of Maddhur to the late Ubaid period (Ubaid 4).

10 - Kheit Qasim (65)

Excavators: Jean and Chantal Forest

References: Ch.Forest-Foucault 'Rapport sur les fouilles de Kheit Qasim III-Hamrin' Paleorient, vol. 6, 1980,
IRAQ, vol.XLIII, 1981,p.182
Arhaeologia 162. Jan. 1982, p.59.

This tell lies to the north of the Hamrin basin about 18 km. north of As-Saadiyah town. It is a flat and very low mound with no definite dimensions. Excavations here revealed two large contemporary buildings of different plan. One measuring 10.5 x 14 m. had a central T-shaped hall with two subsidiary halls of similar shapes arranged perpendicularly on each side of the main hall (Fig. 262). This building is reminiscent of similar tripartite buildings from Tell Abada (in particular building B of level II) and Tell Maddhur. Other parallels to this building are to be found at Tepe Gawra XV and T.Eth-Thalathat.

The second building is not complete and had a simpler tripartite plan measuring 10 x 10 m. (Ch. Forest-Foucault 1980, Fig.1).

There was little material associated with these two buildings. It included painted and plain Ubaid pottery (Figs. 263-264). Impressed ware similar to that from Abada and Dalma ware were also found as well as some sherds of the late Halaf period.

A variety of bowls, jars, beakers and cups were found. These are as follows:

Bowls

Type 1: Bell-shaped bowls (Fig. 263:5, 6)

Type 2: Hemispherical bowls (Fig. 263:1, 2)

Type 7: Large, wide:mouthed bowls (Fig. 263:3, 4)

Type 15: Pedestal bowls (Fig. 263:9)

Type 17: Hole-mouthed bowls with inward sloping sides (Fig. 263:8)

Jars

Type 1: Lugged jars (Fig. 264:1)

Type 4: Necked jars (Fig. 264:2-7)

Type 8: Globular jars with short neck and out-turned rim (Fig. 264:8)

Type 9: High-necked jars (Fig. 264:10)

Type 10: Double-mouthed jars (Fig. 264:9)

In general the Ubaid pottery from K.Qasim is identical to that from Ubaid sites in the Hamrin region, and it is indistinguishable from the Ubaid pottery of Tell Abada and Rashid. Geometric decoration was predominant and reverse patterns seem to have been common.

The architectural evidence from K.Qasim implies close affinity with those Ubaid sites which yielded similar architecture associated with the same type of Ubaid pottery. Thus the ceramic evidence coupled with the architectural would evidently refer to an earlier Ubaid 3 horizon.

11 - Tell Haizalon (40)

Excavators: The British Expedition to Iraq. R.Killick.

References: M.Roaf 'The Hamrin sites' op.cit., p.47

A small sounding was made in this tell which lies in the northwest of the Hamrin basin just below the slopes of the Jebel Hamrin near the west bank of the Narin river. No buildings were discovered, but the few specimens of Ubaid pottery show some similarity to that from Tell Maddhur. Pieces bearing incised and impressed decoration were also found. Judging from the few Ubaid sherds, it seems that the site was probably occupied during the later part of the Ubaid 3/4 period and was

probably contemporary with the Ubaid levels at Tell Maddhur. Vessel types are as follows:

Bowls

Type 4: Large, deep bowls (Fig.265:13-14)

Type 7: Large, wide-mouthed bowls (Fig. 265:1-9)

Type 25: Hole-mouthed bowls with incurved sides (Fig. 265:16)

Jars

Type 2: Handled jars (Fig. 265:19)

Type 4: Necked jars (Fig. 265:20-22)

12 - Tell Bustan (49)

Excavator: Abu Ghoush

Reference: IRAQ, vol.XLIII, 19, p.174

This tell lies in the vicinity of K.Qasim. It is a small mound measuring some 60 x 85 m. and stands about 1.60 m. high. No traces of occupation whatsoever were found in this tell which proved to have been an Ubaid cemetery, of adult burials only. A total of 18 graves were discovered, furnished with pottery of Ubaid 4 style which was placed near the head in most cases. Generally speaking little Ubaid pottery was associated with these graves and it was of rather poor manufacture, the greater proportion was plain. It seems certain that this tell was used as a cemetery by the Ubaid people who presumably lived somewhere not far away. The type of pottery found in these graves is said to be similar to that from Maddhur. The latter site lies less than 4 km. to the east of the cemetery, so it is not unreasonable to assume that the cemetery at Bustan belonged to the Ubaid people of Maddhur.

13 - Tell Ar-Rubeidheh (69)

Excavator: The British Expedition to Iraq.

Reference: IRAQ, vol.XLI, 1979, p.166

This is a low site to the southwest of the Narin river. The main site consists of a sherd scatter some 150 x 125 m. in extent; behind this to the west are two smaller patches with prehistoric painted potsherds. The northern one with late Halaf style pottery proved to be almost completely eroded. A small trench was dug into the southern one which consists of a hump left by wadi erosion. A fair depth of depostis and some painted pottery similar to that of Maddhur was found. [4]

14 - Tell Hasan (67)

Excavator: A.Invernizzi.

References: A. Invernizzi 'Excavations in the Yalkhi Area (Hamrin project - Iraq)' Mesopotamia 1980 vol.XV, pp.19-49.

This is a rather low, small, rounded site measuring some 70 x 70 m. and about 1.50 - 2 m. high. It lies northeast of Tell Yalkhi, right at the foot of the eastern hills on the edge of the cultivated alluvial land.

Painted Ubaid sherds together with late Halaf sherds were plentifully scattered on the surface.

The Ubaid occupation was found only in the eastern part of the tell. There were only a few structural remains with no detectable plan. While the Halaf village was situated on the western part of the tell, a big, deep, ditch seems to have separated the two parts of the tell and was found full of sand and sherds. On the eastern side of this ditch there is only a single Halaf construction. It is a small-sized tholos less than 3 m. in diameter, of which only the tauf base remains.

In the western part of the ditch small, square or rectangular rooms belonging to the Halaf period were packed (ibid, Fig.79). The painted Ubaid sherds are similar to some

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[4] Personal communication with Mr. N. Postgate.

specimens from Tell Abada but generally they are much inferior in terms of manufacture and style of decoration. Of interest are the two almost complete oval-shaped jars (Pl. 19). The jar (a) bears decoration similar to the jar from Tell Abada (Fig. 190:d). The other jar was decorated with animals (goats and ibexes) and geometrical elements. No incised pottery was found.

The Halaf pottery, in general, seems to be of late Halaf date (ibid, Figs.88,91) and similar to the Halaf sherds found at Tell Abada and Tell Rashid. It is significant that Ubaid sherds were never found coexisting with Halaf sherds within a stratified context, neither at the Halaf village or at the Ubaidian one. Thus no contemporaneity between the two villages can be established. Judging from the painted style of the Ubaid pottery and its poor manufacture, together with the complete absense of the incised ware, we may suggest a very late Ubaid date for Tell Hasan.

15 - Tell Abu Husaini (35)

Excavator: A. Invernizzi

References: A.Invernizzi 1980, 39-43;
S.Tusa 'Notes on the Tell Abu Husaini Excavation', Paleorient, vol.6, 1980, pp.225-227.
IRAQ, vol.XLI, 1979, p.165
IRAQ, vol. XLIII, 1981, p.171

This tell is situated about 2 km. to the west of Tell Hasan. It is a natural tell with human settlement on part of it. The tell rises about 6 m. above the surrounding fields. A 300 x 200 m. scattering of sherds was found on the surface. The village houses were built along the eastern slopes of the mound. The limited size of the excavations does not show the exact limits of the inhabited area. Two trenches were opened. The north-eastern one has revealed a group of mudbrick structures consisting of small square and rectangular rooms with very thin walls (Invernizzi 1980, Fig.J and Fig.3). In the western trench lies a group of rooms that form a part of an apparantly large house with a courtyard, but of no regular plan. There are numerous childrens' graves found below the floors of the houses in burial urns, with no funerary goods.

Artifacts are mainly of clay or stone. These are typically spindle whorls, sling balls, clay figurines, flint and obsidian tools. Most common is pottery with the plain ware being predominant. The incised technique seems to have been common also. Painted pottery is rare.

On the whole, the Husaini material, especially the pottery, is homogenous. The plain pottery is predominant. The incised and the few pieces of painted pottery can be described as being rather poor in terms of manufacture and painted style. The ceramic evidence together with the architectural evidence would suggest that the village should be dated to the final stage of the Ubaid period. The same date was also suggested by the excavator (ibid. 42).

Foreign Relations

The Ubaid pottery from the Hamrin sites shows the greatest number of analogies with the Ubaid repertoire in southern and northern Iraq and the whole collection of this pottery can safely be considered as pure Ubaid ware. However, some similarities can also be found between this pottery and that from other sites outside Iraq.

Comparisons can be made in terms of certain shapes and painted designs with a number of Iranian prehistoric sites extending from Susiana and the Deh Luran plain of Khuzistan in south-western Iran to the Solduz valley (Dalma Tepe, Pisedeli Tepe) in the north; and from Giyan in Luristan to Tepe Sialk in the north of the Iranian plateau and down to Tel-i-Bakun.

To consider the actual relationship between the Ubaid settlements in the Hamrin region and these Iranian sites, it is essential to examine the available evidence concerning the kind and the extent of similarities which might imply the existence of such relations. We start with the Susiana area where a number of sites have furnished what is called the Susiana sequence (a,b,c,d) (Le Breton 1947, 1957; Dollfus 1971; 1975; 1978). From Djaffarabad, I,II and III (Susiana a,c,e) and Bendibal (Susiana d), no important evidence can be found and the similarity lies in a very few painted patterns only. At Tepe Djowi (Susiana b), similarities with the Ubaid 2/3 pottery from the Hamrin sites are probably more informative and are manifested in a number of common shapes and painted designs. Of interest is the hemispherical bowl decorated with wavy lines in reserve (Le Breton 1947, Fig.26:2; Dollfus 1978, Fig. 14:11) which is comparable to specimens from Abada and Rashid (Figs. 120:a, b; 234:b). Other important evidence is provided by the large, open bowls (Le Breton 1947, Fig.23:4) which show significant combinations of shape and pattern, closely resembling Type 14 (Fig. 110:i) from Abada III. That part of the large, open bowl with interior decoration on its base (Le Breton ibid., Fig.23:a) is similar to Abada II (Fig. 154:c). Bowls of Type 14 are reported from the Deh Luran plain; at Tepe Sabze a variety of this type were found (Hole et al. 1969, Figs.56-7) with some examples reminiscent of specimens from Abada, Rashid and Songor C. The most significant discovery comes from Choga Safid where a Transitional bowl (Hole 1977, Fig.50:b) strikingly resembles a Transitional one from Abada III (Fig.101:b).

At each of Giyan, Sialk III and Bakun AIII, similarity with our pottery is mainly confined to a small number of painted designs most notably that of Fig. 145:18 which is identical to one from the latter site (Langsdorff and McCown 1942, Pl.48:14) this pattern has never been found at any other site in Iran or Iraq.

Moving to the Solduz valley, a close comparison can be made between Abada and Pisdeli Tepe where a number of painted vessels similar to Abada examples were found (Dyson and Young 1960). These are as follows:

Abada		Pisdeli
Level I	(Fig. 124:d)	Fig.1:3
"	(Figs. 125:b; 145: 13)	Fig.1:5
"	(Fig. 180:7)	Fig.2:1
"	(Fig. 186:d)	Fig.2:2
Level II	(Fig. 116:6)	Fig.2:3
"	(Fig. 169:c)	Fig.3:4
"	(Fig. 176:19)	Fig.3:1

Due to these apparent similarities between Pisdeli and the Ubaid sites in Iraq, it was suggested that "Pisdeli ware is the first documented evidence of pottery of pure Ubaid style" (Dyson ang Young, ibid.26). This assumed relationship between the Solduz valley and Iraq during the Ubaid period is further strengthened by the massive occurrence at Abada and to a lesser extent at Rashid and K.Qasim, of the impressed ware closely matching Dalma impressed ware. Some similarities with the painted ware at Dalma [5] could give weight to Young's suggestion that "the unusual bowl decorated with (double W) pattern, which was certainly an import in the assemblage, indicates that Dalma culture was in contact with other painted pottery traditions" (Young 1963, 39). It would not be surprising if the Ubaid tradition at the Hamrin sites had been one of these traditions, and this intrusive bowl at Dalma which is reminiscent of an example from Abada II (Fig. 139:f), may have been imported from the Hamrin region. This would also explain the presence at Abada of a Dalma-like painted bowl (Fig. 125:d) and two other sherds of the same tradition, which could have been imported from the latter site.

The common occurrence of this type of impressed ware in both Iran and the Hamrin region is significant evidence of a probable direct contact between the Solduz valley in northern

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[5] Young 1963, p.39, no.3 resembles Abada Fig. 161:3. Ibid, no.5 is remiscent of Fig. 116:15. Ibid no.7 is similar to Abada Fig. 125:d).

Iran and central Mesopotamia (the Hamrin region); but does this massive occurrence of this ware in the Hamrin region imply that it originated there and was transferred to Iran, or was it the other way round; one may assume, impressed by the huge quantity of such ware in the Hamrin region, that this technique was invented there and then transferred to Iran, but the inevitable question would certainly be why were the other pottery techniques also not transferred and widely used in Iran? Indeed, to consider the original provenance of this ware, it is important to examine its distribution in both Iraq and Iran.

The Dalma impressed ware has a widespread distribution in Iran; it was found at Giyan (Dyson 1963; Goff 1971). At Seh Gabi a deposit 8 m. thick was excavated in 1971 (Hamlin 1973, 1974). It was also reported from an area extending from lake Urumia to the Kermanshah-Hamadan region and as far south as the Khurramabad valley in Luristan, and the Solduz valley in the north where Dalma is situated (Hamlin 1975, 111). In Iraq, Dalma ware, whether painted or impressed, is not common and has only a limited distribution; one painted example was found at Tepe Gawra XIII (Tobler 1950, no.187) and a few impressed sherds at Kudish Sahir (Starr 1937, Pl.45) and recently in the Hamrin region. To consider whether the Dalma impressed ware was imported from Iran into the Hamrin region we have to examine the available evidence concerning this ware from the latter region. At Abada, Rashid and K.Qasim, and in particular at the former site, it was found in very large quantities, enough to be taken as good evidence that it was locally made. However, important evidence has come from Abada where several examples of this ware were provided with a special kind of lug (Figs. 211:c; 212:a, c). This type of lug has never been attested at any site in Iraq before and can be considered a distinctive feature of the Iranian tradition, it was found, for example, at Djaffarabada 1-3 (Dollfus 1971, Fig.15:13-17), and at Dalma itself (Hamlin 1975, Fig. 10:d). Therefore it is not unreasonable to assume that the impressed pottery of the Hamrin region was highly influenced by, perhaps even a pure imitation of, the Dalma impressed ware; it can be considered a local pottery with an Iranian tradition.

At Abada II/I, Rashid, and Songor C and B a red, straw-tempered ware with red-slipped surface, sometimes burnished, often bearing vertical patterns in dark purple to black paint, was found (Fig. 159). Identical sherds were found at both Ras Al-Amiya (Stronach op.cit.Pl.XLVI:8) and Choga Mami (Oates 1984, 258; Fig.6:2-4). The mineralogical test conducted on specimens of this type of ware from both sites has shown a uniformity of mineralogy, paste texture and paint treatment. The same result can be postulated for Abada's examples. It has been suggested that the source of this ware must have been Iran (Oates 1984, 259). The presence of dimpled-base examples at Abada is another Iranian feature (p. 139, Fn. 29).

Among small finds, which indicate contact between the Hamrin region and Iran, are the elongated limestone pebbles with one end often split, broken or damaged from heat and smeared with asphalt (Fig. 83:e-g). These were apparantly used to stir boiling asphalt when it was being prepared for use as a mastic. These tools were not attested in Iraq before, but they were known from the sequence in the Deh Luran plain in Iran (Hole et al. 1969, 192; Hole 1977, 210; Pl. 50: a, b), their presence at Abada obviously indicates that this technique was derived from the latter area.

The new evidence from the Ubaid settlements of the Hamrin region has explicitly shown that a certain degree of human interaction was actually taking place, yet we do not know what sort of interaction this was. Does it imply a movement of people involved in trade, carrying their ware along with their traditions, or could it be interpreted as a sort of invasion or expansion at the expense of others? Such questions remain very difficult to answer in the light of the evidence at hand.

