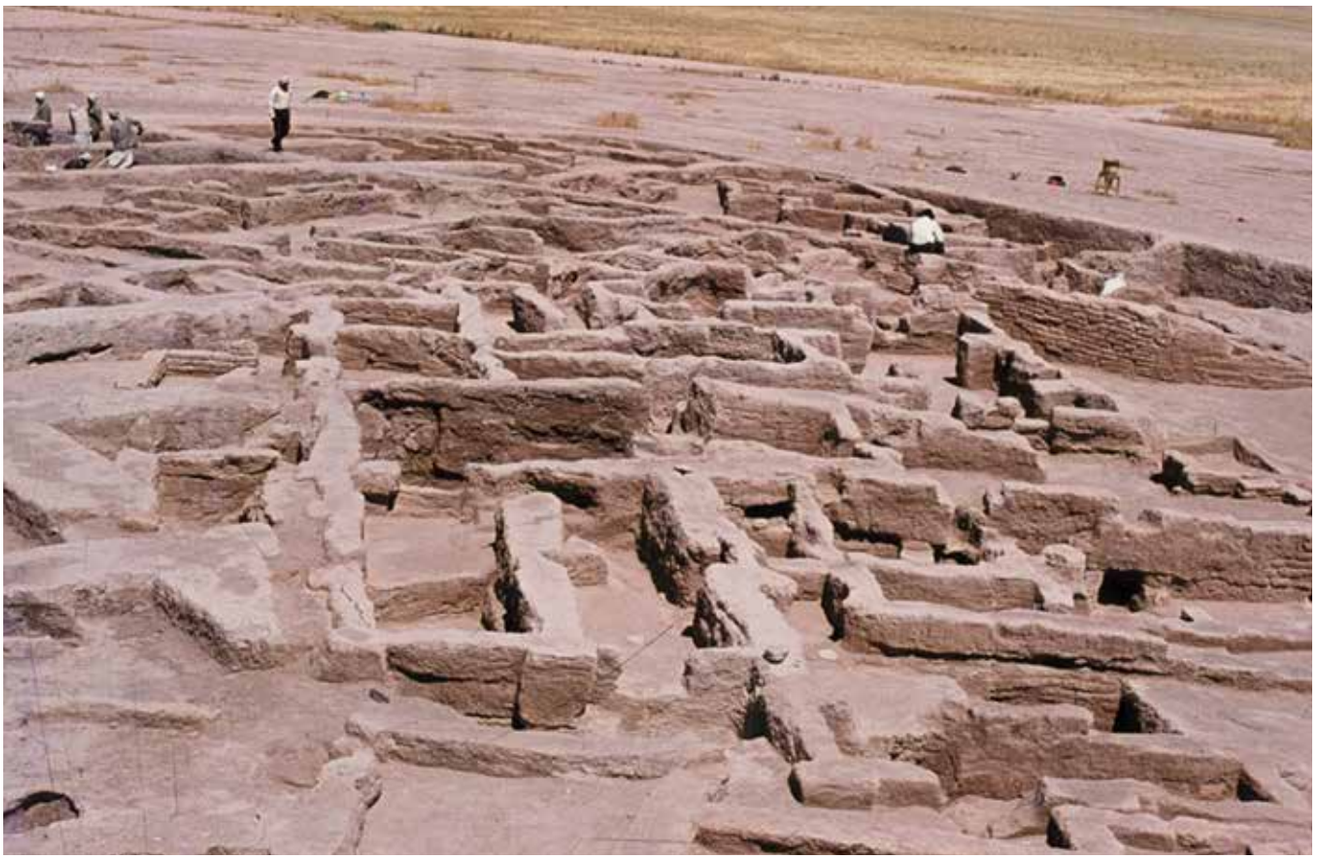
TELL ABADA



View of Tell Abada, levels I–II, during the course of excavations in the year 1978.

TELL ABADA

AN UBAID VILLAGE IN CENTRAL MESOPOTAMIA

by

SABAH ABBOUD JASIM

with contributions by

SEBASTIAN PAYNE *and* BOB BEWLEY

Introduction by

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Illustration: General view of Tell Abada after the excavations at the end of 1978
Spine: Ubaid 1 pottery from level III, Tell Abada (fig. 160)
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ABBREVIATIONS

AD	*anno Domini*, "in the year of the Lord"
BC	before Christ
cat.	catalog
cm	centimeter(s)
esp.	especially
et al.	*et alli*, and others
etc.	*et cetera*, and so forth
fig(s).	figure(s)
gr.	gram
m	meter(s)
mm	millimeter(s)
n(n.)	note(s)
n.b.	*nota bene*, take careful note
no(s).	number(s)
pl(s).	plate(s)
pot	pottery
p(p).	page(s)

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PREFACE

A large archaeological campaign in the area of Hamrin, located some 120 km northeast of the Iraqi capital, Baghdad, was launched by the Iraqi Directorate of Antiquities during the 1970s and undertaken by both local and foreign archaeological teams working independently at selected sites. The primary aim of the campaign was to protect a large number of archaeological sites throughout the area that were threatened by flood damage due to the construction of the large dam now known as the Hamrin Basin.

Excavation activities within the Hamrin basin took place over two consecutive years and yielded a tremendous wealth of archaeological data. Initial results were announced to the public through an international conference (Hamrin 1) convened in Baghdad at the beginning of 1979. This was followed by the release of preliminary reports, articles, books, and research papers in both local and international publications.

The archaeological sites within the basin spanned a considerable historical timeframe ranging from prehistoric to Islamic eras. The author was responsible for the excavation of three archaeological sites at the southeastern side of the basin: Tell Abada, Tell Rashid, and Tell Abu Khazaf. The first and the second of these sites are dated to the al-Ubaid period (sixth and fifth millennia BC), while the third belongs to the Islamic era (fourth century AD; Jasim 1984). The Ubaid period was heavily represented throughout the Hamrin region as evidenced by the presence of some sixteen Ubaid sites found at varying locations within the area. Results from these sites were documented and made available in a variety of publications and books, including a study compiled for my doctoral dissertation, which was first submitted to the University of Cambridge in 1985 and subsequently published in the BAR International Series (Jasim 1985). Some three decades later, a significant body of knowledge has emerged regarding the Ubaid period, both within and outside of Iraq. Two major International events dedicated to the Ubaid period have taken place, one at Copenhagen, Denmark, in 1988 (Henrickson and Thuesen 1989) and the other in Durham, United Kingdom, in 2006 (Carter and Philip 2010).

Ongoing conflicts within the region, together with recent archaeological discoveries of a number of Ubaid or Ubaid-related sites in Mesopotamia, Syria, Turkey, and the Arabian Gulf states, were significant factors in my decision to review, revise, and update my original body of work. The focus of this book therefore is largely based on my original excavations at the sites of Tell Abada and Tell Rashid in the Hamrin region with reference to other known Ubaid sites.

Sabah Abboud Jasim
Cambridge, August 3, 2016

INTRODUCTION

Sabah Abboud Jasim

It has been almost a century since H. R. Hall and L. Woolley (1927) revealed at the small site of Tell Al-Ubaid near Ur the type of distinctive painted pottery that was subsequently found at many sites and was given the title "Al-Ubaid," a term also used to denote the period and culture associated with it. This term "Al-Ubaid" subsequently achieved recognition and "found wide acceptance as one representing one of the major phases of Mesopotamian prehistory" (Nissen 1989, 245).

The Ubaid pottery associated with the earliest levels at Eridu (XV–XIX) represents the earliest pottery found in Southern Mesopotamia; it was first called "Eridu Ware" by the excavators of the site (Lloyd and Safar 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), and 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 proven that both Eridu and Hajji Muhammad were just an earlier phase of a homogeneous assemblage that shows a gradual transformation and displays an unbroken continuity, thus warranting the term Ubaid 1, 2, 3, and 4, respectively. The whole Ubaid period is thus divisible into four phases (Ubaid 1–4), and this study follows this terminology. These terms are widely accepted and adopted by scholars dealing with Ubaid period around the world (Carter and Philip 2010). However, a new term "Ubaid 0" has recently been incorporated in the Ubaid sequence to describe the early levels at Tell Oueili (Huot 1989, 1994). Discoveries from these early levels represent a phase earlier than Ubaid 1 at Eridu (Oates 2012, 477).

The second phase of the Ubaid period (Ubaid 2) is widely distributed in Mesopotamia, is most concentrated in the Uruk region as well as at Uruk and Hajji Muhammad itself (Adams 1981, 58), and is also found at Eridu (VIX–XII) and farther north at the site of Ras al-Amiya near Kish (Stronach 1961), 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 Khuzestan (Hole et al. 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 Khuzestan (Bayat and Mehmeh phases), northwestern Iran, northern Syria, southeastern Turkey, the Arabian Gulf region, and the eastern province of Saudi Arabia. The widespread distribution of the Ubaid material culture over the central Near East (fig. 1) has led some scholars to designate an "Ubaid horizon" (Stein 2010a, 23).

The distribution of the Ubaid culture is an interesting phenomenon that 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 evidence proves either defective or incomplete. The evidence that 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 that could help to resolve some archaeological problems involved with the Ubaid period and its development phases. Therefore, the necessity of finding a site that might be more promising became 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 the Samarra period in the sixth millennium BC until the Ubaid period through a new Transitional Samarra-Ubaid phase that was previously unknown. 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 wider rescue operation conducted by the Iraqi State Antiquities Organisation in the Hamrin region, where about seventy archaeological sites were to be inundated by a dam that has since been 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 among them; it illustrates 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 percent 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 State Organisation of Antiquities and Heritage, Iraq to which the writer was affiliated.

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. In some cases, published or unpublished preliminary reports of excavations were relied upon.

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CHAPTER 1

GEOGRAPHICAL AND ENVIRONMENTAL SETTING

GEOLOGY

Iraq is divisible into three geological regions: (1) the Iraqi portion of the Arabian Shield, covering some 57 percent of the territory; (2) the foothills of the Zagros ranges, covering some 18 percent; and (3) the Mesopotamian plains, covering some 25 percent.

Our concern is with the second region, in northeastern Iraq, where the strata were strongly folded during Tertiary times to form a series of northwest to southeast hills and mountain ranges, which continue southward beyond the frontier in western Iraq (MacFadyen 1966, 5). The region consists of conglomerate and sandstone formed 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 that 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 × 15 km within this geographical area (fig. 2). It lies in the middle Diyala region in the eastern-central part of Iraq between Jebel Hamrin,[1] the westernmost ripple of the Zagros Mountains, and the ridges of Jebel Jubbah Dag that run roughly parallel to the north of it (figs. 3–4).

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 southwesterly direction, cuts the basin into two parts. The river has a constant steep slope of about 2 m per km, 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 that 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 that join the Diyala River in the middle Diyala Basin are the Wand on the left bank and the Narin Chai on the right. The latter river has a very different character from the Diyala: it is a deep-cutting stream, lying as much as 9 m below the plain. It is shallow, measuring about 10 m at its greatest width, and can be forded in various places (Gibson 1981). The catchment area comprises low gravel and sandstone hills that are 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 cm per km and has eroded a meandering channel up to 6 m deep along the northeast foot of the Jebel Hamrin. This river drains an area of about 200 sq. km of gravel hills. Like the Narin Chai, it has eroded a wide, deep bed in the plain south of the town of es-Saadiya (MacDonald and Partners 1959, nos. 3–4).

[1] This is a low range of hills (alt.: 300–400 m; coordinates: 35°01'57.0"N 43°38'47.0"E) running from Fatha on the Tigris River to Mansuriyat al-Jebel on the Diyala, thence merging into the higher Persian foothills of the Pusht-i-kuh near Mandali. The Jebel Hamrin, which is prolonged some distance westward of the Tigris as Jebel Makhul, clearly demarcates upper (or northern) from lower (central and southern) Iraq (Guest 1966, 3).

COMMUNICATIONS

The Hamrin region "lies at the junction of three of the most important land routes of Western Asia" (Postgate 1984, 149). It 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 es-Saadiya, another road forks to Jalawla, where it crosses the river and then passes north up the bank of the Diyala River to Derbendi Khan, and passes through the fertile Shehrizor plain to Sulaimaniya in northern Iraq.[2] From Jalawla another road runs northwest along the railway line linking Qara Tepe at the north end of the basin to Kirkuk and Mosul (MacDonald and Partners 1959; Postgate 1984, 149–1594).

CLIMATE

Temperature and Humidity

The climate is semiarid 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 the 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, and consequently summer evaporation is very high, as is the transpiration rate of vegetation. During winter the temperatures are low, and frosts are not infrequent.

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 with 148 mm at Baghdad. Both stations are relevant to the Hamrin region. The mean monthly values are set out in table 2.

POPULATION

The main population center in the area is the town of es-Saadiya, which has an estimated population of fifty thousand (Ministry of Planning, Central Statistical

Table 1. Mean monthly temperature and humidity data for Khanaqin (Diyala and Middle Tigris Project, MacDonald and Partners 1959, report no. 2)

Temperature (° C) 1938–57				*Relative humidity (%) 1939–57*			
Month	*Mean (max.)*	*Mean (min.)*	*Mean*	*6 hrs.*	*9 hrs.*	*15 hrs.*	*Mean of day*
January	15.2	4.5	9.9	82	72	52	70
February	17.0	5.7	11.4	78	68	45	64
March	20.6	8.3	14.5	75	61	41	59
April	27.7	13.0	20.4	63	45	30	46
May	35.0	18.9	26.9	43	27	19	30
June	40.8	22.6	31.7	28	17	12	19
July	43.8	25.6	34.7	26	18	12	19
August	43.2	25.0	34.1	27	18	13	19
September	39.3	21.0	30.1	28	20	12	20
October	33.4	16.2	24.8	36	27	18	27
November	24.6	10.9	17.8	59	52	36	49
December	17.4	6.2	11.8	80	71	51	67

[2] This is the Assyrian plain of "Zamua" (Postgate 1984, 151; 2007, 261).

Table 2. Mean monthly rainfall (mm) in the middle Diyala Basin for the period 1937–1956 (Diyala and Middle Tigris Project, MacDonald and Partners 1959, report no. 3)

Month	*Jalawla*	*Al-Mansour*
January	36.1	37.8
February	46.7	40.5
March	44.9	43.0
April	28.4	19.9
May	6.1	12.2
June	—	—
July	—	—
August	—	—
September	—	—
October	2.7	15.0
November	27.6	32.5
December	51.0	56.2
Total	243.5	248.1

Organisation, Iraq 2016). Several small villages are scattered throughout the region. The inhabitants depend 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. Unfortunately, owing to recent conflict in the area, it has not been possible to obtain data from more up-to-date censuses.

VEGETATION

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

A. Desert region (350,000–400,000 sq. km)
   1. Desert zone (250–400 m a.s.l.)
   2. Subdesert zone (0–1,000 m a.s.l.)

B. Steppe region (65,000 sq. km)
   3. Dry-steppe zone (100–350 m a.s.l.)
   4. Moist-steppe zone (200–800 m a.s.l.)

C. Mountain-forest region (30,000 sq. km)
   5. Forest zone (500–1,800 m a.s.l.)
   6. Thorn-cusion zone (1,700–3,000 m a.s.l.)

D. Alpine region (100? sq. km)
   7. Alpine zone (2,750–3,730 m a.s.l.)

The second vegetation 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 is divided into two distinctive zones, the dry-steppe zone and the moist-steppe zone (fig. 5). The 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 northeast 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 and 105 m, compared with 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 other hand, in good years the crop return is high because the soil has not been exhausted (Guest 1966, 71). No clear differences 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 that can be seen are hills, flat lands, and marsh areas. The Hamrin Basin contains no hills, but is bounded by them. The vegetation cover on the jebel lands is extremely sparse, as might be expected since most of the low rainfall is lost by runoff, 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 appears transitional in comparison to the flat lands, and, although vegetation is still sparse, some *Centaurea*, *Achillea* sp., *Heliotropism* 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 nonsaline 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 (Soils and Soil Conditions in Iraq, Baghdad, 1960) for the Ministry of Agriculture, which was published in 1960 (fig. 6). The following relies heavily on these two sources.

Land Structure

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 (Soils and Soil Conditions in Iraq, Baghdad, 1960). The soils are of similar texture to those of the plains; they contain a large proportion of calcium carbonate, and they include many examples of gilgai-depression soil.

Groundwater and Salinity

The soils of the Hamrin region differ from the lowland soils of Iraq in that salinity is far less widespread. There are localized saline areas, but in general rainfall and irrigation with good drainage seem able to prevent salinity of the soils. The groundwater is kept deep by natural drainage, and neither weathering nor irrigation has 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.

Texture

The texture most frequently found in the Hamrin region is silt clay loam with many silt loams and silt clays. The texture of the top soils is mainly silt loam, and a large proportion of the profiles are the result of widespread 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 silt loam occurs, but usually in the deeper horizons. There are many areas of extremely well-developed gilgai soils, with poor soil structure and irregular microrelief. 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.

Soil Groups in the Hamrin Region

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.

Normal Soils

This class is divided into two groups:

1. Chand soils
   A group of coarser-textured soils varying from light loamy and light silt loamy to loamy sands and sand (table 3). They are nonsaline or of low salinity. The most common color 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* that run almost parallel to the Diyala River in two separated parts in the southeastern part of the Hamrin Basin; the first *chand* is close to Tell Abada, and the other is close to Tell Rashid (fig. 7).

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

2. Qara Tepe soils
   This group of soils consists of the finer-textured, well-structured, nonsaline or slightly saline soils. The texture of the top 100 cm falls predominantly into the silt clay, silt 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 (table 4).

The area covered by this group of soils is located to the northwest of the large marsh area, and around the township of Qara Tepe (fig. 6). The only Ubaid site that 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.

Saline Soils

This class of soil is divided into three groups: 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 (see table 5 above).

Kanaan 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 or friable when moist. Color 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. Some of

Table 3. Laboratory results (Chand soils) (Diyala and Middle Tigris Project, MacDonald and Partners 1959, report no. 2)

Depth (cm)	*PH paste*	*E.C. (mmos/cm)*	*Perm. (cm/hr)*	*Mechanical Analysis*				*Lime (%)*	*Gypsum (%)*	*me/100g*	
				Sand (%)	*Silt (%)*	*Clay (%)*	*Lab Tex.*			*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

Table 4. Laboratory results (Qara Tepe soils) (Diyala and Middle Tigris Project, MacDonald and Partners 1959, report no. 2)

Depth (cm)	*PH paste*	*E.C. (mmos/cm)*	*Perm. (cm/hr)*	*Mechanical Analysis*				*Lime (%)*	*Gypsum (%)*	*me/100g*	
				Sand (%)	*Silt (%)*	*Clay (%)*	*Lab Tex.*			*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

Table 5. Laboratory results (Kanaan soils) (Diyala and Middle Tigris project, MacDonald and Partners 1959, report no. 2)

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

Table 6. Laboratory results (Musari soils) (Diyala and Middle Tigris project, MacDonald and Partners 1959, report no. 2)

Depth (cm)	*PH paste*	*E.C. (mmos/cm)*	*Perm. (cm/hr)*	*Mechanical Analysis*				*Lime (%)*	*Gypsum (%)*	*me/100g*	
				Sand (%)	*Silt (%)*	*Clay (%)*	*Lab Tex.*			*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

the Ubaid sites, for example, Madhhur, 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* spp. 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.

As can be seen in figure 6, marshland areas are located in two places in the northwestern 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 marshlands serve as the main grazing land for the flocks of sheep and herds of cattle and camels from the villages that 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 marshlands 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).

Fine-Textured Soils

This class of soils is divided into two groups, Tabra soils and Musari soils. The principal area of the first group lies outside the Hamrin region, so we are only concerned with the second group (table 6).

Musari soils are nonsaline 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 silt 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 colors are similar to those of the Qara Tepe group of soils, being predominantly brown, dark brown to dark gray brown. The dry color, however, is generally lighter, ranging from light gray 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 southwestern part of the basin, are associated with this type of soil (Rashid site no. 3A, Abada, Ayash, and Al-Khubari), as are K. Qasim, Tell Hasan, Abu Husaini, and Haizalon on the other side 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 occurrence was recorded in over

90 percent of the sites investigated. Other common plants were *Centaurea* spp., various sedges, and *Alhagi maurorum aghul*, each of which occurred at approximately 40–50 percent 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 affect the pattern of the distribution of the Ubaid sites in the area are the different soil types.

The Hamrin region contains soils that 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 northwestern part of the Hamrin region. The implications of this distribution will be discussed in chapter 5.

CHAPTER 2

TELL ABADA: NEW LIGHT ON THE UBAID PERIOD

THE SITE

Tell Abada lies to the east of the Diyala River in the southeastern part of the Hamrin region, some 12 km southeast of the town of es-Saadiya, on 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] (figs. 7–8).

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. 9). The base of the site, however, as revealed by our excavations, is 2.50 m below the present ground surface (fig. 10).

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 baulks of 1 m wide. Each square was divided into four subdivisions. Excavation started on the squares that 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 center of the mound, the other on its northern slope—were dug down to virgin soil to confirm the stratigraphy. More than 80 percent of the total area of the tell was excavated.

STRATIGRAPHY AND ARCHITECTURE

The excavations at Tell Abada revealed three distinct building levels occupying a vertical depth of about 6 m (fig. 10). These were numbered I, II, and III from top to bottom, respectively. Each level contained several sub-phases 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. 11).

Building A

Building A with its regular tripartite plan consists of a long rectangular hall measuring 8 × 2.40 m ("room" 8), flanked by small rooms on either side. The outer walls had been reinforced with buttresses along the northeastern and northwestern sides. A buttress-like projection is seen in the middle of its southwestern wall, while its southeastern 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 northeastern wall. The deviation in the eastern wall to fit with the straight buttressed wall of the existing building (B) suggests that this building was built subsequent to the construction of that building.

[1] More prehistoric sites belonging to the Ubaid period have been excavated in this area: Tell Rashid, Tell Ayash, and Tell es-Saadiya. Ubaid occupations were also found at Telul Al-Khubari and another small site (TR. East) near Tell Rashid (fig. 7; chapter 4)

Building B (figs. 12, 13)

This is a large building of unusual plan. The external western wall was reinforced with four small buttresses, and a buttress-like projection is seen at the southwestern 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 that must have formed other compartments. The building consists of nineteen rooms of different sizes but all generally small, ranging in size between 80 × 50 cm and 2.5 × 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 seen in these two buildings, which implies that they were in use for a relatively long period of time.

The evidence would seem to suggest that these two buildings were probably 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. 119); a number of plano-convex discs—especially in building B—varying in diameter from 10 to 40 cm (figs. 13 and 144; most likely parts of potter's wheel); floors and walls heavily coated with gypsum; a small basin coated with a very thick layer of gypsum in room 14 of building B; and two large pottery kilns nearby and large quantities of sherds and debris. However, we should point out that building A contains fewer industrial features than building B. This together with its tripartite plan may indicate that it was probably used to house the people who were involved with pottery-making activities that were taken place at the adjacent building.

Building C

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 northwest of the building is a large circular kiln measuring 2 m in diameter.

The buildings of this level were constructed of long slabs of sun-dried mud, measuring 50 × 25–27 × 7–8 cm and laid in alternate courses (as heads and stretchers) 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 *juss*, and 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 some time before the foundation of the level II village.

Level II

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 were excavated, together with the streets and squares separating them. Traces of walls that could have been parts of other substantially demolished buildings were found immediately to the north, west, and south of the well-preserved buildings. These buildings are of different sizes, but most of them are of the same general architectural plan (fig. 16).

Building A

Situated at the center of the settlement, measuring 20 × 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 (figs. 19–20). Internal buttresses were also present (figs. 21–23).

The building is tripartite in plan. The middle sector of the building consists of a big hall (1) measuring 10.2 × 3 m, flanked by a series of smaller rooms. The wall that runs across the middle of this hall, dividing it into two parts (fig. 19), 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, and the sixth bench is attached to the eastern wall. The other subdivisions are the western, with its T-shaped or cross-form courtyard 23, and the eastern, which contains courtyard 17.

The main entrance to the building (34), 80 cm in width, is on its southwest corner (figs. 17–18). 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 (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 in figs. 19 and 20. 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 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 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 were found laid in front of some rooms, such as 6 and 9.

It has been pointed out that building with buttress and recess arrangements was a widespread feature in the mudbrick architecture of the ancient Near East since the sixth millennium BC, such as Mesopotamia, Syria, Turkey, and Iran (Sievertsen 2010, 201). This distinctive architectural feature continued to exist during the Ubaid period, such as Telul eth-Thalathat in northern Mesopotamia (Fukai et al. 1970), Tell Oueili in southern Mesopotamia (Forest 1983; Huot et al. 1981, fig. 3; Huot 1994), and in central Mesopotamia, represented by the Hamrin region, where it also appeared at Tell Rashid (figs. 427 and 428) and Songor A (Fujji 1981, figs. 27 and 28).

Building B

This building is situated to the east of building A, formed by 104–108. The plan is tripartite with a 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, as well as 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 northeastern wall resulted in the creation of two small rooms (107 and 110) both projecting from the northeastern wall of the building; room 109 on the northwestern corner corresponds to room 108 on the northeastern 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 an 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 rooms 117 and 116 (T-shaped court 23 via rooms 30, 29 in building A), and 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 and 17).

Building C (fig. 25: C)

This building is situated to the south of building B at the southeastern corner of the settlement, formed by rooms 158–173. The general plan seems to have been based on a central court, measuring 7.4 × 2.4 m, flanked by a group of rooms (158–160, 164, and 165) to the northwest, and by rooms 166–173 to the southeast. 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 poorly preserved, such as rooms 165 and 173, while other parts to the east of the central court have been entirely destroyed. Other parts that 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. 25: D)

This building is situated to the northeast of building C and is the smallest building in the site. Nevertheless, it is interesting because it represents the most

simple manifestation of the tripartite plan with a 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 northeastern corner leading to a small room (157) that gives access to the central cruciform hall (the opening that appears as a door in the middle of the northwestern 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, and a big jar together with two stone querns was 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 in 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 (figs. 26–27)

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 organisation, comprising three cruciform elements 52, 62, and 53; the large central courtyard (52) measures 9.30 × 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 × 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 southeastern corner of the building, have a very interesting feature. The floors in room 55 are paved with large mudbricks, which slope up toward the outer wall and are perhaps the foundations of a staircase that the plan itself suggests may have been situated here (fig. 28). 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 northeastern 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 northern counterpart (53).

Building F (fig. 29)

This building is situated to the east of building A and seems to be a fairly large building of tripartite plan, but the structure had obviously undergone considerable changes that resulted in the removal of substantial 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 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 is a boundary wall running from west to east separating the building from those 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. 30)

This building is situated among three buildings, building 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 northwestern 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 that 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, while 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, placed against the corner, and fixed with gypsum, and it was probably used to store either 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, and 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. 31)

This building is situated to the north of building F, and northwest 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 that 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 about 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 southwestern side. The first entrance is in the western corner and leads to a long room (70) measuring 3.6 × 0.90 m. The second entrance is south of the first and gives access to a small rectangular room (74) that 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 seems to have been destroyed in the area adjoining room 68, and it could have extended farther 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. 32)

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 building H 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 rather 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 × 40 × 20 cm) had 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 × 1.40 m). Rooms 91, 90, and 92 communicate with one another by a series of central doorways. Room 92 at the end of this row is the largest (2.40 × 2.10 m) with a small basin (50 × 50 × 25 cm) constructed in its eastern

corner and lined with limestone. Behind this room is an empty rectangular space connecting with the first courtyard. The third row is accessible through room 91; a door in its northern wall leads to a long courtyard or corridor (94), measuring 8.50 × 1.80 m, which occupies the eastern half of this row. A door in its western wall leads to room 98 (1.50 × 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 (95–97), flanked by two long corridors or vestibules, room 93 to the northeast measuring 6 m in length and 1.30 m in width, and room 101 to the southwest. Room 97 is larger than the other two adjoining rooms, measuring 1.80 × 1.60 m while the other two measure 1.30 × 0.70 m each. Four buttresses were constructed on the external southwestern 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 this building from the adjoining buildings.

The plan of this building is very different from the others, and it must therefore have been constructed to fulfil a different function (Jasim 1989). The presence of the very long courtyard (100), containing a bitumen-lined basin with a floor full of black ashes, a midden, and what may have been traces of dung, would suggest that this yard was a sheepfold and that the basin inside was for water for domestic animals. The connecting room 103 could have been for keeping fodder with which to feed the sheep, or possibly for accommodating the shepherds or guards. The large, wide courtyard (100 m) could also have been used to keep cattle and other animals in. In the second row are five other rooms (92–103), and the door that 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 92, 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, as 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 attested by the presence of grain impressions, or fuel stuff such as timber, camel-thorn "Shok," 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 locally.

In courtyard 94, a bench made of mudbrick 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.

Building J (fig. 33)

Building J is situated at the uppermost northwestern corner of the mound and is the second largest 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 northeastern and southwestern walls and erecting partition walls across them. Rooms 134 and 142 represent the eastern and 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 no longer exist and must have been removed when the building underwent alterations like the doubling of walls around 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 the 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 fireplace for heating in cold weather 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, midden remains, and 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 is a wall extending parallel to the north wall of rooms 129, 133, 134, and 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 that was completely demolished in later times.

LEVEL I (fig. 34)

Level I is the uppermost level at Tell Abada, in which seven architectural units of coherent plan were excavated. All show considerable continuity from the previous level II. Although some level II buildings (e.g., 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, however.

Building A (figs. 34–35)

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 that were introduced to this building by the inhabitants of level I.

The same tripartite plan is 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 southwestern facade, was completely blocked by a low mudbrick revetment heavily plastered with clay. This feature was also found at the Ubaid site of Tell Madhhur (chapter 4). The new position of the entrance was probably on the northeastern wall, but no evidence for it has been found since large parts of that sector were severely 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, and 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, L. II) have now been removed, and new rooms have been set up in the southern half, with room 3 at the rear of the court. Another rectangular room has been inserted (2) that 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 that existed in this unit of building A in level II have been blocked up so that we no longer see any means of access between these rooms. In the corner of the northeastern wing (29) of the T-shaped court, a bench 60 cm high has been built of mudbrick coated all over 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 southeastern and western sides all bear testimony to subsequent sub-phases 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. Of special interest is the presence of two lenticular jars in room no. 5 (fig. 147: 1, 2). 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. 34)

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 recognizable from the outside walls. It consists of a central court (40) extending across the width of the building and measuring 7 × 2 m. The long walls of the court project farther to the northeast resulting in the creation of a wide recess in the northeastern side and the presence of two small square rooms (41 and 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. 34)

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 northeastern side, and four rooms (34, 36, 37, and 39) and along its southwestern 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. 34)

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 × 2.5 m extending across the width of the building. On either side of the central court were subordinate cruciform courts. Room 55 originally 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 rooms 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 southeastern corner of the building is matched by two rectangular rooms (59 and 60), and 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 northwestern corner, no longer existed in level I. The same is true for the other interior doorways.

A very interesting feature 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 × 1 m, usually in the main courtyard, is marked out and covered with straw or reeds (fig. 147b: 2) and surrounded with standing mats (fig. 147a: 2) 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, which 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, in the al-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.

Building F (fig. 34)

As was the case with other buildings of level I, this building was also found directly above the building

[2] In Iraqi Arabic this means the mat (*baryat*) in which the grain (*shilib*) is preserved.

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 northwestern 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 northeastern half of the room, and the area on the opposite side of the court had been divided into two regular rectangular rooms (81 and 82), each measuring 2.10 × 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 northern side. Three doorways were placed opposite each other in the middle of the building, 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 southeastern corner of the building. A recess is seen at its eastern side, 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 that was heavily burnt, with some black ashes inside, was found in the southeastern corner of room 71, that probably served as a kitchen.

Building H (fig. 34)

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, and 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 farther in front of the facade, forming what appears to be a central projected bay. This court is flanked by four rooms on its eastern side (84–88), 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 × 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 northwestern 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 northwestern corner, the other in the southwestern 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 is strengthened by the very dark color 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 the *baryat shilib* type were found in the southern half of the central courtyard. Lastly it should be pointed out that the partition wall that divides the central court into two parts (83 and 88) was added later, and it runs westward, resulting in the creation of what are now rooms 89 and 90; it then crosses room 94, terminating at the southeastern corner of the neighboring building. One burial urn of a child was found below the floor of the central court.

Building J (fig. 34)

This building has retained almost all the features of building J in the previous level, but some new features are also seen. It is a large building of a 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 communicating 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 × 1 m and 1 m × 0.5 m. Such small dimensions are certainly suggestive of storage compartments (Jasim 1989). 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 northwestern edge of the mound may support our belief. Some buttresses were constructed along the southeastern wall and western wall, and another two buttresses are 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. 34)

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 buildings F and J. The main entrance into the building is in the middle of the northwestern 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 one another 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 are a series of three rooms adjoining one another: rooms 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 northwestern 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 neighboring building J, possibly at the end of the life of level I.

WATER DUCTS (figs. 34, 36–41)

A very important and interesting feature found in level I was the water channel and ducts 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 squares 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 inward 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 ducts (each measuring 50 cm in length and 20 cm in diameter). Only four of these pipes remain in situ (fig. 37), while fragmentary remains of others were traced along a distance of about half a kilometer 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 white plaster *juss* and strengthened by pebbles (fig. 36: 1). 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, and not to drain out the used water. This assumption is based on two important factors; firstly, the ground is sloping downward toward the site, and secondly, it is thought that the purpose of utilizing closely joined pottery ducts is to keep water clean and potable. Therefore, the ducts were most probably used for drawing fresh water to the site rather than for drainage.

To the west of both buildings E and F and about halfway between them in square H9, we found further pottery conical-shaped ducts (figs. 38–40). 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-duct channel, as we found more in a fragmentary condition in situ along a distance of about 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 seen at the rear of courtyard 15 of building A (fig. 34). 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.

THE BURIALS

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. It "appears that the custom at smaller sites was to bury the dead away from the settlement" (Hole 1989, 154).

The only inhumation so far discovered is a simple Old Babylonian grave, which is presumably intrusive. It is reasonable to assume that there must have been a cemetery somewhere on the plain in the surrounding area that 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, while no single urn burial was discovered belonging to level III below. The location of these urn burials can be seen in fig. 42. It seems a reasonable assumption that urn burials were rare throughout the early part of the Ubaid period and did not become common until the beginning of level XIV at Tepe Gawra (Tobler 1950, 107). This particular method of burying children was practiced at other contemporary sites such as Nineveh level 3 (Thompson and Mallowan 1933, pl. 49: 31–32), at Arpachiyah (G.22; Mallowan and Rose 1935, 39), at Nuzi, L-X (Starr 1937, pl. 29, BC), 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

Level I

A total of 74 urn burials were found below the floors of level I. 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. 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 four were unearthed in building E, and three in building B. Two were found in building C and one only in building D. Building G contained only one, while building H and building J both contained two. A group of some seven urn burials was found in the area to the northwest of the last building, and another group of six urn burials were found in the middle of the site, while one urn burial was found outside building B in the southeastern corner. In all cases the urns had been dug into the fill of level II below.

Level II

The remaining urn burials, fifty-three in all, belonged to level II and had been dug beneath the floors of the buildings to different depths, some reaching the gap that separates level II from level III below (fig. 43). As was the case with building A of level I, building A in this level had the largest number of urn burials; a total of thirty-four were found beneath its floor. This figure together with the total of twenty-six found in building A of level I brings the number of burials associated with this one building to fifty-seven, 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 nineteen burials that belong to this level were distributed as follows:

Table 7. Distribution of urn burials throughout the buildings of level II, Tell Abada

Level II building	*No. of urn burials*
A	34
B	5
C	1
D	1
F	1
G	4
H	2
I	1
J	4
Total	53

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. 213–20), 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, were employed for this purpose (fig. 45). Additionally, a large globular jar with an elaborate painted decoration was also discovered to have been used for this purpose (figs. 57–58).

Interment methods greatly varied, but most commonly the urns were covered with a lid, which could be either a single big sherd or several sherds (part of a big bowl) (fig. 46), or a complete bowl (fig. 47), most usually of a particular type decorated with a bold sweeping design (figs. 44: 1; figs. 274 and 275). 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 (table 8: 28, 50, and 70) (fig. 48). Another method is very interesting and rather puzzling; the urn or jar was sealed with clay that appears to have been baked later, and sometimes further unbaked clay or gypsum plaster was added over the baked layer (fig. 49) (table 8: nos. 17, 28, 39, 50, 87, 92, 102, and 107).

The mouths of the urns were sealed with a thick layer of clay or gypsum (figs. 44: 2), but in a few cases, the dead child was covered with a layer of smooth earth devoid of either cover or plaster (table 8: 16, 41, and 42) (fig. 50). Some child-burial urns were made of unbaked clay with the mouth being sealed with clay plaster 3 cm thick, while the plaster only seems to have been baked later and either covered with a whole pot (fig. 49) or lid, as represented by table 1: 47, which could be either a plate (figs. 44:1) or an whole pot (fig. 48) (table 8: 7).

The people of Abada had another kind of interment rite for very young babies or probably the stillborn; to place the dead baby in a circular- or oval-shaped pit and cover it with a large pot (figs. 53–56). Examples are seen with table 8: nos. 33, 53, 55, 75, and 80. Superimposed interment seems to have been practiced in a few limited cases, as we have noticed in the case of two urn burials placed one over the other in level II (table 8: no. 32 was superimposed on 30).

All urn burials were carefully placed in regular pits that were dug for this purpose, and 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 (table 8). No specific locations for burial urns were observed, but some urns have been carefully placed beside corners or in the middle of the room (figs. 56–58).

An important group of twenty urn burials (table 8: 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 twenty of these urn burials are of the same type, consisting 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 to 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. 66, a few beads were found, of different materials and shapes, perhaps from a necklace worn by the dead child. In no. 67 a clay figurine of human shape was found with the dead child (fig. 74: 3). Both of these 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. 368: 5).

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 children, most of the urn burials having been dug below the floors of the houses. They were associated with almost every building, in particular the large central building which contained the largest number, fifty-seven. 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. Therefore, building A can be considered the

primary burial location for infants up to the age of two years (Hole 1989, 164).

As can be seen from table 8, there was no established orientation for the bodies, 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; pl. LXV: a). 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 common method of funeral.

Table 8. Urn burials found at levels I–II (fig. 42), Tell Abada

Burial	*Type*	*Position*	*Direction*	*Location*
1	Urn burial, large, deep bowl, roughly made, plain pottery	Contracted hands on knees	SE–NE	B. A; R. 1, A K 9
2	Urn burial, large pot lidded with a particular type of bowl	Contracted hands on knees	—	B. A; R. 24, A J 9
3	Urn burial, large, deep pot (painted), originally broken and repaired with clay plaster	Contracted hands on chest	E–W	B. A; R. 25 J 9
4	Urn burial, large spouted jar (painted) covered with earth	Contracted	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	Contracted 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	Contracted	—	B. A; R. 10 K 9
7	Urn burial, unbaked clay, lidded with plain plate	Contracted	—	B. A; R. 10 K 10
8	Urn burial, large pot, roughly made, little painted. Covered with earth and lidded with a particular type of plate	Contracted	S–N	B. A; R. 1 K 8
9	Urn burial, large pot painted, lidded with plate (painted), covered with clean earth	Contracted hands on chest	N–S	B. A; R. 26 J 9
10	Urn burial, large globular jar (painted) sealed with clay plaster, which was later baked	Contracted hands on chest	NE–SW	B. A; on the floor of R. 27 J 8
11	Urn burial, large conical bowl (painted) covered with smooth gray earth and sealed with clay	Contracted on right side	N–S	B. A; R. 28 J 8
12	Urn burial, large globular jar (painted) sealed with gypsum plaster, 3 cm thick	Contracted on right side	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	Contracted on right side	N–S	B. A; R. 27 J 8
14	Urn burial, medium sized, globular jar fixed with sherds around, covered with earth	Contracted on left side	N–S	B. A; R. 21 J 8, K 8
15	Urn burial, wide-mouthed pot (painted) lidded with a half of another jar (painted)	Contracted on left side	N–S	B. A; R. 5 K 8

Burial	*Type*	*Position*	*Direction*	*Location*
16	Urn burial, small oval-shaped pot (unbaked clay) covered with earth	Contracted on right side	N–S	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), and another gypsum plaster was added later	Contracted on left side	SE–NW	B. A; R. 21 J 8
18	Urn burial, large pot (painted) sealed with clay plaster	Contracted on left side	NE–SW	B. A; R. 21 J 8
19	Urn burial, large pot (painted) covered with double-mouthed jar, fixed with clay plaster	Contracted	NE–SW	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	Contracted on right side	N–S	B. A; R. 28 K 8
22	Urn burial, large pot (painted) mouth sealed with clay plaster (2 cm thick)	Contracted on right side	N–S	B. F; R. 68 F, I 8
23	Urn burial, large jar (painted) lidded with a dish	Contracted on left side	N–S	B. F; R. 66 I 8
24	Urn burial, large wide pot (painted), lidded with large sherd	Contracted on left side	NE–SW	B. F; R. 73 I 8
25	Urn burial, medium-sized pot (painted), covered with earth, lidded with plate	Contracted on left side	—	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	Contracted	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	Contracted	E–W	B. A; R. 9 K 8
29	Urn burial, small oval-shaped bowl, painted-on rim only sealed with clay	Contracted on left side	N–S	B. F. I 8
30	Urn burial, large pot (painted) lidded with a part of a dish	Contracted on left side	N–S	To the north of B. F. J 8
31	Urn burial, small oval-shaped jar, roughly made, probably contained the small body of an unborn 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, 50x40 cm, 30 cm in depth, lidded, with large bowl	Contracted on 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	Contracted on left side	E–W	B. F. I 9

Burial	*Type*	*Position*	*Direction*	*Location*
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	Contracted on left side	E–W	B. F; R. 66 J 8
36	Urn burial, large pot (painted) mouth and around the rim sealed with clay plaster, later heavily baked, another clay plaster then applied	Contracted on left side, hands on knee	N–S	B. F; R. 69 J 8
37	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
38	Urn burial, large pot sealed with gypsum plaster	Confused	—	B. A; R. 17 L 9
39	Urn burial, large pot (painted), sealed with baked clay plaster and another unbaked one	Contracted on right side	E–W	B. A; R.15 L 9
40	Urn burial, unbaked pot, skeleton covered clay plaster	Contracted on right side	NE–SW	B. A; R. 15 L 10
41	Urn burial, unbaked pot (incomplete). Lidded with sherds, sealed with clay plaster	Confused	—	B. F; R. 79 I 9, I 8
42	Urn burial, big pot, plain pottery, roughly made, lidded with sherds	Contracted	S–N	B. F; R. 68 I 9
43	Urn burial, impressed jar, lidded with sherds	Confused	—	B. F; R. 68 I 9 / I 8
44	Urn burial, large pot (painted), sealed with clay plaster (2 cm) thick	Contracted	SW–NE	B. F; R. 65 I 8
45	Urn burial, small carinated jar	Confused	—	B. F; R. 65 I 8
46	Urn burial, unbaked pot, mouth sealed with later baked clay plaster	Confused	—	B. A; R. 15 K 9
47	Urn burial, large pot (painted), lidded with plain roughly made dish (both heavily broken)	Confused	—	B. A; R. 3 K 9
48	Urn burial, large pot (painted), lidded with plate of the usual type	Contracted on left side	SW–NE	B. A; R. 2 K 9
49	Urn burial, large pot (painted), lidded with another, similar but smaller pot (both broken)	Confused	—	West of B. F. H 8
50	Urn burial, large pot (painted), sealed with clay plaster, later baked	Contracted on left side	SW–NE	B. E; R. 52 J 10
51	Urn burial, large pot (painted), lidded by a plate decorated with a sweeping design	Contracted on right side	SW–NE	B. E; R. 52 J 10
52	Urn burial, large globular pot (painted) sealed with clay plaster (2 cm thick) fixed with sherds on sides	Contracted on left side, hands on knee	NE–SW	I 10
53	Simple inhumation, oval-shaped pit, 30 × 25 × 20 cm. Covered with oval-shaped bowl	Contracted	S–N	West of buildings E, F H 9
54	Urn burial, plain pottery pot, lidded with plate (broken)	Contracted	NE–SW	West of buildings E, F H 9

Burial	*Type*	*Position*	*Direction*	*Location*
55	Simple inhumation, rounded pit 30 cm diameter, 20 cm depth, covered with plate (smashed)	Contracted	NE–SW	West of buildings E, F H 9
56	Urn burial, pot, plain pottery, lidded with plain and roughly made dish (both broken)	Confused	—	B. H; R. 84 H, J 7
57	Urn burial, pot sealed with clay plaster, lidded with plate (broken)	Contracted on right side	N–S	Near kilns 7—10 L 10
58	Urn burial, large jar (painted)	Contracted	NE–SW	Near kilns 7—10 L 10
59	Urn burial, large jar (painted) lidded with plate, sealed with gypsum plaster	Contracted	NE–SW	B. B; R. 120 M 10
60	Urn burial, large pot lidded with sherds	Contracted	N–S	B. A; R. 27 K 9
61	Urn burial, large pot (painted) lidded with plate (both broken)	Contracted	NE–SW	B. A; R. 22 K 9
62	Urn burial, large pot (painted) lidded with plain plate (broken)	Contracted	NE–SW	B. A; R. 16 K 9
63	Urn burial, pot (painted) lidded with plate	Contracted	NE–SW	B. A; R. 2 K 9
64	Urn burial, pot, sealed with clay plaster	Contracted	N–S	B.A; R.1 K 9
65	Urn burial, large pot (painted) lidded with sherds	Contracted on left side	NE–SW	B. A; R. 1 K 9
66	Urn burial, pot (painted) lidded with plate (both broken). Fine small beads associated	Confused	—	B. A; R. 1 K 9
67	Urn burial, pot (painted) lidded with sherds. Figurine associated	Contracted on left side	N–S	B. A; R. 1 K 9
68	Urn burial, large pot (painted) lidded with plate (broken)	Contracted on left side	N–S	B. A; R. 29 K 8
69	Urn burial, pot (painted) lidded with sherds	Contracted on left side	NE–SW	B. A; R. 1 K 8
70	Urn burial, pot, lidded with similar pot (painted, both broken)	Confused	—	B. A; R. 1 K 8
71	Urn burial, large pot (painted), placed within similar but larger pot, lidded with plate (broken)	Contracted on right side	S–N	B. A; R. 4 K 8
72	Urn burial, pot lidded, with sherds	Contracted on left side	N–S	B. A; R. 1 K 8
73	Urn burial, pot (painted), lidded with plate (both broken)	Confused	—	B.A; R.1 K 8
74	Urn burial, pot (painted) lidded with plate of plain pottery (broken)	Confused	—	B. A; R. 12 K 8
75	Simple inhumation, shallow oval-shaped pit covered with plain plate	Contracted on left side	NE–SW	B. A; R. 18 L 9
76	Urn burial, pot lidded with sherds (broken)	Confused	—	B. A; outside to the east L 9

Burial	*Type*	*Position*	*Direction*	*Location*
77	Urn burial, pot, plain, pottery, lidded with roughly made plate (broken)	Confused	—	B. A; R. 18 L 9
78	Urn burial, pot (painted) lidded with sherds	Confused	—	B. A; R. 29 K 9
79	Simple inhumation, small pit, dead child lidded with plate	Laid straightly towards north	—	B. A; R. 7 K 9
80	Urn burial, large pot (painted) lidded with large plate (both smashed)	Confused	—	B. F; R. 68 I 9
81	Urn burial, large jar, lidded with sherds and sealed with clay plaster	Contracted on left side	NE–SW	B. F; R. 82 I 9
82	Urn burial, large pot (painted) lidded with plate, sealed with clay plaster	Contracted	NE–SW	B. A; R. 1 K 8
83	Urn burial, large pot lidded with flat dish, sealed with gypsum plaster	Contracted	NE–SW	B. A; R. 1 K 8
84	Urn burial, pot (painted) lidded with plate, sealed with clay plaster	Contracted on left side	N–S	B. A; R. 7 K 8
85	Urn burial, pot (painted) sealed with clay plaster (2 cm thick)	Contracted on left side	NE–SW	B. A; R. 6 K 8
86	Urn burial, large jar (painted) sealed with clay plaster (2.5 cm thick)	Contracted on left side	N–S	B. A; R. 6 K 8
87	Urn burial, jar (painted) placed upside down and sealed from all sides with clay plaster, which was later baked	Contracted	NE–SW	B. J; R. 98 H 6
88	Urn burial, large jar (painted), lidded with sherds	Contracted on left side	E–W	B. J; R. 104 G 6
89	Urn burial, pot, lidded with sherds (broken)	Contracted on left side	NE–SW	North of B.J; F 6
90	Urn burial, pot, lidded with sherds	Contracted on left side	NE–SW	North of B. J; F 5
91	Urn burial, jar (painted) sealed with clay plaster	Contracted on left side	NE–SW	B. J; R.1—3 H 6
92	Urn burial, pot (painted) lidded with sherds, sealed with clay plaster that appears to have been baked later	Contracted on right side	NE–SW	B. J; R. 102 H 6
93	Urn burial, pot, sealed with clay plaster (1.5 cm thick) (broken)	Confused	—	North B. J. F 5/6
94	Urn burial, pot lidded with sherds	Contracted on right side	N–S	North B. J. F 5/6
95	Urn burial, upper half of double-mouthed jar placed upside down, lidded with sherds	Contracted on right side	SW–NE	North B. J. G 5
96	Urn burial, pot lidded with sherds, plain pottery	Contracted on right side	N–S	North B. J. G 5
97	Urn burial, pot (plain pottery), lidded with half plate (both badly made and broken)	Confused	—	North B. J. Level I
98	Urn burial, pot lidded with sherds	Confused	—	B. J; F 6

Burial	*Type*	*Position*	*Direction*	*Location*
99	Urn burial, pot (plain pottery) lidded with sherds	Confused	—	B. J; F 6
100	Urn burial, pot (painted) lidded with plate (both broken)	Contracted on left side	SE–NW	East B. A M 10
101	Urn burial, pot, lidded with sherds	Contracted on left side	N–S	East B. A M 10
102	Urn burial, pot (painted) plastered with baked clay (heavily broken)	Confused	—	B. A; R. 7 K 9
103	Urn burial, pot, lidded with sherds	Confused	—	B. A; R. 1 K 9
104	Urn burial, pot, lidded with sherds	Confused	—	B. A; R. 1 K 9
105	Urn burial, pot, plastered with clay	Contracted on left side	N–S	B. A; R. 25 K 9
106	Urn burial, pot, plastered with baked clay all around	Contracted on left side	NE–SW	B. C; R. 44 L 11
107	Urn burial, short spouted jar (smashed)	Confused	—	B. C; R. 44 L 11
108	Urn burial, jar (painted), lidded with sherds	Contracted on left side	NE–SW	B. E; R. 63 J 10
109	Urn burial, pot, lidded with sherds	Contracted on left side	NE–SW	North B. A K 7
110	Urn burial, pot, lidded with sherds (smashed)	Confused	—	East B. A M 10
111	Urn burial, pot, lidded with plate and plastered with clay (broken)	Contracted on right side	N–S	B.D; R.30 K 11
112	Urn burial, sealed with clay plaster (smashed)	Confused	—	B. B; R. 113 L 9
113	Urn burial, pot (painted), lidded with sherds (broken)	Contracted on right side	NE–SW	B. B; R. 112 L 9
114	Urn burial, bowl, lidded with sherds belonging to a plate	Confused	—	B. D; R. 38 J 11
115	Urn burial, pot (painted), sealed with plaster (2 cm thick)	Contracted on right side	N–S	North B. H I 6
116	Urn burial, pot, covered with earth	Confused	—	B. H; H 7
117	Urn burial, lidded with sherds	Confused	—	B. G; R. 79 J 7
118	Urn burial, large pot (painted), lidded with large sherd	Contracted on left side	NE–SW	B. F; R. 65
119	Urn burial, small pot, lidded with sherds	Confused	—	West B. A H 9
120	Urn burial, large pot roughly made, lidded with painted dish	Contracted on left side	NE–SW	West B. A H 9
121	Urn burial, large jar (painted), lidded with a plate (broken and repaired with bitumen in antiquity)	Contracted on left side	N–S	B. A; R. 28 J 8
122	Urn burial, large jar (painted), lidded with a plate (broken and repaired with bitumen in antiquity)	Confused	—	B. A; R. 21

Burial	*Type*	*Position*	*Direction*	*Location*
123	Urn burial, large jar, lidded with a plate (both smashed)	Confused	N–S	J 8
124	Urn burial, pot (painted), sealed with gypsum plaster (2 cm thick)	Contracted on 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)	Confused	—	East B .C M 11
127	Urn burial, large jar, lidded with sherds (smashed)	Confused	—	East B. D L 11

In general, the children's bodies were contracted, though one example was fully extended on its back. However, some skeletons were found in a disarticulated 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 nonfunerary 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, 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 (1935, 46) at Arpachiyah, where identical bowls were found covering some urn burials, thus we have 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 9 that the standard age of death ranges between 0–6 months and 2 years.[3] Infant mortality has important implications in terms of health conditions and deficiency diseases, a situation that seems to be understandable in all primitive conditions.

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

Table 9. Age of death in Ubaid infants at Tell Abada

*Age**	*Number of individuals*	*%*
0.5	15	57.7
1	7	26.9
2	4	15.4
Total	26	100.0
* 0.5 = 0–6 months, 1 = 6–15 months, 2 = 15–24 months		

[3] 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 and 2B.

Table 10. Measurements of long bones for aging of infants at Tell Abada

		nº 19	*nº25*	*nº20*	*nº3*	*nº101*	*nº45*	*nº19*	*nº11*	*nº65*	*nº28*
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
Fibula	R	65	96	63.5	—	121	109	—	67.5	—	61.5
	L	64	—	63	96.5	—	111	—	65	—	61.5
Age		0.5	1	0.5	1	2	2	1 (?)	0.5	1	0.5
Clavicula	R	47	41.5	46	—	45	—	52	52	—	64
	L	47	—	—	—	—	—	—	48	—	62
Humerus	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
Ulna	R	—	60	60	63	—	64	72	74.5	—	—
	L	60	60	56.5	—	60	64.5	—	—	—	—
Radius	R	—	51.5	50.5	—	51.5	—	—	65.5	—	95.5
	L	—	51.5	51.5	—	—	—	62	62.5	—	—
Femur	R	—	73	76.5	80.5	75.5	—	100	101.5	122	—
	L	—	74	77	82	76	—	101	—	—	—
Tibia	R	—	64.5	65.5	64.5	65	—	84	81.5	—	—
	L	—	66	65	68.5	66	—	—	—	100	—
Fibula	R	—	61	61.5	61.5	—	—	78	—	—	—
	L	—	61.5	—	61.5	61	—	—	79.5	93	—
Age		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	2

FIRE INSTALLATIONS

One of the most interesting features 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 used for domestic purposes such as bread making, 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 (figs. 59–63). The first one was found at level III, and the others belong to levels I–II. 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, and to provide the draught necessary for the combustion process. The two chambers are separated by a grate that 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. It is interesting to point out that this type of pottery kiln is comparable to one from Tell Oueil in southern Mesopotamia (Huot et al. 1980, fig. 12).
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, and 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; these are represented by kilns in figures 64–67.
3. Kilns with a single dome-shaped chamber built at ground level, varying in size and shape and either built directly over the ground (figs. 68, 69) or just a little below ground level (fig. 70). No grate is found, and it seems that both pots and combustible material were put together in one chamber, which functioned as both fire chamber and baking chamber. Kilns of this kind were well constructed of mudbricks, and both have domed roofs with a chimney in the top and an opening for fuel in one side.
4. Simple single-chamber kilns dug below the floor in varying depth 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. Figure 71: 1 and 2 show examples of this type.
5. Kilns with a unique system of ventilation, no. 16 (fig. 72). 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 features common to the kilns of both Abada and Sialk III I may suggest that Sialk III and I and Abada I were contemporaneous.
6. Other fire installations such as ovens, hearths or fireplaces (fig. 73: 1 and 2) were found in different places at the site, some 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 that was constructed inside the firing

chamber of kiln (fig. 64) 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 serve for placing food or bread to be cooked or baked when the kiln was not being used for pottery firing. This cannot be true with the more specialized kilns that were only used for pottery firing. It is of interest to mention the presence of large, rectangular-shaped benches constructed of mudbricks installed near kilns (figs. 62 and 63). The first stands at a height of some 50 cm, while the height of the other one is 70 cm. These were presumably used for placing pots and for the potter to sit on while watching the firing process.

It is interesting that the shape and size of the kilns vary considerably within each level, and, as we have seen at Abada, very simple types of kiln coexist with more developed and specialized ones. Therefore, the presence of the simultaneous occurrence of simple and complex kiln types seems to have been common in more or less contemporaneous archaeological sites in the Middle East (Hansen 2000, 70). Consequently, the systematic course of development proposed by Delacroix and Huot (1972) cannot be supported.

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 specialised kilns, which produced remarkable and brilliantly executed pottery in huge quantities. All this bears testimony to the industrial specialization that had already been established at the village and without which no such great accomplishments could have been achieved.

FIGURINES

Mesopotamian figurines were uncovered from the Neolithic period onward, for example those discovered at the sites of Karim Shahir (ninth millennium BC), and Jarmo (seventh millennium BC), where about five thousand fragments representing animals and human beings were found (Braidwood and Howe 1960, 44, 53 pl. 23: 8). Figurines continued to be produced during the Hassuna period, and from the Samarra period remarkable figurines appear, such as at Tell es-Sawwan (Yasin 1970, figs. 39–42) and Choga Mami (Oates 1968, 5).

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. 76: 5). Gypsum figurines are extremely rare in prehistoric Mesopotamia; a gypsum human figurine is reported from Tell es-Sawwan L.II (Oates 1969a, 147; pl. 41: C), which dates back to the Samarra period. No other examples have been reported from any Ubaid sites. A total of 102 figurines were found, four of which are of human shape while all the rest depicted animals; this group included some small zoomorphic vessels (table 11).

Anthropomorphic Figurines (figs. 74–75)

Human-shaped figurines seem to have been rare at Abada; nevertheless, four interesting ones were found, two in level I (fig. 74: 1–2) and two in level II (fig. 74: 3–4). Three of these figurines (fig. 74: 1, 3–4) represent females, two of them (fig. 74: 3–4) are depicted in a squatting position and were roughly modeled in a 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

Table 11. Occurrence of various types of figurines at Tell 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

a religious significance, was based on the fact that these 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 et al. 1965, 22) and Chatal Huyuk (Mellaart 1967). The presence of figurines in graves "may also suggest an aspect of identity related to that individual" (Daems and Campbell 2016).

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). However, it has now been suggested that most of these figurines that were previously identified as female are actually genderless, owing to their apparent flat chest and the lack of any marked sexual features (Daems and Campbell 2016).

Of special interest is a well-modeled terracotta figurine depicting a standing female (figs. 74: 1; 75: 3). The surviving part represents a female facing front with right hand, modeled in relief, holding her bust while her left hand is missing. Her navel is indicated by round little hole in the middle of her belly. This figurine is comparable to one from Arpachiyah (Mallowan and Rose 1933, fig. 45: 11) and also reminiscent of one from Tell Zeidan (Stein 2011, fig. 6: 1). Human-shaped figurines were also reported from the site of Chogha Mish II (Alizadeh 2008, figs. 87, 79).

Male figurines seem to have been rare; only one was found, in level II (figs. 74: 2; 75: 2). The dearth of male figurines seems to be in accordance with the evidence from other prehistoric sites where male figurines are extremely rare.[4] They are "rare in Mesopotamia and equally rare in Anatolia and Iran" (Oates 1966, 147).

Animal-Shaped Figurines

These figurines were very common at Abada (figs. 76–86). A wide variety of identifiable animals were represented, but sheep and dogs seem to have been most popular.[5] 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 that may represent a sheep (figs. 80: 1; 81: 5). It is of fired clay, elaborately modeled and decorated with brown bands running diagonally around the body and the neck. The eyes are indicated by reserved circles inside painted rings. The mouth is depicted by means of V-like slashes in front of the face. Both ears are missing, as are some of the face parts and legs. The painted bands probably represent a dye in the wool of a sheep, a custom that is still widely practiced in Iraq today by the shepherds to distinguish their sheep from others. A head of a ram-shaped figurine was also present (figs. 77: 8; 75: 6).

The large number of figurines depicting dogs is of special interest because, although there is no economic benefit from these animals themselves, their importance as guards, and looking after domesticated animals must have been great (figs. 76: 1, 3, 6; 77: 1–7, 9–10; 79; 1–8; 82: 1–12; 83: 1–6).

Representations of cows and bulls (Bukrania) appear in many figurines at the site and also feature as designs on both Halaf and Ubaid pottery (figs. 315: 3–4; 318–20; 394). 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 onward, though this assumption has been questioned by Oates (1978b, 22). An interesting piece (fig. 77: 7) represents a well-modeled 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. 76: 2), evidently intended to depict a snake with cylindrical body and tapering head, the eyes are represented by small reserved rings with painted circles inside. The

[4] Only one male figurine was found at Tell es-Sawwan (Oates 1966b, 47). A single example of a male figurine was found at Tepe Gawra at level X (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, n. 8).

[5] Figurines depicting dogs were reported from Jarmo (Braidwood and Howe 1960, pl. 16), and a high proportion of dog figurines were found at Sarab (Hole 1977, 199). Animal-shaped figurines were common at the Ubaid sites like Tell Oueili (Lebeau 1983, pl. D 2), Tepe Gawra (Tobler 1950), Yarim Tepe III (Bader et al. 1981, pl. 27), Khanijdal East (Wilkinson 1996, fig. 13), and Chogha Mish II (Alizadeh 2008, fig. 80).

spotted body of the snake is shown in paint over 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 (figs. 151: 1; 219: 4; 262: 2; 357: 2). Today snakes are very common where the site is located. A part of large animal-shaped figurine resembles a cow, with eyes indicated by engraved circles (fig. 84: 1).

The figurine shown in fig. 84: 2 found in level III represents a bird (dove) with body tapering toward 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 modeling found at Tell Rashid and dated to the Ubaid period (figs. 436: 4; 437), and a fragment of another bird figurine was also found in level III (fig. 84: 3). A dove figurine was found at Arpachiyah (Mallowan and Rose 1933, pl. V: 2): the "dove is almost certainly associated with the 'mother Goddess' worship" (Mallowan and Rose 1933, 87).

Zoomorphic Vessels (figs. 85, 86)

This type of vessel is generally rare throughout archaeological sites in Mesopotamia and the ancient Near East. However, a few examples were reported from Ubaid sites like Arpachiyah (Mallowan and Rose 1933, pl. 5: 1).

Some attractive examples were found in both levels III and II, made of a hollow pottery and bearing painted or incised decoration. Figsures 85: 1 and 86: 4 represent what must have been the spout of a zoomorphic vessel in the shape of a long-necked animal that could be a camel. The eyes are indicated by two small appliqué pellets, while the hair is indicated by rather deep incisions seen on the neck and the upper part of the head.

Figures 85: 2 and 86: 3 show an interesting zoomorphic vessel that may represent a hedgehog with a hollow body. The body is painted in brown with small spots indicating the bristles. Another zoomorphic vessel was found in level II, perhaps representing a dog with a short tail. It has a hollow body with a cup-shaped top and is certainly designed to hold some liquid, which can be poured through the mouth, which was represented by means of wide grooves with three small holes serving as a spout (figs. 85: 3; 86: 1). Parts of other animal-shaped vessels, some of them bearing painted decoration (fig. 85: 4, 5), were also found.

No conclusive evidence was found at Abada to resolve the problem of the purpose of the animal figurines and zoomorphic vessels, and we still do not know if they were votive offerings, objects of worship, or merely toys. However, an interesting painted zoomorphic vessel was discovered at the Halaf site of Yarim Tepe II (Merpert et al. 1981, figs. VII, VIII), described by the excavator as a "ritual gift in a special pit" (Merpert et al. 1981, 26).

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 (figs. 87–91)

Spindle whorls are known from most Ubaid sites in Mesopotamia. They were found at al-Ubaid (Hall and Woolley 1927, pl. 15: 1), Tepe Gawra (Tobler 1950), Ras Al-Amiyah (Stronach 1961, pl. 45: c), Telul eth-Thalathat (Fukai 1964, pl. 81: 13), Arpachiyavh (Mallowan and Rose 1933, fig. 49: 15, 16), Oueili (Lebeau 1983, pl. C 8), and Khanijdal East (Wilkinson et al. 1996, fig. 13: 1–5). It was also reported from the site of Tell Nader in Iraqi Kurdistan (Kopanias et al. 2102, fig. 21). A collection of painted spindle whorls were found at Chogha Mish in Susiana (Alizadeh 2008, fig. 83). The presence of these particular objects might be indicative of the development of wool production in the Ubaid period (Sudo 2010, 169).

The excavations at Tell Abada have produced some 143 spindle whorls, most of them made of baked clay, one example was only 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 bearing incised decoration, while 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 varying between 0.5 and 3.3 cm. The types can be classified into four types:

Type 1 Conical spindle whorls (figs. 87: 1, 2; 88: 2, 4–6, 8–10)

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. 87: 7, 8; 88: 3, 7).

Type 3 Biconical spindle whorls (fig. 89: 8)

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 figures 87: 4–6 and 89: 11. Some examples bear impressed decoration consisting of small oval-shaped dents around the surface (figs. 87: 2; 89: 9, 10) or incisions (figs. 87: 9; 89: 10). In two examples, one bears punctured decoration consisting of tiny squares arranged in three horizontal rows upon the surface (fig. 89: 3), and the second is decorated with eight rows of holes around the surface (fig. 89: 6).

Spindle whorls bearing incised and impressed decoration were common at other Ubaid and earlier sites: Hassuna, Al-Ubaid, Tepe Gawra XIII, Ras al-Amiya, Khanijdal East, and Tell Nader.

Type 5 Discoid spindle whorls (fig. 78: 3). These are disc-shaped whorls with an 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. 42, 45); generally this type of spindle whorl is scarce in prehistoric sites.

Type 6 Dome-shaped spindle whorls (fig. 90: 1). No similar whorls have been reported from Ubaid sites in Iraq, but one punctuated dome-shaped type was found at Ali Kosh (Bayat phase) (Hole et al. 1969, fig. 90, f).

Type 7 "Chariot-wheel" spindle whorls (fig. 91: 1–6). These are circular, convex ceramic discs, ranging in diameter between 4.5 and 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 (1–2). 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. 92: 1–12). These are chipped-sherd discs that were made from body sherds of Ubaid painted pottery from both levels 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 or jar stoppers (Kopanias 2012, fig. 22), but there is no reason to rule out such usage as spindle whorls 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, which must have been either in process of preparation, 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 (Hole et al. 1969), and Choga Safid (Hole 1977, 219).

In conclusion, a wide variety of spindle whorls were found at Abada; types 1, 2, and 3 are the traditional type of spindle whorl, which are widely distributed at prehistoric sites and in particular at Ubaid sites in Iraq and the Middle East. However, types such as number 7—the "chariot wheel" spindle whorl—are rather anomalous in the Ubaid context in

Table 12. Occurrence of spindle whorl types and their percentage at Tell Abada

	Type	*Level III*	*Level II*	*Level I*	*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	Biconical-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

Iraq and were more common in Susa and Deh Luran plain sites.

Sling Balls (figs. 93–94)

These are biconical or oval-shaped objects made of clay, some are sun dried, others baked. They were either straw or grit tempered and vary considerably in size, the smallest measuring 3.5 cm in length and 3.5 cm in middle diameter, the biggest measuring 5.6 cm in length and 3.5 cm in middle diameter. They were common in both levels I and II: sixty-two in level I and seventy-four in level II. None was found in level III. Although these objects have traditionally been described as sling balls or missiles that have been used for hunting, 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 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 yet available.

These objects were known from many Ubaid sites in Iraq such as Eridu, Warka, Tello (Perkins 1949, 85), and from Telul eth-Thalathat (Egami 1959, fig. 62: 7, 8). Sling balls were reported from Choga Mami (Oates 1969a, 131), Telul eth-Thalathat (Fukai et al. 1970, pl. LXXXI; 5–9) and Khanijdal East (Wilkinson et al. 1996, fig. 14: 1–4). Similar objects were reported from Tepe Sabz (Hole et al. 1969, 213) and Choga Safid (Hole 1977, 233).

Bent Ceramic Nails (figs. 95–97)

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 (Stein 2010, 23). They were found at Eridu, Al Ubaid, Ur, Ubaid, Warka, Choga Mami, and Ras Al-Amiya, where they were considered to "provide an important link with the earliest Ubaid levels at Eridu" (Stronach 1960, Pl LXV: b, 105). They were also reported from Tell Oueili (Lebeau 1983, pl. C: 5). In the north of Iraq, they were found at Tepe Gawra XIX-XVI (Tobler 1950, pl. LXXXIII: f, g), Arpachiyah (Mallowan and Rose 1933, fig. 49: 80), Telul eth-Thalathat, Yarim Tepe (Bader et al. 1981), Tell Hasan (Tusa 1978, fig. 38), Khanijdal East (Wilkinson et al. 1996, fig. 14: 3, 4), and Tell Nader (Kopanias et al. 2012, fig. 18). Bent clay nails are reported also from Tell Zeidan in northeasters Syria (Stein 2011, fig. 11), 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 and Rose 1935, 90; 1967, 21, 22), or that they were "sickle hand protectors for reapers" (Hall and Woolly 1927, 4–49), or "hooks" for picking up low growing crops (Hall 1930, 202),

although the possibility of their being rubbers for grinding paint was not excluded (Hall 1930).

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 mudbrick wall (1978, 47). Stein suggested that mullers with cross-hatch incised heads found at Tell Zeidan at the end of the Ubaid period provide evidence for stylistic change from mullers with smoothed, undecorated heads in the beginning of the Ubaid Period (Stein 2011, 130). Our excavations at Tell Abada have produced a large number of these objects, ninety-seven in all, more than have been found from all other Ubaid sites; forty-seven of them came from level II and fifty 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, and the convex heads differ in size from one to another; the smallest head has a diameter of some 3 cm, while the biggest measures about 9 cm. Some examples have painted decoration in black or red paint (figs. 95: 2–4, 6, 9, 10; 96: 1, 6).

The most interesting feature that characterizes some of the bent nails from Abada is that they have animal protomes in which the bent end was modeled in the shape of a ram; the ears and eyes were indicated by applied pellets (figs. 96: 11; 97: 8), another bent nail was modeled in the shape of a human figurine (fig. 96: 10). It should be pointed out that this latter 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 ninety-seven specimens found in the site, a length that can fit comfortably in the palms 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. 96: 2, 3, 8); 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 Oates, who mentions a number of bent nails found at Al Ubaid as well as at Choga Mami that "showed definite signs of wear as though they had been used as mullers" (1969a, 131).

Ceramic Cones or "Ladles" (figs. 98–99)

These objects consist of a conical shaft or handle with a ladle-like cup on top. These objects, whose "purpose remains entirely mysterious" (Crawford and Carter 2010, 78), were found in both Samarra and Ubaid contexts. At Abada both the long-handled drinking cup type (fig. 98: 1, 2) and the "golf-tee" (3) were found, the former type found in stone at Tell es-Sawwan (Al-Wailly and Abu Es-Soof 1965, fig. 66); at Choga Maud this type was also found in Samarran levels, while the latter was associated with transitional material (Oates 1968, pl. 12: 11–14), and it is also known from Ubaid levels at Ur (Woolley 1955, pl. 15), Tepe Gawra (Tobler 1950, 169), Telul eth-Thalathat (Bader et al. 1981), and As-Sabiyah in Kuwait (Crawford and Carter 2010, fig. 4.7: 3). Most examples from these sites and from Abada are painted with bands encircling the handles as well as the cups (3). The latter example is the only one in which the handle is bent. All three ladles mentioned above (1–3) were found in level III at Abada; two other long-handled ladles come from level II (4, 5).

UTILITARIAN CLAY ARTIFACTS

The items described under this category comprise objects of 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 that became baked in the course of usage.

Miniature vessels (fig. 100)

Five small vessels were found, two from level I (1, 4) and three from level II (2, 3, 5). Example (2) 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. Example (3) is another small bowl measuring 3.8 cm in diameter, of rather conical shape with slightly incurved walls, made of fine clay and nicely modeled. The last one (5) is a very small pot measuring only 1.3 cm. It is oval shaped with rounded base and sharply incurved walls that were fine grit-tempered and well modeled.

The first vessel from level I (1) is a tall beaker some 13 cm in length and 9 cm in diameter with thick walls slightly flaring outward. No particular shape could be determined for its base due to its poor condition, and the base of the beaker was coated on the inside with a thick layer of gypsum, obviously to waterproof it. It was made of grit-tempered clay and not very well modeled. It is comparable in form to an unpainted pottery vessel from Al-Ubaid (Hall and Woolley 1927, pl. 55: 6). The second (4) is a miniature jar 2 cm in diameter, with a flat base and meandering edge, and the general form and manufacture are fair. A number of varied, unpainted miniature pottery vessels were reported from Arpachiyah (Mallowan and Rose 1933, figs. 41, 43).

Lamp lids (fig. 101)

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 were found distributed in both level II, where we found seven of them, and level I, where fifteen were found. In all these examples the concave part of the cone or the groove is heavily burnt and sooty, a 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 (thirteen in level II, five in level I); they are heavily burnt around the mouth and obviously served as lamps.[6]

Tripods (fig. 102)

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 were apparently used for cooking. This assumption was strengthened by the presence of some of them near hearths in the houses of level II.

Miscellaneous Clay / Ceramic Artifacts

These miscellaneous objects can be described as follows:

1. Pot Lids (fig. 103: 1). 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 modeled. 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 center for suspension. The sides of the lid were painted with dark purple paint, while the upper surface was decorated with three painted bands.
2. A regular and thin piece of plano-convex shape, measuring 11.3 cm in length and 5.5 cm in width (fig. 103: 2). 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 or sharpening or for some other function.
3. A hollow, curved, cylindrical object of an almost square cross-section with two almost square holes on the upper surface (fig. 103: 3), it is of unknown use but is reminiscent

[6] Primitive lamps of similar technique are still being used in some remote Iraqi villages today, where an empty small glass 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 1930s.

of the kernos fragment from Tepe Gawra (Tobler 1950, pl. 80: b).

4. An oval-shaped rattle made of well-baked clay with a small hole in the upper painted end for suspension. Small pebbles were placed inside to create the rattling sound (figs. 103: 4; 104). This kind of object was found at Tepe Gawra XVII (Tobler 1950, pl. 82: no. 1).

5–8. A series of wheel models of different kinds are illustrated here; number 5 represents a biconical wheel with rounded hole running across the hub of the wheel, and number 6 is discoid with a serrated edge and a hole in the center, while numbers 7–8 represent a plain discoid wheel.

Boat Models (fig. 105: 1–2)

One of the interesting features that could be considered characteristic of the Ubaid period in southern Iraq is the presence of a variety of a baked clay models of boats or canoes, as at Eridu (Safar et al. 1981, fig. III), Al-Ubaid (Hall and Woolley 1927, pl. 48: T.O. 532), al-Uqair (Lloyd 1943, pl. 18: 13), and Tell Oueili (Huot 1980, 109). Boat models were recently found at the Ubaid related site of As-Sabiyah in Kuwait (Carter 2010, 89). A pottery disc with a painted design showing an image of boat with a two-footed mast was also produced from the latter site (Carter 2010, fig. 5: 2). At Tell Abada two ceramic boat models were recovered from level I; the first (fig. 105: 1) 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, matched by a brown band on the upper opposite side. This boat model is similar to wooden boats used on the rivers of Iraq today, called balam.

The second boat model (fig. 105: 2) is smaller than the previous one (9.5 × 5 cm) and has incurved bows. This type of boat is closely comparable to one called mashhoof, which is still being used in the marsh area in southern Iraq today.

The presence of boat-shaped models in Ubaid sites would undoubtedly imply the acquaintance of the Ubaid people with seafaring. This has been evidenced by the discovery of Ubaid materials, notably pottery, at sites well beyond their homeland in southern Mesopotamia, such as the eastern province of Saudi Arabia and the Gulf region.

ORNAMENTS (figs. 106–8)

Human concern for adornment has always been expressed, 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, and frit to metal. All are dealt with in this section.

PENDANTS

A total of six pendants of different types were found. These can be classified as follows:

1. Pin-shaped marble pendants (fig. 106: 3)
2. Whetstone-shaped marble pendants (fig. 106: 1)
3. Drop-shaped marble pendants (fig. 106: 2)
4. Pendant flakes of transparent stone with a small hole pierced at one edge for suspension (fig. 106: 4–6)

STUDS (fig. 106: 7–9)

These are peg- or nail-shaped objects with flat or discoid 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. 12: 19), Jarmo (Braidwood and Howe 1960, 46), Shimshara (Mortensen 1970, fig. 43), and Al-Ubaid (Hall and Woolley 1927, pl. 13: 7). They are reported also from the Deh Luran Plain (Hole et al. 1969, fig. 102, h), Sialk (Ghirshman 1938, pl. 11, 26–31), and Chogha Mish II (Alizadeh 2008, fig. 81: C–D).

Studs 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; PI. XCIIa, 11–13), Eridu (Thompson 1920, pl. 9), Al-Ubaid (Hall and Woolley 1927, pl. 13, 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, 131–32; pl. XXX a, b), Ras Al-Amiyah (Stronach 1961, pl. XLIII, 8, 9) and As-Sabiyah in

Table 13. 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

Kuwait (Carter 2010). At Tell Abada three studs were found, all made of a very fine polished stone. One was found in level I (7), and two were found in level II (8, 9).

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 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 amulet 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, p. 102). Ceramic nails or plugs were also reported from As-Sabiyah (site H3; Crawford and Carter 2010, fig. 4.2).

"Labrets" was used again to describe them by Stein, who considers them a "marker of Ubaid personal identity" due to their widespread distribution across regions within the Ubaid horizon and their presence at most excavated sites from north Mesopotamia down to the Arabian Gulf (Stein 2010, 30).

Recent evidence drawn from the Choga Mami figurines coupled with the evidence obtained from some burials at Ali Kosh (Stein 2010, 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).

Beads

1. Engraved beads of polished grayish stone (fig. 106: 11).
2. Conical shaped beads of polished black stone (fig. 106: 10).
3. Frit beads (fig. 106: 13, 14, 20) representing a discoid shape. Some 51 examples of different sizes were found.
4. Reel-shaped stone beads (fig. 106: 12).
5. Disc-shaped stone beads (fig. 106: 15, 18).
6. Cylindrical beads (fig. 106: 16).
7. Tabular beads (fig. 106: 19, 21): The last three beads are made of frit, with an elongated cylindrical body, round in cross-section. Two of these beads are partially painted in black (19, 21). These three beads are part of the necklace found in burial 67.
8. Bracelets and ring-shaped beads (figs. 107 and 108): These were all made of a baked clay pottery and represent what might have been used as small bracelets for babies (figs. 107: 1–4; 108: 1–4). Others represent ring-shaped beads (5–15).

CLAY TOKENS AND PROTO-TABLETS

The objects included under this category consist of clay pieces modeled 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"[7] for reasons to be discussed below. Clay tokens are 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.E." (Schmandt-Besserat 1977, 3). Clay spheres dated to the seventh millennium BC were found at Jarmo in northern Iraq (Morales 1983, 389). These simple geometric clay tokens were used as numerical "calculi" in the Late Uruk period, dating back to the latter part of the fourth millennium BC They are believed by many to be the precursors of written notation (Jasim and Oates 1986).

The total of ninety tokens from Tell Abada include four basic types: spheres, cones, discs, and rods, in addition to a few other types. Each type includes some subtypes as we shall see below. Distribution of the tokens can be seen in fig. 16: 34 (Jasim and Oates 1986, figs. 1, 2).