Abada and Ubaid Chronology

In our general discussion of the Ubaid assemblages from the Ubaid sites in the Hamrin region, we tentatively attributed each of them to one phase or another of the Ubaid period. Below the problems involved in this classification of the ceramic industries and their chronological implications are considered.

As we have already seen, the earliest level (III) at Abada produced a number of vessels and a variety of sherds which are closely comparable to examples from Eridu XVI-XV (Ubaid I), together with some examples which resemble both Choga Mami Transitional Samarra/Ubaid type and more classical Samarra pottery. They were also associated with more conventional Ubaid 2 pottery (Fig. 268).

This simultaneous occurrence of these different ceramic styles in one level would seem to pose a chronological problem, which has to be carefully dealt with. As far as the occurrence of the transitional pottery is concerned we should stress the fact that we do not have very characteristic Transitional material comparable with both Choga Mami and Choga Safid; most significant is the fact that the Transitional material follows Samarra at both of these sites, a situation which does not exist at Abada; and from the Transitional material at the latter site was found in association with Ubaid 2 pottery, it is more reasonable to suggest that our material is late in the Transitional range and could be contemporary with the beginning of the Ubaid 2 phase or late Ubaid I.

The association of the Ubaid 2 material with the Transitional ware some of which closely resembles examples from both Choga Mami and Choga Safid, does suggest that this level was partially contemporary with the Transitional levels at the latter two sites. A radiocarbon date of 4896 b.c. was obtained for the Transitional levels at Choga Mami (Oates 1984, 263).

The pottery from level II is overwhelmingly dominated by Hajji Muhammad or Ubaid 2 pottery (Fig. 268). This closely resembles that of the same phase from the type site and other contemporary sites. However, other vessels appear to belong to the Ubaid 3 ceramic style (Fig. 269), this reflects the fact that the distinctive painted ceramic style associated with Ubaid 2 continues well into the Ubaid 3 phase (Oates 1960, 36). Among the most common types at Abada is the hemispherical bowl, Type 2 (Fig. 95; Schema 2), the most distinctive example of which is bowl (Fig. 120:a, b). This very characteristic Ubaid 2 type was found at Hajji Muhammad (Zieger 1953, Pl.28d), Ras Al-Amiya (Stronach 1961, Pl.XLIV:5) and Choga Mami (Oates 1984, Fig.7:8). Bell-shaped bowls (Type 1) are another common type at Abada (Figs. 115, 118), it resembles specimens from Eridu XIII-VIII (Safar et al. 1981, Fig.72:20a), Ras Al-Amiya (Stronach 1961, Pl.XLVI:1), Choga Mami (Oates 1984, Fig.4:3-6) and Arpachiya (Mallowan and Rose 1935, Fig.29). The decoration on the base exterior of Fig. 118:e is reminiscent of Tepe Gawra XIX-XVIII (Tobler 1950, nos. 86-92). The quality and the painted style of the Abada examples is more similar to the Choga Mami ones. Another distinctive trait of Ubaid 2 style at Abada is the large, open, carinated bowl (Type 14); of particular interest is the combination of decoration on the base interior with a perpendicular grid pattern on the rim interior (Figs. 110:d; 153:a-c). Similar examples were found at Hajji Muhammad, Ras Al-Amiya and Choga Mami (Oates 1984, Fig.6:11-12). Of similar interest is the distinctive Ubaid 2 bowl (Fig. 157) decorated with a variety of pendant loops similar to examples from Hajji Muhammad (Ziegler 1953, Pl.12), Eridu XIII (Safar et al. 1981, Fig.89), Ras Al-Amiya (Stronach op.cit.,Pl.LI:1,6,9) and Choga Mami (Oates 1984, Fig.5:12). At Abada pendant loops were used as both interior decoration on this particular type of bowl and exterior on other types (Figs. 129, 130:1-13). Another distinctive Ubaid 2 ornament is the denticulated pattern of small triangles running along the top of the rim (Figs. 131:b, c, e, and g; 132:e), similar to examples from Eridu XII (Safar et al., 1981, Fig.88:6) and Choga Mami (Oates 1984, Fig.5:6-9). At Abada this pattern was found associated with the large deep bowl (Type 4). The presence at both Abada and Choga Mami of the open-mouthed, carinated bowls (Fig. 216 and Oates 1984, Fig.5:6), and the trough-spouted vessels (Fig. 188:g) of a type known from the Mehmeh phase at Tepe Sabz (Hole et al. 1969, Fig.66:a) is another important feature in chronological terms.

Level I has produced other distinctive chronological diagnostic items such as "Tortoise vases" or Lenticular jars (Fig. 192). This peculiar type of vessel was also found at other

Ubaid sites like Eridu XIII-VIII (Safar et al. 1981, Fig.72:15), Ras Al-Amiya (Stronach 1961, Pl.LVI:4), Tepe Gawra XIX-XVII (Tobler 1951) and Choga Mami (Oates 1984, 258). The occurrence of this particular type of vessel in different sites located in different geographical areas underlines the fact that real contact was actually taking place between northern and southern Mesopotamia, and these levels of the mentioned sites were contemporaneous with each other (Fig. 268). As we have seen, level I cannot be far in time from level II, as shown by the architectural evidence where the houses of level I were built directly upon those of level II. Indeed much of the Ubaid pottery from level I is similar to that from level II, and since level I has produced larger proportions of pottery identical to Ras Al-Amiya, it is therefore almost contemporary with the latter site and approximately with Eridu XII-XI.

Another important discovery which is significant in chronological terms, is the occurrence of late Halaf polychrome sherds at Abada II/I (Fig. 217-220). These sherds were found side by side with the Ubaid 2/3 pottery, in a very well stratified level. There is no earlier Halaf occupation whatsoever at Abada, as the earliest level in the site was built directly over the virgin soil, not is there any Halaf occuption in the whole of the southeastern Hamrin, where Abada lies. Therefore the presence of these late Halaf sherds cannot be explained as being intrusive from an earlier Halaf occupation either from Abada or another site in the vicinity. In the northwestern part of the Hamrin, there are some sites with a marginally earlier late Halaf level, like Songor B and Tell Hasan, neither of which produced Ubaid pottery in their Halaf levels. Thus it is clear that the coexistence of the two ceramic styles in the Hamrin was confined to the early Ubaid 3 - late Halaf only, and it would seem plausible, according to the new evidence, to suggest that these late Halaf sherds were either imported from other contemporary late Halaf sites, or that "in the Hamrin at this time there were potters working in both the Halaf and the Ubaid traditions, perhaps even side by side in the same villages" (Oates 1984, 254). It is relevant to mention here that at Choga Mami Halaf pottery was found in a well, roughly contemporary with the Ubaid 2/3 phase (Oates 1972, 50).

Among the small objects which have a chronological importance are the large numbers of "bent nails" which served as mullers (Figs.56, 57) in both levels I and II at Abada, these objects first appeared at Eridu XII and also at Ras Al-Amiya and Choga Mami. Another important discovery is the "Chariot-wheel" spindle whorls (Fig. 53) of a type known from the Mehmeh phase at Tepe Sabz (Hole et al. 1969, Fig.89), and this agrees well with a Ubaid 3 date for Abada II/I.

Hamrin Ubaid and Local Chronology

A total of sixteen sites were excavated in the Hamrin region. As we can see in Fig. 268, level III at Abada was dated to the beginning of the Transitional/Ubaid 2 phase, probably partially contemporary with the Transitional levels at both Choga Mami and Choga Safid. At Songor A the lower levels have also produced Transitional pottery, hence their contemporaneity with the latter sites is likely. Level II and I at Abada were dated to the early Ubaid 3 phase. Similar dates can be attributed to the Ubaid sites of Rashid, Al-Khubari, K.Qasim, the Songor group, Ayash and site no. 3, as these sites produced similar or even identical material to that of Abada II/I. Of special interest is the presence of the "Tortoise ware" or lenticular jars at each of Abada, Ayash, Songor A and Songor C, also the presence at Rashid and Songor C of the distinctive Ubaid 2 bowl (Fig. 234:b; Pl.16:13). The presence of the impressed Dalma type pottery, and of late Halaf sherds at Rashid and K.Qasim, reflects a situation similar to Abada II/I, and since these Ubaid sites represent settlements of relatively short duration, their contemporaneity with each other and with Abada II/I, and by implication with Ras Al-Amiya, Choga Mami Ubaid and Eridu XII/XI, and their partial contemporaneity also with the late Halaf, is beyond question.

Other Ubaid sites like Bustan, Rubeidheh, Hasan, Haizalon, Abu Husaini have produced too little material to allow their precise dating, but on the basis of an assessment of the available evidence, we attributed them to the late Ubaid period (Ubaid 4). However Maddhur has yielded painted pottery closely comparable to Tell Uqair (Fig. 258:6; 259:3) so its equation with the latter site seems not unreasonable. C14 determinations have come from only two of the Ubaid sites; Abada II, has yielded a C14 date of 5,770 +- 45 b.p. or a calibrated date of 4,670+-70 B.C., the other site is Tell Maddhur which produced C14 dates of 5,560+-55 b.p. or calibrated date of 4,470+-80 B.C. (Roaf 1981, 43). In this connection we should stress the fact that a single radiocarbon determination is far from being sufficient to rely upon.

One of the difficulties we were faced with during our endeavour to establish the chronology of the Ubaid sites in the Hamrin, is the presence of certain vessel types at sites belonging to phases far apart in time; we found that types such as the double-mouthed jars were represented at Abada I and K.Qasim, both of which belong to the early Ubaid 3 phase; at the same time we know that this type of jar was previously known from a late Ubaid context like Tepe Gawra XIII and Arpachiya or even as late as the Uruk period in the 3rd millennium B.C. Another type of vessel which is found in early Ubaid 3 contexts in the Hamrin, like Abada and Rashid, is that type of beaker (Figs. 197-199) which closely resembles examples from Tepe Gawra XIII. Such an occurrence may seem rather an anomaly in chronological terms, but a reasonable explanation for it is

that the distribution of such types of vessels seems to have persisted through a long span of time, from as early as the beginning of Ubaid 3 or even earlier, up to the late Ubaid period, or even later. Of conceivable interest is the occurrence of some common features shared by both Abada I and the Arpachiya Ubaid. The presence of identical wide-mouthed bowls decorated with bold sweeping designs at Abada (Fig. 164) and Arpachiya (Mallowan 1935, Fig. 32) is notable, as is the fact that they are used to cover child burials. Also the presence at both sites of almost identical small carinated jars (Fig. 164; Mallowan, ibid:Fig. 37:5) is striking. Moreover, both sites seem to have shared similar painted styles, as we can see in the examples (Figs. 194:e; 195:d, e) which resemble examples from Arpachiya (Mallowan, ibid., Fig. 36:1, 2, 4, 5, 8). In the light of these similarites between the two sites, and between the latter site and both Songor A (p.181) and B (p.182) and according to the excavator who has himself indicated that "some of the types are closely similar to the best material of the early Ubaid" (Mallowan ibid, 21), we are encouraged to suggest an Ubaid 3 date for the Ubaid levels at Arpachiya.

Conclusions

Sixteen newly excavated sites of the Ubaid period have been described, discussed and tentatively dated, in the previous three chapters. Important and new evidence concerning the Ubaid period has become available, most interesting is the new data on Ubaid architecture and pottery. The most peculiar phenomenon which has clearly aroused interest is that most of these Ubaid sites, like Abada, Rashid, K.Qasim, Ayash and Maddhur, share a general architectural plan consistng of small rooms of different sizes and shapes disposed around a central space which is a T-shaped or cruciform hall. This feature is the most distinctive element in the plan. This central hall seems to have been roofed in some buildings as was indicated by the fallen roofs found at both Abada and Maddhur. In some buildings, other lateral T-shaped halls were placed perpendicularly to the large central one (Fig. 16) giving the layout an impressive appearance. Other subsidiary rooms at the end of the hall, and what apparently seem to be foundations for a staircase, can also be found as familiar architectural features in this plan.

At Abada building A (Fig. 14) can be singled out as being the most spectacular one among other buildings at the Ubaid sites in the Hamrin, owing to its unusual features regarding size, symmetry and internal subdivisions, and its regularly spaced buttresses around its exterior wall. In discussing the possible function of this building, it is important to stress that there were no features such as altars, hearths or pedestals which might indicate that it was a temple or a building dedicated to religious use. On the other hand, apart from the copious pottery which was found mainly in Unit 3, no other domestic items were found. However, a large number of infant burial urns were excavated below the floors of this building. These outnumbered

the total of burial urns found elsewhere at the settlement. Another important discovery in this building is the presence of clay tokens or "counters" (p. 69), which probably served an accounting function, and as they were only found in this building they indicate that an important function or status is likely for this building. Moreover, its location in the centre of the settlement and the fact that it is the largest in all the Ubaid sites, suggests at least the possibility that it might have been a ritual, administrative, or other special structure, a part of which may have been occupied by the chief of the community (Unit 3, hall 7, and the surrounding rooms). By contrast with building A at Abada, the other buildings in the same site and other Ubaid sites in the Hamrin share general features that could clearly characterize them as more secular buildings.

Not only administrative and domestic buildings were represented at Hamrin, but also those used as workshops which suggest a degree of craft specialisation, such as building G at Abada. Multi-purpose buildings were also found, like building I in the latter site, which served as a sheepfold, barn and store.

The material employed in the construction of the buildings throughout the Ubaid settlements in the Hamrin was mainly mud-bricks measuring 50-56 x 27 x 27 cm., laid alternatively across and along the axis of the wall. Most of the walls were plastered with levigated clay both inside and out. Gypsum plaster was extensively used at Abada III, and in other buildings of level II. However, tauf or pise were still in use at other Ubaid sites like Songor C; this may seem incompatible with the general method of using mud-bricks at this time, but it was not exceptional as one can still find various building methods, such as brick, mud-brick and tauf, used to construct houses in some present Iraq villages.

It seems obvious that this type of architectural plan (the tripartite) was well established and widely followed during the end of the Ubaid 2 and Ubaid 3 phases, and though we still lack evidence of Ubaid I and 2 plans, the assumption that the same kind of plan had been followed during these two phases of the Ubaid period cannot be ruled out. Indeed the origins of such a plan can be traced back to the Choga Mami Transitional and Samarra period, as evidenced by the discoveries from the transitional levels at, Songor A (Fig. 247), Tell Es-Sawwan [6] and Choga Mami [7] where we have unequivocal evidence of buttressed buildings with tripartite plans.

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[6] El-Wailly and Abu Es-Soof 1965, Pl.IX, Fig.24; Abu Es-Soof 1968, Pl.II; Al-A'dami 1968, no.s 2,3; Yasin 1970 Pl.1.

[7] Oates 1969a, Pl.XXIV.

Temples of tripartite plan were first discovered in the south of Iraq at Eridu VIII, temple VII represents a very well preserved building of tripartite plan (Fig. 270:b) and so does temple VI. At Warka two Ubaid temples were found (Schmidt 1974, Figs.2,4). These are almost identical with Temples VII and VI at Eridu. In northern Iraq, at Tepe Gawra, temples and houses of tripartite plan were found in level XIX-XVIII and XV-XIV (Tobler 1950, pls. XX, XIX, XV, XIV, XII, XI), the northern temple of level XIII may represent a development from the tripartite plan (Perkins 1949, 67).

That the tripartite plan was the most common and prominent feature of the buildings of the Ubaid period was confirmed by the new discoveries from many Ubaid sites in the Hamrin region, where some buildings similar to Abada ones have come to light, as we have already seen in this chapter.

It seems obvious that this traditional plan of architecture had been maintained in some parts of Iraq, throughout the subsequent cultural eras. From the Uruk and Protoliterate periods a series of temples were discovered at Warka; at Anu Ziggurat, temples with tripartite plans based on those of the preceding Al-Ubaid period, as clearly shown in a building called "The White Temple" (Fig. 271:a) which displays a tripartite division with a long central court (the cella) and a row of smaller rooms on each side. The stairway rooms at the south and west corners of the building became an important feature in this type of architecture, the prototype of which can be seen at Abada, building A (room 29) and building E (room 55) where a foundation for a staircase is still in situ. Another temple of similar plan at Anu Ziggurat was found in level E (Fig. 271:b) which is about identical to the plan of the white temple. The striking continuity of this type of architecture is exhibited in another sector at Warka where a magnificent array of temples have been erected in the so-called "Eanna precinct" (Warka level IV) (Fig. 272). Here temples A,B and D although incompletely preserved seem to indicate the usual tripartite plan which consists of a long central court flanked by two rows of smaller rooms. Temple C is the best preserved building at Eanna precinct and displays a very interesting feature consisting of two tripartite units combined together, the large one is based on a long cruciform central court with a row of smaller rooms on either side, the second unit is similar in plan but much smaller and laid out at a right angle to it, the combination of more than one tripartite unit has been demonstrated magnificently at Abada where some buildings consist of three tripartite units as represented by the spectacular building A, and buildings B and E (Figs. 14, 16, 18).

Another building of the same plan is the "limestone temple" (Fig. 273) which was found at Warka level V. Contemporary architecture of tripartite plan can be seen also at other sites such as Tell Uqair in the middle of Iraq and not far from Babylon where a building known as "the painted temple" seems to

have been of simple tripartite plan (Fig. 274:b).

At the end phase of the Uruk period, a series of buildings known as "Sin temples" were found at Khafaja, they were obviously built according to the general tripartite plan (Delougaz and Lloyd 1942). Moving to the north we find more evidence available which shows architecture of the well known tripartite plan; at Grai Rash, in Sinjar district in northwestern Iraq, a building described by the excavator as a "large and carefully planned private house (Lloyd 1940, 13) was discovered at level II (Fig. 274:a) this building is similar to the building found at level III at Tell Rashid of Ubaid period in the Hamrin region (Fig. 228). Still in the north and in the Uruk period, more buildings of the same tripartite plan have come from Tepe Gawra levels X and IX (Tobler 1950, pls. III, II) and level VIIIc (Fig. 274:c). To the northeast of Tepe Gawra, two buildings of tripartite plan were revealed at Tell Qaling Agha in Arbil in northern Iraq, both belong to the Uruk period (Hajareh 1973, 18), building A displays a remarkable similarity with plans of some buildings at Abada (levels II and I) where the tripartite plan is based on a long cruciform central court with a row of small rooms on either side (Fig. 275:a), the same division is apparant in building B also (Fig. 275:b). To the west of Iraq, in the Habur valley of Syria, from the site of Tell Brak comes the so-called "Eye Temple" which dates to the Jamdat Nasr period (Mallowan 1947; 1965, 5,44). Here again the basic architectural feature of the preceding period is illustrated, a tripartite plan consisting of a central cruciform court with a series of smaller rooms on either side (Fig. 270:a). Similar house and temple plans were also found at Habuba Kabira (Ludwig 1977; Strommenger 1980) and Jebel Aruda (Driel 1977; Driel and Driel-Murray 1980, Pl.1).

It should be pointed out that in all the instances given above there are considerable differences, which can be explained in terms of local variations, but the common features are the more significant.

We have tried to trace the architectural evidence from the Ubaid period as represented by the buildings of Abada and contemporary sites, back to the Samarran period and up to the Uruk and Protoliterate periods as revealed in several sites in the south, middle and north of Mesopotamia. We found that unequivocal evidence of a common plan upon which all these buildings are based; the so-called tripartite plan, consisting of a long central hall with a series of smaller rooms on either side.

It seems evident that we are dealing with an uninterrupted architectural tradition from the Samarra period until Uruk IV. It remains important to point out that no such plan is known from southern Iraq, so far, until the Ubaid 4 period (Eridu VIII/VII), therefore it is probable that the plan is indigenous

to northern, or central Mesopotamia.

Among other interesting discoveries from the Ubaid sites is the presence of a large number of pottery kilns, the largest number of which was found at Abada and Songor B. Fire installations or fire devices in Iraq and the neighbourng areas have been fully dealt with by a number of recent studies (Delacroix and Huot 1972; Barrelet 1974; Majidzadeh 1975; Crawford 1977), but the authors were unable to provide us with information about the installations during the Ubiad period due to a lack of relevant discoveries. However the excavations at the Ubaid sites in Hamrin have now brought to light a wide range of such installations.

The practice of burying children in urns below the floors of houses was a common tradition among the Ubaid people at Abada, Rashid, Ayash, As-Saadiya and Abu Husaini. Such a practice may be of religious significance. This is supported by the fact that no adults' graves were found associated with houses, but in special places serving as cemeteries, located far from the settlements, for example Bustan which may have been a cemetery for Maddhur, and Songor A which served as a cemetery for Songor C.

A rich variety of materials were found throughout the Ubaid sites in Hamrin; of interest is the large collection of figurines depicting human and animal shapes. Spindle whorls were abundant, particularly at Abada, and this would obviously suggest that weaving was widely practiced. Basketry and matting manufacture appear to have been well developed and technically accomplished. Two techniques were used; twill plaiting, over two, under two, which was used in making mats, and coil-work in making smoother and finer basketry. Reed mats were common at both Abada and Rashid and were effectively used for various purposes such as roofing or covering floors; the most interesting usage was to build the Baryat shilib seen in several buildings of level I at Abada (Fig. 25).

The excavations at Abada have revealed a good collection of clay objects in different geometric shapes such as spheres, cones, discs, rods and some other shapes. Such objects have long been reported from most neolithic sites in Iraq and south-western Asia, and were arbitrarily described by their excavators as gaming pieces of unknown use. With the exception of a very few spheres which were made of stone and metal, all these objects recovered at Abada were made of clay and modelled by hand. The majority of these objects were found in groups, in one building only, building A in both level II and I, as shown in the plan of those two levels; each group consisted of 6 - 18 objects of different shapes. Nevertheless, some were found sporadically throughout the levels.

It would seem not irrelevant in this connection to mention the work of D. Schmandt-Besserat (1977) who has listed and studied such clay objects from Middle Eastern sites and has described the stages of their evolution. She concluded that these objects were actually tokens to keep records of transactions and so should be considered counters. The author based her assumption on the results of a study made by Pierre Amiet (1966) who identified in the archives of Susa an archaic system of recording dating from the second half of the fourth millennium B.C.; the system consists of small clay tokens of geometric shapes mostly in the form of spheres, discs, cones and tetrahedrons, found enclosed in clay envelopes in the shape of hollow clay balls called bullae. The surface of these balls usually bears seal impressions and sometimes marks indicating the number of tokens enclosed. He interpreted each bulla as representing a transaction. The tokens inside indicated the kind of goods exchanged by their shapes, and the quantity, by their size and number. This belief was supported by epigraphic evidence from Nuzi where a bullae was found containing 48 small objects "pebbles" (abnu) and bearing a lengthy cuneiform inscription dealing with various kinds of herds and their numbers. The total number of all animals mentioned in the text amounts to 48 which corresponds to the total number of the abnu inside the bullae (Oppenheim 1958, 123), and thus the abnu were proved to be counters. In other words the bullae fulfilled the same function as the early tablets and were an administrative record of economic transactions. The hollow bullae were soon replaced by full bullae, i.e. tablets bearing only the numerical signs on their outside (Schmandt-Besserat 1977, 25), 'as soon as the system of marks on the exterior of the bullae was generally adopted and understood, it obviously made the system of tokens inside the bullae superfluous and obsolete and tablets with numerical signs made their appearance' (ibid., 27). It is interesting to point out that both Amiet (1966) and Schmandt-Besserat (1977, 24; chart 7) postulated a possible relationship between tokens and the earliest writing and in particular between the shape of the abstract signs and the shape of the tokens.

The discovery at Abada of a considerable collection of various clay objects concentrated mainly in one building (A), and the fact, as noted before, that this building was the most prestigious one in the village, should certainly shed light on the function of these geometric-shaped objects. This function should be interpreted in administrative and economic terms, and it seems plausible that these various shapes of clay may well have been tokens representing records of transactions. It is interesting to mention in this connection that a primitive accounting system based on tokens of different shapes and material is still being used in most Iraqi villages by farmers to keep records of the crops they have delivered; for instance the farmer, or someone he would send, would take a particular token for each quantity of crops he handed over and after a certain agreed period the farmer would exchange the tokens for

money from the purchaser. [8] In this sense tokens should be considered as counters and their presence at Abada represents part of a widespread recording system which had been established throughout prehistoric sites in the area since the 9th millennium B.C. It continued to operate until the 4th millennium B.C. without apparent modifications (Schmandt 1977, 27).

Although all shapes of tokens found at other sites were represented at Abada, no bullae were found. However, a very important discovery was made in level I. We found what we feel justified to call a proto-tablet (Fig. 70:a) bearing on its upper surface signs arranged in four parallel lines; although no study was conducted by epigraphists to determine the nature of these signs it would seem reasonable to assume that they may have been intended to stand for numerical values. This assumption would be congruent with the idea that the first known tablets were administrative records of economic activities. The appearance of this proto-tablet in the Ubaid period at Abada is of great significance in terms of the date and origin of writing. It is also of great importance in determining which people should be given the credit for an invention which had such momentous consequences.

The most important and extremely interesting discovery from our Ubaid sites is the large quantity of Ubaid pottery. Of special interest is Abada where we found tens of thousands of painted, impressed, incised and plain sherds, and a large number of complete vessels. As we have already seen, the ceramic industry and the pottery types have provided good chronological indicators for dating the Ubaid sites in the Hamrin region.

It is of great interest to see that the Ubaid 3 sites which were located in the south-eastern part of the Hamrin (Abada II/I, Rashid, Site no.3, Ayash and Al-Khubari) have produced indistinguishable Ubaid pottery which could have been manufactured or produced in one production centre in the area and distributed to the other Ubaid sites mentioned above. The Ubaid 3 pottery found at Tells Songor A,B,C, and K.Qasim which occupy the middle sector of the north-western part of the Hamrin, is very similar and was slightly different from the Ubaid pottery of the first group. Of similar interest is that all the sites which belong to the late Ubaid period like Maddhur, Hasan, Haizalon, Rubeidheh, Bustan and Abu-Husaini

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[8] Another example which demonstrates the function of tokens, comes from my own city (Hillah) near Babylon in the middle of Iraq; there the people who usually work in premises and shops in a particular area used to drink a good deal of tea at various times every day which was provided for them by some cafe nearby; they give the tea man one particular token for each cup of tea they took, tokens would be exchanged for money at a later time.

(Fig. 277), were located close to each other, in the northern part of the region. The reasons and the implications of such a distribution will be discussed in the next chapter.

CHAPTER V

Settlement Patterns: Subsistence and Site Distribution

It is widely agreed that the reconstruction of a prehistoric society is one of the most problematic issues in archaeology. The very limited scale of excavations conducted on Ubaid sites during the last fifty years has produced very little data, making the attempt to reconstruct Ubaid society very difficult. However the new excavations in the Hamrin region have made available a considerable amount of information with which we shall endeavour to accomplish a reconstruction of Ubaid society, bearing in mind that any form of prehistoric reconstruction will be far from complete or accurate, and that the reconstructed picture will be altered or modified as fresh evidence becomes available from future excavations.

The concept of settlement pattern which was introduced to the field of archaeology in the early fifties (Willey 1953,1956) is still receiving a good deal of attention from both archaeologists and anthropologists. The term "settlement pattern" may mean the consideration of individual buildings and the manner in which both these buildings and communities were established (Trigger 1968, 55). It is also used to investigate factors affecting the location of prehistoric sites and can reveal evidence about the technological achievements of their inhabitants (Oates 1972a). Chang (1962, 28) has differentiated between settlement pattern and community pattern which implies social and political matters. Here we use "settlement pattern" as a broader concept to consider factors effecting the distribution of the Ubaid sites throughout the Hamrin region and the subsistence activities of their inhabitants, also to study the community patterns in terms of socio-political behaviour and hierarchy.

Site Distribution

The concentration of some sixteen Ubaid sites in the Hamrin region is a rather interesting feature of the Ubaid settlement pattern which may have occurred in other regions as well. It is thus important to investigate and understand the reasons behind this concentration of settlements within a relatively small area of north-central Iraq. [1]

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[1] Some 50 Ubaid sites were found, concentrated in an area of 350 km. around Tell Afar in north-western Iraq (Oates 1980, 307).

Ecological factors are often stressed as determinant factors which play the key role in settlement patterns. Communities whose subsistence is mainly based on agriculture and pastoralism would naturally prefer to find land with high potential productivity and available water. Water whether in the sense of rainfall and wells, or irrigation, is considered one of the most powerful factors affecting settlement patterns in Mesopotamia, due to its aridity (Oates 1972a, 299).

Technology must be added to environment as an important factor in determining the location and distribution of settlements, and the environmental role is of course a limiting, not a determining one (Trigger 1965, 5).

Zimmerman (1978, 28) has explained site location in terms of locational "behaviour", he argues that "people have a conception of where persons in their 'situation' would prefer to live. They know in a very general way that major factors (such as availability of key resources or distance to friends or relatives) contribute to their idea of proper location".

It seems that a wide range of variables such as type of soil, distance to water, availability of natural resources, proximity of routes or markets, and existence of other sites, in addition to security and defence, contribute to site location (Plog and Hall 1971, 9; Oates 1972a, 299; Hodder and Orton 1976, 53).

Trade and routes were also considered to be important factors affecting Mesopotamian settlement patterns as early as 7000 B.C. (Oates 1972a, 299).

Site Catchment Analysis

A variety of approaches have been suggested to deal with the subject of settlement pattern. One of these is site catchment analysis. This fashionable approach can be used to reconstruct subsistence activities and to suggest reasons for site location (Higgs and Vita-Finzi 1970, 1972; Hodder and Orton 1976, 236).

The concept of site catchment is essentially based on the idea that human groups tend to exploit economic resources which lie within a certain distance from the site. Beyond that proposed distance the exploitation would be uneconomic and undesired and "the further the area is from the site the less it is likely to be exploited" (Vita-Finzi and Higgs 1970, 2-7). A similar idea was expressed by Judge (1971) who used what he called "minimax strategy" to explain the issue of site locations, that is "sites are located so as to minimize resource acquisition and maximise resources acquired" (ibid.,

38).

The catchment area is defined as "The zone of resources, both wild and domestic that occur within a reasonable walking distance of a given village" (Flannery 1976, 91). The limits of the catchment area are a controversial question. Chisholm (1962) in his study based on modern peasant agriculture postulated a distance of 1 km. beyond which the cost of movement becomes sufficiently great to warrant some kind of response, while at a distance of 3-4 km. the cost becomes oppressive and detrimental (ibid., 73,148). Oates (1980, 308) has suggested a catchment area of 2 kms. radius for sites in the region of Nineveh in Northern Iraq, purely to test pressure on land.

A "workable hypothesis" was proposed suggesting a radius of 5 kms. for agricultural economies and 10 kms. for mobile ones (Higgs and Vita-Finzi 1972, 31). Because of topographic variation the distance was converted into the time taken to cover it; a walking distance of one hour in at least four directions from the site is suggested for agricultural territories, and two hours for hunter-gatherer ones (Higgs and Vita-Finzi 1970, 33). Vita-Finzi and Higgs (1970) influenced by Van Thune's model of concentric circles (1875), have adopted a scheme of "weighting" sections of the catchment area according to their distance from the site by drawing concentric circles with radii of 1, 2, 3, 4 and 5 kms. around the site, concluding that the more distant the circle is from the site the less exploited it is and vice versa (Vita-Finzi and Higgs 1970, Table 3).

The distance relationship advanced by Vita-Finzi and Higgs (ibid) was used by Hillman (1973) to analyse the catchment area in the Aşran region in Turkey. He worked out the distance between a villager's house and his field at c. 2.6 km., a distance which is to be considered uneconomic according to Chisholm's criteria (1962, 66). However this figure seems to be inconsistent with my information derived from ethnographic data which was obtained from Iraqi villages [2] involved in wheat and barley agriculture, where the Iraqi farmers, generally, walk a distance of about 5 km. or even more to reach their fields, i.e. an equivalent of about an hour's walking time. Although site-catchment studies were carried out with some suitable reconstructions, they suffered from certain shortcomings involved in one or another of their factors. Distance factors, for example, have not gained support from recent studies (Flannery 1976, 94; Oates 1980, 308). The assumption that sites are non-agricultural if arable land constitutes only a small percentage of their catchment area (Vita-Finzi and Higgs 1970, 16) has also been proved to be invalid (Flannery 1976, 92-93). The method has been further

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[2] pers.comm. with Iraqi farmers in south and central Iraq.

criticised by Hodder and Orton (1976, 233) who rightly argued that "the rings of land nearest the village or farmsteads often consist of poor, denuded and uncultivated soil". Ethnographic data would support this statement as we find that in almost every village in Iraq today the further the area is from the village the better exploited it is, because the area which immediately surrounds the village always consists of compact and strongly beaten soils due to their frequent use and continuous movements of the inhabitants; it is rather used as an access area into and out of the village. Another shortcoming in site catchment analysis is that the sites and their catchment areas are considered in isolation and site location is interpreted in terms of a single type of resource, thus ignoring other resources which might combine to influence the choice of the location of the site (Hodder and Orton 1976, 235; Hodder 1978, 25; Roper 1979, 126). More recently Findlow (1980) has criticized the approach for its failure to develop an adequate measure of the relative economic importance of environmental area within site catchments, he proposed what he called "conical correlation analysis" which basically depends on the interaction between technology and environments as a new method for site catchment analysis (ibid., 158). Finally Dennell (1980, 17) has pointed out that the technique of site catchment analysis cannot be applicable to every type of subsistence economy.