Spheres (figs. 109–10)

These are balls of different sizes ranging between 0.6 and 3.0 cm in diameter, modeled of fine clay, some of irregular shape. The majority of the spheres are made of clay (1–11, 16–25). However, balls of other materials — four only (12–15) — 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, as follows:

1. Pellets (fig. 109: 1): These are tiny or very small balls with maximum diameter of about 0.5 cm, resembling subtype 1 of Schmandt (Schmandt-Besserat 1977, 5).
2. Small spheres (fig. 109: 7–11).
3. Large spheres (fig. 109: 16–19).
4. Truncated spheres (fig. 109: 20–22).
5. Incised truncated spheres (fig. 109: 23–25): 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 (23), or five parallel diagonal lines on the convex surface (24), or one diagonal line or groove on the convex side (25). They resemble the incised three-quarter spheres found at Choga Safid and Susa (Schmandt-Besserat 1977, p. 8).

Cones and related shapes (figs. 111–13)

Clay objects of conical shape were also common at Abada, where they constitute 36 percent 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 slightly concave base, and round or pointed tips.

The subtypes are as follows:

1. Small cones (fig. 111: 5–8).
2. Large cones (fig. 111: 1–4, 9–14).
3. Incised cones (fig. 111: 15).
4. Bent cones (fig. 111: 16, 17).
5. Squat cones (fig. 111: 18–20; fig. 113: 4–6).
6. Cones with pinched tops (fig. 113: 3).
7. Other related shapes (fig. 113: 1, 2).[8]

Discs (fig. 114)

The discoid clay pieces from Tell Abada can be divided into seven subtypes in accordance with their thickness and their surface markings:

1. Small discs (1).[9]
2. Large discs (2, 3).
3. Lenticular discs (4).
4. Plano-convex discs (5).[10]

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

[8] These pieces closely resemble those classified as subtypes 11 and 12 by 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 (Schmandt-Besserat 1977, 16).

[9] Discs of this subtype were found at Beldibi, Ganj-Dareh Tepe, Tepe Sarab, Can Hassan, Choga Safid, Tepe Yahiya, Susa, and Tepe Nissan; they resemble subtype 113 of Schmandt (Schmandt-Besserat 1977, 11).

[10] This subtype of disc was classified as type 1/4 by Schmandt, examples of which have come from Tepe Asiab, Kanj Dareh, Tepe Sarab, can Hasan, Jarmo, and Kish (Schmandt-Besserat 1977, 8).

5. Incised reel-shaped discs (6).[11]
6. High discs (7).
7. Incised high discs (8).

Rods (fig. 113: 7–9)

These objects are made of fine clay, and three subtypes can be recognized:

1. Elongated oval-shaped coil (fig. 113: 9). This resembles the "elongated pellets" of Schmandt (Schmandt-Besserat 1977, 17).
2. Rods with cylindrical cross-section and rounded ends measuring 7–8 mm in diameter and 3–3.5 cm in length. (fig. 113: 7, 8).
3. Curved rods rolled and modeled between palm and fingers, the prints of which can be very clearly seen on the rod (fig. 113: 10–12). Similar objects described as "clay sling pellets" were found at Tepe Gawra XIII (Tobler 1950, pl. LXXXVI: b). It is believed that these lumps of clay were used "in sealing doors or containers such as jars or baskets" (Stein 2010b, fig. 11).

Proto-tablets (figs. 115 and 116: 2–4)

These are tablet-shaped pieces of carefully finished fine baked clay; three of them (fig. 115: 1–3) are of elongated oval shape, and one (fig. 115: 2) bears a line in the shape of a groove running along the center of the surface. Figure 115: 4 shows a small square tablet of 3 × 3 cm, with two flat faces and slightly rounded edges, well modeled and without distinguishing marks 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 fig. 115:1 and 116: 3, which came from level I (building A, room 7). Unfortunately, the piece is broken and a considerable part of it is missing, but the surviving part measures 4.5 × 3 × 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 fingernail prints, and the second are short horizontal strokes. These signs are well arranged within four parallel vertical lines and a single nail print to a side of one of the flat edges, and considerable attention seems to have been paid to executing the signs.

GROUND AND POLISHED STONE ARTIFACTS

Our excavations at Tell 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:

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 (figs. 117 and 118)

Stone vessels are known from several prehistoric sites, dating from the seventh millennium BC; 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 Maud (Oates 1969a, 131), Umm Dabaghiya (Kirkbride 1973, pl. VIII: b), Tell Soto (Merpert et al. 1977), and Yarim Tepe (Merpert 1971, fig. 7: b).

For the Ubaid period, stone vessels have been found at many sites such as Al-Ubaid (Hall and Woolley 1927, pl. XLVI: 3), Eridu (Safar 1947, 104), Tepe Gawra (Tobler 1950, 208–9), 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:

1. Bowls with carinated shoulder (figs. 117: 1, 2; 118: 6, 7).

[11] Incised discs were classified under subtype 114 by Schmandt and are similar to ones from Ganj Dareh and Susa (Schmandt-Besserat 1977, 11).

Table 14. Occurrence and percentage of clay tokens at Tell Abada

Type	*Subtype*	*Level II*	*Level I*	*Total*	*Gross Total*	*Percentage*
Spheres	1	7	3	10	42	47
	2	11	7	18		
	3	5	3	8		
	4	2	1	3		
	5	1	2	3		
Cones	1	4	5	9	32	36
	2	7	4	11		
	3	—	1	1		
	4	2	—	2		
	5	3	2	5		
	6	—	1	1		
	7	—	1	1		
	8	—	1	1		
	9	—	1	1		
Discs	1	—	1	1	8	9
	2	1	1	2		
	3	1	—	1		
	4	—	1	1		
	5	1	—	1		
	6	1	—	1		
	7	1	—	1		
Rods	1	—	1	1	4	4
	2	2	—	2		
	3	1	—	1		
Varia	1	—	1	1	4	4
	2	—	2	2		
	3	—	1	1		
				Total:	90	100

2. Bowls with out-turned and diagonally faceted rim, rounded body, thick sides and flat base, made of white marble (fig. 117: 3).
3. Deep bowls with incurved sides and simple direct rim. Body is rounded with flat base, made of white marble (fig. 117: 4).
4. Bowls with out-turned or "beaded" rim. Various shapes were represented (fig. 117: 5–8).
5. Miniature vessels (fig. 117: 6). 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 grayish stone.

Grinding and Pounding Tools (figs. 119–24)

Grinding Tools

Most of these grinding stones were found within their original contexts, either inside the rooms or in courtyards, where they had usually been used for purposes that could have been either domestic, such as grinding grains for preparing food, or industrial, such as preparing red ocher, 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 that indicates the important role these tools played in the daily life of the people and their subsistence.

Different types of grinding stone were represented:

1. Large slab stones (fig. 119: 1–3). These have either a flat upper face (1) or slightly concave face (2, 3). This type of grinding stone was represented at the Deh Luran Plain in the Bus Mordeh and Khazineh phases (Hole et al. 1969, 171) and Choga Safid (Hole 1977, 201), Shimshara (Mortensen 1970, fig. 46 a), Telul eth-Thalathat (Fukai 1981, pl. 40: 5), and Yarim Tepe (Bader et al. 1981, pl. XXXI).
2. Saddle-shaped grinding stones (fig. 120: 1–3): Saddle-shaped grinding stones were found at Jarmo (Braidwood 1952, fig. 14), Hassuna (Lloyd and Safar 1945, fig. 7), Yarim Tepe (Munchajev and Merpert 1973, pl. XII: 6), Shimshara (Mortensen 1970, 6, fig. 46), Choga Mami (Oates 1969a, 131), and Telul eth-Thalathat (Fukai 1981, pl. 40: 6).
3. Basin-shaped mortars (fig. 120: 1, 2): Similar stones were found at Jarmo (Braidwood and Howe 1960, pl. 20: 1), Tepe Guran (Mortensen and Flannery 1966, figs. 9, 10), and Choga Safid (Hole 1977, 201). Similar tools with either shallow or deep basins were reported from Ali Kosh, Tepe Sabz (Hole et al. 1969, fig. 74: c, d), and Chogha Mish II (Alizadeh 2008, fig. 87: H).
4. Bowl mortars (fig. 120: 4): Similar mortars were found at Tepe Gawra XIII (Tobler PI. CLXXIX: 57) in northern Iraq, and it is interesting to mention here that mortars of a similar shape are still being used in some parts of Iraq today.
5. Pebble mortars (fig. 120: 3, 5, 6): It would have seemed difficult to interpret these objects as mortars if we had not seen traces of red ocher on some examples; the same

Table 15. Occurrence 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
Boulder mortars	-	1	1	2
Pebble mortars	-	10	5	15
Boulder mortars	-	4	6	10
Total	4	23	19	47

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: a, c). Mortars of a similar type were found at Jarmo (Braidwood and Howe 1960, pl. 20, no. 3).

6. Boulder mortars (fig. 121): Similar objects are found at Jarmo (Braidwood 1951, fig. 11), Yarim Tepe (Bader et al. 1981, pl. XXI), Ali Kosh, Tepe Sabz (Hole et al. 1969, fig. 76), and Choga Safid (Hole 1977, figs. 33, 82).

Pounding Stones (figs. 122–24)

These can be classified into the following types:

1. Flat hand stones (fig. 122: 1, 2).
2. Sandstone abraders (fig. 123: 5, 6): This type of abrader was reported only from Choga Safid (Safid through Choga Mami transitional phases) (Hole 1977, 215).
3. Pounders and grinders: This category of hand stones includes three main types:
   a. Spherical hammer stones (fig. 123: 1, 2). This was the most common type of pounder at Abada, as it was in many prehistoric sites in Iraq such as Al-Ubaid (Hall and Woolley 1927, pl. XIV: 6), 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).
   b. Cubic pounders or rubbing stones (fig. 123: 3).
   c. Stubby grinders (fig. 123: 4).
4. Pestles. Two types can be distinguished:
   a. Cylindrical pestles (fig. 122: 3).
   b. Conical pestles (fig. 122: 4).

OTHER STONE ARTIFACTS

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

The flint/chert industry of Abada will be described and discussed in appendix 2. The stone artifacts which will be dealt with in this section are retouched and un-retouched hoes:

Retouched Hoes (fig. 125: 1–4)

These tools are fairly large in general and relatively heavy, ranging from 13 to 23 cm in length, and made of river cobbles (1) or large flakes struck from cobbles, the edges of which have been bifacial retouched so that the cobbles form pear-shaped hoe blades (3, 4). Others were made of bifacial retouched flint flakes, bearing some traces of bitumen around the edges, an indication of hafting (2). These tools seem to have been multi-purpose but may have mainly been used for agricultural activities, such as soil cultivation and weed removal. It is interesting to learn that the invention of the hoe was credited to Enlil, the chief of the council of Gods (PBS, *Heritage: Civilization and the Jews*, "Nippur," accessed December 5, 2013). Hoes were reported from several Ubaid sites

Table 16. Occurrence of different types of hand stone at Tell Abada

Type	*Level III*	*Level II*	*Level I*	*Total*
Flat hand stones	1	2	3	6
Sandstones, abraders	1	2	3	6
Spherical hammer stones	7	33	28	68
Cubic 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

such as Al Ubaid (Hall and Woolley 1927, pls. XIII: 1; 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. LVIII: 18; LXV: e), and at Abada and Tell Rashid.

Un-retouched Hoes (fig. 126: 3–4)

These tools are similar to the aforementioned ones, but are un-retouched 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. Similar tools were reported from Chgha Mish II (Alizadeh 2008, fig. 87: J, L, M-O).

Polished Celts (figs. 127–29)

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:

1. Celts with rounded butt and slightly curved sides (fig. 127: 3, 6).
2. Celts with adze-type bits (figs. 127: 1, 2, 4, 5; 128: 3, 5, 11).
3. Celts with straight butt (fig. 128: 7, 10).
4. Celts with pointed butt and symmetrical bit (fig. 128: 4).
5. Perforated Celts with relatively large hole in the middle for mounting on a wooden shaft (fig. 128: 2).

Polished Celts identical to the first four types mentioned above have been found in many sites in Iraq and the nearby area: in Jarmo (Braidwood 1952, fig. 14), Hassuna (Lloyd and Safar 1945, 269), Yarim Tepe (Munchajev 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), Al-Ubaid (Hall and Woolley 1927, pl. XIII: 2), Arpachiyah (Mallowan and Rose 1933, fig. 55: 5–11), 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: 3 a, b), Tepe Gawra (Tobler 1950, 202), Ras Al-Amiya (Stronach 1960, 106), Umm Dabaghiyah (Kirkbride 1972, pl. VII; 1973, pl. IX c), Yarim Tepe III (Bader et al. 1981), and Tell Oueili (Lebeau 1983, pl. B 8).

Small Regular Stone Tools with Circular Depression on Either Side (fig. 130: 1–4)

These tools are almost circular or oval in shape with small circular depressions in the middle of either side, some made of limestone or river pebbles. The use of such stones is not quite certain, and while they have been interpreted as hammer stones by some excavators (Mortensen 1970, 56), others have refrained from giving any comment on the possibility 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 Stone Tools (fig. 131: 1–4)

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) and Khanijdal East (Wilkinson et al. 1996, fig. 14: 1, 2). They are also reported from Tepe Sabz (Hole et al. 1969, 196–198) and Choga Safid (Hole 1977, 212, 213).

Rubbing Stones (fig. 132: 1–4)

Different shapes of these elongated pieces of stones were represented. All examples bear obvious traces of rubbing.

Stirring Rods (figs. 132: 5–7; 133: 1–6)

These are elongated limestone river pebbles with one end often damaged or broken and smeared with asphalt. Traces of asphalt/bitumen still adhere to the upper parts. It is obvious that these stone rods have been used to stir boiling asphalt as it was being prepared for use as a mastic and for modeling other artifacts (fig. 146: 1–3). These rods range in length

between 12 and 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.

Whet Stones (fig. 132: 8–10)

These tools are made of round, oblong or elongated pebbles scarred with whet marks resulting from use for sharpening some blade tools. Similar artifacts described as slicing slabs were found at Ali Kosh and Tepe Sabz (Hole et al. 1969, 192–96) and Choga Safid (Hole 1977, 210); they were also known from Shimshara (Mortensen 1970, 53).

Door Sockets (fig. 134: 1–2)

These are large and heavy stones, roughly circular in shape, made of pieces of limestone 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. 134: 3–4)

This kind of tool was represented by two examples only, both made of flat, elongated pieces of fine black stone. The smaller one bears two grooves about 2 mm deep, one on the middle of either surface (3). The second stone (4) 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. 7: d) and Zawi Chemi Shanidar (Solecki 1964, 406). They were also reported from Karim Shahir, Jarmo (Braidwood and Howe 1960, 53, 45) and Khanijdal East (Wilkinson et al. 1996, fig. 14: 5); stones with multiple grooves were known at Tepe Gawra (Tobler 1950, 207).

Mace-heads (figs. 135–36)

These tools were made of fine quality of stone and hafted by means of a shaft hole to a wooden stick. 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 gray with white veins; greenstones and fine-grained lime stones have also been employed. A variety of shapes were produced including flat and ovoid (fig. 135: 1, 2, 9), spheroid (fig. 135: 3), barrel shaped (fig. 135: 4, 5, 8), and discoid (fig. 135: 6).

Scepters or mace-heads are known from many sites in Iraq, from 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. XIII: 3), and Uqair (Lloyd 1943, pl. XXIV) and they were abundant at Tepe Gawra, where about forty were found (Tobler 1950, 203; pl. CLXXVII: 29–37). Some of the Gawra examples, such as those illustrated in Tobler (1950, pl. XCVII nos. 2, 3, 4), are very comparable to the Abada ones such as those in fig. 135: 3, 5, and 7, respectively. They were also found at, southeast of Larsa in southern Iraq, As-Sabiyah in Kuwait (Crawford and Carter 2010, fig. 4.9: 15), and Chogha Mish II (Alizadeh 2008, fig. 87: D–F).

Stone "Phallus" (fig. 137: 1)

One object from level I represents a phallus symbol made of fine-grained black stone. It is closely comparable to similar examples made of bitumen from the same level at Abada (fig. 146: 1).

The stone phallus symbol, which might have had some sort of significance, seems to have enjoyed an important role in human history. Among the oldest phallus representations was that known from the "Hollow Cave" in the Alps of Germany dating to 28,000 years ago. "[Phallus] symbols often represent fertility and cultural implications that are associated with the male sexual organ as well as the male orgasm."[12] The phallus "played an important role in the cult of Osiris in the ancient Egyptian religion, and was also ubiquitous in the ancient Roman

[12] In Wikipedia, retrieved August 1, 2014, from http://wikipedia.org/wiki/Phallus.

culture."[13] Phallic symbols have also been common at some early prehistoric sites in the ancient Near East, 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 (figs. 137: 2–4; 138)

These are small pieces of marble with highly smoothed and polished surfaces, rectangular, oval or circular in shape. Two varieties of marble were employed: pink and grayish 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. 106: 1, 3), and further support for this assumption could come from the object (fig. 137: 7) that represents a small unhallowed bowl shape made of pink marble, presumably prepared to be hollowed for use as a bowl.

Painter's Palettes (fig. 137: 5)

One almost complete example and fragments of two other palettes were found at Abada. The first is of a rectangular shape with open ends and very short side walls, made of fine-grained and well-polished

Table 17. Occurrence of stone objects at Tell Abada

Type	*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
Stone tools with circular depressions	4	6	5	15
Bored Stone tools	9	46	33	88
Rubbing stones	5	7	36	48
Stirring rods	-	3	2	5
Whet stones	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	156
Total	47	177	180	404

[13] In Wikipedia, retrieved August 1, 2014, from http://wikipedia.org/wiki/Phallus.

Table 18. Occurrence 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
Spatulas	-	2	4	6	12
Scrapers	-	1	1	2	4
Total	3	23	23	49	100%

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 paint palette. Similar objects were found at Tepe Gawra (Tobler 1950, 207; pl. XCII a), Arpachiyah (Mallowan and Rose 1933, fig. 52: 4), and Yarim Tepe III (Merpert et al. 1981).

Varia

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

Stone discs (fig. 139: 4, 5)

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. Whilst the same observation is applicable to the object (fig. 139: 2), which represents an oblong pebble with biconvex surfaces, it is not possible to confirm this.

Small cones (fig. 139: 7; 133: 11, 12)

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

Pecked stone balls (fig. 139: 3)

These are completely spherical balls, pecked from limestone in a regular shape, the average diameter ranges between 3 and 6 cm. No obvious traces indicating any 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, 214–15), and Tepe Gawra (Tobler 1950, pl. XCVII: b).

BONE ARTIFACTS

A total of forty-nine 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 percent); the remainder consist of perforators, scrapers, and spatulas (table 18).

Awls (figs. 140–42; 143: 1–2)

Awls of different types are the most traditional bone tools that have had a wide distribution throughout most prehistoric sites in the Middle East since the ninth millennium BC. They were found in abundance at Zawi Chemi Shanidar (Solecki 1964, 408). They appeared in considerable frequency in most Ubaid sites in Iraq such as Arpachiyah (Mallowan and Rose 1927, pl. 12), Khanijdal East (Wilkinson et al. 1996, fig. 14: 6–8), Yarim Tepe III (Merpert et al. 1981, pl. XXIII). They were also found at As-Sabiyah in Kuwait (Crawford and Carter 2010, fig. 4: 8).

At Tell Abada a total of forty-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) Matapedia awls (figs. 140: 1–7; 142: 1–3)

b) Flat splinter awls (figs. 142: 4–8; 143: 1, 2)

c) Small spear-like awls (fig. 143: 3, 4)

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

d) Incised awls (figs. 140: 8; 141: 7)

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) and Yarim Tepe III (Merpert et al. 1981, pl. XXIII).

Spatulas (fig. 143: 5, 8–9)

These are long and flat pieces of bone with parallel sides and wide, rounded ends, usually with polished surfaces. The lengths of these tools range from 6.5 to 11.5 cm and their width from 1 to 1.8 cm. Spatulas were represented in both levels II and I at Abada. The spatula in fig. 143: 5 is an interesting example, representing 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 spatula were found at Hassuna and Sialk I (Braidwood 1952, figs. 6, 7), spatula were also common at Zawi Chemi Shanidar (Solecki 1964, 408), Hassuna (Lloyd and Safar 1945, 288; PI. X: 2), Yarim Tepe (Merpert and Munchajev 1971, fig. 6: h), Ali Kosh (Hole et al. 1969, fig. 93: d), and Choga Safid (Hole 1977, 221; pl. 53 J–l a). They are also reported from Choga Mami (Oates 1969a, 132), Uqair (Lloyd 1943, pl. XXIX), and Tepe Gawra (Tobler 1950, 214).

Scrapers (fig. 143: 6, 7)

These are relatively large, flat pieces of bone with polished surfaces and narrow rounded ends. This kind of tool may have been used in making pottery or obsidian tools or perhaps for detaching hides. The example (6) is provided with a groove running along one edge probably for making the ends of some tools tapered and sharp. No comparable examples have been reported from other sites.

OTHER ARTIFACTS

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

Gypsum Objects (figs. 144–45)

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

Plano-convex discs (fig. 144: 1–2)

These are gypsum discs with one flat face and the other convex; they are of different sizes, ranging in diameter between 10 and 40 cm. The gypsum disc most probably represents a simple device used as a tournette. The flat head served as a working surface while the convex bottom likely served as a pivot that could have fitted on a clay-fired disc or platform to slowly rotate over when turned by potter. Therefore, these discs served as a turntable and could well have been parts of the potter's wheel. Their presence in the buildings of level III, which we believe was dedicated to pottery manufacture, might give support to this particular idea of their function.

Cones (fig. 145: 2–3)

Two conical-shaped objects were found, the large one (2) in level II, measuring 13 cm in length and 8 cm at the widest diameter, and the other one (3), 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.

Spheres (fig. 145: 4)

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 H).

Vessels (fig. 145: 5)

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 that had been flattened upward to form the sides with a thin, straight rim.

Bench (fig. 145: 1)

The most interesting object represents a bench of rather rectangular shape measuring 30 cm in length and 20 cm in width, with four short, rounded legs (fig. 145: 1). The surface was smoothed all over. This 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 on which to stand valuable objects.

Bitumen Objects (fig. 146: 1–3)

Natural asphalt/bitumen was known and widely used by the people of the ancient Near East. According to new discoveries from the Syrian desert, bitumen was used by the Neanderthal population during the Mousterian period some 40,000 years ago (Connan 1999, 33). Bitumen was imported from its source in northern and western Iraq, the Mosul and Hit areas, as well as Iran (Connan 2010).

Bitumen and its versatility were manifested in various aspects at Abada as a practical and efficient material. It was involved in sickle making as an adhesive for fixing serrated flint blades to hafts, as attested by many flint pieces still bearing bitumen traces (figs. 526, 527). Stone stirring rods remain stained with bitumen (figs. 132: 5–7; 133). Using "bitumen mixtures as an adhesive to stick flint implements to the handles of various tools was widespread until Neolithic times" (Connan 1999, 36). This versatile material was also used to fill cracks in pottery, which was clear from some examples of big jars that had been repaired with it. It was also used as a waterproof material for containers and boats.

The use of bitumen is limited at Ubaid sites in Southern Mesopotamia, although small objects were found at the Southern Mesopotamian site of Oueili (Huot 1989, 37).

At Abada, a lump of bitumen was found below a stone threshold in room 16 of building A, level I, probably also serving an adhesive purpose.

Some objects made of bitumen were also found; the most interesting is a phallus representation (fig. 146: 1), which is quite similar to the stone phallus from the same level at the site (fig. 137: 1).

Another object which was made of bitumen (fig. 146: 2) is a 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. A big lump of bitumen shaped in the form of a biconcave disc of unknown use was also found (fig. 146: 3).

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 roofs, bearing reed impressions. However, wide patches of clay with impressions of basketry or matting were found at both levels II and I at Tell Abada. 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.

Basketry (fig. 147a: 1; 147b: 1)

A patch of gypsum (6.2 × 9.3 cm) containing an impression of coils has come from level II at Abada, the coils made of some fibrous material and joined with each other 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).

Matting (fig. 147a: 2; 147b: 2)

Sample 2, as shown impressed on a clay lump, is one of other impressions obtained from granaries. This granary from Tell Abada L. I is almost identical in design to types still being manufactured and widely used in Iraq today for storing grain.

The material used in making this type of mat was reed that 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 seventh millennium BC, as shown by the discoveries at Jarmo (Braidwood 1952, fig. 14; Adovasio 1977, 223–30), 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, pl. 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 BC.

CHAPTER 3

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 plain. The latter 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 that allow some understandable reconstruction; only representative forms are illustrated. The quantity of each category is shown in table 1 and figure 148, schema A. Categories of bowls and jars and their relative frequencies are shown in figure 148, schema B, and figure 149. Distribution of illustrated pottery within Tell Abada buildings is demonstrated in appendix 2. From table 19 one can also see that the pottery at Tell Abada can be broadly divided into four main categories according to technical characteristics: 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.

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 that resemble both Choga Mami Transitional Samarra/Ubaid I types and more classical Samarra pottery.

Table 19. Number of sherds and complete vessels found at the sequence of Tell Abada

	Painted Pottery	*No. Recovered*	*Frequency %*
a	Black on buff	55,327	52.04
b	Black on cream	30,036	28.25
c	Brown on buff	11,110	10.45
d	Brown on cream	6184	5.82
e	Red on buff	1104	1.04
f	Red on cream	2556	2.40
	Total	106,317	100.00

Category	*Level III*		*Level II*		*Level I*		*Total No. Recovered*	*Frequency %*
	No.	*Freq.*	*No.*	*Freq.*	*No.*	*Freq.*		
Painted pottery	9617	9.04	51,913	48.83	44,787	42.13	106,317	60.19
Impressed pottery	4205	11.40	17,962	48.69	14,726	39.91	36,893	20.88
Incised pottery	2116	8.86	12,901	54.03	8861	37.11	23,878	13.52
Plain pottery	1123	11.75	5914	61.9	2517	26.35	9554	5.41
Gross total	17,061		88,690		70,891		176,642	100

These ceramic types are also found in association with more conventional Ubaid 2 pottery.[17]

Transitional Pottery (figs. 150–52; 153: 1; 154–58)

Among the pottery from the earliest level at Abada are a number of examples that display similarities both to Samarra and to early Ubaid (Ubaid I) ceramic types. These warrant the term "Transitional," a term first used by Joan Oates in describing the pottery found in the uppermost levels at Choga Mami (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. 151: 1) is reminiscent of the Napfe bowl from the type site (Herzfeld 1930, no. 120), the fringe inside the rim is a very characteristic motif on Samarra pottery from the type site (Herzfeld 1930), Baghouz (Du Mesnil du Buisson 1948), Tell es-Sawwan (Ippolitoni 1970–71), and Choga Mami (Oates 1969). Another version of the same pattern is seen on another carinated bowl found in the same level at Abada (fig. 151: 2). 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 sinuous lines (fig. 151: 3). This is also a typical Samarran motif found at Samarra, Baghouz, and Tell es-Sawwan. The outside decoration recalls similar patterns used on Ubaid 1 bowls from Tell Oueili (Breniquet 1996, pl. IV:1; pl. XXV: 1).

A long-necked jar bearing multiple painted decorative zones covering the entire body is reminiscent of Samarra style (fig. 150: 1). Similar decoration can also be seen on the sherd of another vessel (fig. 155: 3) and is reminiscent of one from Oueili, Ubaid 1 (Huot 1989, fig. 14).

The wide-mouthed pot with rounded belly and slightly flaring rim (fig. 150: 2) is similar to the Flacher Topf (Herzfeld 1930, 57). A variety of typically Samarran motifs were found (fig. 152). The chevron, a distinctive Samarran pattern, is most frequent at Abada, and both right- and left-pointing chevrons were represented (fig. 152: 1, 2).[18] Vertical and diagonal steps (fig. 152: 6, 7), a rhombus (fig. 152: 1), and two rows of hatched triangles separated by zigzags in reserve (fig. 152: 8) are reminiscent of Baghouz (Du Mesnil du Buisson 1948, pl. XXII: 9), wavy lines and solid triangles alternate with each other in opposition (fig. 152: 4). The pattern (fig. 152: 5) consists of a combination of a solid diagonal cross and four cross-hatched triangles, reminiscent of a similar design from Bakun B11 and Bakun A (McCown 1942, fig. 12: 22, 244). A basically similar motif was found at Samarra (Herzfeld 1930, Abb: 218). The most distinctive example is the pot illustrated in fig. 153: 1, which is very reminiscent of Choga Mami (Oates 1969a, pl. XXXII: 5). Another example that could be considered "Transitional" is fig. 157: 3, 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 hemispherical bowl (fig. 157: 4) bears an exterior decoration consisting of a multi-horizontal chevron similar to Samarra (Ippolitoni 1970–71, fig. R: 7). This decoration is reminiscent of one seen on a large body sherd. 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 figure 154: 1 is an interesting combination of Ubaid 1–2 in terms of form and

[17] 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" (Oates 1960; see also Oates 2010). Oates clearly showed 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 1960, 40). Since then the terms "Ubaid 1" to "Ubaid 4" have been widely accepted and used by most Near Eastern archaeologists.

[18] Both right- and left-pointing chevrons were found at Mattarah (Braidwood 1952, figs. 14, 15, 16: 11), Tell es-Sawwan (Al-A'dami 1968, pls. VI, VII, IX, XIV); Ippolitoni 1970–71, fig. T: 16, 17), Baghouz (Du Mesnil du Buisson 1948, pls. 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 Samarra (Tulane 1944, 59), Hassuna (Lloyd and Safar 1952, fig. 16: 17), and Shimshara (Mortenson 1970).

exterior decoration, and Samarra influence in terms of interior pattern, which represents two bands of angular meanders arranged alternatively, forming a running denticulate band. It is noteworthy that meanders are a 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 Mesnil du Buisson 1948, pls. 26–28), Samarra (Herzfeld 1930), and Tell es-Sawwan (Ippolitoni 1970–71, fig. R: 7). A similar design, described as a "defecating ibex," was found at Choga Mami as an exterior pattern (Oates 1969a, 134; pl. XXXI: a). Ibex motifs were also common at Chogha Mish II (Alizadeh 2008, figs. 38: 1; 40: D, E, I, K, L, N; 41: K).

Another bowl similar in shape to the last one is shown in figure 154: 3, and its relation to Samarra is shown by the base interior decoration. The interior of the bowl is decorated in brown paint with impaled divided caduceus, as the "wand of Aesculapius" (Herzfeld 1941, 60; fig. 154: 3); this motif was found on a bowl from Choga Mami (Oates 1969a, pl. XXXII: 1) and Eridu XIV (Safar et al. 1981, fig. 90. 16).[19] The outside is decorated by diagonal bands running between two horizontal bands, which resembles Choga Mami Transitional (Oates 1968, pls. XII, 1, 3). Indeed, the Abada example (fig. 154: 3) is closely comparable in shape to Choga Mami (no. 1). Of special significance is the bowl (fig. 154: 2), which closely resembles a bowl from Choga Safid (Hole 1977, fig. 50: b). In both examples the shapes and the exterior and interior decoration are almost identical.

The sherds seen in figures 154: 4–7, 155, and 156 can be paralleled with Samarra and Ubaid I styles. The painted triangles associated with multiple zigzags (fig. 154: 4) are reminiscent of Choga Mami (Oates 1968, pl. VII: 20, 21), while the pendant half loops below are a 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 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 well fired. The paint is either reddish, brown, or very dark green. A variety of incised decoration is found, such as chevrons (fig. 152: 11), horizontal and vertical zigzags (fig. 152: 10, 11), cross-hatching (fig. 152: 10); diagonal rows of short strokes (fig. 150: 3), and grain-shaped incisions arranged diagonally in a herring-bone pattern (fig. 152: 9). This type of decoration is very common at Tell es-Sawwan (Ippolitoni 1970–71, fig. F: 6, 9, 11; fig. I: 1).[20]

Rectilinear and wavy lines were also used. One piece bearing impressed decoration consists of horizontal rows of fine triangular jabs on the upper rim of a jar (fig. 150: 4).

Four jars are shown in figure 150: 3–6: a globular jar with flaring rim (3) bearing painted decoration of chevron design on the neck outside and incised decoration on the shoulder and body. Another jar (4) with globular body and out-turned rim is of special interest since it was decorated with impressed, painted, and incised designs. Jars 5–6 are globular, with collared neck and plain rim both bearing decoration on the neck and incised decoration upon the shoulders.[21] Decorated low- and high-collared jars are characteristic of early Eridu levels and both Samarra and Hassuna (Oates 1960, 42).

The Ubaid I Pottery

As mentioned above, level III at Abada has produced, in addition to the pottery that has been termed "Transitional," a number of pottery types that 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; Safar et al. 1981), as well as Tell Oueli (Breniquet 1996). 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 that enabled the potters to manufacture thin pottery with extreme care

[19] 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).

[20] Similar designs were also found at Mattara (Braidwood 1952, fig. 14: 8) and Shimshara (Mortensen 1970, fig. 83: f).

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

and apparent taste. A wide range of geometric decorative motifs was employed, such as chevrons, chequered patterns, zigzags, lozenges, cross-hatching, wavy and straight lines, triangles, circles, herringbone patterns, and a variety of reserve decoration. No naturalistic decoration was found, and 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 shown in fig. 157: 1, adorned with dense grid pattern, is closely comparable to a bowl from Eridu XVI (Safar et al. 1981, fig. 92: 2) and one from Ubaid 1 at Oueili (Breniquet 1996, pl. VI: 1), in addition to samples from As-Sabiyya (Smogorzewska 2010, fig. 14). The large, wide bowl (fig. 157: 2) with its elaborate interior decoration is reminiscent of some bowls from Eridu XVIII–XIV bearing an attractive painted decoration on their base interior, and indeed the chequerboard pattern inside the base of this bowl very much resembles a bowl from Hajji Muhammad (U.V.B. 1938, pl. 36). Identical base interior decoration can be seen on a bowl from Arpachiyah (Mallowan and Rose 1935, fig. 58: 4) and Oueili, level Ubaid 1 (Huot 1989, fig. 13; Breniquet 1999, pl. VI: 1). The pattern shown on fig. 171: 1 is closely comparable to one from Oueili, level Ubaid 1 (Huot 1989, fig. 15).

The beakers (figs. 153: 2, 3; 159: 2) resemble examples from Eridu XVI (Safar et al. 1981, fig. 96: 20–22). The jar in fig. 159: 3 is somewhat similar in shape to one from Eridu XIX–XIV (Safar et al. 1981, fig. 72: 29 A). This jar bears a characteristic decoration of Ubaid I style, denticulate bands, which can be seen as a typical motif on Samarran pottery and from which the decoration was most likely derived. This denticulate pattern was found at Eridu XVI (Safar et al. 1981, figs. 96: 3; 95: 2). The upper half of a high-necked jar (fig. 159: 1) is ornamented with a fine and delicate pattern. A graceful bowl of Ubaid I style from Abada is shown in fig. 160: 1, representing a combination of form and decoration typical of the Ubaid I type. The wide open-mouthed bowl (fig. 160: 2) is similar in form to examples from Eridu XIX–XII (Safar et al. 1981, fig. 72: 27 c). 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.

The two bowls illustrated in figure 161 bear the most aesthetic, elaborated, and intricate interior decoration, though they are not very common; however, they are reminiscent of Ubaid 1 examples from Tell Oueili (Beniquet 1996, pl. V: 2; pl. VI: 1). They bear elements that could be assigned to the Ubaid I style, and the reserve wavy line running around the rim interior of the bowl in figure 161: 1 is reminiscent of a Halaf bowl from Arpachiyah (Mallowan 1935, PI. LXVII: b) while the denticulate pattern is a distinctive pattern of Ubaid I at Eridu. The shallow open-mouthed bowl (fig. 162: 4) 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. 162: 2) bears a distinctive decoration: the joined somewhat triangular shapes running around the rim interior, leaving what looks like a large flower in reserve, is 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 hemispherical bowl (fig. 162: 3) 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 fabric and technique (illustrated in figs. 163–67) show more patterns that can be attributed to the Ubaid I style which are comparable to Ubaid I sherds from Eridu. The motifs that consist of multiple zigzag bands with large triangles in reserve (figs. 163: 4; 204: 2, 3, 5, 6) are reminiscent of a sample from Oueili Ubaid 0 (Huot 1989, fig. 10). Of special interest is the motif on the bowls in figs. 163: 6 and 166: 4. This pattern, which consists of small triangular shapes in reserve, is 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. 164: 11–15), the same is true of the Ubaid I repertoire at Eridu (Oates 1960, 35). Another interesting sherd from this level is that in fig. 165: 2, which is decorated with a metope of a 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). More illustrations of Ubaid 1–2 are to seen in figs. 168–86. Of particular interest is the pattern shown on (fig. 169), which recalls patterns from Obeid 1 at Oueli (Breniquet 1996: pl. V: 2, 3).

The Ubaid 2 Pottery (Hajji Muhammad) (figs. 187–89)

The Painted Pottery of Level III

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 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,[22] but some significant sherds were available. Bowls and jars seem to have been the most common, as each of these two classes was found in a variety of forms. Three types of bowls were represented:

1. Wide-mouthed bowls with curved walls and out-flaring rim (fig. 187: 2–4, 6, 9).
2. Wide-mouthed bowls with straight or slightly incurved walls (fig. 187: 1, 8).
3. Bowls with slightly out-curved walls and straight simple rim (fig. 187: 5, 7).

All these types of bowls were decorated in a 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. Almost identical interior decoration can be seen on examples from Abada (fig. 187: 1) and one from Ubaid 2 level at Oueili (Breniquet 1996: Pl XVI: 2).

The exteriors are less highly decorated, and often the decoration consists of only one or two bands (fig. 187: 1, 5–7), sometimes combined with curvilinear lines in between (fig. 187: 3). Other examples are covered from outside with solid paint (fig. 187: 2) that sometimes leaves triangles in reserve (fig. 187: 4). Triangles painted on the inside alternating with others in reserve (figs. 187: 9; 189: 1; 205: 1, 2, 4–11; 224: 7; 300: 3) are another characteristic Hajji Mohammad motif (Ziegler 1953: pls. 4k, 14, 16: b 33: a–f) and can also be found at Oueili (Lebeau 1991b: pl. III: 2; Breniquet 1996, pl. XIV: 6) and As-Sabbiya (Smogorzewska 2013. fig. 15: 5–7). The most distinctive characteristic combination of Hajji Muhammad vessel form plus pattern is shown in (fig. 187: 4), which was decorated with a criss-cross of diagonal bands with tiny squares in between, the latter pattern 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 similar to the Abada example (fig. 187: 4). A criss-cross or oblique grid pattern was also found at Ras Al-Amiya (Stronach 1961, PI. XLIX: 2) and Choga Mami (Oates 1983, fig. 6: 11, 12), and another interesting combination of form and pattern that could be attributed to Ubaid 2 is found on the large wide-mouthed bowls with base interior decoration of a sun-burst pattern (fig. 187: 8, 10). These are identical with examples from Hajji Muhammad (Zeigler 1953, pl. 16 a), Eridu XIV (Safar et al. 1981, fig. 91: 7, 9), Al-Ubaid (Hall and Woolley 1927, pl. XVI), 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. 187: 1), identical with examples from Hajji Muhammad (Ziegler 1953, pls. 1, 13, 27, 34) and Ur Al-Ubaid (Woolley 1956, pl. 50: 23). Reserve decoration seems to have been common in the Ubaid 2 repertoire at Abada, the bowl in figure 187: 2 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 the bowl in figure 187: 5, which consists of small checks, is identical to specimens from Eridu XVIII–VIII (Safar et al. 1981, figs. 89: 23; 91: 12; 92: 12, 17, 19, 29; 93: 1; 94: 10, 13; 98: 37; 99: 2, 3, 20). Hemispherical bowls with all-over patterns were also found (fig. 162: 1).

Jars of Ubaid 2 style from this level are represented by various forms and sizes (figs. 188, 189); probably the most distinctive type is the jar with a projecting ledge inside the rim (fig. 189: 2). Jars with

[22] The examples illustrated in fig. 187: 1–10 were selected for their characteristics representative of the Ubaid 2 pottery from level III at Abada.

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. 189: 2, 3, 6) were found. A series of fairly large jars was also present (fig. 189: 5). Most common are those with globular body, short neck, and out-turned rim (fig. 188: 1–4); indeed, (2) is similar to examples from Eridu XIX–XIV (Safar 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. 188: 7, 8). Figure 188: 5 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. 188: 6) are reminiscent of a type from Hajji Muhammad (Ziegler 1953, pl. 29: f) and Ras Al-Amiya (Stronach 1961, pl. LIII: 7). In all of these examples, the patterns have been nicely executed with lustrous paint in an all-over style, a distinctive feature of Ubaid 2 pottery.

The Plain Pottery of Level III

Plain pottery was represented by only 5 percent 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 small quantity of sherds were found. However, some of those specimens are of great importance for the chronology. Two large coarse jars (figs. 190: 1, 2; 191) resemble a characteristic Hassuna type that is also known from the earliest levels at Eridu (XIX–XIV) (Safar et al. 1981, fig. 72: 30). It is interesting to notice that one jar (fig. 190: 1) has a small concave base that was a characteristic feature of some vessels from Sialk I (Ghirshman 1938, fig. 9: 6). A variety of large and thin carinated bowls made of a well-levigated clay, with a greenish-yellow mien (fig. 191: 4–9), are particularly interesting. It is obvious that this type of bowl (fig. 190: 4) is closely related to that known from Ubaid I and 2 levels at Eridu (XIX–XIV; Safar et al. 1981, fig. 72: 24 A) or "type 10, the most distinctive pottery 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 a 2" (Herzfeld 1930, 12).

The large coarseware jars (fig. 192: 1, 2) ranging in diameter from 45 to 55 cm were probably used for storage purposes, particularly for liquids that may have been involved with pottery making, as suggested by the presence of a layer of bitumen lining the interior of jar (fig. 192: 2). These large jars were found in the building that we thought was used for pottery manufacture (figs. 12, 13).

THE PAINTED POTTERY

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 that appear to belong to the Ubaid 3 ceramic style also occur. Some types that appeared in level III such as the wide-mouthed, carinated bowls (fig. 187), hole-mouthed globular jars (fig. 188), and the jars with a ledge inside the rim (fig. 189: 2) 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, and the fine ware is grit tempered. A slip or wet smoothing was commonly used on both exterior and interior surfaces. Some pieces appear to have been burnished.

The pottery was handmade and monochrome painted. The paint is black, purple-black, brown, red, and orange; each color may be seen in various

shades, and this could obviously be due to the degree of firing and thickness of paint.[23]

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

A large quantity of vessel forms is represented. These broadly include a variety of bowls, jars, beakers, and chalices, and each type is represented by a large number of specimens. We have illustrated many of these types that were found complete or in accurately reconstructable pieces. Various parts of sherds bearing distinct painted decoration were also illustrated. Isolated examples of other shapes were also found. Numbers and percentages of each type based on the calculation of both complete pieces and significant sherds are charted in tables 20 and 21 and figures 148 and 149.

Bowls

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

1. Bell-shaped bowls (figs. 193–95).
2. Hemispherical bowls (figs. 198–203).
3. Hole-mouthed bowls with almost straight or slightly flared sides (fig. 212: 3–7).
4. Large, deep, flat-based, hole-mouthed bowls with various profiles (figs. 213–20).
5. coops (figs. 221: 1–3; 222).
6. Hole-mouthed hemispherical bowls with straight sides (figs. 224, 225).
7. Large, wide-mouthed bowls with flaring rim (fig. 231: 1–4).
8. Small, thin-walled bowls with flat base and flaring rim (fig. 235). A variety of painted decoration covering the entire external surface consists of wavy lines, semi-circles, lozenges, cross hatching, and variant circles (figs. 235–37). Reserve decorations were also used (fig. 238: 1, 2, 6, 9, 1, 18, 20).
9. Large, deep, carinated bowls (fig. 239: 1, 2).
10. Small, wide-mouthed carinated bowls (fig. 242: 1–14).
11. Large, deep bowls with bulging body, concave shoulders, and slightly out-turned rim (fig. 241).
12. Concave-shouldered bowls (a very fine version of the above-mentioned type) (figs. 248). Range of painted motifs shown on (fig. 249).
13. Small, deep, hole-mouthed bowls (fig. 253).
14. Large wide-mouthed bowls with interior patterns (figs. 256–59).
15. Pedestal bowls (fig. 268: 1–3).

Type 1: Bell-shaped Bowls (figs. 193: 1–5; 194–95)

The rim diameter is at least twice the height and ranges from 11 to 16 cm. The bowls are distinguished by their thin, highly fired walls, the thickness of which is between 2 and 4 mm at midsection. The decoration of these bowls shows a rich variety of motifs that seem to have involved almost the entire exterior surface of the bowl. Interior decoration is usually confined to a plain band running around the upper rim. These bowls were as common at both levels II and I at Abada as they were at other Ubaidian sites in Iraq (fig. 511). This type of bowl seems to have been common at the site of Hammam Et-Turkman in northern Syria, where it was represented by a variety of designs (Akkermans 1988, fig. 2). It is interesting to point out that some decorative designs associated with this type of bowl at the latter site closely resemble or are even identical to ones from Tell Abada. The design appearing in Akkermans (1988, fig. 2: 6) is identical to one found on examples from Tell Abada in both bowls (figs. 170: 2; 189: 12; 204: 1) and jars (figs. 344: 5; 346: 2). Notable also is the design on

23 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 color 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	only. Haematite 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.

Akkermans (1988, fig. 3: 30), which is identical to examples from Tell Abada (figs. 249: 4; 299: 7). Another example from Hammam Et-Turkman (Akkermans 1988, fig. 5/64) bears a design resembling one found at Abada (fig. 243: 4). The rare design on Akkermans (1988) fig. 6/86 is reminiscent of one from Tell Abada (fig. 413: 2). Bell-shaped bowls are also represented in plain pottery, which constitutes the vast majority of pottery finds from Hammam Et-Turkman (Akkermans 1988, fig. 7: 110–12). They were also reported from the site of Tel Kashkashok II in northeastern Syria (Koizumi 1993, fig. 10).

Type 2: Hemispherical bowls (figs. 198–203)

These range in diameter from 12.5 to 16 mm. A variety of rim types is represented: rounded (fig. 198: 4), bevelled (fig. 198: 5), flat (fig. 198: 3, 6, 7), plain beaded (fig. 198: 1), or slightly incurved (fig. 199: 4, 10). Apart from the bowl in figure 198: 1, bead rim seems to have been rare at Abada. Two fabrics occur: a thin, hard-fired ware and a well-levigated ware (fig. 199: 1, 2, 8, 9). The thickness of the former ranges between 2 and 2.5 mm, the latter between 3.5 and 4 mm. The type of bowl illustrated in figure 198: 1, 2 and 4 is known from Hajji Muhammad (Ziegler 1953, pl. 28: d) and Ras Al-Amiya (Stronach 1961, pl. XLIV: 5). Indeed, figure 198: 1 closely matches the example from Hajji Muhammad, while the bowl in figure 198: 2 is more comparable to that from Ras Al-Amiya. Hemispherical bowls were also common at the site of Khanijdal East in northern Iraq (Wilkinson et al. 1996, fig. 7) and the sites of Hammam Et-Turkman (Akkermans 1988, fig. 6) and Tell Kashkashok II (Koizumi 1993, fig. 9) in northeastern Syria. Similar bowls with almost identical painted decoration are known from Chogha Mish II (alizadeh 2008, fig. 37: I).

Various decorative motifs were used, such as solid circles encircled by dots (fig. 199: 7, 9). This particular motif is seen on bowls from Tepe Gawra XVIII (Tobler 1950, pl. LXXIII: a), Eridu (Safar et al. 1981, fig. 88: 4), and Al-Ubaid (Hall and Woolley 1927, pl. XVI: 1641). The fringed solid circle (fig. 199: 8) originally appeared on painted Halaf pottery at Arpachiyah (Mallowan and Rose 1935, fig. 62: 3). It is similar to one from Al-Ubaid (Mallowan and Rose 1935; Hall and Woolley 1927, 1621).

The bowl in figure 199: 3 bears an interesting decoration consisting of two different lozenges, one on each side of the bowl. Of particular interest is the floral motif on figures 201: 3 and 202. A full range of the painted motifs can be seen in figures 204–11.

Type 3: Hole-mouthed with almost straight or slightly curved sides (fig. 212: 3–7).

Most bowls of this type are extremely fine, thin walled, hard fired, and well levigated. The bowls illustrated in figure 212: 4 and 5 were decorated with Halaf-like patterns that seem to have continued to be used during the Ubaid period. Other bowls were decorated with patterns[24] familiar in the Ubaid period[25] (c, e, f, g, i; figs. 212: 1, 3, 6, 7; 213). Comparable shapes appear at Deh Luran-Susiana black-on-buff pottery (Hole et al. 1969, fig. 55) and other sites in Iraq (fig. 511).

Type 4: Large, deep, hole-mouthed flat based bowls (figs. 213–20)

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

1. Rounded sides, flat base, and diagonal flattish rim (fig. 213: 1, 2, 4).
2. Rounded body, flat base, and straight rim (fig. 213: 3, 5, 6, 9).
3. Rounded body and beaded rim (fig. 213: 6). 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 (fig. 213: 8, 10). 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 from Hajji Muhammad (Ziegler 1953, Pla. 37b: 78–81).

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[24] Lozenge shapes filled with dots (fig. 212: 4) can be seen on Halaf sherds from the type site (Oppenheim 1943, pl. III: 16: pl. XLII: 17). The solid circle surrounded by small dots (fig. 212: 5) is similar to one on a Halaf bowl from Arpachiyah (Mallowan and Rose 1935, pl. XVIII; figs. 58: 4; 76: 2), and Tepe Gawra (Tobler 1950, pl. LXVII a: 16; pl. LXIX b: 20).

[25] 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).

Wavy lines, snake motifs (fig. 219: 4) and reserve decoration were also found (figs. 213: 1; 214). A snake motif seems to have been a common decorative design on pottery vessels at Abada, as can be seen, for instance, in figures 219: 4 and 244: 1.

Type 5: Scoops (figs. 221: 1, 3; 222)

These peculiar vessels were designed with a U-shaped section and either straight out-turned sides (figs. 221: 1; 222) or concave sides with flaring rims (fig. 221: 2, 3). The bases are almost flat. Examples bearing painted decoration covering the entire body are shown in figure 221: 1, 2, 4, 5. One example has its decoration on the upper half of the body (fig. 221: 3). The bowl in figure 221: 5 was entirely covered with solid black paint.

This type of vessel seems to have first appeared during the Halaf period at Arpachiyah (Hijara 1980, PI. LXXVI, layers 13–12, no. 529). Similar examples were found at Hajji Muhammad (Ziegler 1950, pls. 21 b; 22: b). It was also found at Tepe Gawra XVIII–XX and described as being a scoop that "may have been used in that manner to obtain liquids or other substances from skins or any kind of large container" (Tobler 1950, 137; pls. LXXIII: e; CXXIII: 112; CXXV: 145, 147). An oval variant was reported from Ras Al-Amiyah (Stronach 1961, pl. LI: 13).

The examples from Abada are closest to both those from Hajji Muhammad in terms of the overall patterns and those of Ras Al-Amiya, which shows the simplest of motifs.

Type 6: Wide-mouthed bowls with straight sides (figs. 224–25)

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 covering almost the whole body. Some of the decorative motifs appear for the first time in this level and have not been found previously at any Ubaid site. Of interest is decoration that consists of a question-mark–shaped motif arranged in two rows across the body (figs. 224: 1; 230: 2). Another unusual motif consists of a series of lozenges containing a ladder-shaped decoration placed in a diagonal position (figs. 224: 2, 3: 227: 2, 3, 9).

Variations of triangles both painted and in reserve were common motifs on pottery from the three levels of the site (figs. 224: 7; 189: 1; 204: 1, 2, 4–7, 10). These closely resemble specimens from Eridu (Safar et al. 1981, figs. 86: 22; 91: 6) and Tell Hammam Et-Turkman in Syria (Akkermans 2010, fig. 2: 6). The range of variation in the painted designs is illustrated in figures 228–30.

Of note is the decoration consisting of multiple vertical zigzags (figs. 229: 6; 230: 1, 6; 297: 5). This motif can be traced on Ubaid 1–2 pottery from Oueili (Lebeau 1991a, pl. VIII: 4), H. Mohammad (Ziegler 1953, pls. 3: k, q; 27: e, 29: e), Eridu XII (Safar and Lloyd 1981, fig. 88: 7) and Ras Al-Amiya (Stronach 1961, pl. XLVI: 3, XLVII: 5, LIV: 8–9).

Type 7 (fig. 231: 1–21)

These are large, wide-mouthed bowls with flaring sides and rims ranging in diameter from 20 to 40 cm. Bases seem to have been rounded in most cases, flattish bases were also found (fig. 231: 3). A variety of decorative motifs is associated with this type of bowl, most of which are known from other Ubaid sites, such as running lozenges in solid form (figs. 231: 5) or blank (fig. 231: 4), and hanging triangles interrupted at intervals (fig. 231: 2)[26] and running fishes (figs. 231: 1; 232: 2).[27] 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 4 and 5, respectively. A full range of motifs associated with this type of bowl is seen in figures 233 and 234.

Type 8: Small, thin-walled bowls with flaring rims and flat bases (figs. 235: 1; 236)

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 and 4 mm at midsection. Rim diameters range from 12 to 16 cm. The bowls display patterns more akin to the Ubaid 2 style. A full range of the decorative

[26] This kind of pattern is known from Tepe Gawra XX–XVII (Tobler 1950, figs. 83–85, 97).

[27] 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). An 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).

motifs found in association with this type can be seen in figure 238.

Type 9: Large, deep carinated bowls (figs. 239: 1, 3; 240–41)

Two kinds of profiles are represented; in the bowls in figures 239: 1 and 240, the walls tend to lean inward immediately after the carination, while in figures 239: 3 and 241, they rise vertically above the carination and then gradually flare toward 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 in an all-over style. The pattern in figure 239: 1 consists of superimposed black triangles; it is reminiscent of a Halaf motif from Arpachiyah (Mallowan and Rose 1935, pl. XV) and examples from Eridu (Safar et al. 1981, fig. 84: 16), Tepe Gawra XIIA-XII (Tobler 1950, pl. CXXXIX: 39), and Kanaan Tepe (and Godedzor; Chataigner 2010: fig. 23. 6). The pattern on the bowl in figure 239: 3 is reminiscent of Ur Ubaid I (Woolley 1956, pl. 46: a).

Type 10: Small carinated bowls (fig. 242: 1–14)

These are relatively small, with a sharp carination of the lower third of the bowl. The diameters range from 12 to 18 cm and the depths between 5 and 7 cm. The walls tend to be either straight (fig. 242: 1–3), or curving slightly inward (fig. 242: 4, 11), or slightly outward (fig. 242: 5, 6). The base is usually flat.

These elegant, fully decorated carinated bowls have no comparable counterparts elsewhere as far as the form is concerned, but one bowl (fig. 242: 6) 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.[28] The design on figure 242, consisting of crosshatched lozenges alternating with blank ones around the upper half of the bowl, is identical to one from Tell Uqair (Lloyd and Safar 1943, pl. XX: 14). The range of variation of painted patterns is figure 243.

Type 11 (fig. 244: 1–8)

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 diameters range between 22 and 30 cm. The depth is between 15 and 20 cm. Decoration on these bowls finds its closest counterparts among the Hajji Muhammad repertoire;[29] most common seems to have been the zigzag pattern depicted in different forms (fig. 244: 1–4, 8) and (figs. 245–247). Very interesting is the zigzag (fig. 244: 1) combined with diagonal bands on one arm and a snake motif on the other. Equally interesting are the superimposed striped chevrons (fig. 244: 5).

Type 12 (fig. 248: 1–6)

These bowls are similar to the last type, but the fabric is extremely fine, 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 (fig. 248: 2) that can be found at Hajji Muhammad (Ziegler 1953, pl. 37 d: 136), Ras Al-Amiya (Stronach 1961, pls. XLII: 8; LIX: 1, 3), Arpachiyah (Mallowan and Rose 1935, figs. 64, 65) and Tell Halaf (Oppenheim 1943, pl. XI: 6). Comparable patterns were also found at Nuzi (Starr 1937, Pla. 48: JJ 2, KK) and Tepe Sabz (Hole et al. 1969, fig. 62: g). The motif on figure 248: 2, consisting of crosshatched lozenges, has appeared on other bowls both from level II (fig. 199: 3) and level I (fig. 225: 4) at Tell Abada. It also resembles one from the site of Tell As-Sabiyah (Carter 2010, 3.17: 32). One bowl (fig. 248: 4) was nicely decorated with a 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 like Ras Al-Amiya (Stronach 1961, pl. LVII: 21) and Tell Hammam Et-Turkman in Syria (Akkermans, fig. 3: 30). The close-style pattern so characteristic of the Ubaid 2 style appears on a bowl (fig. 248: 1) where the pattern is

[28] The pattern on the bowl in figure 244: 1 resembles that from T. Uqair (Lloyd and Safar 1943, pl. XXB: 14) and Serik (Oates 1968. pl.VI:2). The pattern on figure 244: 2 is known from Sialk III (Ghirshman 1938, pl. XLVIII A9). (fig. 244: 3) is reminiscent of Giyan VA (Contenau and Ghirshman 1935, pl. 42: 12). A similar motif to (fig. 244: 4) was found at Bakun SIX (McCown 1942, fig. 11: 60). Figure 244: 5 is known from Bakun AIV (Langsdorff and McCown 1942, pl. 47: 8).

[29] A) The solid horizontal zigzag (figs. 244: 2; 247: 1) is similar to Hajji Muhammed (Ziegler 1953, pl. 15: a), Tell Uqair (Lloyd and Safar 1943, pl. XIX: 13), and Al-Ubaid (Hall and Woolley 1927, pl. XV). B) The combination of a criss-cross pattern and solid zigzag (fig. 244: 7) is closely comparable to Hajji Muhammed (Ziegler 1953, pl. 6: c). The bowl (fig. 244: 7) decorated with two bands crossed diagonally leaving reserved little lozenges in a reserved rectangular shape is reminiscent of Hajji Muhammad (Ziegler 1953, pl.22: b, c) and resembles one from Ras Al-Amiya (Stronach 1961, pl. XLVII: 5).

neatly executed in a way which is more reminiscent of the Ubaid I ceramic style. The reserve pattern seen on the bowl in figure 248: 6, 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 Mesnil du Buisson 1948, pl. XXVIII: 2 a), and a Samarran sherd at Hassuna (Lloyd and Safar 1945, fig. 16: 21) and Hajji Muhammad (U.V.B. 1937, pl. 37 a). The range of the variation of the painted motifs shown in (figs. 249–52) finds close parallel with motifs on painted pottery from Al-Ubaid (Hall and Woolley 1927, pl. XVI) and Ubaid 2 at Oueili (Breniquet 1996, pl. XII–XVII).

Type 13: Small, deep bowls (fig. 253: 1–5)

These are small, deep bowls with either rounded or flattish bases. The sides are either slightly flared (fig. 253: 2–4) or slightly interned (fig. 253: 1, 5). These bowls are decorated with all-over patterns, the most attractive of which consists of vertical zigzags in reserve (fig. 253: 4). This pattern is somewhat reminiscent of Ur Ubaid (Woolley 1955, pl. 50: 17). The wavy line in reserve (fig. 253: 5) is similar to one from Hajji Muhammad (Ziegler 1953, pl. 37: 125). A full range of the painted designs is shown in figure 254.

Type 14: Open, carinated bowls with interior and exterior decoration (figs. 255–62)

These are generally large, open bowls with flaring sides that 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). This type of vessel "is one of the most characteristic and abundant vessels of the Khazineh and early Mehmeh phases" (Hole et al. 1969, 144; figs. 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 patted 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 (figs. 257: 1; 261: 1, 4). Some examples were densely covered with paint leaving geometric shapes in reserve (fig. 256: 1, 2). Of special interest is the exterior pattern on bowl (fig. 256: 2), which shows triangles in reserve. This pattern is similar to examples from Hajji Muhammad (Ziegler 1953, pls. 14, 15: c), Ras Al-Amiya (Stronach 1961, pl. XLVIII: 2) in Iraq, and Bahra 1 (Smogorzewska 2011, 42) in Kuwait. The pattern on the bowl in figure 258: 1, 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 Arpachiyah (Mallowan and Rose 1935, pl. XV).

The decoration of the interiors of the bowls is rather interesting. In each example the pattern covers the entire internal surface of 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. 257: 2–3). 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), Eridu XIV (Safar et al. 1981, fig. 90: 3–5), Ras Al-Amiya (Stronach 1961, pl. XLIX: 2), Choga Mami (Oates 1984, fig. 6: 11, 12), and Bahra 1 (Smogorzewska 2011, 39, 40). 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. 257: 1) is reminiscent of an example from Eridu XIV (Safar et al. 1981, fig. 91: 4). Decoration on the interior of the rim of the bowl shown in figures 258: 3 and 259, which consists of zones of concentric semi circles, is reminiscent of a pattern on Halaf bowls from Tepe Gawra XIII (Tobler 1950, pl. CXIII: 28).

Bowls decorated with the "sunburst" or "rosette" (figs. 256: 2; 263) seem to have been very popular in level II at Abada, and the Hamrin sites of Tell Rashid (fig. 443: 7–8), Songor A (Fujji 1981, fig. 35: 8), and Songor B (Fujji 1981: fig. 46: 7). Identical bowls were found at Hajji Muhammad (Ziegler 1953, pl. 16: a) and Eridu XIV and XIII (Safar et al. 1981, figs. 91: 7, 9; 89: 20), Al-Ubaid (Hall and Woolley 1972; pl. XVI), and Ras Al-Amiya (Stronach 1961, pl. XLVIII, 2; pl. XLIV: 1, 2). It was also present at Tell Oueili (Lebeau 1991, pl. 1; 6–11) and Tell As-Sabiyah in Kuwait (Carter 2010, fig. 3.15: 1; Smogorzewska 2011, 42; Smogorzewska 2013, fig. 6: 1). It is interesting that one example from

Ras Al-Amiya is similar to that from Abada in terms of shape and pattern.

Similar patterns were also found at Serik (Oates 1968, pl. 81: 5) and Tepe Sabz (Hole et al. 1969, fig. 56: b, d). This particular pattern seems to have continued until 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. 258: 3) 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 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). A large open bowl (figs. 255: 1; 258: 2) is decorated with a large cross-hatched square, seemingly alternate with a blank one on the exterior, and a sweep design on the interior. The pattern on the base interior of another bowl (fig. 256: 1) is reminiscent of a Halaf design from Arpachiyah (Mallowan and Rose 1935, pl. XVII, b; fig. 55: a) and on a sherd from As-Sabbiya (Smogorzewska 2013, fig. 6:1). The interior decoration on the bowl in figure 260: 1 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 the bowl in figure 257: 2, in which the circle is equally divided into two different designs, is interesting. The interior decoration on the bowl in figure 261: 1 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. 261: 3). It is characterized 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. 262: 1–4) as similar bowls were found at Arpachiyah (Mallowan and Rose 1935, fig. 29: 6), 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). More examples of this type are illustrated in figures 263–67. The bowl (fig. 262: 2) is similar in form to one from Ubaid 1 at Oueili (Brenequet 1996, pl. XXVI), which is internally decorated with snake motifs reminiscent of bowls from Abada.

Type 15: Pedestal bowls (fig. 268: 1–3)

Pedestal bowls are very rare among the Ubaid pottery from Abada; however, two interesting examples were found. That shown in figure 268: 1 is wide mouthed and 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 that was attested at Hajji Muhammad (Ziegler 1953, pl. 21: a, b; pl. 25: e). That in figure 268: 2 is a unique bowl of another type of pedestal, with a high, projecting ring. A similar pedestal was reported from both sites of Tell Maddhur (fig. 499: 16) and Ras Al-Amiya (Stronach 1961, pl. XVII: 14) and is also known from Ubaid 1 at Oueili (Breniquet 1996, pl. XXIII: 4). The high pedestal, out flaring overall painted bowl (fig. 268: 3) is reminiscent of an example from Ubaid 0 at Oueili (Breniquet 1996, pl. 1: 2).

Jars (Level II)

A large number of 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. 282–85).
2. Handled jars (fig. 285: 7–10).
3. Interior-ledge-rim jars (figs. 296–97; 301: 1; 303).
4. Necked jars (figs. 301: 2–8; 303–6; 308–10; 313–22).
5. Small carinated jars (figs. 324: 1–3).
6. Spouted jars (figs. 334–37).
7. Large storage jars (figs. 338: 1–5; 340).
8. Globular jars with short neck and out-turned rim (figs. 344: 1–5).
9. High-necked jars (fig. 344: 6).

Type 1: Lugged jars (figs. 282–85: 1–6; 290: 2; 287–89)

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 variety of designs ,some of which were known from Hajji Muhammad and other Ubaid sites.[30] Indeed, the combination of zones of different motifs seen on some jars (figs. 284: 1–4; 285: 1–4, 6) is reminiscent of Tepe Gawra XIX–XVI in terms of execution and style of painting, but the Abada specimens are neater and the paint more lustrous. V-shaped motifs in a free field (figs. 282: 1, 6; 284: 2) are reminiscent of Al-Ubaid (Hall and Woolley 1927, pl. XLIX: 515), Tell Uqair (Lloyd and Safar 1943, pl. XX), Ras Al-Amiya (Stronach 1961, pl. LVIII: 10), Tepe Gawra XVII (Tobler 1950, pl. LXXIV b: 14–16), and Choga Mami (Oates 1984, fig. 5: 4). The last motif together with that in figure 285: 6 are both of Halaf inspiration and can be paralleled at Arpachiyah (Mallowan and Rose 1935, fig. 64: 2 and fig. 60: 2).

Type 2: Handled jars (fig. 285: 7–10)

These are large jars with a globular body and short, out-turned neck similar to Type 1 but provided with looped handles set either on the upper shoulder or immediately below the neck. In most cases the loops were painted with horizontal or diagonal stripes. Some examples had no decoration. Striped handles were first found in the Samarra period at Baghouz (Du Mesnil du Buisson 1948, pls. X, XIII) and reported from Tepe Gawra XlII (Tobler 1950, pl. CXXX: 223). They are also known from the Bayat phase at Tepe Sabz (Hole et al. 1969, fig. 63: h). Apart from the above-mentioned sites, this type of jar was not apparently common in Ubaid sites.

Type 3: Interior-ledge-rim jars (figs. 296, 297; 301: 1; 303).

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 (Safar et al. 1981, fig. 72: 73), Hajji Muhammad (Ziegler 1953, pl. 29 a, b), Tepe Gawra (Tobler 1950, pl. CXXII: 107), Ras Al-Amiya (Stronach 1961, pl. LIV: I and J, 6), Arpachiyah (Mallowan and Rose 1935, fig. 38: 1), Choga Mami (Oates 1984, fig. 6: 5), Khanijdal East (Wilkinson et al. 1996, fig. 1: 27, 28), Tell Nader (Kopanias et al. 2012, fig. 23: 14, 15), and other Ubaid sites (fig. 511).

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 thatthey may be a typical Ubaidian form. Designs associated with this type of jar are common within the Ubaid 2–3 repertoire (fig. 298). Of interest is the large jar (figs. 301: 1; 303) that 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. Flying birds are a common motif on the Ubaid pottery from Tell Abada (figs. 308–12). They were also found at the sites of Tell Uqair (Lloyd and Safar 1943, pl. XIX: 11), Al-Ubaid (Hall and Woolley 1927, pl. XIX: 1613, 1616, 1634), and Tepe Gawra XIX–XVIII (Tobler 1930, pls. LXIX: 1; LXX a: 12; LXX b: 14; LXXI b: 9). The horizontal row of opposite sold triangles (fig. 296: 2), seen also on vessels from level III (fig. 189: 3), level II (fig. 344: 1), and level I (fig. 200: 3), is comparable to specimens from Al-Ubaid (Hall and Woolley 1927, pl. XVIII: 1601, 1807, 1813), Tepe Gawra XIX (Tobler 1950, pl. LXIX b: 16), and Ras Al-Amiya (Stronach 1961, pls. LIV: 4; LVII: 22).

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[30] The painted motif on (fig. 282: 2) is similar to Hajji Muhammad (Ziegler 1953, pl. 37: 65–67), Ras Al-Amiya (Stronach 1961, pl. LVIII: 14), and Choga Mami (Oates 1984, fig. 4: 6). Impaled oval-shaped patterns in reserve (fig. 282: 4) are identical to Hajji Muhammad (Oates 1984, pl. 37d: 134). Hanging loops (fig. 284: 1, 3) is another common pattern at Hajji Muhammad (Oates 1984, pl. 37b: 78–79). Opposing rows of alternating triangles (fig. 283: 1; 291: 3) are known from Hajji Muhammad (Oates 1984, pl. 37 b: 55), Ras Al-Amiya (Stronach 1961, pl. LVII: 22), Tepe Gawra XIX, XVIII (Tobler, pl. LXIC b: 16; pl. LXXb: 12), Tell Uqair (Lloyd and Safar 1943, pl. XIX: 18), and Tell Ubaid (Hall and Woolley 1927, pl. XVIII: 1807). An identical motif was found in the Halaf well at Choga Mami (unpublished).

Lugged jars were common at most of the Ubaid sites in Mesopotamia like Tell Uqair (Lloyd and Safar 1943, pl. XX), Tepe Gawra XIX (Tobler 1950, pl. LXIX: 4, 5), Ras Al-Amiya (Stronach 1961, pls. LIII: 1; LV: 8–11), and Arpachiyah (Mallowan and Rose 1935, fig. 34: 1, 5, 6).

Type 4: Necked jars (figs. 301: 2–8, 302, 304–6).

These are globular jars with a short everted neck springing directly from the shoulder. The base could be either rounded or slightly flattened. The decoration on these jars shows a wide variety of patterns, some of which reflect Halaf influence, such as that in figure 301: 6 and 7, which consists of horizontal parallel rows of small, solid circles. This motif is seen on specimens from Arpachiyah (Mallowan and Rose 1935, figs. 64, 65), Tell Al-Ubaid (Hall and Woolley 1927, XVI: 1551, 2285), and Ras Al-Amiya (Stronach 1961, pl. LVIII: 5; LIX: 20). The fish-scale pattern on a jar (fig. 304: 2) is another Halaf design at Arpachiyah (Mallowan and Rose 1935, fig. 78: 1); it is interesting to note that this pattern was common in Arpachiyah and "was deliberately copied in the Al-Ubaid period" (Mallowan and Rose 1935, 167). The motif in figure 304: 6 is identical to one on a Halaf jar from Tepe Gawra (Tobler 1959, pl. CXVI: 57). The jar in figure 304: 1 is remarkably decorated with a cross-hatched circle within a circle in reserve; next to it is another pattern, which looks like a lanceolate motif in reserve.

The motif on the jar in figure 304: 5 is closely comparable to one on another jar of the same type from level I (fig. 313: 1). This motif was common on specimens from Abada level II (figs. 224: 5; 228: 19–21), and they are closely comparable to designs from Eridu (Safar et al. 1981, fig. 98: 17).

Type 5: Small carinated jars (figs. 324–27)

These are relatively small jars with an elongated body, flat base, and short out-turned neck. The carinated part of the body is on the lower third. The upper two-thirds of the body is nicely painted in dark brown with beautiful patterns in reserve (figs. 324: 1, 3; 325). The latter example has a painted decoration on the inner rim consisting of running triangles (fig. 327: 3). The jar in figures 324: 2 and 326 bears decoration consisting of rectilinear and curvilinear patterns.

Type 6: Spouted vessels and spouts

Spouted vessels of various types occurred in this level at Abada. This was indicated by the presence of several types of detached spouts (figs. 336 and 337).[31]

Various sizes of spout were found. The lengths range between 4.5 and 8.00 cm. Shapes vary also, the most popular type being the trumpet-shaped spout (fig. 336: 1, 6, 8, 10–12).[32] Cylindrical spouts (fig. 336: 2–4) and tabular ones (e) (fig. 336: 5) were also found. Spouts were either entirely or partially painted. Some examples were in plain ware (fig. 336: 3, 11), but these could have belonged to painted vessels. A hemispherical vessel with an upright diagonal spout just below the rim (fig. 336: 7) is notable. This vessel bears a floral motif similar to one from Tepe Gawra XVIII (Tobler 1950, pl. LXXb: 8).

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 such as Arpachiyah (Mallowan and Rose 1935, fig. 30: 6) and Khanijdal East (Wilkinson et al. 1996, fig. 10: 51).

Type 7: Large storage jars (fig. 338: 1–5)

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 attractively decorated with all-over painted designs, sometimes covering the entire exterior from rim down to base (fig. 338: 2). Extra-large, thick, coarse, heavily tempered with chaff, and cursorily painted examples were also found.

Type 8: Globular jars with short neck and out-turned rim (fig. 344: 1–5)

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. 344: 1) was known as early as the Samarra period (McCown 1942, fig. 12: 86) and Halaf (Mallowan and

[31] The only spouted vessel that could be reconstructed represents a deep bowl with a trough spout bearing a beautiful floral decoration (fig. 336: 7). Bowls with trough spouts in both plain and painted pottery are known from the Muhammad Jaffer and Sabz phases in Deh Luran (Hole et al. 1969, figs. 43: o–r; 44: c).

[32] It is essential to point out that this type of spout is usually associated with lenticular or "tortoise-shaped" vessels.

Rose 1935, fig. 87: a); it is also found at Hajji Muhammad (Ziegler 1953, pl. 37 a: 22), Eridu XIV (Safar et al. 1981, fig. 91: 6), and Sialk III (Ghirshman 1938, pl. LXXXII: d). The running cross-hatched lozenges in reserve (fig. 344: 2) are reminiscent of a Halaf design from Arpachiyah (Mallowan and Rose 1935, fig. 72: 3).

Type 9: High-necked jars (fig. 344: 6)

Just one example 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 Hajji Muhammad (Ziegler 1953, pl. 29: c), but more interesting is that the jar from Abada is decorated on its neck with a typical Hajji Muhammad design (Ziegler 1953, pl. 37 b: 71, 72) and thus shows a classic combination of both form and pattern of the Ubaid 2 style.

THE DECORATED POTTERY OF LEVEL I

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 reconstructable sherds are charted in tables 20 and 21 below (see figs. 148, schema 1, 2; 149).

The painted pottery from this level displays all the typical features of the Ubaid 3 phase well known from Ubaid sites elsewhere. The fabric is generally fine, but some pieces display a high chaff content. A 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.

In general, the fabric is fine. Fine grit was commonly used for tempering. Chaff- or straw-tempered wares 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.

Bowls

Bowls were numerous at this level and many types are present. Types 1–9 of the previous 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. 194: 1–9)
2. Hemispherical bowls (figs. 200–202)
3. Bowls with almost straight and flared sides (fig. 212: 1, 2)
4. Large, deep bowls (figs. 218–20)
5. Scoops (figs. 221: 4–5; 223)
6. Hemispherical bowls with straight sides (fig. 225: 1–6)
7. Large, wide-mouthed bowls with flaring rim (fig. 231: 5, 6)
8. Small, thin-walled bowls with flat base and flaring rim (figs. 335: 4, 5).
9. Large, deep carinated bowls (figs. 239: 2)
10. Deep, hole-mouthed bowls with broad ornamented rim (figs. 269–272).
11. Incurved rim bowls (fig. 273: 1, 2)
12. Bowls with rounded sides and flat base (fig. 273: 4–8)
13. Wide-mouthed bowls with bold sweeping interior design (figs. 274 and 275).
14. Deep, carinated bowls (figs. 276–78)
15. Basins (figs. 279: 1, 2; 280)
16. Hole-mouthed bowls with rounded or flat base (fig. 279: 3–5)
17. Miniatures (fig. 281: 1–3)
18. Miscellaneous bowls (fig. 281: 4–8)

Type 1: Bell shaped (fig. 194: 1–9)

These are similar to those of the previous level (fig. 193: 1–5), but they are more common in this level and are represented by two versions; a thin, hard-fired group of well-levigated fabric, which constitutes the larger proportion, and ordinary fabric. Of special interest is the thin-walled bowl (fig. 194: 5) 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; pl. CXXVII/182). An identical motif is seen on jars from Eridu XIII (Safar et al. 1981, fig. 89: 12), Al-Ubaid (Hall and Woolley 1927, pl. XVI: 1652), Tepe Gawra XVI–XV

(Tobler 1950, pls. CXXV: 148; CXXVII/182), and Ras Al-Amiyah (Stronach 1961, PL. LVIIl: 7–9).

Type 2: Small, deep hemispherical bowls (figs. 200–2)

This type of bowl was the most numerous. It is hole mouthed with curved sides and either a flat or rounded base. A variety of patterns was used to decorate these bowls. Those in figure 221: 1 and 2 bear patterns identical to examples from Hajji 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 one bowl (fig. 201: 3). This is closely comparable to one from Tepe Gawra XIII (Tobler 1950, pl. CXXVIII: 187). This type of bowl seems to have been widespread and common at Khanijdal East (Wilkinson et al. 1996, fig. 7: 1–18) and other Ubaid sites (fig. 511).

Type 3: Straight-sided bowls (fig. 212: 1, 2)

These are similar to the same type from the previous 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, one bowl (fig. 212: 1) is poorly painted with a motif reminiscent of Hajji Muhammad (Ziegler 1952, pl. 37 a: 43). The other bowl (fig. 212: 2) also bears a pattern similar to one from Hajji Muhammad (Ziegler 1952, pl. 37 b: 51).

Type 4: Large, deep bowls (figs. 218–20)

These are rather large, deep, thick-walled pots with diameters ranging from 20 to 50 cm, hole mouthed and with a flat diagonal rim that sometimes bears simple decoration (figs. 218: 1, 3, 5, 9; 220: 1–6). The base is flat in most cases, though rounded bases also occur. 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. 220: 1) and a snake motif (fig. 219: 4) were also found.

Type 5: Scoops (figs. 221: 2, 4,5; 223)

These have a flat base and straight sides, similar to ones from the previous level (figs. 221: 1–3; 222), but the decoration here is rather naive and simple. Bowl 4 is reminiscent of an example from Tepe Gawra XVIII (Tobler 1950, pl. LXXIII: e). Bowl 5 was fully covered with black paint on the exterior.

Type 6: Hemispherical bowls with straight or slightly out turned sides (fig. 225: 1–6)

These are similar to examples from the previous level. Some patterns associated with these bowls are reminiscent of the Halaf repertoire, such as lines of connected solid circles (fig. 225: 1, see Oppenheim 1943, pl. XLVII: 1) and hatched lozenges (fig. 226: 4, see Mallowan and Rose 1935, figs. 63: 1; 71: 7–9; 72: 1–5). An attractive design is seen on one bowl (fig. 225: 3), which consists of a combination of different decorative elements: solid lozenges alternating with small circles followed by a row of bigger solid lozenges and double meandering bands running between two rectilinear bands. The design on the bowl in figure 225: 6 is similar to Hajji Muhammad (Ziegler 1953, pl. 3: k) and Tepe Jowi (Le Breton 1947, fig. 23: 7). The serrated circle (fig. 225: 2) is reminiscent of Al-Ubaid (Hall and Woolley 1927, pl. XVI: 1621). Some examples have a painted inner rim (fig. 225: 2, 3, 6).

Type 7 (fig. 231: 5, 6)

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

Type 8 (fig. 235: 4, 5)

These are similar to the above-mentioned type but are of fine fabric, hard fired, and thin walled. As was the case with their counterparts in the previous level (fig. 237: 1–3), they are painted in an all-over style with beautiful designs of Ubaid 2 appearance.

Type 9 (fig. 238: 2)

This hole-mouthed, large, deep, carinated bowl is similar to an example from level II (figs. 239: 1, 3; 240; 241) but is decorated in a simpler style.