To reconstruct the size of a catchment circle, Flannery (1976, 193) had reversed the approach by gathering empirical data concerning different types of resources such as plants, animal and mineral resources found at many sites, regardless how far these materials were brought from, instead of depending on resources available within the territory of a given site. Based on these empirical data Flannery visualized the catchment area as consisting of a series of ever-widening concentric circles measuring from less than two and a half kilometres and up to two hundred kilometres in diameter (ibid., 109).

An alternative approach to site catchment analysis was offered by Zarki (1976). This takes the proportions of various environmental zones within a large study area as given, and deduces the resources by treating the catchment circles as samples drawn by prehistoric man. The conclusion is that "prehistoric villages were located to take advantage of certain resources, even when such resources constitute only a small percentage of the total catchment area of the site" (ibid., 117-128).

It seems evident that one of the limitations of site catchment analysis is that a site and its territory were dealt with separately. We feel that a better way to find out the reasons which have affected site location is to understand the economic strategy involved. A fair knowledge of environmental data such as soil types, agricultural potential, farming

practises and animal husbandry is required for this.

Soil Types and Site Locations

The total area of the Hamrin region is about 600 square kilometres. The major types of soils contained in this area are shown in (Table 1). The description and the results of laboratory analysis for each of those types was given in (Chapter 1, Tables 3-6).

A look at these results will clearly show that the entire area of the Hamrin generally consists of alluvial basins whose soils are basically a consistant mixture of alluvial clay, silt and loam.

The examination of the distribution of the Ubaid sites throughout the region and the type of soil they are associated with, obviously reflects the preference of the inhabitants in choosing their site location.

All sixteen Ubaid sites with no exception (Chapter IV) were actually located on alluvial soils, thus revealing an important relationship between site location and soil type (Fig. 6).

The fact that alluvial soil was an important factor in determining the site location must not induce us to overlook other equally important factors which might have had a strong effect. A glance at (Fig. 6) shows that there are two marsh areas located in the north-western section of the Hamrin region. At present each of these two areas is surrounded by a number of villages. These marsh areas provide the nearby villages with suitable grazing land for their flocks of sheep and herds of cattle and camels, and with reeds for mats and basketry making. They are also the mainstay of wild pigs and birds. This present situation may also have been the case in ancient time, as we can see from Fig. 6 that some of the Ubaid sites are located near the marsh areas which may have existed at almost the same locations. The group of Tells Songor A, B and C are located near the marsh area to the west of the Diyala river. The other marsh area which is located near Qara Tepe is surrounded by the Ubaid sites of K.Qasim, Maddhur and Bustan.

The presence of the Diyala river and its tributaries like the Kurderreh and the Narin Chai could have been another important factor in the choice of location of the Ubaid settlements in the Hamrin region. Both Rubeidheh and Haizalon are located along the Narin Chai in the west of the region. Tell Rashid is located near the southern stretches of the Kurderreh which might well have stretched further then. The presence also of a large, wide, alluvial depression chand which turns into a

torrential river during winter and spring, and keeps pools with considerable water during summer, may have been an incentive factor for the people of Abada to establish their settlement, which is located near both this chand to the north and the Kurderreh to the west.

Abada's farmers seem to have taken advantage of this situation to draw water from both these sources presumably for drinking and other domestic purposes and for watering their crops when needed. This was attested by the archaeological evidence obtained from our excavation at the site where we found unequivocal evidence of water pipes lying in situ along two different directions (Fig. 25). To the north these water pipes were traced along a distance of about half a kilometre and apparently extended further to join the chand which lies not far away in the same direction. The other channel is found running in a westerly direction for a distance of about 200 m. and seemingly continuing till it joined Kurderreh river which lies just a bit further in the same direction. We have not been able to trace the channel down to the river as the soil was greatly eroded and a huge gully has been formed along the river. The presence of marshes and rivers in the region provided not only water for drinking and irrigation but also good resoures for fishing and fowling, as well as serving as routes of communication. The discovery at Abada and Songor C of a pottery boat model similar to those used in Iraq today balam (Fig. 63) is reminiscent of simlar boat models from Eridu (Safar et al. 1981, Fig.111). These obviously indicate the use of such boats by the Ubaidians for different purposes and imply a knowledge of handling rivers; we already know that the Ubaid people used boats in the Gulf and adjacent marshes for other resources.

Thus it seems evident that the presence of fertile alluvial soils and availability of water were the main factors behind the location of the Ubaid sites in the Hamrin region. The combination of fertile soil and water implies that agriculture would have been the important base of subsistence for the communities in the area. Having reached such a conclusion the next step will be to discuss the components of the agricutural economy based on the use and exploitation of both alluvial soil and water.

Table 1

Soil types in the Hamrin region.

Soil	Description
Chand	Coarse textured non-saline or slightly saline soil.
Qara Tepe	Fine textured, non-saline or slightly saline soil with no extreme structural deterioration.
Musari	Fine textured non-salne or slightly saline soil, with some structural deterioration.
Kanaan	Coarse textured, saline soil.

Land-use in the Hamrin Region

The actual system of farming followed is the same basic pattern found throughout the greater part of Iraq, that is, the major crops are the winter cereals wheat and barley, and these are usually grown in a traditional fallow rotation.

The general idea of this farming system is that "In any single year only about half the available land would be planted with shitwi crop, the rest lying fallow and at the same time providing winter pasture" (Oates and Oates 1976a, 117). In the Hamrin region and the Middle Diyala area as a whole, occasional differences occur in the length of the fallow rotation; that is, instead of a regular alternation between one winter season under crops and one under fallow, there are such variants as having two successive years under fallow. These variations from the standard fallow rotation are probably adopted to meet some particular requirement or some abnormal condition such as an attempt on the part of the grower to recoup for himself after a very poor havest, an occurence which can all too often happen in the purely rain-fed parts of the region.

Oates (1980) has succinctly demonstrated according to the available data that "the traditional system of alternating fallows was probably in use, at least in some parts of Mesopotamia, as early as the 6th millennium B.C." (ibid., 303).

Arable Land and Agriculture in the Hamrin Region

As we have already seen the land of the Hamrin basin is considered to be fertile land of good productive potential, and one can assume that the soils were reasonably good during the

time with which we are concerned as well.

Agriculture

Although the question of the ancient climate in Iraq is a controversial one due to the limitation of the palaeo-environmental evidence so far available (Oates and Oates 1976a, 115), it is generally assumed that present-day climatic conditions probably stabilized around 6,000 B.P. (Wright 1960; Van Ziest 1969). This does not necessarily mean that the prehistoric climatic conditions were precisely as they are today. Using settlement data from the arid zones of Mesopotamia (Jazirah), Oates has shown that the climate would seem to indicate a marginally wetter phase during the period c. 6500-5000 B.C. and perhaps extending into the fifth millennium (1982b, 361).

Generally speaking, there have been no major changes that could have had significant consequences since the appearance of the first village communities (Oates 1980, 304). So if the present-day climatic conditions are generally similar to the ancient ones, it would be not unreasonable to assume that the present-day farming situation should be relevant to that which was prevailing in the period with which we are concerned. To illucidate this proposition a consideration of the agriculture, both rain and irrigation based, will be necessary.

Rain Cultivation

As demonstrated in Chapter I, the climate of the Hamrin region may be classified as semi-arid. The area receives on average rainfall of 327 mm. falling almost certainly during the winter and spring months, from November to May. With an average precipitation of over 300 mm. per annum the region is therefore capable of supporting such crops as wheat and barley under rain grown conditions.

The main characteristic of the region's agriculture is that it is basically dependent on rainfall and has therefore to be centered on winter crops. The main winter crops are wheat and barley. Wheat predominates because soil salinity is rare so the need to offset this by growing more barley is not so compelling. Apart from cereals, the only other winter crops are linseed, beans and winter vegetables, always grown today with irrigation.

The outcome of winter crops depends entirely on the amount of rainfall in the sowing season. With the uncertainty of receiving sufficient or well distributed rain in some four years out of ten, bringing a sharp fall in yields and sometimes

even widespread crop failures, irrigation may be used to supplement the rainfall. The frequency with which years of unfavourable rains occur may be gathered from Table 2 which gives total precipitation for the months October-May over a period of more than twenty years at Khanaqin. Bearing in mind that Khanagin is wetter than the Hamrin region, it will be noted that in terms of total precipitation, 2 out of 22 years had less than 200mm.; 7 years had between 200-250 mm. and 1 year had between 250-300mm.. While a total precipitation of 250 mm. is very marginal for wheat and barley, this total may be regarded as being just sufficient provided the rainfall is uniformly distributed.

Irrigation Pattern

The existing irrigated lands in the Hamrin basin are situated in the plains between the successive ranges of low hills that traverse the area. The main sources of supply are the Diyala river with its tributaries the Kurderreh and Narin Chai. On account of the steep river slopes of the Diyala and the fact that the river is nowhere deeply incised below the general level of the plains, there is genrerally little difficulty in obtaining adequate command. This condition has imposed the typical irrigation pattern of the area, in which water is abstracted from the river by means of numerous small private canals often running parallel to each other for many kilometres, not one of these has any headworks, and effective control is therefore difficult and haphazard. The heads are often left open throughout the irrigation season and, should a flood in the river occur at this time, the water pours unchecked down the canals, breaching the banks, scouring the canals and inundating cultivated areas far inland.(Diyala and Middle Tigris project, Report No.2).

The land within the Hamrin basin slopes uniformly from southeast to southwest at approximately 2.5 metres per kilometre (Fig. 6) and drains into the Kurderreh river and Narin Chai which run northwest and southeast respectively, to join the Diyala upstream of the Jebel Hamrin.

The Diyala river runs approximately east to west across the region. The plains south of the river are intersected by two wadis, the Khir Chand, near Tell Abada, and Khir Gul, near Tell Rashid, both of which carry high discharges at flood time. The area to the north of the Diyala is somewhat different in character due to a subsidiary fold. The land slopes are steeper and less uniform compared with those in the southern area. Parts of the area have no natural outlet for surface water and consequently have become waterlogged and saline.

The main canals that today irrigate the region are as follows:

1 - As-Saadiya canal, which serves the greater part of the southern area, is well sited on the outside of a bend in the river about 400 m. down stream of Jalawla town.

2 - The Zawiya Saghir canal takes off about 1500 m. upstream of Saadiya and irrigates a small area of lands and gardens around the town.

3 - The Zawiya Kabir takes off just down stream of the last canal and runs parallel to Diyala past Saadiya. This canal which is about 8 km. long irrigates the area adjacent to the confluence of Kurderreh and Diyala.

4 - The remaining area between Diyala and Narin Chai is served by a group of 4 canals of which the largest is "Mahmula", these later canals take off from Diyala at a common offtake point opposite Saadiya.

Where possible efforts are made to increase the amount of water reaching the cultivated lands by diverting adjacent wadis. An example of this type of irrigation is to be found along the chand in the southern part of the region just near Abada.

At the north-western end of the region there is an extensive marsh bordered by the largest area of saline land. Run-off from the surrounding hills concentrates here as there is no natural surface outlet, although the Narin Chai runs within 2 km. to the south-west. Characteristic of heavily sediment charged rivers, the Narin Chai is bounded by a low ridge through which the surface drainage cannot pass. The ground water however is not highly saline and is used for irrigation around the fringes of the land.

No evidence for irrigation canals was found in the Hamrin, but the archaeological evidence from nearby Choga Mami has conclusively shown that canals of substantial size were being dug by the farmers of the sixth millennium B.C. who were practising irrigation agriculture (Oates and Oates 1976a, 133). More evidence from the same area has also shown another canal of Ubaid 3 date. Therefore it is probable that the Ubaid farmers knew of this technique and used it in the Hamrin basin.

Ancient Cultivation

It was pointed out that the growing season of cereals in the Middle East, along with all major crops which are known in prehistoric times, is a winter one (Oates and Oates 1976a,117). According to the palaeo-botanical evidence available from both Choga Mami and Abada, both the Mandali and Hamrin areas experienced a fully developed winter agriculture. Emmer,

Einkorn, bread wheat, naked six-row barley and hulled two-row barley were identified at Choga Mami (Helbaek 1972), in addition to large grain oat, pea, lentil, rye grasses, linseed and clover. These plants would suggest the availability of more water than modern conditions of rainfall would supply, a further indication for the practice of irrigation here since the Samarra period (Oates 1982a, 27).

Palaeo-botanical evidence from Abada [3] not far to the north of Choga Mami, shows the presence of Emmer, Einkorn (wild and domesticated) and Bread wheat (doubtful identification). Hulled and naked six-row barley and two-row barley, were also found at Abada. Liliacae were attested at both Choga Mami and Abada.

It seems evident that despite the limited botanical evidence from Abada compared to Choga Mami, both sites generally share the same kinds of plants, a fact that may imply similar climatic conditions during the Samarra and Ubaid periods in the sixth and fifth millennium B.C.

Animal Husbandry

As a result of sufficient rainfall, the grazing conditions are favourable in the Hamrin region which can support, on natural grazing, a large population of grazing animals, grazing on fallow and waste land in the winter, on stubble after harvest and some migrating to mountain pastures in the summer.

Livestock are to be found in all zones of the region today, but are of special importance in the hills which actually surround the region (Fig. 6). In such areas where the topography becomes too broken to permit the cultivation of more than small pockets of arable land, the agriculture is principally of a pastoral type. These pastoral zones have a small resident population, but are also extensively used by nomadic herdsmen for their large flocks of sheep and goats. They provide an important winter grazing during the period when most of the fallow land has already been ploughed in readiness for next season's crops, and before cereal stubble is ready for grazing. Village flocks play an important part in the provision of leban (yoghurt) and ghee for local consumption. Livestock numbers vary greatly during the year, being highest in the winter when the nomadic flocks are grazing the hills, and lowest in the summer when they have moved north to the higher mountains around the Iranian frontier. Cows are maintained in the towns and villages for the production of fresh milk. The bulk of the

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[3] Paleao-botanical remains from Tell Abada were identified by Michael Charles and Gorden Hillman to both of whom I am greatly indebted (see Table 3).

milk produced is drunk in the form of leban or turned into ghee and cheese and is not sold. Wool is mostly sold. Goat's hair is rarely marketed but used for making tents and ropes.

Hunting, though on a very limited scale, is still practised; gazelle and wild fowl are the preferred game. Fishing is widely practised in rivers like the Diyala, Kurderreh and Narin Chai. The marsh areas in the south-western part of the region also provide good resources for fishing and bird hunting. Wild pigs or boars are abundant in these marsh areas, they are not eaten today for religious reasons but are killed and thrown away as they cause considerable damage to the cultivated lands, perhaps they were eaten in the past. The marsh lands have high water tables and a distinctive marsh vegetation. They serve a useful purpose at present as wild life areas and for the perennial grazing of village livestock.

It is interesting to note that the present-day animal situation is similar to the prehistoric one; according to the results of the study of the prehistoric faunal data from Abada [4] both sheep (Ovis) and goats (Caper) were available; cattle, which were domesticated later in South-western Asia than sheep and goats, were also found at Abada in both wild and domesticated forms. Cattle bones represented about 17.40% of the bones found at the site. The meat diet was obviously supplemented by hunting wild animals such as gazelle, which seem to have been abundant as they represented 37.78% of the total bones. Pig/wild boar (Sus) and deer (Cervid) were probably eaten also. Large dogs or small wolves (Canis) also existed. Onager (E. asinus), the native wild equid of Mesopotamia, were frequently represented at Abada. The presence of Equus, Bos, Ovis, Capra and Gazzella suggests rather open grassland.