Type 16: Deep bowls with broad overhanging decorated rims (figs. 269–72)

This type of bowl can be separated into three subtypes based on differences in size, shape, and rim form.

16A: Relatively small, almost hemispherical with rounded bases (figs. 269: 1–2; 270: 1, 2; 271: 1–4; 280: 7–8, 10), in all these specimens the broad out-turned rims are nicely ornamented with a variety of motifs, and reserve decoration seems to have been the favorite style. Of special interest is the bowl in figures 269: 1 and 270, for it is the only one of this type bearing interior decoration. The diameters of these bowls range between 10 and 15 cm.

16B: Medium-sized bowls (fig. 272: 1–4), 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 and 20 cm. The exterior decoration consists of a simple broad band running horizontally around the upper half of the bowl.

16C: The last subtype of these bowls is large with a flat base and walls expanding toward a wide mouth. The diameters range between 35 and 40 cm (figs. 269: 3, 5; 272: 5, 6, 9). The width of the decorated rim reaches up to 5 cm in some examples. Within this group we may include figure 219: 6, a large pot whose diameter is about 50 cm, with a 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, however it was painted with a plain band.

This type of bowl seems not to have been common at other Ubaid sites; however, a few specimens were found. At Telul eth-Thalathat a similar bowl was found (Egami 1959, figs. 18: 10; 68: a). Comparably ornamented rims were found at Tepe Giyan (Contenau and Ghirshman 1935, pl. 40: 11) and Khanijdal East (Wilkinson et al. figs. 9: 41; 10: 48, 49).

Type 17: Incurved bowls (fig. 273: 1, 2)

This type is hole-mouthed with a 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 Tell Kheit Qasim (fig. 501: 8), Telul eth-Thalathat (Egami 1959, fig. 18: 3, 4), Nuzi (Starr 1937, pl. 42: H1, 2; K, 2; L1, 2), and Khanijdal in northern Iraq (Wilkinson et al. 1996, fig. 8: 27–30). Two examples from the latter site (Wilkinson et al. 1996, fig. 8: 279, 280) are closely comparable to our examples. Sharply incurved bowls in plain versions were reported from Hammam Et-Turkman (Akkermans 1988, fig. 7: 90–93, 95, 96), Tell al-'Abr (Yamazaki 2010, fig. 19.7), and Kashkashok II (Koizumi 1993, fig. 8: 86–2/3). Similar bowls with less incurved rims were found at Tell Halaf (Oppenheim 1943, pl. XXXI: 7) and other sites (fig. 511).

Type 18: Bowls with rounded sides and flat bases (fig. 273: 4–8)

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 (fig. 273: 5), simple (fig. 273: 4, 7, 8), and beveled (fig. 273: 6). Patterns associated with this type of bowl generally consist of rectilinear simple bands, serrated bands (fig. 273: 6), and hanging loops. One example has the same design displayed both inside and out (fig. 273: 7).

Type 19: Wide-mouthed bowls with bold sweeping designs (figs. 274 and 275).

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 is 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 Arpachiyah (Mallowan and Rose 1935, fig. 32). Comparable bowls were reported from Tell Kashkashok II in northeastern Syria (Koizumi 1993, fig. 12). Of special interest is the fact that these bowls were found only in association with burial urns at both Abada and Arpachiyah, where they were used to cover the mouth of the urn. Similar examples were found at Khanijdal East (Wilkinson et al. 1996, fig. 8: 23–25).

Type 20: Deep, carinated bowls (figs. 276–78)

In most cases these bowls were made of a well-levigated fabric, with thin walls and highly fired. The rim diameters range from 13 to 17 cm with either straight sides (fig. 276: 3, 4, 6), or slightly concave ones with flaring rims (fig. 276: 1, 2, 5). The base is usually flat, but the possibility of a ring base cannot be excluded since it is represented in one bowl (fig. 276: 7).[33] Most bowls of this type were associated with a particular design in various aspects, consisting of a cypress-like motif that seems to have been known at other Ubaid sites in Iraq such as Hajji Muhammad (Ziegler 1953, pl. 37d: 146, 147), T. Ubaid (Hall and Woolley 1927, pl. XVII: 1826, 1838, 1839, 1841), and Ur Ubaid I (Woolley 1956, pl. 46: 9). A similar motif described as "grain decoration" was noticed on a single sherd from As-Sabbiya (Smogorzewska 2013, fig. 6:1).

Type 21: Basins (fig. 279: 1, 2; 280)

These are large, deep vessels with depths ranging from 22 to 38 cm that have a flat base and rim that is slightly out-flaring. One bowl (figs. 279: 1; 280) shows a sharp carination above the base, while in another (fig. 279: 2) the sides are gently curving upward. The first example is nicely decorated with dark green paint with an all-over pattern consisting of large triangles running around the body and alternating with large solid circles. Two rectilinear bands encircle the upper rim. The second one (fig. 279: 2) is decorated at regular intervals with four vertical bands. Large, deep basins were found at Tepe Sabz (Sabz phase), and 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. 279: 3–5)

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

Type 23: Miniature vessels (fig. 281: 1–3)

Miniature vessels are known from this level at Abada and are found in both painted and plain pottery. This type of small vessel was of uncertain use,[34] but they may have been used as containers for cosmetics. The rim diameters of these miniatures range from 3.5 to 4.5 cm. Of interest is the vessel in figure 281: 1 and figure 352: 4 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 (fig. 281: 2) has been poorly made with the least decoration. The small bowl (fig. 281: 3) with flat base and straight flaring sides is simply decorated with small solid circles scattered on the upper half.

Type 24: Miscellaneous bowls (fig. 281: 4–8)

These types are represented by a single example each. The small bowl (fig. 281: 4), which is made of a fine fabric, thin walled, and hard fired, is reminiscent of Hajji Muhammad (Ziegler 1953, pl. 23: a). Another interesting bowl of this type is that in figure 281: 5, with a pointed base and sides expanding toward a wide mouth. This bowl was perforated twice on the upper part, below the rim on one side only. Figure 281: 6 is a small bowl of a 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 with angled wall-base juncture, a feature of some Halaf bowls from Arpachiyah (Mallowan and Rose 1935, fig. 63) and Tell Halaf (Oppenheim 1943, pl. X: 13–15, 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 all-over 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 an interior ledged vessel, and the middle hole was for suspension.

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[33] Ring bases of similar type are known from Tell Ubaid (Hall and Woolley 1927, pl. XLIV: 254), Tepe Gawra XIII (Tobler 1950, pl. CXXVII: 137), and the Deh Luran plain (Mehmeh and Bayat phases; Hole et al. 1969, fig. 51: 1, l). Ring bases are also known earlier, from the Halaf period at Tepe Gawra (Tobler 1950, pl. CXI: 17; pl. CXIII: 23).

[34] These very small vessels are thought to have been used as crucibles or as paint-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).

Jars (Level I)

Jars in this level were numerous and varied. Types known from the previous level (Types 1–7) continued to be found here. Other types such as 8 and 9 have disappeared. New distinctive types appeared, Types 10–15, some of which, and in particular the lenticular jars, were important when estimating the date of this level. Various decorative motifs were used with some new and unique examples that appear for the first time in the Ubaid period. Figure 328: 3 shows one of these. Some jars had retained the all-over 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 (figs. 315: 1–4; 323). Other jars bear a simple decoration consisting of a broad band or bands around the neck or the shoulder (figs. 334: 4, 5; 338: 6–8; 353: 1–3), or are entirely covered with black paint (fig. 352: 5), sometimes having only limited space in reserve (fig. 353: 4). Reserved decoration continued to be used but on a lesser scale. Below are the main types of jars in this level:

1. Lugged jars (figs. 289; 290: 2)
2. Handled jars (figs. 290: 1; 291: 7)
3. Interior-ledge-rim jars (fig. 290: 3, 4; 292)
4. Necked jars (figs. 313–22)
5. Small carinated jars (figs. 328–33)
6. Spouted jars (figs. 334–37)
7. Large storage jars (figs. 338: 6–8; 341–43)
8. Lenticular jars (figs. 347: 1, 2; 348)
9. Small globular jars (figs. 349: 1,2; 350)
10. Small squat jars (fig. 349: 3–5)
11. Miniature jars (figs. 351; 352: 2, 3, 5–7)
12. Oval-shaped jars (fig. 353: 2–4, 6–9)
13. Rare types (figs. 344: 7; 345; 353: 1, 5)

Type 1: Lugged jars (figs. 289; 290: 2)

These are globular jars with small lugs. This type, which is common in level II, is found infrequently in this level, and the few occurrences were similar to ones from level II.

Type 2: Handled globular jars (fig. 290: 1; 291: 7)

This type was known from the last level, as was attested by the presence of some decorated handles (fig. 285: 7–10). The example from this level (fig. 290: 1) 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 Tepe Gawra XVI (Tobler 1950, no. 159).

Type 3: Interior-ledge-rim jars (figs. 290: 3, 4; 292)

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 (figs. 290: 4; 57: 1). The base is flat, and the upper half of the body was decorated with a foliage pattern similar to examples from Tepe Gawra XIII (Tobler 1950, pl. CL: 469) and Arpachiyah (Mallowan and Rose, 1935, fig. 34: 3).

Type 4: Necked jars (figs. 313–22)

These are similar to those from the last level. A variety of motifs were associated with these jars. One motif looks like a flying eagle (figs. 313: 3 and 314: 2) and is similar to ones from Ras Al-Amiyah (Stronach 1961, pl. LIX: 6, 7), Eridu (Safar et al. 1981, fig. 88: 9), Hammam Et-Turkman (Akkermans 1988, fig. 6: 86), Giyan VA (Contenau and Ghirshman 1935, pl. 43: 17), and Tell Mismar (Schmidt 1978, fig. 3: a). The decorative motif on the jar in figure 313: 1 resembles ones from Eridu (Safar et al. 1981, fig. 98: 16, 17) and Tepe Gawra (Tobler 1950, pl. CXLIX: 455). The jars illustrated in figures 315 and 316 are distinguished by their unusual type of decoration. This consists of some isolated motifs painted against a blank background and distributed in regular intervals along the shoulder or the upper half of the body.[35] The jars in figures 315: 3, 4 and 318: 2, 3, 5–7 are decorated with what looks like a representation of a bull's head or "bukranium," the popular motif of the Halaf period. This motif was frequent on painted pottery at Tell Abada. It was represented in different forms of stylized design in both horizontal and upright position

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

(figs. 315, 318–20). A crude naturalistic representation is also present (figs. 318: 4; 319: 5). However, it should be pointed out that none of the "bukranium" designs on the Ubaid pottery from Tell Abada are similar to those from Arpachiyah. Bukrania stylised representations were found on Halaf pottery from Tepe Gawra (Tobler 1950, pl. LXVII: 1–4), Eridu (Safar et al. 1981, fig. 104: 12), Ras Al-Amiyah (Stronach 1961, XLV: 10) and Yarim Tepe III (Bader et al. 1981, pl. XIII: 3, 5). It is worthy of mention here that this particular motif has not been reported from any of the other Ubaid sites in the Hamrin region.

The decorative motifs on jars in figures 315 and 316 that consist of a variety of painted circles find close parallels to ones from Al-Ubaid (Hall and Woolley 1927, pl. XVI: 1640, 1645) and Eridu (Safar et al. 1981, figs. 87: 14; 88: 4; 89; 12; 99: 14).

Type 5: Small carinated jars (figs. 328–33)

These jars, which range in size between 9 and 12 cm in diameter, are characterized by a pronounced carination either in the middle of the body or in the lower part above the base. The carinated jar in figure 328: 1 is beautifully decorated with a rosette of thirteen 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 most fascinating examples are those bearing a rich variety of beautifully painted rosette decoration, neatly executed within reserved circles (figs. 330: 1–3; 331; 332). The jar in figure 328: 2 is almost identical to one from Arpachiyah (Mallowan and Rose 1935, 186: fig. 37: 5). Rosette motifs were also attested at Tepe Gawra XIII (Tobler 1950, pl. CXLXII/303) and the small Ubaid sites of Khanijdal in northern Iraq (Wilkinson et al. 1996, fig. 12: 19, 20).

The most interesting example is figure 328: 3, which is nicely decorated with four large stars in reserve. This kind of star has not been attested at any site before. However, stars of different kinds appeared on pottery from Tepe Jowi (Le Breton 1947, fig. 24: 17, 18). The jar in figure 328: 7 is reminiscent of one from Telul eth-Thalathat (Egami 1959, fig. 19: 6). The small carinated jar is reminiscent of one from Tepe Gawra XX–XVII (Tobler 1950, pl. CXXIII: 115). Both jars bear comparable motifs.

Type 6: Spouted jars (figs. 334–37)

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 (figs. 336 and 337) and are also reported from other Ubaid sites in Iraq such as Tell Uqair (Lloyd and Safar 1927, pl. XX), Tepe Gawra XIII (Tobler 1950, pl. CXXXI: 222, 224), Ras Al-Amiyah (Stronach 1961, pl. LVI/6, 7), and Khanijdal East (Wilkinson et al. 1996, fig. 10: 51). Abada's examples are closely comparable to examples from Arpachiyah (Mallowan and Rose 1935, fig. 30: 6).

Type 7: Large storage jars (figs. 338: 6–8; 340–43)

These are rather large jars with diameters reaching up to 50 cm in some examples. The body is generally globular with rounded or flat base and short, outturned 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 all-over decoration were found in this level, although they were represented in level II (fig. 338: 2–5).

Type 10: Lenticular jars (figs. 347: 1, 2 and 348)

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. Two reconstructable examples were found in room number 5 at this level. They are characterized by their high spouts and heavily out-flaring openings. The function of this type of jar remains abscure, but it might have been ritual. The presence of these two lenticular jars in Building A, which we considered of being the most prestigious building in the village, could give support to this idea. Detached spouts, which could well have been parts of lenticular jars, were also found in the fill of Building A, level II (fig. 337: 1–3, 6).

This type of jar was found at Eridu XIII–VIII and the contemporary levels of Tepe Gawra XIX–XVII

(Tobler 1950, pl. CXXIII: 113). A lenticular jar almost identical to (fig. 347: 2) was found at Ras Al-Amiya (Stronach 1961, pl. LVI: 4). This type has also been discovered at some of the Ubaid sites in the Hamrin region (chapter 4). An interesting array of lenticular jars dating from the Middle Susiana period was reported at the site of Chogha Mish (Alizadeh 2008: fig. 52). Sherds belonging to "tortoise vessels" were also found at Tell Brak in Syria (Oates 1987, 193).

Type 11: Small globular jars (figs. 349: 1–3; 350)

These are relatively small jars with a globular body ranging in diameter between 12 and 16 cm with flat or rounded bases and out-turned necks. The jar (figs. 349: 1; 350) is distinguished by a small hole-mouth. The decoration is confined to the shoulder consisting of four simple bands encircling the shoulder with half circles hanging in between followed by a relatively wide band. This decoration is reminiscent of one on a bowl from Tepe Gawra XIIA–XII (Tobler 1950, pl. CXXXIII: 247).

Type 12: Small squat jars (fig. 349: 3–5)

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 in figure 349: 5 is reminiscent of a small jar from Tepe Gawra XVII (Tobler 1950, pl. CXXIII: 116).

Type 13: Miniature jars (figs. 351: 1–6; 352: 2, 3, 5–7)

These are very small vessels that may have been used for various purposes, including, perhaps, for keeping cosmetics of some sort. One miniature jar has a little spout on its lower part (fig. 531: 1). 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 small jar in figure 351: 3 is similar in shape and decoration to one from Arpachiyah (Mallowan and Rose 1935, fig. 36: 7). The jar in figure 351: 5 was entirely covered with black paint, and its dimple base and also the concave base of that in figure 351: 2 should be noted. Both features are more common in Iran than Iraq.[36] Very interesting is the spouted jar in miniature (fig. 334: 2).

Type 14: Oval-shaped jars (fig. 353: 2–4, 6–9)

These are small jars with nearly oval-shaped bodies and flat bases. Two have a relatively high neck (2, 4), while others have an out-turned (6, 8, 9) or collared neck (7). These jars were decorated with simple broad bands, or entirely covered with solid paint leaving a horizontal band in reserve (4). The last example is reminiscent of ones from Arpachiyah (Mallowan 1935, fig. 36: 4, 5).

Type 15: Rare forms (figs. 344: 7; 345; 353: 1, 5)

Only three examples are to be described under this heading. The first (figs. 191: g; 344: 7; 345) is a hole-mouthed carinated jar with short straight neck and small, flat base, decorated on the upper half of the body with an attractive pattern that looks like double rows of lozenges in reserve running around the body. Each lozenge contains three dots in horizontal order in the middle. 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 matched at any other site. The other example is the small jar (fig. 353: 1) 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 Tepe Gawra XVI (Tobler 1950, pl. CXXVI: 158). The third example (fig. 353: 5) is a hole-mouthed, thick-walled jar with almost squared shoulders and slightly out-turned short neck with paint around the neck and the middle of the body.

[36] 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 (Hole et al. 1969, fig. 65: b, f, g). Concave bases were found at Choga Safid (Safid and Surkh) phases (Hole 1977, figs. 48, 49). They were also found at Jaffarabad in the Susiana sequence (Le Breton 1947, fig. 9: 6).

Table 20. Occurrence and percentage of painted bowl forms at levels I–II, Tell Abada (see also fig. 148: b)

Types	*Level II*		*Level I*	
	No. Recovered	*Freq. %*	*No. Recovered*	*Freq. %*
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	99.99

Table 21. Occurrence and percentage of painted jar forms at levels I–II, Tell Abada (see also fig. 149)

Types	*Level II*		*Level I*	
	No. Recovered	*Freq. %*	*No. Recovered*	*Freq. %*
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	223	99.99

Beakers

Beakers from Level II (figs. 327: 1, 2; 354–60)

As beakers are taller and did not tend to have a flared opening, we decided to define beakers separately from cups and bowls.

Several complete beakers with very well-made, 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. 354–58: 2, 6).
2. Beakers with rounded body, concave shoulders, flat base, and out-flared rim (fig. 358: 1, 3, 4).
3. Beakers with straight sides and flat base (fig. 358: 5; 327: 1).

The fabric is generally buff. Cream and reddish brown fabric was also found. Slips were commonly used. All the examples were distinguished by their all-over patterns, which were beautifully and successfully executed, and adapted well to the shape of the beakers. Reserve decoration seems to have been the favorite style associated with these beakers; a variety of geometric designs in reserve were used. The beaker in figure 358: 1 is almost fully covered with a criss-cross design. It is similar in form and design to one from Kanaan Tepe (Parker 2010, fig. 21. 10: M). The one in figure 358: 2 bears a beautiful pattern in reserve. The beaker in figures 358: 3 and 360 is fully decorated with dotted vertical zigzag in reserve. The example in figure 358: 4 is fully painted in black with an inverted V-shaped pattern in reserve. Natural motifs were also represented, such as the graceful representation of a snake in reserve (fig. 357: 2). One of the most attractive beakers from Abada is shown in figures 354: 1 and 355. This was decorated in black on cream with an all-over pattern consisting of vertical panels containing what looks like a triple spear head or spikelet on a plain background. Different motifs including elements in reserve such as oval shapes alternate with a diagonal line.

Beakers first appeared at Eridu XVIII-XII (Safar et al. 1981: fig. 72: 32). These resemble examples from

the earliest level at Abada (fig. 153: 3, 4). Both Eridu examples and Abada III ones are different in shape from the current examples. Close parallels can be drawn from Tepe Gawra XIII (Tobler 1950, pl. CXXIX). Indeed, beaker Type 1 at Abada is closely comparable to Tepe Gawra XIII (Tobler 1950, pl. CXXIX: 202). The style of decoration associated with these beakers at both Abada and Tepe Gawra is actually the same, both sharing the predominance of all-over and richly painted patterns. A single example was found at Arpachiyah (Mallowan and Rose 1933, fig. 33: 10). Similar beakers were also attested at the site of Khanijdal East (Wilkinson et al. 1996, fig. 8: 35).

Beakers from Level I (figs. 361–64)

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 from the previous level were found here. The new types of beaker that appeared can be classified as follows:

Type 4: Beakers with almost straight, slightly everted sides and wide flat bases (figs. 361: 1; 362). This example, bearing an attractive painted decoration, consists of a large oval-shaped pattern split in the middle by double vertical lines in reserve. Two horizontal bands encircle the beaker right on the upper rim and the base.

Type 5: Beakers with sinuous sides and flat bases (fig. 361: 2). This example bears painted decoration covering the shoulder up to the rim. It consists of a zigzag pattern and triple bands going around the upper part of the body. It is somewhat similar in form to one from Arpachiyah (Mallowan 1935, fig. 33: 10).

Type 6: Beakers with straight sides and wide, flat bases (fig. 361: 4, 5; 363). The former beaker bearing an overall decoration consists of four vertical bands of five sinuous lines between the upper painted rim and the painted lower part over the base. The other example also bearing vertical decoration consists of a combination of triple zigzag and triple lines placed between two horizontally painted lines on top and bottom.

Type 7: Beakers with ring bases and straight sides (fig. 361: 3). This beaker is decorated with vertical panels containing double vertical lines alternating with a ladder-shaped pattern consisting of three triangular shaped motifs between short horizontal lines.

Type 8: Conical-shaped beakers with pointed base (fig. 364: 3). The beaker is a rather unusual shape and bears an over-all decoration consisting of three consecutive rows of triangles in reverse. The beaker is 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.

Type 9: Beakers with slightly concave shoulders and out-turned rims (fig. 364: 4, 5). Of particular interest is the first beaker (fig. 364: 4), which is beautifully decorated with animal motifs that look like ibexes heading right on the upper part followed by triple horizontal bands. The representation of the 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 Safar 1943, pl. XIX a). This motif was very common at Sialk III (Ghirshman 1938, pls. LXX, LXXI, LXXXI, LXXXII, LXXXIII).

Type 10: Barrel-shaped beakers (fig. 364: 6). This is the only example of its kind, bearing simple decoration on its upper half. It consists of four broad parallel horizontal bands encircling the body. The beaker is reminiscent of a beaker from Uruk (U.V. 8. 6, pl. 16: cp).

Type 11: Cylindrical footed beakers (figs. 365 and 366). Perhaps the most interesting example of these beakers is this tall cylindrical footed beaker. This unique example is decorated with vertical panels covering the entire exterior surface 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, and it is unprecedented at any Ubaid sites before. However, the human representation on this beaker is somehow reminiscent of that on a

vessel from Tepe Gawra XI–IX (Tobler 1950, pl. CXLV: 398).

Cups

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

1. Carinated cups with straight sides and flat bases (fig. 367: 1, 3, 7).
2. Small carinated cups with slightly concave sides and flat base (fig. 367: 2, 4).
3. Small, carinated cups with slightly incurved sides (fig. 367: 5, 6).
4. Small cups with gently curved sides and slightly concave shoulders (fig. 367: 8).

The size of these cups varies from 7 cm in rim diameter for the smallest example (fig. 367: 6) to 14 cm for the largest one (fig. 367: 1), and the depths range between 6 and 8.50 cm.

All the specimens were well made of fine fabric, and carefully painted in all-over designs with different kinds of attractive motifs. Reserve decoration seems to have been the favorite. Checkerboard patterns (fig. 367: 4, 5) are identical to examples from Tepe Gawra XIII (Tobler 1950, pl. XXVII: 173; pl. CXXIX: 202) and Sialk III (Ghirshman 1938, pl. LXXVI a: 19, 20, d: 13–15; pl. LXXVII c: 8). The network of small squares occupying the major part of the exterior body (fig. 367: 7) is interesting for both its simplicity and the neat way in which it was executed. These cups are not matched by any other examples from other Ubaid sites in Iraq. The only examples with which they are comparable are from Susiana (Le Breton 1947, fig. 38: 17–20).

Cups from Level I (figs. 364: 1, 2; 368: 1–11).

Cups of various shapes continued to be found in this level. Only Type 1 of the previous level was represented here (fig. 368: 1; 369: 1), while some new types appeared:

1. Small cups with almost straight sides gently curved over the base (figs. 364: 1, 2; 368: 2, 3, 9–11).
2. Small cups with slightly concave shoulders (fig. 368: 7).
3. Small cups with small discoid base (fig. 368: 5)
4. Small cups with slightly out-curved sides (fig. 368: 8).

Like the cups of the last level, these cups were decorated with a variety of patterns, some of which show an elaborate and highly artistic design (fig. 368: 1, 2). At the same time, cups bearing only simple decoration appeared, such as those in figure 368: 4, 5, 11.

SECTION C. THE PLAIN POTTERY

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 reddish 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 are given in table 22.

Bowls

Several types of bowls in plain pottery were found:

1. Wide-mouthed carinated bowls (fig. 370: 1–6).
2. Straight-sided bowls (fig. 370: 7–15).
3. Small, hemispherical bowls (fig. 370: 16–18).
4. Large, wide-mouthed bowls with flaring rim (fig. 231: 7–22).
5. Small, thin-walled bowls with flaring rim (fig. 235: 6–11).
6. Small, carinated bowls (fig. 242: 8–14).
7. Unusual bowls (fig. 370: 19–21).

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 well-levigated fabric of buff grey or cream colors with cream slip and smooth surfaces. The walls are very thin, ranging in thickness from 2 to 4 mm at the carination point, and were highly fired. This type of bowl is the same kind as those from level III at Abada (fig. 190: 4–9) and similar to the painted carinated bowl from level II (figs. 256–62), which finds its

closest parallels at Samarra and Hajji Muhammad. Bowls with straight sides and either rounded rims (fig. 370: 7–10) or bevelled rims (fig. 370: 11–14) match painted examples from the same level (fig. 212: 5–7). The small carinated bowls (fig. 242: 8–14) are a plain version of a painted one from the same level (fig. 242: 1–7). Three examples are unusual (fig. 370: 19–21). All were of poor fabric, heavily tempered with chaff and roughly made. The uneven-sided bowl with a small hole in the middle (fig. 370: 19) may have been a lid for some sort of vessel. The large rounded bowl (fig. 370: 20) 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. 370: 21) is a bowl of clumsy manufacture with thick and slightly incurved walls. In the middle of the base interior is a cylindrical projection with a flat top. The precise purpose of this bowl is not clear.[37] No comparable example has been reported for the last type from any other site so far.

Jars (Level II)

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

1. Small globular jars (figs. 371: 4–6; 373: 5, 6).
2. Carinated jars (fig. 371: 1, 8–9).
3. Elongated jars (figs. 371: 3; 373: 1, 3).
4. Large, globular jars with lugs (figs. 374: 1–7; 375).
5. Large storage jars (figs. 374: 8–10, 25–29).
6. Square-shouldered jars (fig. 373: 4).

Type 1 was the most common. They are somewhat similar to examples from Ras Al-Amiya (Stronach 1961, pl. LIII: 6, 3). The large carinated jar (fig. 373: 1) 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. It is also almost identical to one from Tell Uqair (Lloyd and Safar 1943, pl. XX: 7).

The elongated jar (fig. 373: 1) is reminiscent of a jar from Ras Al-Amiya (Stronach 1961, pl. LV: 2). The square-shouldered jar (fig. 373: 4) is similar to Stronach pl. LV: 1. A series of large globular jars with short necks and out-turned rims (figs. 374: 1–7) are provided with small lugs around their shoulders. A variety of lugs is represented (fig. 375); the one shown in figures 374: 4 and 375: 4 is unique in its shape. The large storage jars have almost globular bodies exceeding 50 cm in diameter, with short, out-turned necks and rounded bases (fig. 374: 8–15). Coarse examples with heavy fabric were also found. Different profiles of such jars were found (fig. 374: 25–29).

Table 22. Occurrence and percentage of plain bowls and jars at levels I–II, Tell Abada

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

[37] 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 serving as a handle.

The Plain Pottery of Level I

As with the previous level, level I at Abada produced little plain or unpainted pottery, which 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 unusual examples were found. These include a variety of bowls, jars, and miniatures. The number and percentage of each type are given in tables 23 and 24.

Bowls

Only a few types occur in both painted and plain pottery: the hole-mouthed bowls with almost straight or slightly flared rim (Type 7), and the bell-shaped bowls (Type 1). These two types are of a fine fabric and are represented by sherds only (fig. 374: 16–24). Wide-mouthed bowls with a sharply incurved rim (fig. 273: 3) resemble examples in painted pottery (fig. 273: 1, 2). Another type common to both painted and plain is the large deep pot (fig. 273: 4–8). Most of these large pots were used as burial urns for children.

Jars

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

1. Small jars (fig. 377: 1–3)

A total of eighteen small jars ranging in body diameter from 7 to 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, which suggests that they were being used as lamps. They were found in association with lids (fig. 101).

Table 23. Occurrence of bowls in plain pottery at level I, Tell Abada

Bowl (Type)	*Level I*	
	No. Recovered	*Freq. %*
6	16	17.39
1	9	9.78
17	1	1.08
4	29	31.52
23	37	40.21
Total	92	99.99

Table 24. Occurrence of jars in plain pottery at level I, Tell Abada

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

2. Double-mouthed jars (figs. 378: 1–6; 379)

Six examples of various shapes[38] were found. These generally have a globular body topped with double hole-shaped mouth. The two mouths are either separated from each other (fig. 378: 1, 3, 5, 6) or directly joined together (fig. 378: 2, 4). The base is either flat (fig. 378: 1) or rounded (figs. 378: 2; 379). 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 Tell Halaf (Oppenheim 1943, 92; fig. 135, pls. LXXVI: 516; CIII: 1–3), Eridu (Safar et al. 1981, fig. 104: 13), Arpachiyah L. XI (Hijara 1980, 181), and Khanijdal East (Wilkinson et al. 1996, fig. 10: 50).

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), Arpachiyah (Mallowan and Rose 1935, fig. 41: 14, 18), Nuzi (Starr 1937, pl. 42), and Khanijdal East (Wilkinson et al. 1996, fig. 10: 50). It was also found at Tell Brak (Oates 1982 c, pl. XVII: b). Such jars seem to occur much later in the south.[39] In the Hamrin region it was reported from the sites of tell Maddhur, Kheit Qasim, and Abu Husaini.

3. Miniature Pottery

It has been pointed out that "the practice of making miniature pottery, though common in the earlier Tell Halaf period, was rare in the Al Ubaid" (Mallowan and Rose 1933, 72). Nevertheless, a large number of these miniatures were produced at Tell Abada in both painted pottery (figs. 351: 1–6; 352: 2, 3, 5–7) and plain (figs. 376: 4–11; 377: 4–11). Although the exact function of these minute vessels cannot be determined, they could have certainly been used for different purposes. Of interest is a bottle with a perforated sealed mouth that looks like a salt bottle (fig. 377: 6); whether it was really used for this purpose or to keep some other kind of valuable substance is not known. Of special interest is the minute jar (fig. 377: 7) bearing three enigmatic signs painted in black on its shoulder. It seems likely that such peculiar marks cannot be explained as mere decoration, thus this minute jar may have been used for some ritual or ceremonial purpose. Other miniature vessels could have served as cosmetic containers. The tiny jar with two large projecting lugs (fig. 376: 5) may have been a model of a larger jar, for its relatively large lugs would have served no function on such a jar. Of great interest is the peculiar jar (fig. 376: 10) with a pinched discoid body decorated with vertical incisions running around the middle part of the body (fig. 376: 10). Another interesting bowl bears a single band painted on the internal rim (fig. 376: 9). We may also include within this category two interesting miniature vessels; one represents a double-mouthed jar (fig. 378: 7), and another is in the shape of a spouted jar (fig. 334: 2).

SECTION D. IMPRESSED AND INCISED POTTERY

Another important category of pottery found in large amounts is that class of vessels whose surface was manipulated with a rather different decorative technique, with either impressed or incised ornament (figs. 380–89). The first technique is represented with a frequency of 20.80 percent, the second of 13.5 percent. Since this type of pottery is abundant and identical in both levels II and I, we will deal with both levels as a 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 with the painted and fine plain pottery from the two levels of the site. Distribution and occurrence of the impressed pottery sherds at both levels II and I are given in table 25.

Impressed Pottery

The technique of decorating the surface with impressions covering either the entire surface of the vessel,

[38] This type of jar was interpreted as a "spectacle vase with a double mouth perhaps 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 (Oates 1982c, 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.

[39] 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.

or only a limited part of it, is executed in different ways:

1) Shallow or deep finger-tip impressions

This technique was implemented by pressing the wet surface with a fingertip, 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 (figs. 380: 1–3; 381; 382: 8; 383: 12). This type of impressed ware is reminiscent of pottery from Dalma Tepe (Hamlin 1975, pl. Ice) and was also found at Nuzi (Starr 1937, pl. 45: M, Q) and Tell Halaf (Oppenheim 1943, pl. LXXXVIII: 17, 18).

2) Jabbed fingernail impressions

This technique was achieved by pressing the surface with a finger nail in a vertical or oblique position, leaving shallow crescent-shaped impressions arranged in horizontal rows (fig. 382: 9). A similar technique was attested at Dalma Tepe (Hamlin 1975, 118).

3) Barbotine

This is an appliqué technique executed by setting small clay pellets over the exterior surface of the vessel (fig. 380: 4). 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 made by jabbing the wet surface of the vessel with a bone implement or small twig (figs. 382: 10; 383: 10). A similar technique was noticed at Dalma Tepe (Hamlin 1975, 118). These jabbed holes were either arranged 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. 382: 1, 12). 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 made 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 seen on (fig. 382: 3, 4).

7) Triangular or pear-shaped impressions

This technique was probably achieved by using a square-headed tool pressed obliquely so as to make such shapes on the surface of the vessels (figs. 382: 11; 383: 9, 14). These shapes were arranged either in vertical lines or in combination with multiple zigzags and horizontal lines.

8) Semi-circle 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. 382: 2, 6). 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. 383: 11).

The distribution and occurrence 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 was represented in the impressed ware of both levels II and I at Abada:

1) Squat jars (fig. 380: 1)

The impressed decoration consists of shallow fingertip 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 (figs. 280: 3; 381)

This jar has an out-turned rim and flat base. It is decorated with small, shallow fingertip impressions covering all the exterior surface. On the upper half of the body is a handle or lug in the form of a concave disc.

3) Oval-shaped jars with short neck and out-turned rim (fig. 380: 4)

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

4) Shallow, hemispherical bowls with thick walls (fig. 380: 2)

This example bears deep fingertip impressions made all over the exterior surface. There is a hole in the middle of the thick base that might indicate using it upside down as a lid.

5) Lugged jars (fig. 382: 1, 3)

These are small globular-shaped jars with upward-projected lugs. A jar of similar form and impressions but without lugs was found at Khanijdal East (Wilkinson, Monahan, and Tucker 1996, fig. 11: 82).

6) Small jars (fig. 382: 2, 4, 6)

These jars have an almost round body and short, out-turned rim. These small jars are decorated with different types of impressions.

Table 25. Distribution and occurrence of the impressed pottery sherds from levels I–II, Tell Abada

Type	*Level II*	*Level I*	*Total*
1	2610	1116	3726
2	2538	2667	5202
3	2	-	2
4	2701	2917	5618
5	2516	3310	5826
6	2936	2333	5269
7	1878	2589	4567
8	2786	1219	4005
9	1495	1180	2675
Total	19,462	17,431	36,893

Incised Pottery

The technique of decorating vessels with incisions has a long tradition going back to the Hassuna period, as it was found at Hassuna (Lloyd and Safar 1945, figs. 4, 10). It was also common in the Samarra period at Mattarah (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 limited scale at Tell Halaf (Oppenheim 1943, pl. LXXXVIII: 13).

In the Ubaid period, it was found at Tepe Gawra XIII (Tobler 1950, pl. CXXI: 217–18, 220), Nuzi (Starr 1937, pls. 44–46), Choga Mami and Serik (Oates 1968, pl. V: 7), Yarim Tepe III (Bader et al. 1981), Khanijdal East (Wilkinson et al. 1996, fig. 10: 57).

This type of pottery, decorated with incisions, was common in both levels II and I at Abada. The fabric in general is coarse, and the manufacture is poor, a fact that 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 26, 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 (figs. 384: 1; 388).
2. Long and deep strokes diagonally arranged in a herring-bone or zigzag pattern (fig. 384: 8, 9).
3. Short, slight strokes diagonally arranged in a herring-bone pattern (fig. 384: 4).
4. Large, deep, and irregular strokes (fig. 384: 10; 387: 1).
5. Horizontal rows of finely incised chevrons (fig. 384: 6).
6. Deeply ribbed decoration with corrugations on both sides seems to have covered the entire surface. Within the horizontal grooves is a secondary decoration consisting of tiny diagonal incisions (fig. 383: 1). This precise and extremely fine technique is so elaborate that it seems to represent a fully developed style.
7. The decoration (fig. 383: 2) 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 the pottery in figure 383: 5.
8. The same grooved technique is shown in figure 383: 6, but here the secondary incisions consist of curved small ones.
9. Impressed rope pattern (?) covering the entire exterior surface and the base (fig. 383: 4).
10. Wide zone consisting of deep horizontal grooves (fig. 383: 3).
11. Short, slightly incised strokes vertically or diagonally arranged in horizontal rows (fig. 383: 7).
12. Decoration that consists of long, fairly deep incisions arranged in parallel diagonal rows (fig. 383: 13).
13. Long, fairly deep incisions diagonally arranged in a vertical herring-bone pattern (fig. 384: 5).
14. Two or more horizontal zones of simple shallow grooves running around a vessel (fig. 384: 11).
15. Decoration very similar to the last style and associated with running horizontal zigzags (fig. 384: 3).
16. Composed decoration of two zones consisting of horizontal and relatively deep grooves, and running multiple zigzags (fig. 384: 2).
17. Decoration consisting of a combination of two bands of horizontal grooves with wavy grooved lines in between (fig. 383: 8).
18. Long, slightly curved incisions broken in the middle, arranged in a herring-bone pattern (fig. 384: 12).

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 (figs. 384: 1; 389) that was decorated on both surfaces 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 (Lloyd and Safar 1945, figs. 3, 4, 9, 13, 15; Smith 1952, fig. 7: 14; Mortensen 1970, fig. 71: d). This design seems to have been revived 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 was also attested at Tell Rashid, Tell Maddhur (Roaf 1984, fig. 20: 13), and Tell Abu Husaini (Tusa 1984, fig. 36) in the Hamrin region. It should be pointed out that samples from outside Abada were never incised on the interior. Globular jars with short out-turned necks (fig. 384: 2, 6) were another type at Abada.

Table 26. Distribution and occurrence of incised pottery in levels I–II, TellAbada

Type	*Level II*	*Level I*	*Total*
1	3126	2310	5436
2	2009	2025	4034
3	898	705	1603
4	716	612	1328
5	660	521	1181
6	427	317	744
7	518	401	919
8	448	428	876
9	366	222	588
10	410	390	800
11	512	431	943
12	616	563	1179
13	338	384	722
14	715	696	1411
15	298	366	664
16	305	285	590
17	288	267	555
18	110	185	295
Total	12,760	11,108	23,868

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 (table 27). This combined technique, which dates back to the Hassuna period,[40] did not persist into the subsequent periods.[41] 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. 390: 1–5, 7) or on both the outside and the inside of the rim (fig. 390: 3). Similar broad bands are seen painted on other parts of the body in some examples (fig. 390: 8–10). The pottery in figures 390: 6 and 391: 7 was decorated initially with an incised design then covered entirely with black paint leaving triangles in reserve. Of interest is a zigzag that has actually been engraved on a painted band (figs. 229: 1; 412: 2).

Incised/impressed designs consist of the following elements:

1) Small jabbed or punctured holes diagonally arranged in a herring-bone pattern (fig. 390: 1), or in two horizontal zones (fig. 390: 5).

2) S-shaped incisions (fig. 390: 2). These are fairly deep incisions probably made by a

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

[41] In the Samarra period, this pottery was found at Mattarah (Smith 1952, fig. 14: 8), Tell es-Sawwan (Ippolitoni 1970–71, figs. I–K), Baghouz (Du Mesnil 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).

fine-pointed tool and nicely arranged in multiple horizontal rows around the body.

3) Oval- or pear-shaped incisions probably produced by using a small round-headed tool, arranged in double or multiple horizontal rows (fig. 390: 4).

4) Short, straight slits (fig. 390: 3, 6, 7, 9) diagonally arranged in horizontal rows.

5) Rectilinear and curvilinear patterns consisting of straight grooves combined with chevron patterns (fig. 390: 8) or a combination of straight grooves and wavy lines (fig. 390: 10).

6) Cross-hatched decoration (fig. 391)—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 (fig. 391: 1–5).

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. 390: 2, 3). Fragments of jars (fig. 390: 6, 7) could belong to this type of jar. Of interest is the small globular, spouted jar (fig. 390: 1).

The second category includes large, wide, open-mouthed carinated bowls (fig. 391) similar in shape to the large carinated bowls from level II at the site (figs. 256–62). The present bowls are distinguished by a particular 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 (figs. 389: 9, 15–17; 391: 1–4) or covering the lower half of the inside walls downward to cover the entire base interior (fig. 391: 5). Of special interest is the bowl in figure 391: 4 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 27. Distribution of the patterns on incised/impressed-and-painted pottery at levels I–II, Tell 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

A total of some forty-two late Halaf polychrome sherds were found in level II at Abada. Only three sherds were found in level I. It is outside the scope of this research to deal in detail with Halaf pottery, so 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.

Selected sherds and reconstructed forms are seen in figures 392–400. In general, the pottery is fine, hard, and well fired; the fabric is buff to reddish and well levigated, occasionally tempered with a very fine grit. Buff and cream slips were used. The surfaces were well smoothed. The paint is either red and black combined together in the same pattern, or red, brown, and orange individually used. A beautiful collection of bowls and jars were represented. A variety of typical Halaf polychrome motifs have been used, of particular interest being the carinated jar decorated with a bull-head "bukranium," which is typical of the Halaf repertoire (figs. 393: 1; 394).

The deep bowl (fig. 392: 1) is similar in shape to one from Arpachiyah (Mallowan and Rose 1935, fig. 60: 5). This example bearing all-over exterior decoration consists of double horizontal rows of squares intersected by diagonals, with the result that each square is divided into four little triangles. There are two painted bands above and below. The interior design consists of three rows of squares intersected by diagonals, running between double thin bands from above and below. A similar motif is seen on other bowls (fig. 393: 4, 5) and other sherds (fig. 395: 2, 3, 5). The hemispherical bowl (fig. 392: 2) is also decorated with similar squares as above, but bearing different design on the interior consists of multiple zones of different motifs. Of great interest is the bowl in figure 392: 3. This example bearing identical design on both inside and out consists of multiple rows of solid cables intersected by oval-shaped patterns in reserve. Of particular interest is the bowl (fig. 393: 6) decorated with intersected squares from inside and a cross-shape in reserve, dividing the panel into four cross-hatched rectangles. Another small hemispherical bowl (fig. 393: 2) has four cross-hatched panels separated by painted vertical and reserved bands. The interior of the bowl bears triple painted bands running around the inner rim. Of interest also is the small bowl in figure 393: 3. The upper half is painted with a series of cross-hatched hourglass patterns with two reserved triangles on each side, separated by two vertical bands and underlined by three horizontal bands. Interior decoration consists of rectilinear and short diagonal storks. While the majority of Halaf pottery bears geometric patterns, some were decorated with natural motifs such as "bukranium" (figs. 393: 1; 394) and a snake (figs. 395: 1; 397: 6). A fish-scale pattern, another distinctive Halaf design, is also present (fig. 396: 1)

CONCLUDING REMARKS

The excavations at Tell Abada have produced a large quantity of pottery throughout the three excavated levels. Pottery from each level has been dealt with separately. Illustrations/photographs of the complete specimens and significant sherds, together with a wide range of patterns associated with each vessel type, are shown in figures 150–424. The general distribution of the vessel types is shown in figures 510 and 511. The chronological occurrence of the most distinctive types is shown in figures 512 and 513.

Level III, the earliest, revealed some quantity of Ubaid I ceramic types (figs. 157–62) 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 II pottery.

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

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 at Choga Safid in Khuzistan (Hole 1977). Abada examples (fig. 153: 1; 154: 2) resemble those from both nearby Choga Mami and Choga Safid. Other examples (figs. 150–52) bear some resemblance to the Samarra style. This level has also produced a number of pieces of Ubaid 2 ceramic style (figs. 187–89) that resemble examples from Eridu XIV–XII, Hajji Muhammad and Ras Al-Amiya, Oueili, and As-Sabiyya 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 to both 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 share particular vessel forms and patterns:

1. Open, carinated bowls with both interior and exterior decoration (figs. 187: 1–10, 256–61), 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. 187: 4; 257: 1–3).
2. Interior-ledge-rim jars (figs. 189: 1, 2; 290: 3, 4; 296; 297; 301: 1; 303).
3. Necked jars (figs. 189: 3–6; 301: 2–8; 304; 305).

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 the following:

1. The presence of hemispherical bowls decorated with wavy lines or bands in reserve (fig. 198: 1, 2, 4); this particular combination of form and pattern is a genuine distinctive feature of Ubaid 2 that 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. 229: 1; 238: 1, 2; 412: 2), are another distinctive feature of the Ubaid 2–3 style found at several sites belonging to that period. This technique was used in Al-Ubaid (Hall and Woolley 1927, –l. XIX: 1915, 1916) and As-Sabiyya (Smogorzewska 2013, fig. 16).

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, Choga Mami, and As-Sabiyya, 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 II from level III, we would argue in favor 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 shows a great variety of such intricate close-style patterns, a feature usually associated with the Ubaid 2 style. Geometric patterns were predominant, but some remarkable naturalistic floral patterns were also represented (figs. 276: 1–6; 277; 402–6). Fascinating are the flower motifs that seem to have been common and were represented in a variety of shapes (figs. 328: 1, 2; 329–32).

Of interest is the "Mouflon" head depicted in a semi-naturalistic style (figs. 319: 2; 320: 11). This motif closely resembles examples from Arpachiyah (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 (figs. 319: 5; 318: 4). Bird motifs seem to have been popular and represented by variant shapes (figs. 303, 308–12). Of interest is the one that looks like a stork (figs. 407 and 408). This motif is reminiscent of one from Tell Uqair (Lloyd and Safar 1943, pl. XIX: 1). A snake seems to have been a popular motif in the Abada pottery repertoire through its three occupational levels. It has appeared in beautiful representations on a transitional bowl from level III (fig. 151: 1). Level II produced many examples adorned with snake motifs, such as the elegant beaker in which it was represented in reserve (fig. 357: 2), in addition to other examples as we have already seen.

Vessel types and patterns from level I continued to be the same for the most part as those of the preceding level (II), but certain ones 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. 198: 1–4). On the other hand, new types have now appeared, of particular interest being the "lenticular jars" similar to examples from Eridu XIII–XVTII, Al-Ubaid, Hajji Mohammad, 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 4). Other new types were also represented (fig. 511). 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. 315, 316, 320, 321, 323) and a star pattern in reserve (fig. 328: 3; 333). New also is the representation of ibex (figs. 364: 4; 409: 1, 2). Ibex patterns were known from Uqair (Lloyd and Safar 1943, pl. XIX a), Sialk III (Ghirshman 1933) and Giyan (Contenau and Ghirshman 1935). Another attractive and new motif is that of the cross shapes that were represented in various forms in reserve pattern (figs. 254: 1–3; 323: 1, 3, 11, 21, 22) and solid (fig. 254: 4). More decorative motifs are seen on some of the selected Ubaid sherds from both levels II and I (figs. 413–424).

Since level I at Abada was built directly 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 toward 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 4

THE UBAID SITES IN THE HAMRIN REGION

In addition to the extensive evidence concerning various aspects of Ubaid life found at Tell Abada, Ubaid occupation was evidenced in a number of other sites in the Hamrin Basin (fig. 425). 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 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.

TELL RASHID

This is a small, oval-shaped mound measuring some 54 m long and 30 m wide and rising about 2.50 m above the surrounding plain (fig. 426). 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. 425).

While the work at Tell Ababa was in progress, the writer 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 × 15 m covering the entire middle section of the mound (fig. 426). 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

The earliest remains are found in level IV. It was built directly on virgin soil and was reached through a deep sounding measuring 1.50 × 1.50 m, as can be seen in the cross-section (fig. 426). The structural remains of this level as they appeared in this sounding consisted of a few foundations of mudbrick walls with clay plaster, apparently part of some structure that extends under the unexcavated area. The few sherds that were found near the wall were of Ubaid 2–3 style (fig. 458) and similar to the type of pottery that was also found in the upper levels of the site.

Level III

This appears to be the best-preserved level at the site. It contains three buildings ("houses"), two of them located on the southern side (A and B). The small building (A), illustrated in figures 427 and 428, has a tripartite plan and a buttressed façade (fig. 429). The latter feature is reminiscent of buildings from Tell Abada. The entrance to the building is located in the northwestern corner and leads to a large hall (1 in fig. 427), 4 × 1.5 m, which leads in its turn to the central courtyard (2), measuring 5 × 1.8 m, giving access to other small rooms to the south (3 and 4; figs. 429 and 430). Two burial urns containing children were found below the floor of room 3.

The second building (B) is located to the southwest of the building A. The eastern flank of this building is directly adjacent to the last building (figs. 427 and 431). The entrance to the building is in the middle of the northern wall and leads directly to the large central courtyard (8 in fig. 427; fig. 432). The common area outside the two buildings was surrounded by a curved wall with two doorways, one in each corner. Two domestic ovens were installed in close proximity to each other (13). These seem 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 a tripartite one. The very close proximity of these two buildings, coupled with the presence of the common enclosed area in front of these houses, could suggest they were occupied by one extended family.

In the northern half of the trench and facing the above mentioned buildings were remains of another

building (C), consisting of a large rectangular room (f15) 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) that was subsequently demolished with the rest of the building. The walls in this level were preserved up to a height of about 1 m and were built of mudbricks each measuring 52 × 28 × 8 cm and plastered with a layer of levigated clay (fig. 433).

Level II

The remains of this level were confined to the southern sector of the tell. A group of four rectangular rooms was found that seems 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 previous level (figs. 434 and 435).

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. 435). 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 limited number of artifacts was found, mostly of clay and stone. Clay artifacts (fig. 436) include a variety of animal figurines, the most interesting of which represents a bird with a pedestal base, two projecting wings, and a long slender neck (figs. 436: 4; 437). The eyes are indicated by two circular applied pellets. This "dove" is reminiscent of one from Arpachiyah (Mallowan and Rose 1935, fig. 46:3), although the Rashid dove looks much neater and more naturalistic.

Spindle whorls, some of which bear impressed decoration, were also found (figs. 436:2, 3; 438). So too were possible lids of lamps with a smoke deposit and traces of burning (fig. 436:1); identical specimens were discovered at Tell Abada II and I (fig. 101). Sling balls, tokens or gaming pieces, and nail-shaped cones were also found (fig. 436:5, 6–8).

The stone industry (figs. 439–441) was represented by some polished celts (figs. 349: 5; 441: 1), hoes (figs. 439: 3; 441: 5), pestles (figs. 439: 1; 441: 3) and other grinding tools (figs. 439: 6, 7; 440).

The flint industry was represented by a variety of tools (fig. 442: 1–12), 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. A few pieces of obsidian were also found (fig. 442: 13, 14).

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 small quantities. All the complete and reconstructable specimens together with some representative sherds are illustrated/photographed in figures 443–68. Impressed and incised ware is illustrated in figures 469 and 470.

The amount and the percentage of the various categories of pottery are given in table 28. Vessel types and their general distribution throughout the Ubaid sites in the Hamrin and in Iraq, in general, are illustrated in figures 510 and 511.

Painted Pottery (figs. 443–68)

The main bulk of the pottery of Tell Rashid has come from levels III and II, because 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 forces. 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 find spots. The assemblage includes a variety of bowls, jars, and beakers. As a rule, vessel types similar to types found at Abada are given the same

number in our classification, while new numbers are given to the new types not represented at Abada.

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 hemispherical bowl with curved walls and rounded base. Of special interest is that in figure 447: 2; both the 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 in figure 447: 3 and 4, both decorated with all-over patterns, the latter bearing decoration closely comparable to Hajji Muhammad (Ziegler 1953, pl. 37 b: 63). A round bowl with slightly out-turned rim bearing all-over decoration consists of a row of large triangles set vertically. Cross-hatched triangles alternate with black ones ornamented with snake shapes in reverse and other signs (fig. 447: 3). This sort of painted design has not been attested before.

Bell-shaped bowls were also represented. Of interest are those that bear a unique decoration possibly depicting a mythical creature (figs. 443: 1; 444: 2).

Large, wide, open-mouthed bowls with decorated interior bases, some bearing the characteristic sunburst decoration, were also found (figs. 443: 7, 8; 446).

These and other types of bowls, along with their numbers and frequency, are found in table 29.

Jars (fig. 452)

Jars at Tell Rashid were represented by a variety of types. These are types 1–6 and 8, a description of which can be found in table 30.

Beakers (fig. 455)

Beakers decorated with all-over patterns were represented by three types:

1. Small carinated beakers with a flat base, concave sides, and flared-out rim (fig. 455: 1, 2). This type is similar to beakers from Abada (Type 1), and Tepe Gawra XIII (Tobler 1950, fig. 202).
2. Beakers with almost straight sides and a slightly out-turned rim (fig. 455: 4, 5).
3. Carinated beakers with straight sides, a slightly out-turned simple rim, and a flat base (fig. 455: 3).

Table 28. Categories of sherds found in the sequence at Tell Rashid

	Category	*No. Recovered*	*Freq. %*
1	Painted pottery	1678	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		2365	100.00

Table 29. Occurrence of vessel types (bowls) at Tell Rashid

Type		*Level IV*	*Level III*	*Level II*	*Level I*	*Total*	*Frequency %*
1	Bell-shaped bowls (fig. 443: 1 and 2)	-	2	3	1	6	10
2	Hemispherical bowls (fig. 447)	2	5	6	4	17	22.22
4	Large, deep bowls (fig. 449: 2 and 4)	-	3	2	-	5	8.89
9	Carinated bowls (fig. 449: 1)	1	2	3	-	6	10
14	Long, open carinated bowls with interior and exterior decoration (fig. 443: 3–8)	7	12	16	11	46	34.44
16	Deep, broad-rim bowls (fig. 450)	-	6	4	-	10	14.44
Total		10	30	34	16	90	100.00

Table 30. Occurrence of vessel types (jars) at Tell Rashid

Type		*Level IV*	*Level III*	*Level II*	*Level I*	*Total*	*Frequency %*
1	Lugged jars (fig. 452: 1 and 2)	-	7	2	1	10	15.87
2	Handled jars (fig. 452: 3 and 4)	-	5	4	2	11	17.46
3	Interior-ledge-rim jars (fig. 452: 6; 454)	-	6	6	3	15	23.80
4	Necked jars (fig. 452: 8)	1	4	5	3	13	20.64
5	Small carinated jars (fig. 452: 7)	-	1	1	-	2	3.18
6	Spouted jars (fig. 452: 10–12)	-	2	3	-	5	7.94
8	Globular jars with short neck and out-turned rim (fig. 452: 9)	-	3	4	-	7	11.11
Total		1	28	23	9	63	100.00

Incised/Impressed Ware (figs. 469, 470)

Incised or impressed pottery was abundant throughout the sequence at Tell Rashid. Examples bearing combined decoration of incised/impressed and painted elements were also present. The percentage of each is shown in table 28. 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, are for example figure 469: 5, 12, and 13. The first seems to have been produced by pressing a rounded tool, which could have been a stick or bone with pointed head, onto the wet surface of the vessel. For the second, the impressions could have been made by pressing a reed splinter against the wet surface of the vessel (fig. 469: 12). Others might have been produced by pressing the wet surface deeply with fingertips (fig. 469: 13). There were only a few specimens bearing decoration combining incised/impressed and painted patterns (fig. 469: 15–17).

Halaf pottery (figs. 471: 1–8; 472)

The upper three levels at Tell Rashid, and in particular level III, have produced a number of polychrome sherds of late Halaf period similar to those from Tell Abada (figs. 392–400). The bowl with flared-out sides (fig. 471: 1) bears resemblance in form and decoration to one from Arpachiyah (Mallowan and Rose 1935, fig. 57: 2). The significance of the occurrence of Halaf pottery in these levels is discussed below.

Vessel Types and Patterns

The pottery from 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 in figure 447: 2, which resembles examples from Abada II (fig. 198: 1, 2). 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). Also of interest are large, open bowls bearing exterior and interior patterns (Type 14; figs. 443: 3–8 and 446). Bowls similar to those in figure 443: 7 and 8 were also discovered at Abada II (fig. 256: 2), Hajji Muhammad (Ziegler 1953, pl. 37 d: 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. 455: 1, 2) 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 small scale (figs. 463 and 464). Reserve decoration, a distinctive feature of Ubaid 2–3 ceramic styles, was most common and constitutes more than 70 percent of the total painted sherds. The pattern shown in figures 455: 2 and 456: 11 is similar to examples from Serik (Oates 1968, pl. X: 21). Figures 447: 5 and 459: 14 are also similar to examples from Serik (Oates 1968, pl. X: 8; fig. X1: 15). The decoration seen on the relatively large beaker

(figs. 455: 3 and 457: 2) is reminiscent of one from Tell Al-Ubaid (Hall and Woolley 1927, pl. XVIII, 1959). Other patterns, such as in figures 458: 1 and 461: 8 and 11, find their parallels with specimens from Hajji Muhammad (Ziegler 1953, pl. 37 b: 67; pl. 37 c: 100).

The all-over painted style, a characteristic feature of Ubaid 2, was also implemented on some specimens. Those in figure 447: 4 and 8 bear decoration closely comparable to specimens from Hajji Muhammad (Ziegler 1953, pl. 37b: 63; fig. 37 b: 71).

In general, the closest parallels to Tell Rashid in terms of 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.

SITE TR EAST

This very small site is located about 3 km to the east of Tell Rashid.[42] 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 (figs. 473 and 474).

TELL AYASH

This tell was located about 7 km to the northwest of as-Saadiya, 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 × 60 m, and rises about 2.25 m above the plain (Al-Jadir 1979).

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 clearer in the former. The walls were provided with buttresses and were constructed of mudbricks measuring 50 × 24 × 7 cm. The general plan seems to have been tripartite (Al-Jadir 1979, fig. 1).[43] The plans, buttresses, and the type of mudbrick are similar to both Abada and Tell Rashid.

The pottery from Tell Ayash was not abundant, and only four complete examples were found. Most interesting is the lenticular jar (Al-Jadir 1979, fig. 5). Of interest also is a jar of zoomorphic form painted in red (Al-Jadir 1979, fig. 7). Vessel types from Tell Ayash and their comparative distribution are shown in figure 511.

Other finds at Tell Ayash include the head of a human figurine (Al-Jadir 1979, fig. 8), the most characteristic feature of which is the appliqué "coffee-bean" eyes which are reminiscent of the Choga Mami 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. 512). The Ayash discoveries, on the basis of both ceramic and architectural evidence, can be dated to the beginning of the Ubaid 3 phase.

TELUL AL-KHUBARI

This tell was located about 8 km west of as-Saadiya town and 10 km east of the Diyala River. It is oval shaped, some 50 m 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 × 30 × 12 cm associated with some painted sherds were found. Impressed, incised, and painted sherds were also found as well as a few sherds of the late Halaf period (Dawoud 1979; 1984). In general, the Ubaid pottery from this tell is similar to that from Abada II and I, Rashid, and site number 3A. The site seems to have been contemporary with the above-mentioned Ubaid sites and

[42] This site was investigated by the writer during the course of his excavation at Tell Rashid. It was not located during the general survey for the Hamrin region, and thus it was not referred to in the general Hamrin map (Killick and Roaf 1979). As no original name was given to it, this site is denoted in reference to its proximity to Tell Rashid.

[43] The numbering of these figures are as originally given in Al-Jadir 1979.

can be dated to the beginning of the Ubaid 3 phase. The pottery is illustrated in figures 475–77.

TELL ES-SAADIYA

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 kilometer upstream from the modern town of as-Saadiya. It measures some 85 × 75 m and rises about 2.50 m above the ground. Six building levels were distinguished, the earliest two belonging to the Ubaid period. Parts of four houses were excavated, with mudbrick walls standing no more than 40 cm high. Six burial urns containing children were found below the floors. The small finds included clay bent nails, animal-shaped figurines, spindle whorls, celts, polishing stones, and flint and obsidian tools.

Pottery material consisted of painted pottery vessels carrying simple geometrical motifs, tulip-shaped beakers, small cups, deep bowls, and large containers. A small quantity of incised-and-painted pottery was also found.

The pottery found in the upper layer has been dated as late Ubaid, while that found in the lower level was attributed to Ubaid II–III phases (Roaf and Postgate 1981, 187).

TELL SONGOR A

Songor consists of three tells — A, B, and C — located near the junction of the Diyala River and the Narin River, which runs to the north of Jebel Hamrin (H. Fujji, 1981; 1984; K. Matsumoto 1984).[44]

The first tell, Songor A, is an oval-shaped mound measuring some 190 × 140 m in area 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. 478). The well-preserved building (the largest structure in the "Northern Area") had been constructed directly upon the virgin soil. This building is similar to the Samarra-period house plan from Choga Mami (Oates 1969a, pl. XXIV). In the central area, a group of round-shaped pits, ranging from 1.6 to 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 Samarra 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 both painted and plain styles (fig. 479). The painted pottery is of blue 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.

Bowls

Type 2. Bell-shaped bowls (fig. 479: 2, 3).

Type 4. Hemispherical bowls (fig. 479: 1). This example, decorated with isolated motifs consisting of cross-hatched lozenges on a free background, is closely comparable to one from Tell Abada II (fig. 199: 3).

Type 14. Large, open bowls with exterior and interior decoration (figs. 480: 1, 2).

Jars

Type 5. Small carinated jar (figs. 479: 4–6; 481: 2; 482).

Type 10. Lenticular jars (figs. 479: 8).

Type 12. Small squat jars (figs. 479: 7; 481: 1).

Of interest is the lenticular jar (fig. 479: 8) that is similar to examples from Abada I, Ayash, Eridu XIII–VIII, Al-Ubaid, Tepe Gawra XlX–XVII, and Ras Al-Amiya. The large, wide-mouthed bowls with base interior patterns (fig. 480: 1, 2) are reminiscent of specimens from Tell Abada, Rashid, Hajji Muhammad, and Ras Al-Amiya and other Ubaid sites. Vessel types and their comparative distributions are shown in figures 510 and 511.

In summary, the Ubaid pottery from Songor A reflects a similar situation to that of Abada II and I

[44] I am grateful to both Professors H. Fujji and K. Matsumo for their close cooperation during the course of my work in the Hamrin region and the subsequent work meetings in Baghdad and in Cambridge.

and Tell 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.

TELL SONGOR B

This tell is situated about 100 m from Tell Songor A. It has an oval shape measuring some 60 × 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. 484). B1 measured 23m × 10 m and 0.70 m wide and was constructed of tauf (rammed earth walls). 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 (fig. 60).

The Ubaid pottery from Songor B is the same in both levels II and I (figs. 485–88) and consists of various types of bowls, jars, and beakers.

Bowls

Type 1. Bell-shaped bowls (fig. 485: 2–4).

Type 2. Hemispherical bowls (fig. 485: 1). This type resembles in form some examples from Tell Abada (fig. 198: 2), Tell Rashid (fig. 477: 2), and Songor C (fig. 492: 16).

Type 5. Scoops (fig. 485: 7). Similar containers were found at Tell Abada II and I (fig. 221).

Type 9. Large, deep carinated bowls (fig. 485: 6).

Type 14. Large, open bowls with exterior and interior decoration (figs. 485: 5; 487, 488).

A unique type has large, deep, flared-out sides with an open spout bearing vertical and diagonal decoration (fig. 491)

Jars

Type 1. Lugged jars (fig. 486: 3)

Type 3. Interior-ledge-rim jars (fig. 486: 2, 5)

Type 5. Small carinated jars (fig. 486: 4)

Type 8. Jars with short neck and out-turned rim (fig. 486: 6, 8).

One jar bearing a combination of painted and impressed decoration was also present (fig. 486: 7).

The comparative distribution of these vessel types is shown in figures 510 and 511. 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 I–II 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 apparent. This was attested by the presence of some characteristic bowls (figs. 485: 5; 487; 488: 3) similar to specimens from Eridu, Hajji Muhammad, and Ras Al-Amiya, while those in figure 486: 6 are similar to examples from Arpachiyah. As can be seen from figure 511, other specimens find their parallels in both southern and northern Ubaid sites. In 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 be dated to the Ubaid 2–3 phase.

TELL SONGOR C

Songor C lies about 100 m to the northeast of Songor B. It is a small tell measuring some 40 × 30 m in area 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 in poor condition. Level I consists of a complex of eighteen small,square rooms (fig. 489). 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 (figs. 490: 1–15 and 488: 2) is indistinguishable from that of both Songor A and Songor B, and is 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. 490: 9), reminiscent of similar jars from Eridu XIII–VIII, Tepe Gawra XIX–XVII, and Ras Al-Amiya, and similar to ones from Abada I, Ayash, and Songor A. Of interest too is the small hemispherical bowl painted in all-over style with wavy lines in reserve (fig. 492: 16), which is similar to examples from Hajji Muhammad, Tell Rashid, and Ras Al-Amiya. It also is reminiscent of one from Tell Songor B (fig. 485: 1). 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 bowls (fig. 492: 16).

Type 7. Large, wide-mouthed bowls with a flaring rim (fig. 490: 14).

Type 9. Large, deep bowls (fig. 490: 12).

Type 13. Small, deep bowls with flared-out sides (fig. 490: 13).

Type 14. Open, carinated bowls with interior and exterior patterns (figs. 490: 12; 488: 2).

Jars

Type 1. Lugged jars (fig. 490: 1, 3, 4).

Type 3. Interior-ledge-rim jars (fig. 490: 11).

Type 5. Small, carinated jars (fig. 490: 6).

Type 9. High-necked jars (fig. 490: 2).

Type 10. Lenticular jars (fig. 490: 9).

The comparative distribution of the vessel types is shown in figures 510 and 511.

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 or 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 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; however 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 buried their dead at Songor A. Both the last two sites are within a stone's throw from Songor C.

TELL MADHHUR

Tell Madhhur lies in the northeastern 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 to west and about 80 m from north to south. Ubaid occupation at the tell has been subdivided into four levels, 1–4, with no gap in the occupation of the site between the levels. The earliest occupation level at the tell (level 1) was only excavated in three small soundings, and no walls were found (1982; 1984a; 1984b; 1989; Killick and Roaf 1979; Roaf and Postgate 1981).

The pottery was similar to that of the later three Ubaid levels, and in fact there was very little change throughout the Ubaid period at the site. The most important discovery was in level 2, where a well-preserved house with intact windows and doors was revealed. It is about 14 sq. m with a tripartite plan consisting of a central cruciform hall flanked by rooms to the north and south (fig. 493). The walls were constructed of large rectangular mudbricks in two sizes: 53 × 28–30 × 8–10 cm and 53 × 14.5–15 × 8–10 cm. The same kind of mudbrick was used at Tell Abada and Tell 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 antechamber into the central hall (room 7), which is 11 m long and 4 m wide. This is apparently cross shaped with two arms as transepts

toward 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 at level 1 at Abada (fig. 35). A shelf of mudbrick and an intact window above it were found in the south wall of room 3. Other windows were found in room 11. The narrow parallel rooms to the east of room 3 (rooms 4 and 5) most probably belonged to the staircase leading up to the roof; similar arrangements were found at Tell Abada (level 2, Building E). A pit was cut down into the north wall of room 9, apparently from level 3 above, and a child was buried in this pit, covered by sherds from a large deep bowl.

Room 7 is the largest one in the house, measuring some 11 m long and over 4 m wide. On the floor of the room was a row of four pots, two large jars, a globular pot, and an incised jar. Room 11 had three doors and two windows and had been heavily burnt. Similarly, room 3 on the south side of the building was also heavily burnt. This room contained a large pot full of carbonized grains that have been identified as six-row hulled barley yielding a Carbon 14 date of 4479 ± 80 BC.

Level 3 has produced a large building (fig. 494) with a solid curving revetment wall made out of tauf. This had a battered outer face and in places stood over a meter 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 quite damaged, but it seems that it may have been tripartite. In another sector of this layer, 6F, a small building was found with two 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 was a solid tauf revetment.

Levels 3–4 is considered by the excavator to be an early phase of level 4 rather than a distinct level intermediate between levels 3 and 4. The building remains consist of a rectangular room which had been reused in level 4 together with its pise revetment. The walls were made out of mudbricks 53 × 23 × 9 cm in size. The floor of this room was covered with smashed pots (fig. 495).

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. Carbonized grains were found. These were identified as six-row hulled barley.

Pottery

As we have suggested earlier, the pottery from Tell Madhhur 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. 498: 9). This type of jar is well known from northern Ubaid sites like Arpachiyah, Tepe Gawra XIII, Telul eth-Thalathat, Nuzi, and Khanijdal East. It was also found at the Ubaid sites of the Hamrin region like Abada and K. Qasim. Incised decoration (fig. 498: 1 and 2) was popular throughout the Ubaid levels at Tell Maddhur (Moon and Roaf 1984). A variety of techniques was employed, resembling some of the incised decoration occurring at other Ubaid sites in the Hamrin region (i.e., Abada, Rashis, 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. 497: 1). This example is somehow reminiscent of an example from Abu Hasaini (fig. 508).

The painted pottery was not as common as the plain pottery at Tell Madhhur. 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 figure 510. Obvious comparisons can also be made with the Ubaid sites outside the Hamrin Basin and in particular Tell Uqair (fig. 511). Vessels were represented in different forms, and a variety of painted patterns was used. Most interesting is the large, extraordinary painted jar (fig. 499: 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 and complicated 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. Ibex motifs appeared on some specimens from Tell Abada (fig. 364: 4) and Tell Hasan (fig. 505).

It was suggested that the Ubaid occupation at Madhhur belongs to the late Ubaid period (Roaf 1982, 41). To verify such an attribution, some facts concerning the pottery from Madhhur 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 that can be firmly attributed to the Ubaid 2 and 3 horizons like Abada, Rashid, and the Songor sites.
2. The percentage of painted pottery constitutes a basic difference between Madhhur and the other Ubaid sites in the region that belong to the Ubaid 2 and 3 phases. The painted pottery is predominant at those sites, while it is scanty at Madhhur.
3. Although the incised decoration was common at Madhhur, it never reached the sophisticated level represented at Abada and Rashid. The variety of techniques used at the latter sites far exceeded those of Madhhur.
4. The presence at both Abada (fig. 391) 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 absence from Madhhur, is good evidence for making the latter 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 Madhhur to the late Ubaid period (Ubaid 4).

KHEIT QASIM

This tell lies to the north of the Hamrin Basin about 18 km north of as-Saadiya. It is a flat and low mound with no definite dimensions (Forest–Foucault 1980; 1984; Forest 1983; 1984a, 1984b; Roaf and Postgate 1981).[45]

Excavations here revealed two large Ubaid period buildings of different plans. One, measuring 10.5 × 14 m, had a central cruciform hall with two subsidiary halls of similar shapes arranged perpendicularly on each side of the main hall (fig. 500). This building is reminiscent of similar tripartite buildings from Tell Abada (in particular building B of level II, fig. 24) and Tell Madhhur (fig. 493). Other parallels to this building are found at Tepe Gawra XV and Telul eth-Thalathat.

The second building is not complete and had a simpler tripartite plan measuring 10 × 10 m (Forest-Foucault 1980, fig.1).

There was little material associated with these two buildings. It included painted and plain Ubaid pottery (figs. 501 and 502). 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 was found. These are as follows.

Bowls

Type 1. Bell-shaped bowls (fig. 501: 5, 6)
Type 2. Hemispherical bowls (fig. 501: 1, 2)
Type 7. Large, wide-mouthed bowls (fig. 501: 3, 4)
Type 15. Pedestal bowls (fig. 501: 9)
Type 17. Hole-mouthed bowls with inward-curved rim (fig. 501: 8)

Jars

Type 1. Lugged jars (fig. 502: 1)
Type 4. Necked jars (fig. 502: 2–7)
Type 8. Globular jars with short neck and outturned rim (fig. 502: 8)
Type 9. High-necked jars (fig. 502: 10)
Type 10. Double-mouthed jars (fig. 502: 9)

[45] I am indebted to both Chantal Forest and the late Jean Daniel Forest for their close cooperation during the course of excavation in the Hamrin region. I am also grateful to them for acquainting me with the documents of their work, and for their hospitality in Paris.

In general, the Ubaid pottery from Kheit Qasim is identical to that from Ubaid sites in the Hamrin region, and it is indistinguishable from the Ubaid pottery of Tell Abada and Tell Rashid. Geometric decoration was predominant, and reverse patterns seem to have been common.

The architectural evidence from Kheit Qasim implies close affinity with those Ubaid sites that 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.

TELL HAIZALON

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 Madhhur. Pieces bearing incised and impressed decoration were also found (Roaf 1982). 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 Madhhur. Vessel types are as follows:

Bowls

Type 4. Large, deep bowls (fig. 503: 13, 14)

Type 7. Large, wide-mouthed bowls (fig. 503: 1–9)

Type 25. Hole-mouthed bowls with incurved sides (fig. 503: 16)

Jars

Type 2. Handled jars (fig. 503: 19)

Type 4. Necked jars (fig. 503: 20–22)

TELL BUSTAN

This tell lies in the vicinity of Kheit Qasim. It is a small mound measuring some 60 × 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 eighteen graves were discovered, furnished with pottery of Ubaid 4 style that was placed near the head in most cases (Roaf and Postgate 1981, 174). Generally speaking, little Ubaid pottery was associated with these graves, and it was of rather poor manufacture; the greater proportion was plain and is said to be similar to that from Madhhur. 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 Madhhur.

TELL AR-RUBEIDHEH

This is a low site to the southwest of the Narin River. The main site consists of a sherd scatter some 150 × 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 (Postgate 1979, 166). A fair depth of deposits and some painted pottery similar to that of Madhhur was found.[46]

TELL HASAN

This is a rather low, small, rounded site measuring some 70 × 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 (Invernizzi 1980; Fiorina 1984). 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 located on the western part of the tell, a big, deep, ditch seems to have separated the two parts of the tell, which was found to be full of sand and sherds. On the eastern side of this ditch 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 part west of the ditch, small, square,

[46] Personal communication from Professor Nicholas Postgate.

or rectangular rooms belonging to the Halaf period were packed (Invernizzi 1980, fig. 79). The painted Ubaid sherds are similar to some 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; figs. 504 and 505). The jar (fig. 504) is reminiscent of a jar from Tell Abada in terms of form and decoration (fig. 338: 4). The other jar was decorated with animals (goats and ibexes) and geometrical elements (fig. 505). This motif recalls one at Tell Abada (fig. 364: 4). No incised pottery was found.

The Halaf pottery, in general, seems to be of late Halaf date (Invernizzi 1980, 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 nor 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 absence of the incised ware, we may suggest a very late Ubaid date for Tell Hasan.

TELL ABU HUSAINI

The site was located about 2 km to the west of Tell Hasan. It is a natural mound with human settlement on part of it and rises about 6 m above the surrounding fields. A 300 × 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 northeastern one has revealed a group of mudbrick structures consisting of small square and rectangular rooms with thin walls (Invernizzi 1980, figs. J and 3). In the western trench lies a group of rooms that form a part of an apparently large house with a courtyard, but of no regular plan. There are numerous children's graves found below the floors of the houses in burial urns, with no funerary goods (fig. 506).

Artifacts are mainly of clay or stone. These are typically spindle whorls, sling balls, clay figurines, and flint and obsidian tools. Most common is pottery, with the plain ware being predominant. Of interest are a spouted globular jar (fig. 507), a knobbed jar (fig. 508), and a double-mouthed jar (fig. 509). The incised technique also seems to have been common (Tusa 1980, figs. 33, 35, 36). Painted and incised specimens were also found, but painted pottery is rare, although some interesting bowls were present (Tusa 1980, figs. 39, 40).

On the whole, the Husaini material, especially the pottery, is homogenous. Plain pottery is predominant. The incised pottery 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 (Tusa 1980, 274).

ABADA AND UBAID CHRONOLOGY

As we have already seen, the earliest level (III) at Tell Abada produced a number of vessels and a variety of sherds that are closely comparable to examples from Eridu XVI–XV (Ubaid I), together with some examples that resemble both Choga Mami Transitional Samarra/Ubaid type and more classical Samarra pottery. They were also associated with more conventional Ubaid 2 pottery (fig. 512).

This simultaneous occurrence of these different ceramic styles in one level would seem to pose a chronological problem. As far as the occurrence of the transitional pottery is concerned, we should stress the fact that we do not have characteristic Transitional material comparable with both Choga Mami and Choga Safid. Furthermore, the Transitional material follows Samarra at both of these sites, a situation that does not exist at Abada. Since 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. 2 sigma calibrated date with probability of 6079–5476 BC (0–9970) and 5401–5390 BC (0–997) 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. 512). 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. 513), which 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. 148: schema 2), the most distinctive example of which is the bowl in fig. 198: 1, 2. This characteristic Ubaid 2 type was found at Hajji Muhammad (Zieger 1953, pl. 28 d), Ras Al-Amiya (Stronach 1961, pl. XLIV: 5), and Choga Mami (Oates 1984, fig. 7: 8). Bell-shaped bowls (Type 1) are another type common at Abada (figs. 193 and 194), resembling 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 Arpachiyah (Mallowan and Rose 1935, fig. 29). The decoration on the base exterior of figure 194: 5 is reminiscent of Tepe Gawra XIX–XVIII (Tobler 1950, nos. 86–92). The quality and the painted style of the Abada examples are 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. 187: 4; 257: 1–3). 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. 262: 1–4) 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-Amiyah (Stronach 1961, 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 externally on other types (figs. 213: 2, 4–7; 222: 1–13). Another distinctive Ubaid 2 ornament is the denticulate pattern of small triangles running along the top of the rim (figs. 218: 1, 3; 220: 5) 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. 391 and Oates 1984, fig. 5: 6), and the trough-spouted vessels (fig. 336: 7) 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. 347: 1, 2; 348). 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 XlX–XVII (Tobler 1951), Choga Mami (Oates 1984, 258), and Tell Songor in Hamrin region (fig. 479: 8). 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. 512). 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 that is significant in chronological terms is the occurrence of late Halaf polychrome sherds at Tell Abada I–II (figs. 392–400). These sherds were found side by side with the Ubaid 2–3 pottery, in a 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, nor is there any Halaf occupation in the whole of the southeastern Hamrin region, where Abada lies. Therefore, the presence of these late Halaf sherds cannot be explained as being intrusive from an earlier Halaf occupation from either 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 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 that have chronological importance are the large numbers of "bent nails" that served as mullers (figs. 95–99) in both levels I and II at Abada, objects that first appeared at Eridu XII and also at Al-Ubaid, Tepe Gawra XIX–XVI, Ras Al-Amiya, and Choga Mami. Another important discovery is the "chariot-wheel" spindle whorls (figs. 1–6) 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 Tell Abada I–II.

UBAID CHRONOLOGY IN HAMRIN

A total of sixteen sites were excavated in the Hamrin region. As we can see in fig. 512, 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 at Abada were dated to the early Ubaid 3 phase. Similar dates can be attributed to the Ubaid sites of Rashid, Al-Khubari, Kheit Qasim, the Songor group, Ayash and site no. 3 (A), as these sites produced similar or even identical material to that of Tell Abada levels I–II. Of special interest is the presence of the "tortoise ware" or lenticular jars at each of Abada, Ayash, Songor A, and Songor C, as well as the presence at Rashid and Songor C of the distinctive Ubaid 2 bowl (figs. 447: 2; 492: 13). The presence of the impressed Dalma-type pottery, and of late Halaf sherds at Rashid and Kheit Qasim, reflects a situation similar to Tell Abada I–II, and since these Ubaid sites represent settlements of relatively short duration, their contemporaneity with each other and with Tell Abada I–II, 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, and 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, Madhhur has yielded painted pottery closely comparable to Tell Uqair (figs. 496: 6; 497: 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 BC, the other site is Tell Madhhur, which produced C14 dates of 5,560 ± 55 b.p. or calibrated date of 4,470 ± 80 BC (Roaf 1983, 41). 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 region 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 Kheit Qasim, both of which belong to the early Ubaid 3 phase; at the same time this type was also found at Tell Abu Husaini of the late Ubaid date. We know that this type of jar was previously known from a late Ubaid context like Tepe Gawra XIII and Arpachiyah or even as late as the Uruk period in the third millennium BC Another type of vessel that is found in early Ubaid-3 contexts in the Hamrin, like Abada and Rashid, is the type of beaker (figs. 357–61) that 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 considerable interest is the occurrence of some common features shared by both Abada I and the Arpachiyah Ubaid. The presence of identical wide-mouthed bowls decorated with bold sweeping designs at Abada (figs. 274 and 275) and Arpachiyah (Mallowan and Rose 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. 351: 3; Mallowan and Rose 1935, fig. 37: S) is striking. Moreover, both sites seem to have shared similar painted styles, as we can see in the examples (figs. 351: 5; 352: 4, 5) that resemble examples from Arpachiyah (Mallowan and Rose 1935, fig. 36: 1, 2, 4, 5, 8). In the light of these similarities

between the two sites, and between the latter site and both Songor A and B, 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 and Rose 1935, 21), we are encouraged to suggest an Ubaid 3 date for the Ubaid levels at Arpachiyah.

CONCLUSION

Sixteen excavated sites of the Ubaid period have been described, discussed, and dated in the previous three chapters. These sites, with exception of Abada and Abu Husaini, seem to represent small hamlets and are considered to be a characteristic feature of the Ubaid settlement in the north of Iraq (Akkermans 1989, 342).

Important and new evidence concerning the Ubaid period has become available, most interesting being the new data on Ubaid architecture and pottery. The most peculiar phenomenon that has clearly aroused interest is that most of these Ubaid sites, like Abada, Rashid, Kheit Qasim, Ayash, and Madhhur, share a general architectural plan consisting of small rooms of different sizes and shapes disposed around a central space that 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 Madhhur. In some buildings, other lateral T-shaped halls were placed perpendicularly to the large central one (fig. 24) 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.

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. However, it should be noted that "these regularly built tripartite structures are by no means the sole kind of Ubaid architecture; numerous other types of rectangular or even round structures have been uncovered" (Akkermans 1989, 343).

On the basis of both architectural data and factual materials, notably pottery from Tell Abada, it seems evident that this type of architectural plan (the tripartite) was well established and widely followed during the Ubaid 2 and the Ubaid 3 phases. Although we still lack evidence of earlier phase plans, evidence from Oueili, and Ubaid 0 and 1 is far from being complete, and the type of buildings is not comparable (Huot 1989, 29).

Indeed, the origins of such a plan can be traced back to the Choga Mami Transitional and Samarra periods, as evidenced by the discoveries from the transitional levels at Songor A (fig. 478), Tell es-Sawwan (El-Wailly and Abu Es-Soof 1965, pl. IX, fig. 24; Abu as-Soof 1968, pl. II; Al-A'dami 1968, nos. 2, 3; Yasin 1970, pl. 1), and Choga Mami (Oates 1969a, pl. XXIV), where we have unequivocal evidence of buttressed buildings with tripartite plans.

Temples of a tripartite plan were first discovered in the south of Iraq at Eridu VIII, where temple VII represents a well-preserved building of tripartite plan (fig. 514: 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. At the site of Tepe Gawra in northern Iraq we have a well-defined tripartite building in level XV with a cruciform central hall (Tobler 1950, pl. XV; fig. 515; and the Eye Temple at Tell Brak, fig. 514: a). The northern temple of level XIII may represent a development from the tripartite plan (Perkins 1949, 67).

In northern Iraq also, we turn to the site of Telul eth-Thalathat, where tripartite buildings were excavated by the Japanese expedition at tell 2 (Egami 1959, figs. 25, 47; here fig. 516). Although some sherds on the floor of the central room belong to the Uruk period, "others fit more easily into an Ubaid assemblage than a Uruk one" (Roaf 1984a, 84).

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 was discovered at Warka. At Anu Ziggurat were temples with tripartite plans based on those of the preceding Al-Ubaid period, as clearly shown in a building called the "white temple" (fig. 517; Eichmann 2007), 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. The striking continuity of this type of architecture is exhibited in another sector at Warka where a magnificent array of temples were erected in the so-called Eanna precinct (Warka level IV; fig. 518; Crawford 1991; Roaf 1996). 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 based on a long cruciform central court with a row of smaller rooms on either side, the second unit 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. 17, 24, 26).

Another building of the same plan is the "limestone temple" (fig. 519), which was found at Warka level V (Crawford 1991, 4, 8). Contemporary architecture of tripartite plan can be seen also at other sites such as Tell Uqair in the middle area of Iraq and not far from Babylon where a building known as "the painted temple" seems to have been of simple tripartite plan (fig. 520: b; Loyd and Safer 1943).

At the end phase of the Uruk period, a series of buildings known as "sin temples" was found at Khafaja, obviously built according to the general tripartite plan (Delougaz and Lloyd 1942). Moving to the north we find more evidence available that 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. 520: a) this building is similar to the building found at level III at Tell Rashid of Ubaid period in the Hamrin region (fig. 426).

Still in the north and in the Uruk period, more buildings of the same tripartite plan have come from Tepe Gawra levels × and IX (Tobler 1950, pls. II, III) and level VIIIc (fig. 520: c).

To the northeast of Tepe Gawra, two buildings of tripartite plan were revealed at Tell Qaling Agha in Arbil in northern Iraq, both belonging to the Uruk period (Hijarah 1973, 18). Building A displays a remarkable similarity to 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. 521: a), the same division is apparent in building B also (fig. 521: b).

To the west of Iraq, in the Habur Valley of Syria, the site of Tell Brak contains 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. 514). Similar house and temple plans were also found at Habuba Kabira (Ludwig 1977; Strommenger 1980) and Jebel Aruda (Driel 1977; Driel and Driel-Murray 1983, 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 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), thus it is probable that the plan is indigenous to northern or central Mesopotamia.

Returning back to our site of Abada, building A (fig. 17) 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 the regularly spaced buttresses, implying a symbolic value (Sievertsen 2010). 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 found mainly in unit room 3, no other domestic items were found. However, a large number of infant burial urns was 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," 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 center of the settlement, and the fact that Abada is the largest of all the Ubaid sites, suggest 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.

The material employed in the construction of the buildings throughout the Ubaid settlements in the Hamrin was mainly mudbricks measuring 50–56 × 27 × 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 mudbricks at this time, but it was not exceptional, as one can still find various building methods, such as brick, mudbrick, and tauf, used to construct houses in some present Iraqi villages.

Not only administrative and domestic buildings were represented at Hamrin, but also those used as workshops, which suggests a degree of craft specialization, such as building G at Abada. Multipurpose buildings were also found, like building I, which served as a sheepfold, barn, and store (Jasim 1989).

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 neighboring areas have been fully dealt with in a number of recent studies (Delacroix and Huot 1972; Barrelet 1974; Majidzadeh 1975; Crawford 1977), but the authors were unable to provide information about the installations during the Ubaid 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 common during the Ubaid period at Abada, Rashid, Ayash, As-Saadiya, and Abu Husaini. Such a practice may imply some religious significance. This is supported by the fact that no adults' graves were found associated with houses, but rather in special places serving as cemeteries, located far from the settlements, for example Bustan, which may have been a cemetery for Madhhur, and Songor A, which served as a cemetery for Songor C.

A rich variety of materials was 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. 34).

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 southwestern Asia, and were arbitrarily described by their excavators as gaming pieces of unknown use. With the exception of a very few spheres that were made of stone and metal, all these objects recovered at Abada were made of clay and modeled by hand. The majority of these objects was found in groups, in one building only, building A in both levels II and I, as shown in the plan of those two levels (fig. 524); each group consisted of six–eighteen objects of different shapes. Nevertheless, some were found sporadically throughout the levels. The work of Schmandt-Besserat (1977) is of particular importance. She 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 BC; 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 bulla was found containing forty-eight 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 forty-eight, which corresponds to the total number of the abnu inside the bulla (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, that is, tablets bearing only the numerous 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" (Schmandt-Besserat 1977, 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 materials is still being used in most Iraqi villages by farmers to keep records of the crops they have delivered. For instance, a farmer, or someone on his behalf, 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.[47] In this sense tokens should be considered as counters, and their presence at Abada and Tell Brak represents part of a widespread recording system that had been established throughout prehistoric sites in the area since the ninth millennium BC (Jasim and Oates 1986). It continued to operate until the fourth millennium BC 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 in calling a proto-tablet (fig. 115: 1; 116: 3) bearing on its upper surface signs arranged in four parallel lines. Although no study was conducted by epigraphers 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 that had such momentous consequences in human history.

The most important and an extremely interesting discovery from our Ubaid sites is the large quantity of Ubaid pottery. Of special interest is the site of Tell Abada, where we found tens of thousands of

[47] Another example that demonstrates the function of tokens comes from my own city of Hillah, near Babylon in the middle of Iraq. There the people who working in premises and shops in a particular area used to drink a good deal of tea at various times every day that was provided for them by some café nearby. They would give the tea man one particular token for each cup of tea they took, and these tokens would be exchanged for money at a later time.

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 that were located in the southeastern part of the Hamrin region (Tell Abada I–II, Rashid, site no. 3 [A], Ayash and Al-Khubari) have produced indistinguishable Ubaid pottery that could have been manufactured or produced in one production center in the area and distributed to the other Ubaid sites mentioned above. The Ubaid 3 pottery found at Tells Songor A, B, and C and Kheit Qasim, which occupy the middle sector of the northwestern part of the Hamrin, is similar and was slightly different from the Ubaid pottery of the first group. Of similar interest also is that all the sites which belong to the late Ubaid period like Madhhur, Hasan, Haizalon, Rubeidheh, Bustan, and Abu-Husaini (fig. 523) were located close to one another, in the northern part of the region. The reasons and the implications of such a distribution will be discussed in the next chapter.

CHAPTER 5

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 difficult. However, the excavations in the Hamrin region have made available a considerable amount of information with which we shall endeavor to reconstruct Ubaid society, bearing in mind that any form of prehistoric reconstruction will be far from being 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 that was introduced to the field of archaeology in the early 1950s (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 that implies social and political matters. Here we use "settlement pattern" as a broader concept to consider factors affecting 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 behavior and hierarchy.

SITE DISTRIBUTION

The concentration of some sixteen Ubaid sites in one geographical area, "the Hamrin region," is a rather interesting feature of the Ubaid settlement pattern that 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.[48]

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 from rainfall and wells, or irrigation, is considered one of the most powerful factors affecting settlement patterns in Mesopotamia, due to the aridity of the region (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 location "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 defense, contribute to site location (Plog and Hill 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 BC (Oates 1972a, 299).

[48] Some fifty Ubaid sites were found, concentrated in an area of 350 km around Tell Afar in northwestern Iraq (Oates 1980, 307).

SOIL TYPES AND SITE LOCATIONS

The total area of the Hamrin region is about 600 square kilometers. The major types of soils contained in this area are shown in table 31 below. The description and the results of laboratory analysis for each of those types were given above 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 consistent mixture of alluvial clay, silt, and loam. The examination of the distribution of the Ubaid sites throughout the region, and of 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 4) were 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 that might have had a strong effect. A glance at figure 6 shows that there are two marsh areas located in the northwestern 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 times, as we can see from figure 6 that some of the Ubaid sites are located near the marsh areas that may have existed at almost the same locations. The group of tells Songor A, B, and C is 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 Kheit 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 farther then. The presence also of a large, wide, alluvial depression chand that 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. 34). To the north these water pipes were traced along a distance of about half a kilometer and apparently extended farther to join the chand that 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 until it joined Kurderreh river, which lies just a bit farther 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 resources for fishing and fowling, as well as routes of communication. The discovery at Abada of a pottery boat model similar to those balam used in Iraq today (fig. 105: 1, 2) is reminiscent of similar boat models from Eridu (Safar et al. 1981, fig. 111). These obviously indicate the use of such boats by the Ubaidian culture 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.

Table 31. 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-saline or slightly saline soil, with some structural deterioration
Kanaan	Coarse-textured, saline soil

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 agricultural economy based on the use and exploitation of both alluvial soil and water.

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 variants such as 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 harvest, an occurrence that 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.E." (Oates and Oates 1976a, 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 BP (Wright 1960; Van Zeist 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 circa 6500–5000 BC and perhaps extending into the fifth millennium (Oates 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). If the present-day climatic conditions are generally similar to the ancient ones, then 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 elucidate this proposition, a consideration of the agriculture, both rain and irrigation based, will be necessary.

Rain Cultivation

As demonstrated in chapter 1, the climate of the Hamrin region may be classified as semi-arid. The area receives on average rainfall of 327 mm, falling almost entirely 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 unfavorable rains occur may be gathered from table 32, which gives total precipitation for the months October–May over a period of more than twenty years at Khanaqin. Bearing in mind that Khanaqin is wetter than the Hamrin region, it will be noted that in terms of total precipitation, two out of twenty-two years had less than 200 mm, seven years had between 200 and 250 mm, and one year had between 250 and 300 mm. While a total precipitation of 250 mm is marginal for wheat and barley, this total may be regarded as being just sufficient provided the rainfall is uniformly distributed.

Irrigation Pattern

The current 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 generally 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 kilometers, not one of these has any head works, 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 meters per kilometer (fig. 6) and drains into the Kurderreh River and the 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.

Table 32. Total rainfall per winter season (October–May) at Khanaqin, 1936–1958 (Diyala and Middle Tigris project, report no. 2, Macdonald and Partners 1959).

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 / 53	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 between 250 and 300 mm

** Seasons with total rainfall between 200 and 250 mm

*** Seasons with total rainfall less than 200 mm

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 situated on the outside of a bend in the river about 400 m downstream 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 downstream of the last canal and runs parallel to Diyala past Saadiya. This canal, which is about 8 kilometers long, irrigates the area adjacent to the confluence of the Kurderreh and Diyala.
4. The remaining area between Diyala and Narin Chai is served by a group of four canals, of which the largest is "Mahmula," and these later canals take off from Diyala at a common take-off point opposite as-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 found along the chand in the southern part of the region just near Abada.

At the northwestern 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 kilometers to the southwest. Characteristic of heavily sediment-charged rivers, the Narin Chai is bounded by a low ridge through which the surface drainage cannot pass. The groundwater, 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 BC who were practicing 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 probably used it in the Hamrin Basin.

Ancient Cultivation

The growing season of cereals in the Middle East, along with all major crops that 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,[49] 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 (table 33).

It seems evident that despite the limited botanical evidence from Abada compared with 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 millennia BC.

Animal Husbandry

Significant rainfall in the Hamrin region results in favorable conditions for the natural grazing of large populations of animals. The animals graze on fallow and waste land in the winter, on stuffle after harvest, with some migrating to mountain pastures in the summer.

Livestock are found in all zones of the region today, but are of special importance in the hills that 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

[49] Palaeo-botanical remains from Tell Abada were identified by Michael Charles and Gordon Hillman, to both of whom I am greatly indebted (see table 3).

Table 33. Palaeobotanical 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. Two near certain, others dubious
8	Cereals / grasses, indeterminate
9	cf. Hordeum sativum, possibly 6-row naked barley. If it is, then this is interesting as it is (one of) the latest occurrences of naked barley in the 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 / T. boeoticum

their large flocks of sheep and goats. They provide important winter grazing during the period when most of the fallow land has already been plowed 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 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 is used for making tents and ropes.

Hunting, though on a very limited scale, is still practiced; gazelle and wild fowl are the preferred game. Fishing is widely practiced in rivers like the Diyala, Kurderreh, and Narin Chai. The marsh areas in the southwestern 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 disposed of as they cause considerable damage to the cultivated lands; perhaps they were eaten in the past. The marshlands have a high water table and a distinctive marsh vegetation. They serve a useful purpose at present as wildlife habitats 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,[50] both sheep (Ovis) and goats (Capra) were available; cattle, which were domesticated later in southwestern Asia than sheep and goats, were also found at Abada in both wild and domesticated forms. Cattle bones represented about 17.40 percent 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 percent 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

[50] See appendix 3, "The Animal Bones from Tell Abada" by Sebastian Payne.

the Palaeo-botanical evidence); and second because it reflects the importance of such animals in communities whose economy was largely based on agriculture, as they were capable of drawing a plow, which was necessary to prepare the land for sowing cereals. Hence it would be plausible to suggest that some sort of ox-drawn plow was already in use during the fifth millennium BC and that plow cultivation had accompanied irrigation agriculture even in the earlier Samarra period (Oates 1972a, 305; 1980, 306).

Nevertheless, and despite the lack of remains of plows, which were presumably wooden, we should not exclude the possibility that human-drawn plows were in use side by side with ox-drawn ones; this is still the case in some parts of Iraq and southwestern Asia today. Finally, it is important 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. Rain-fed cultivation was widely practiced 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 gazelle, 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 bread wheat).
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 farther to the north of Abada, while wild boars were hunted in the marshes, located about 15–30 km to the northwest 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 plow and plant; and 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 6 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 with a radius of 2 km is drawn around each of the Ubaid sites to show

the availability of arable land that could satisfy the basic requirements of the inhabitants, but settlement territories could be extended roughly as far as is shown by these polygons (fig. 523). 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 plow), 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 used effectively by farmers for plowing. Thus, assuming that Abada's population, as we will see in the next chapter, was about eighty to a hundred persons, leaving aside the old and children, the labor force could be estimated as about thirty-five to forty 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 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 required 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 farther to the northwest. The size of population is another important factor affecting the size of the catchment area; sites with relatively large populations like Abada could afford to send more of their members far away while some others stayed 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 a place to live. A look at the map of the region (fig. 6) clearly shows that the Ubaid people deliberately chose a valley that is surrounded by Jebeles, 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 3). The Hamrin region also lies on the most important routes in western Asia linking Iraq to Iran and running north to south along the Zagros (figs. 2 and 3). These routes can have changed little throughout the centuries due to the physical character of the region (Postgate 1984, 594).

Therefore, it seems evident that ecological, geographical, and economic reasons were all behind the selection of this 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.

CHAPTER 6

COMMUNITY PATTERNS: INTER- AND INTRA-SITE ANALYSIS

SITE SPACING AND DEMOGRAPHY

We have already seen in chapter 5 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 that should be raised now is: What pattern is discernible 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.

It seems evident, as seen from the map of the region (fig. 425), 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 distances between one site and another range from about 2 km to 14 km.

With the exception of Tells Songor A, B, and C, which are located not more than 100 m from each other and might have been one ancient settlement but comprising three different sites, the calculation of the distances 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 separates Tell Abada from each of Ayash and Telul Al-Khubari.
3. A distance of about 6 km separates Ayash from the Songor group.
4. A distance of 2 km between Al-Khubari and Ayash.
5. A distance of about 4 km separates Kheit Qasim from the Songor group.

This apparently irregular spacing should not necessarily be explained in terms of randomness, because individual behavior 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 the 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 the zone created was actually much 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. 522) would further rule out such a postulation. Should the desire to acquire more surrounding lands have been the reason behind the 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 that 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 km, 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. Thus an area that 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 incursion 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 one another 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. T. R. 3, Ayash and Telul Al-Khubari is very similar to each other (this group of sites is located 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 5, 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 settlements, 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). As Renfrew (1972, 383) has pointed out, however, 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, that is, 10 square meters 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 analyzing 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 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 necessarily reflect the number of people accommodated, but nevertheless the case seems generally to be so.

Unfortunately, only a few residential units have been excavated at a few of the Ubaid settlements in the Hamrin region. Other Ubaid settlements in the region were either poorly destroyed or produced only sparse 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 an almost complete picture of a village ,which will enable us to obtain a better idea about the dwelling units and their populations. 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 existent ones. They may also have been residential units that have been demolished during the course of time due to their location on the edges of the site. The size of

each of the existent 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, along with contemporary settlement data from closely comparable Iraqi villages, constitute the grounds for our estimation. Taking all these into consideration, we come to the conclusion that Abada was occupied by roughly 80 to 120 inhabitants. We should point out that this figure is considered to represent the highest 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 Mesopotamia. 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 BC is absent (Oates 1977, 472), but the excavations of the Ubaid sites in the Hamrin region have made available some evidence that can be interpreted in terms of status differentiation and economic rank. It is normally understood that "wealth and status covary 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 finds of the houses should be good indicators of variations in the social and economic status of their occupants. At Abada, houses vary in size and contents (Jasim 1989). Two groups of houses can be differentiated in terms of size. Firstly, a group containing building A (240 sq. m), building B (210 sq. m), and building J (215 sq. m). The other group is generally of smaller 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. 523), 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 34. Distribution of special objects throughout the building levels at Tell Abada

Building	*Room*	*Object*	*Quantity*	*Figure*
A (L II / I)	1	Special burial urns	3	58
A (L II / I)	1, 2, 7, 24–29	Clay tokens	90	109–16
A (L II / I)	17	Special gypsum items	1	145: 1
A (L II / I)	20	Marble vessels	5	117: 1–5
A (L II / I)	1	Marble mace-heads	4	135: 1, 3, 4
A (L II / I)	1	Palettes	1	137: 5
A (L II / I)	9	Unique beaker	1	366
A (L I)	5	Lenticular jar	2	347: 1, 2; 348
B	119	Unique beaker	1	354: 1
B	124	Marble vessels	3	117: 6–8; 118
B	121, 122	Mace heads	3	135: 6–8
B	122	Marble studs	2	106: 7, 8
B	122	Marble pendants	2	106: 3
J	134	Mace heads	2	135: 2
J		Marble studs	1	106: 9
J		Marble pendants	1	106: 1

As can be seen from this table, these large houses have produced particular evidence in the form of distinctive objects or particular features that can be thought of as status symbols. The presence beneath the floors of building A alone of three child-burial urns provided with funerary offerings (a necklace consisting of frit and carnelian beads, a female figurine, and a painted cup, respectively) is an obvious clue explaining the status of the occupants of this building. Although "this implies relatively low status for the infants, but the fact that they were interred in specially made vessels suggests a special burial

rite" (Hole 1989, 164). Other indicators of status are the four mace heads made of a very fine quality of marble, together with five marble vessels and other special items, in addition to the large collection of clay tokens mentioned earlier (chapter 2, section G). The building is distinguished also by its gypsum-plastered interior walls, not matched by any other house in the village.

Most important is the exterior wall of the building, which was adorned with buttress and recess arrangements along its entire periphery (fig. 17). This elaborate arrangement has been sensibly taken as an indication of high-status prestige (Sievertsen 2010) and considered to have been an "architecture of the semi-official sphere that played a vital part in the emergence of the imposing official architecture in the latest phases of the Ubaid period, thus representing an interim stage" (Sievertsen 2010, 216).

All this evidence would support our earlier impression that this building may be singled out as the most important one, which must have been occupied by the some privileged people in the village, probably the sheikh and his family. Both houses A and B seem to have been 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. 524). 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. 34) might also reflect status distinction. Such repositories had been in use during the Halaf period and continued into the Ubaid period (Ozbal 2010, 44). However, it should be pointed out that these granaries are of modest size and are most probably privately owned by the families utilizing those particular buildings associated with them. This situation rules out chiefdom control or communal use as far as Tell Abada is concerned.

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 finds (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, followed by the occupants of building J. All other buildings in level II seem to have been more or less 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 within this small chiefdom.

The complexity reflected in non-religious buildings at some of the Ubaid sites like Uqair, Oueili, and Abada has led Gibson to think of "Kingdoms and kings with real power in the Ubaid and not just chiefs and chiefdoms" (Gibson 2010, 86). However, the suggestion that "Ubaid Mesopotamia consisted of a series of small, localised chiefdoms based on staple finance" (Stein 1994, 41) sounds both practical and plausible.

SITE HIERARCHIES

Throughout this chapter we have been dealing with various aspects of socio-political organisation within the Ubaidian community as part of a general analysis of the settlement patterns of the Ubaid sites in the Hamrin region. The next step in this 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 analyze 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 criterion to establish site hierarchies. Adams and Nissen (1972) have used this criterion 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 at the smaller sites, and these larger centers are spaced at greater intervals (Hodder and Orton 1976, 60). This method thus proposes two kinds of places: central places and dependent places, with the first category being more important, larger trade centers, while the second group is 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 (1966) and the similar model of Losch (1954).

A central place was defined by Johnson (1975) as "the spatial locus of an activity agglomeration involving production and distribution of goods or services or both, preliminary for use within a surrounding complementary region" (Johnson 1975, 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 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 regions, by considering the significance of the sites associated with ceramic wall cones as being specialized administrative centers for the mediation of local exchange (Johnson 1975, 336). By using this approach, Johnson (1975) has recognized a four-level settlement-size hierarchy in this area.

It appears 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 1970, 67), such as the presence of defensive walls (Hodder 1972, 891). The criteria we propose for the classification of sites in hierarchical levels in the Hamrin region make use of various aspects of interaction and influence among the sites. Where sites are associated with a particular architectural feature, or an industrial or artefact type, this association will be used as a measurement to implement the model. These measurements can be classified as major 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. 17), 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 that 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 evidence is the presence of specialized workshops for pottery or stone industry, and also the presence of large, double-chambered, highly specialized, and technically sophisticated kilns dedicated to pottery manufacture. Sites of the previous two groups could 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, and whose levels can be established.

1. Major administrative centers that were associated with measures 1–5. It is evident that Abada is the only site that should be singled out, due 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: Tell Rashid, Kheit Qasim, Ayash, and Songor. These sites share with Abada one of its prominent 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 that is generally applicable, and 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. Two hierarchical levels were established for these more or less contemporaneous sites that 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, although we have been dealing with contemporaneous settlement patterns of the Ubaid sites in the region, we did not mention the sites of Telul Al-Khubari and number 3 (A), 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 4).

THE HOUSEHOLD AND THE RESIDENTIAL UNIT

There is no doubt that the basic and the most socioeconomic manifestation at the community level is the household and the unit that accommodates 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 and throughout the early dynastic period (Oates 1977, 474). However, it has been assumed that "these buildings were intended in the first instance for living" (Akkermans 1989, 343). This appears to be true in light of their layout and the domestic nature of their contents.

The building material used, in the majority of the Ubaid sites in the region, was mudbricks of large, rectangular shape. Mudbricks were the most convenient material for the climatic conditions in Mesopotamia at that time and remain so today, as they insulate against 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, which was attested by reed impressions that 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 that could be interpreted as having housed a staircase (figs. 17, 24, 26, 493, 500). This is not necessarily indicative of the presence of a second level, as the staircase could simply lead to the roof (Roaf 1989, 94). The roof was likely to have been constructed with split-tree trunks and overlaid by mats and sealed with a thick layer of mud. It was most probably flat, so it could be utilized as a space for domestic activities as well as a sleeping place during summer nights. The ethnographic data from present-day Iraqi villages would strongly support this assumption. Roofs seem to have covered all parts of the tripartite Ubaid house including the central hall, as indicated by fallen roof beams at Abada

The Ubaid houses were provided with doors, whose stone sockets are still in situ. Thresholds were also noticed in rooms inside different buildings at level II, but neither door sockets nor thresholds

were recorded from other levels. Openings in walls, or "windows" serving for light and ventilation, can be assumed, but no postulation can be made due to complete absence of evidence.

Hearths were installed inside rooms and were presumably for heating, and bigger ones were found in the courtyards, presumably for cooking purposes.

A number of domestic activities appear to have been carried out in the courtyards. Various grinding and pounding stones were discovered, which were presumably used for food preparation; cooking pots, storage jars, utensils, and hearths were found in these courtyards. Numerous spindle whorls for making threads from wool for textiles, figurines, and personal adornments were found inside the rooms. 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 were 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. 34); the same method is still practiced in some villages in Iraq today.

Ritual activities seem to have also been practiced within the Ubaid houses in Abada. A large number of infant burials were placed beneath or over the floors of the houses.

The main entrances to the Ubaid houses faced in a southwesterly direction in most cases, presumably to avoid the harsh northern winter wind, and to face the refreshing western summer wind. This traditional arrangement is common in Iraqi villages today.

The size of the Ubaid house is of interest. Houses vary considerably in size from about 70 square meters (fig. 25: D) to about 240 square meters (fig. 17). 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. 25: C), 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. 17, 24, 33).

CRAFT SPECIALIZATION

The detection of specialization in archaeology is not an easy task. It requires an extensive knowledge of intra-and inter-site variation, which could be achieved through either random sampling or complete excavations. Pottery kilns at both al-Ubaid and Eridu were not observed by the excavators then, but recent visits to these sites by Moore (2002) has indicated the presence of kiln areas situated at the edge of the settlements. These were apparently used to produce the characteristic Ubaid pottery at the two sites.

The thoroughly excavated Ubaid site of Tell Abada has fortunately furnished us with unequivocal evidence of craft specialization; in level III an industrial quarter consisting of two large, multi-roomed, rectangular courtyard buildings was 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 ocher and grinding stones on which it had been prepared were found. The presence also of large gypsum hemispherical discs of various sizes, parts of a potter's-wheel equipment, and large storage jars probably for keeping water, together with the discovery of three large kilns with a lot of ceramic debris and waste, would suggest a pottery workshop at this level of the site. The concentration of many and various types of kilns in specific areas throughout the settlement may indicate several independent workshops (Hansen 2000, 80).

The ceramic industry was well developed, and there were "several potters employing different kinds of kilns that reflected different levels of technological sophistications and varying amounts of labour investment in their construction" (Patterson 1989, 313). Sixteen pottery kilns were found, some of which were highly sophisticated, double-chamber kilns (figs. 59–70). Some of these kilns, coupled with the massive occurrence of 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 ascertain 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 compete 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. 60), was found at Tell Songor B (Fujji 1980, pl. 20: 1), and the possibility 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 southeast of the region and Songor in the northwest. "The kilns at Tell Abada and the large pottery-firing installation at al-Ubaid and Eridu provide valuable testimony of the scale and complexity of pottery production in Ubaid times, something that hitherto we have had to infer simply from the standardised nature of the pottery itself" (Moore 2002, 76).

The large quantity and the wide variety of the ground-stone industry that was represented at Abada, and to a lesser extent at other Ubaid sites in the region, reflects another craft specialization and may imply labor specialization. The lithic industry at Abada was carried out in a special workshop (fig. 20, building G, L II; fig. 279; fig. 30, building B, L II; fig. 523), here we found digging-stick weights, loom weights, and various grinding stones, some of which were left in incomplete shape, others probably broken during manufacture. A lot of waste debris was also noticed scattered all over the floor. 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. Obsidian, which had to be imported as raw material, was most probably locally used for blade production. Various obsidian blades were found, notably the serrated sickle blades hafted in bitumen.

Another kind of household activity conducted by the Ubaidian people was textile weaving. It has been assumed that the "ubiquitous occurrence of spindle whorls in the earliest villages attest an extensive textile production" (Oates 1993, 408). In this regard we note the large number of spindle whorls in almost every house in Tell Abada (figs. 87–90). It is of particular interest to mention here that the types of these spindle whorls are similar to those still used in Iraq today.

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 apparently 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 used in making mats, and coil work which was used in making smoother and finer basketry (fig. 147).

Of special interest are the small bowls of highly polished stone (marble) that were found distributed in only some of the houses (fig. 524), but 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 (fig. 137). Of interest also is the presence in the same house of small regular slabs of fine marble that were apparently prepared to cut out pendants (figs. 137: 2–4; 138: 3–6). Beautifully executed pendants of the same material were found at the same place (fig. 106: 1, 3). 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 were obtained from the present Iraqi villages that practice extensive agriculture and are known to specialize in one or another craft such as textiles, basketry,

pottery, olive oil, or wine (personal observation). In these contemporary 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, as 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 were village specialization and 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 that needs to be clarified concerns the division of labor in terms of sex, which is difficult to demonstrate, and any conclusion in this respect would be most speculative.

FOREIGN ANALOGS

Ubaid pottery from the Hamrin sites shows the greatest number of comparandae with the Ubaid repertoire in southern and northern Mesopotamia, 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 outside sites.

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 southwestern 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 relationship between the Ubaid settlements in the Hamrin region and these Iranian sites, the available evidence concerning the kind and the extent of similarities that might imply the existence of such relations must be further explored. 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 Bandibal (Susiana d), no important evidence can be found, and the similarity lies in 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. 198: 1–2; 447: 2). 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 from Abada III (fig. 187: 1). That part of the large, open bowl with interior decoration on its base (Le Breton 1947, fig.23: a) is similar to Abada II (fig. 285: 3).

More recently, a new terminology has been postulated for the lowland Susiana sequence based on discoveries from the site of Chigha Mish (Alizadeh 2008). The many similarities in the pottery repertoire and other utilitarian objects between southwestern Iran and the Ubaid 1 phase in southern Mesopotamia during the early Susiana Period have led to the conclusion that "Susiana was in a lockstep development with southern Mesopotamia" (Alizadeh 2008, 10). During the early part of the middle Susiana period, contact with southern Mesopotamia-Ubaid 2 and Susiana was strong (Alizadeh 2008, 11). Most significant is the appearance of similar lenticular or tortoise-shaped jars at both Chogha Mish (Alizadeh 2008, fig. 52: d and j) and Tell Abada (fig. 348). As we have already seen, these types of jars are known from southern Mesopotamian Ubaid sites such as Eridu and Ras al-Amiya, northern sites such as Tepe Gawra, and the Hamrin region sites including Tell Abada and Tell Songor B. Close comparison can also be made between certain vessel types and decorative motifs from Abada and Chogha Mish: for example, the bowl (Alizade 2008, fig. 38: l) is similar in shape to the bowls (figs. 160: 1, 2; 161: 2), while its interior decoration resembles (fig. 256: 1).

Close parallels can also be drawn with high pedestal vessels from Tell Abada (fig. 268: 1–3) and Chogha Mish (Alizadeh 2008, fig. 43: g–j). The form

of the vessel (fig. 361: 3) is closely comparable to one (Alizadeh 2008, fig. 36: j), while the form of (fig. 328: 6) is comparable to (Alizadeh 2008, fig. 44: s).

Similarities also exist in certain decorative motifs at both Abada and Chogha Mish; the solid circle bordered by small dots (Alizadeh 2008, h) is identical to (figs. 317: 18; 321: 9). The ibex motif (fig. 319: 1) is reminiscent of (Alizadeh 2008, fig. 40: k, n).

Bowls of Type 14 are reported from the Deh Luran Plain; at Tepe Sabze a variety of specimens of this type were found (Hole et al. 1969, figs. 56, 57) 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. 154: 2).

At each of Giyan, Sialk III, and Bakun AIII, similarity with Abada pottery is mainly confined to a small number of painted designs most notably that of figure 243: 18, which is identical to one from Bakun AIII (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 Pisedeli Tepe, where a number of painted vessels similar to Abada examples were found such as the one illustrated in figure 200: 4 (Dison and Young 1960, fig. 1:3). These are as follows:

Due to these apparent similarities between Pisedeli and the Ubaid sites in Iraq, it was suggested that "Pisedeli ware is the first documented evidence of pottery of pure Ubaid style" (Dyson and Young 1960, 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 Kheit Qasim, of the impressed ware closely matching Dalma impressed ware. Some similarities with the painted ware at Dalma[51] 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. 231: 6), may have been imported from the Hamrin region. This would also explain the presence at Abada of a Dalma-like painted bowl (fig. 201: 4) and two other sherds of the same tradition, which could have been imported from the latter site. However, it has been argued that "this lowland impressed pottery is not true Dalma Impressed, though it may represent local copies of Zagros DI ware, and this appears to be an example of intercultural transmission of a stylistic idea" (Henrickson 1989, 382).

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 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?

Table 35. Comparative painted vessels at Tell Abada and Pisedeli Tepe in Solduz Valley

	Tell Abada	*Pisdeli Tepe* (Dyson and Young 1960)
Level I	fig. 200: 4	fig. 1: 3
Level I	figs. 201: 2; 243: 13	fig. 1: 5
Levels I–II	fig. 307: 7	fig. 2: 1
Levels I–II	fig . 328: 4	fig. 2: 2, 5
Level II	fig. 204: 14	fig. 2: 3
Level II	fig. 283: 3	fig. 3: 4
Level II	fig. 298: 19, 20	fig. 3: 1

[51] Examples of similar items, from Young 1963, 39, are no. 3 (cf. Abada, fig. 271: 3); no. 5 (cf. Abada, fig. 195: 15); no. 7 (cf. Abada, fig. 201: 4). Examples of similar items, from Young 1963, 39, are: no. 3 (cf. Abada, fig. 271: 3); no. 5 (cf. Abada, fig. 195: 15); no. 7 (cf. Abada, fig. 201: 4).

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 were 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 1965; 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 Uraemia 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 Saghir (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 Kheit 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. 380: 3; 381; 382: 1, 3). 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 Djaffarabad 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. It is also highly probable that it was simply imported from Iran.

At Abada I–II, 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. 401). Identical sherds were found at both Ras Al-Amiya (Stronach 1961, 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 (see above, n36).

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. 132: 5–7). These were apparently used to stir boiling asphalt when it was being prepared for use as a mastic. These tools have not been 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.

New evidence on major Ubaid sites has also become available from the Upper Euphrates area. In the Balikh Valley in northern Syria, pottery finds from the site of Hammam et-Turkman display close affinities with Abada's pottery. Identical shapes and decorative designs at both assemblages from the two sites bear convincing testimony to contact between the two regions (Akkermans 1988). Excavation at Tell Zeidan in the Euphrates River Valley of north-central Syria has revealed a large regional center or town dating to the Halaf and Ubaid periods. Ubaid materials from Tell Zeidan include painted pottery bearing geometric stylistic that are typical of southern Mesopotamia (Stein 2010, figs. 16, 17) and also resemble some of the Tell Abada examples in both forms and decoration. Most interesting is the discovery of baked-clay bent nails or mullers, a distinctive marker of southern Ubaid (Stein 2010, fig. 11) and central Mesopotamia such as the site of Tell Abada (figs. 95–99). Ubaid-period strata were also present at Tell Leilian on the Habur Plain of Syria (Weiss 1985) and the site of Tell Kosak Shimali (Nishiaki and Toshio 2001; 2003).

Closely comparable Ubaid material was discovered at the site of Tell al-'Abr in the upper part of the Syrian Euphrates Valley (Yamazaki 2010). Ubaid material was also found at the site of Tell Aqab in northeastern Syria (Davidson and Watkins 1981) and Tell Kashkaskok II in northeastern Syria (Koizumi 1993).

Moving to southeastern Turkey in the upper Tigris River Valley, the site "Kennan Tepe" has produced Ubaid material comparable to Tell Abada and other Ubaid sites in the Hamrin region (Parker 2010). Ubaid materials were also found at the site of Horum Hoyuk (Fletcher 2010) and Tell Kurdu in the Amuq Valley in southeastern, Turkey which is considered to have been a part of general scenario in northern Mesopotamia during the Ubaid period (Ozbal et al. 2001; Ozbal et al. 2004; Ozbal 2010). Of particular interest is the presence of a tripartite-style architecture at the site of Degirmentepe that reflects remarkable resemblances with southern and central Mesopotamian sites (Stein and Ozbal 2007, 336). However, while the tripartite-style Ubaid houses in southern Mesopotamia and in the Hamrin region were freestanding, in Degirmentepe they appear contiguous. This architectural pattern is "typical of both north Mesopotamian Jazirah and Anatolian traditions" (Stein 2010, 37).

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 wares along with their traditions, or could it be interpreted as a sort of invasion or expansion at the expense of others? Such questions remain difficult to answer in the light of the evidence at hand.

TRADE

It has been asserted that "Mesopotamia is wholly lacking in raw materials and that the necessity to organize the long-distance acquisition of such resources was a major factor in the early development there of complex political and economic forms" (Oates 1993, 407).

The geographical position of the Hamrin region (figs. 2, 3) was obviously important in encouraging and facilitating the movement of groups, people, and information between regions. The interaction of goods and information has been considered as the "embeddedness" behind the evolution of civilization (Renfrew 1975, 5–8). Trade that implies such interaction seems to have been essential to the economy of the Ubaid people of the region, because it made available resources vital to their technology and subsistence. This was shown by the presence, at some Ubaid sites, of large amount of stone that must have been imported from somewhere else.

Lithic artefacts at Tell Abada are represented by a variety of tools; these were made mainly of chert stones probably originating somewhere in the Zagross Mountain (appendix 2). The presence of some obsidian tools at Abada (figs. 524 and 525), Tell Rashid (fig. 442), and Abu Husaini could indicate involvement in long-distance trade, but obsidian had been around for a long time, but pieces can be re-used or acquired by "down the line exchange." Neutron activation analysis for the obsidian found in most of the Middle Eastern archaeological sites (including Iraq and Iran), dating back to the period 5000–3000 BC, 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 Professor Colin Renfrew, who advised that the majority belong to group 4c, and one specimen only to group 1g.[52] Carnelian in the form of beads was also found at Abada. It must have been imported from somewhere else, Iran being the probable source (Kenoyer 2003, 395). It constitutes another indication of the existence of a network of trade and communication.

Natural asphalt was imported to Tell Abada for hafting the sickle blades, most of which still bear its traces (fig. 527). It is of a great interest to learn that "bitumen was used by Neanderthal population as a hafting material to fix handles to their flint tools" (Connan 1999, 33). It was also used at Abada to manufacture other objects (fig. 146) and was certainly used for different purposes including basketry and matting (fig. 147). It was also used as a waterproofing material; this was evidenced by the presence of a bitumen-lined basin in the courtyard of building I of level II. During the Ubaid 3 period, bitumen from northern and western Iraq (Mosul and Hit) became more important and was traded as far as the southern Arabian Gulf (Connan 2010). Bitumen beads were found around the neck of one individual in a grave belonging to the Ubaid period at Umm al-Qaiwain in

[52] I am indebted to Professor Colin Renfrew, who was then head of the Faculty of Archaeology and Anthropology, University of Cambridge, who kindly examined these specimens and provided me with this valuable information.

the United Arab Emirates (Phillips 2002). The analysis indicates that the bitumen is of Mesopotamian origin and possibly comes from the well-known source at Hit (Phillips 2002, 176). Abada's bitumen may well have been imported from the same source.

Other evidence that may indicate commercial activities has come from Abada, Rashid, and Tell Madhhur. This is the discovery of clay tokens of various shapes—ninety tokens were found at Abada alone (figs. 109–116)—which may have been used as counters to keep records of transactions (Jasim and Oates 1986). 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 widespread 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 convincing evidence for both cultural and economic interaction, which explicitly implies trade relations. As we have seen earlier, Ubaid pottery indistinguishable from that of Abada was found at Tepe Gawra and Arpachiyah and on a larger scale at the sites of Khanijdal East and Tell Nadir in northern Iraq. Ubaid pottery has also been found on hundreds of sites throughout the northern plain, in the Zagros to the northeast and to the west across northeastern Syria (Oates and Oates 1976b, 125; Oates 1983, 260; Akkermans, 341), and southeastern Turkey.

Most interesting are the recent discoveries of Ubaid pottery from the eastern province of Saudi Arabia, Qatar, and Bahrain (Burkholder 1972; Bibby 1973; Tosi 1974; Masry 1974; Oates 1976; 1978a; Roaf 1976; de Cardi 1977; Inizan 1980; Frifelt 1989; Patterson 1989, 313; McClure and Al-Shaikh 1993; Drechsler 2012). It was also reported from the United Arab Emirates (Haerinck 1991; Boucharlat et al. 1991; Hermansen 1993; Uerpmann and Uerpmann 1996; Jasim 1999; Beech and Elders 1999; Beech et al. 2000; Phillips 2002; Jasim 2004; Beech et al. 2008) and Kuwait (Carter and Crawford 2010; Smogorzewska 2011), thus extending enormously its spacial distribution. However it should be pointed out that these Ubaid-related sites are ephemeral with few if any permanent structures. It has been suggested that "these Ubaid pots traveled with their owners, either for their contents or for their utilitarian value" (Oates 1993, 410). However, it has also been suggested that these Ubaid pots were actual trade items and almost certainly did not travel with their owners for their contents or utilitarian value (de Cardi 1989; Carter 2006).

The neutron-activation and petrography-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). This point of view has been supported by Dan Potts, who argued, "it seems likely that Mesopotamian sailors visited these regions seasonally, perhaps to trade for something they desired from local inhabitants" (Potts 2012, 26). Ubaid pottery was also considered as "an important element of exchange between the people inhabiting the Gulf region and their Mesopotamian neighbours in the sixth and fifth millennium B.C.E." (Smogorzewska 2011, 45). It has been suggested that "pearls were an object of exchange between people of Eastern Arabia and the coast" (Drechsler 2012, 493). Others suggested that "both pearls and fish seem to have been the desired objects" (Oates 2012, 481). However, whether these desired materials were pearls and fish or other items not available in Mesopotamia, or even more exotic commodities, remains conjecture (Magee 2014). It has even been suggested that "the definite movement of Ubaid pottery into the Gulf, where we are dealing with rather sophisticated sailing ships" (Wright 1989, 450).

Did such trade involve professional traders? And, if it did, what was the status of such a class in the social hierarchy? It is difficult to explore this archaeologically, but it has been suggested that trade could be a collective undertaking carried out 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, that is, the main and largest building (A) (fig. 17). Building A appears to have been the most prestigious, and 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 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.

THE UBAIDIAN COMMUNITY AND THE EVOLUTION OF POLITICAL HIERARCHY

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) also divided societies into four classes, but using different terms: bands, tribes, chiefdoms, and states. These terms seem to have been widely adopted by anthropologists and archaeologists in their endeavor 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 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 BC in the Near East (Flannery 1972a).

The third evolutionary stage is the "chiefdom" in which society is more complex and more organized, with distinct economic, social, and religious activities and internal status differentiation, as well as increased productivity and greater population density (Harding et al. 1960, 37; Service 1962, 133).

In chiefdoms, the economy shows a higher degree of craft specialization and diversification, chiefs themselves maintain 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 sacerdotal 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 labor 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 BC 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 high population densities (Flannery 1972a, 404).

To consider which of these four evolutionary stages might fit the socio-political organization of the Ubaidian community during the sixth and fifth millennia BC, it would seem most plausible to turn to the third stage, the chiefdom, as many authors agree (Flannery 1972a, 403; Watson and LeBlanc 1973; Adams 1975, 462; Service 1975, 207). In her attempt to analyse the Mesopotamian societies of the sixth and fifth millennia BC, Frangipane has proposed "Vertical egalitarian systems for the early communities during Samarra-Early Ubaid cultures in central and southern Mesopotamia." She suggests that these communities had a mixed agricultural and livestock economy and they usually have been seen as rank or stratified societies with a chiefdom organization (Frangipane 2007, 164). She went on to advocate that "although they are represented and symbolically guided by a chief, societies with an essentially uniform population are basically to be considered 'egalitarian with vertex.'" (Frangipane 2007, 165).

In order to verify the validity of applying the term "chiefdom" to the Ubaidian community, we should test the criteria upon which it was based against the archaeological evidence in hand. It is argued that ranked classes and craft specialization are an important feature of the chiefdom (Harding, Sahlins, and Service 1960, 36; Flannery 1972a, 40; Watson and LaBlance 1973; Service 1975, 207; Wright 1977, 381–86). 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), but evidently neither of these cases was

true in the Hamrin region during the Ubaid period. So while some of the important criteria have been met, others that 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 by no means should this be derived from the type of chiefdom that 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 unilateral evolution is that it is too specific because he describes a particular kind of chiefdom that is characteristic of Polynesia (Sanders and Webster 1978, 270). However, we see no reason to agree with Sanders and Webster, who believe that lowland Mesopotamia did not pass through a chiefdom stage (Sanders and Webster 1978, 282). But we would emphasize that the type of chiefdom must have been different, and more suited to the different situation. It was a chiefdom based on special considerations pertaining to the ancient Iraqi community that 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 lived 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. 17), which 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 of and actually controlling 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 (Adams 1975, 462). We think that chiefdom with a theocratic character would have been more suitable for primitive communities for which religion is much more of an incentive than coercion. This assumption would find full support from the ethnographic 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 BC, there was a public "assembly" that was a decision-making body, without a hereditary leader, and this continued to be the case even as late as the second millennium BC. 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 7
CONCLUDING REMARKS

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. We regrettably "continue to know relatively little about Ubaid Mesopotamia itself" (Oates 2010, 48). Indeed, the available archaeological evidence stops short of providing us with the necessary answers to 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 Samarran and Ubaid periods down to the Uruk period. Archaeologists and scholars now tend to agree with Oates (1960, 46) that the Sumerians were already in southern Mesopotamia during the 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 support this fact (Oates 1969b, 127; 1979, 21). Additionally, 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 (Huot 1983; 1989; 1992), and the chance discovery of Ras Al-Amiya near Kish (Stronach 1961), which had been lying under a heavy blanket of alluvial sediments, are good examples.

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 widely to the north of Iraq, where it is well attested at a number of major sites, and "by late Ubaid time human settlements had spread to every part of greater Mesopotamia" (Wright et al. 1975). It had also spread further across Iran, north and northeastern Syria, and Anatolia, where major Ubaid sites were found (Stein and Ozbal 2007). It was the first time in Mesopotamian prehistory that both southern and northern Iraq were culturally unified (Oates 1993, 408–9).

The central part of Iraq—notably the Diyala region—due to its geographical position between northern and southern Mesopotamia, 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 central Iraq 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 sixteen Ubaid sites have been excavated. The most culturally informative and important of these sites is Tell Abada, for its excellent excavation and materials that have attracted frequent reference by scholars from all over the world (Oates 2010, 48; 2012, 478). The extensive excavations conducted in this site have revealed three distinct building levels, with enormous quantities of Ubaid pottery and a wide variety of materials. Most interesting is the village plan, the first ever recovered for an Ubaid settlement. Tripartite buildings with a T-shaped or cruciform hall, which was most probably roofed, as evidenced in some buildings at Tell Abada and Tell Madhhur, seem to have been customary during the Ubaid period. This was attested at several Ubaid sites in Hamrin like Abada, Rashid, Ayash, Kheit Qasim, and Madhhur. This evidence parallels earlier and similar discoveries from Tepe Gawra and Telul eth-Thalathat in northern and northwestern Iraq. Such buildings are known from southern Ubaid sites of Eridu and Oueili (Huot 1989; 1994; Vallet 1996). The earliest examples of the tripartite structures are to be found at the seventh-millennium BC site of Tell es-Sawwan situated north of Baghdad (El-Wailly and Abu es-Soof 1965; Wahida 1967; Al-A'dami 1968). Tripartite buildings were also revealed at the site of Degirmentepe in the Upper Euphrates Valley of eastern Turkey (Stein 2010, 35; Gurdil 2010,

361). Of particular interest is the presence at both Tell Abada and Tell Rashid of distinctive tripartite buildings with niched and buttressed façades; this type of architecture is considered to be a distinctive characteristic and a status symbol of the Ubaid period (Seivertsen 2010, 201; Stein 2010a, 23).

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 (Roaf 1996, 62–63).

The Ubaid pottery from Abada of special interest is of particular importance. The simultaneous occurrence at level III of Ubaid pottery with pottery that resembles both Choga Mami Transitional Samarra/Ubaid type and more classical Samarra pottery is particularly noteworthy. 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 discovery 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 similar to classical Samarra ware in both painted and painted-and-incised style (figs. 151 and 152), therefore it was termed Samarra in my preliminary report (Jasim 1983). However, 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, that is, between Hajji Muhammad and Sawwan III or Safid 3/4. Such contemporaneity cannot be supported in any way by the available archaeological evidence or by the C14 determination, which yielded a date of 5080 BC for Sawwan III (Oates 1984, 263). To reconcile the situation, we attributed this apparently Samarran ware to the Transitional phase. However, the well-stratified association of Ubaid 1–2 with Transitional ware is important and confirms the contemporaneity of the Transitional with early Ubaid (Oates 1984, 253).

The painted pottery from Abada II and I and other contemporary sites in the Hamrin region is brilliantly executed and skilfully painted. It generally resembles the Ubaid 2–3 ceramic style from al-Ubaid, Eridu, Oueili, Tell Uqair, Hajji Muhammad, Ras Al-Amiya and Choga Mami, Tepe Gawra, and Arpachiyah in southern, central, and northern Mesopotamia. However, it was represented here, particularly at Tell Abada, in a series much richer in both 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 practiced by the Ubaid potters. Many distinctive vessel types known from both the south and the north of Mesopotamia 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 in the Hamrin region were attributed to the late Ubaid period.

The geographical situation of the Hamrin region in the central part of Mesopotamia is reflected in its materials that show similarity either to both south and north Iraq or to one or another of them. The relationship between the Hamrin and other parts of Iraq is therefore now attested. The relationship between the Ubaid sites in the Hamrin is also 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 among that site, Abada III, and Safid 5. Closely comparable painted Ubaid specimens were also reported from the site of Mahidasht in the central western Zagros (Levine and McDonald 1977, Pl. II). The massive occurrence of Dalma impressed ware and the presence of red-slipped ware decorated with vertical patterns of zigzag lines (fig. 401), both of Iranian origin, 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 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 Kheit 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.

In addition to Iran, "Mesopotamian Ubaid material culture style were broadly distributed into neighbouring regions of Syria and southeast Anatolia" (Stein and Ozbal 2007, 239) and farther north to the site of Godedzor in southerneastern Armenia (Chataigner et al. 2010). The phenomenon of the appearance of Ubaid material in these areas located far beyond its original homeland in southern Mesopotamia has been viewed as Mesopotamian colonial expansion and that northern Ubaid sites were actually northernmost outposts of southern Mesopotamia (Oates 1983; Oates and Oats 2004; Esin 1985, 257). However, this expansion seems to have spread to the north "peacefully through a combination of trade and the local appropriation of Ubaid social identity and ceremonial ideology rather than actual colonisation" (Stein and Ozbal 2007, 334).

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, einkorn, bread wheat(?), and two varieties of barley. Irrigation could well have been practiced in the Hamrin, as the evidence from the nearby Choga Mami shows that it was practiced since the earlier Samarra period. Plough cultivation may have accompanied irrigation agriculture, and 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. It has been suggested that rituals were conducted at the level of the household and that sacred structures were jointly used as residential dwelling spaces at the site of Degirmentepe in southeast Anatolia (Stein and Ozbal 2007, 337). This possibility could have very well been true at Tell Abada.

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 presence also of a large number of gypsum hemispherical discs in level III at Tell Abada would indicate the earliest Near Eastern evidence for the use of the potter's wheel (Oates 2012, 479). The enormous quantity of the remarkably painted Ubaid Ware was apparently produced by these wheels as indicated by their highly symmetrical shapes and neat execution. The wide range and variety of forms together with the richness and the beauty of decorative repertoire certainly bespeak a highly professional craftsmen. 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, but differences in residential architecture and their association with some special items are considered to be indicative measures that may reflect variability in socio-economic status (Write et al. 1975; Jasim 1989). Building A is distinguished as being the most prestigious in the village due to the distinctive features associated with it, such as its unusually large size, its central location, and the regularly spaced buttresses along its exterior wall, which may imply a symbolic status, as does the presence below its floors of numerous child-burial urns, some of which were found furnished with funerary offerings. The concentration of

burials of children under the floors of this particular building is reminiscent of a similar situation at Tell es-Sawwan (Al-Wailly and Abu Es-Soof 1968; Wahida 1967; Yasin 1970). This "shows that, from the initial formation of these central-southern Mesopotamian communities, one household unit stood as a symbolic benchmark for the whole community, and must have been the ideological depository of the continuity of the group" (Frangipane 2007, 169).

Most interesting is the presence of lenticular jars that might have been used for ritual purpose and clay tokens that 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 was most probably a religious and political leader at the same time.

The presence of Ubaid settlements 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 terracotta ducts for a considerable distance from the large wadis, the chand, and from a river nearby, presumably for drinking and domestic purposes. The existence of marshland 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 a habitat of 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 gazelle and deer, as well as 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 widespread distribution of the Ubaid culture outside its original home in southern Mesopotamia. 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 discernible in the Hamrin; moreover, the region seems to have been completely abandoned toward 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. Thus many archaeological problems, particularly chronological ones, remain. The chronology of the Ubaid period, which is extremely long, since its material spans most or all of the fifth millennium BC (Adams 1981, 54), remains to be clarified. There is "more of a problem in attempting to re-classify Ubaid materials, given the regrettable paucity of reliable Ubaid sequence" (Oates 2010). There is a great need to seek out new sites 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

DISTRIBUTION OF ARTIFACTS

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
74	1	23	A	—	—	*
	2	43	C	—	—	*
	3	113	A	—	*	—
	4	15	B	—	*	—
76	1–2	49	C	—	—	*
	3	164	C	—	*	—
	4	58	E	—	—	*
	5	37	F	—	*	—
	6	82	G	—	*	—
	7	67	H	—	*	—
77	1–2	7	A	—	*	—
	3	127	B	—	*	—
	4	43	C	—	—	*
	5–6	35	D	—	—	*
	7	54	E	—	—	*
	8	62	E	—	—	*
	9	70	F	—	—	*
	10	87	H	—	—	*
79	1–2	45	C	—	—	*
	3–5	64	E	—	—	*
	6	72	F	—	—	*
	7–8	89	H	—	—	*
	9	98	J	—	—	*
	10	108	J	—	—	*
80	1	7	A	—	—	*
	2	44	C	—	—	*
	3–4	55	E	—	—	*
	6–7	94	H	—	—	*
	8–9	139	J	—	*	—
	10	115	J	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
82	1–2	111	A	—	*	—
	3–4	104	B	—	*	—
	5	125	B	—	*	—
	6	166	C	—	*	—
	7	159	C	—	*	—
	8	150	D	—	*	—
	9	62	E	—	—	*
	10	54	E	—	—	*
	11	41	F	—	—	*
	12	78	G	—	*	—
83	1,3	111	B	—	*	—
	2,4	161	C	—	*	—
	5	149	D	—	*	—
	6–7	58	E	—	—	*
	8	39	F	—	*	—
	9	81	G	—	*	—
	10	66	F	—	—	*
84	1–2	11	A	—	—	*
	3	10	A	—	—	*
	4	6	A	—	—	*
85	1	3	A	—	—	*
	2	125	A	—	*	—
	3	104	B	—	*	—
	4	171	C	—	*	—
	5	48	F	—	*	—
87	1	3	A	—	—	*
	2	48	C	—	—	*
	3	79	F	—	—	*
	4	26	A	—	*	—
	5–6	112	B	—	*	—
	7	157	D	—	*	—
	8	55	E	—	*	—
	9	69	H	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
89	1–2	159	C	—	*	—
	3	171	C	—	*	—
	4	156	D	—	*	—
	5–6	62	E	—	*	—
	7–8	35	F	—	*	—
	9	80	G	—	*	—
	10	73	H	—	*	—
	11	70	H	—	*	—
90	1–2	40	C	—	—	*
	3	57	E	—	—	*
	4–5	159	C	—	*	—
	6	153	D	—	*	—
	7	152	D	—	*	—
	8	60	E	—	*	—
	9	44	F	—	*	—
	10	83	G	—	*	—
	11	71	H	—	*	—
91	1	24	A	—	—	*
	2	61	E	—	—	*
	3	12	B	—	*	—
	4	161	C	—	*	—
	5	148	D	—	*	—
	6	53	E	—	*	—
92	1	108	G	—	—	*
	2	112	G	—	—	*
	3	114	B	—	*	—
	4–5	159	C	—	*	—
	6–7	152	D	—	*	—
	8	56	E	—	*	—
	9	37	F	—	*	—
	11–12	80	G	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
93	1	27	A	—	—	*
	2–3	40	A	—	—	*
	4	87	F	—	—	*
	5–6	121	A	—	*	—
	7–8	119	B	—	*	—
	9	162	C	—	*	—
	10–11	156	D	—	*	—
	12–13	152	D	—	*	—
	14	61	E	—	*	—
	15–16	45	F	—	*	—
	17	76	G	—	*	—
	18	71	H	—	*	—
95	1	27	A	—	—	*
	2	40	C	—	—	*
	3	112	G	—	—	*
	4	22	A	—	*	—
	5	105	B	—	*	—
	6	159	C	—	*	—
	7	59	E	—	*	—
	8	45	F	—	*	—
	9	73	H	—	*	—
	10	144	J	—	—	*
96	1	33	A	—	*	—
	2–3	105	B	—	*	—
	4	166	C	—	*	—
	5	158	C	—	*	—
	6–7	149	D	—	*	—
	8	53	E	—	*	—
	9	39	F	—	*	—
	10	81	G	—	*	—
	11	77	H	—	*	—
98	1	17	A	—	—	*
	2	114	A	—	*	—
	3	114	B	—	*	—
	4	128	J	—	*	—
	5	145	J	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
100	1	22	A	—	—	*
	4	104	B	—	—	*
	2	158	C	—	*	—
	3	53	E	—	*	—
	5	74	H	—	*	—
101	1	17	A	—	*	—
	2	114	B	—	*	—
	3	60	E	—	—	*
102	1	154	D	—	*	—
	2	142	G	—	*	—
	3	43	C	—	—	*
	4	127	J	—	—	*
103	1	53	E	—	*	—
	3	162	C	—	*	—
	4	52	E	—	*	—
	2	52	E	—	—	*
	5	70	F	—	—	*
	6	126	J	—	—	*
	7	104	J	—	—	*
	8	123	J	—	—	*
105	1	68	F	—	—	*
	2	112	J	—	—	*
106	1	134	J	—	—	*
	2	92	H	—	—	*
	3	122	B	—	*	—
	4–6	148	D	—	*	—
	7–8	122	B	—	*	—
	9	134	H	—	—	*
	10,12	35	F	—	*	—
	11	51	F	—	*	—
	12–14	42	G	—	*	—
	15–17	66	H	—	*	—
	18,21	144	J	—	*	—
	19–20	146	J	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
107	1–2	118	B	—	*	—
	3	162	C	—	*	—
	4	158	C	—	*	—
	5–6	152	D	—	*	—
	7	31	D	—	*	—
	10–11	68	F	—	—	*
	12–13	114	J	—	—	*
	14–15	129	J	—	—	*
115	1	17	A	—	*	—
	2	7	A	—	—	*
	3	24	A	—	—	*
	4	2	A	—	*	—
117	1	20	A	—	*	—
	2	122	B	—	*	—
	3	169	C	—	*	—
	4	63	H	—	*	—
	5	22	A	—	—	*
	6	90	H	—	—	*
	7	104	J	—	—	*
	8	124	J	—	—	*
119	1	125	J	—	—	*
	2	94	I	—	*	—
	3	14	B	*	—	—
120	1	11	A	*	—	—
	2	14	B	*	—	—
	3	149	J	—	*	—
	4	8	A	*	—	—
	5	94	H	—	—	*
	6	144	J	—	—	*
121	1	166	C	—	*	—
	2	132	J	—	*	—
	3	55	E	—	—	*
	4	107	J	—	—	*
122	1	17	B	*	—	—
	2	46	F	—	*	—
	3	129	J	—	*	—
	4	136	J	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
123	1	15	B	*	—	—
	2	9	A	*	—	—
	3	88	G	—	*	—
	4	138	J	—	*	—
	5	40	C	—	—	*
	6	122	J	—	—	*
125	1	48	F	—	*	—
	2	80	G	—	*	—
	3	138	J	—	*	—
	4	145	J	—	*	—
126	1	39	F	—	*	—
	2	84	H	—	—	*
	3	124	J	—	—	*
	4	13	A	*	—	—
127	1	4	A	*	—	—
	2–3	53	E	—	*	—
	4,6	88 a	G	—	*	—
	5	143	J	—	*	—
	7	71	F	—	—	*
	8	88	H	—	—	*
	9	143	J	—	—	*
128	1	12	A	*	—	—
	2	24	A	—	*	—
	3–4	104	B	—	*	—
	5	57	E	—	*	—
	6	158	G	—	*	—
	7–8	68	F	—	—	*
	9–10	103	J	—	—	*
	11	130	J	—	—	*
130	1	7	A	*	—	—
	2	170	C	—	*	—
	3	104	J	—	—	*
	4	115	J	—	—	*
131	1	8	A	*	—	—
	2	151	D	—	*	—
	3	36	B	*	—	—
	4	126	J	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
132	1	107	B	—	*	—
	2–3	164	C	—	*	—
	4	1	A	*	—	—
	5–6	145	J	—	*	—
	7–8	136	J	—	—	*
	9	110	J	—	—	*
	10	141	J	—	—	*
134	1	104	B	—	*	—
	2	37	F	—	*	—
	3	82	G	—	*	—
	4	92	J	—	*	—
135	1	17	A	—	*	—
	2	93	J	—	*	—
	3	17	A	—	*	—
	4	1	A	—	*	—
	5	20	A	—	*	—
	6	122	B	—	*	—
	7	122	B	—	*	—
	8	123	B	—	*	—
137	1	20	A	—	—	*
	2–3	48 a	F	—	*	—
	4	70	F	—	—	*
	5	136	J	—	—	*
	6	128	J	—	—	*
	7	123	J	—	—	*
139	1–2	159	C	—	*	—
	3–4	169	J	—	—	*
	5–6	61	E	—	*	—
	7	139	K	—	—	*
140	1–2	170	C	—	*	—
	3	162	C	—	*	—
	4	168	C	—	*	—
	5–6	156	D	—	*	—
	7–8	53	E	—	*	—
	9	70	F	—	—	*
	10	95	J	—	—	*
	11	139	K	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*Level I*
142	1	17	A	—	*	—
	2	106	B	—	*	—
	4–5	58	E	—	*	—
	6	79	F	—	—	*
	7–8	124	K	—	—	*
145	1	17	A	—	*	—
	2–3	40	C	—	—	*
	4	32	A	—	*	—
	5	128	J	—	—	*
146	1	59	E	—	—	*
	2	79	F	—	—	*
	3	123	K	—	—	*
147	1	39	F	—	*	—
	2	52	E	—	—	*
	3	85	F	—	—	*
	4	88	H	—	—	*
	5	95	J	—	—	*
	6	110	J	—	—	*