The presence of cattle (Bos) in the Hamrin region during the Ubaid period is of particular interest for two important reasons; first because it is consistent with the similar situation at other Ubaid sites in the middle and south of Iraq like Ras Al-Amiya and Eridu (Flannery and Wright 1966; Flannery and Cornwall 1969) which may refer to the prevalence of the same environmental conditions in Iraq during the Ubaid period (as was already indicated by the palaeo-botanical evidence); and secondly it reflects the importance of such animals in communities whose economy was largely based on agriculture, as they were capable of drawing a plough which was necessary to prepare the land for cereal dispersal. Hence it would be plausible to suggest that some sort of ox-drawn plough was already in use during the fifth millennium B.C. and that plough cultivation had accompanied irrigation agriculture even in the earlier Samarra period (Oates 1972a, 305; 1980, 306).

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[4] See appendix (1) "The animal bones from Tell Abada" by Sebastian Payne, pp. 220-227.

Nevertheless and despite the lack of plough remains which were presumably wooden, we should not exclude the possiblity that man-drawn ploughs were in use side by side with ox-drawn ones, this is still the case in some parts of Iraq and South-western Asia at the present-day. Finally it is of significance to point out that a similar range of domesticates were identified at Choga Mami (Oates 1982a, 27).

Discussion and Conclusions

It seems evident now on the basis of soil type analysis and plant remains that the Ubaid settlements in the Hamrin region were associated with arable land of alluvial soil, and that agriculture was an important element in their economy. Rainfed cultivation was widely practised during winter, but with the uncertainty of receiving sufficient or well distributed rain, artificial means of watering were practiced, thus irrigation would have been a vital factor to maintain life and stability in those agricultural communities.

Since the Ubaid settlements were actually associated with arable land over almost their entire area, the calculation of the percentage of such land involved in the site catchment analysis is not relevant here. Probably a more suitable approach for a site catchment analysis would be the one proposed by Flannery (1976) who does not confine himself to a limited encircled area around the site but rather envisages a series of ever-widening concentric circles (regardless of their actual distance) depending on empirical data concerning plants and animals. The presence at Abada and other Ubaid sites in the region of the bones of wild animals such as gazelles, goat, sheep, boar, cattle and onager, would apparently give some support to Flannery's model as it would obviously indicate that the inhabitants hunted animals, which inhabited various natural environments, at a quite considerable distance beyond the immediate catchment area of the sites concerned.

To test the extent of the applicability of Flannery's approach, we take Abada as a representative example of the other Ubaid sites in the region. With the help of the limited empirical data available from Abada, a series of catchment circles can be reconstructed as follows:

1. - The existence of animal bones belonging to domesticated species such as cattle, goats and sheep, would necessarily presume that these animals were available within the village itself and were kept and looked after by the inhabitants.

2 - On the arable land associated with the settlement and within a radius of 2 km. the villagers grew barley and three kinds of wheat (Emmer, einkorn and breadwheat).

3 - Within a circle of about 5 km. radius, the villagers had available to them a variety of plants such as wheat and barley in wild forms.

4 - Wild animals such as gazelle, sheep/goats and deer, could have been hunted at a distance of about 15-20 km. in the hills located beyond Tell Rashid and further to the north of Abada, while the wild boars were hunted in the marshes, located about 15-30 km. to the north-west of the region (Fig. 6).

5 - Specific raw materials such as chert and flint, were available in the Khanaqin area at a distance of 25-30 km.

To propose a definite limit for the catchment area, two points need to be taken into consideration; first, the availability of arable lands for able farmers in the village to plough and plant; second, the availability of an adequate area of the land to permit the implementation of the fallow system. Oates and Oates (1976a, 120) have pointed out that on irrigated land a family of six needs six hectares for its support at subsistence level, without affecting the soil fertility. With the consideration that half of this land would lie fallow, the other half would produce a minimum of 1500 kg. of which no more than 600 kg. would be needed for consumption by the family.

In the Hamrin region a circle of 2 km. radius is drawn around each of the Ubaid sites to show the availability of arable land which could satisfy the basic requirements of the inhabitants, but settlement territories could be extended roughly as far as is shown by Thiessen polygons (Fig. 276) In modern times, in wheat and barley cultivation, each able farmer can prepare and plant an equivalent of about 2.5 hectares of arable land. This figure may be considered too high or too great a workload for the ancient Mesopotamian farmer due to the difficulties of using small axes or hand hoes (in the absence of the plough), but we cannot agree with Allan (1972, 214) who suggested half a hectare per head. I would rather put the figure up to one hectare at least, basing my assumption on ethnographic data from some Iraqi villages where a primitive shovel, comparable to a large hand hoe, is still being effectively used by farmers for ploughing. Thus assuming that Abada's population, as we will see in the next chapter, was about 80-100 persons; leaving aside the old and children, the labour force could be estimated as about 35-40 individuals. This figure represents the total workable land in hectares out of the estimated 200 hectares of the catchment area, with at least 700 kg. per hectare, taking into consideration the fallow system of rotation, each family would have had quite sufficient crops to subsist upon along with other sources of diet such as what comes from hunting and fishing.

The size of the catchment area, in my opinion, varies from one settlement to another according to the needs of the

inhabitants and the whereabouts of the needed resources; they could be in the vicinity of the village or instead far away from the envisaged catchment area. It also varies from one season to another, for instance the mobility of the inhabitants would have been far less in severe cold winters and vice versa. Also there is the preference to exploit the better areas of grazing and pasture despite their far distance, such as the hills surrounding the plains of the Hamrin region and the marsh areas further to the north-west. The size of population is another important factor effecting the size of the catchment area; sites of relatively large populations like Abada could afford sending more men far away while some others stay behind to look after their properties in the village. Therefore the catchment area should remain a matter of flexibility and not be confined to any given limits. Also it does not necessarily need to be seen in the shape of regular circles set up around the village, but could well extend randomly regardless of topography and directions, in accordance with the availability of different resource zones.

Having established the main reasons underlying the location of the Ubaid sites in the Hamrin region, other points need to be considered as well. Topography seems to have been taken into consideration by the Ubaidian villagers when they selected the place to live in. A look at the map of the region (Fig. 6) clearly shows that the Ubaid people have deliberately chosen a valley which is surrounded by jebels, or high hills that constitute a natural barrier secluding the area from other parts of surrounding regions. They may have chosen to settle here simply because there was good agricultural land, and because those hills provide good grazing areas.

The situation of the Hamrin region in a central position in Iraq enabled the inhabitants to act as a connecting link between southern and northern Iraq as we have seen through our study of the Ubaid pottery of Abada (Chapter III). Also the Hamrin region lies on the most important routes in western Asia linking Iraq to Iran and running north to south along the Zagros (Fig. 1). These routes can have changed little throughout the centuries due to the physical character of the region (Postgate 1979, 594).

Therefore it seems evident that ecological, geographical and economical reasons were all behind the selection of the area - the Hamrin region - by the Ubaidian villagers. Other reasons relating to the distribution of these Ubaidian villages will be discussed in the next chapter.

Table 2

Total Rainfall per Winter Season (October - May)

at Khanaqin, 1936-1958.

Year	mm.	
1936/37	251.5	*
1937/38	356.4	
1938/39	518.2	
1939/40	459.5	
1940/41	329.6	
1941/42	149.6	***
1942/43	524.7	
1943/44	229.2	**
1944/45	238.6	**
1945/46	488.3	
1946/47	237.2	**
1947/48	181.8	***
1948/49	348.4	
1949/50	477.1	
1950/51	229.8	**
1951/52	223.1	**
1952/52	359.8	
1953/54	349.0	
1954/55	246.0	**
1955/56	330.2	
1956/57	586.0	
1957/58	219.7	**

*** Seasons with total rainfall less than 200 mm.
** Seasons with total rainfall between 200-250 mm.
* Seasons with total rainfall between 250-300 mm.

Source:Diyala and Middle Tigris project, Report No.2, Macdonald and partners 1959.

Table 3

Paleaobotanical specimens from Tell Abada

1 - Barley Hordeum cf.spontaneum - exceptionally small grains, possibly a relative e.g.Elymus.

2 - Cereal fragments, indeterminate

3 - Prosopis shell fragments.

4 - Triticum cf. dicoccum -very damaged, with the high ridged back characteristic of emmer missing.

5 - Triticum cf. dicoccum/T dicoccoides or T.boeoticum (2 grained), probably a weed of crops.

6 - Liliacae fragments ?

7 - Hordeum sativum: some slightly asymmetric, therefore 6-rowed. 2 near certain, others dubious.

8 - cereals/grasses, indeterminate.

9 - cf. Hordeum sativum, possibly 6-row naked barley, if it is, then interesting as it is (one of) the latest occurrences of naked barley in Near East.

10 - ? Triticum aestivum type.

11 - Glume of Triticum boeoticum/Triticum cf. dicoccum though scar width suggests T.monococcum/T.boeoticum being slightly large for T.dicoccum also secondary keel suggests T.monococcum/boeoticum.

CHAPTER VI

Community Patterns: Inter- and Intra-site Analysis

Site Spacing and Demography

We have already seen in Chapter V that the Ubaid settlements were founded in the Hamrin basin where both environmental and geographical conditions met the requirements of these village farming communities throughout the region. The question which should be raised now is what pattern is discernable in the distribution of the Ubaid sites in this area? In order to answer this question two variables need to be discussed here, spacing between sites and their population densities.

Site Spacing

It seems evident, as seen from the map of the region (Fig.227), that the Ubaid settlements were established at a distance from each other. No regularity is observable in this distance nor had any particular system been followed. The distance between one site and another varied from about 2 - 14 km.

With the exception of Tells Songor A, B, and C which are located very closely, not more than 100 m. from each other, the calculation of the distance between other contemporary Ubaid sites is as follows:

1 - A distance of about 12 km. between Abada and Tell Rashid.
2 - A distance of about 5 km. spacing Tell Abada from each of Ayash and Telul Al-Khubari.
3 - A distance of about 6 km. spacing Ayash from the Songor group.
4 - A distance of 2 km. between Al-Khubari and Ayash.
5 - A distance of about 4 km. spacing Kheit Qasim from Tells Songor.

This apparently irregular spacing should not necessarily be explained in terms of randomness because individual behaviour is not random but is usually constrained and determined by economic and physical factors in the location of sites (Hodder and Orton 1976, 53; Hodder 1978, 224).

In interpreting reasons behind such spacing, Flannery (1976, 111) has dismissed any probability that it resulted from the

need of each village to maintain exclusive rights to a particular zone around the site, since this zone was actually far larger than any one village would have needed. This viewpoint seems to hold true for the situation in the Hamrin region, where, as we have seen through the site catchment analysis, the area of 2 km. radius we suggested for each site was actually greater than the real need of the villages, moreover the overlap of some catchment areas due to the distance between them (Fig. 276) would further rule out such a postulation. Should the desire of acquiring more surrounding lands have been the reason behind spacing, this would have been no problem due to the availability of arable lands in the area, but we think that spacing between the Ubaid sites in this area was affected by two factors. The first pertains to the local environmental situation when choosing the site for residential purposes: a fertile flat alluvial plain with adequate economic resources in most cases. The other and the most important factor which we think might have had a great role in site spacing was a social factor. Ethnographic data indicate that social factors govern and determine the spacing distance between villages in Iraq today. Here, though the location of the village was deliberately chosen in accordance with the water supply and economic potentials of the area, we see that most of the inhabitants belong to the same tribe, and the next village, which is normally situated at a distance of between 2 to 7 kms., is always inhabited by the cousins and other close relatives of the tribe in the first village, so that relatives can keep in touch and maintain good relations. And so an area which could extend for a few tens of square miles may be inhabited by one tribe. In the meantime by maintaining close proximity they prevent any potential movement by other tribes who might think of moving around their villages. This modern pattern of spacing reflects the ancient one of the Ubaid period in the Hamrin region where we can see groups of small settlements at various distances. The social factor or reason behind site-spacing could be further clarified by the pattern of the distribution of Ubaid pottery throughout the settlements in the region. We have noticed that the pottery found in a group of sites located near to each other shows a closer resemblance, or even identity, than that found in groups of sites located at a farther distance. For instance we found that the Ubaid pottery found at each of Tell Abada, Rashid, Site No.3A, Ayash and Telul Al-Khubari, are very similar to each other (this group of sites is situated in the south of the region). The pottery found at Tells Songor A, B and C is virtually identical. Almost the same situation is found with other groups of Ubaid sites in the north of the region. This interesting phenomenon probably indicates that these ceramic utensils were in circulation between villages inhabited by one tribe within each group, or that they were supplied by the same potters, bearing in mind that we are dealing with a pottery with common Ubaid traits and that these differences are of regional rather than chronological variation. Social factors have also been suggested as determinants in spacing between villages by Flannery (1976, 178).

The second issue involved in our topic is to consider the implications of the site distribution pattern in the Hamrin region in terms of population growth and what role, if any, this may have had on the cultural process in general and on the agricultural economy in particular.

However, as we have already seen in Chapter V, it is most probable that if we examine the amount of available arable land in the Hamrin region during the Ubaid period and the number and size of the associated Ubaid setlements there will be no argument for any demographic pressure. To prove this point, an estimation of population densities of these sites is needed.

Various approaches to population estimates have been advanced. They are based on different criteria, such as human skeletons, food residues and portable objects like grinding stones, ceramic vessels and storage facilities (Sumner 1979; Kramer 1980).

For unexcavated sites a figure of 96 - 395 persons per hectare of site area has been suggested by Adams (1965, 25). A figure of 200 persons per hectare of village was also suggested (Oates and Oates 1976a, 127). But as Renfrew (1972, 383) has pointed out, the estimation of population density based on survey data from sites is rather perilous and would produce an incomplete picture. Another method proposes that the ratio of enclosed floor space per person is relatively constant, i.e. 10 square metres per person (Naroll 1962; Cook and Hiezer 1968; Kramer 1979).

It seems obvious that the estimation of prehistoric population is extremely difficult, if not impossible due to the lack of sufficient excavation and the variability between prehistoric settlements (Oates and Oates 1976a, 127), and the use of any of these proposed approaches would be highly inaccurate and probably misleading.

It has been suggested that ethnographic data provide useful paradigms in analysing the archaeological record particularly when both archaeological and ethnographical data can be shown to be comparable (Kramer 1980, 316). Braidwood and Reed (1957) were the first to use such contemporary settlement data to estimate prehistoric population size.

To estimate the Ubaid population of the Ubaid settlements in the Hamrin region, both archaeological and ethnographic data need to be taken into consideration. The correlation between house and room size and population density, could be a useful indicator, but we should keep in mind that size of rooms and houses may vary according to wealth and social status and not neccessarily reflect the number of people accommodated.

Nevertheless the case seems generally to be so.

Unfortunately only a few residential units were excavated at a few of the Ubaid settlements in the Hamrin region. Other Ubaid settlements in the region were either badly destroyed or produced only sparce traces of occupation. So any attempt at population estimation would be incomplete and most certainly misleading. However, the thoroughly excavated site of Abada has furnished us with an almost complete picture of a village which will enable us to obtain a better idea about the dwelling units and their population. The excavations of Level II have revealed ten building units. Tenuous traces of other buildings have been found to the north, west and east, in the areas immediately surrounding the existant ones. They may also have been residential units which have been demolished during the course of time due to their location on the edges of the site. The size of each of the existant buildings and the numbers of rooms together with the amount of portable materials and other domestic features such as hearths and granaries, not counting the unroofed courts and the small storage rooms, constitute, along with contemporary settlement data from closely comparable Iraqi villages, the grounds for our estimation. Taking all these into consideration we come to the conclusion that Abada was occupied by roughly 80-120 inhabitants. We should point out that this figure is supposed to represent the highest one among the Ubaid settlements in the region, on the basis that Abada is apparently the site largest in extent, with the greatest number of houses and a quantity of archaeological materials far exceeding the other Ubaid sites.

Indeed we cannot talk about the question of population pressure in the Hamrin basin in isolation from the population pressure elsewhere in Iraq. There was insufficient pressure to force continued occupation of the Hamrin basin. There are no Uruk sites in the region, so there was no even population growth and the area appears to have been abandoned; whether this was due to change of climate or political and economic change remains unknown.

Status Differentiation

Convincing evidence concerning status differentiation in the Ubaid settlements of the fifth millennium B.C. was absent before (Oates 1977, 472), but the new excavations of the Ubaid sites in the Hamrin region have made available some evidence which can be interpreted in terms of status differentiation and economic rank. It is normally understood that "wealth and status co-vary not only with one another but with available archaeological indicators: private house size and embellishments, tomb furnishings and the like" (Adams 1975, 456).