APPENDIX 2

DISTRIBUTION OF POTTERY

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
150	1	11	A	*	—	—
	2	11	A	*	—	—
	3	5	A	*	—	—
	4	1	B	*	—	—
	5	14	B	*	—	—
	6	19	B	*	—	—
151	1	12	A	*	—	—
	2	10	A	*	—	—
	3	9	A	*	—	—
152	1–3	8	A	*	—	—
	4–5	1	A	*	—	—
	6	2	A	*	—	—
	7	7	A	*	—	—
	8–9	13	A	*	—	—
	10–11	6	A	*	—	—
153	1	8	A	*	—	—
	2	10	A	*	—	—
	3	8	A	*	—	—
	4	3	A	*	—	—
154	1	3	A	*	—	—
	2	11	B	*	—	—
	3	5	A	*	—	—
	4–5	8	A	*	—	—
	6–7	5	B	*	—	—
155	1–3	11	A	*	—	—
	4–5	3	A	*	—	—
	6–7	17	B	*	—	—
	8	3	A	*	—	—
	9–10	9	A	*	—	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
156	1–2	2	A	*	—	—
	3–5	1	A	*	—	—
	6–7	5	A	*	—	—
157	1	13	B	*	—	—
	2	14	B	*	—	—
	3	8	A	*	—	—
	4	9	A	*	—	—
158	1–3	8	A	*	—	—
	4–7	10	A	*	—	—
	8–11	12	A	*	—	—
159	1	5	A	*	—	—
	2	12	A	*	—	—
	3	7	A	*	—	—
160	1	8	A	*	—	—
	2	7	A	*	—	—
161	1	6	A	*	—	—
	2	8	A	*	—	—
163	1–3	8	A	*	—	—
	4–5	7	A	*	—	—
	6–7	13	A	*	—	—
	8–9	10	A	*	—	—
164	1–4	3	A	*	—	—
	4–6	1	A	*	—	—
	7–8	12	A	*	—	—
	9–10	8	B	*	—	—
	11–12	13	B	*	—	—
	13–15	12	B	*	—	—
	16–17	4	B	*	—	—
	18	6	A	*	—	—
	19	5	A	*	—	—
	20	7	A	*	—	—
165	1–2	13	A	*	—	—
	3–4	12	A	*	—	—
	5–9	8	A	*	—	—
	10–12	6	A	*	—	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
166	1–5	6	A	*	—	—
	6–8	7	A	*	—	—
	9–10	13	A	*	—	—
	11–13	12	A	*	—	—
167	1–5	17	B	*	—	—
	6–7	13	A	*	—	—
	8–11	3	A	*	—	—
168	1–5	1	A	*	—	—
	6–9	2	A	*	—	—
	8–11	7	A	*	—	—
169	1	2	A	*	—	—
170	1–10	8	A	*	—	—
171	1–8	1	A	*	—	—
172	1–6	1	B	*	—	—
	7–11	11	B	*	—	—
173	1–16	1	A	*	—	—
	17–19	7	A	*	—	—
174	1–7	1	A	*	—	—
	8–11	9	A	*	—	—
175	1–5	13	B	*	—	—
	6–12	14	B	*	—	—
176	1–20	8	A	*	—	—
177	1–10	15	B	*	—	—
178	1–6	19	B	*	—	—
	7–14	16	B	*	—	—
179	1–11	5	B	*	—	—
180	1–11	12	A	*	—	—
181	1–8	10	A	*	—	—
182	1–8	13	A	*	—	—
183	1–4	8	A	*	—	—
	5–10	12	A	*	—	—
184	1–5	3	B	*	—	—
	7–10	16	B	*	—	—
185	1–8	10	A	*	—	—
186	1–13	9	A	*	—	—
187	1–10	6	A	*	—	—
188	1–8	13	A	*	—	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
189	1–2	4	A	*	—	—
	3–4	13	A	*	—	—
	5–6	12	A	*	—	—
190	1	5	A	*	—	—
	2–3	14	B	*	—	—
	4–9	15	B	*	—	—
192	1	14	B	*	—	—
	7–3	16	B	*	—	—
193	1–3	111	B	—	*	—
	5	106	B	—	*	—
194	1–3	30	A	—	*	—
	4–6	115	B	—	*	—
	7–9	161	C	—	*	—
198	1–2	23	A	—	*	—
	3–4	31	A	—	*	—
	5	110	B	—	*	—
	6–7	46	F	—	*	—
	8–9	66	H	—	*	—
199	1–3	20	A	—	*	—
	4	114	B	—	*	—
	5	39	F	—	*	—
	6–7	71	H	—	*	—
	8	135	J	—	*	—
	9	144	J	—	*	—
200	1	19	A	—	—	*
	2	7	A	—	*	—
	3–4	119	B	—	*	—
	5,8	148	D	—	*	—
	6–7	45	F	—	*	—
	9	75	G	—	*	—
	10	70	H	—	*	—
201	1	17	A	—	—	*
	2	1	A	—	—	*
	3	32	D	—	—	*
	4	53	E	—	—	*
	5	87	H	—	—	*
	6	127	J	—	—	*
202	1	32	D	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
203	1	53	E	—	—	*
207	1–3	148	D	—	*	—
	4–5	59	E	—	*	—
	6–8	71	H	—	*	—
	9–10	60	F	—	—	*
	11–12	95	J	—	—	*
208	1–2	167	C	—	*	—
	3–6	48	F	—	*	—
	7–8	50	C	—	—	*
	9–12	139	K	—	—	*
209	1	82	G	—	*	—
	2–3	144	K	—	—	*
210	1–5	171	C	—	*	—
	6–11	124	K	—	—	*
211	1–2	106	B	—	*	—
	3–5	65	F	—	—	*
	6–8	140	K	—	—	*
212	1	49	C	—	—	*
	2	79	F	—	—	*
	3	114	B	—	*	—
	4–5	58	E	—	*	—
213	1–2	166	C	—	*	—
	3	154	D	—	*	—
	4–5	48	F	—	*	—
	6	80	G	—	*	—
	8	1	A	—	*	—
214	1	166	C	—	*	—
215	1	154	D	—	*	—
216	1	39	F	—	*	—
217	1	1	A	—	*	—
218	1,3	2	A	—	—	*
	2,4	63	E	—	—	*
	5–6	94	H	—	—	*
	7	89	H	—	—	*
	8	104	J	—	—	*
	9	123	K	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
219	1	44	C	—	—	*
	2	38	D	—	—	*
	3	61	E	—	—	*
	4–5	108	J	—	—	*
	6	115	J	—	—	*
220	1,4	68	F	—	—	*
	2–3	88	H	—	—	*
	5–8	169	J	—	—	*
	9–11	148	K	—	—	*
	12	124	K	—	—	*
221	1	160	C	—	*	—
	2	61	E	—	*	—
	3	74	H	—	*	—
	4	61	E	—	—	*
	5	108	J	—	—	*
222	1	160	C	—	*	—
223	1	61	E	—	—	*
224	1	4	A	—	*	—
	2	106	B	—	*	—
	3–4	56	E	—	*	—
	5	49	F	—	*	—
	6	81	G	—	*	—
	7	66	H	—	*	—
225	1	17	A	—	—	*
	2	48	C	—	—	*
	3	33	D	—	—	*
	4	70	F	—	—	*
	5–6	106	J	—	—	*
227	1–3	104	B	—	*	—
	4–7	62	E	—	*	—
	6–9	83	G	—	*	—
229	1–2	2	A	—	*	—
	3–4	52	E	—	—	*
	5–6	46	F	—	*	—
	7–9	139	K	—	—	*
	10	42	G	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
230	1	60	E	—	—	*
	2,4	55	E	—	*	—
	3	49	F	—	*	—
	5–6	126	K	—	—	*
231	1	53	E	—	*	—
	2	40	F	—	*	—
	3	76	G	—	*	—
	4	70	H	—	*	—
	5	43	C	—	—	*
	6	84	H	—	—	*
	7–11	119	B	—	*	—
	12–15	55	E	—	*	—
	16–17	39	F	—	*	—
	20–21	140	J	—	*	—
232	1–2	40	F	—	*	—
	3–5	81	G	—	*	—
	6–7	145	J	—	*	—
234	1,3	44	F	—	*	—
	2,4	78	G	—	*	—
	5–7	73	H	—	*	—
	8	133	J	—	*	—
	9–10	134	J	—	*	
235	1	127	B	—	*	—
	2	56	E	—	*	—
	3	49	F	—	*	—
	4	87	H	—	—	*
	5	113	J	—	—	*
	6–7	59	E	—	*	—
	8–9	64	H	—	*	—
	10–11	133	J	—	*	—
236	1	127	B	—	*	—
237	1	49	F	—	*	—
239	1	40	F	—	*	—
	2	68	F	—	—	*
	3	104	B	—	*	—
240	1	40	F	—	*	—
241	1	40	F	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
242	1	1	A	—	*	—
	2	104	B	—	*	—
	3	152	D	—	*	—
	4–5	48	F	—	*	—
	6	81	G	—	*	—
	7	72	H	—	*	—
	8–9	60	E	—	*	—
	10–11	48 a	F	—	*	—
	12	76	G	—	*	—
	13–14	141	J	—	*	—
244	1–2	59	E	—	*	—
	3	55	E	—	*	—
	4	66	H	—	*	—
	5	138	J	—	*	—
	6–7	71	H	—	*	—
	8	135	J	—	*	—
245	1–3	58	E	—	*	—
	4–6	80	G	—	*	—
	7–9	144	J	—	*	—
246	1,4	124	K	—	—	*
	5–6	138	K	—	—	*
	7	72	F	—	—	*
	2	118	B	—	*	—
	3	52	E	—	*	—
247	1–2	160	C	—	*	—
	3–5	148	D	—	*	—
	6–8	60	E	—	*	—
	9–10	47	F	—	*	
	11–12	70	H	—	*	—
	13–15	144	J	—	*	—
248	1	17	A	—	*	—
	2	111	B	—	*	—
	3–4	53	E	—	*	—
	5	72	H	—	*	—
	6	139	J	—	*	—
250	1,3–4	53	E	—	*	—
	5–6	67	H	—	*	—
	8–9	126	J	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
251	1–3	130	J	—	*	—
	4–5	144	J	—	*	—
	6	63	H	—	*	—
	7–8	79	G	—	*	—
	9–10	55	E	—	—	*
	12–14	139	K	—	—	*
252	1,4	162	C	—	*	—
	2–3	50	F	—	*	—
	5–6	86	G	—	*	—
	7–8	66	F	—	—	*
	9–10	146	K	—	—	*
253	1,3	51	F	—	*	—
	2	81	G	—	*	—
	4	60	E	—	*	—
	5	72	H	—	*	—
255	1	158	D	—	*	—
	2	50	F	—	*	—
256	1	1	A	—	*	—
	2	55	E	—	*	—
257	1–2	127	B	—	*	—
	3–4	57	E	—	*	—
	5–6	51	F	—	*	—
	7	86	G	—	*	—
	8–9	71	H	—	*	—
258	1	59	E	—	*	—
	2	158	D	—	*	—
	3	134	G	—	*	—
	4	158	C	—	*	—
259	1	134	G	—	*	—
260	1	81	G	—	*	—
	2	50	F	—	*	—
261	1	162	C	—	*	—
	2	61	E	—	*	—
	3	39	F	—	*	—
	4	78	G	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
262	1	39	F	—	*	—
	2	66	H	—	*	—
	3	139	J	—	*	—
	4	143	J	—	*	—
263	1	1	A	—	*	—
	2–3	104	B	—	*	—
	4	54	E	—	*	—
	5–6	68	H	—	*	—
	7–8	130	J	—	*	—
264	1	66	H	—	*	—
	3–4	81	G	—	*	—
	2,5	83	G	—	*	—
	6–8	129	J	—	*	—
	9–11	136	J	—	*	—
265	1–2,5	152	D	—	*	—
	3–4	166	C	—	*	—
	6,8	48	F	—	*	—
	7,9	79	G	—	*	—
	10–11	68	H	—	*	—
	12	129	J	—	*	—
266	1	55	E	—	*	—
	2	1	A	—	*	—
	3	39	F	—	*	—
	4	81	G	—	*	—
	5	158	D	—	*	—
	6–7	88	G	—	*	—
	8–9	66	H	—	*	—
	10,12	147	J	—	*	—
	11	127	B	—	*	—
267	1–5	160	C	—	*	—
	6–9	46	F	—	*	—
	11–14	82	G	—	*	—
268	1	48 c	F	—	*	—
	2	56	E	—	*	—
	3	66	H	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
269	1	42	C	—	—	*
	2	57	F	—	—	*
	3	87	H	—	—	*
	4	107	J	—	—	*
	5	143	K	—	—	*
270	1	42	C	—	—	*
271	1–2	64	E	—	—	*
	3	54	E	—	—	*
	4	90	H	—	—	*
	5	128	J	—	—	*
	6	108	J	—	—	*
	7	139	K	—	—	*
272	1–2	20	A	—	—	*
	3	48	C	—	—	*
	4	62	E	—	—	*
	5	79	F	—	—	*
	6	91	H	—	—	*
	7	139	K	—	—	*
273	1	40	C	—	—	*
	2	38	D	—	—	*
	3	60	E	—	—	*
	4–5	68	F	—	—	*
	6	88	H	—	—	*
	7–8	124	K	—	—	*
274	1	1	A	—	—	*
	2	52	E	—	—	*
	3	52	E	—	—	*
	4–5	79	F	—	—	*
	6	68	F	—	—	*
	7	67	F	—	—	*
275	1	52	E	—	—	*
276	1	3	A	—	—	*
	2	41	C	—	—	*
	3	32	D	—	—	*
	4	53	E	—	—	*
	5–6	70	F	—	—	*
	7	65	F	—	—	*
	8	135	K	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
277	1,3	27	A	—	—	*
	2,11,16	44	C	—	—	*
	4–6	33	D	—	—	*
	7–8	55	E	—	—	*
	9–10	79	F	—	—	*
	12–13	103	J	—	—	*
	14–15	142	K	—	—	*
278	1	70	F	—	—	*
279	1	61	E	—	—	*
	2	79	F	—	—	*
	3	87	H	—	—	*
	4–5	108	J	—	—	*
280	1	61	F	—	—	*
281	1	104	B	—	*	—
	2	160	C	—	*	—
	3	171	C	—	*	—
	5,7	152	D	—	*	—
	4	59	E	—	*	—
	8–9	83	G	—	*	—
282	1	165	C	—	*	—
	2	160	C	—	*	—
	3	152	D	—	*	—
	4	56	E	—	*	—
	5	61	E	—	*	—
	6–7	48	F	—	*	—
	8	82	G	—	*	—
	9	68	H	—	*	—
	10	144	J	—	*	—
283	1	121	B	—	*	—
	2	148	D	—	*	—
	3	59	E	—	*	—
	4	42	G	—	*	—
284	1–2	159	C	—	*	—
	3,5	154	D	—	*	—
	4,6	53	E	—	*	—
	7	41	F	—	*	—
	8	40	F	—	*	—
	9–10	138	J	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
285	1–2	172	C	—	*	—
	3–4	152	D	—	*	—
	5,7	52	E	—	*	—
	6,8	53	E	—	*	—
	9	51	F	—	*	—
	10	49	F	—	*	—
287	1–4	171	C	—	*	—
	5–7	159	C	—	*	—
	8–10	148	D	—	*	—
	11–12	56	E	—	*	—
	13–15	41	F	—	*	—
	16–17	78	G	—	*	—
	18–19	144	J	—	*	—
288	1	172	C	—	*	—
	2	166	C	—	*	—
	3	156	D	—	*	—
	4	59	E	—	*	—
	5–6	37	F	—	*	—
	7–8	143	J	—	*	—
289	1	16	C	—	*	—
	2	155	D	—	*	—
	3	51	F	—	*	—
	4	41	F	—	*	—
	5,8	81	G	—	*	—
	6–7	128	J	—	*	—
290	1	48	F	—	—	*
	2	83	G	—	—	*
	3	147	J	—	—	*
	4	1	A	—	—	*
291	1–2	55	E	—	—	*
	3	59	E	—	—	*
	4–5	68	F	—	—	*
	6–8	124	K	—	—	*
	7	48	F	—	—	*
292	1	42	C	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
293	1–2	132	J	—	*	—
	3,6	55	F	—	—	*
	4–5	104	J	—	—	*
	7–8	135	K	—	—	*
294	1	142	J	—	*	—
	4	144	J	—	*	—
	2–5	87	H	—	—	*
	6–7	126	J	—	—	*
	8–10	139	K	—	—	*
296	1	167	C	*	—	—
	2	161	C	*	—	—
	3–4	48 c	F	*	—	—
	5	81	G	*	—	—
	6	133	J	*	—	—
297	1	53	E	*	—	—
	2–3	79	G	*	—	—
	4	135	G	*	—	—
	5–6	132	G	*	—	—
299	1–2	62	E	—	*	—
	3–5	35	F	—	*	—
	6–7	81	G	—	*	—
300	1–3	36	F	—	*	—
	4–6	80	G	—	*	—
	7–9	128	J	—	*	—
301	1	16	C	—	*	—
	2–3	156	D	—	*	—
	4,6	48	F	—	*	—
	5,7	43	F	—	*	—
	8	71	H	—	*	—
302	1	71	H	—	*	—
303	1	16	C	—	*	—
304	1	111	B	—	*	—
	2–3	155	D	—	*	—
	4–5	60	E	—	*	—
	7	47	F	—	*	—
	6	86	G	—	*	—
	8	68	H	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
305	1	162	C	—	*	—
	2	172	C	—	*	—
	3	35	F	—	*	—
	4	82	G	—	*	—
	5	144	J	—	*	—
306	1–2	158	C	—	*	—
	3	156	D	—	*	—
	4–5	52	E	—	*	—
	6	39 a	F	—	*	—
	7–8	82	G	—	*	—
308	1–2	16	C	—	*	—
	3,6	79	G	—	*	—
	4–5	65	F	—	—	*
	7–8	85	H	—	—	*
	9	97	J	—	—	*
309	1–2	48	F	—	*	—
	3–4	78	G	—	*	—
	5	128	J	—	*	—
	6–8	73	F	—	—	*
	9–10	99	J	—	—	*
	11–12	130	K	—	—	*
310	1–2	138	J	—	*	—
	3–4	55	E	—	—	*
	5–6	108	J	—	—	*
312	1,4	48	F	—	*	—
	2–3	67	H	—	*	—
	5–6	44	C	—	—	*
	7–10	110	G	—	—	*
313	1	35	D	—	—	*
	2–3	67	F	—	—	*
	4	87	H	—	—	*
	5	169	J	—	—	*
314	1	45	C	—	—	*
	2	67	F	—	—	*
	3–4	87	H	—	—	*
	5–6	107	J	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
315	1	49	C	—	—	*
	2	30	D	—	—	*
	3	53	E	—	—	*
	4	70	F	—	—	*
316	1–2	49	C	—	—	*
	3–5	65	F	—	—	*
	6–7	89	H	—	—	*
	8–9	135	K	—	—	*
318	1	47	C	—	—	*
	2	53	E	—	—	*
	3–4	79	F	—	—	*
	5–6	87	H	—	—	*
	7–8	101	J	—	—	*
	9–10	124	K	—	—	*
320	1,3	44	C	—	—	*
	2	70	F	—	—	*
	4–6	94	H	—	—	*
	7–8	100	G	—	—	*
	9–10	146	K	—	—	*
321	1–2	48	C	—	—	*
	3–4	30	D	—	—	*
	5–7	67	F	—	—	*
	8	89	H	—	—	*
	9–10	110	G	—	—	*
322	1–3	40	C	—	—	*
	4–5	38	D	—	—	*
	6–7	55	E	—	—	*
	8,10	87	H	—	—	*
	9,11	138	K	—	—	*
323	1,4	46	C	—	—	*
	2–3	36	D	—	—	*
	4–6	54	E	—	—	*
	7–8	70	F	—	—	*
	9–11	63	H	—	—	*
	12–14	95	J	—	—	*
324	1	37	F	—	*	—
	2	66	H	—	*	—
	3	136	J	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
325	1	37	F	—	*	—
326	1	66	H	—	*	—
327	1	65	F	—	—	*
	2	90	H	—	—	*
	3	137	K	—	—	*
328	1	15	A	—	—	*
	2	43	C	—	—	*
	3	64	E	—	—	*
	4–5	68	F	—	—	*
	6	87	H	—	—	*
	7	98	J	—	—	*
330	1,4	159	C	—	—	*
	2	15	A	—	—	*
	3,5	53	E	—	—	*
	6–7,9	68	F	—	—	*
	8,10	108	J	—	—	*
331	1	43	C	—	—	*
	2–3	61	E	—	—	*
	4	94	H	—	—	*
332	1–2	48	C	—	—	*
	3	30	D	—	—	*
	4–5	55	E	—	—	*
	6–7	60	E	—	—	*
	8–11	68	F	—	—	*
	12–14	70	F	—	—	*
	15–16	88	H	—	—	*
	17	104	J	—	—	*
333	1–6	64	E	—	—	*
334	1	28	A	—	—	*
	2	33	D	—	—	*
	3	52	E	—	—	*
	4	71	F	—	—	*
335	1	35	A	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
336	1–2	160	C	—	*	—
	3–4	148	D	—	*	—
	5–6	38	F	—	*	—
	7	48	F	—	*	—
	8–9	79	G	—	*	—
	10–12	138	J	—	*	—
337	1–2	160	C	—	*	—
	3–4	156	D	—	*	—
	5–6	148	D	—	*	—
	7–9	88 a	G	—	*	—
	10–11	73	F	—	—	*
	12	68	F	—	—	*
	13–14	126	J	—	—	*
338	1	171	C	—	*	—
	2	48	F	—	*	—
	3	81	G	—	*	—
	4	71	H	—	*	—
	5	146	J	—	*	—
	6	44	C	—	—	*
	7	56	E	—	—	*
	8	83	H	—	—	*
339	1–2	36	F	—	*	—
	3–4	42	G	—	*	—
	5–6	71	H	—	*	—
	7–9	68 a	H	—	*	—
	10–12	128	G	—	*	—
340	1	171	C	—	*	—
341	1	44	C	—	—	*
342	1	56	E	—	—	*
343	1	83	H	—	—	*
344	1	35	F	—	*	—
	2	48	F	—	*	—
	3	55	E	—	*	—
	4–5	61	E	—	*	—
	6	71	H	—	*	—
	7	67	F	—	—	*
345	1	67	F	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
346	1,3	166	C	—	*	—
	2,4	53	E	—	*	—
	5	61	E	—	*	—
	6,10	70	F	—	—	*
	7,8	94	H	—	—	*
	9,11	111	G	—	—	*
347	1	5	A	—	—	*
	2	5	A	—	—	*
348	1	5	A	—	—	*
349	1	58	E	—	—	*
	2	82	F	—	—	*
	3	87	H	—	—	*
	4–5	95	J	—	—	*
350	1	58	E	—	—	*
351	1	65	F	—	—	*
	2	87	H	—	—	*
	3	91	H	—	—	*
	4,6	98	G	—	—	*
	5	116	K	—	—	*
352	1	19	A	—	—	*
	2	98	G	—	—	*
	3	116	K	—	—	*
	4	61	F	—	—	*
	5	70	F	—	—	*
	6	65	F	—	—	*
	7	87	H	—	—	*
353	1	63	E	—	—	*
	2	172	C	—	*	—
	3	154	D	—	*	—
	4	52	E	—	*	—
	5	84	H	—	—	*
	6	48	F	—	*	—
	7–9	133	G	—	*	—
354	1	9	A	—	*	—
	2	59	E	—	*	—
	3	40	F	—	*	—
355	1	9	A	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
356	1–2	158	C	—	*	—
	3–4	152	D	—	*	—
	5	59	E	—	*	—
	6–8	45	F	—	*	—
	9–10	71	H	—	*	—
	11–12	81	G	—	*	—
357	1	23	A	—	*	—
	2	104	B	—	*	—
	3	54	E	—	*	—
	4	82	G	—	*	—
	5	66	H	—	*	—
	6	141	G	—	*	—
358	1	170	C	—	*	—
	2	160	C	—	*	—
	3	112	B	—	*	—
	4	56	E	—	*	—
	5	39	F	—	*	—
	6	70	H	—	*	—
359	1	170	C	—	*	—
360	1	56	E	—	*	—
361	1	45	C	—	—	*
	2	46	C	—	—	*
	3	60	E	—	—	*
	4	68	F	—	—	*
	5	87	H	—	—	*
362	1	45	C	—	—	*
363	1	87	H	—	—	*
364	1	44	C	—	—	*
	2	43	C	—	—	*
	3	61	E	—	—	*
	4	79	F	—	—	*
	5	86	H	—	—	*
365	1–2	9	A	—	*	—
366	1–2	9	A	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
367	1	162	C	—	*	—
	2	158	D	—	*	—
	3	156	D	—	*	—
	4	62	E	—	*	—
	5	61	E	—	*	—
	6–7	48	F	—	*	—
	8	147	G	—	*	—
368	1	43	C	—	—	*
	2	35	D	—	—	*
	3	52	E	—	—	*
	4	55	E	—	—	*
	5	65	F	—	—	*
	6	89	F	—	—	*
	7	97	J	—	—	*
	8	108	J	—	—	*
	9	111	J	—	—	*
	10–11	124	K	—	—	*
369	1	43	C	—	—	*
	2–3	36	D	—	—	*
	4	61	E	—	—	*
	5–6	83	H	—	—	*
370	1–3	158	C	—	*	—
	4–7	156	D	—	*	—
	8–10	53	E	—	*	—
	11–14	54	E	—	*	—
	15	35	F	—	*	—
	16–18	37	F	—	*	—
	19	131	G	—	*	—
	20	146	G	—	*	—
	21	147	G	—	*	—
371	1	114	B	—	*	—
	2	166	C	—	*	—
	3–4	150	D	—	*	—
	5	58	E	—	*	—
	6	53	E	—	*	—
	7	36	F	—	*	—
	8	47	F	—	*	—
	9	81	G	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
372	1	130	G	—	*	—
373	1	162	C	—	*	—
	2	170	C	—	*	—
	3	156	D	—	*	—
	4	48 a	F	—	*	—
	5	138	G	—	*	—
	6	139	G	—	*	—
374	1–2	61	E	—	*	—
	3–4	53	E	—	*	—
	6–8	45	F	—	*	—
	9–12	36	F	—	*	—
	13–15	81	G	—	*	—
	16–18	64	E	—	—	*
	19–21	64	F	—	—	*
	22–24	112	G	—	—	*
375	1–2	61	E	—	*	—
	3–4	53	E	—	*	—
	6–9	36	F	—	*	—
	10	43	C	—	—	*
	11–12	56	E	—	—	*
	13	127	J	—	—	*
376	1–2	57	E	—	—	*
	3	56	E	—	—	*
	4,6	70	F	—	—	*
	5	38	D	—	—	*
	7–8	87	H	—	—	*
	9	103	G	—	—	*
	10	125	G	—	—	*
	11	139	K	—	—	*
377	1–2	43	C	—	—	*
	3,5	30	D	—	—	*
	4	54	E	—	—	*
	6	60	F	—	—	*
	7	89	H	—	—	*
	8	90	H	—	—	*
	9–10	111	G	—	—	*
	11	140	K	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
378	1	44	C	—	—	*
	2	31	D	—	—	*
	3	53	E	—	—	*
	4	68	F	—	—	*
	7–8	108	G	—	—	*
379	1	44	C	—	—	*
380	1	162	C	—	*	—
	2	60	E	—	*	—
	3	41	F	—	*	—
	4	68	F	—	—	*
381	1	125	J	—	—	*
382	1–2	58	E	—	*	—
	3–4	53	E	—	*	—
	5–6	145	G	—	*	—
	7	68	H	—	*	—
	8–9	65	F	—	—	*
	10–11	87	H	—	—	*
	12	131	K	—	—	*
383	1–2	152	D	—	*	—
	3–4	154	D	—	*	—
	5–6	59	E	—	*	—
	7	47	F	—	*	—
	8	46	C	—	—	*
	9	47	C	—	—	*
	10–11	64	E	—	—	*
	12,14	108	G	—	—	*
	13	136	K	—	—	*
384	1,4	168	C	—	*	—
	2–3	155	D	—	*	—
	5–6	48	F	—	*	—
	7–8	40	C	—	—	*
	9	30	D	—	—	*
	10–12	108	J	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
385	1–4	159	C	—	*	—
	5–7	56	E	—	*	—
	8,12	128	G	—	*	—
	9,10	79	F	—	—	*
	11,14	140	K	—	—	*
	13	83	H	—	—	*
386	1–3	48	F	—	*	—
	4–5	39	F	—	*	—
	6–7	144	G	—	*	—
	8	143	G	—	*	—
	9	138	G	—	*	—
	10–11	52	E	—	—	*
	12–13	68	F	—	—	*
	14–15	107	J	—	—	*
387	1	384	J	—	—	*
	2	110	K	—	—	*
388	1	186	C	—	*	—
389	1–4	79	F	—	—	*
	5–8	87	H	—	—	*
	9–10	110	J	—	—	*
	11–13	159	C	—	*	—
	14	138	G	—	*	—
	15–17	35	F	—	*	—
	18	36	F	—	*	—
390	1	168	C	—	*	—
	2	160	C	—	*	—
	3–4	60	E	—	*	—
	5	61	E	—	*	—
	6–7	41	F	—	*	—
	8–9	137	J	—	*	—
	10	87	G	—	*	—
391	1	87	G	—	*	—
	2–3	77	H	—	*	—
	4–5	35	F	—	*	—
392	1	56	E	—	*	—
	2	49	F	—	*	—
	3	71	H	—	*	—
	4	129	J	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
393	1	1	A	—	*	—
	2–3	39	F	—	*	—
	4	150	D	—	*	—
	5	151	C	—	*	—
	6	74	H	—	*	—
394	1	1	A	—	*	—
395	1–2	52	E	—	*	—
	3–4	88	G	—	*	—
	5	145	J	—	*	—
396	1–2	48	F	—	*	—
	3–5	57	E	—	*	—
	6–7	82	G	—	*	—
397	1	150	D	—	*	—
	2	158	C	—	*	—
	3	61	E	—	*	—
	4	60	E	—	*	—
	5	63	H	—	*	—
	6	71	H	—	*	—
400	1	157	D	—	*	—
	2	159	C	—	*	—
	3–5	48	F	—	*	—
	6–8	144	J	—	*	—
401	1–2	41	F	—	*	—
	3–4	47	F	—	*	—
	5–6	138	J	—	*	—
402	1,3	169	C	—	*	—
	2,4	158	D	—	*	—
	5,8	39	F	—	*	—
	6–7	60	E	—	*	—
	9,11	80	G	—	*	—
	10	139	J	—	*	—
	12	138	J	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
403	1	138	J	—	*	—
	2	161	C	—	*	—
	3	169	C	—	*	—
	4	158	D	—	*	—
	5	60	E	—	*	—
	6	39	F	—	*	—
	7	60	E	—	*	—
	8–9	158	F	—	*	—
	10	132	J	—	*	—
	11–12	68	H	—	*	—
405	1,3	88 a	G	—	*	—
	2	78	G	—	*	—
406	1–3	16	C	—	*	—
	4–5	150	D	—	*	—
	6–7	61	E	—	*	—
	8–10	141	J	—	*	—
408	1	158	D	—	*	—
	2–3	46	F	—	*	—
	4–5	54	E	—	*	—
	6,9	84	G	—	*	—
	7–8	145	J	—	*	—
409	1,3	60	E	—	—	*
	2,6	68	E	—	—	*
	4–5	87	H	—	—	*
	7	94	H	—	—	*
	8–9	112	J	—	—	*
410	1–4	112	J	—	—	*
	5	63	E	—	—	*
	6	85	F	—	—	*
	7	87	H	—	—	*
412	1–4	40	F	—	*	—
	5–10	49	C	—	—	*
	12–17	110	J	—	—	*
413	1–3	68	F	—	—	*
	4	152	D	—	*	—
	5–7	161	D	—	*	—
	6	68	F	—	—	*
	9–12	88	H	—	—	*

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
414	1–6	81	G	—	*	—
	7–9	138	J	—	*	—
	10–12	126	J	—	—	*
415	1–4	65	F	—	—	*
	5–7	110	J	—	—	*
	8–9	142	K	—	—	*
	10–12	166	C	—	*	—
	13–14	159	D	—	*	—
	15–16	38	F	—	*	—
	17–18	86	G	—	*	—
416	1–3	40	C	—	—	*
	4–7	36	D	—	—	*
	8–10	73	F	—	—	*
	11–15	88	H	—	—	*
	16–17	47	F	—	*	—
	18–19	83	G	—	*	—
	20–22	144	J	—	*	—
417	1–6	88	F	—	—	*
	7–10	85	H	—	—	*
	11–12	94	H	—	—	*
	13–14	98	J	—	—	*
	15–16	76	G	—	*	—
	17–21	83	G	—	*	—
418	1–3	40	C	—	—	*
	4–7	30	D	—	—	*
	8–11	125	J	—	—	*
	12–13	80	G	—	*	—
419	1–4	57	E	—	—	*
	5–7	171	C	—	*	—
	8–10	152	D	—	*	—
	11–13	40	F	—	*	—
	15–16	79	G	—	*	—
420	1–2	51	C	—	—	*
	3–5	150	D	—	*	—
	6–8	55	E	—	—	*
	9–11	107	J	—	—	*
	12–13	81	G	—	*	—
	14–17	76	G	—	*	—

Figure	*No.*	*Room*	*Building*	*Level III*	*Level II*	*LevelI*
421	1–4	148	K	—	—	*
	5–8	104	J	—	—	*
	9–12	145	J	—	*	—
	13–15	144	J	—	*	—
422	1–7	55	F	—	—	*
	8–12	94	H	—	—	*
	13–16	108	J	—	—	*
	17–21	124	K	—	—	*
423	1–4	70	F	—	—	*
	5–8	68	F	—	—	*
	9–12	94	H	—	—	*
	13–16	95	J	—	—	*
424	1–3	44	C	—	—	*
	5–9	36	D	—	—	*
	11–13	52	E	—	—	*
	14–17	67	F	—	—	*
	18–22	145	K	—	—	*

APPENDIX 3

THE ANIMAL BONES FROM TELL ABADA

Sebastian Payne

Despite the excavation of many sites in Iraq, little is known 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 per annum: 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 recovered 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 otherwise well preserved. The sample immediately presents two peculiarities: horn cores 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 meters were excavated, which gives the extraordinarily low concentration of around 1 g of bone per cubic meter of earth. Poor preservation is almost certainly not the explanation, as the bones that were found are generally in good condition, and horn cores and antlers, which are abundant, are less resistant to destruction than most other bones. Possible explanations for the low concentration of bone finds include that little meat was consumed, and thus few bones came onto the site; that more meat was eaten, but that bones were not brought onto the site, or were subsequently disposed of offsite; and 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 horn cores 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

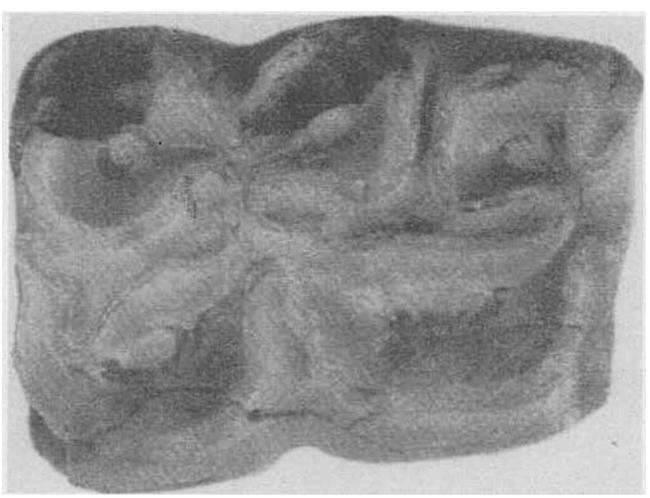

Plate A. Lower cheek tooth of Equus asinus/hemionus.

Plate B. Upper second premolar of Equus asinus/hemionus

SPECIES REPRESENTED

Table 36. Animal species present in the sample from Tell Abada

Species	*Type*
Bos (cattle)	probably wild and domestic
Equus asinus/hemionus (ass/onager)	
Capra (goat)	probably domestic
Ovis (sheep)	
Gazella cf. Subgutturosa (goitered 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 southwest Asia. The following measurements were taken (unless otherwise described, definitions follow von den Driesch 1976; measurements are given in millimeters):

Some specimens are large enough to suggest the presence of wild cattle (e.g. sp. nos. 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.

Table 37. Bone measurements of *Bos* at levels I–III, Tell Abada

	Sp. No.	*Bone*	*Measurements*
Level III	7	Ulna	SDO 60.3, DPA 73.1 Fusing!
Level III	8	Humerus	HTC (height of trochlea at constriction) 38.9
Level III	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	GLl 69.6
Level I	65	Phalanx II	GL > 58.3, KD 36.7, BD 40.7+
Level I	68	Metatarsus	BD 63.8
Level I	69	Metacarpus	BD 79.3

Equus asinus/hemionus

Equid bones are especially frequent in level III. A lower cheek tooth (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:

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.

Table 38. Bone measurements of *Equuas Asinus/Hemionus* at levels I–III, Tell Abada

	Sp. No.	*Bone*	*Measurements*
Level III	1	Phalanx	GL 81.0, Bp 43.5, KD 25.4, BFd 35.1 Bd 38.0
Level III	2	Pelvis	LAR ca. 49.5
Level III	3	Humerus	HTC 32.6
Level III	5	Astragalus	BFd 42.2. LmT 55.8
Level III	11	Phalanx I	GL 72.2, Bp 40.3, KD 23.5, BFd 31.7, Bd 33.5
Level III	12	Phalanx I	KD 23.7, BFd 33.3, Bd 34.2
Level III	14	Radius	Bd 59.4, BFd 50.7
Level III	15	Femur	TC 45.2
Level II	32	Phalanx I	GL ca. 84.0
No level	87	Phalanx I	Bp 41.8

Capra

Goat bones are fairly common. A number of male horn core 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:

Table 39. Bone measurements of *Capra* at levels I–II, Tell Abada

	Sp. No.	*Bone*	*Measurements*
Level II	40	Astragalus	GLl 25.8, GLm 23.7
Level II	42	Scapula	GLP 27.8+, BG 19.9+
Level I	71	Astragalus	GLl 29.2, GLm 27.1
Level I	72	Astragalus	GLl 25.3
Level I	73	Astragalus	GLm 23.1

Ovis

Sheep bones are again fairly common, but no horn cores were found. The following measurements were taken:

Table 40. Bone measurements of *Ovis* at levels I–II, Tell Abada

	Sp. No.	*Bone*	*Measurements*
Level II	38	Astragalus	GLl 31.4, GLm 29.8
Level II	39	Humerus	HTC 15.4
Level II	41	Tibia	Bd 27.6 ?Ovis
Level I	70	Astragalus	GLl 30.2, GLm 30.0 (*sic*!)
Level I	74	Astragalus	GLl 29.5, GLm 28.5
No level	90	Astragalus	GLl 31.4, GLm 29.9

Gazzella cf. subgutturosa

Gazelle horn cores 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:

Table 41. Bone measurements of *Gazella cf. Subgutturosa* throughout levels I–III, Tell Abada

	Sp. No.	*Bone*	*Measurements*
Level III	20	Horncore	Base ca. 27.3 × 18.7
Level II	22	Horncore	Base 30.5 × 19.2
Level II	23	Horncore	Base 31.2 × 21.3 burnt
Level II	24	Horncore	× 22.5
Level II	25	Horncore	32.0 × 24.2
Level II	26	Horncore	34.4 × 23.7
Level II	27	Horncore	34.1 × 22.0
Level II	28	Horncore	36.5 × 23.5
Level II	29	Horncore	33.8 × 22.5
Level II	30	Horncore	32.2 × 26.8 (*sic*!) juvenile; ? Identification
Level II	47	Metatarsus	Bd 21.7
Level I	57	Horncore	32.8 × 23.2
Level I	58	Horncore	33.1 × 22.5
Level I	75	Humerus	HTC 14.6
No level	96	Horncore	36.5 × 24.0
No level	97	Horncore	33.5 × 24.4

Sus

A small number of specimens was found, only one of which could be measured:
Level II 49 Astragalus GLl 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

Table 42. Occurrence of species teeth, horn-cores, and antler in levels I–III, Tell Abada

	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								

Discussion

The small size of the sample, together with evidence for selection (disproportionate abundance of horn cores, antler fragments, and Ovis and Capra astragal), 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 Mureybet (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 the samples are so small that little reliance can be placed on these comparisons.

The association of Equus, Bos, Ovis, Capra, and Gazzella suggests a rather open grassland. The Sus, if wild, probably came from the reed-swamp 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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I am grateful to Sabah Abboud Jasim for inviting me to examine the Tell Abada animal bones and to Doctor Joan Oates for her help. I am also grateful to the Department of Archaeology and Anthropology and to the Museum of Zoology, University of Cambridge, for the use of comparative material.

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APPENDIX 4

TELL ABADA: PRELIMINARY LITHIC ANALYSIS

Bob Bewley

This small assemblage of lithic artefacts was made of mainly chert stone, though there is one obsidian artefact. The chert artefacts probably originate somewhere in the Zagros Mountains, as they have the characteristic colors and multi-color 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 remnants of the binding material, presumably bitumen. There were few cores, which suggests that the artefacts were made somewhere else or that 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-utilized, though some had utilisation marks. Very few had retouch, though some had a little; not enough to categorize 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 II is perhaps the most productive in terms of sickle blades and blade flakes.

Micro-wear analysis and further comparative study ought to be done on this material to set it in its overall context.

Table 43. Distribution of the lithic artifacts throughout the archaeological levels at Tell Abada

	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
Conical 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	3	50
Totals	128	411	570	205	1314

FIGURES

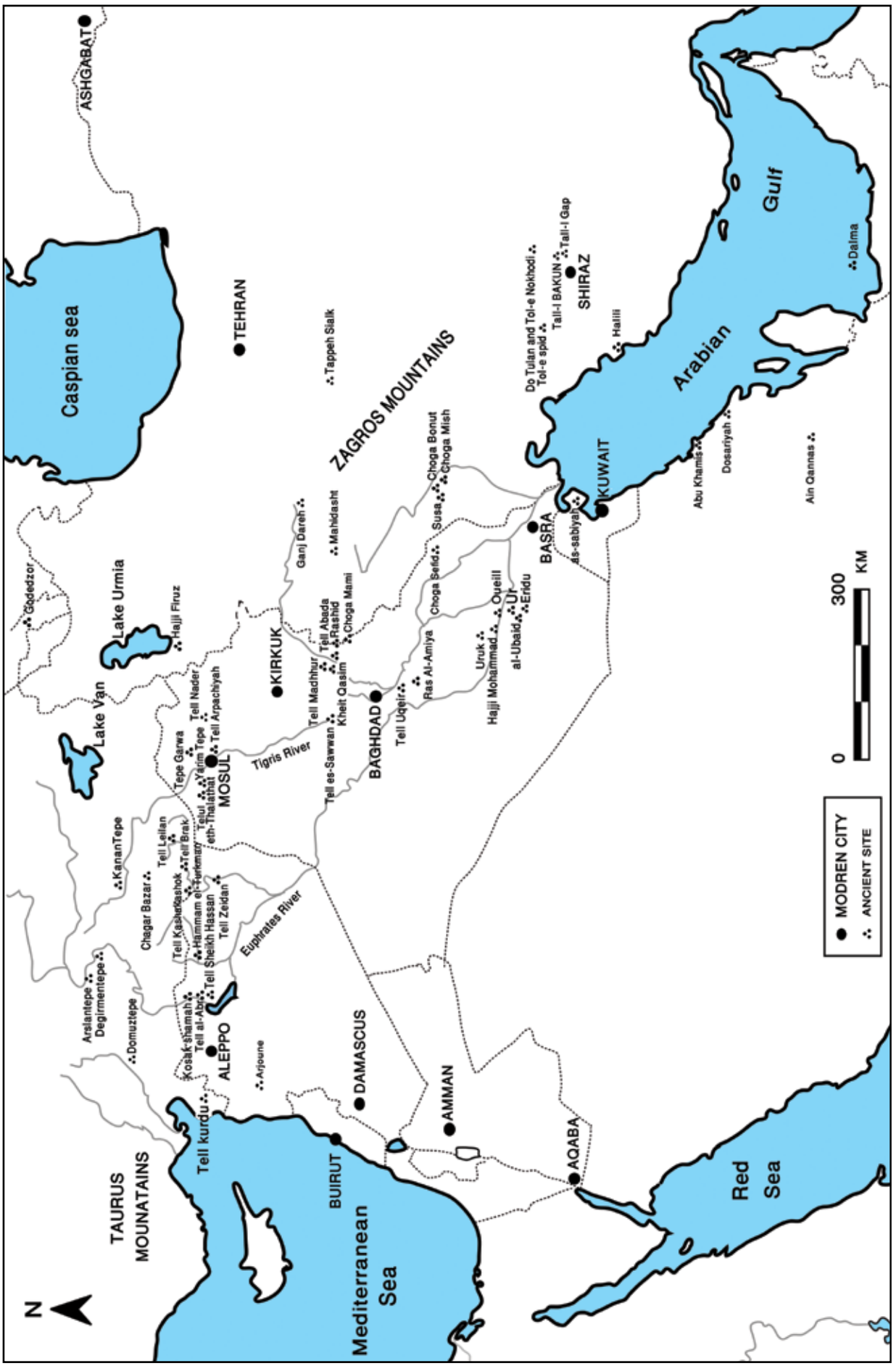


FIGURE 1. Map showing the distribution of Ubaid sites in Mesopotamia and the region.

FIGURE 2. An aerial view showing the area of Hamrin Basin after the completion of the dam.

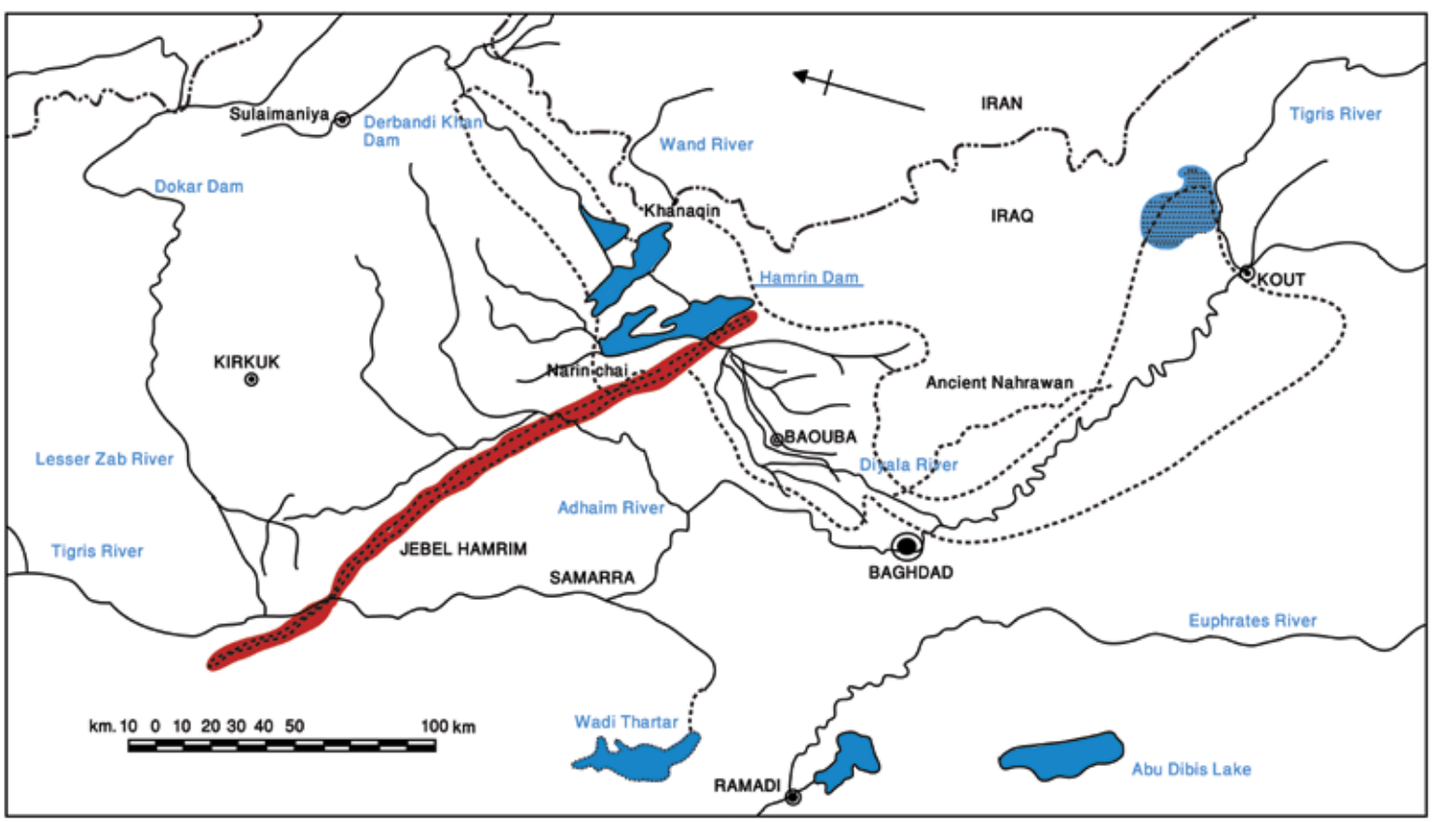


FIGURE 3. Map of northeastern Iraq showing the location of Hamrin Basin.

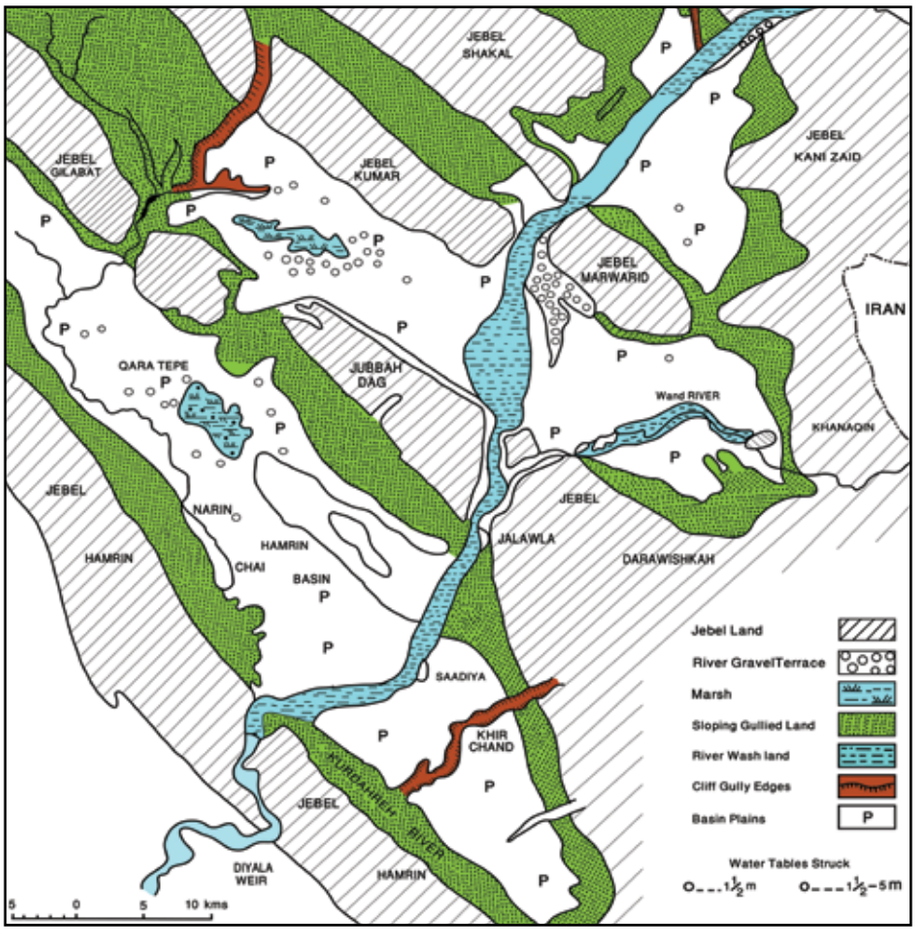


FIGURE 4. General topography and water table in the Hamrin region.

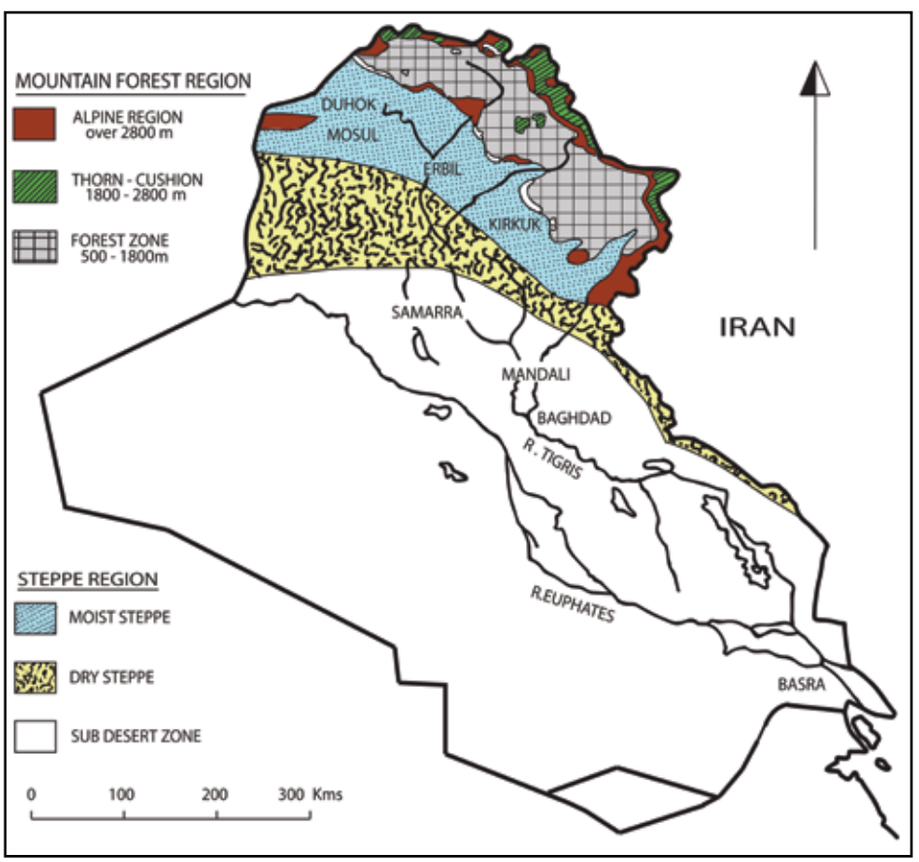


FIGURE 5. Map of vegetation region in Iraq (after Guest 1966).

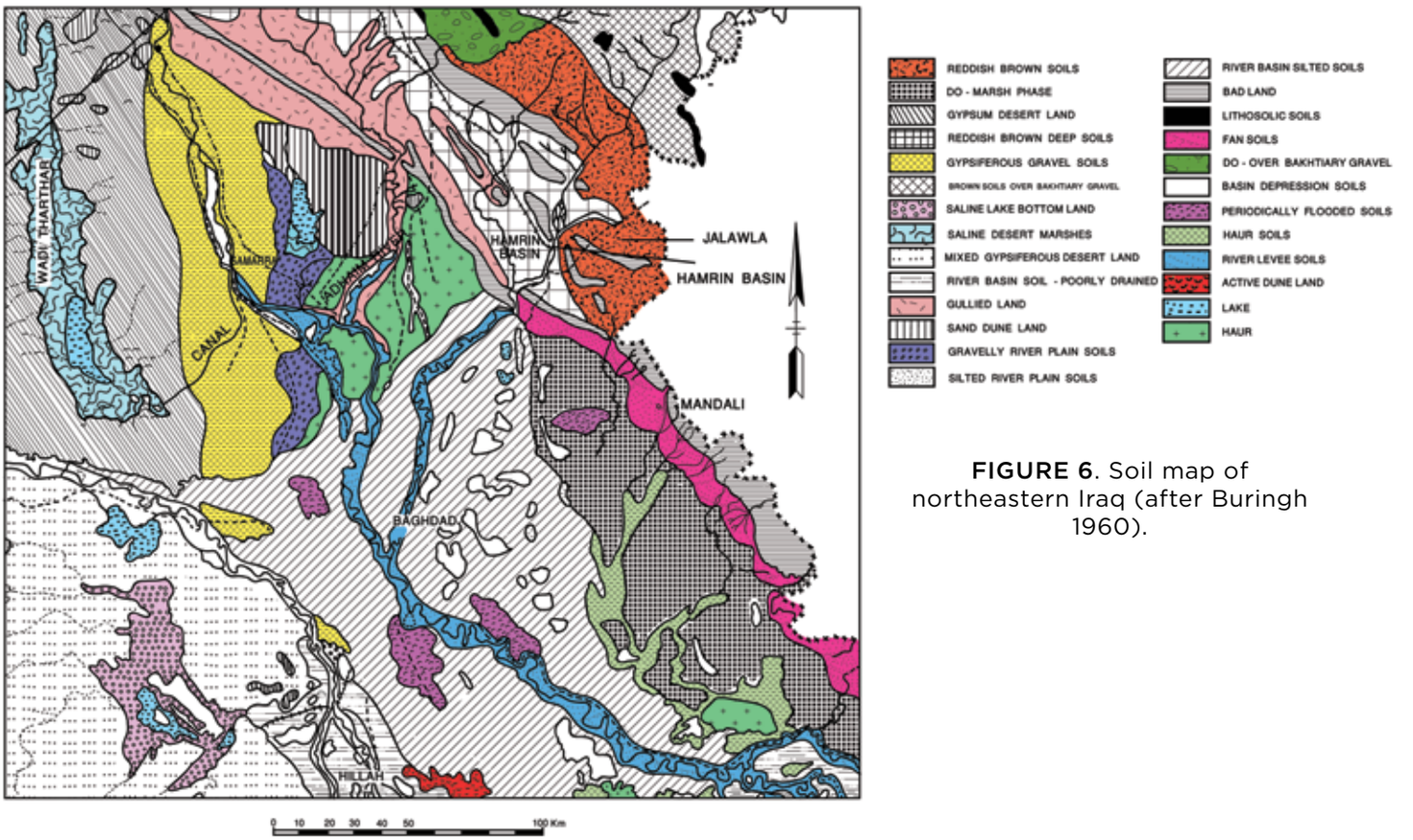


FIGURE 6. Soil map of northeastern Iraq (after Buringh 1960).

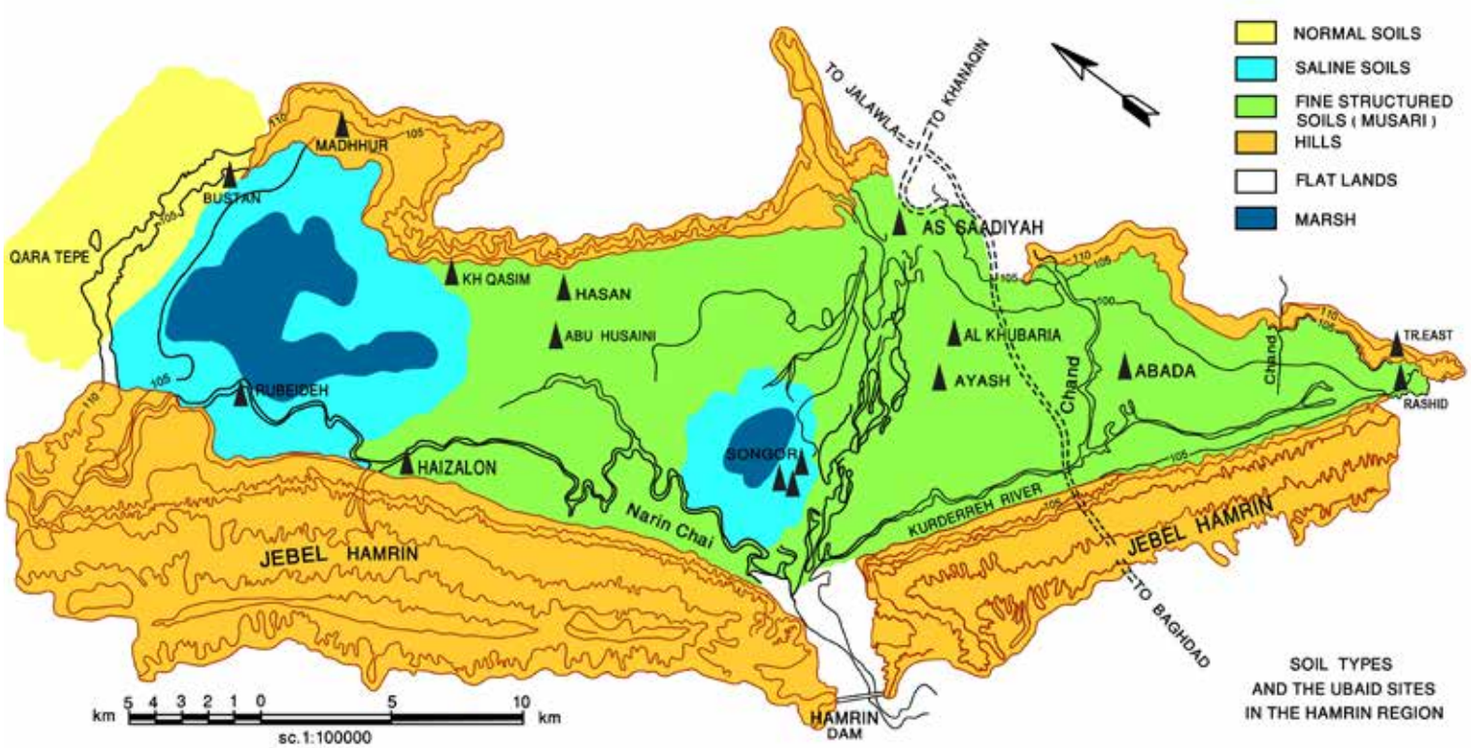


FIGURE 7. Soil types and the Ubaid sites in the Hamrin region.

FIGURE 8. An aerial map of Mesopotamia showing the position of Tell Abada.

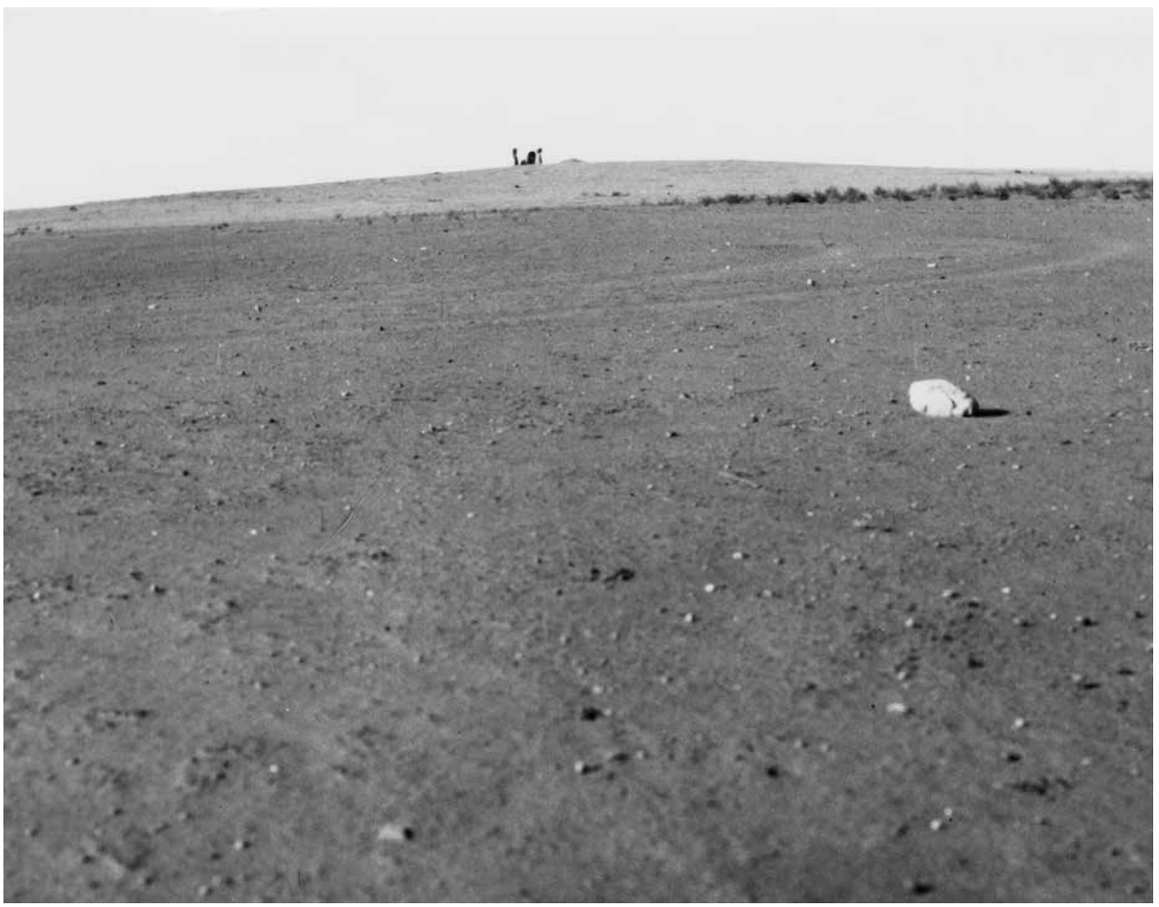


FIGURE 9. General view of Tell Abada (looking east) before excavations.

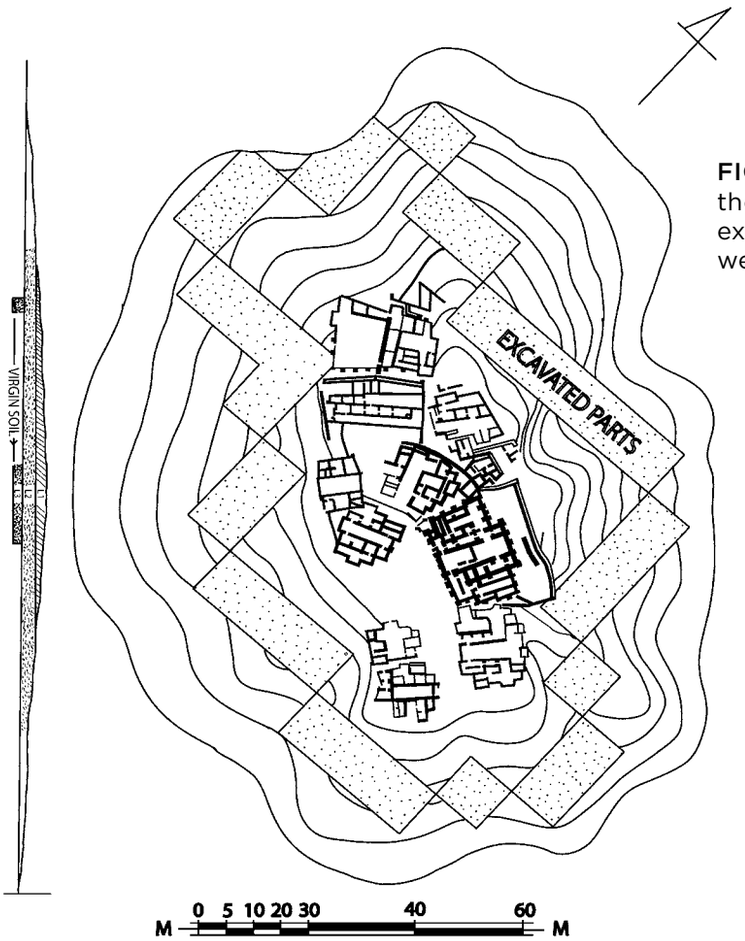


FIGURE 10. Contour plan at Tell Abada with the excavated parts. Dotted areas represent excavated parts where no structural remains were found.

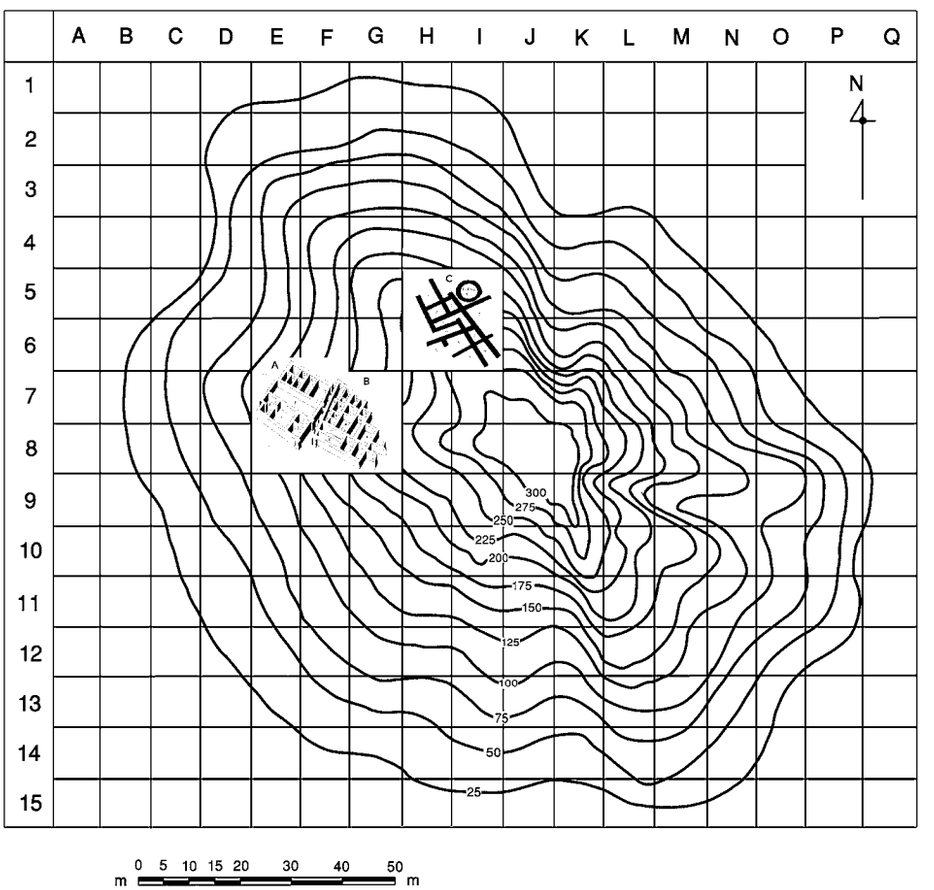


FIGURE 11. Tell Abada, level III, showing the location of Buildings A, B, and C.

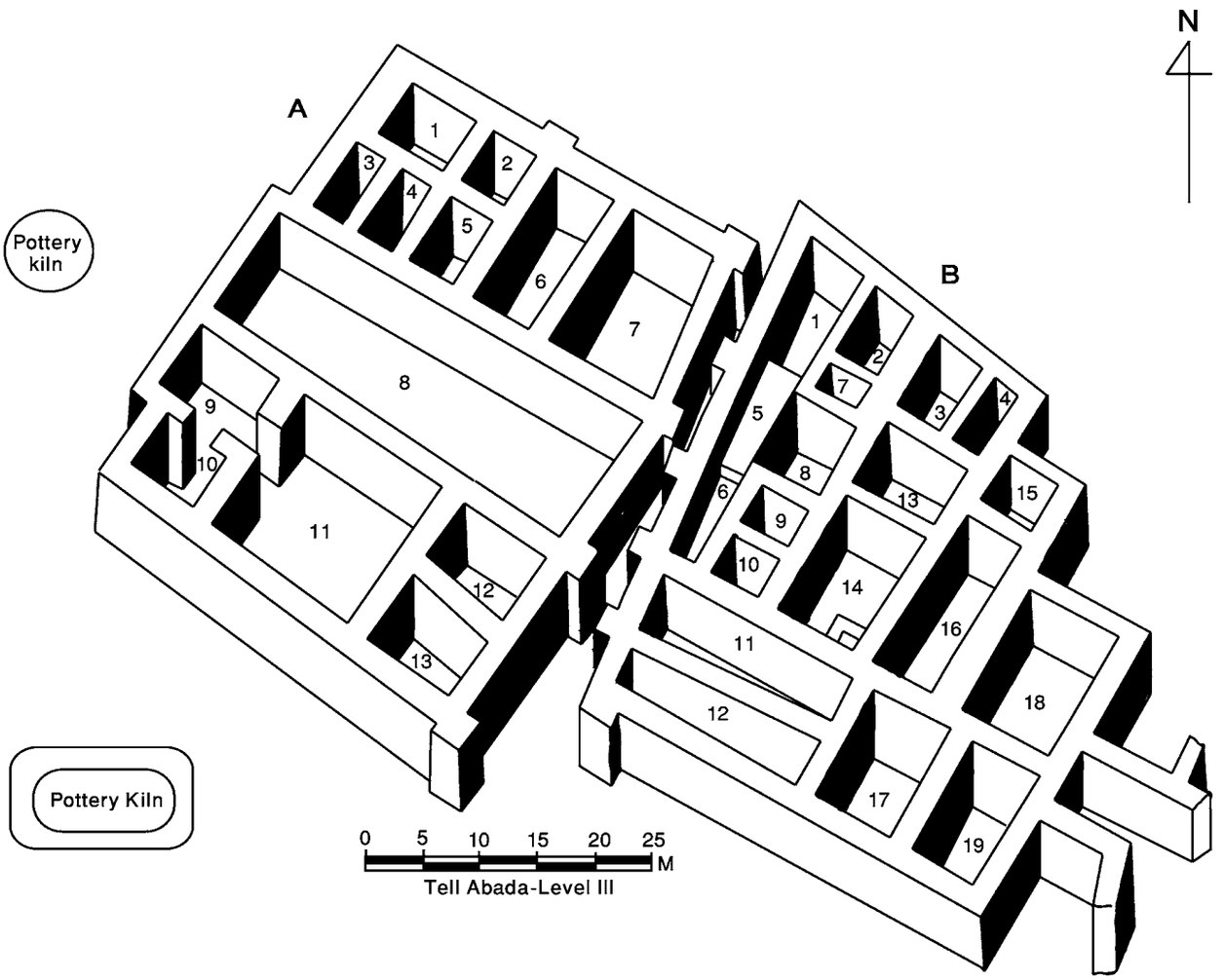


FIGURE 12. Plan of Buildings A and B, level III, Tell Abada.

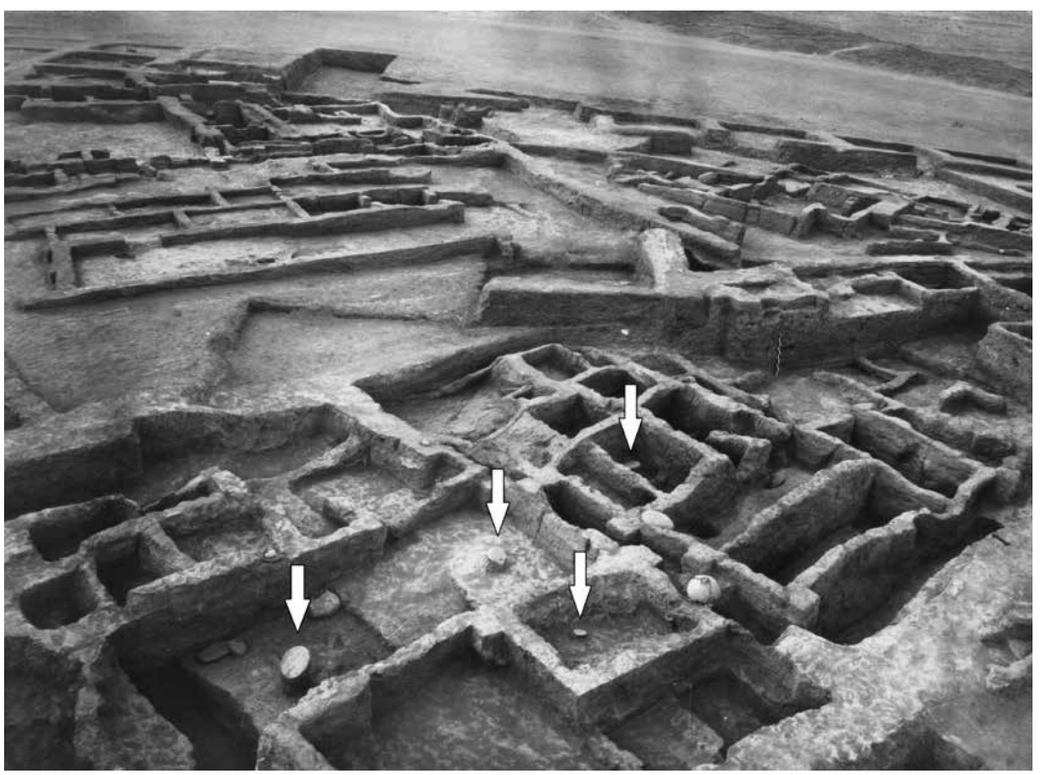


FIGURE 13. General view of level III buildings at Tell Abada, showing gypsum discs in situ within Building A.

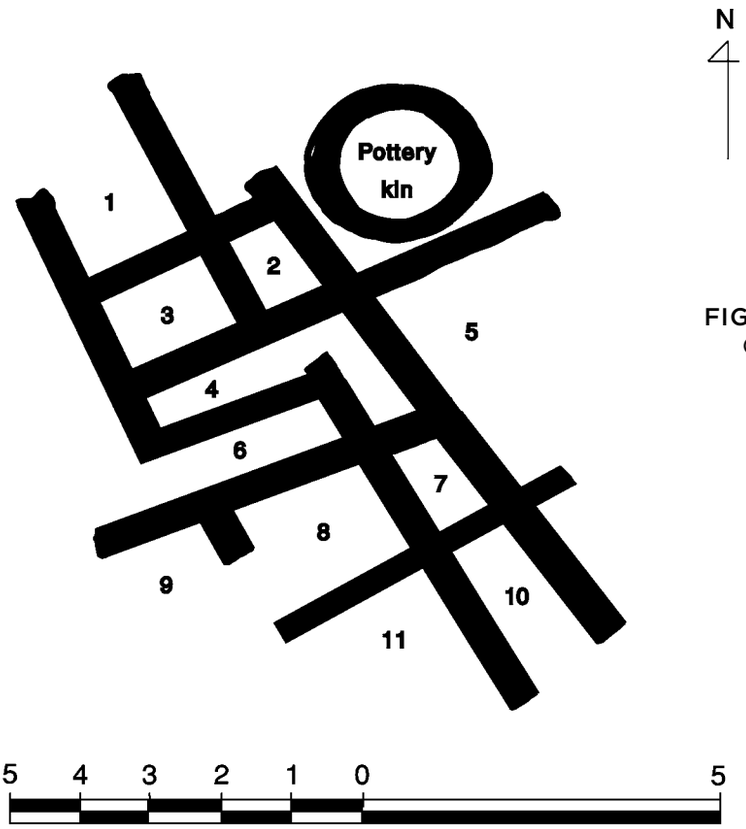


FIGURE 14. Plan of Building C, level III, Tell Abada.

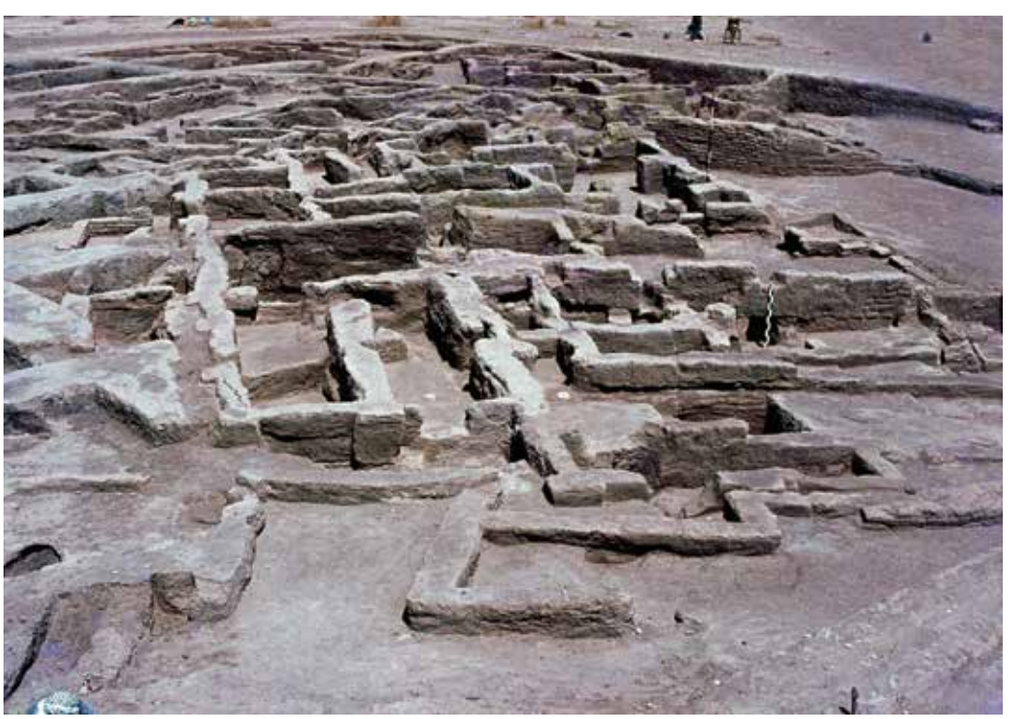


FIGURE 15. General view of level II, Tell Abada.

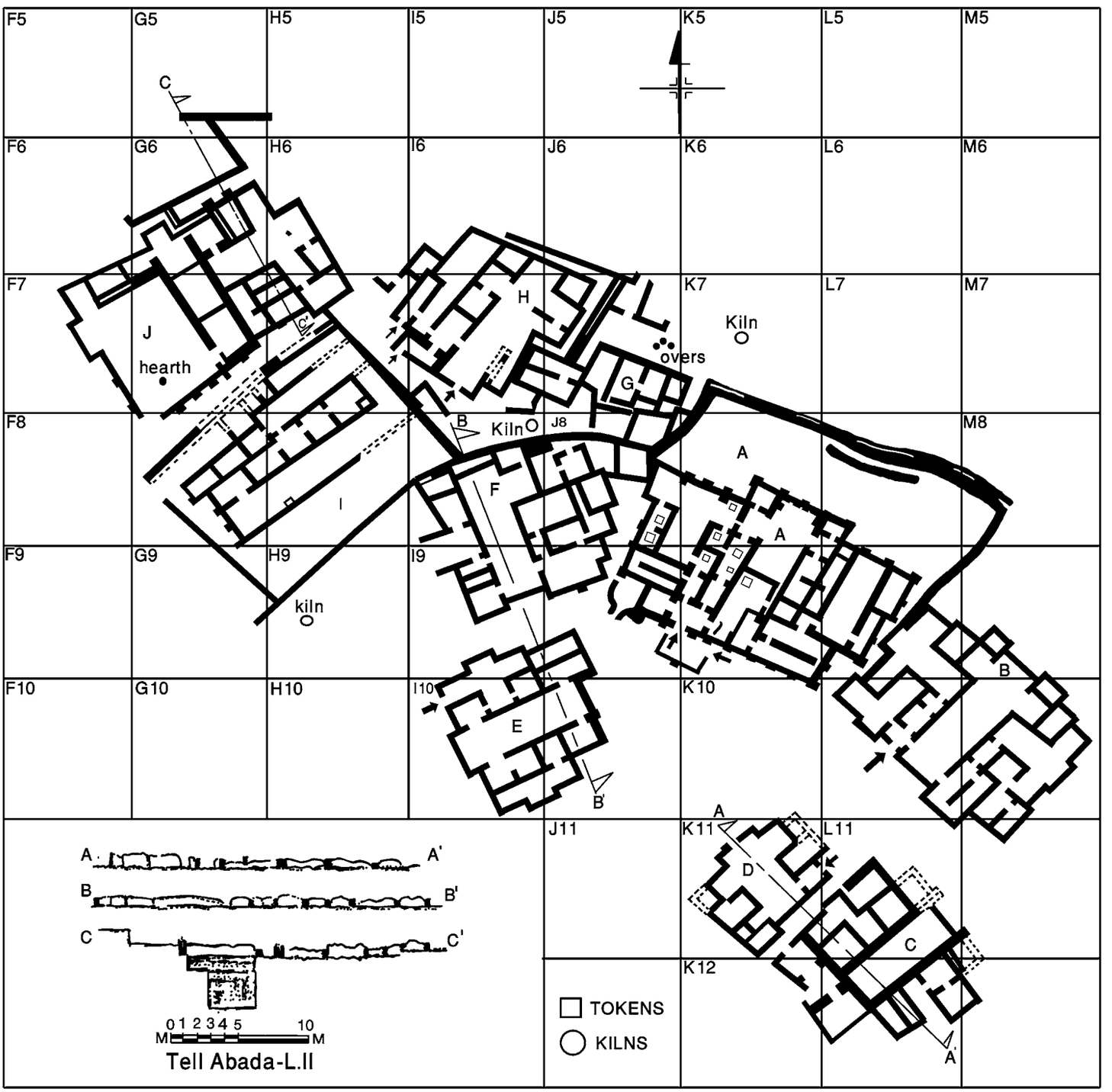


FIGURE 16. Plan and cross-section of level II, Tell Abada.

FIGURE 17. Plan of Building A, level II, Tell Abada, showing the distribution of certain objects.

FIGURE 18. Entrance to Building A, level II, Tell Abada.

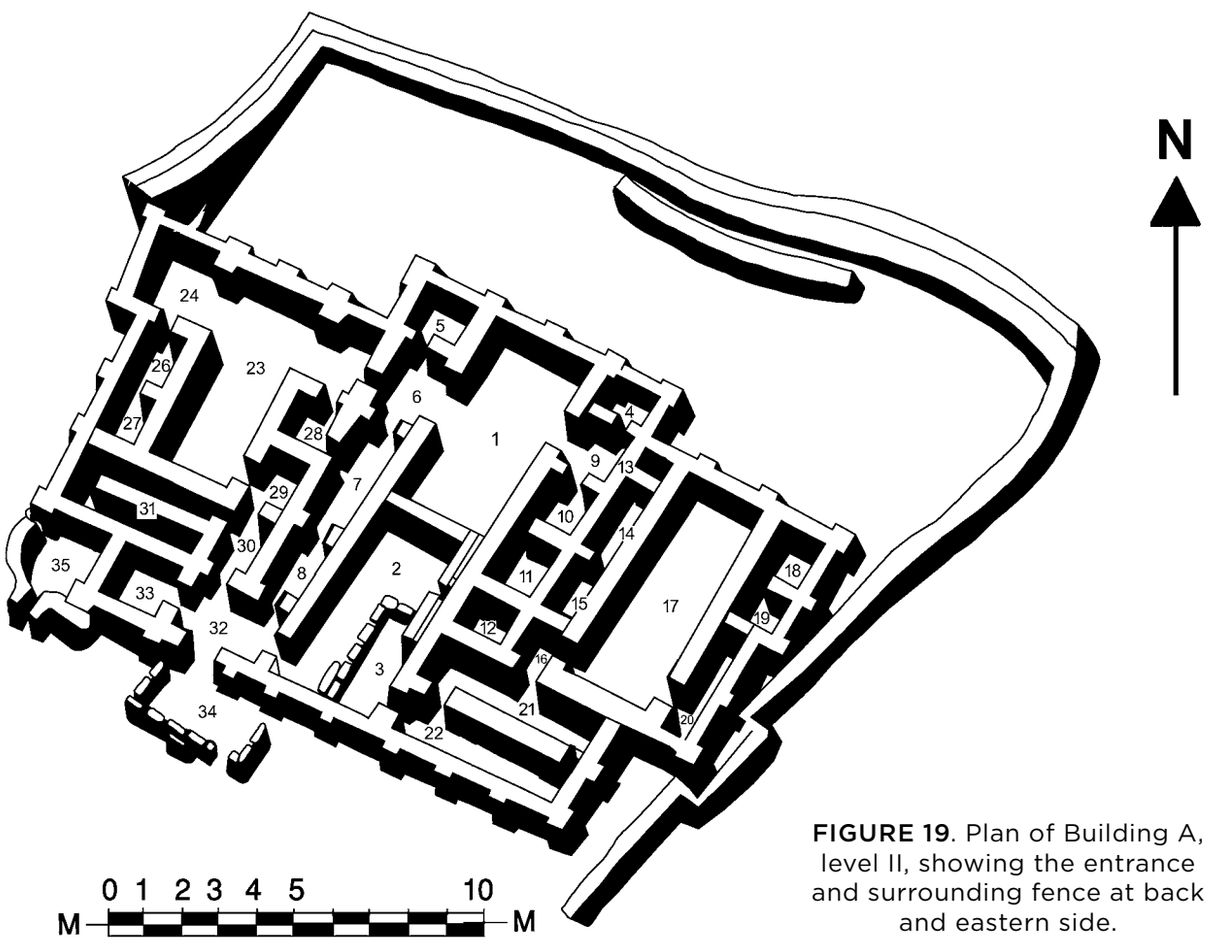


FIGURE 19. Plan of Building A, level II, showing the entrance and surrounding fence at back and eastern side.

FIGURE 20. General view of Building A, level II, Tell Abada, showing the fenced area at the rear.

FIGURE 21. View of the buttressed facade and the central hall at Building A, level II, Tell Abada.

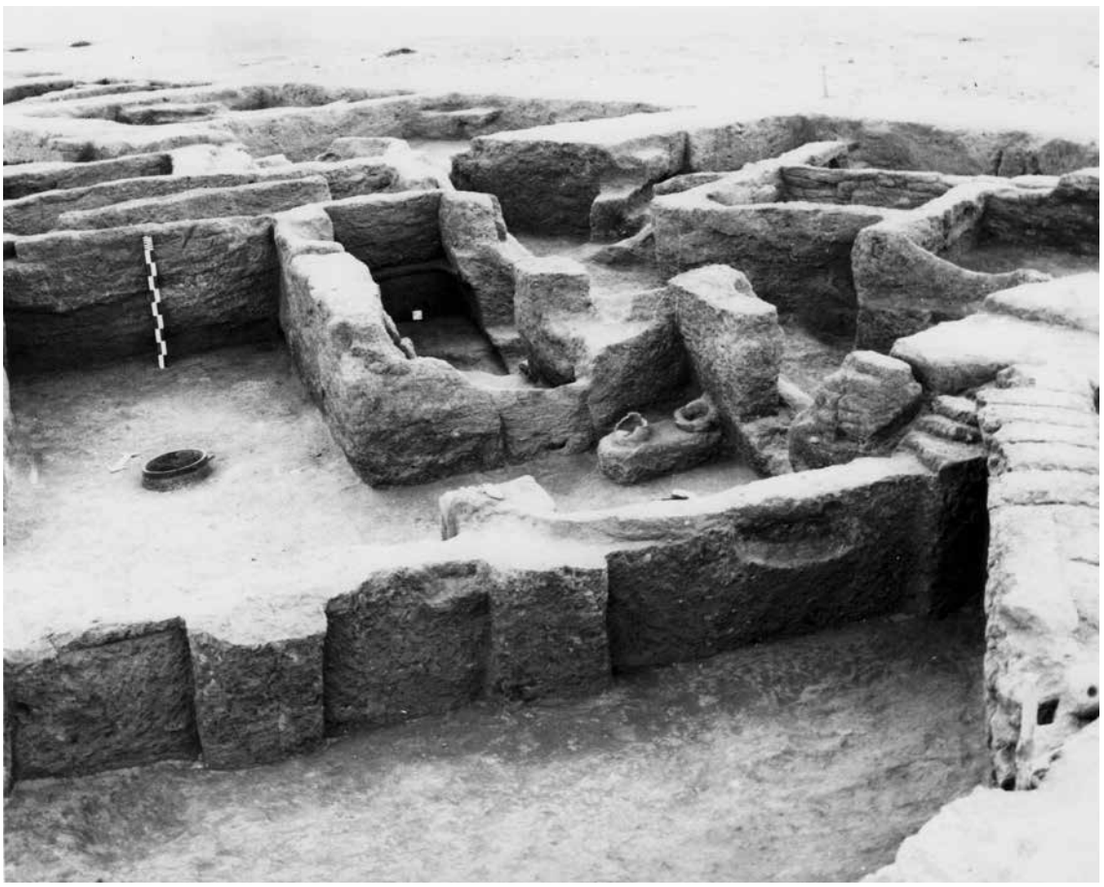


FIGURE 22. View of the northern wall at the central hall of Building A, level II, Tell Abada, with interior and exterior buttresses.

FIGURE 23. General view of the northern side of Building A, level II, Tell Abada.

FIGURE 24. Plan of Building B, level II, Tell Abada, showing the distribution of certain objects.

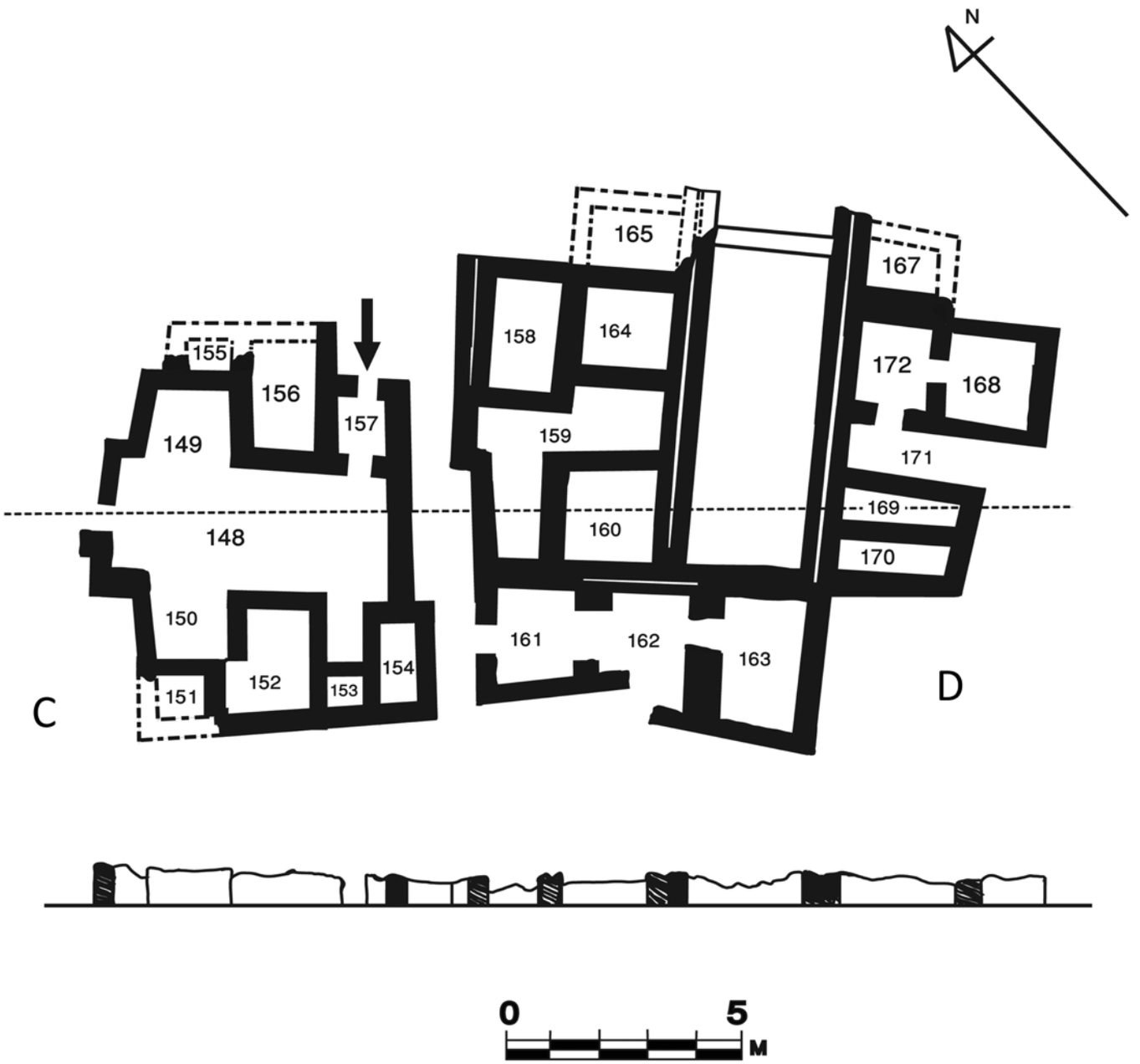


FIGURE 25. Plan and cross-section of Buildings C and D, level II, Tell Abada.

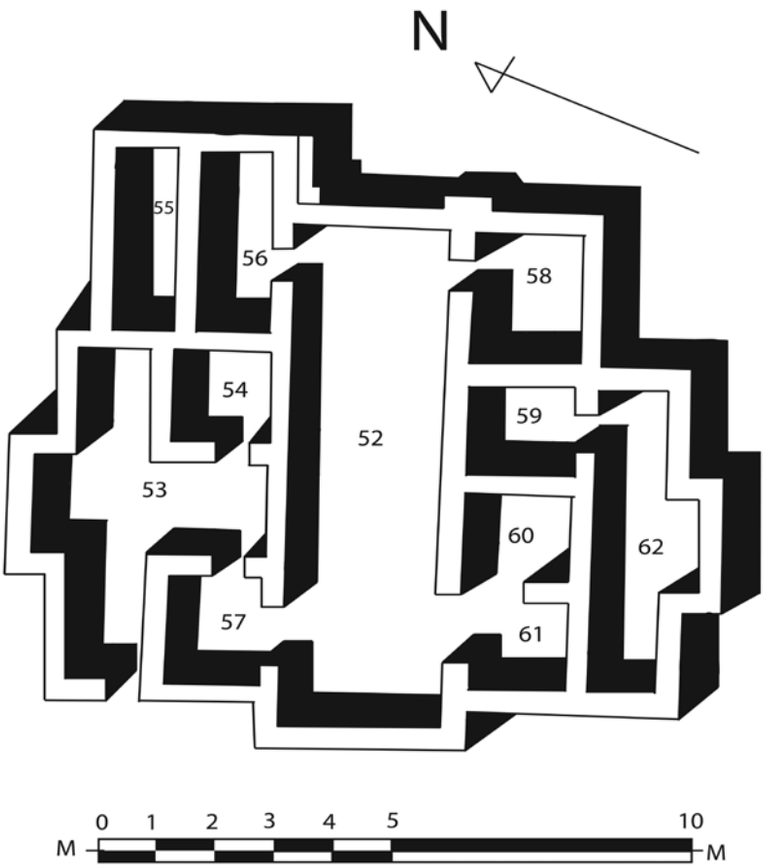


FIGURE 26. Plan of Building E, level II, Tell Abada.

FIGURE 27. General view of Building E, level II, Tell Abada.

FIGURE 28. View of room 55, Building E, level II, housing a staircase?

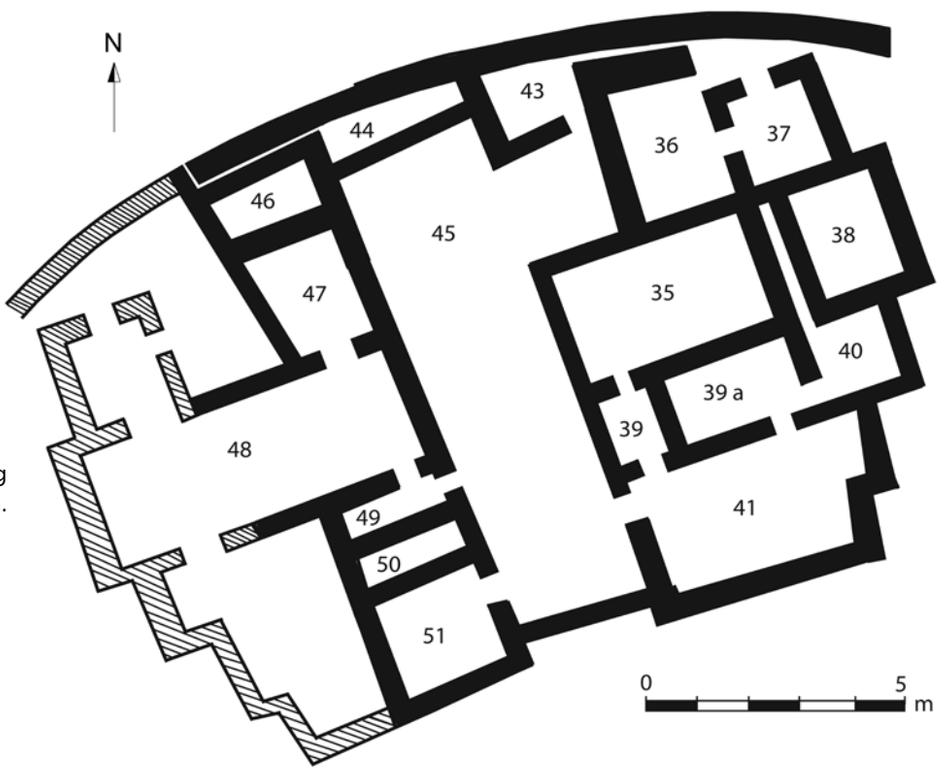


FIGURE 29. Plan of Building F, level II, Tell Abada.

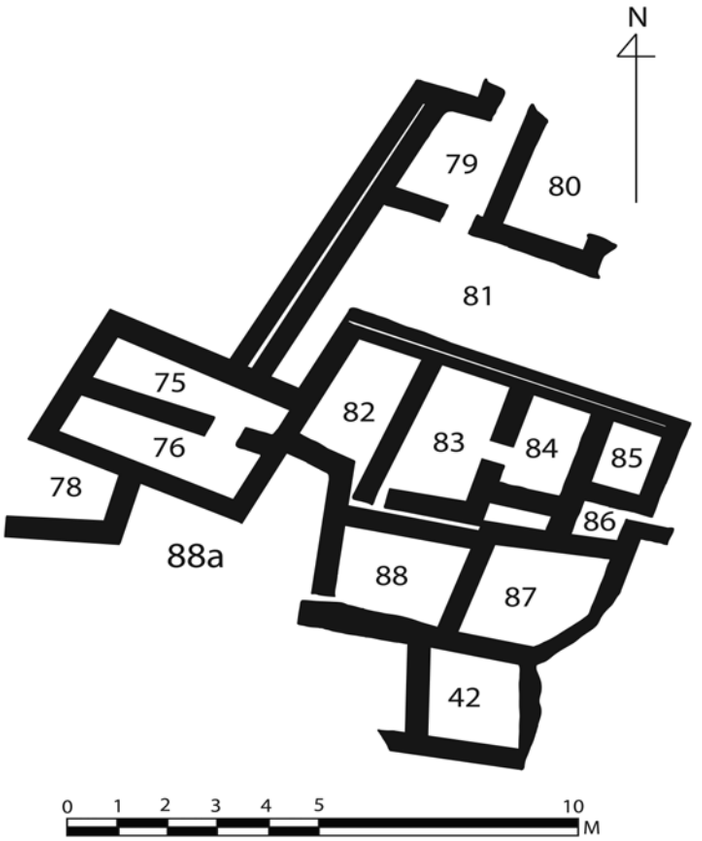


FIGURE 30. Plan of Building G, level II, Tell Abada.

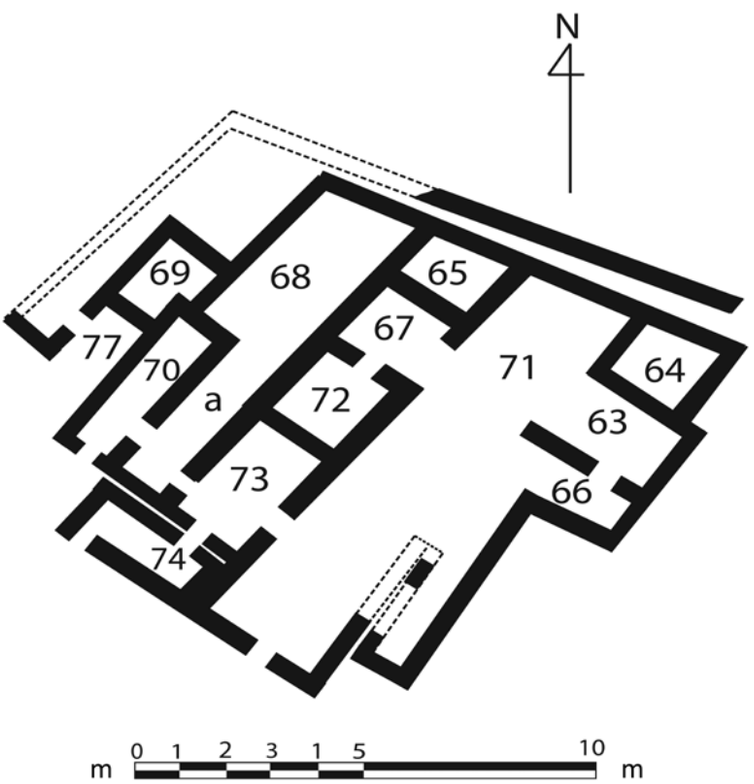


FIGURE 31. Plan of Building H, level II, Tell Abada.

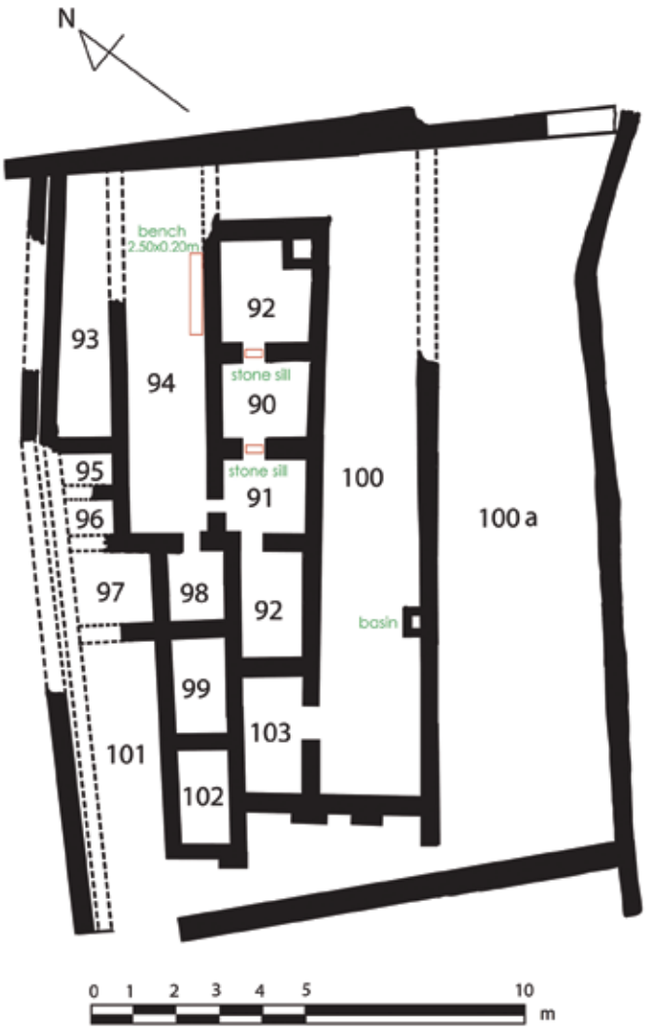


FIGURE 32. Plan of Building I, level II, Tell Abada.

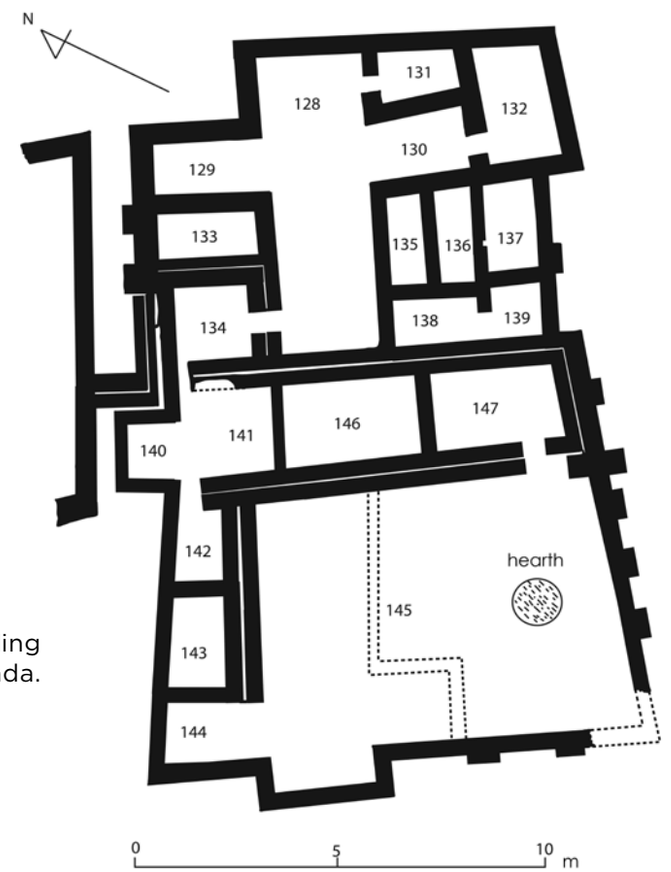


FIGURE 33. Plan of Building J, level II, Tell Abada.

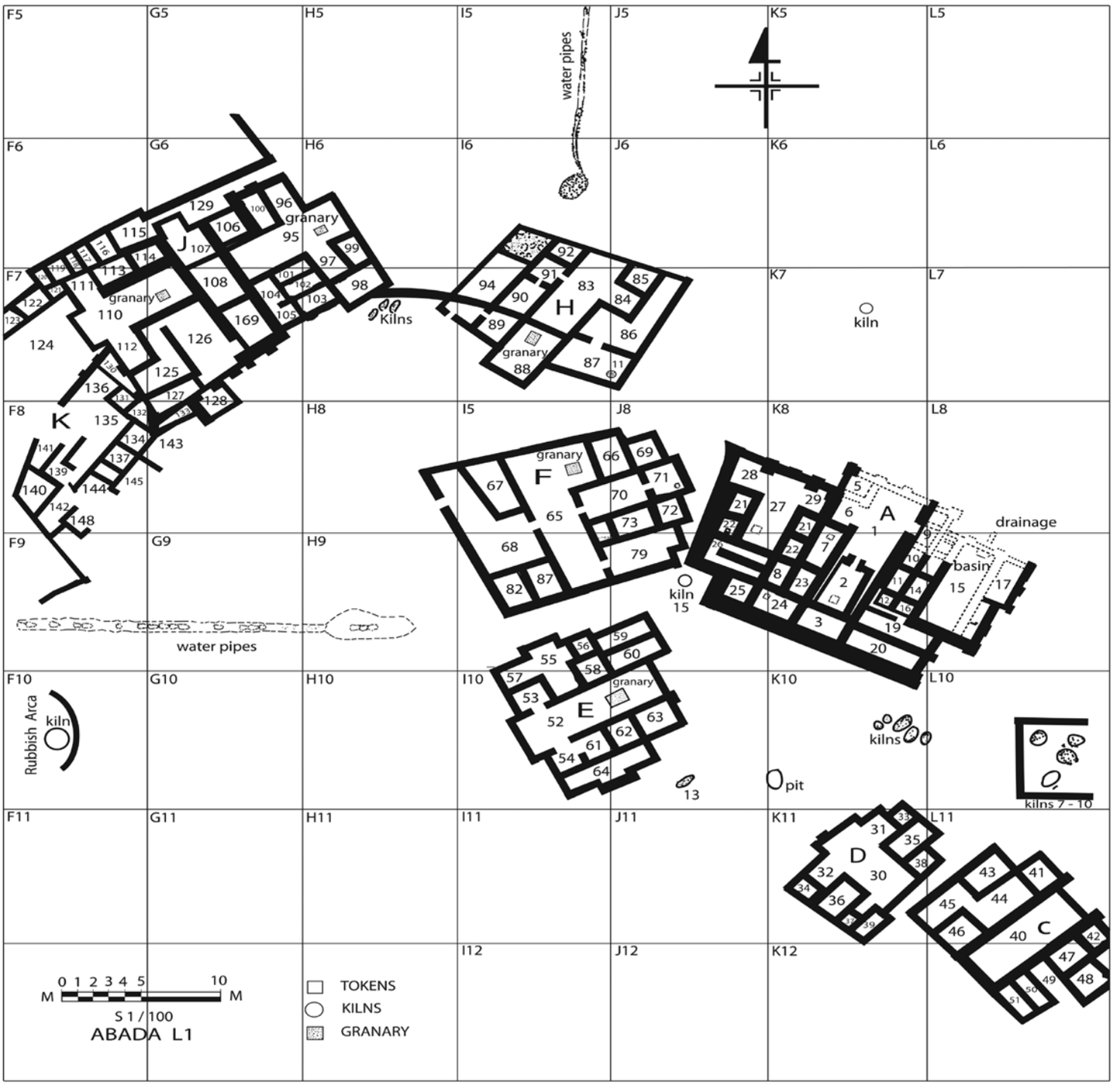


FIGURE 34. General plan of level I, Tell Abada, showing the distribution of tokens, kilns, and granaries.

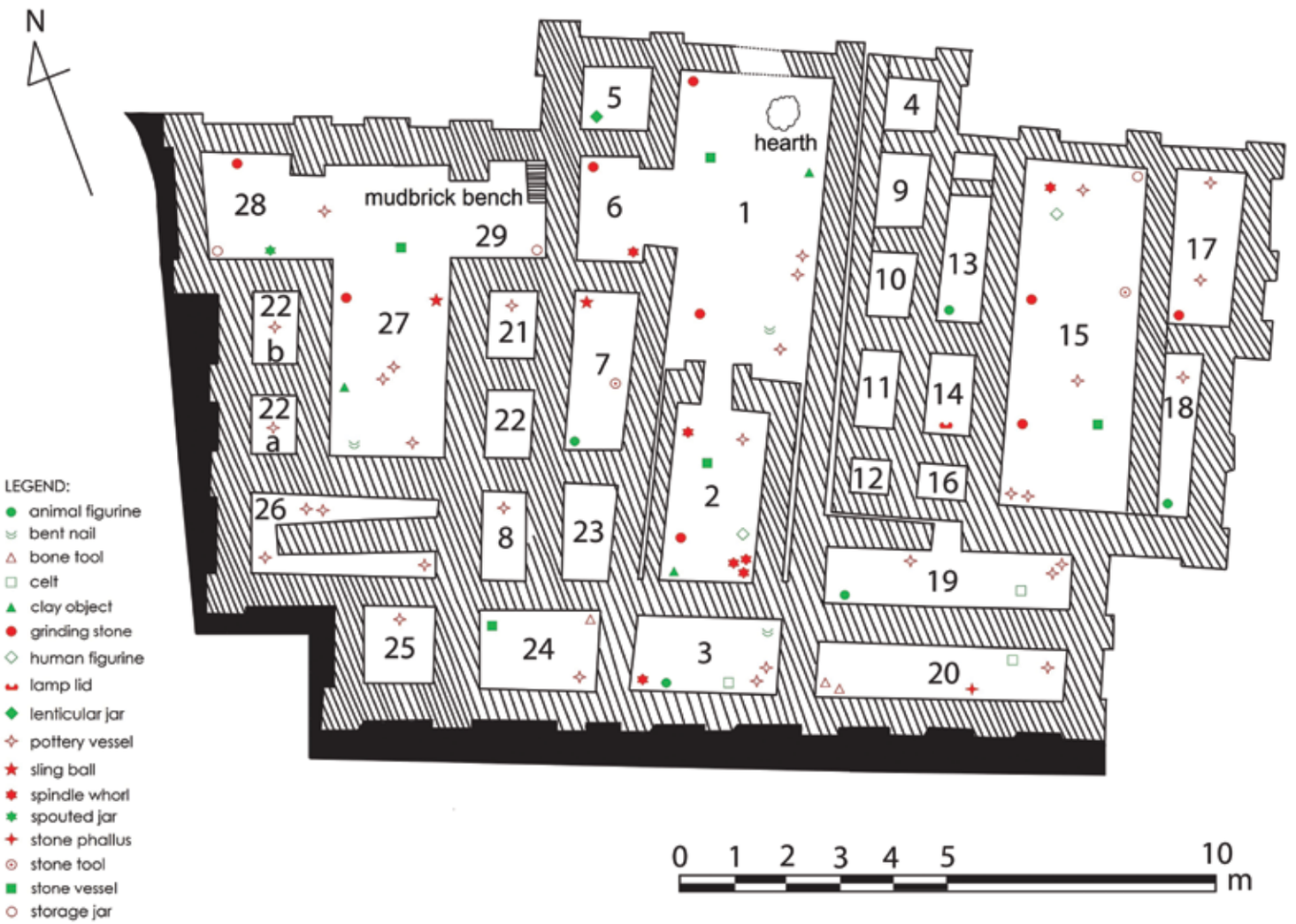


FIGURE 35. Plan of Building A, level I, Tell Abada, showing the distribution of content.

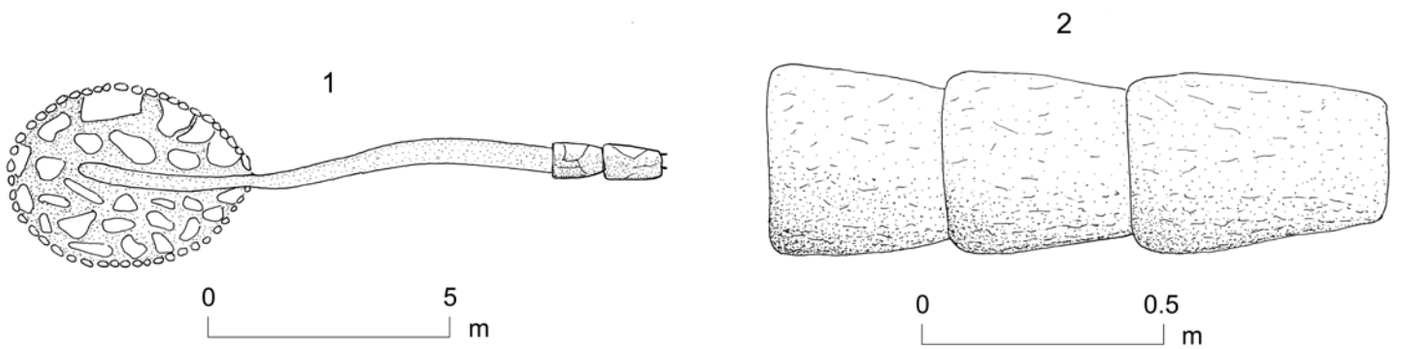


FIGURE 36. Sketch of water pottery ducts from level I, Tell Abada.

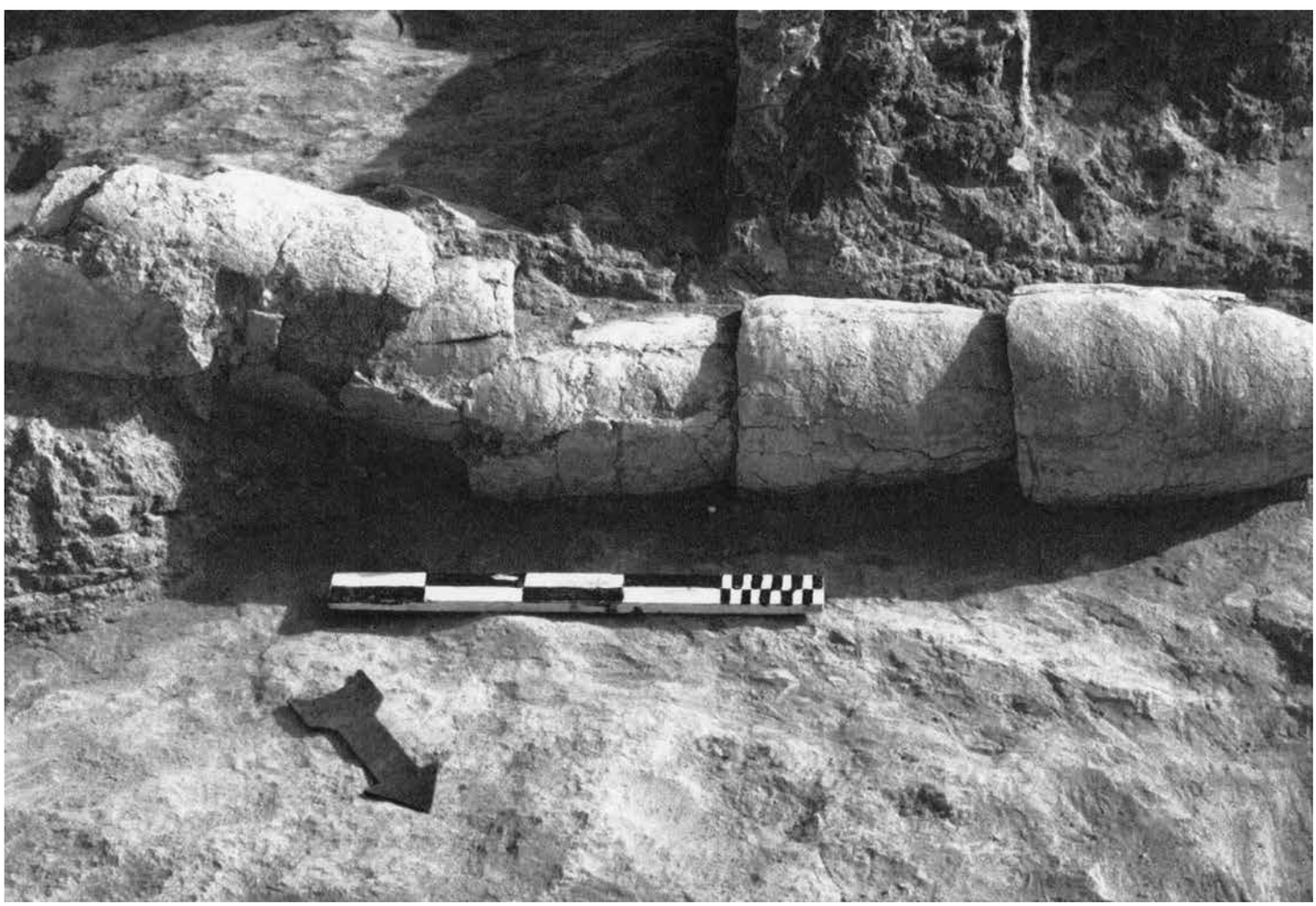


FIGURE 37. View of Water Pottery ducts in situ at level I, Tell Abada.

FIGURE 38. Water channel reinforcement with gypsum and pottery duct in situ from level I, Tell Abada.

FIGURE 39. The outlet of the water duct system at level I, Tell Abada.

FIGURE 40. Part of the drainage system at level I, Tell Abada.

FIGURE 41. Pottery water duct in situ, level I, Tell Abada.

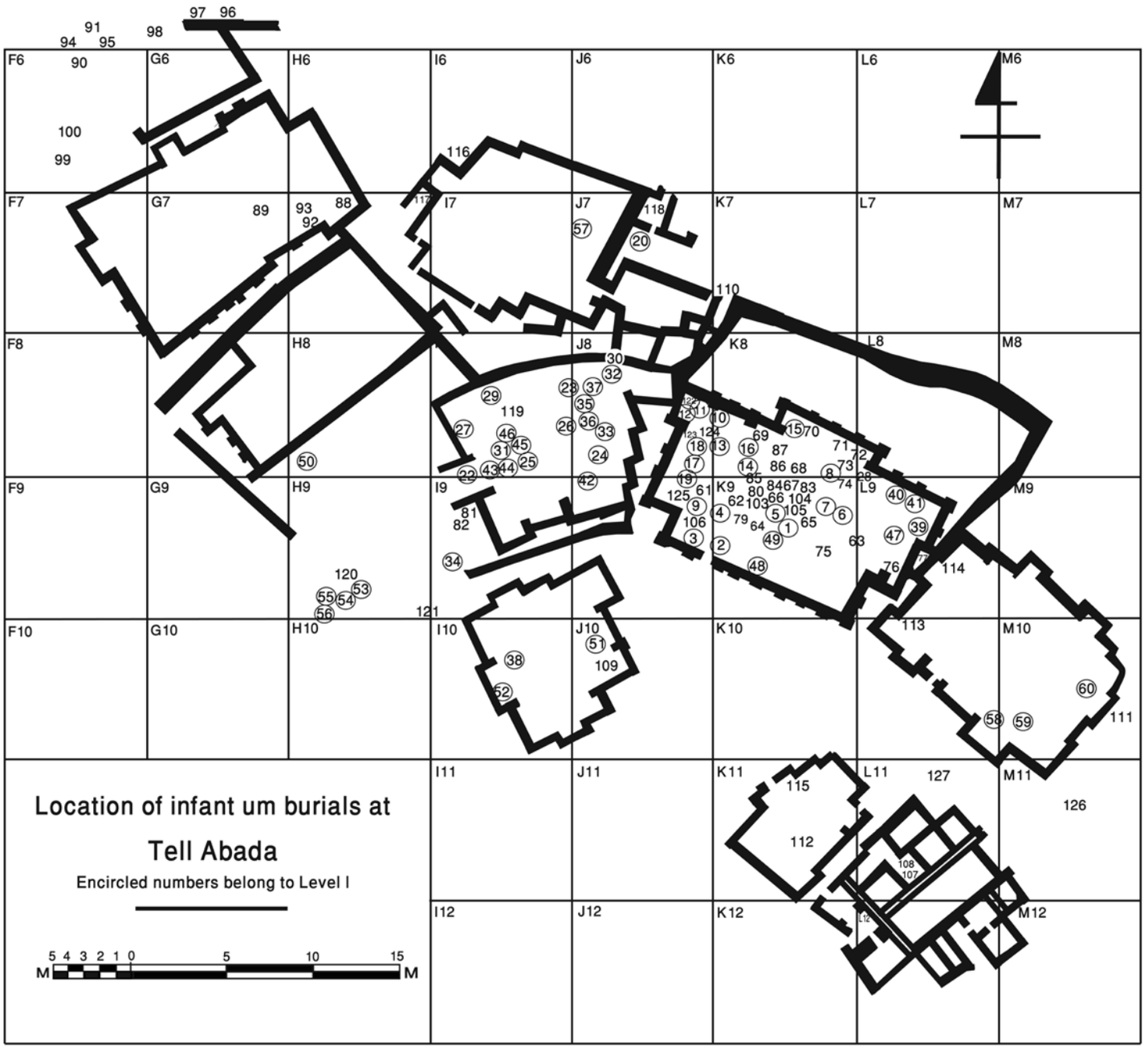


FIGURE 42. Location of infant urn burials at levels I–II, Tell Abada.

FIGURE 43. An urn burial in situ at level I, Tell Abada.

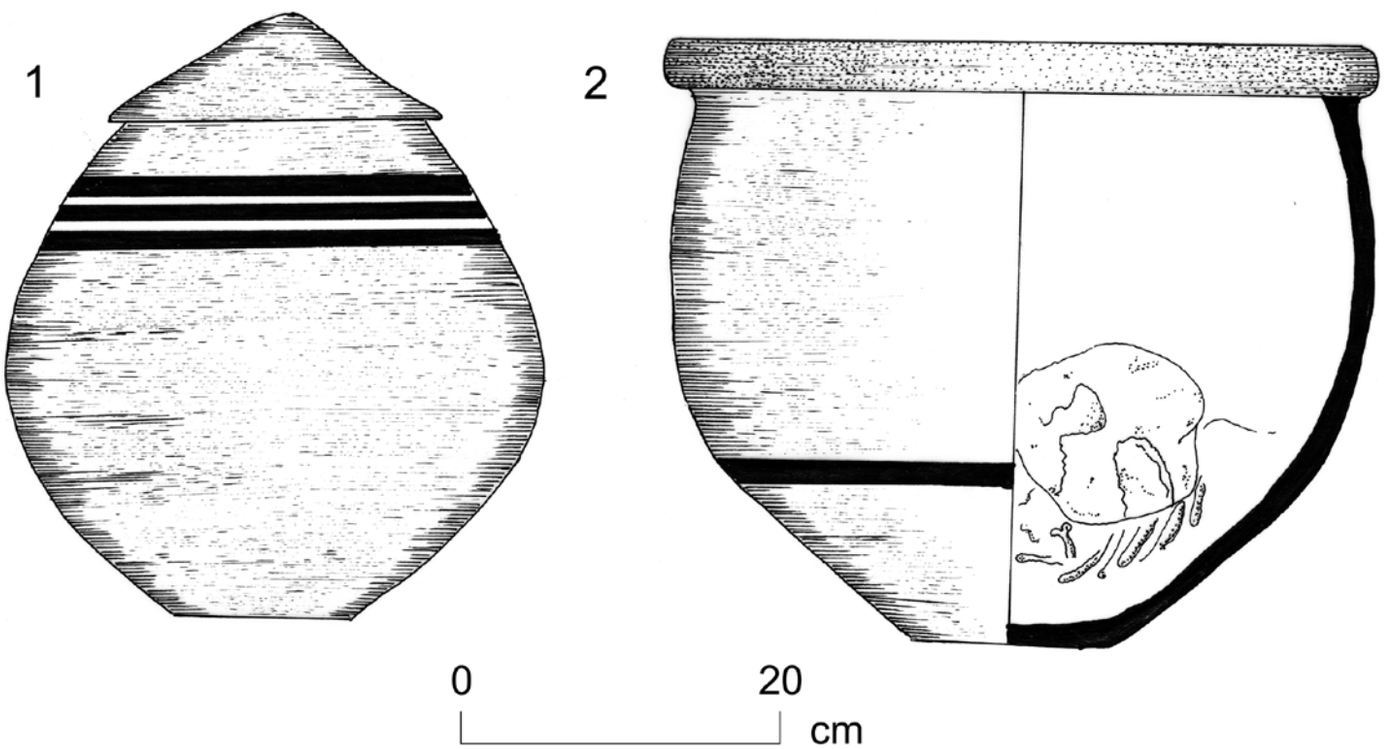


FIGURE 44. Drawing of urn burials from level I, Tell Abada.
(1) Covered with a large plate. (2) Sealed with baked plaster.

FIGURE 45. Selected collection of burial urns from levels I–III, Tell Abada.

FIGURE 46. Burial urn in situ at level I, Tell Abada.

FIGURE 47. Burial urn covered with a painted vessel (fig. 258: 1) in situ at level I, Tell Abada.

FIGURE 48. Burial urn lidded with pottery vessel in situ at level I, Tell Abada.

FIGURE 49. Burial urn lidded with a large vessel in situ at level I, Tell Abada.

FIGURE 50. Burial urn containing infant skeletal remains (fig. 217) at level I, Tell Abada.

FIGURE 51. Burial urn in situ at level I, Tell Abada.

FIGURE 52. Burial urn in situ at level I, Tell Abada.

FIGURE 53. Burial pit covered with a large vessel in situ at level I, Tell Abada.

FIGURE 54. Burial pit covered with urn in situ at level I, Tell Abada.

FIGURE 55. Burial pit covered with a large urn in situ at level I, Tell Abada.

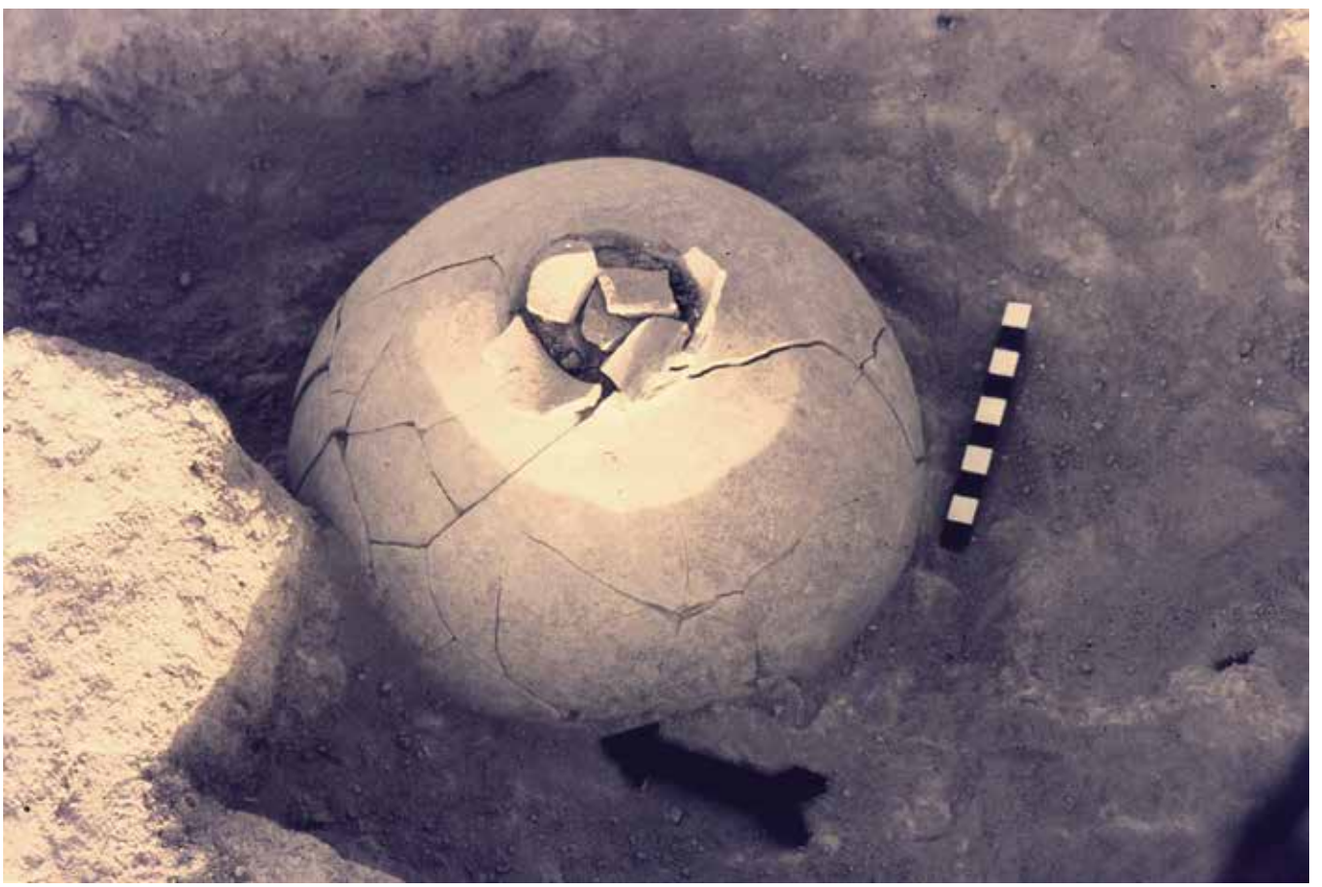


FIGURE 56. Burial urn in situ at level I, Tell Abada.

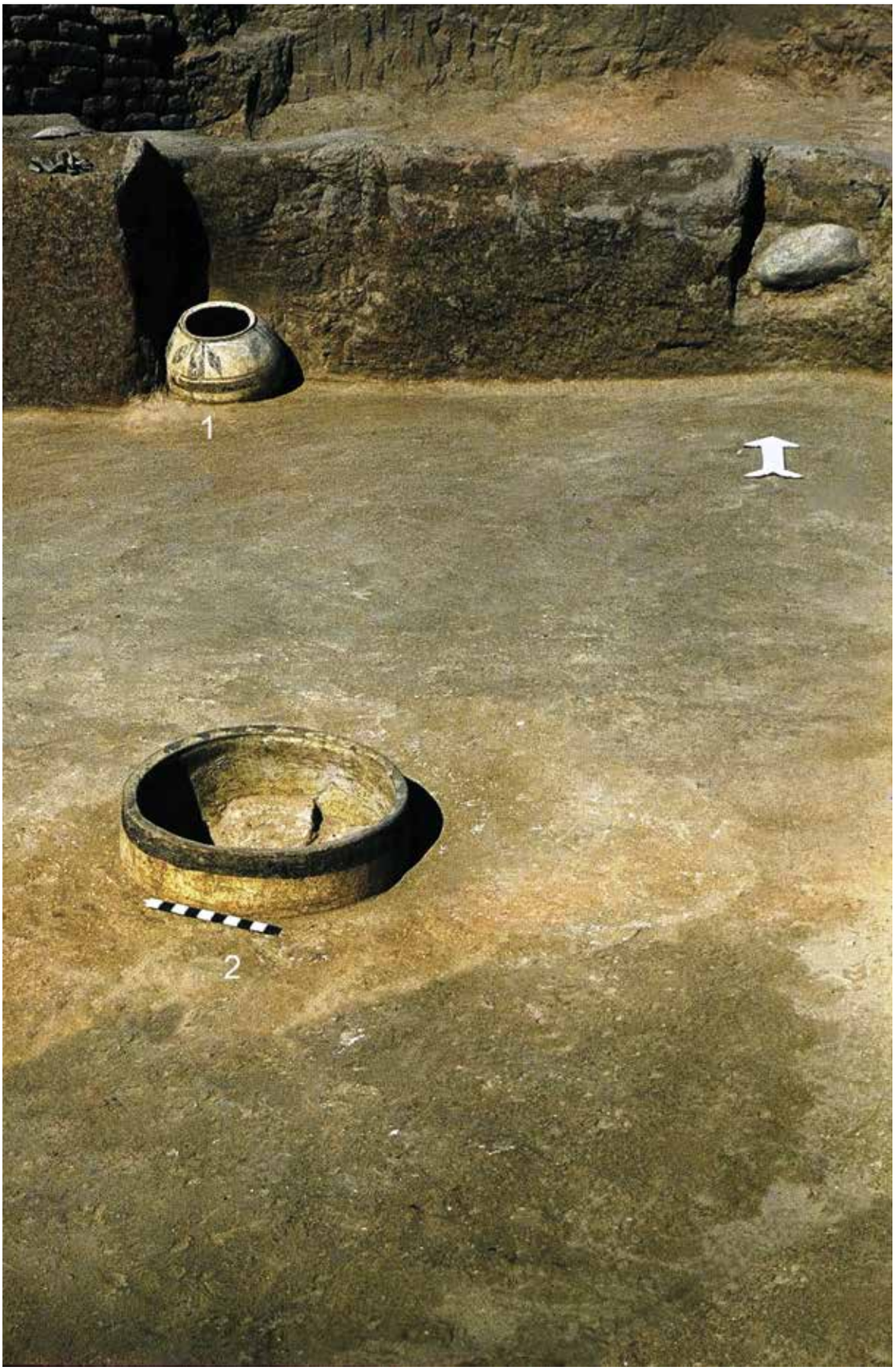


FIGURE 57. View from the central hall of Building A showing burial urn in situ at the middle and another burial urn at the rear (fig. 58) at level I, Tell Abada,.

FIGURE 58. Burial urn in situ at the corner of the central hall of Building A (fig. 57: 1) at level I, Tell Abada.

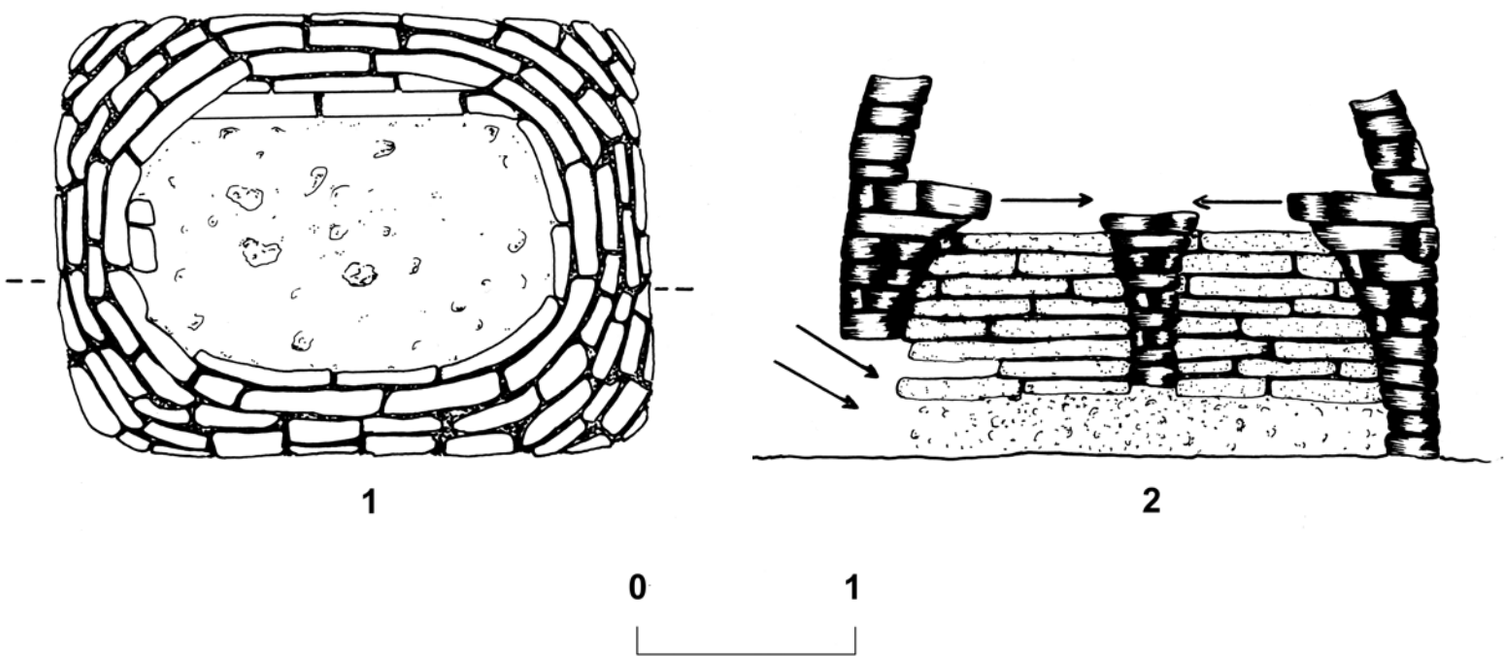


FIGURE 59. Plan and cross-section of a double-chambered pottery kiln at level III, Tell Abada.

FIGURE 60. A view of a double-chambered kiln (fig. 61) at level II, Tell Abada.

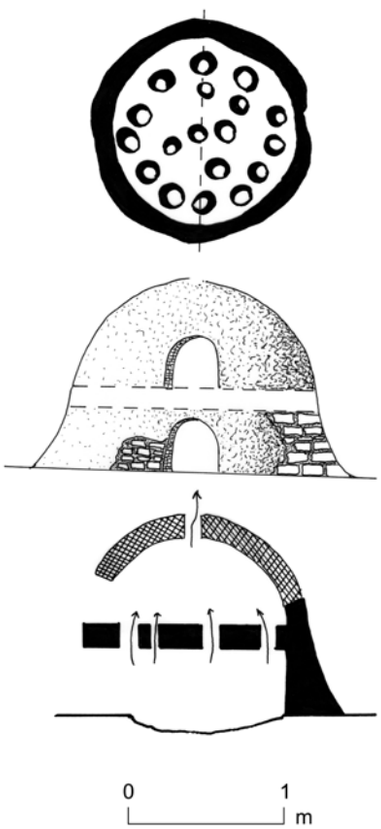


FIGURE 61. Plan and cross-section of a double-chambered pottery kiln (fig. 60) at level II, Tell Abada.

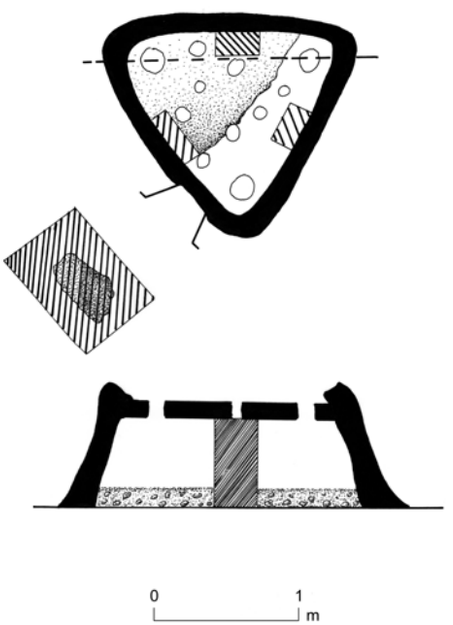


FIGURE 62. Plan and cross-section of a double-chambered pottery kiln at level II, Tell Abada.

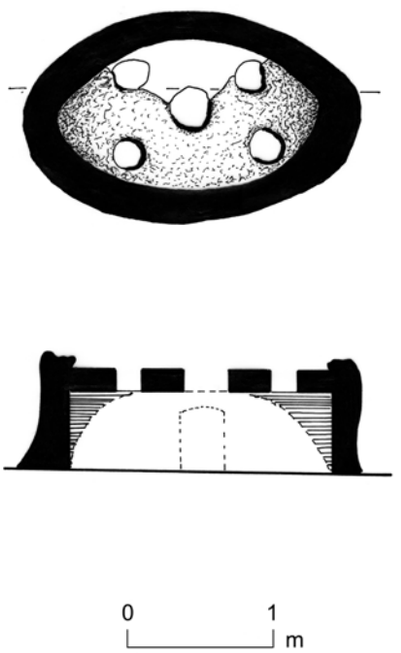


FIGURE 63. Plan and cross-section of a double-chambered pottery kiln at level II, Tell Abada.

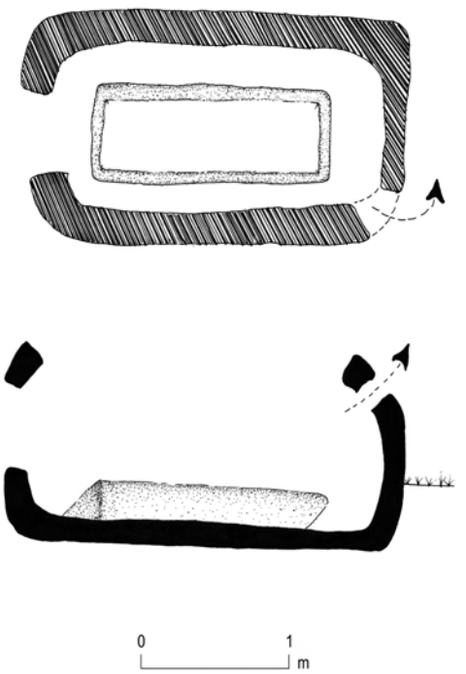


FIGURE 64. Plan and cross-section of pottery kiln at level I, Tell Abada.

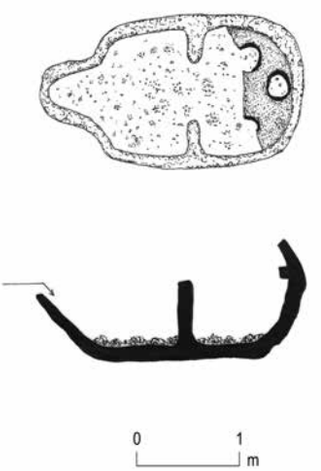


FIGURE 65. Pottery kiln at level I, Tell Abada.

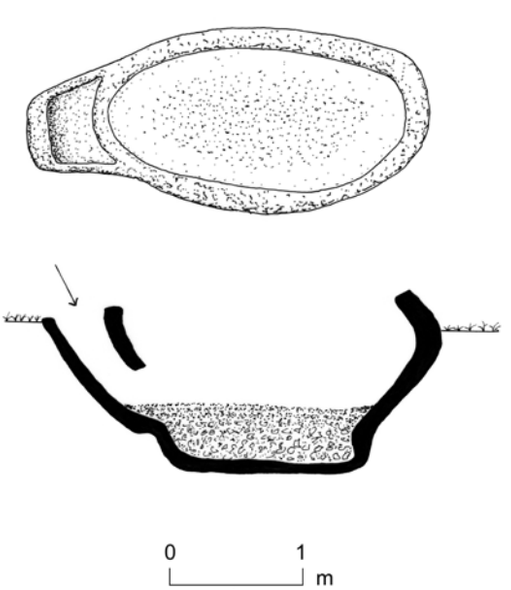


FIGURE 66. Pottery kiln at level I, Tell Abada.

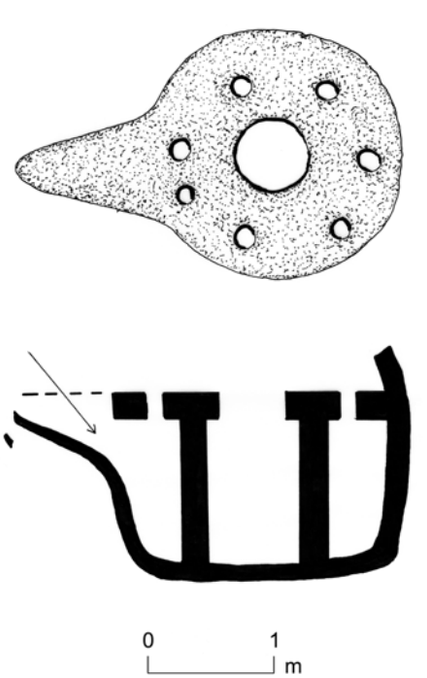


FIGURE 67. Pottery kiln at level I, Tell Abada.

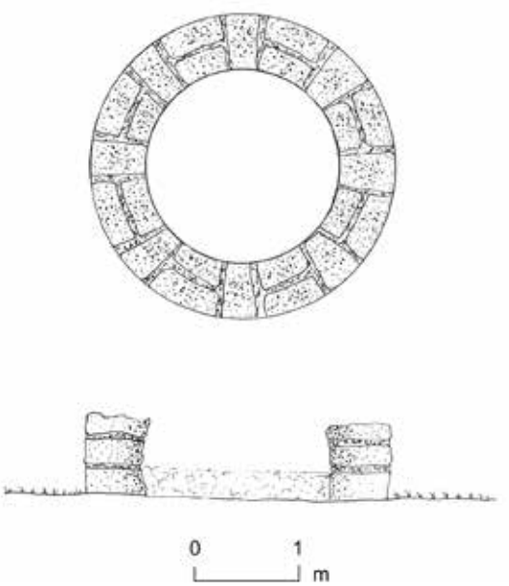


FIGURE 68. Pottery kiln at level I, Tell Abada.

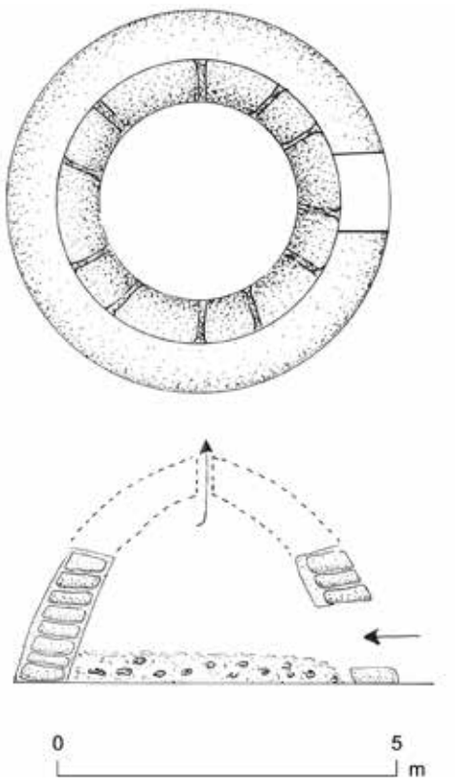


FIGURE 69. Plan and section of a pottery kiln at level I, Tell Abada.

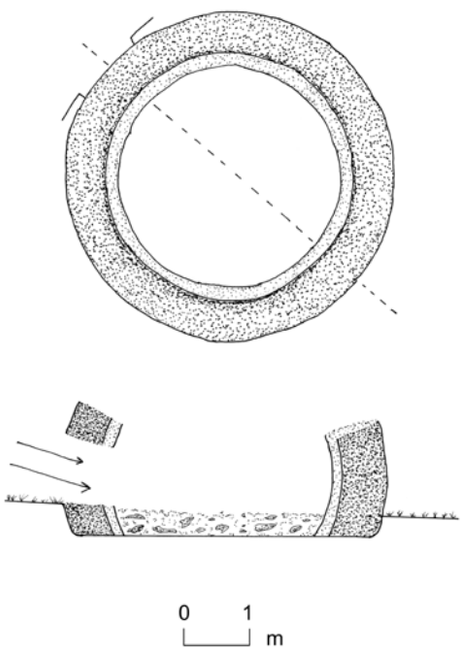


FIGURE 70. Plan and section of a pottery kiln at level I, Tell Abada.

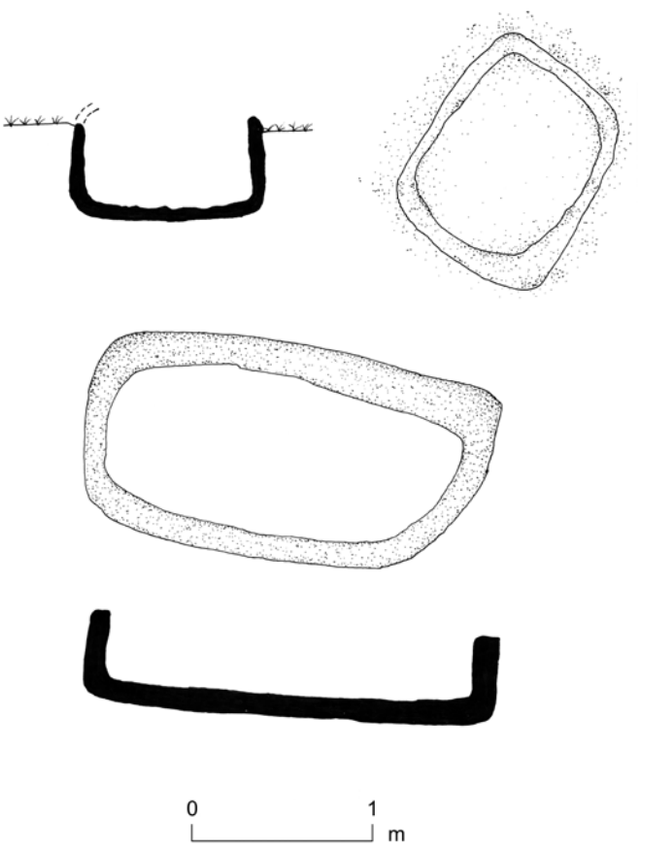


FIGURE 71. Hearths/fireplaces at level I, Tell Abada.

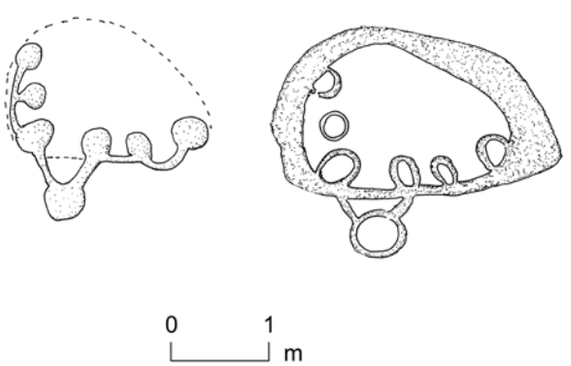


FIGURE 72. Pottery kiln at level I, Tell Abada.

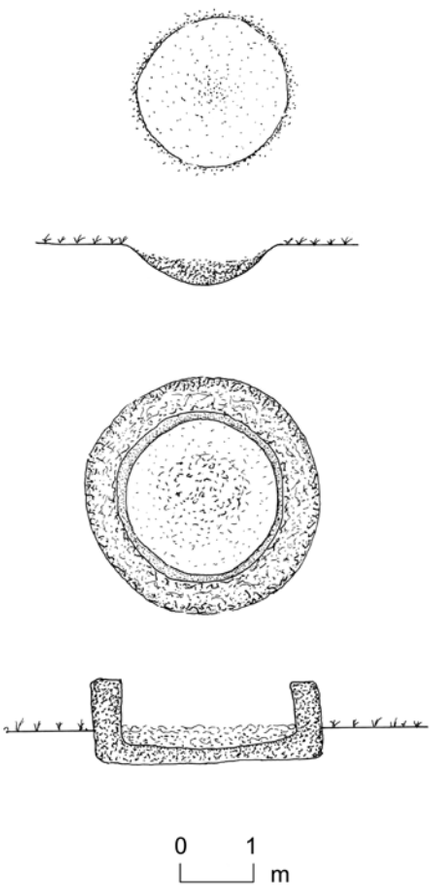


FIGURE 73. Hearths/fireplaces from level I, Tell Abada.

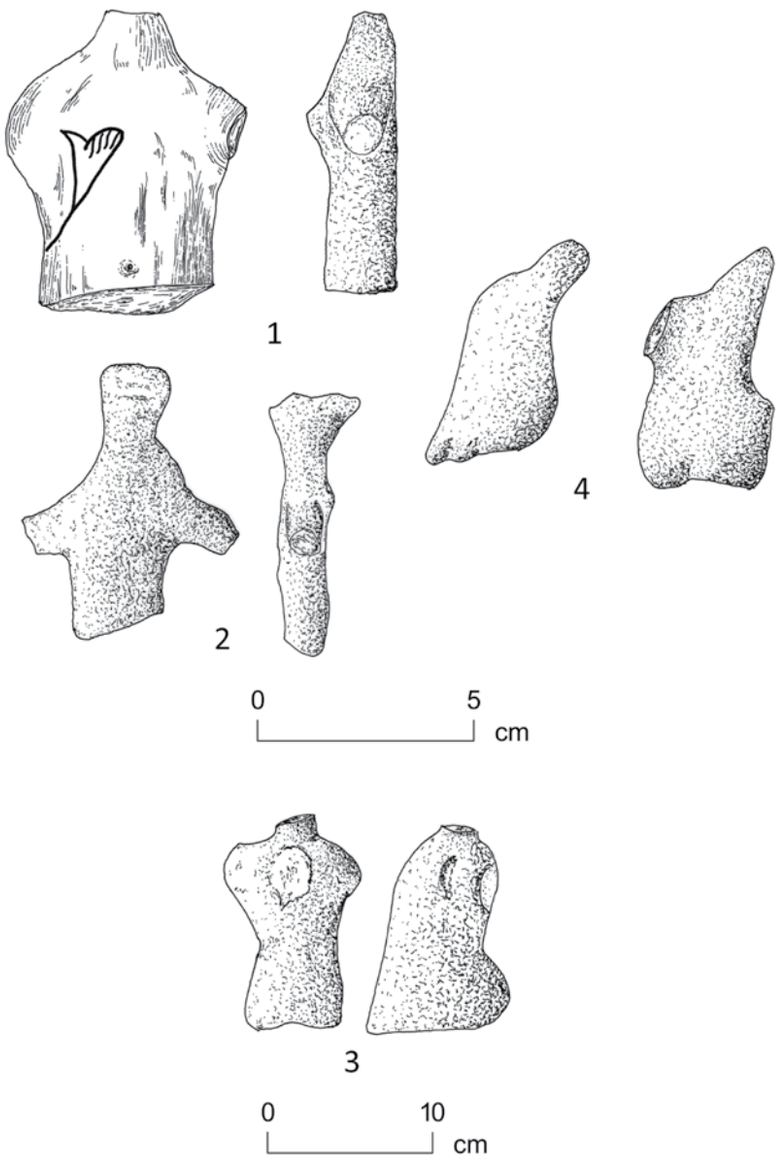


FIGURE 74. Human-shaped figurines from levels 1–II, Tell Abada.

FIGURE 75. Baked clay human-shaped figurines (fig. 74) from levels I–II, Tell Abada.

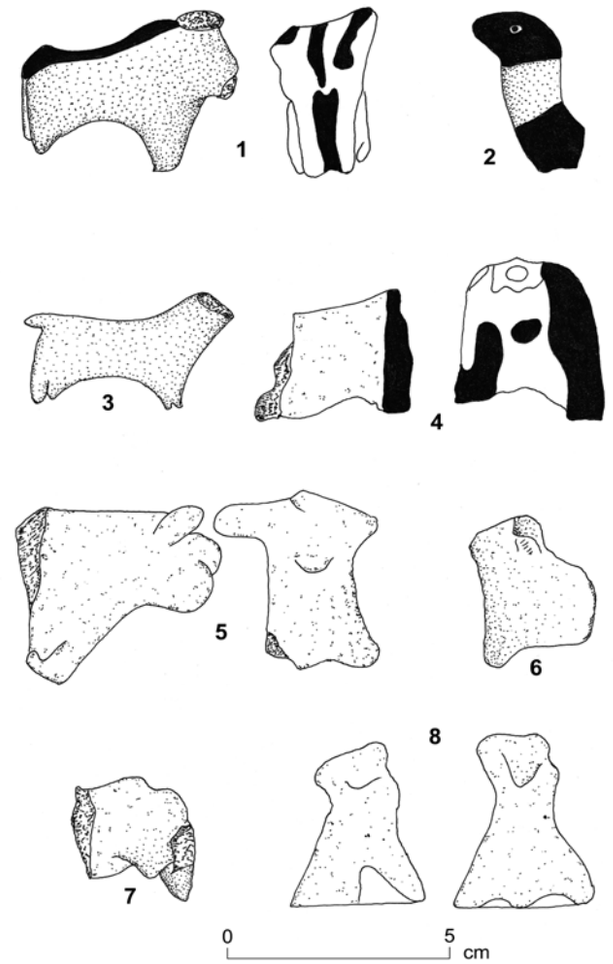


FIGURE 76. Animal-shaped figurines from level I, Tell Abada.

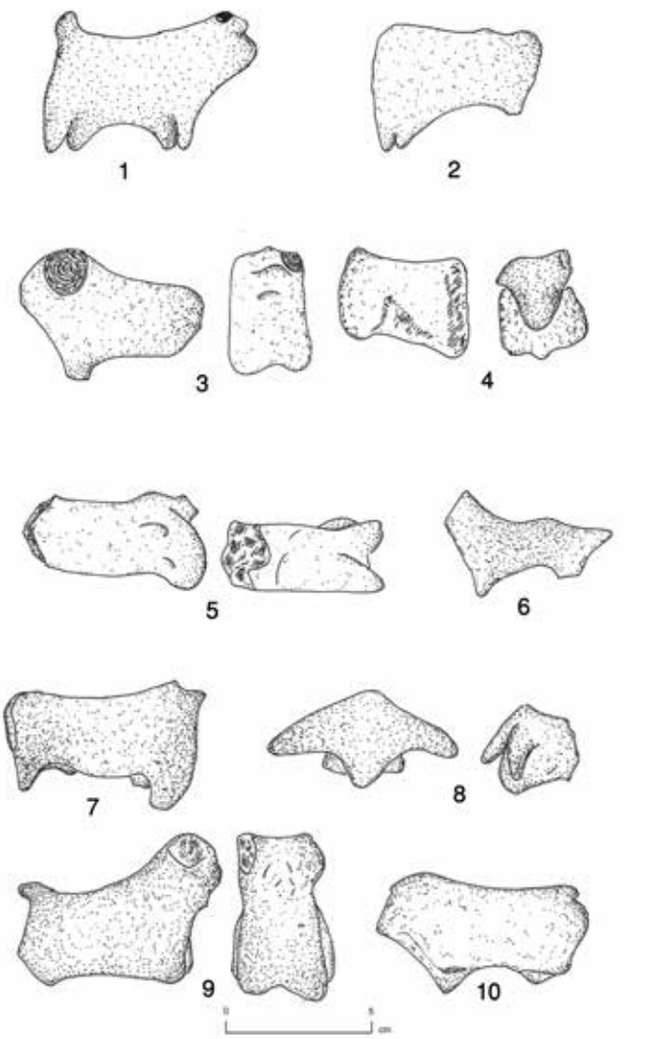


FIGURE 77. Animal-shaped figurines from level I, Tell Abada.

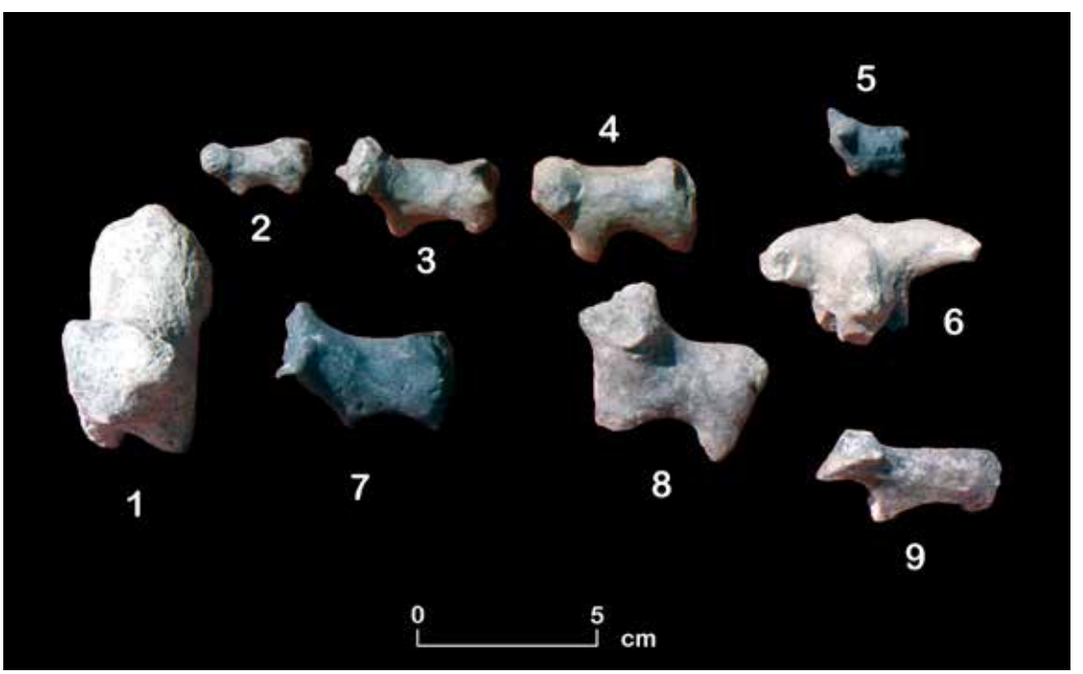


FIGURE 78. Baked clay animal-shaped figurines (fig. 77) from level I, Tell Abada.

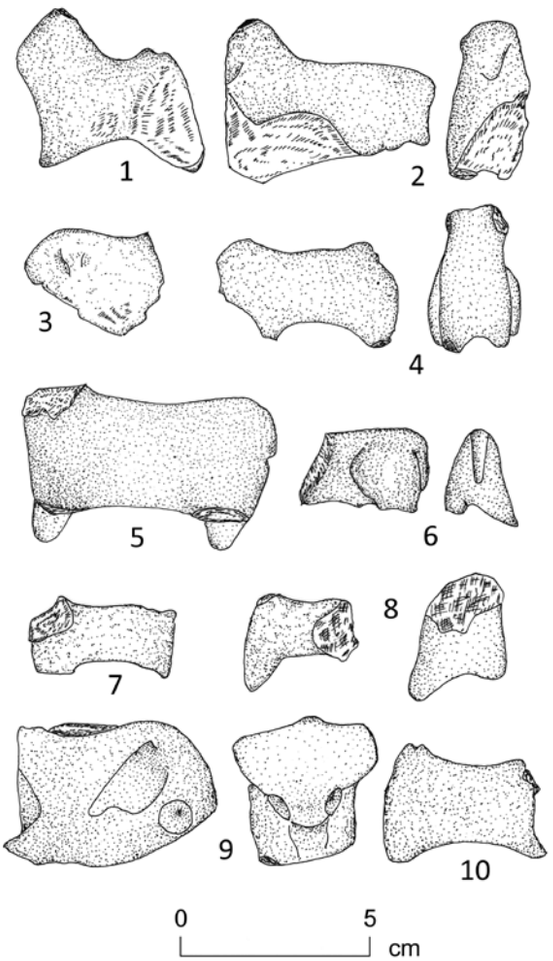


FIGURE 79. Animal-shaped figurines from level I, Tell Abada.

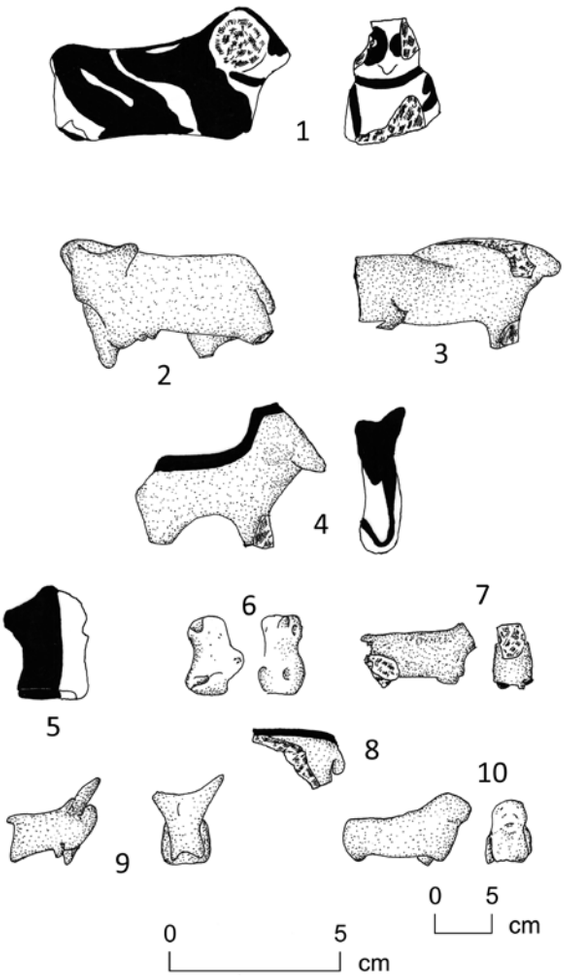


FIGURE 80. Animal-shaped figurines from level I, Tell Abada.

FIGURE 81. Baked clay animal-shaped figurines (fig. 80) from level I, Tell Abada.

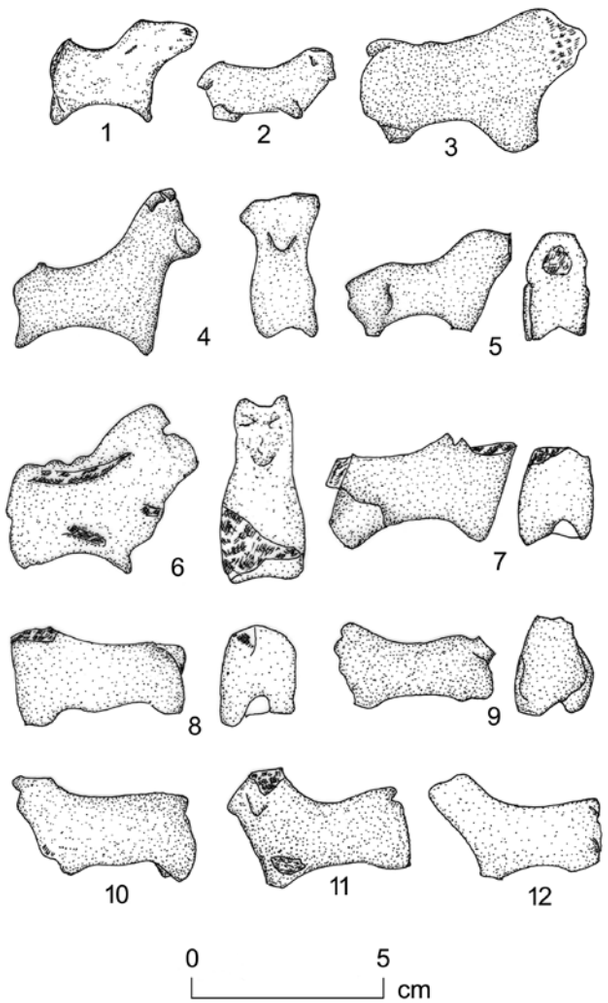


FIGURE 82. Animal-shaped figurines from level II, Tell Abada.