The architectural features and the findings of the houses should be good indicators of variations in social and economic status of their occupants. At Abada, houses vary in size and contents. Two groups of houses can be differentiated in terms of size. Firstly a group containing building A (240 square m.), building B (210 square m.) and building J (215 square metres). The other group is generally of smaller sized buildings and consists of the rest of the houses, the smallest of which covers an area of some 60 sq. m. (building D). In order to investigate the differences between the two groups in terms of their contents, as well as the variability within the first group, if any, we need to examine the material associated with them. As can be seen from the general distribution of the objects in the houses of level II (Fig. 279), the large houses in the first group can be distinguished by the presence of particular objects, which were not found in any house of the second group. These objects are shown in the following table:

Table 1

Building	Room	Object	Quantity	Figure
A	1	Special burial urns	3	30
(L II-I)	1,2,7,24-29	Clay tokens	90	66-70
	17	Special gypsum items	1	92:a
	20	Marble Vessels	5	71:a-e
	1	Marble mace-heads	4	85:a, b-e
	1	Palettes	1	86:e
	9	Unique Beaker	1	201
B	119	Unique Beaker	1	196:a
	124	Marble vessels	3	71:f-h
	121-122	Mace heads	3	85:f-h
	122	Marble studs	2	64:g-h
	122	Marble pendants	1	64:c
J	134	Mace heads	2	85:b
		Marble studs	1	64:i
		Marble pendants	1	64:a

As can be seen from this table, these large houses have produced particular evidence in the form of distinctive objects or particular features which can be thought of as status symbols. The presence below the floors of building A, only, of three child burial urns provided with funerary offerings (a necklace consisting of frit and carnelian beads, a female figurine and painted cup, respectively) is an obvious clue explaining the status of the occupants of this building. Other indicators of status are the 4 mace heads made of a very fine quality of marble, together with 5 marble vessels and other special items, in addition to the large collection of clay tokens mentioned earlier (Chapter II, Section G). The building is distinguished also by its gypsum-plastered interior walls, not matched by any other house in the village.

All this evidence would support our earlier impression that this building is entitled to be singled out as the most important one, which must have been occupied by the most prestigious people in the village, probably the Sheikh and his family. Both houses A and B, seem to have been very well maintained and looked after during their life. The floors were regularly surfaced and the walls were repeatedly coated from both inside and out. Building B may be regarded as the next in importance as regards the type and quantity of some of the distinctive objects, and the absence of the first two features of the first building (Fig. 279). It is likely that this house was occupied by close relatives of the Sheikh and his family who were living in the nearby building A. The presence in building J, of only a few of the distinctive objects, and its relatively distant location from the first two houses, would apparently make it the third in importance among the first group.

The presence of granaries in some of the houses of level I and their absence from others (Fig.25) might also reflect status distinctions. On the other hand, the smaller houses of the second group do not appear to be substantially different from the first ones in terms of findings (apart from the above-mentioned items). The occupants in both groups possessed large quantities of pottery and a rich variety of other items. The inhabitants, in general, seem to have enjoyed an apparent level of peace and prosperity. As can be understood from the foregoing, the inhabitants of building A, were at the top in terms of socio-economic rank. Building B is classified as the next in importance and its occupants were second in socio-economic rank, to be followed by the occupants of building J. All other buildings in level II seem to have been equal in status. While we have seen some evidence suggesting the existence of a variation in socio-economic status, we would not go as far as to suggest the existence of pronounced class divisions or a hierarchically arranged community.

Site Hierarchies

Throughout this chapter we have been dealing with various aspects of socio-political organisation within the Ubaidian community as part of our general analysis of the settlement patterns of the Ubaid sites in the Hamrin region. The next step in our analysis will be the classification of these sites in hierarchical ranking throughout the region.

Flannery (1976, 163) has asserted the importance of hierarchical arrangement in the settlement pattern analysis so as to reflect the differences in size, function, features and other attributes of sites. Pattee (1973, 150) has pointed out that hierarchies and evolution must be closely related to each other. However, the use of information and hierarchy theories to analyse the archaeological record is extremely difficult

(Chang 1972; Pattee 1973; Wenke 1981). The distinction between sites as 'hamlet' or 'village' by reference to differences in public architecture (Parsons 1971) was rejected by Flannery (1972b, 38; 1976, 162) as this difference is a matter of degree rather than kind. Size is often taken as a criteria to establish site hierarchies. Adams and Nissen (1972) have used this criteria to build the settlement hierarchies of the late Uruk sites in the Warka area of southern Iraq. The size method was based on the assumption that there are fewer larger sites in the region, providing a great deal of goods, activities and specialist services, than the smaller sites, and these larger centres are spaced at greater intervals (Hodder and Orton 1976, 60). So the method proposes two kinds of places; central places and dependant places, with the first category being more important, larger trade centers, while the second group are smaller and less important and located peripherally to the central places (Zubrow 1976, 258). This assumption was based on the idea of central place theory which was originally proposed by Christaller (1933) and the similar model of Losch (1954).

A central place was defined by Johnson (1975) as: "The spacial locus of an activity agglomeration involving production and distribution of goods or services or both, preliminary for use within a surrounding complementary region" (ibid., 288). Renfrew (1977, 85) considers that "The concept of central place implies, however, more than simply larger size. The central place is a locus for exchange activity, and more of any material passes through it than through a smaller settlements." The application of this theory to archaeology has been criticized because it was especially designed to deal with modern market economies and cannot be applicable to "non-money-market" economies (Sahlins 1972), and also because it was "predicated upon the extreme division of labour and the absence of household self-sufficiency that are characteristic of modern society alone" (Adams 1974, 242).

Johnson (1975) has modified the central place theory to what he calls a "central place model" to deal mainly with settlement hierarchies through local exchange systems of the middle and late Uruk period in the Susiana and Warka region, by considering the significance of the sites associated with ceramic wall cones as being specialized administrative centres for the mediation of local exchange (ibid., 336). By using this approach Johnson (1975) has recognised a four-level settlement size hierarchy in this area.

It appears to be the case that there is no strict rule or particular approach that has to be followed when grouping sites in hierarchical levels. It should be possible to do this by using various traits (Hodder and Orton 1976, 67), such as the precence of defensive walls (Hodder 1972, 891). The model we propose for the classification of sites in hierarchical levels in the Hamrin region makes use of various aspects of interaction and influence between the sites. Where sites are

associated with a particular architectural feature, or an industrial or artifact type this association will be used as a measurement to implement the model. These measurements can be classified as prime ones (1-3) and secondary ones (4-5) as follows:

1 - Unique architectural evidence

The presence of prominent and special buildings like building A at Abada (Fig. 14; p. 203) which can be interpreted as public or administrative in function, is a significant feature denoting the importance and rank of the settlement in which it exists.

2 - Common architectural evidence:

This type of evidence is represented by the presence of large buildings of tripartite plan which can be interpreted as being ordinary houses belonging to a particular level in the social hierarchy. Sites with this feature lack the first feature above.

3 - Industrial evidence:

Such as the presence of specialized workshops for pottery or stone industry. Also the presence of large, double-chambered, highly specialized and technically sophisticated kilns dedicated to pottery manufacture. Sites of the previous two groups could either be associated with this evidence or not.

4 - Particular artifact type evidence:

Some artifact types were found exclusive to a particular site, such as the marble mace-heads, pendants, palettes and vessels. Other particular artifacts such as lenticular jars were common only at particular sites.

5 - General artifact type evidence:

This general evidence is represented by the presence of Ubaid 3 pottery in all of the contemporaneous Ubaid sites in the region.

Having decided on the particular cultural measurements or indicators to be used in the analysis of the site hierarchy, the sites can now be arranged in their hierarchical order (Fig.

277), and the following hierarchical levels can be established.

1 - Major administrative centres which were associated with measures 1-5. It is evident that Abada is the only site which is entitled to be singled out owing to the presence of all the features.

2 - Sites associated mainly with measure 2, and some of them associated also with one or more of the secondary measurements. These sites can be classified within the second level of hierarchy, they are Tell Rashid, K.Qasim, Ayash, and Songor. These sites share with Abada one of its prime features (The Tripartite buildings or pottery kilns) but lack the evidence of the first measurement (public or administrative buildings).

During our classification of the Ubaid sites in the Hamrin region into hierarchical levels we discovered that there is no particular model or theory which is generally applicable, classification should depend rather on the special nature and peculiarities of sites in each study area. The available evidence alone should dictate the most suitable model to be applied in each case. According to our model, two hierarchical levels were established for these more or less contemporaneous sites which were integrated in an overall regional network throughout the Hamrin region. The relative size of each of the above mentioned sites would also support such a hierarchical order. It should be pointed out that though we have been dealing with contemporaneous settlement patterns of the Ubaid sites in the region, we did not mention the sites of T.Al-Khubari and no. 3 as they only produced an unstratified collection of Ubaid 3 pottery, found on the surface in the first site, and in a small deep pit in the second. We also excluded other sites because they belonged to the later part of the Ubaid period in the region (Chapter IV).

The Household and the Residential Unit

There is no doubt that the basic and the most socio-economic manifestation at the community level is the household and the unit which accomodates it, the house. It is in this spatial structure *per se* that various social arrangements and economic activities normally take place. Apparently a great many similarities are shared by the Ubaid sites in the region. Basically the Ubaid house is a multi-roomed house of rectangular shape. A tripartite plan seems to have been a common architectural feature adopted for both houses and temples, from Ubaid times through the early dynastic period (Oates 1977, 474). The building material used, in the majority of the Ubaid sites in the region, was mud-bricks of large rectangular shape. Mudbricks are the most convenient material for the climatic conditions in Iraq at that time and today, as they resist the scorching heat in the summer, and maintain a

fairly warm atmosphere inside in the winter. The roofs of these houses were probably constructed of reed matting fixed and covered with mud, laid over wooden beams probably made from palm trunks, this was attested by reed impressions which had apparently fallen from the roof together with charred beams. The walls were plastered with levigated clay and sometimes with gypsum plaster. Of special interest is the presence in some houses at Abada, Madhhur and Kheit Qasim of an architectural feature which could be interpreted as having housed a staircase (Figs. 14, 16, 18, 225, 262) which could have lead either to a second storey or to the roof of the house which probably served several useful purposes, for example, for sleeping during summer nights as is the case in Iraq today.

The Ubaid houses were provided with doors, whose stone sockets are still in situ. Hearths were installed inside rooms and were presumably for heating, bigger ones were found in the courtyards and they were presumably for cooking purposes. A number of domestic activities appear to have been carried out in the courtyards. Various grinding stones, which were presumably used for food preparation, and cooking pots were found in these courtyards. Such objects are quite familiar in every village house in present day Iraq. Storage facilities in the form of small compartments usually without doors (bins), or large jars are available in most of the Ubaid houses in the area. The inhabitants made use of a previously unattested method for grain storage as indicated by the special granaries at Abada (Fig. 25); the same method is still practiced in some villages in Iraq today.

Main entrances to the Ubaid houses faced a south-westerly direction in most cases, presumably to avoid the detrimental northern winter wind, and to face the refreshing western summer wind. This tradition is very common in Iraqi villages at the present time.

The size of the Ubaid house is of interest. Houses vary considerably in size from about 70 square metres (Fig. 17:D) to about 240 square metres (Fig. 14). It has been suggested that the family structure might be inferred from the size and layout of houses. Often a house occupied by a nuclear family consists of one or more rooms (Fig. 17), while if the house was occupied by an extended family, the nuclear family units are likely to be found repeated within the house (Trigger 1968, 57). Such a case is clearly represented in some of the houses at Abada (Figs. 14, 16, 24).

Craft Specialization and Trade

The detection of specialization in archaeology is not an easy task. It requires an extensive knowledge of intra- and intersite variation, this could be achieved either through

random sampling or complete excavations. The thoroughly excavated Ubaid site of Tell Abada has fortunately furnished us with unequivocal evidence of craft specialization; where in Level III, an industrial quarter consisting of two large, multi-roomed, rectangular courtyard buildings were excavated. The floors and walls of all the rooms and courtyards within these two buildings have been heavily coated with a thick gypsum plaster. Quantities of red ochre and grinding stones on which it had been prepared were found. The presence also of gypsum plano-convex discs of various sizes, perhaps moulds of some-sort, and large storage jars probably for keeping water, together with the discovery of three large kilns with a lot of ceramic debris and wastes, would suggest a pottery workshop at this level of the site.

The ceramic industry was well-developed. Sixteen pottery kilns were found, some of which were highly sophisticated, double-chamber kilns (Figs. 36-38). Some of these kilns coupled with the massive occurrence of the Ubaid pottery found throughout the site would evidently reflect the fact that craft specialization had been well established and implemented by highly skilled artisans who produced a remarkable Ubaid pottery. One might wonder whether this specialized ceramic industry was exclusive to Tell Abada alone or was universal for all Ubaid sites in the region. To consider this point we have to examine the archaeological evidence from the sites concerned to see which of them has produced similar kilns and how much pottery has been manufactured. Actually it is difficult to know about this as these sites have only undergone a limited scale of excavation, but judging from the relatively small size of these sites and the apparently short duration of their survival, together with their poor discoveries, we may deduce that none of them was in the position to be capable of competing with Tell Abada in terms of specialization and extent of production. However, a group of kilns one of which is comparable to one from Abada (Fig. 36) was found at Tell Songor B (Fujji 1980, Pl.20:i), and the possiblity of the presence of more cannot be excluded. Therefore it seems plausible to suggest that a possible regional specialization prevailed in the Hamrin region during the Ubaid period, that is, the ceramic industry was carried out by certain villages in the region; Abada in the south-east of the region and Songor in the north-west.

The large quantity and the wide variety of the ground stone industry that was represented at Abada and to a less extent at other Ubaid sites in the region, reflects another craft specialization and may imply labour specialization. The stone industry at Abada was carried out in a special workshop (Fig. 20,Building G., L.II; Fig. 279), here we found digging stick-weights, loom weights, and various grinding stones some of which were left in incomplete shape, others were probably broken during manufacture. A lot of waste debris scattered all over the floor was also noticed. On the other hand these types of tools were found to have had a universal distribution as they were found in almost every house on the site.

The presence of flint and chert tools 'in almost every house' would suggest that flint-knapping was a universal household activity. The same situation was noticed with the bone tools and figurines. Another kind of household activity conducted by the Ubaidian people was weaving, in terms of textiles and basketry. The first category was indicated by the presence of a large number of spindle whorls in almost every house of a type still used in Iraq today (Figs. 50-52).

Basketry and matting manufacture were attested by the presence of a patch of gypsum containing impressions of coils; these fine coils seem to have been made of some fibrous material and joined to each other apparantly by wrapping. According to Hodges (1976, 132) "In wrapped coil-work the join is made by passing a wrapping completely around the adjacent part of the coil, many different wrappings may be used". Judging from the negative impression we found at Abada, matting and basketry manufacture seem to have been well developed in technical terms. Two techniques seem to have been used; twill plaiting over two, under two, which was was used in making mats; and coilwork which was used in making smoother and finer basketry (Fig. 94).

Of special interest are the small bowls of highly polished stone (marble) which were found distributed in only some of the houses (Fig. 279), more interesting is the presence of an unfinished bowl of marble; only the general profile was cut and the carver had just started to hollow it when it was left for some reason. Of interest also is the presence in the same house of small regular slabs of very fine marble which were apparently prepared to cut out pendants. Beautifully executed pendants of the same material were found at the same place (Fig. 64:a, c). This activity, which may have been carried out in every village by perhaps only one or two households in each village, could be classified as a possible household specialization (Flannery and Winter 1976, 36).

In some of the foregoing instances we have evidently been dealing with various aspects of craft specialization, and dedicated workshops. The consequent question is: did these crafts imply full-time specialization conducted by full-time craftsmen who dedicated themselves to one craft only? It will be extremely difficult, even impossible to answer such a question, but contemporary ethnographic data could be of some help in this matter. This data was obtained from the present Iraqi villages which practice extensive agriculture and are known to specialize in one or another craft such as textiles, basketry, pottery, wine. In these recent villages the same farmers who practice farming and agriculture perform another specialized occupation, and thus they are farmers and craftsmen as well. Actually this combination sounds plausible, the farmer does not spend all his time working in the fields, nor does the potter make pottery all the time. One might argue that the massive occurrence of pottery at Tell Abada signifies a full-

time specialization. The counter argument would be that these large quantities of pottery were not manufactured overnight. It has been suggested that full-time specialization will occur only if the population is sufficiently large (Hole and Hiezer 1969, 341). The rough estimate of Abada's population does not appear to be sufficient to permit such full-time specialization.