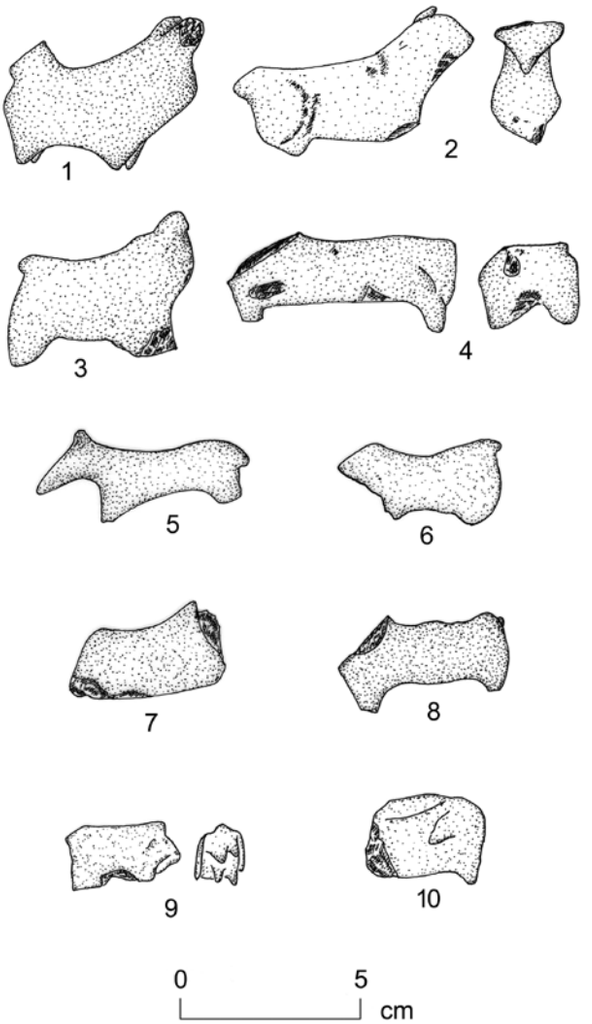


FIGURE 83. Animal-shaped figurines from level II, Tell Abada.

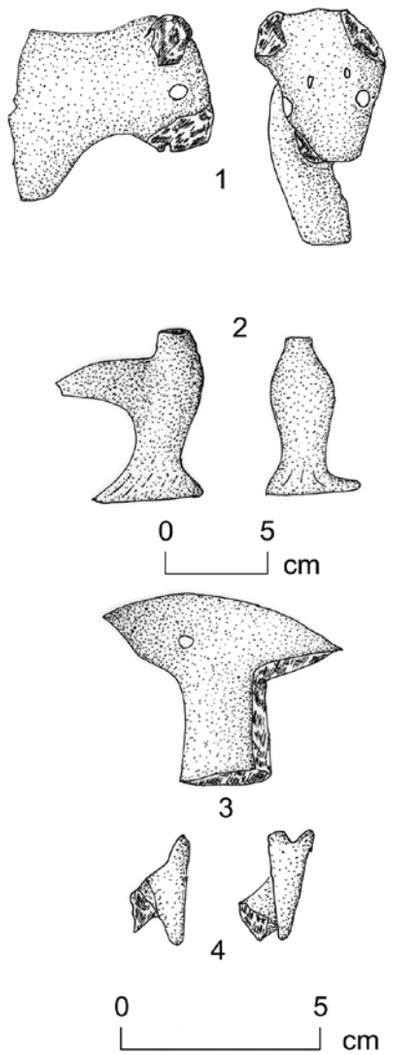


FIGURE 84. Animal-shaped figurines from level III, Tell Abada.

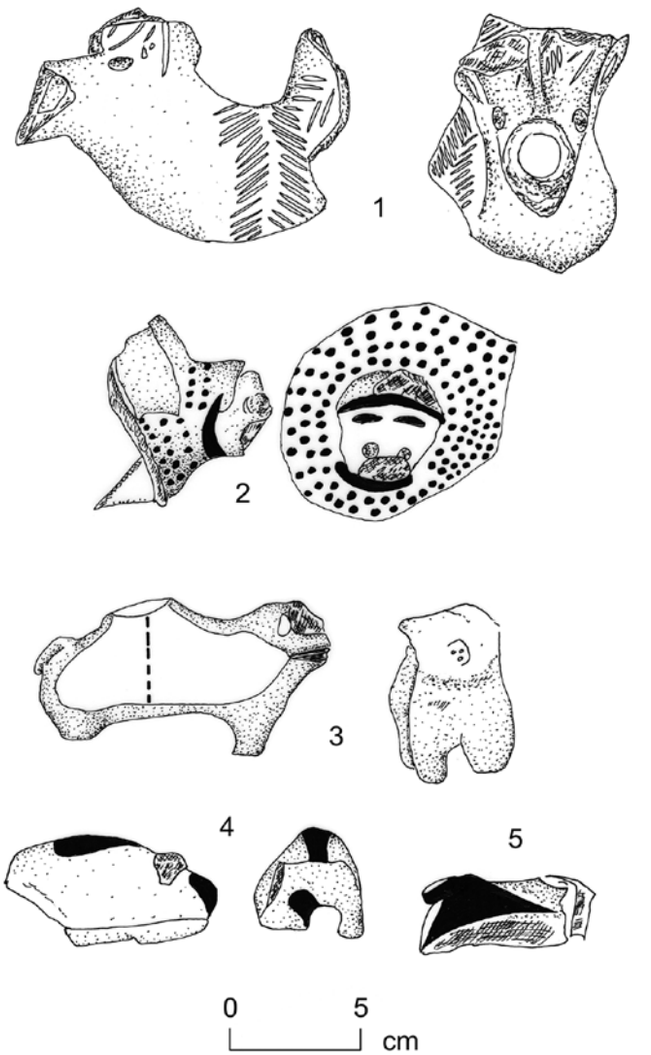


FIGURE 85. Zoomorphic vessels from levels I–II, Tell Abada.

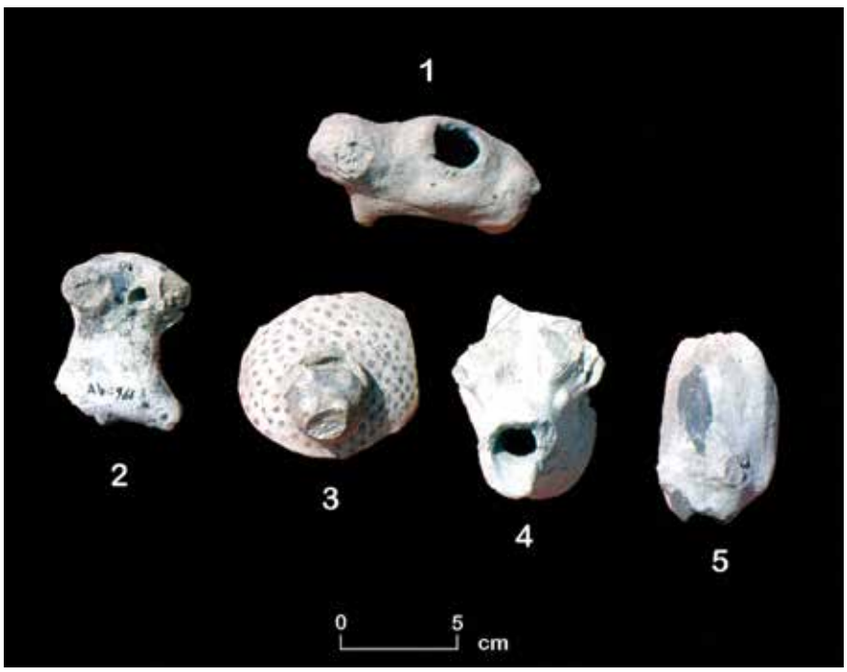


FIGURE 86.
Zoomorphic vessels (fig. 85) from levels I–II, Tell Abada.

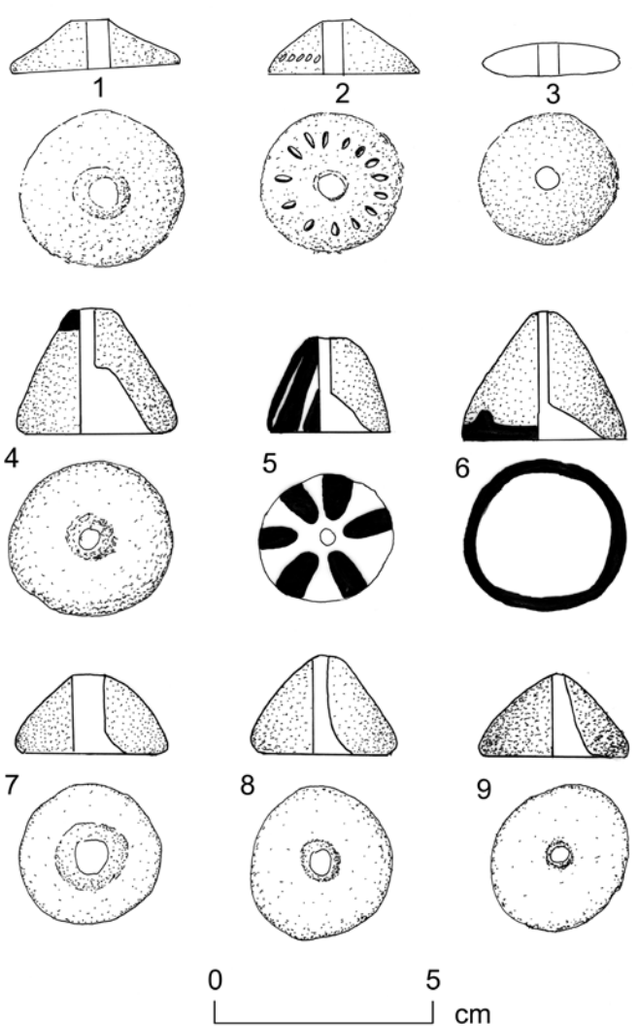


FIGURE 87. Spindle whorls from levels I–II, Tell Abada.

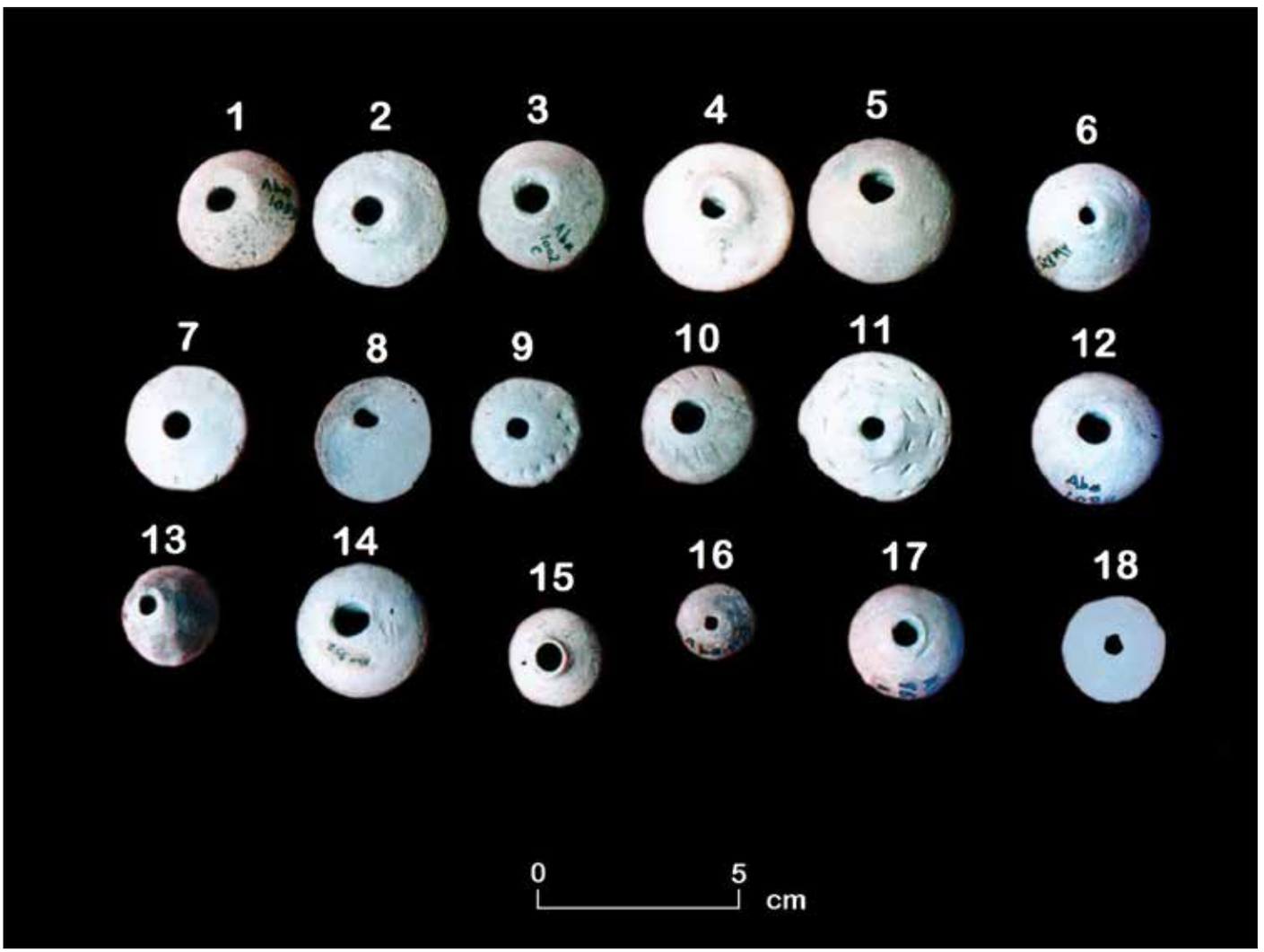


FIGURE 88. Spindle whorls (figs. 87, 89) from levels I–II, Tell Abada.

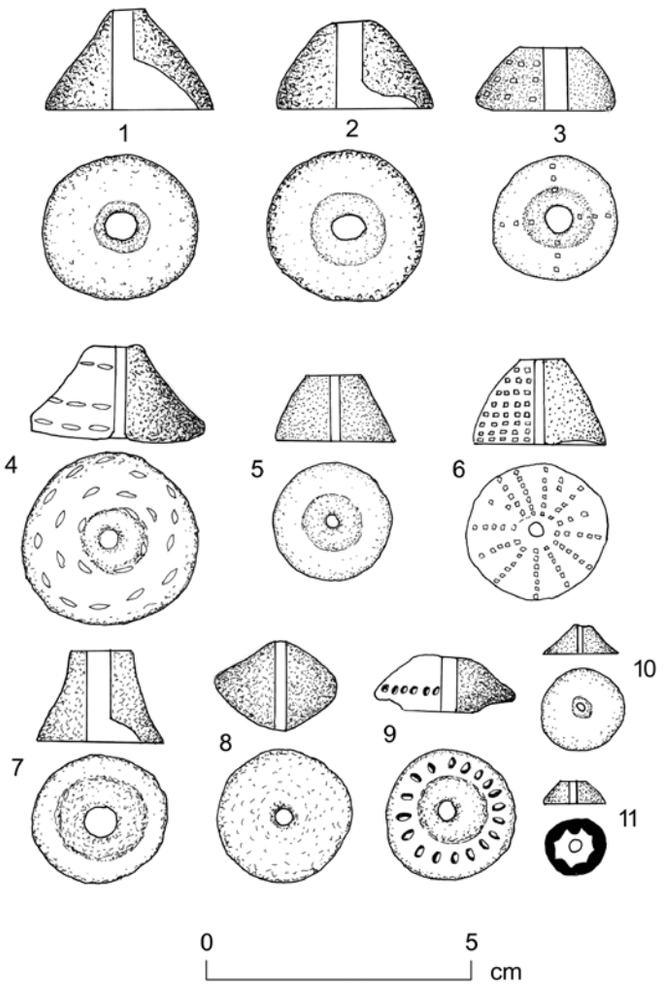


FIGURE 89. Spindle whorls from level II, Tell Abada.

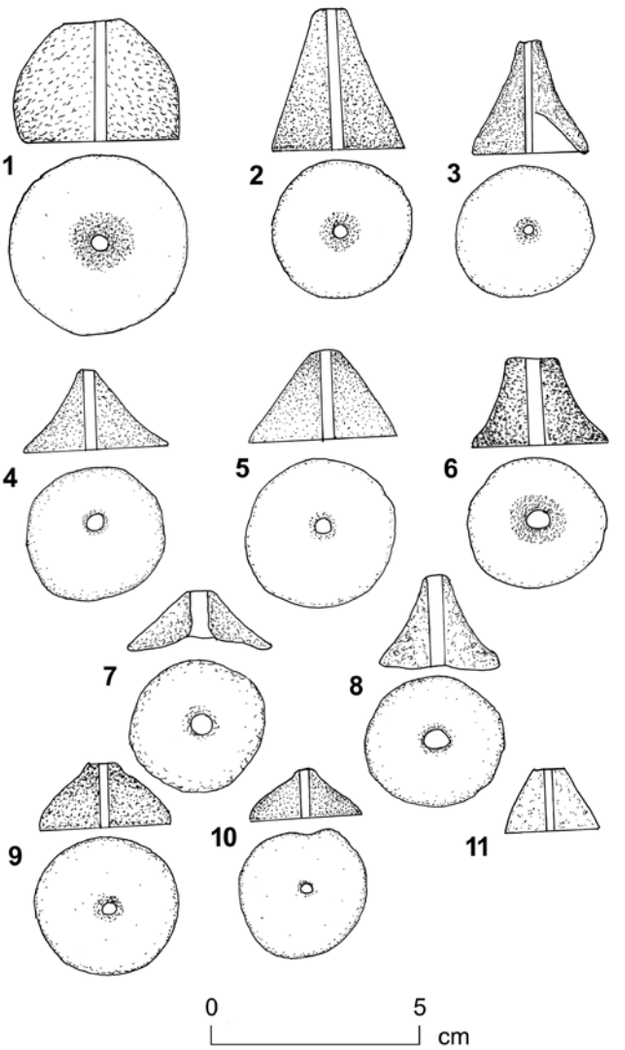


FIGURE 90. Selected spindle whorls from levels I–II, Tell Abada.

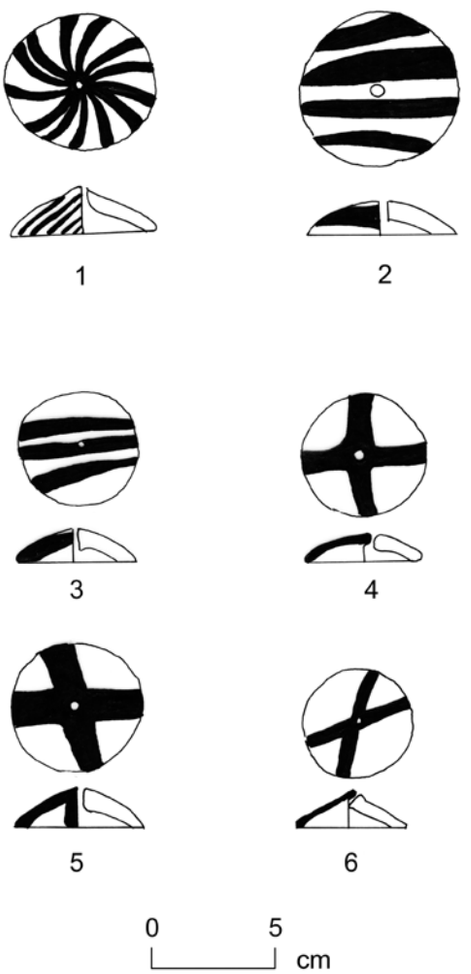


FIGURE 91. Painted spindle whorls from levels I–II, Tell Abada.

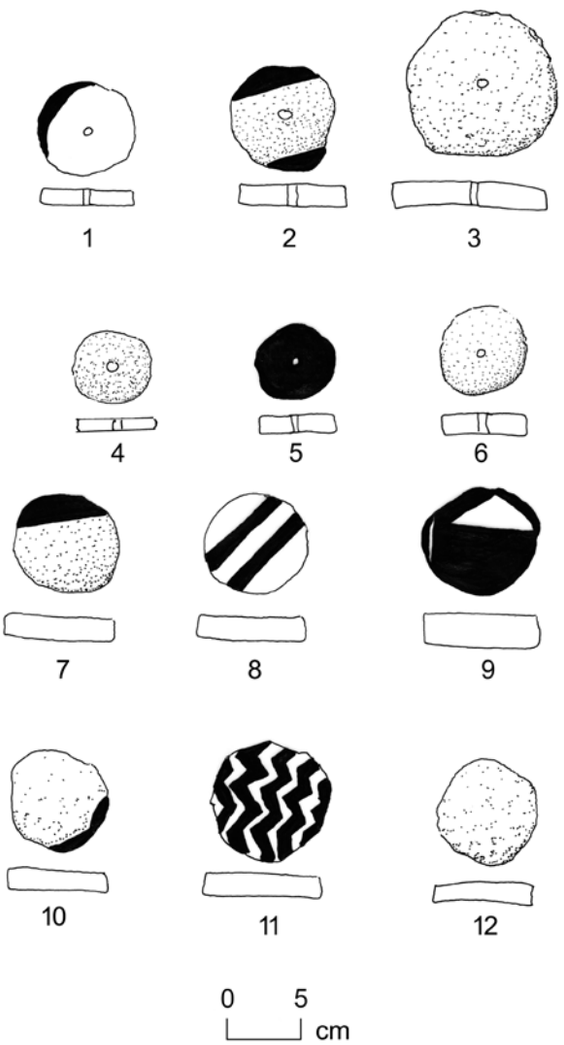


FIGURE 92. Selected ceramic discs from levels I–II, Tell Abada.

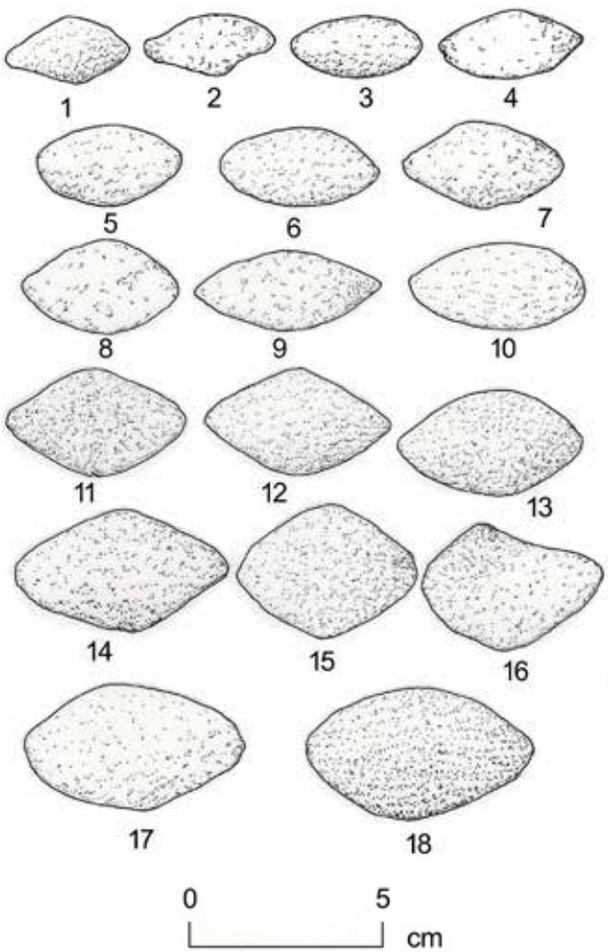


FIGURE 93. Selected clay sling balls from levels I–II, Tell Abada (fig. 93).

FIGURE 94. Selected sling balls (fig. 93) from levels I–II, Tell Abada.

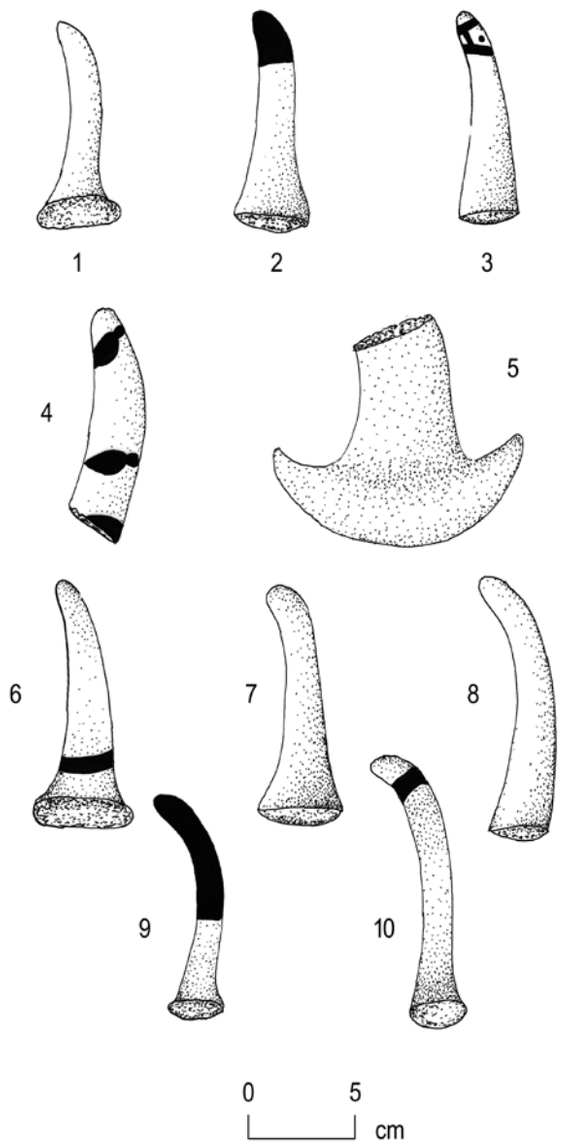


FIGURE 95. Selected bent nails "mullers" from levels I–II, Tell Abada.

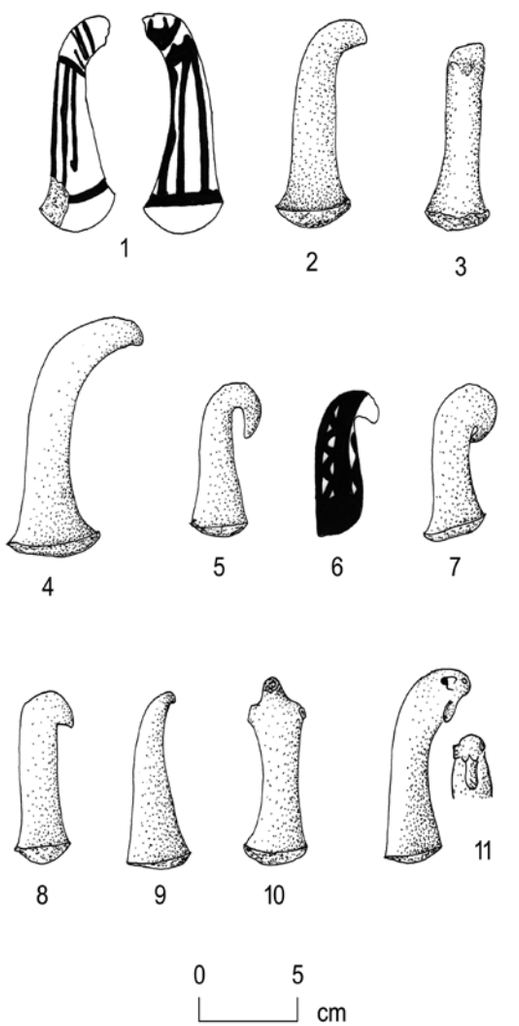


FIGURE 96. Selected bent nails "mullers" from levels I–II, Tell Abada.

FIGURE 97. Selected pottery bent nails "mullers" (fig. 96) from levels I–II, Tell Abada.

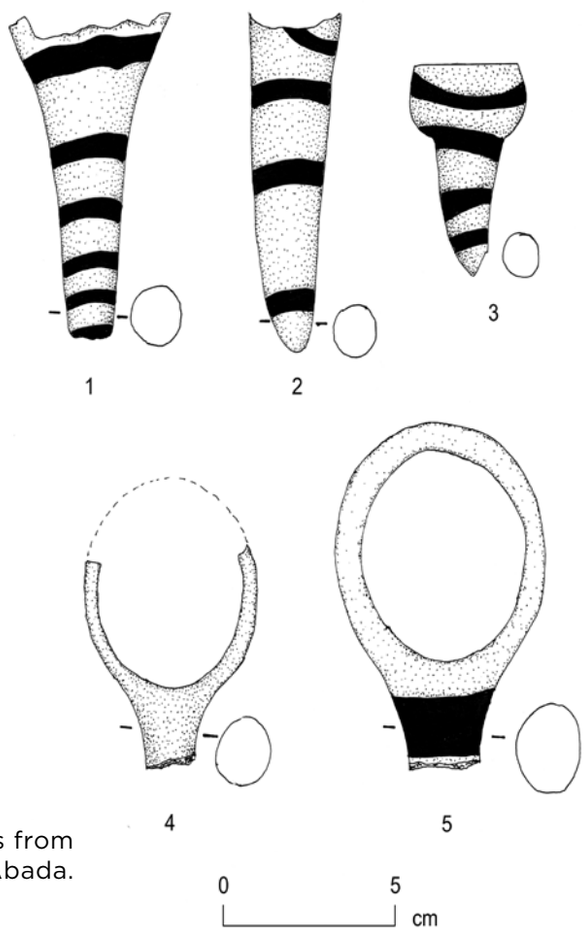


FIGURE 98. Ceramic ladles from levels I–II, Tell Abada.

FIGURE 99. Ceramic ladles (fig. 98) from levels I–II, Tell Abada.

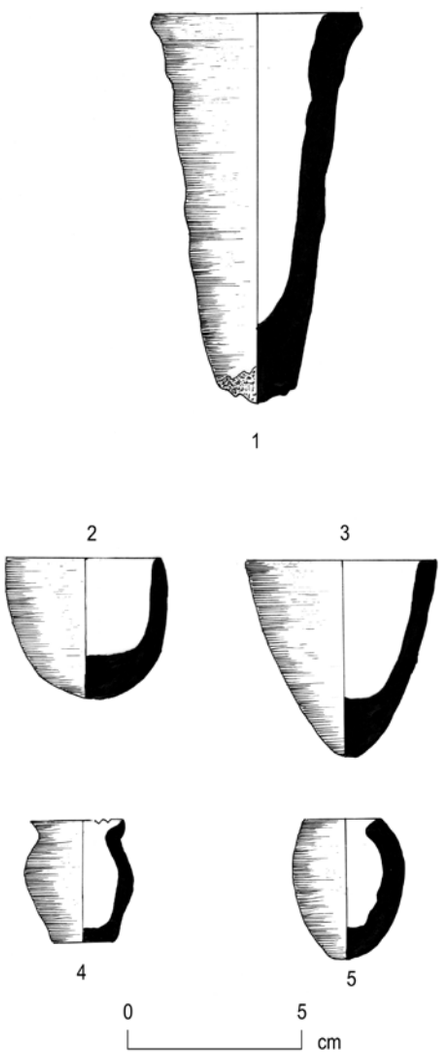


FIGURE 100. Miniature vessels from levels I–II, Tell Abada.

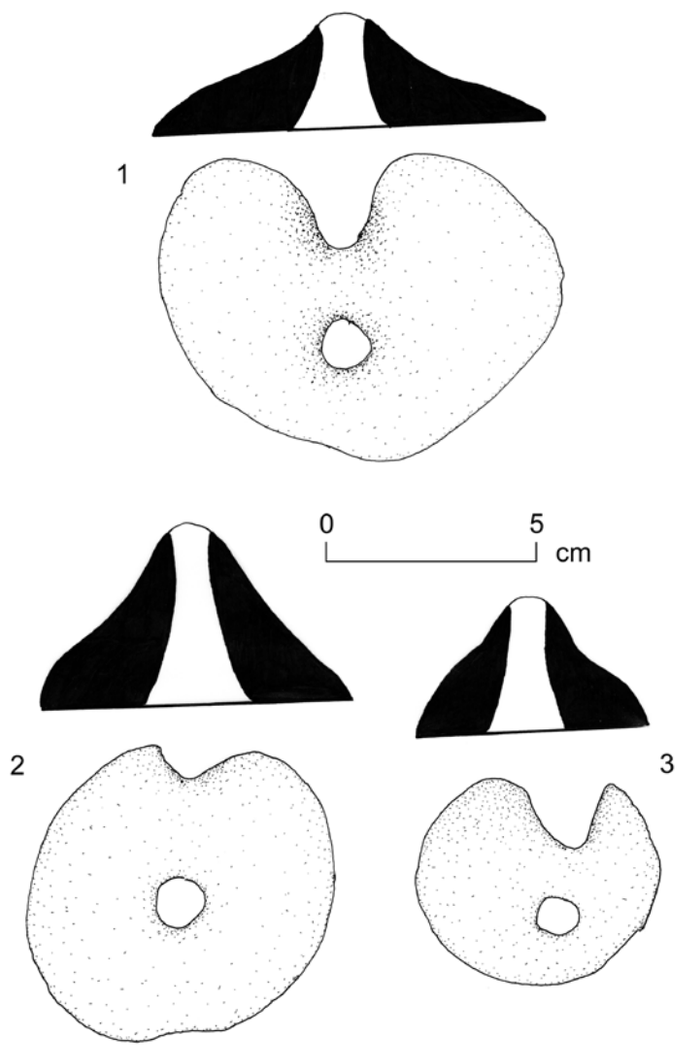


FIGURE 101. Selected clay objects from levels I–II, Tell Abada.

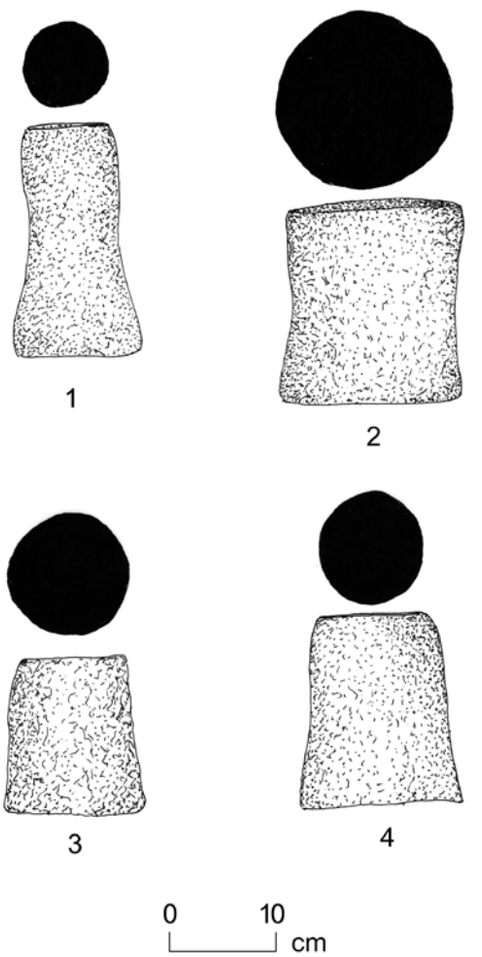


FIGURE 102. Selected clay objects from levels I–II, Tell Abada.

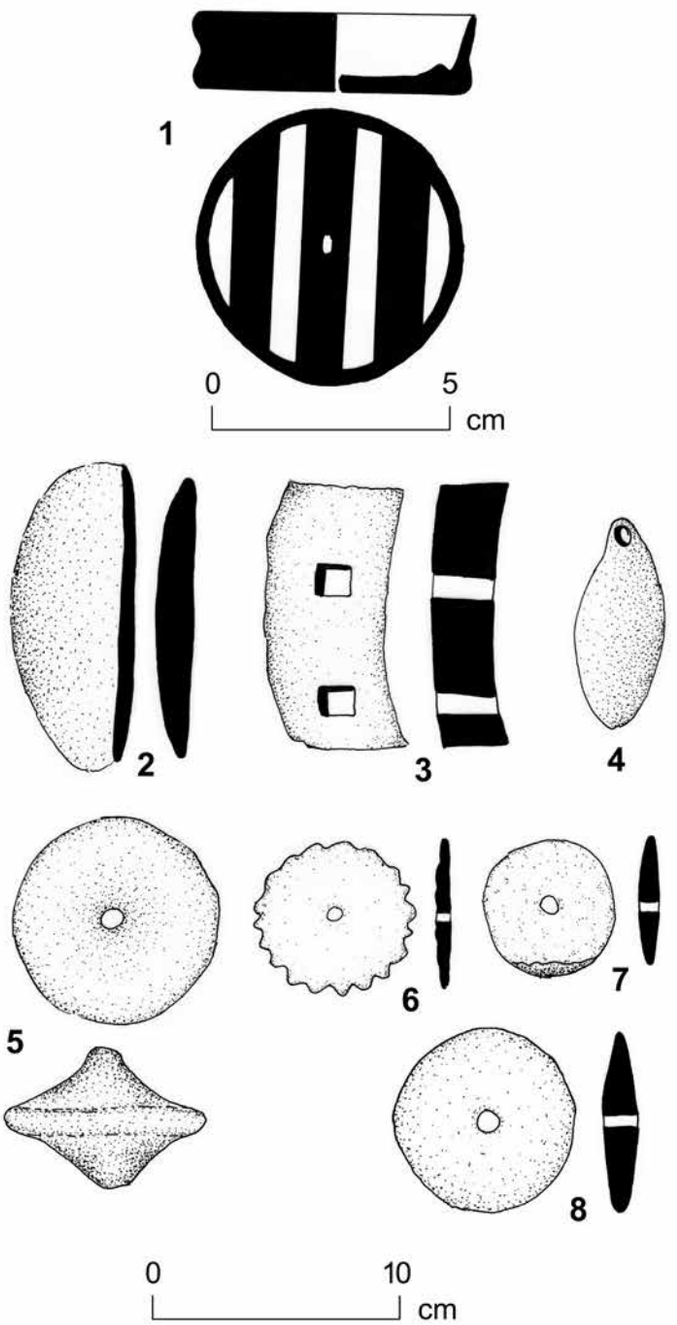


FIGURE 103. Selected ceramic objects from levels I–II, Tell Abada.

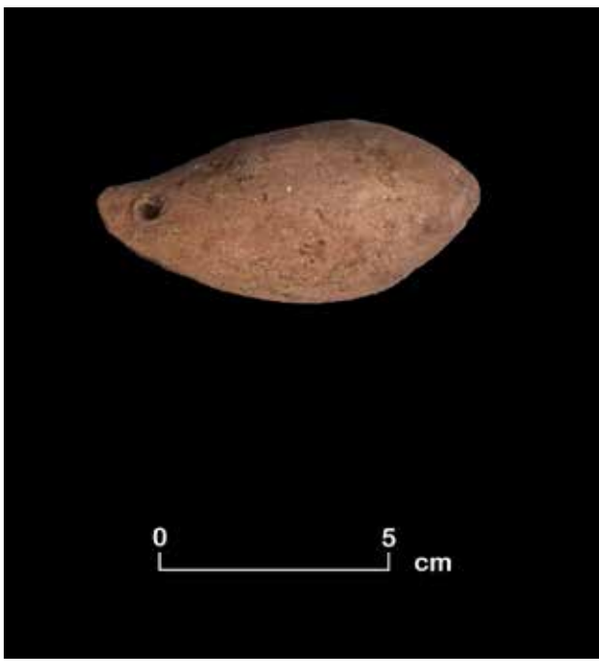


FIGURE 104. Pottery rattle (fig. 103: 4) from level II, Tell Abada.

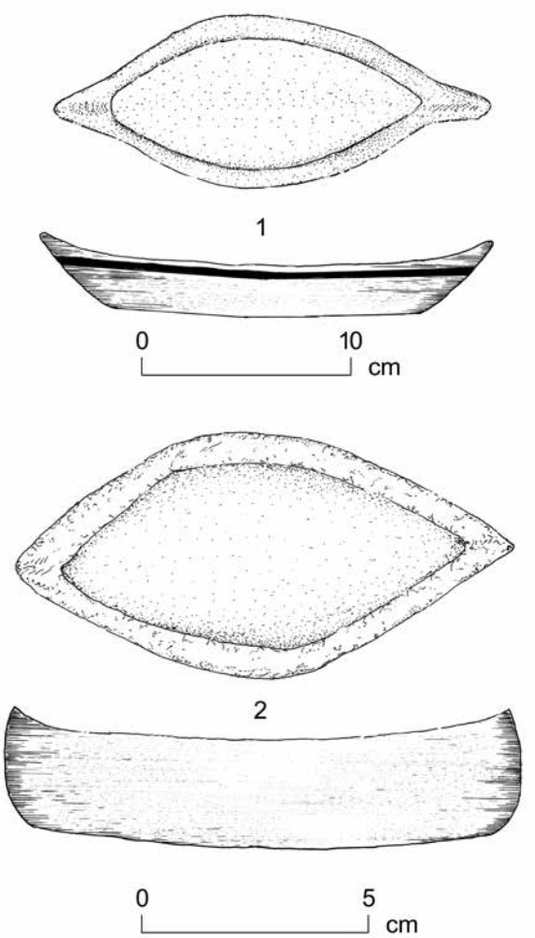


FIGURE 105. Ceramic boat models from level I, Tell Abada.

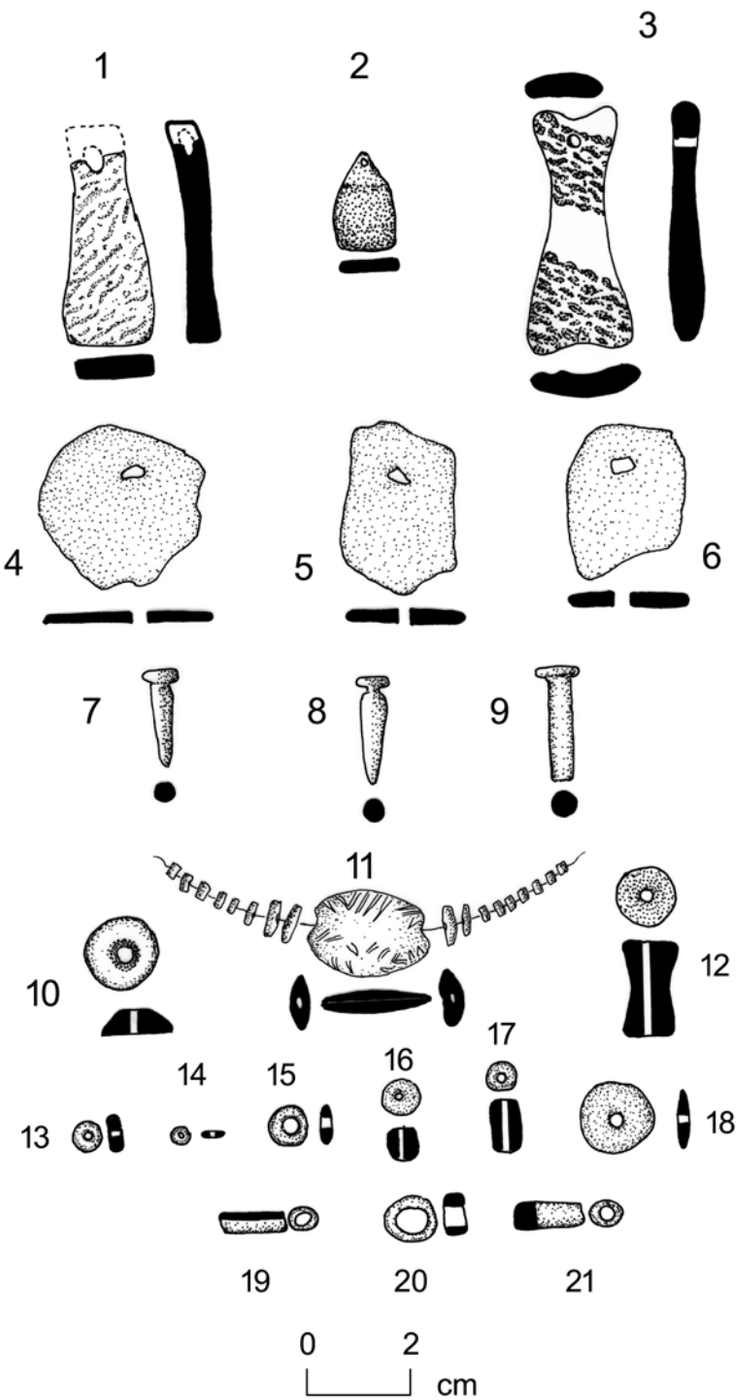


FIGURE 106. Selected pendants, studs, and beads from levels I–II, Tell Abada.

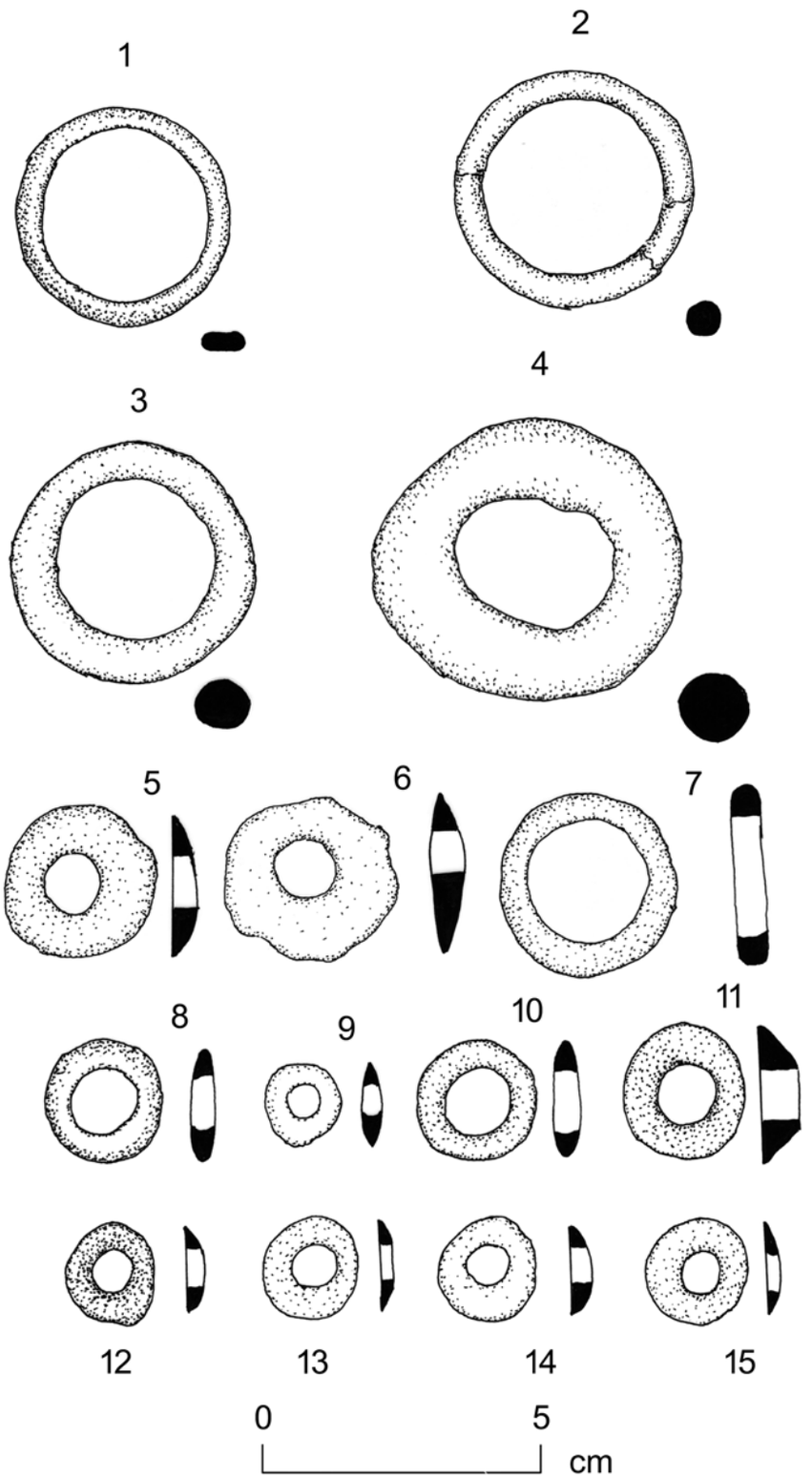


FIGURE 107. Bracelets and beads from levels I–II, Tell Abada.

FIGURE 108. Ceramic bracelets and rings (fig. 107) from levels I–II, Tell Abada.

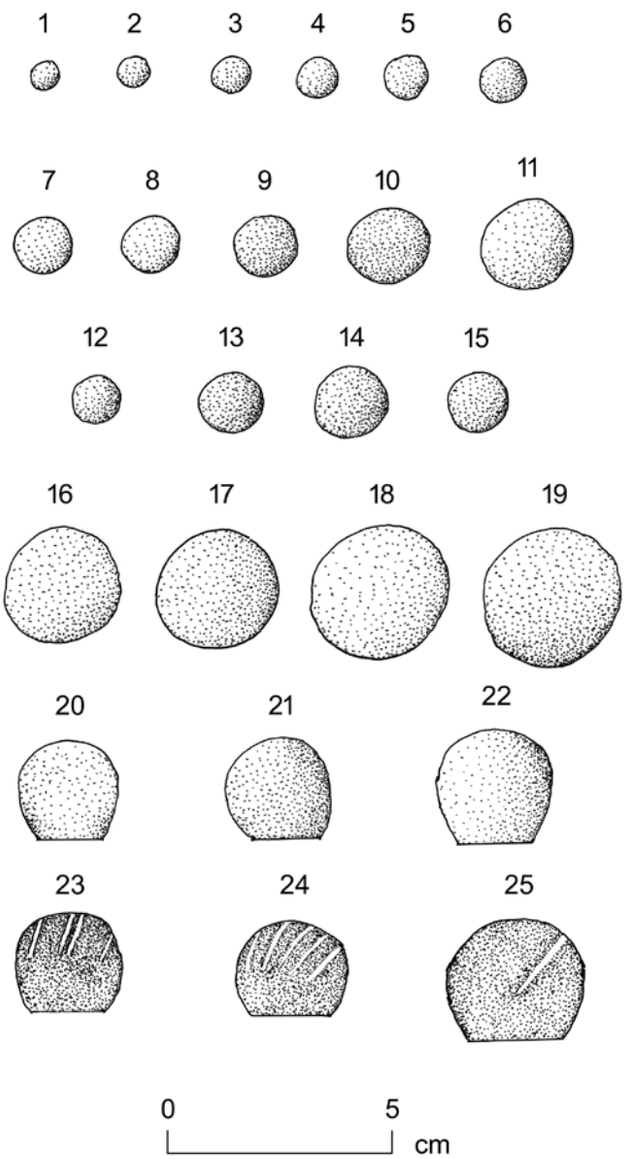


FIGURE 109. Variety of clay tokens from levels I–II, Tell Abada.

FIGURE 110. Variety of clay tokens (fig. 109) from levels I–II, Tell Abada.

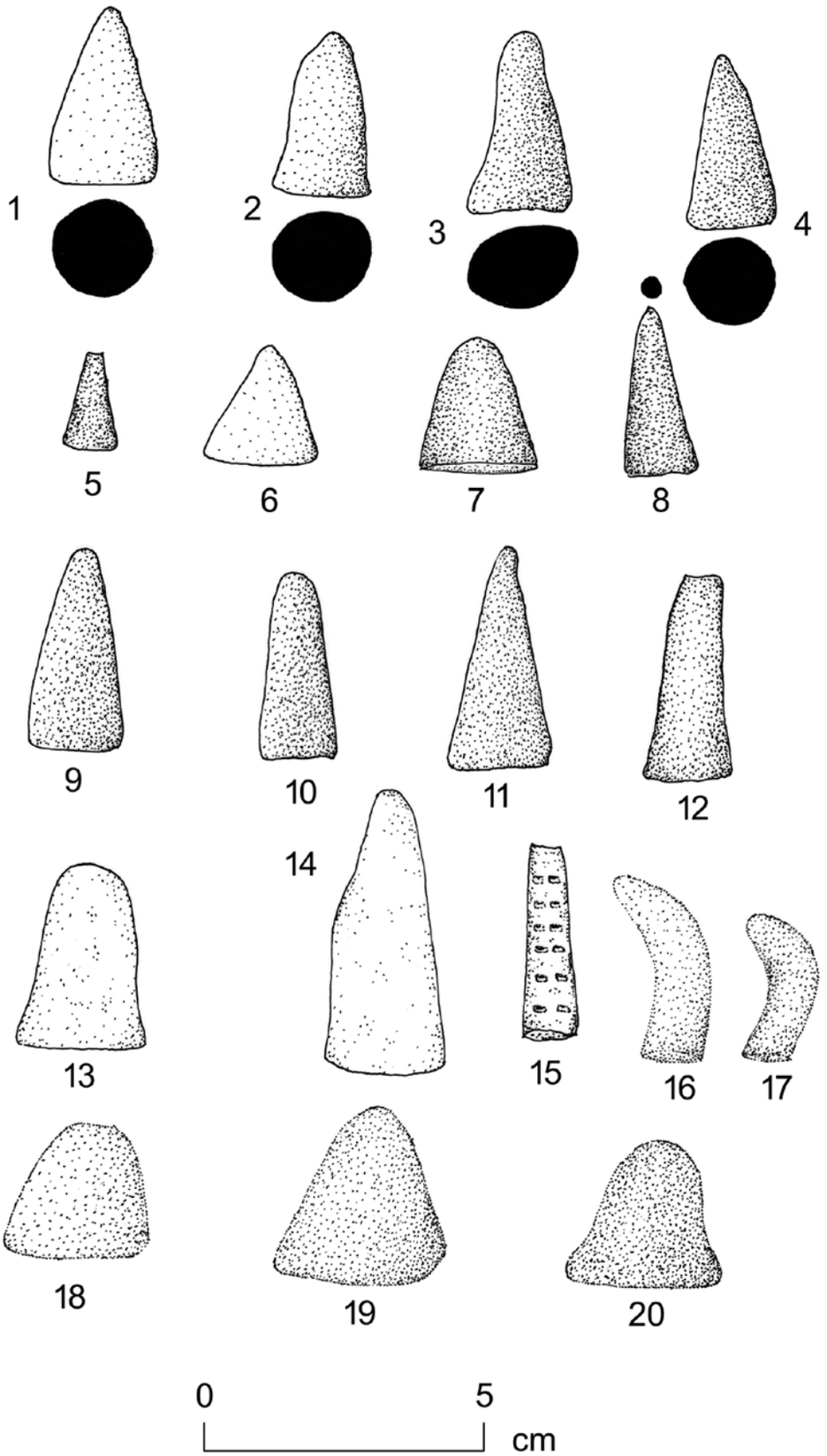


FIGURE 111. Variety of clay tokens from levels I–II, Tell Abada.

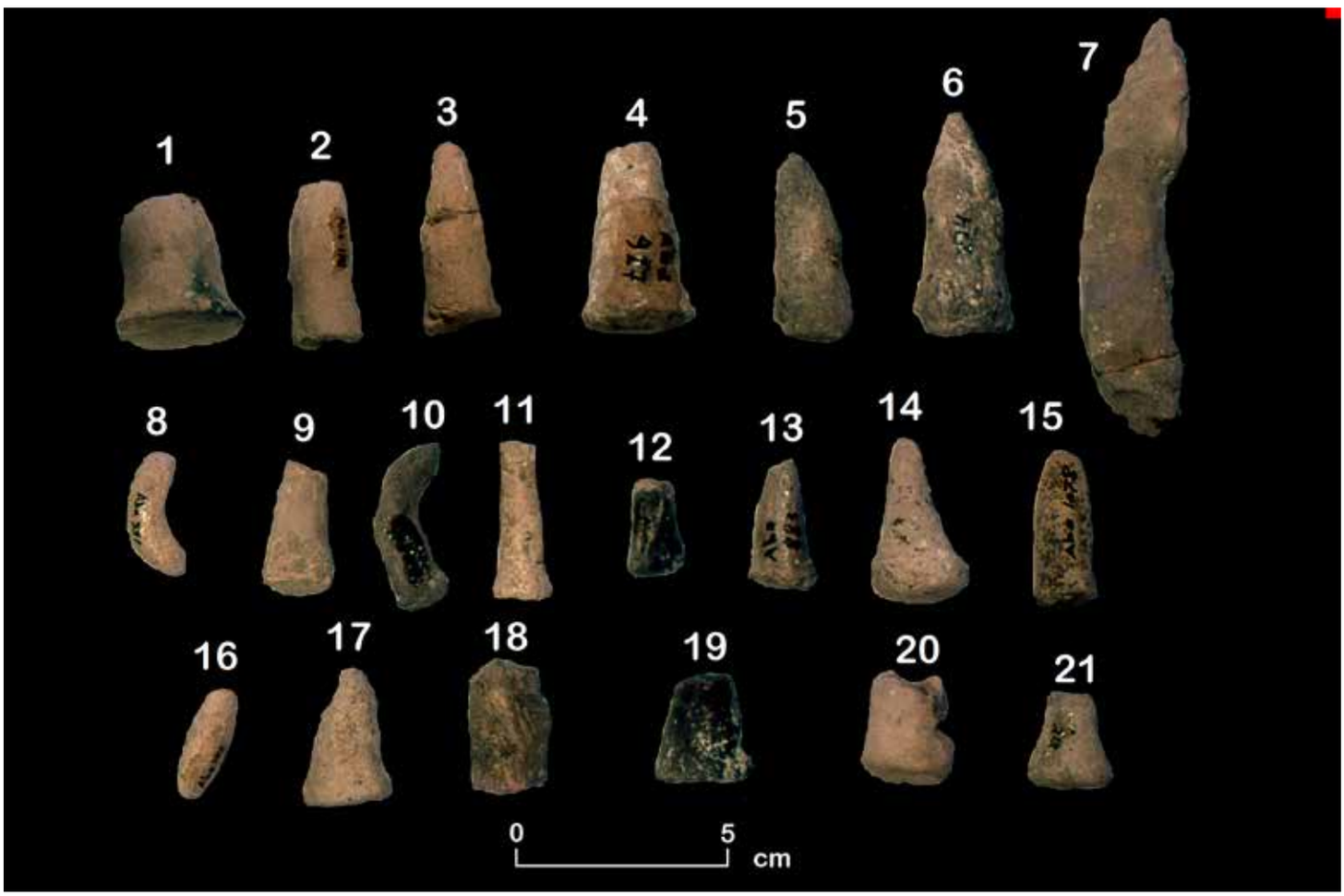


FIGURE 112. Collection of clay tokens (fig. 111) from levels I–II, Tell Abada.

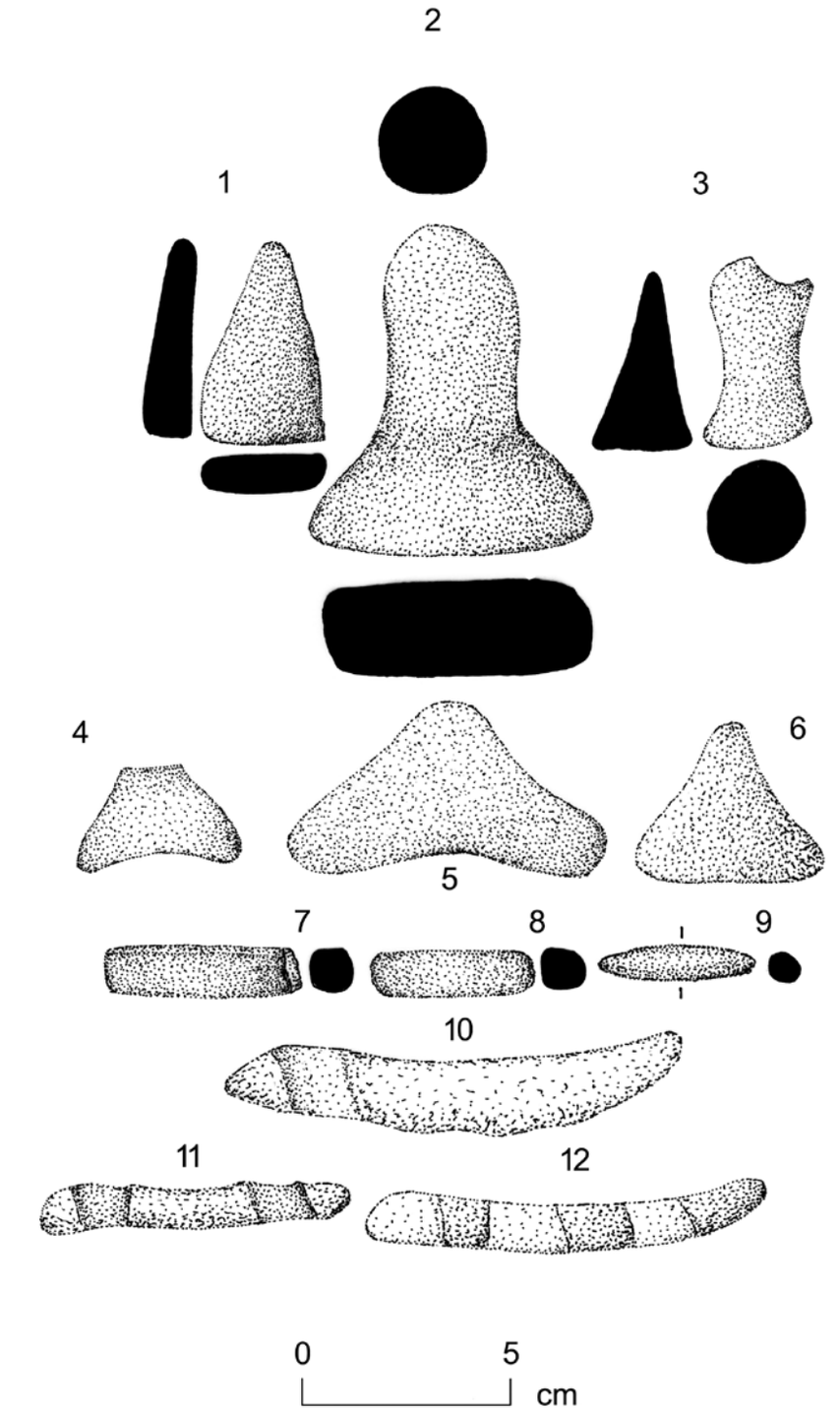


FIGURE 113. Variety of clay tokens from levels I–II, Tell Abada.

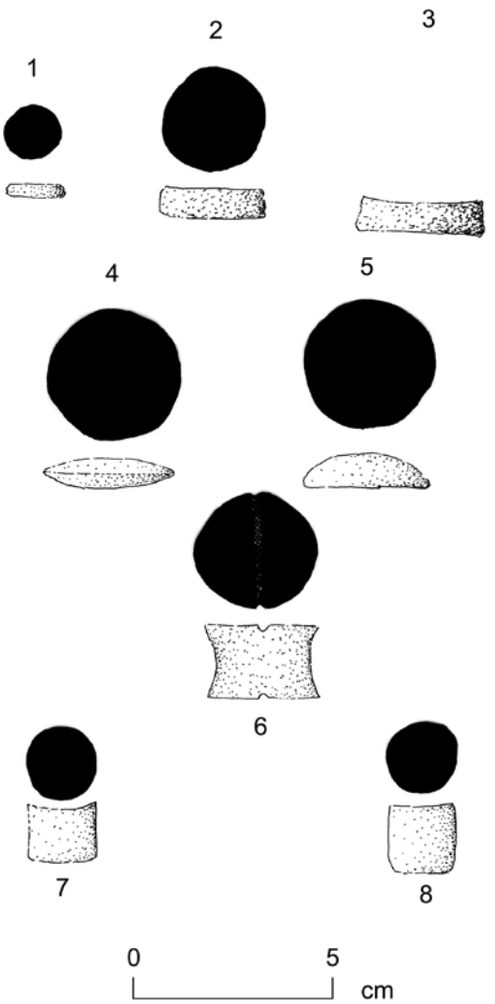


FIGURE 114. Variety of clay tokens from levels I–II, Tell Abada.

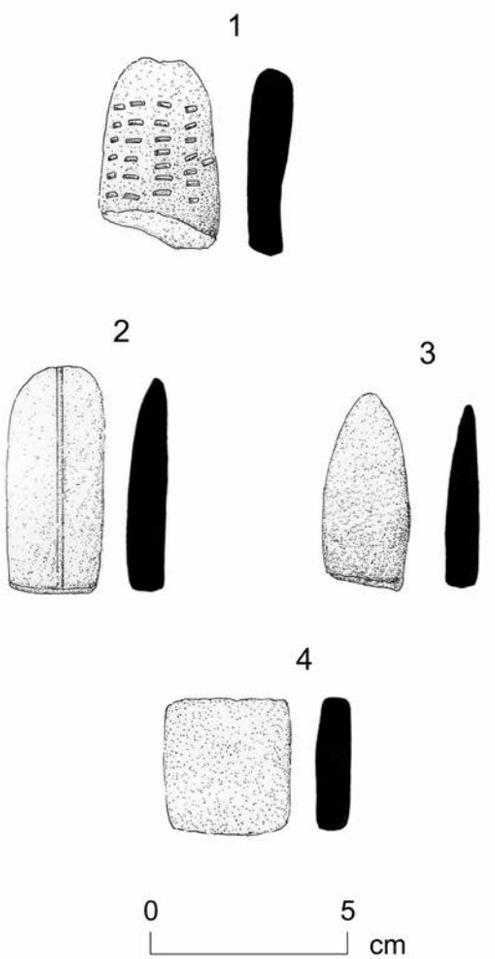


FIGURE 115. Proto-tablets from levels I–II, Tell Abada.

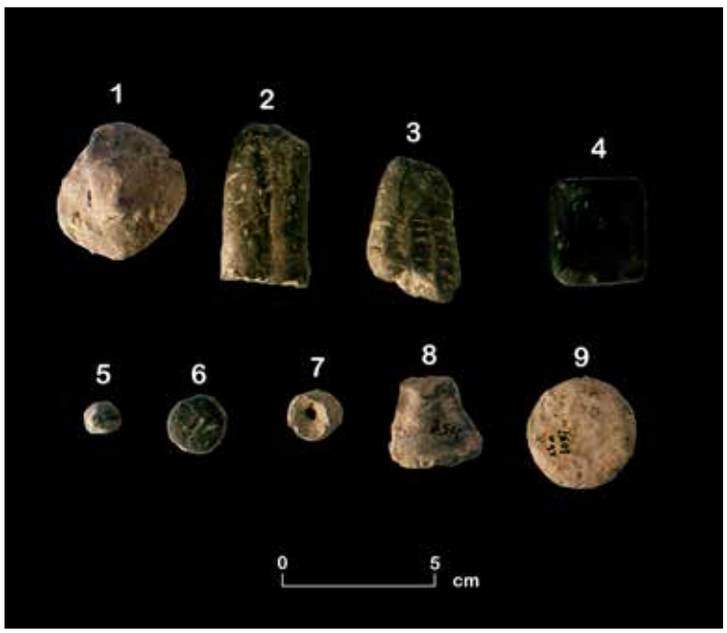


FIGURE 116. Proto-tablets and tokens (fig. 115) from levels I–II, Tell Abada.

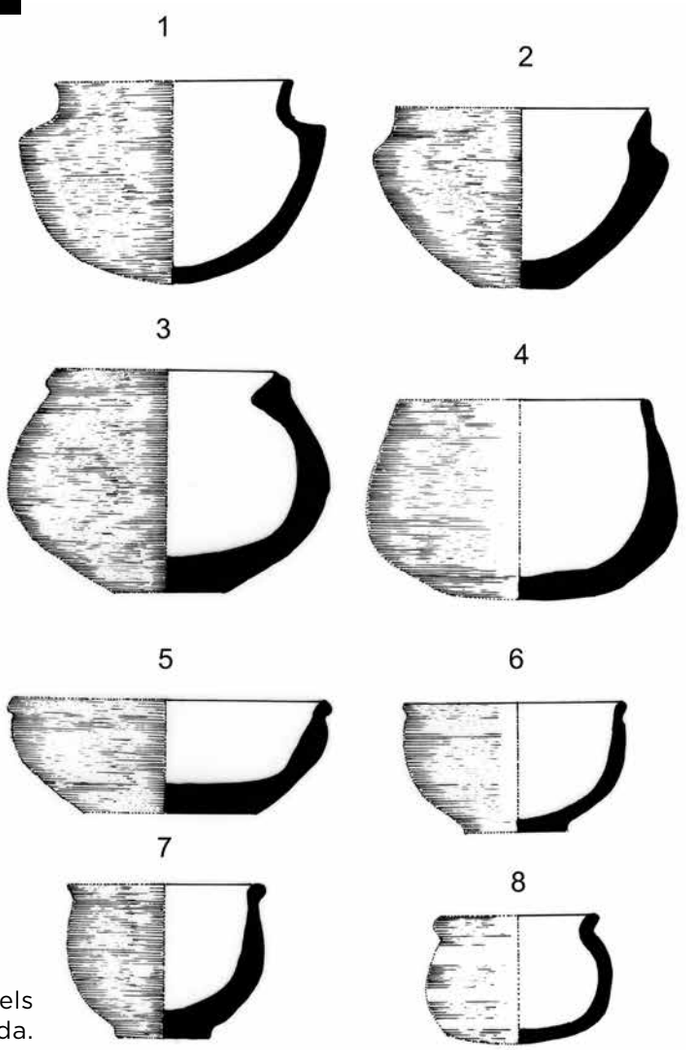


FIGURE 117. Stone vessels from levels I–II, Tell Abada.

FIGURE 118. Stone vessels (fig. 117) from levels I–II, Tell Abada.

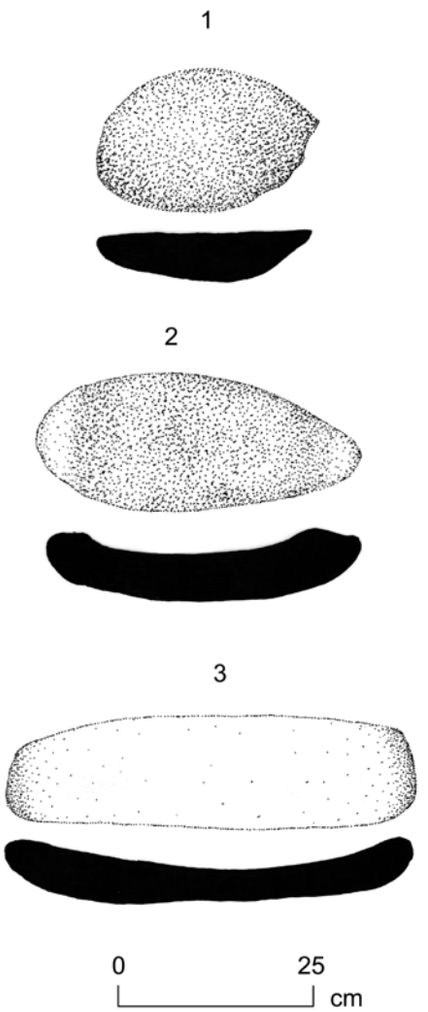


FIGURE 119. Grinding stones from levels I–II, Tell Abada.

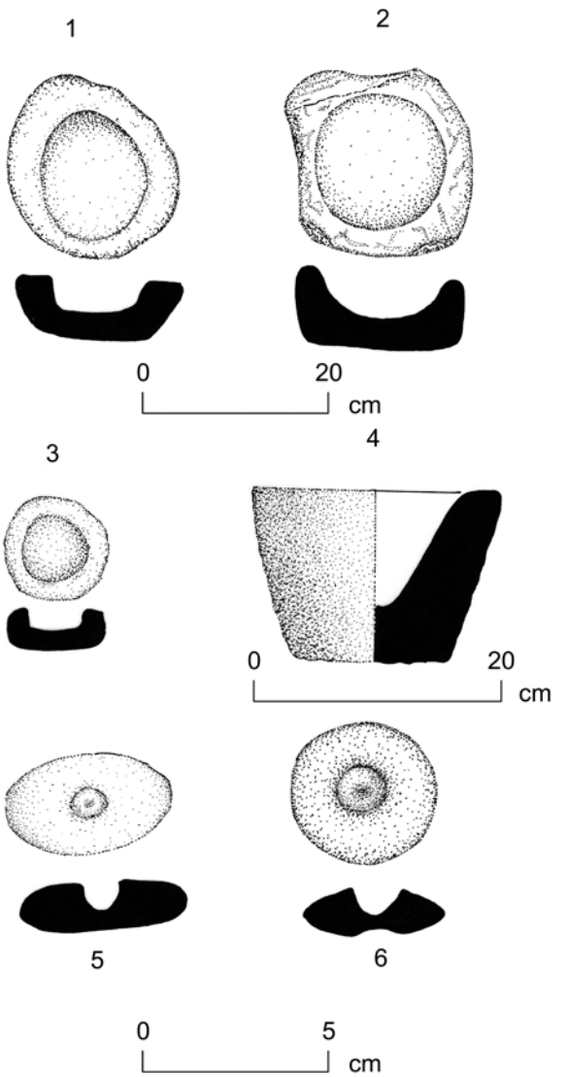


FIGURE 120. Selected grinding stones from levels I–II, Tell Abada.

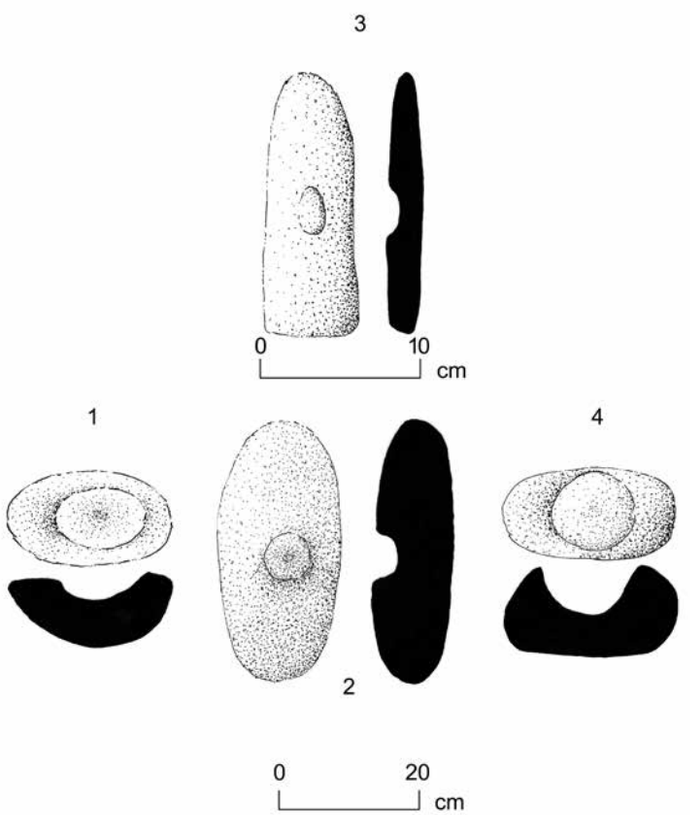


FIGURE 121. Selected grinding stones from levels I–II, Tell Abada.

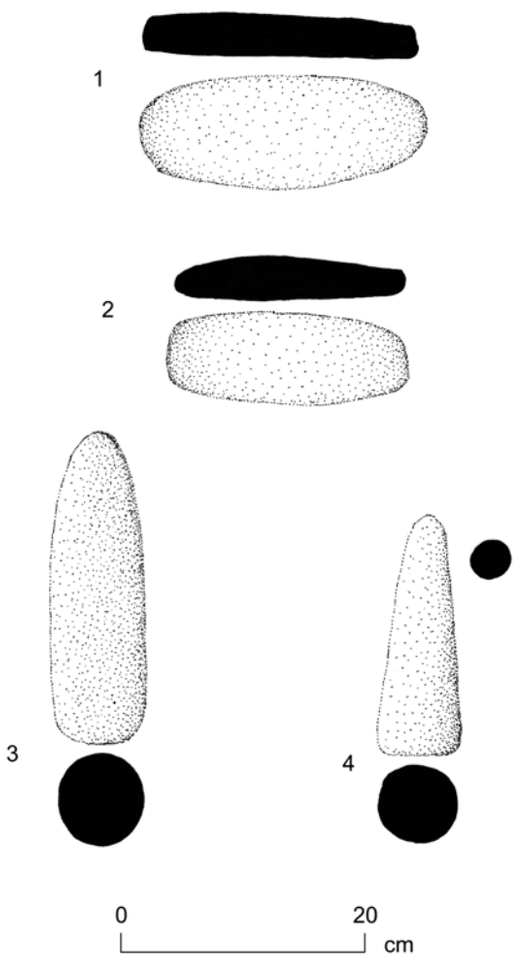


FIGURE 122. Selected grinding stones from levels I–II, Tell Abada.

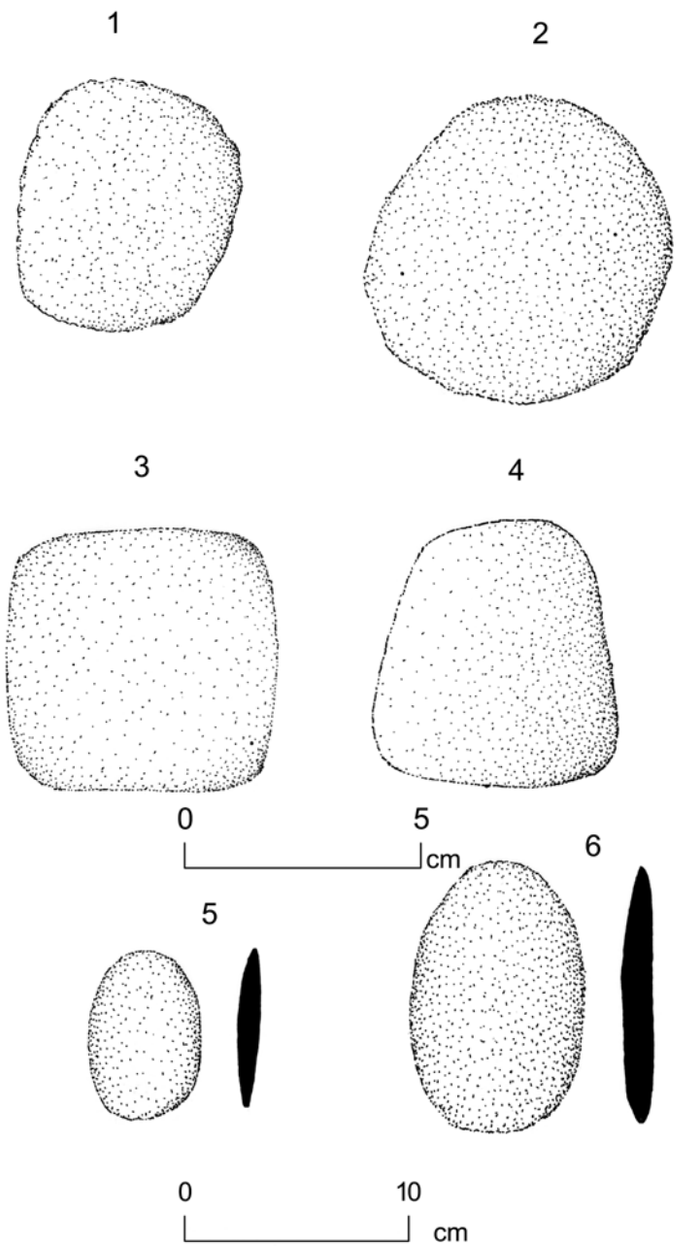


FIGURE 123. Selected grinding stone tools from levels I–III, Tell Abada.

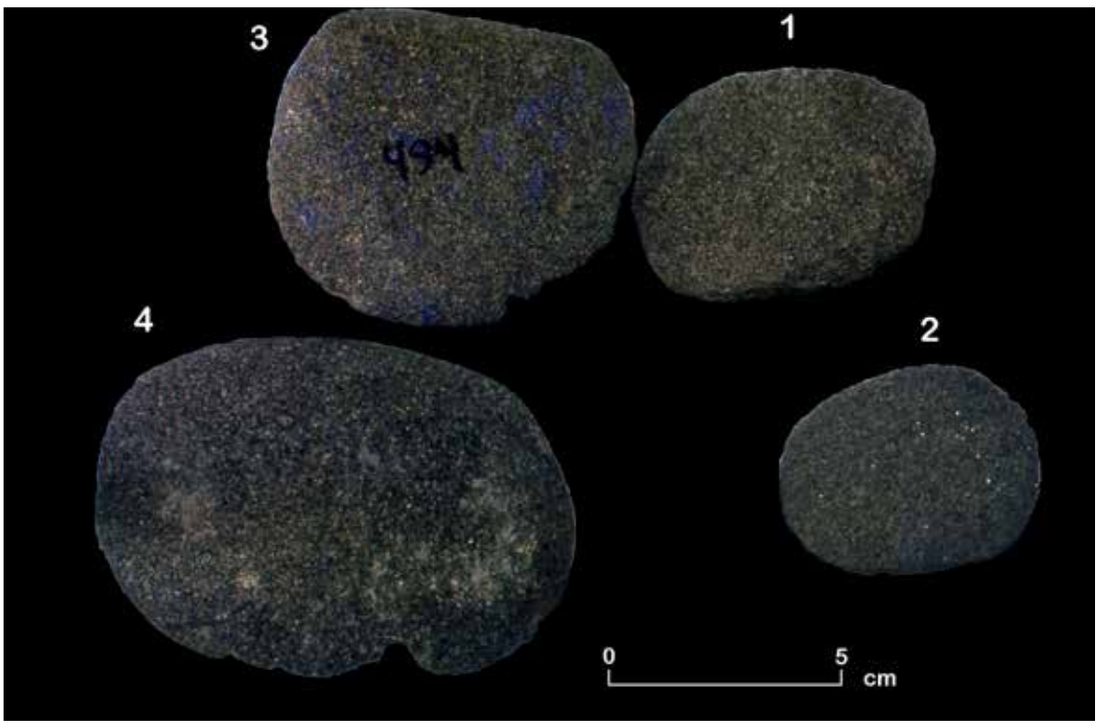


FIGURE 124. Grinding stone tools (fig. 123) from levels I–III, Tell Abada.