There was village specialization, part-time specialists, but no class of full-time craft specialists. They did not necessarily "devote their time to the manufacture of craft products" nor "withdraw themselves from some or all of the basic subsistence activities" (Evan 1978, 115). Another point which needs to be clarified concerns the divison of labour in terms of sex, this is difficult to demonstrate and any conclusion in this respect would be most speculative.

Trade

The geographical position of the Hamrin region (Figs. 1, 3) was obviously an important factor that encouraged and facilitated the movement of groups and individuals between regions to exchange goods while conveying imformation at the same time. The interaction of goods and information has been considered as the "embeddedness" behind the evolution of civilization (Renfrew 1975, 5-8). Trade which implies such interaction seems to have been essential to the economy of the Ubaid people of the region, because it made available several things vital to their technolgy and subsistence; this was shown by the presence, at some Ubaid sites, of a voluminous amount of stone which must have been imported from somewhere else. Natural asphalt was imported to Tell Abada for hafting the sickle blades, most of which still bear its traces. This was probably imported from the Assyrian steppe. Carnelian in the form of beads was also found at Abada, the source was most probably Iran.

The presence of some obsidian tools at Abada (Fig. 278), Rashid and Abu Husaini could indicate involvement in long-distance trade, however obsidian had been around for a long time, pieces can be re-used or acquired by "down the line exchange". The neutron activation analysis for the obsidian found in most of the middle eastern archaeological sites, dating back to the period 5,000 - 3000 B.C. (including Iraq and Iran), shows that it belongs to group 4c and group 3 of the obsidian interaction zones, the region of which is Van-Azerbaijan-Armenian (VAA) in Anatolia and the Soviet Union (Renfrew and Dixon 1976). Abada's specimens were visually identified by Prof. C.Renfrew. The majority belong to group 4c,

and one specimen only to group 1g. [1] Other evidence which may indicate commercial activities, has come from Abada, Rashid and Tell Madhhur. This is the discovery of clay tokens of various shapes (90 tokens were found at Abada alone), (Chapter II, Section G; Fig. 279), which may have been used as counters to keep records of transactions. These would obviously imply the existence of a goods exchange mechanism (trade). Thus we may deduce that contact and reciprocal exchange was really taking place. The wide-spread distribution of the Ubaid pottery in northern Iraq, right into the homes of the Hassuna and Halaf people, by the beginning of the Ubaid 3 phase is very convincing evidence for both cultural and economic interaction, which explicilty implies trade relations. As we have seen earlier, Ubaid pottery indistinguishable from that of Abada was found at Tepe Gawra and Arpachiya. Ubaid pottery has been found on hundreds of sites throughout the northern plain, in the Zagros to the northeast and to the west across northern Syria (Oates and Oates 1976b, 125). Most significant are the recent discoveries of identical Ubaid pottery from the eastern province of Saudi Arabia and nearby Qatar and Bahrain, thus extending enormously its geographical distribution (Burkholder 1972; Biby 1971; Tosi 1974; Masry 1974; Oates 1976; 1978a; Roaf 1976; de Cardi 1977; Inizan 1980). The neutron activation and petrographic distribution analysis of the pottery from these sites shows that this Ubaid pottery was made in Southern Mesopotamia, definitely in the Ur, Eridu and Al-Ubaid area, and was brought down to the Gulf by the Ubaid "Seafaring merchants." The Ubaid Contact with the Eastern Coast of Arabia seems to lie in some form of trade and exchange involving perishable materials such as hides and oil, or perhaps even stone or mineral resources (Oates et al. 1977). Did such trade involved professional traders, and if it did, what was the status of such a class in the social hierarchy? It is very difficult to explore this archaeologically, but it has been suggested that trade could be a collective undertaking carried on either by a chief or through general participation of the members (Polanyi 1975, 143). The validity of either of these assumptions could be investigated through the archaeological evidence. At Abada we found that all the clay tokens or the above-mentioned counters were concentrated in one place only, that is the main, the largest building (A) (Fig. 14, 279) which appears to be the most prestigious, and which must have been used for some special purpose, as well as for the residence of the chief of the village. So it would seem plausible that this chief was in charge of the trade and kept in his own office the records of its transactions represented by these tokens. However, this evidence does not in any way establish participation in long-distance trading networks. Such tokens could be used for purely local accounting.

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[1] I am indebted to Prof. C.Renfrew, head of the Faculty of Archaeology and Anthropology, University of Cambridge, who kindly examined these specimens and provided me with this valuable information.

The Ubaidian Community and the Evolution of Leadership

In the course of the study and analysis of the cultural process and the stages of cultural evolution, a number of interesting theories have been advanced, mainly to explain the origins of complex societies and the formation of the state. Fried (1967) has divided societies into four classes, non-ranked, non-stratified, ranked and stratified societies. Service (1962) has also divided societies into four classes, but different terms were given by him, these are: bands; tribes; chiefdoms; and states. These terms seem to heve been widely adopted by anthropologists and archaeologists in their endeavour to explain the socio-political evolution of the prehistoric societies. Since the "band" is the simplest and most primitive form of social structure, it is frequently attributed to the hunter and gatherer groups (Service 1962, 97; Flannery 1972a, 401). The tribal level is more complex than the band level, but yet shares its most important characteristics: they are both egalitarian, self-sufficient with no differentiation in the basic residential units of the society (Service 1962, 131), but tribal societies are larger and integrated by elaborate ceremonies, rituals and kinship affinities (Flannery 1972a, 401). It was suggested that an approximate date for the appearance of this stage was 7000 B.C. in the Near East (ibid.).

The third evolutionary stage is the "chiefdom" in which society is more complex and more organized, with distinguished economic, social and religious activities and internal status differentiation, also increased productivity and more population density (Harding, Kaplan, Sahlins and Service 1960, 37; Service 1962, 133). In chiefdoms, the economy shows a higher degree of craft-specialization and diversification, chiefs themselves maintained a very high prestige and could be regarded as divine and might be priests as well (Flannery 1972a, 403). Chiefs are almost sacrosanct and frequently play a vital saccerdotal role, they are surrounded by a retinue of wives, retainers, and assistants, their life crises of birth, marriage, and most particularly, death, are frequently accompanied by elaborate public rituals. Chiefs can also command periodic contributions of labour for construction and maintenance of their houses and of public buildings such as temples (Service 1962). This stage was thought to have appeared as early as 5500 B.C. in the Near East (Flannery 1972a).

The last of the evolutionary stages is the state which is the highest form of socio-political organization. It usually involves a strong and centralized government with professional ruling class, full-time craftsmen, powerful economic structure and heavy population densities (Flannery 1972a, 404).

To consider which of these four evolutionary stages might fit the socio-political organisation of the Ubaidian community

during the fifth millennium B.C. it would seem most plausible to turn to the third stage, the chiefdom, as many authors agree (Flannery 1972a, 403; Watson and LaBlance 1973; Service 1975, 207; Adams 1975, 462).

In order to verify the validity of applying this term to the Ubaidian community we should test the criteria upon which it was based against the archaeological evidence in hand. It was argued that ranked classes and craft specialization were an important feature of the chiefdom (Harding, Sahlins and Service 1960, 36; Flannery 1972a, 40; Watson and LaBlance 1973; Service 1975, 207; Wright 1977, 381-386). As we have already seen both features were attested, to a certain degree, at the Ubaid site of Tell Abada. But what about other criteria involved in, and representing the components of chiefdom? Flannery has suggested that in chiefdoms population is often very large and warfare frequent (Flannery 1972a, 412), evidently neither of these cases were true in the Hamrin region during the Ubaid period. So while some of the important criteria have been met, others which are equally important have not. Therefore if we are to agree that a kind of chiefdom was actually extant in the Ubaid community we have to assert that this should be by no means derived from that type of chiefdom which was formulated and proposed for communities in other parts of the world. It was pointed out that a major problem in Service's definition of the chiefdom as a broad typological category and stage in unilineal evolution is that it is too specific because he describes a particular kind of chiefdom, characteristic of Polynesia (Sanders and Webster 1978, 270). However, we see no reason to agree with Sanders and Webster who believe that lowland Mesopotamiia did not pass through a chiefdom stage (ibid., 282). But we would emphasize that the type of chiefdom must have been different, more suited to the different situation. It was a chiefdom based on special considerations pertaining to the ancient Iraqi community which shares a lot of political and social traits with the present rural communities. For this reason it would be more convenient to call it a "Sheikhdom", in which the chief of the village (the Sheikh) may have been a religious leader combining the responsibility of running the community affairs with more practical agricultural management. Such may have been the type of authority in the Ubaidian settlements (Oates 1977, 472). The Sheikh and his family would have the largest and the best share of lands, proceedings, and commodities. They usually live in the largest house in the village, surrounded by their followers and relatives. This was obviously attested by the archaeological evidence from Abada where we have seen that the Sheikh and his family were living in the best and largest house (Fig. 14). This was richly furnished with a variety of goods. The presence in this house alone of the clay tokens which may have been used as records of transactions, would indicate that the sheikh was in charge and actually controling the trade.

It is difficult to suggest whether this chiefdom (or Sheikhdom) was a secular one or a theocratic one. Both Service

(1975, 207) and Webb (1975, 162) have associated chiefdom with theocracy. However, Adams (1975) while assuming the theocratic character of lowland Mesopotamia describes the chiefdoms in the peripheries of the Mesopotamian plain as being under predominantly secular control (ibid.. 462). We think that chiefdom with a theocratic character would have been more suitable for primitive communites for which religion is much more of an incentive than coercion. This assumption would find full support from the ethnogrphic data derived from Iraqi rural societies. In the villages where an Imam (a religious rank) resides, he is more influential and commands more authority than the Sheikh (whose power and rank are normally only secular). In other villages the same person combines the office of Imam and Sheikh thus maintaining full control of his followers and of the village's affairs, also being highly respected by other villages.

It would be interesting to know what role the public had in the running of affairs, and how much say they had in the decision-making process, but it is impossible to demonstrate or investigate such things. It is relevant to mention here that by the fourth millennium B.C. there was a public "Assembly" which was a decision-making body, without a hereditary leader, this continued to be the case even as late as the second millennium B.C. But, again on the basis of ethnographic data, I doubt that the public would have had any significant effect on the prime decision-making body, the sheikh and his elite.

CHAPTER VII

Conclusion

The archaeological record pertaining to Mesopotamian prehistory suffers from severe defects. The Ubaid period which has been described as the most neglected period in the archaeological investigation of Iraq (Mellaart 1979, 28) is obviously one of those important cultural epochs that still needs further investigation to clarify and resolve various problems involved in it. Indeed the available archaeological evidence stops short of providing us with the necessary answers for many questions, among which are, for instance, the origins of the Ubaid people, their identity, and the time at which they entered Iraq. However, we should stress the fact that there is abundant evidence referring to a remarkable and unbreakable cultural continuity from the earliest Ubaid period to the Uruk period. Archaeologists and scholars tend to agree now with Oates (1960, 46) that the Sumerians were already in southern Mesopotamia during the Ubaid period (Mallowan 1967, 20; Mellaart 1967, 44; Roux 1969, 137). Indeed we have no real justification for assuming an earlier homeland for the Ubaid people other than in southern Mesopotamia and archaeological data derived from architectural, ceramic and religious evidence, strongly supports this fact (Oates 1969b, 127; 1979, 21). Also, the possibility of the existence of pre-Eridu settlement in southern Mesopotamia cannot be ruled out. The recent discoveries, by the french expedition, at Tell Oueili in southern Iraq, of at least a dozen pre-Eridu (Ubaid I) levels, and the chance-discovery of Ras Al-Amiya near Kish, which had been lying under a heavy blanket of alluvial sediments are good examples to be mentioned here.

The Ubaid culture, during its first phases (Ubaid I and 2) had already been known from many sites in southern Iraq and stretched from Eridu to Kish where Ras Al-Amiya lies. By the beginning of Ubaid 3 it had spread to the north of Iraq where it was well attested at Tepe Gawra, and to the west, at Yarim Tepe and further across northern Syria. It was the first time in Mesopotamian prehistory that both southern and northern Iraq were culturally unified under Ubaid influence.

The central part of Iraq - notably the Diyala region - due to its geographical position between the north and south of Iraq, and its proximity to Iran, seems to be the most promising area in which to search for the evidence for links between north and south.

The new excavations in the Hamrin basin in the above-mentioned area, have furnished us with such evidence, thus helping to fill part of the gap in the archaeological record of the Ubaid period. Here in an area of about 600 sq. km. some 16 Ubaid sites were excavated. The most interesting and important of these sites is Tell Abada. The extensive excavations conducted in this site have revealed three distinct building levels, with enormous quantities of Ubaid pottery and a very wide variety of materials. Most interesting is the village plan, the first ever recovered for an Ubaid settlemnt. Tripartite buildings with a T-shaped or cruciform hall, which was roofed as evidenced in some buildings at Abada and Maddhur, seem to have been fashionable during the Ubaid period. This was attested at several Ubaid sites in Hamrin like Abada, Rashid, Ayash, Kiet Qasim and Maddhur. This evidence substantiates earlier and similar discoveries from Tepe Gawra and Telul Eth-thalathal in north and northwestern Iraq. The architectural evidence from Abada shows a remarkable continuity of the Tripartite plan with cruciform hall which shows its finest development in the Uruk Eanna precinct at Warka.

Most fascinating is the Ubaid pottery from Abada. Of special interest is the simultaneous occurrence at level III of Ubaid pottery with pottery which resembles both Choga Mami Transitional Samarra/Ubaid type and more classical Samarra pottery. These ceramic types were also found in association with pottery of Ubaid 2 style. The occurrence of the new ceramic style "Transitional" first identified at Choga Mami, represents an important addition to the repertoire of this newly discovered pottery which exhibits features related to both Samarra and Ubaid I ceramic styles. Of interest is that some of the Transitional examples from Abada are closely comparable to examples from both Choga Mami in Iraq and Choga Safid in Khuzistan. The discoverey of this type of ceramic at Hamrin (Abada III and Songor A), furnishes further evidence of a "new prehistoric phase apparently characteristic of central Mesopotamia and intrusive into Khuzistan" (Oates 1982a, 28). Indeed some of the ware we designated here as Transitional is very similar to the classical Samarra Ware both in painted and painted-and-incised style (Figs.97-99), therefore it was termed Samarra in our preliminary report (Jasim 1983). But the occurrence of Samarra Ware in this level would create a serious chronological problem concerning the relation of materials of different cultures which are known to be far apart in time, like Samarra and Ubaid 2, unless we propose a contemporaneity between the two styles, i.e. between Hajji Muhammad and Sawwan III or Safid 3/4. Such contemporaneity cannot be supported in any way by the available archaeological evidence nor by the C-14 determination which yielded a date of 5080 b.c. for Sawwan III (Oates 1984, 263). To reconcile the situation, we attributed these apparantly Samarran ware to the Transitional phase. However, the well stratified association of Ubaid I/2 with Transitional ware is very important and confirms the contemporaneity of the latter with early Ubaid (Oates 1984, 253).

The painted pottery from Abada II and I and other contemporary sites in the Hamrin, is brilliantly executed and skillfully painted. It generally resembles the Ubaid 2/3 ceramic style from Hajji Muhammad, Ras Al-Amiya and Choga Mami, but it was represented here, particularly at Abada, in a much richer series both in shapes and patterns. Painted pottery is overwhelmingly predominant at the Ubaid 2/3 sites in Hamrin, and this obviously reflects the fact that the painted style was still popular and widely practised by the Ubaid potters. Many distinctive vessel types known from both the south and the north of Iraq, were found; of significance is a certain combination of vessel forms and painted designs. These were used as reliable chronological indicators to establish, with a degree of assurance, the date of the sites and to fit them into the Ubaid sequence. The date of Ubaid 2 was suggested by the Ubaid pottery from level III while a date of early Ubaid 3 was suggested by that from levels II and I and other contemporary sites in the region. Other sites were attributed to the late Ubaid period.

The geographical situation of the Hamrin region in the central part of the country is reflected in its materials which show similarity to either both south and north Iraq or to one or another of them. So the relationship between the Hamrin and other parts of Iraq is now attested. Also the relationship between the Ubaid sites in the Hamrin is clearly established.

The relationship between Mesopotamia and Iran during the Ubaid period is now well attested by the new evidence from the Hamrin region. The presence at Abada III of a Transitional vessel strikingly resembling specimens from Choga Safid, would support similar evidence from Choga Mami, which implies a contemporaneity between the latter site, Abada III and Safid 5. The massive occurrence of Dalma impressed ware and the presence of red-slipped ware decorated with vertical patterns of zigzag lines (Fig. 159), both of Iranian origins, together with certain other small findings at the Ubaid sites in the Hamrin, is further evidence of a relationship between Mesopotamia and Iran, which certainly involves contemporaneity between the Ubaid 3 and Mehmeh phases.

Another distinctive feature of the Hamrin region is the presence of large quantities of Ubaid incised ware some of which is very similar to the Hassuna/Samarra style. The impressed and incised ware is of a high standard and demonstrates a fully developed technique. Of chronological significance is the discovery, at some of the early Ubaid 3 sites like Abada, Rashid and K. Qasim, of late Halaf polychrome sherds. These were found side by side with early Ubaid 3 materials in stratified levels, and the only reasonable explanation for such occurrence is the contemporaneity of these two ceramic styles.

The excavation of the Ubaid site of Abada has provided us with new and important information concerning various aspects of settlement and community patterns and shed light on the social and economic manifestations of the Ubaid community. The economy was based on winter agriculture of emmer, eincorn, bread wheat ? and two varieties of barley. Irrigation could well have been practised in the Hamrin, as the evidence from the nearby Choga Mami shows that it was practised since the earlier Samarra period. Plough cultivation may have accompanied irrigation agriculture, this obviously represents an improvement in agricultural methods. The present-day farming situation based on the traditional fallow rotation was probably followed by the Ubaidian farmers. However, agriculture was not the sole mode of subsistence and was supplemented by the hunting of gazelle, deer, boar and onger, according to the animal osteological evidence from Tell Abada. No conclusive evidence concerning the beliefs of the people could be drawn, and no dedicated religious buildings were found; but the practice of burying the dead children below the floors of the houses, and the funerary offerings associated with some of these burials may suggest some religious significance.

Craft specialization is well attested in the Hamrin region. This was represented by the discovery of large dedicated workshops at Abada, and by the presence of several large and sophisticated pottery kilns at both Abada and Songor B. The enormous quantity of the remarkably painted Ubaid Ware was apparantly produced by these kilns. Stone and bone tools were varied and abundant. Weaving, basketry and matting manufacture was well executed.

The material evidence obtained from the dwelling houses at Abada evidently reflects a prosperous economy and good standard of living for all the Ubaid people in the village, however, the size of the houses and their association with some special items considered to be indicative measures may reflect variability in socio-economic status. Building A is distinguished as being the most prestigious one in the village due to the distinctive features associated with it, such as its unusually large size, central location, and the presence below its floors of numerous child burial urns some of which were furnished with funerary offerings. Most interesting is the presence of the clay tokens which may have been used as counters representing records of economic transactions. Such unusual features shed light on the function of this building which might have served administrative and religious purposes. A part of that building may have been occupied by the chief of the community; the Sheikh who most probably was a religious and political leader at the same time.

The presence of Ubaid settlement in the Hamrin region was dependent on the availability of arable land and water. According to the archaeological evidence from Abada, the people there drew water by channels and ceramic pipes for a

considerable distance from the large wadis, chand, and from a river nearby, presumably for drinking and domestic purposes. The existence of marsh land areas in the northwestern part of the region and their use by the present-day villages as the main grazing land for flocks of sheep and cattle, and the fact that the area is also the homestay for wild pigs and birds, could reflect a similar situation to that which existed during the Ubaid period. The hills surrounding the Hamrin basin also provided good grazing land and a habitat for gazelles and deer, a good supplementary diet for the villagers. The geographical location of the area and its accessibility by various routes leading to the south and north of Iraq, and nearby Iran, was probably another reason that encouraged the Ubaid people to reside there and enabled them to establish commercial contacts with other regions.

The presence of Ubaid sites in the Hamrin is further evidence of the wide-spread distribution of the Ubaid culture outside its original home in southern Iraq into the north, west and down to the Arabian Gulf. What does this distribution mean and in what terms can it be explained? Was it an expansion and colonization resulting from population growth or pressure? It is certainly true that the "increase in number and size of Ubaid settlements reflects some improvements, both in agricultural methods and tools (Oates 1972a, 305), but no population growth is discernable in the Hamrin, moreover, the region seems to have been completely abandoned towards the end of the Ubaid period, as no Uruk occupation was found. Indeed the evidence from the eastern province of Saudi Arabia has clearly shown that the Ubaid materials found there were brought from southern Iraq by the Ubaid "Seafaring merchants" who were involved in trade and maritime contact.

The new discoveries from the Hamrin region, have greatly enriched the Ubaid repertoire and enormously increased our knowledge of the Ubaid period. Nevertheless, the occupation of most of these Ubaid sites is of relatively short duration which creates some chronological problems, as short-lived sites can actually tell little about cultural development and they are insignificant in terms of overall Ubaid settlement. Thus many archaeological problems, particularly chronological ones remain. The chronology of the Ubaid period, which is extremely long, its material spans most or all of the fifth millennium B.C. (Adams 1981, 54), remains to be clarified. New sites badly need to be searched for and more archaeological work needs to be carried out, especially on sites that will provide a long sequence. But it is unlikely that the quantitative data from the Hamrin region will be superseded elsewhere for some time to come.

Appendix 1

The Animal bones from Tell Abada.

by Sebastian Payne.

Despite the excavation of many sites in Iraq, little is known as yet about the zoo-archaeology of the area. For this reason the animal bone sample from Tell Abada, a fifth millennium site in the Diyala region, is of interest despite its small size.

Tell Abada lies out on the plain, but only a short distance from the first Zagros foothills. Rainfall nowadays is in the region of 300 mm.; enough for cereal farming without irrigation. Winters are cold and wet; summers hot and dry. The plain is heavily cultivated, and without trees except in the villages; low-lying areas are covered by reed-swamp.

Seven bags of bone were recoved during the excavations at Tell Abada, with a total weight of 4.93 kg. of bone. The bones are in the broken state typical of food remains from archaeological sites, but are othewise well-preseverd. The sample immediately presents two peculiarities: horncores and antler fragments are disproportionately common, and the amount of bone is very small in relation to the total volume of earth excavated; more than 50,000 cubic metres were excavated, which gives the extraordinarily low concentration of around .1 gm. of bone per cubic metre of earth. Poor preservation is almost certainly not the explanation, as the bones that were found are generally in good condition and horncores and antlers, which are abundant, are less resistant to destruction than most other bones. Possible explanations for the low concentration of bone finds include:

a) that little meat was consumed, and thus few bones came onto the site;

b) that more meat was eaten, but that bones were not brought onto the site, or were subsequently disposed of off-site; and

c) that large numbers of bones were missed during excavation.

That some bone was missed during excavation is probable: sieving experiments have shown (Payne 1972; 1975) that trench recovery often misses smaller bones and bone fragments; even if some allowance is made for this, however, the scarcity of bone at Tell Abada is striking in relation both to the volume of

excavated earth, and to the enormous quantity of potsherds found. The abundance of horncores and antler may indicate that these were kept for display while postcranial bones were disposed of, and more meat may therefore have been consumed than the very low counts seem to suggest.

Species represented:

The following species were present in the sample:

Bos	cattle	probably wild and domestic
Equus asinus/hemionus	ass/onager	
Capra	goat	probably domestic
Ovis	sheep	
Gazella cf. subgutturosa	goitred gazelle	
Sus	pig/wild boar	
cervid	deer	probably Dama mesopotamica
Canis	dog/wolf	

Bos:

Large bovid bones are fairly common; they are probably all of Bos rather than Bison or Bubalus, but more work is needed on criteria for distinguishing these genera in bone samples from south-west Asia. The following measurements were taken (unless othewise described, definitions follow von den Driesch 1976; measurements are given in millimetres):

	Sp. No.	Bone	Measurements
Level III	7	Ulna	SDO 60.3, DPA 73.1 Fusing!
"	8	Humerus	HTC (height of trochlea at constriction) 38.9
"	9	Metacarpus	Bp 58.8
Level II	35	Metacarpus	Bp 60.5, Bd ca. 60.0, KD 30.3 Gl ca. 197.5
Level I	63	Astragalus	GL1 69.6
"	65	Phalanx II	GL >58.3, KD 36.7, BD 40.7+
"	68	Metatarsus	BD 63.8
"	69	Metacarpus	BD 79.3

Some specimens are large enough to suggest the presence of wild cattle (e.g. Spp. No. 65 and 69), while others are small, and probably from domestic cattle (e.g Sp. No. 35). The sample is unfortunately too small to see whether there are two separate size groups, or a continuum.

Equus asinus/hemionus:

Equid bones are especially frequent in Level III. A lower cheektooth (Level I, Sp. No. 62) has a fairly shallow buccal sinus, symmetrical entoflexid, and sharply V-ed lingual sinus (Plate A). An upper second premolar (Level III, Sp. No. 16) has no caballine fold, and a very short protocone, but is fairly worn (Plate B). The following measurements were taken:

	Sp. No.	Bone	Measurements
Level III	1	Phalanx	GL 81.0, Bp 43.5, KD 25.4, BFd 35.1 Bd 38.0
"	2	Pelvis	LAR ca. 49.5
"	3	Humerus	HTC 32.6
"	5	Astragalus	BFd 42.2, LmT 55.8
"	11	Phalanx I	GL 72.2, Bp 40.3, KD 23.5, BFd 31.7 Bd 33.5
"	12	Phalanx I	KD 23.7, BFd 33.3, Bd 34.2
"	14	Radius	Bd 59.4, BFd 50.7
"	15	Femur	TC 45.2
Level II	32	Phalanx I	GL ca. 84.0
No level	87	Phalanx I	Bp 41.8

The characteristics of the teeth, together with the slenderness of the first phalanges, show that these belong to the E. asinus/hemionus group; but separation between these two species is difficult. Traditionally E. hemionus, the onager, is regarded as the native wild equid of Mesopotamia; but this has been questioned by Ducos (1978), who has identified the equid abundant at Tell Mureybet in northern Syria as E. asinus, the wild ass. The characteristics of the Tell Abada equid bones are perhaps more asinine than hemionine, but the sample is very small; it is also possible that the native Mesopotamian equid may in some respects have been intermediate between the Persian onager and the wild ass of North Africa.

Capra:

Goat bones are fairly common. A number of male horncore fragments show evidence of torsion, slight in some cases, and considerable in others, and this is normally taken to indicate domestication. The following measurements were taken:

	Sp. No.	Bone	Measurements
Level II	40	Astragalus	GLl 25.8, GLm 23.7
"	42	Scapula	GLP 27.8+. BG 19.9+
Level I	71	Astragalus	GLl 29.2, GLm 27.1
"	72	Astragalus	GLl 25.3
"	73	Astragalus	GLm 23.1

Ovis:

Sheep bones are again fairly common, but no horncores were found. The following measurements were taken:

	Sp. No.	Bone	Measurement
Level II	38	Astragalus	GLl 31.4, GLm 29.8
"	39	Humerus	HTC 15.4
"	41	Tibia	Bd 27.6 ?Ovis
Level I	70	Astragalus	GLl 30.2, GLm 30.0 (sic!)
"	74	Astragalus	GLl 29.5, GLm 28.5
No level	90	Astragalus	GLl 31.4, GLm 29.9

Gazella cf. subgutturosa:

Gazelle horncores are common. All are fairly robust, and show the close apposition and lateral compression typical of G. subgutturosa. Postcranial bones are notably scarce. The following measurements were taken:

	Sp. No.	Bone	Measurements
Level III	20	Horncore	Base ca. 27.3 x 18.7
Level II	22	Horncore	Base 30.5 x 19.2
"	23	Horncore	Base 31.2 x 21.3 Burnt.
"	24	Horncore	- x 22.5
"	25	Horncore	32.0 x 24.2
"	26	Horncore	34.4 x 23.7
"	27	Horncore	34.1 x 22.0
"	28	Horncore	36.5 x 23.5
"	29	Horncore	33.8 x 22.5
"	30	Horncore	32.2 x 26.8 (sic!) juvenile; ? identification
"	47	Metatarsus	Bd 21.7
Level I	57	Horncore	32.8 x 23.2
"	58	Horncore	33.1 x 22.5
"	75	Humerus	HTC 14.6
No level	96	Horncore	36.5 x 24.0
No level	97	Horncore	33.5 x 24.4

Sus:

A small number of specimens were found, only one of which could be measured:
Level II 49 Astragalus GL1 41.8+ ?juvenile

Cervid:

Cervid antler fragments are fairly common; all are very broken and rather soft. This is typical of shed antler, and the one basal fragment appears to have been shed. The condition of the fragments makes identification difficult; they are from fairly large antlers, and their surface appearance suggests Dama rather than Cervus. No other parts of the skeleton were found.

Canis:

Two fragments were found: part of an ulna, and a broken pelvis. Both are fairly large, and could be from large dogs or from small wolves

Discussion

The small size of the sample, together with evidence for selection (disproportionate abundance of horncores, antler fragments and Ovis and Capra astragali) makes any discussion of relative abundance problematic. This is illustrated in Table 1 below.

The abundance of Equus in Level III invites comparison with Umm Dabaghiya (Bokonyi 1973), the lower levels of Tell Muryebet (Ducos 1978) and Palegawra (Turnbull and Reed 1974); while the frequency of Bos in Levels II and I suggests closer similarity with Ras Al Amiya and Eridu (Flannery and Cornwall 1969) than with the high Ovis/Capra and very low Bos counts that are typical of the Deh Luran sequence (Hole, Flannery and Neely 1969). But samples are so small that little reliance can be placed on these comparisons.

The association of Equus, Bos, Ovis, Capra and Gazella suggests a rather open grassland. The Sus, if wild, probably came from the reedswamp areas, where wild boar are common even today. The only suggestion of a more wooded environment comes from the cervid antlers; but these could have come from some distance from the site as antler is often traded or transported over long distances.

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Table 1

	Level III		Level II		Level I		No level	
	Bones & teeth	Horncores & antler	Bones & teeth	Horncores & antler	Bones & teeth	Horncores & antler	Bones & teeth	Horncores & antler
Equus	11		1		1		2	
Bos	3		3	?frs.	7			
Ovis/Capra		*C.*frs.	9	*C.* frs.	8	*C.* frs.	1	*C.* frs.
Gazella		1 + frs.	1	9 + frs.	1*	2 + frs.		2 + frs.
Sus			1		2		2	
Cervid		frs.				frs.		frs.
Canis			1				1	

* +1 worked *Gazella* proximal metacarpus; not included, as remainder of worked bone not seen.

Plate A: Lower cheektooth of Equus asinus/hemionus.

Plate B: Upper second premolar of Equus asinus/hemionus.

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Appendix 2

Tell Abada Preliminary Lithic Analysis

by Bob Bewley

Table 1

	Surface	Level I	Level II	Level III	Totals
Sickle Blades	1	18	36	12	67
Blade Flakes	38	77	121	36	272
Pointed Flakes	-	6	15	2	23
Scrapers	5	9	15	11	40
End Scrapers	-	4	-	2	6
Notched Flakes	-	4	-	2	6
Crested Flakes	3	-	2	3	8
Drills	-	-	1	-	1
Flakes	78	202	321	72	673
Concial Core	-	2	-	1	3
Misc. Core	2	2	3	2	9
Debitage	-	51	35	43	129
Chunks	-	6	4	16	26
Whetstones	1	-	-	-	1
Stones	-	30	17	7	50
Totals	128	411	570	205	1314

This small assemblage of lithic artefacts was made of mainly chert stone, though there is one obsidian artefact. The cherts probably originate somewhere in the Zagros Mountains, as they have the characteristics colours and multi-coloured appearance. There are a number of fine sickle blades with very obvious sickle gloss, which would be worth studying for micro-wear analysis. These sickle blades also have remants of the binding material, presumably bitumen. There were few cores, which suggests that the artefacts were made somewhere else or the 'lithic working' area of the site was not discovered. The largest category of artefact was the flake (673 or 51%); mostly these were non-utilised, though some had utilisation marks. Very few had retouch, though some had a little; not enouth to categorise them as scrapers. The blade flakes were also usually not retouched, though many of the blades may have been used (or at least prepared for use) as sickle blades.

No metrical analysis was done as there is very little comparative material available for study and the assemblage was too small, with too little variation between the layers. Level 2 is perhaps the most productive in terms of sickle

blades and blade flakes.

Microwear analysis and further comparative study ought to be done on this material to set it in its overall context.

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