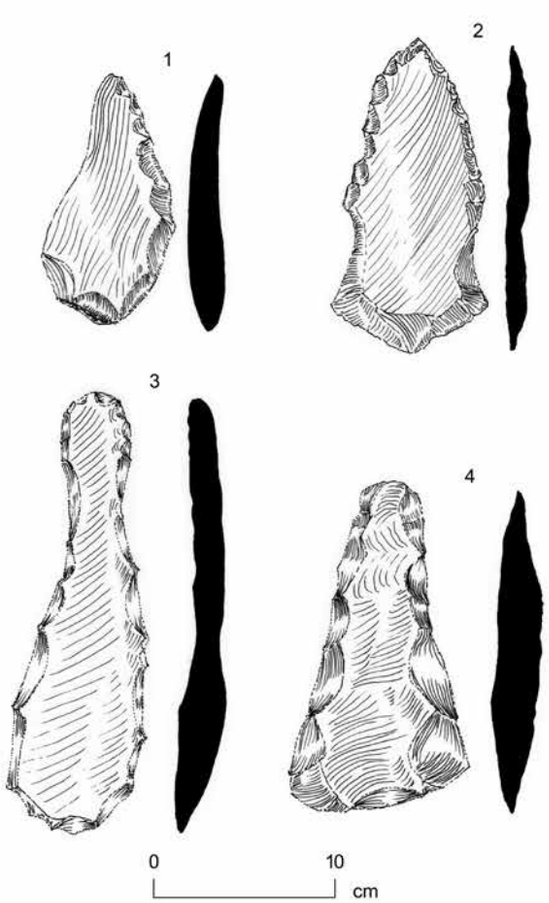


FIGURE 125. Stone hoes from level II, Tell Abada.

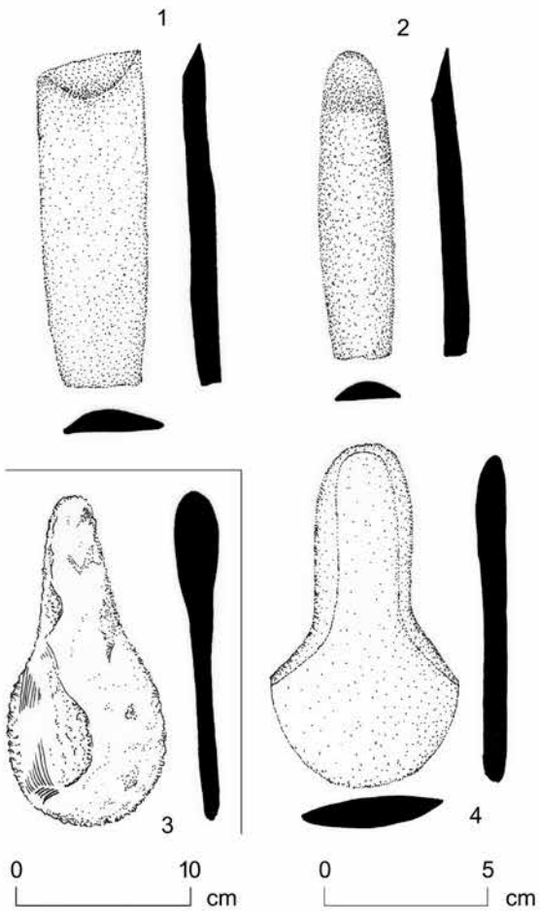


FIGURE 126. Stone tools from levels I–III, Tell Abada.

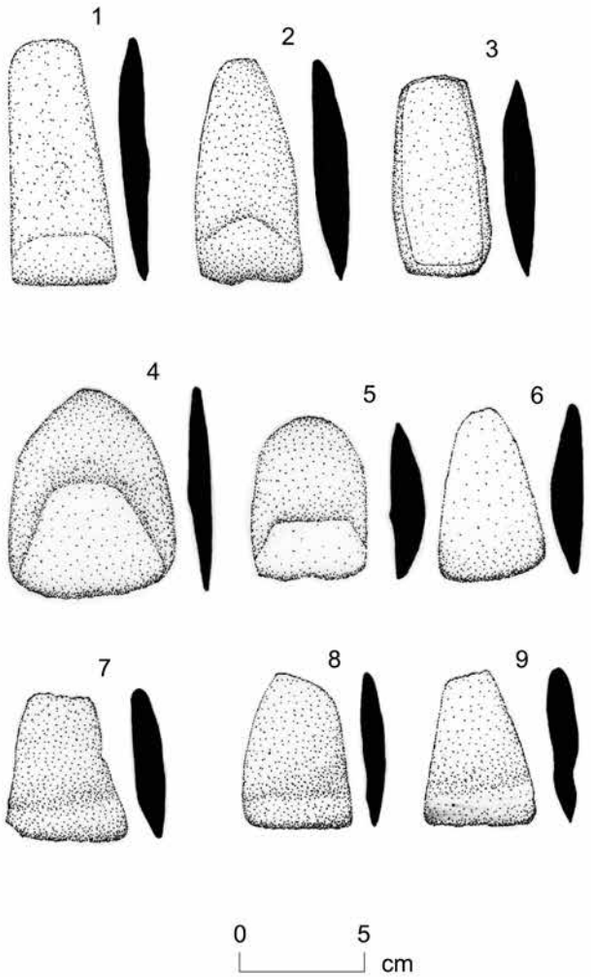


FIGURE 127. Celts from levels I–III, Tell Abada.

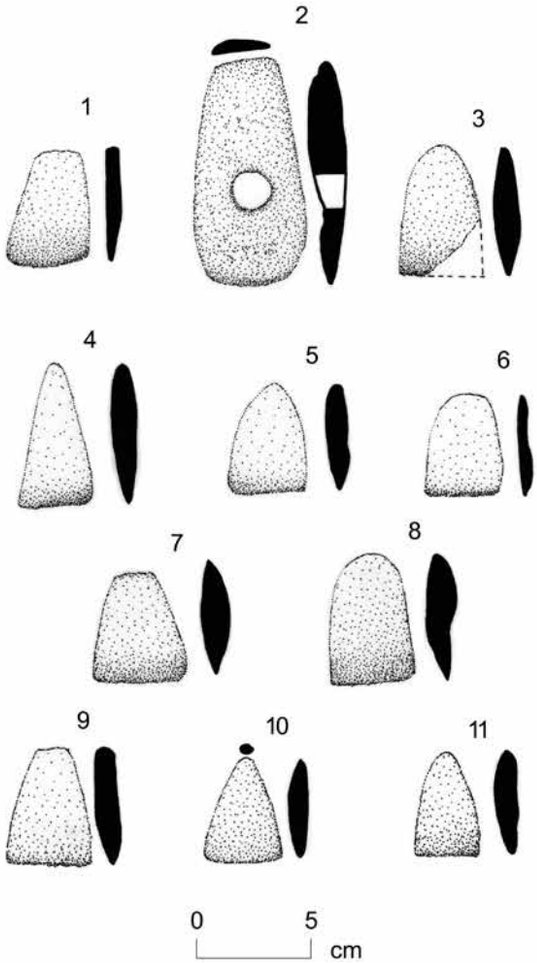


FIGURE 128. Celts from levels I–II, Tell Abada.

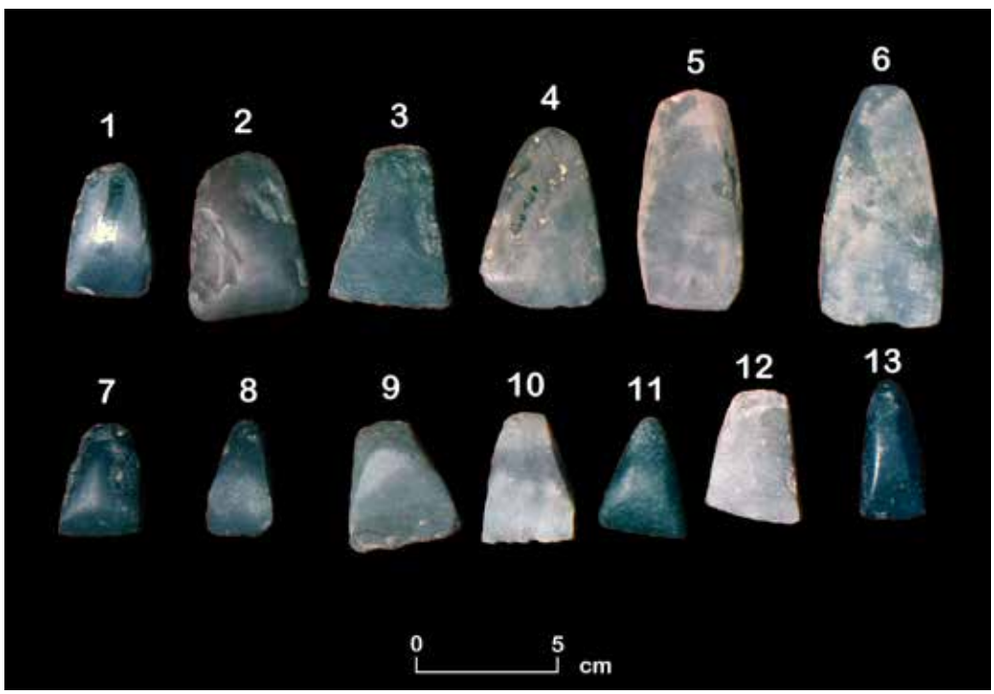


FIGURE 129. Celts (figs. 127–28) from levels I–III, Tell Abada.

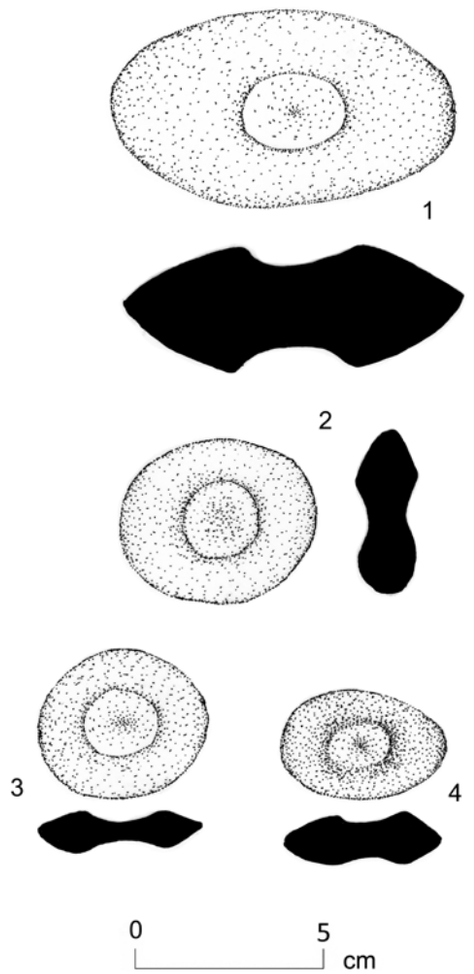


FIGURE 130. Stone tools from levels I–III, Tell Abada

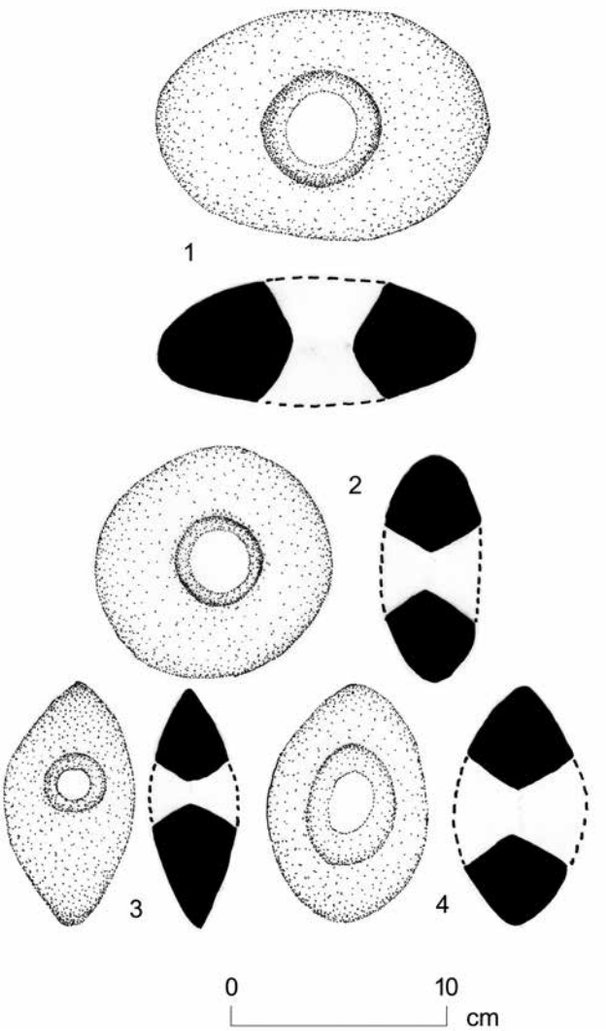


FIGURE 131. Stone tools from levels I–III, Tell Abada.

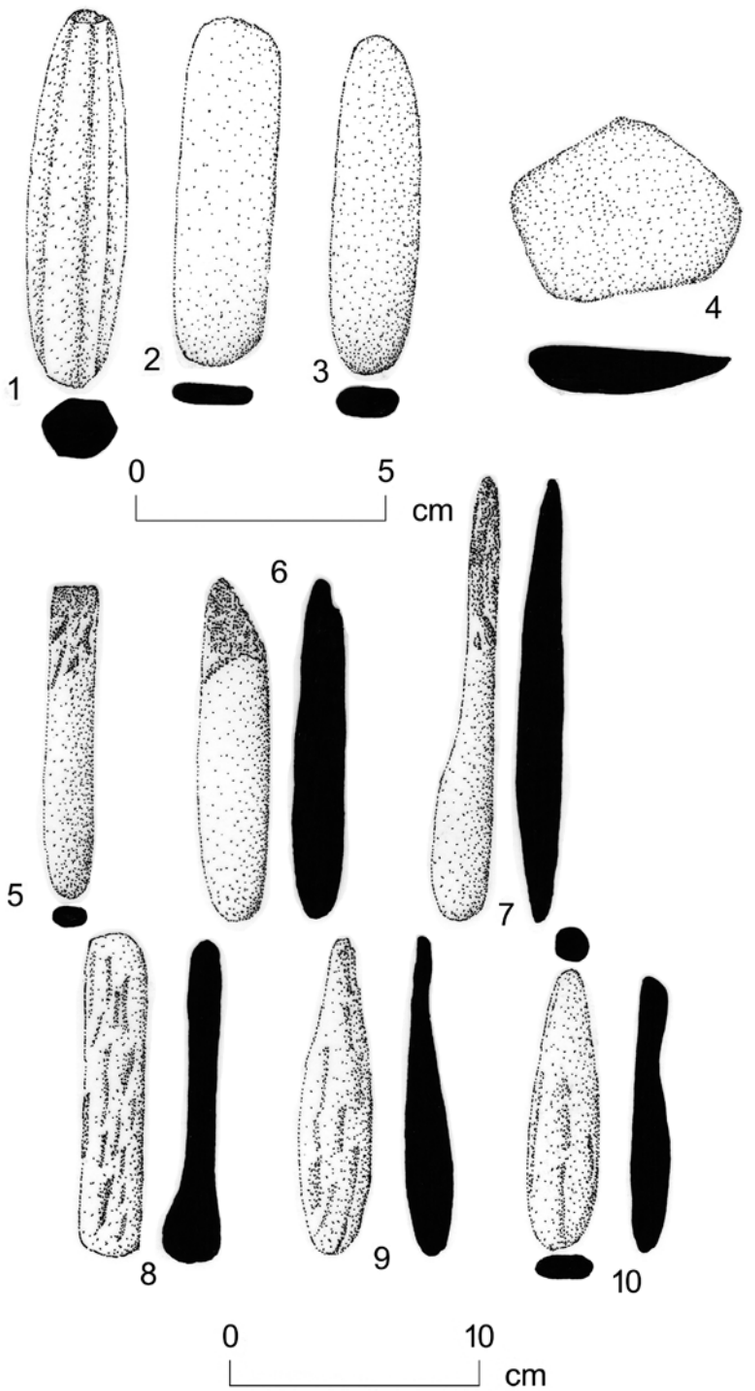


FIGURE 132. Stone objects from levels I–III, Tell Abada.

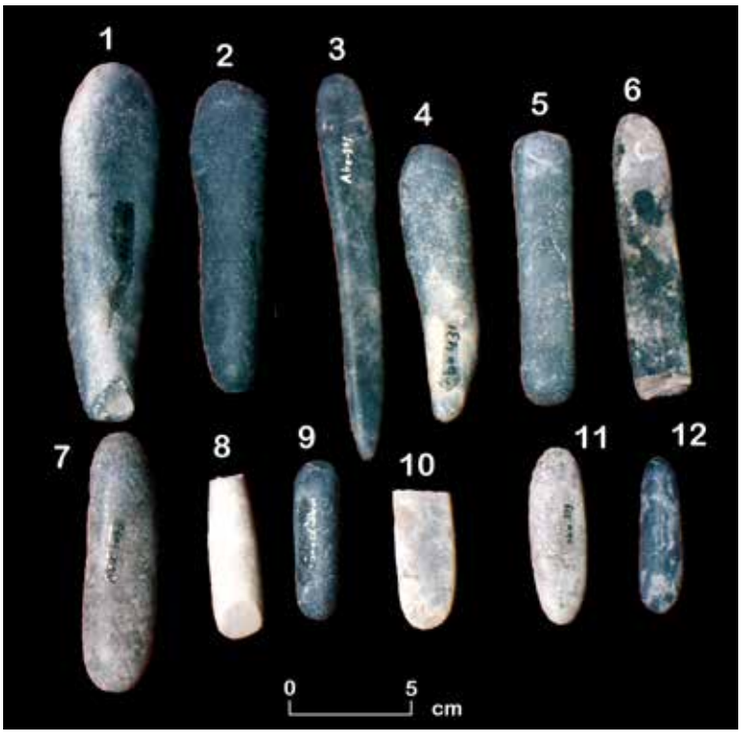


FIGURE 133. Stone objects (fig. 132) from levels I–III, Tell Abada.

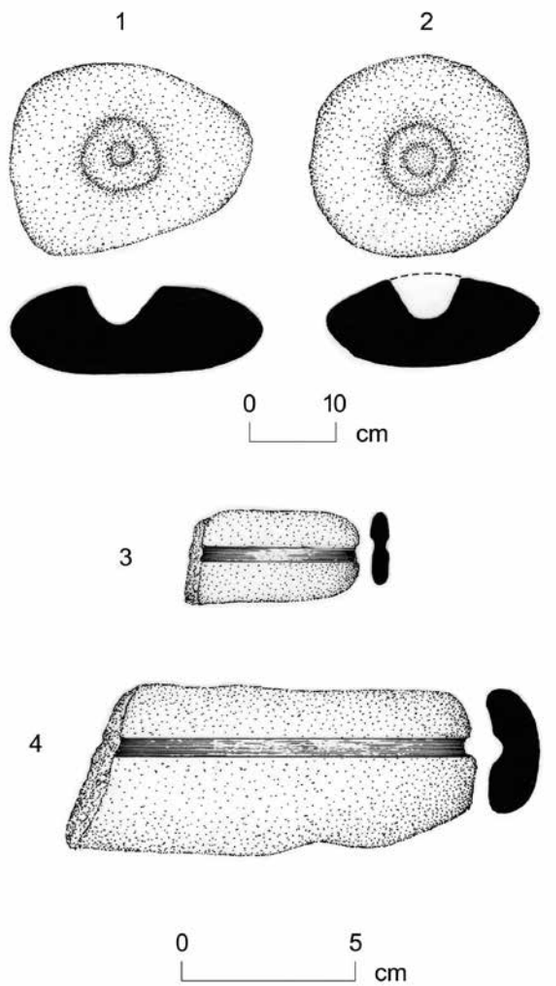


FIGURE 134. Stones objects from level II, Tell Abada.

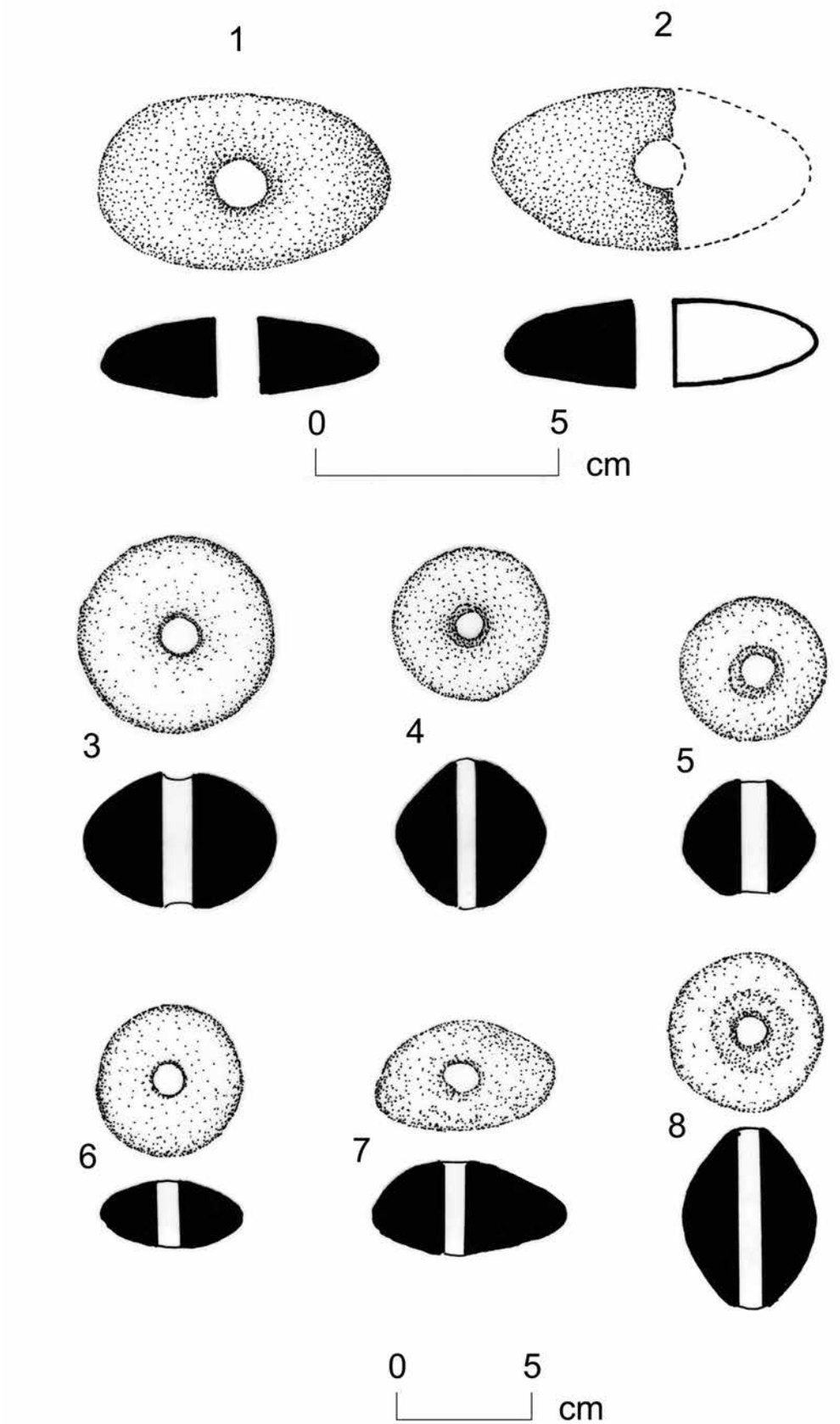


FIGURE 135. Mace-heads from level II, Tell Abada.

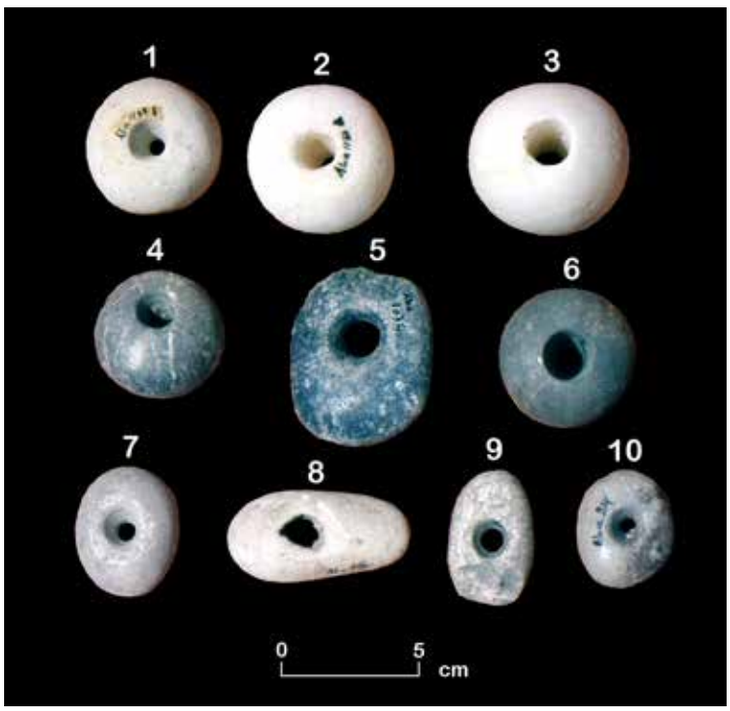


FIGURE 136. Mace-heads (fig. 135) from level II, Tell Abada.

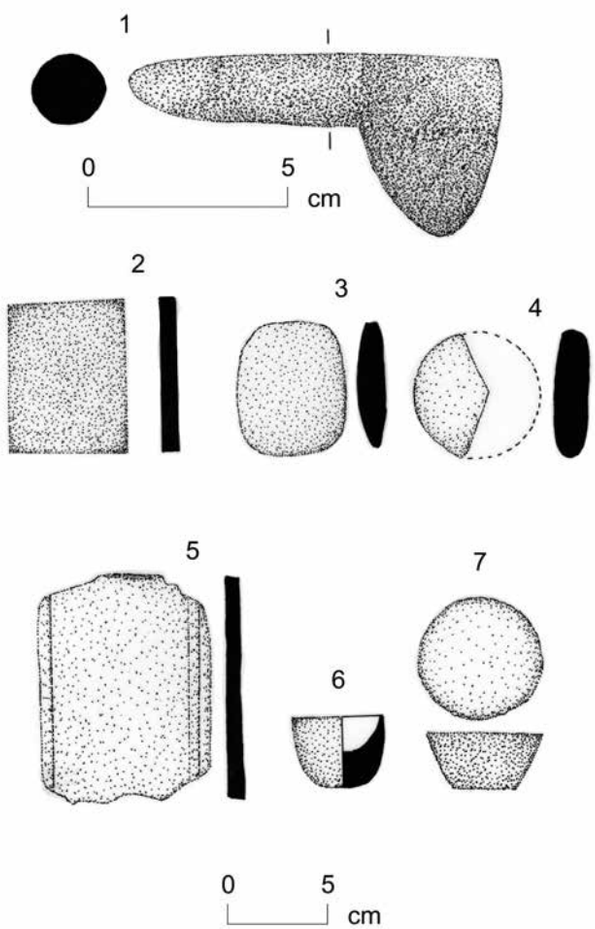


FIGURE 137. Various stone objects from levels I–II, Tell Abada.

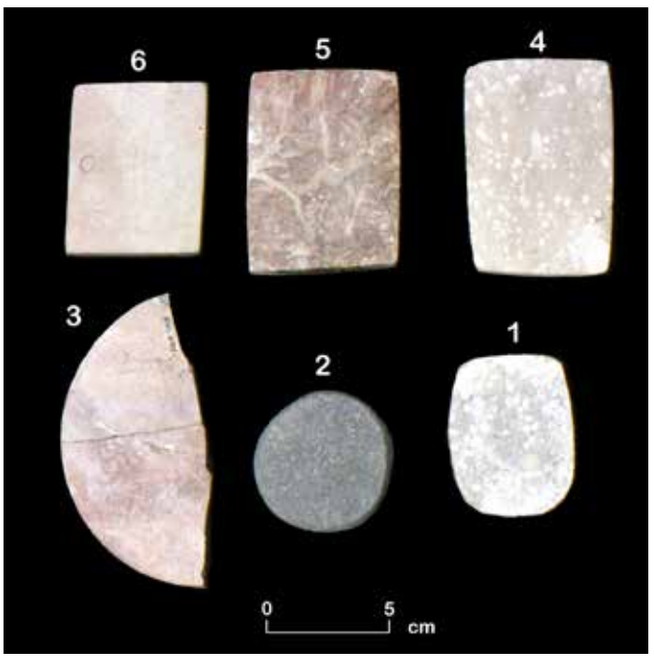


FIGURE 138. Stone objects from levels I–II, Tell Abada (fig. 137).

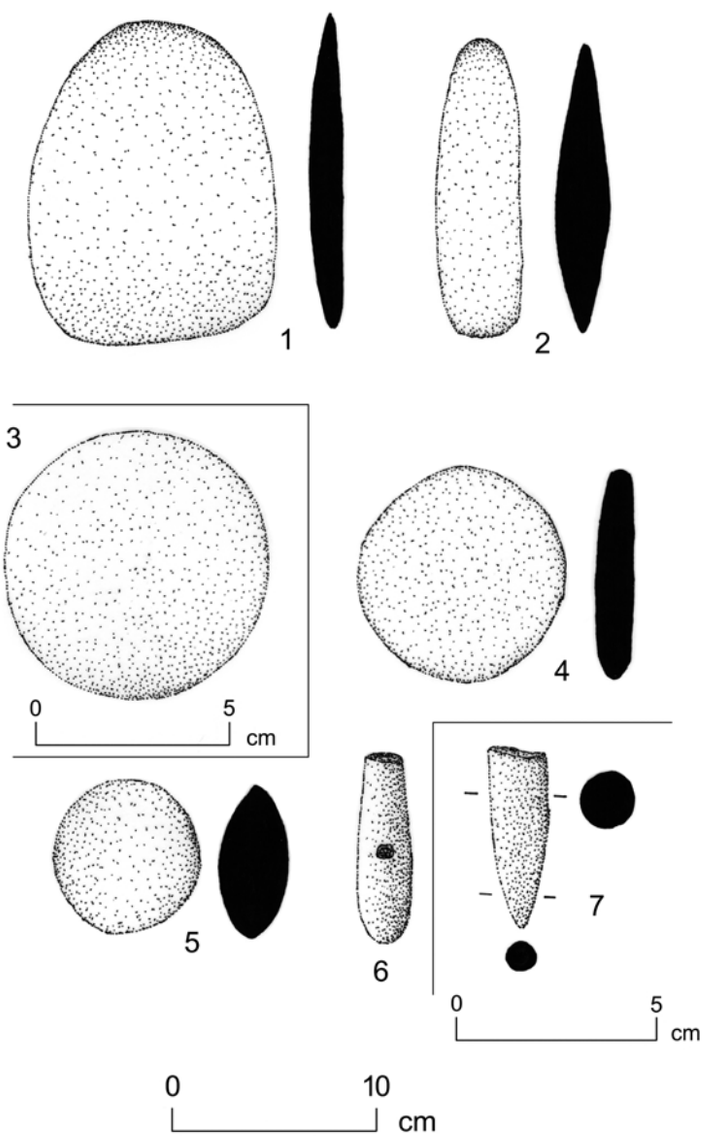


FIGURE 139. Stone objects from levels I–II, Tell Abada.

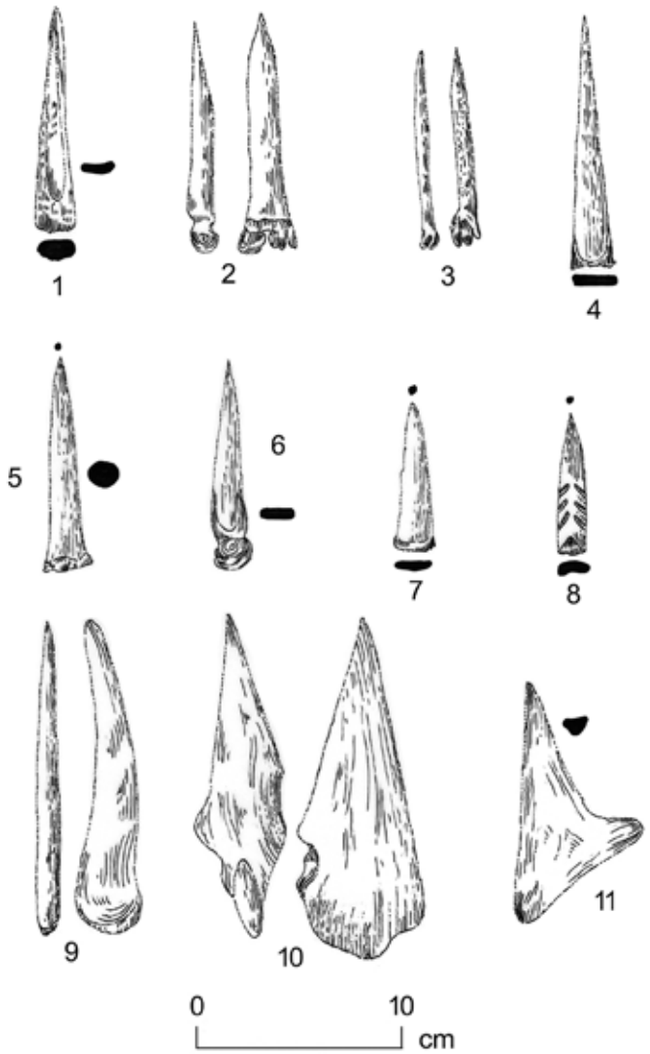


FIGURE 140. Selected variety of bone tools from levels I–II, Tell Abada.

FIGURE 141. Selected variety of bone tools (fig. 140) from levels I–II, Tell Abada.

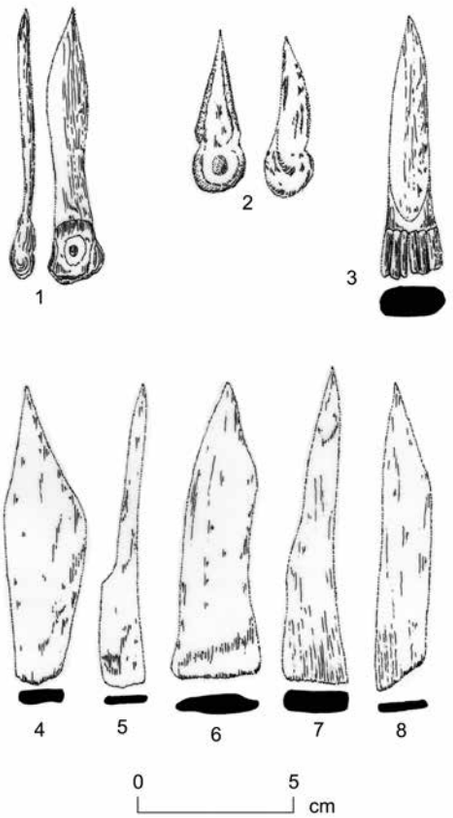


FIGURE 142 Selected variety of bone tools from levels I–II, Tell Abada.

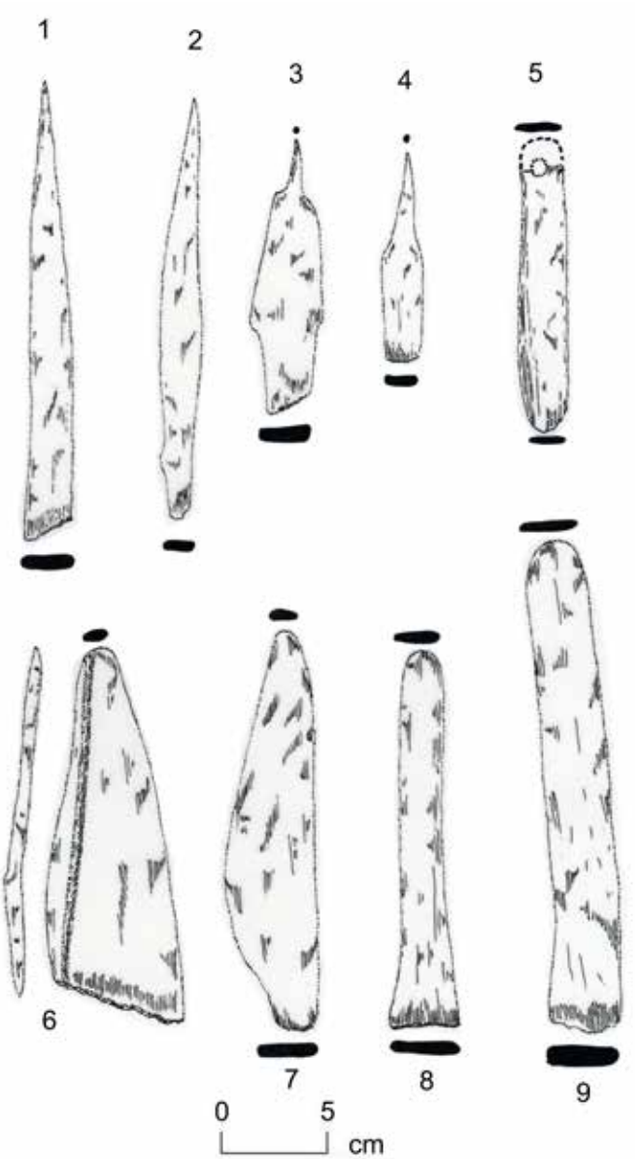


FIGURE 143. Selected variety of bone tools from levels I–II, Tell Abada.

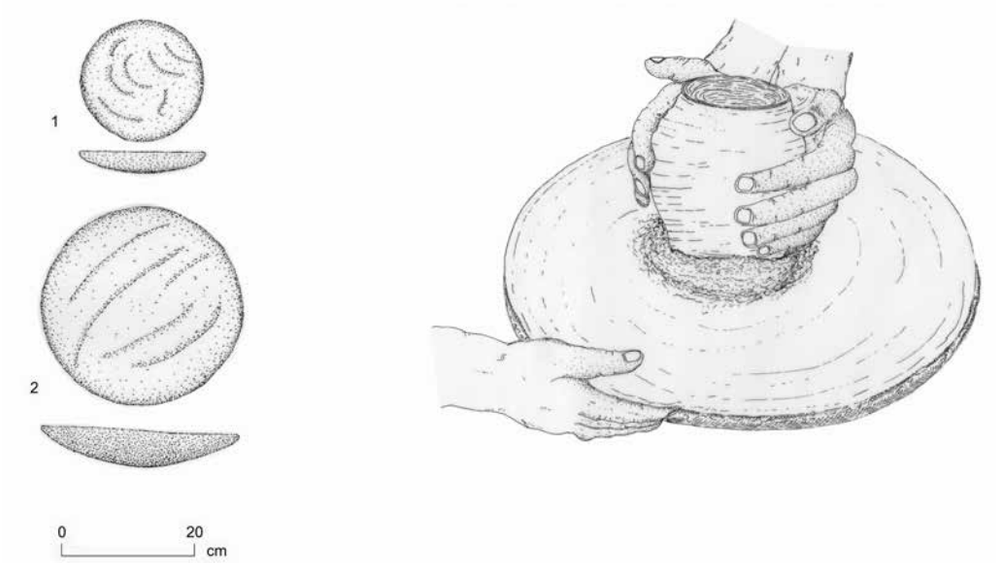


FIGURE 144. Gypsum Discs "Potter's wheels" from Building A, level III, Tell Abada.

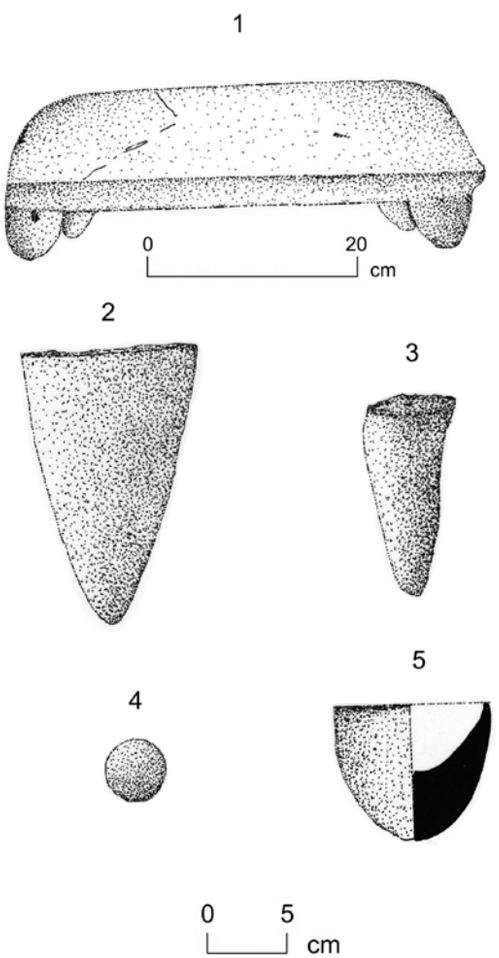


FIGURE 145. Gypsum objects from levels II–III, Tell Abada.

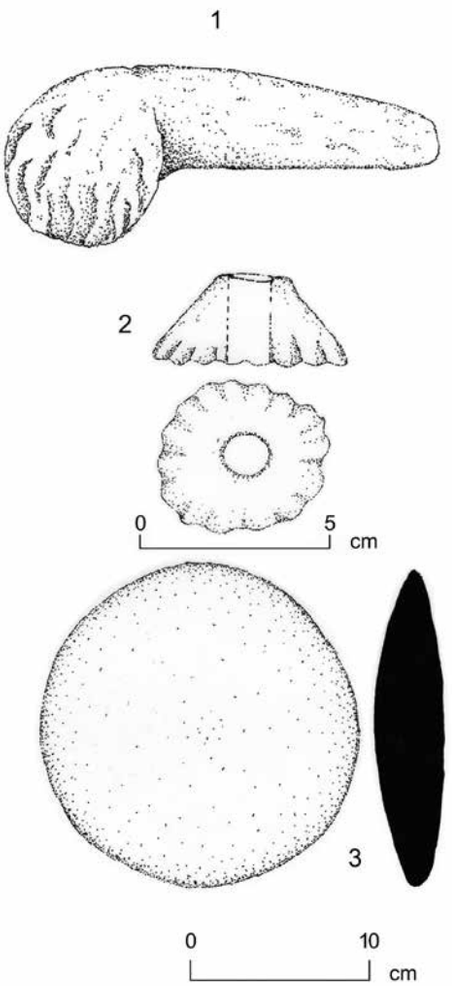


FIGURE 146. Bitumen objects from level I, Tell Abada.

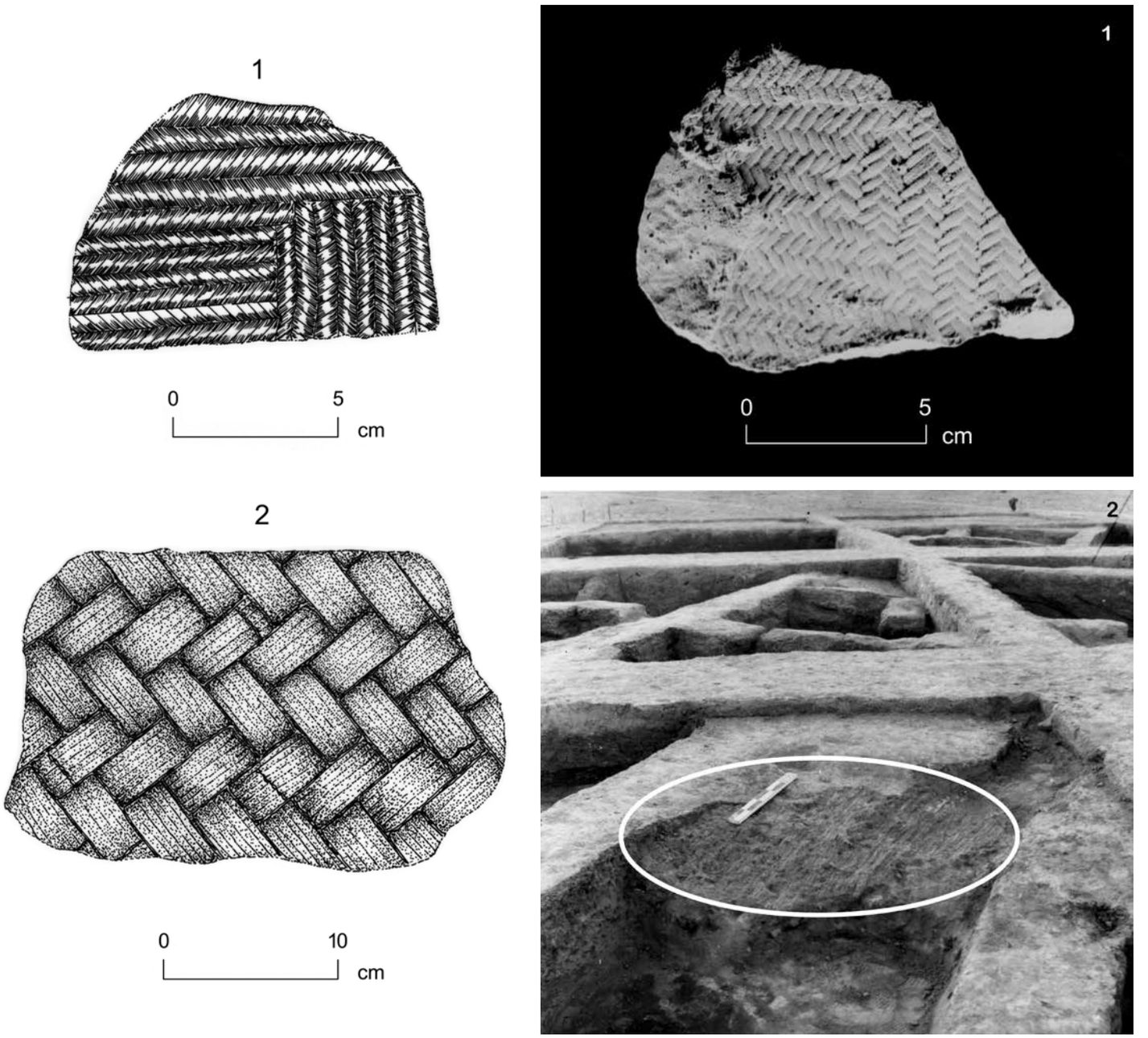
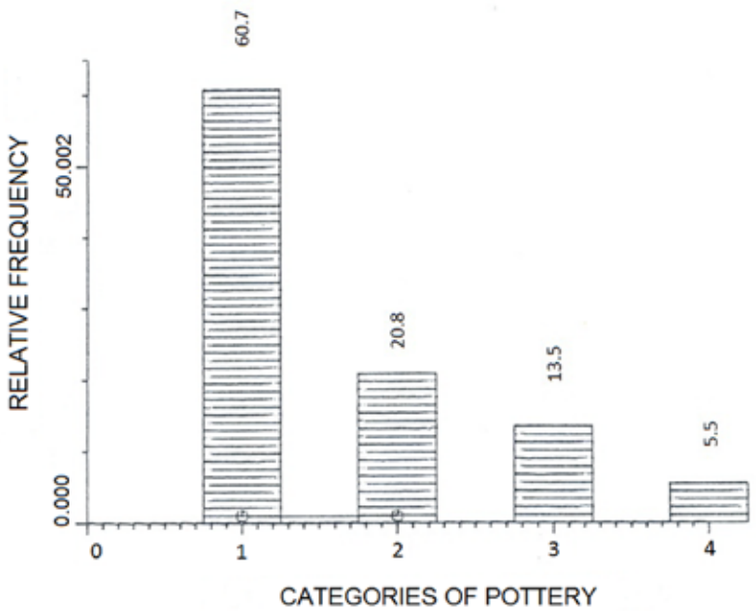
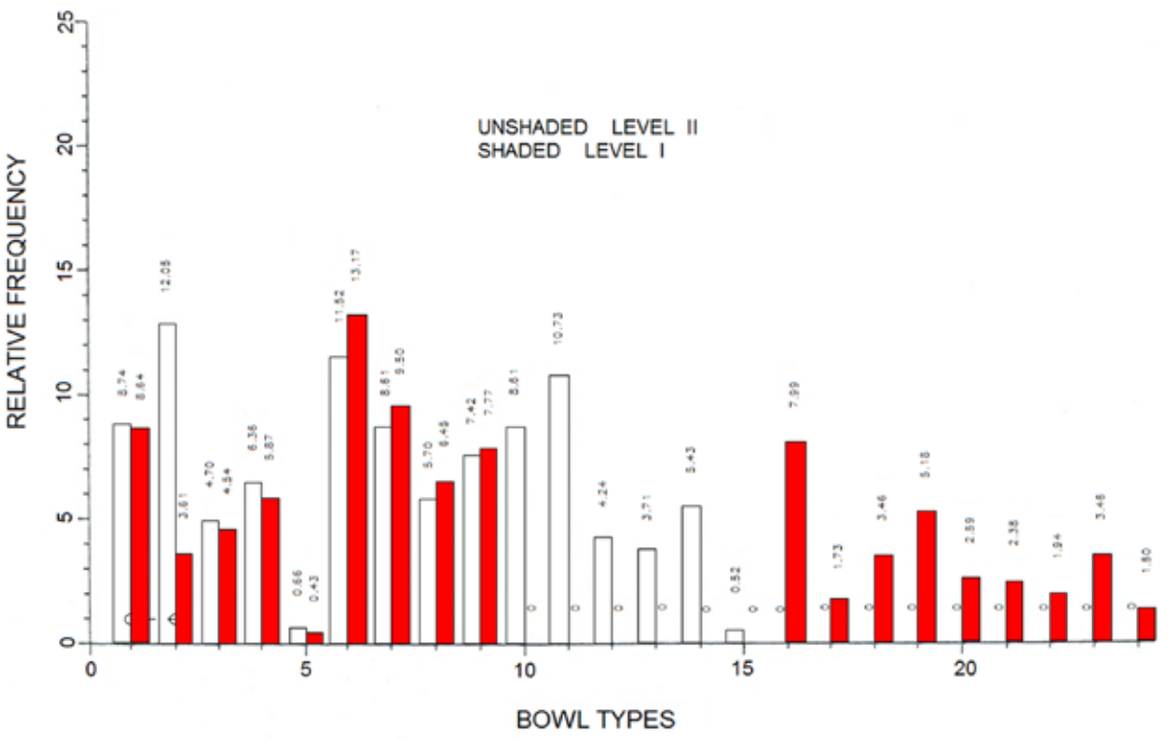


FIGURE 147. Basketry and matting impressions from levels I–II, Tell Abada.



SCHEMA A



SCHEMA B

FIGURE 148. Bar plot showing categories of pottery and relative frequency of bowl types of jars in levels I–II, Tell Abada.

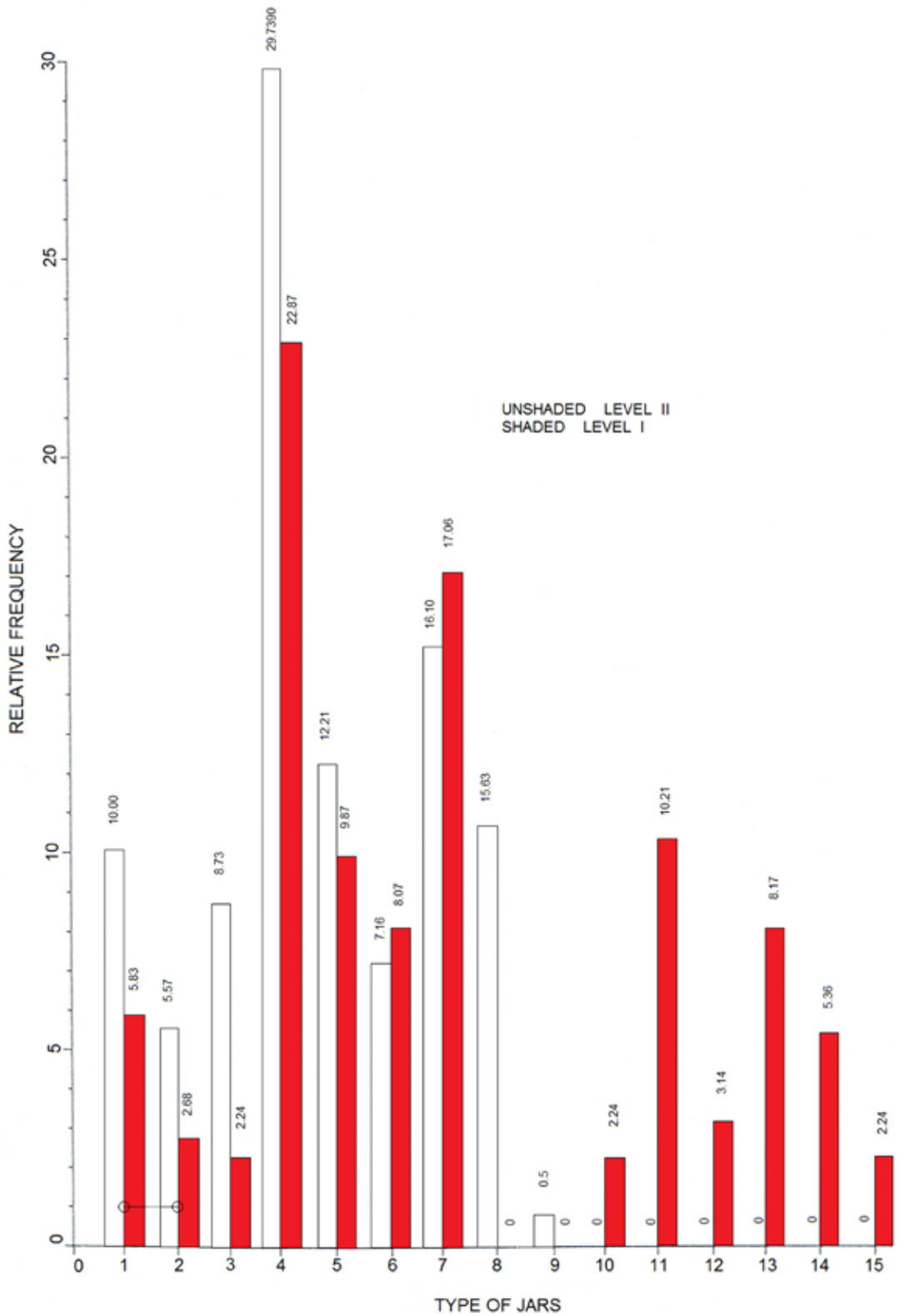


FIGURE 149. Bar plot showing relative frequency of types of jars in levels I–II, Tell Abada.

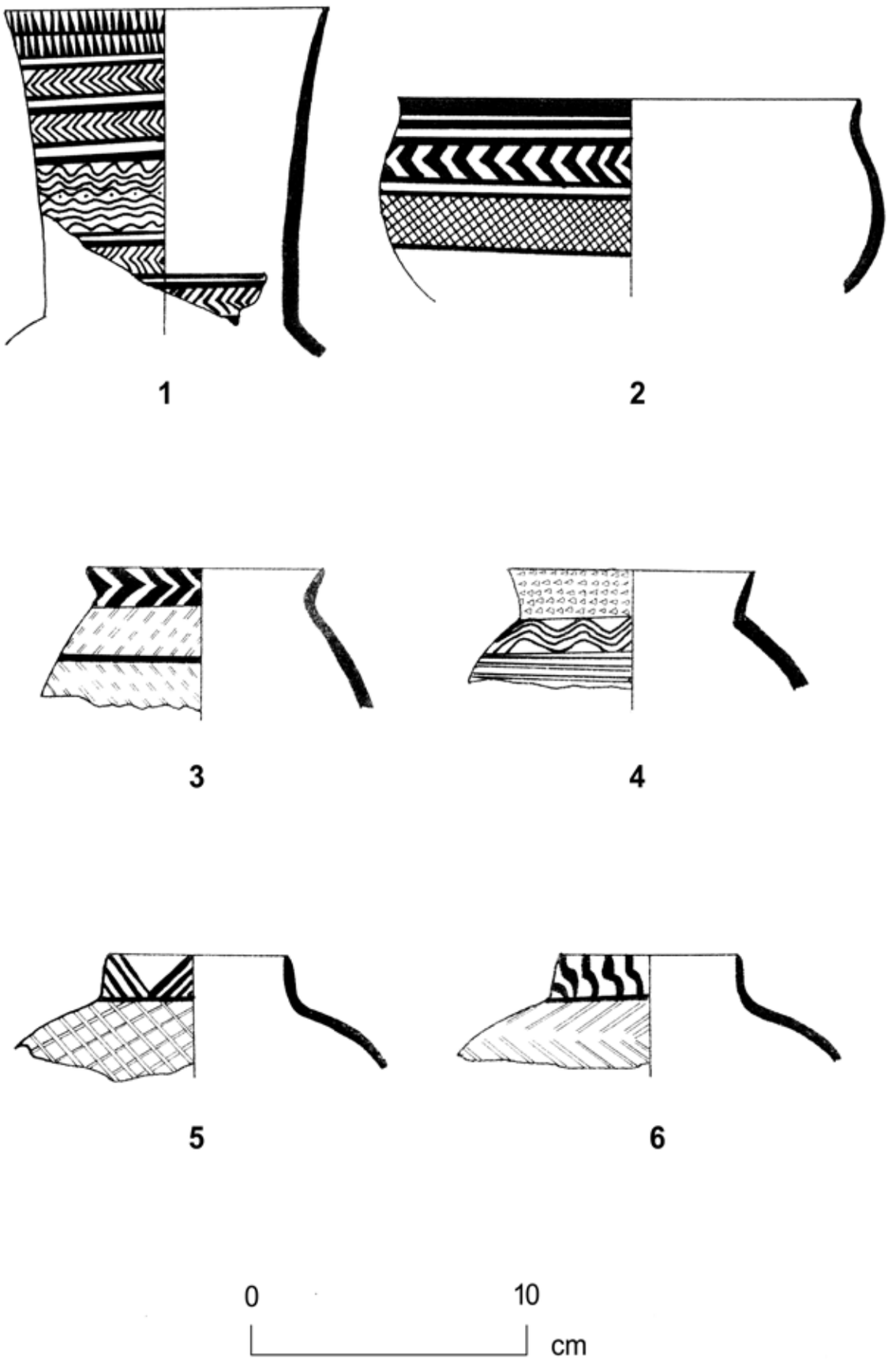


FIGURE 150. Transitional pottery from level III, Tell Abada.

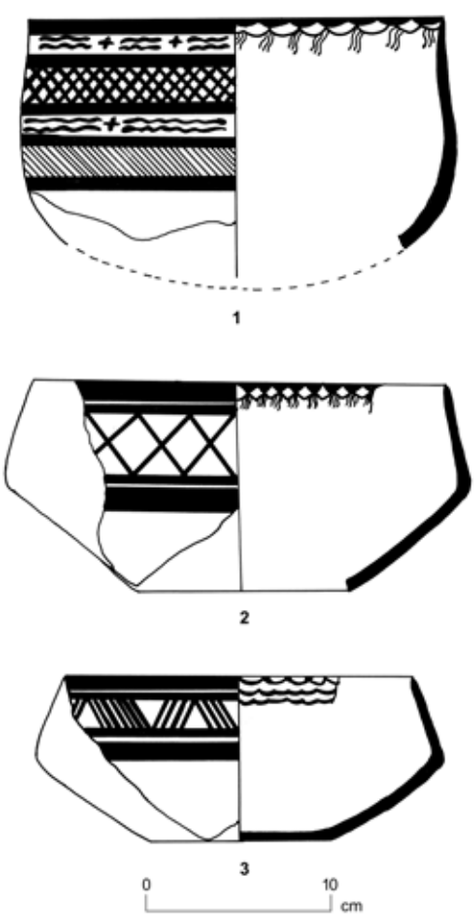


FIGURE 151. Transitional pottery from level III, Tell Abada.

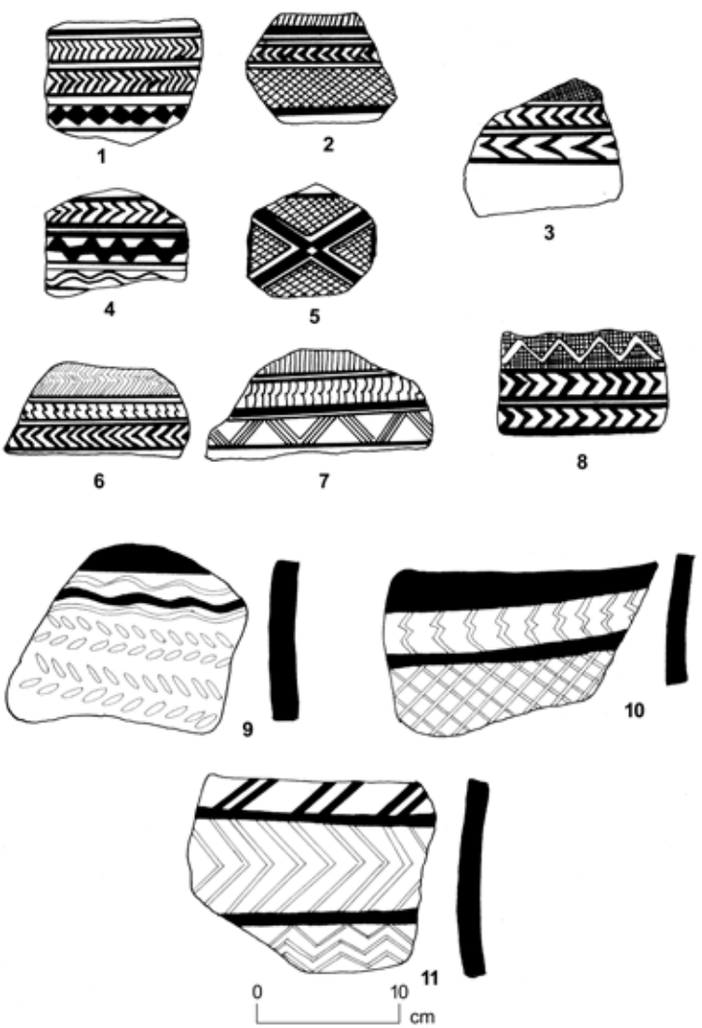


FIGURE 152. Transitional pottery from level III, Tell Abada.

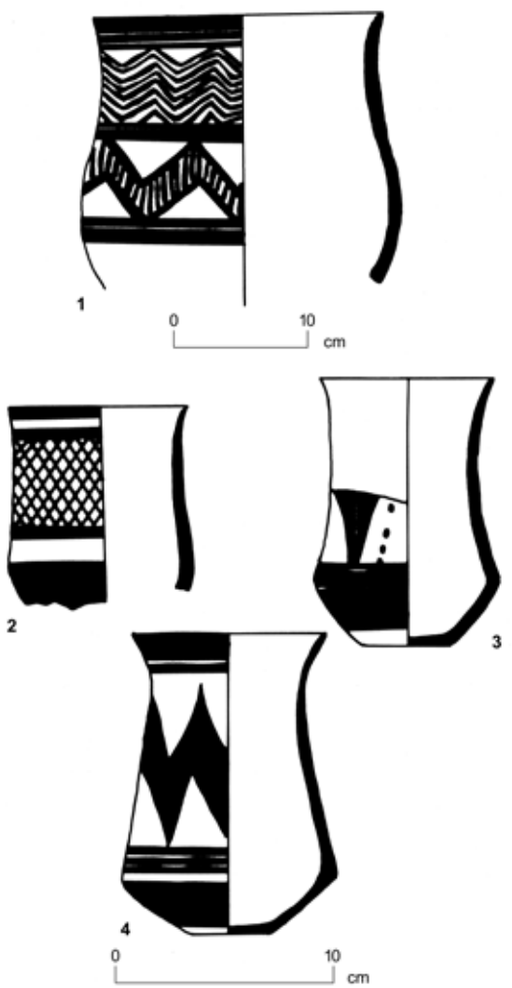


FIGURE 153. Transitional and Ubaid I pottery (reconstructed) from level III, Tell Abada.

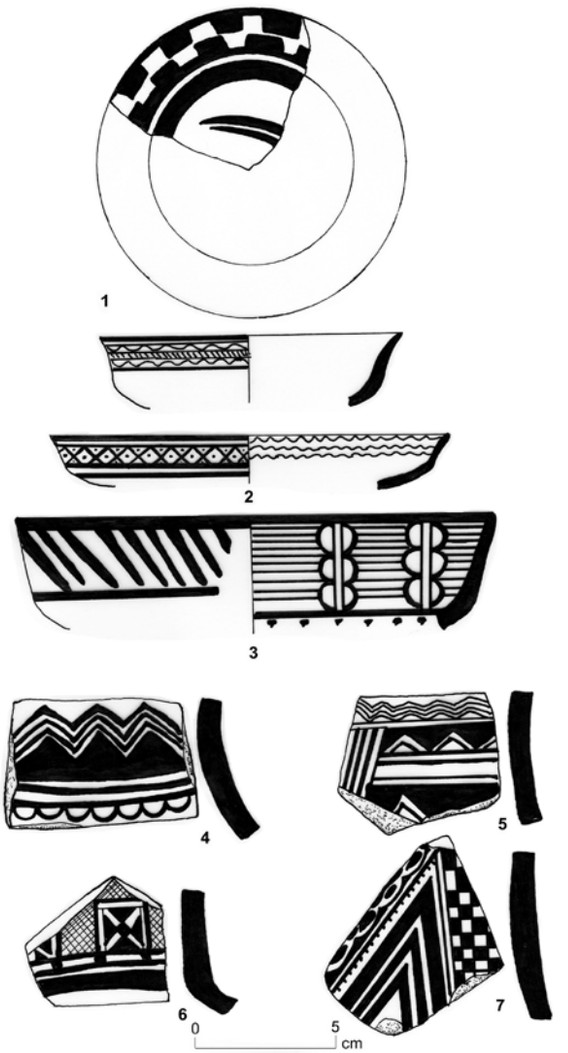


FIGURE 154. Transitional pottery (reconstructed) from level III, Tell Abada.

FIGURE 155. Transitional pottery from level III, Tell Abada.

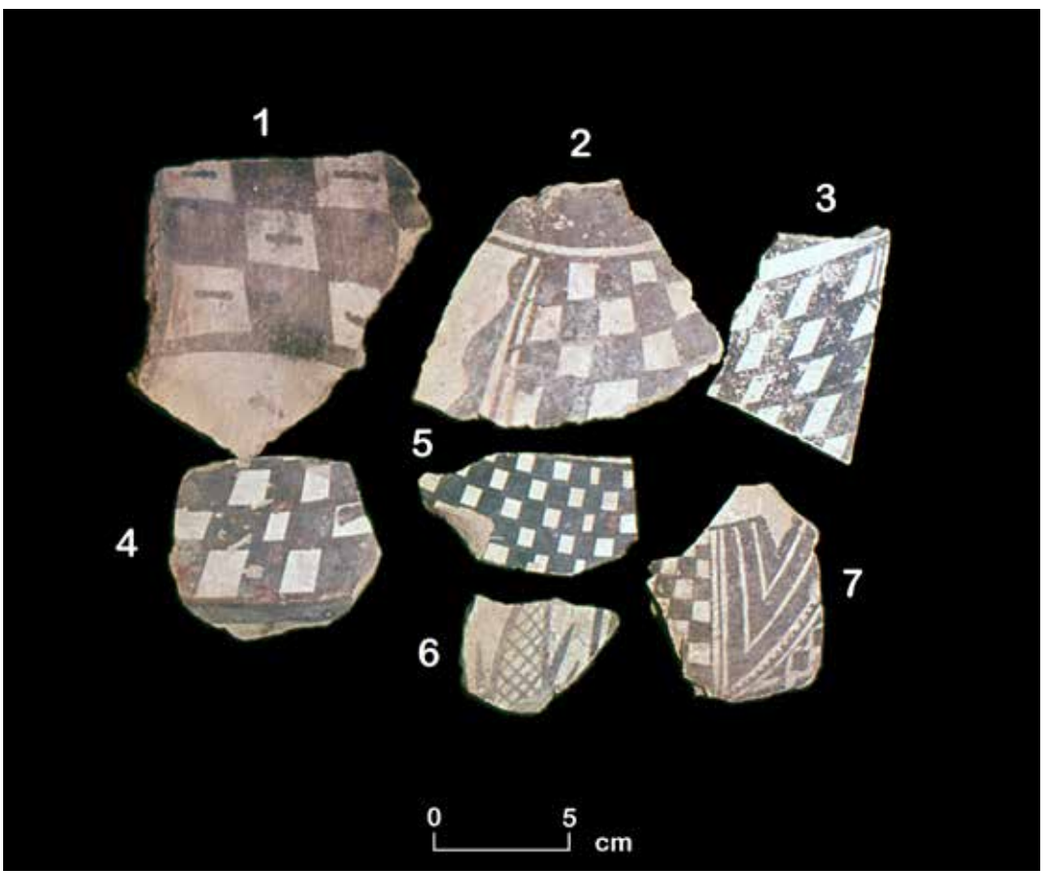


FIGURE 156. Transitional pottery from level III, Tell Abada.

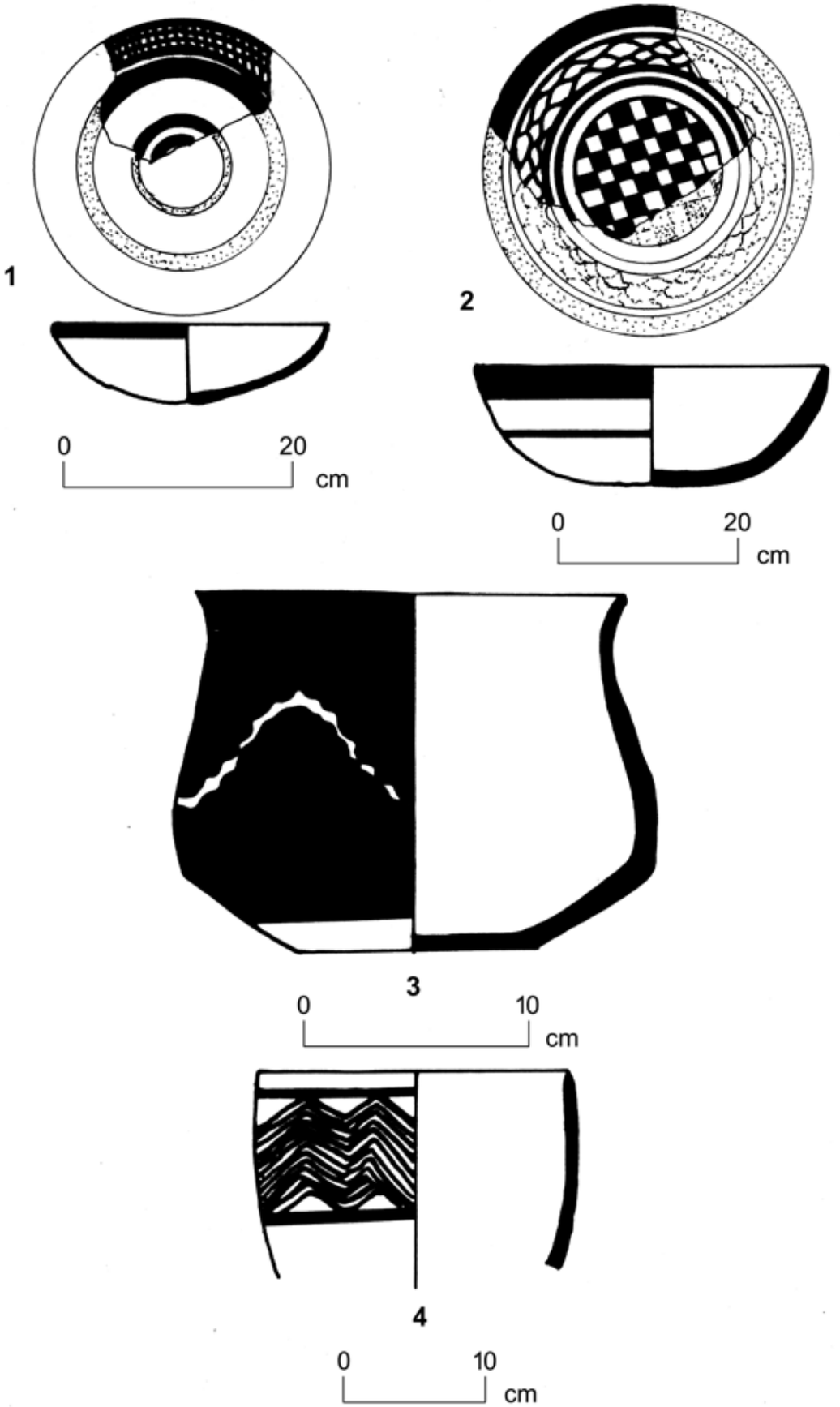
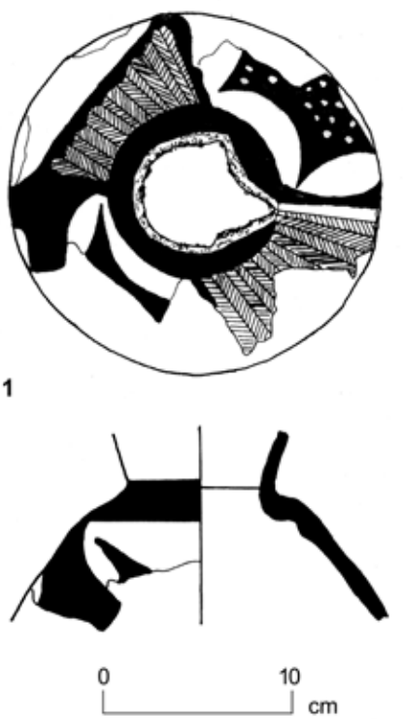


FIGURE 157. Transitional pottery (reconstructed) from level III, Tell Abada.

FIGURE 158. Transitional pottery from level III, Tell Abada.



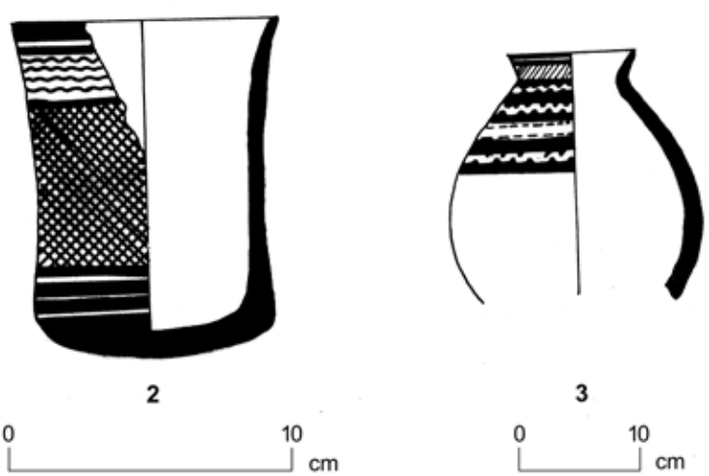


FIGURE 159. Ubaid 1 pottery (reconstructed) from level III, Tell Abada.

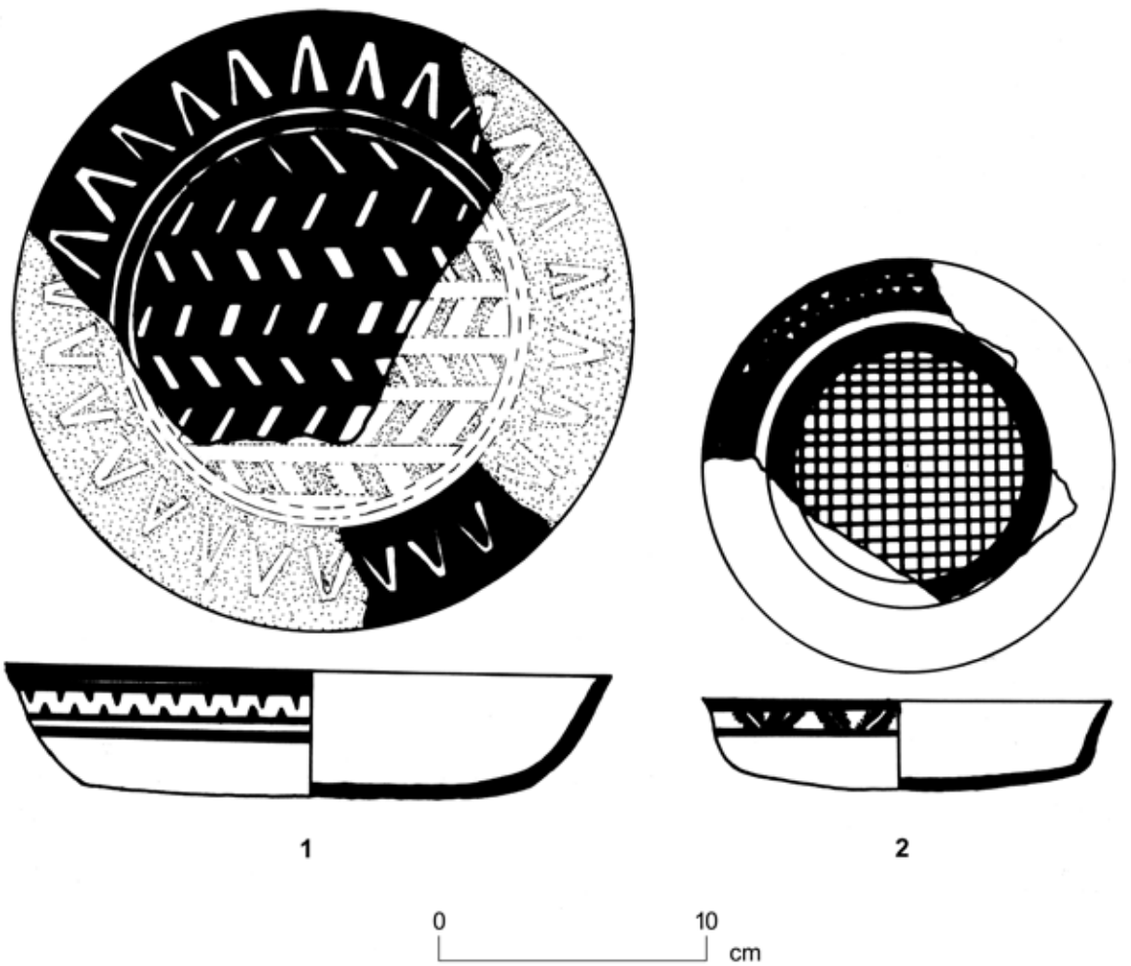


FIGURE 160. Ubaid 1 pottery (reconstructed) from level III, Tell Abada.

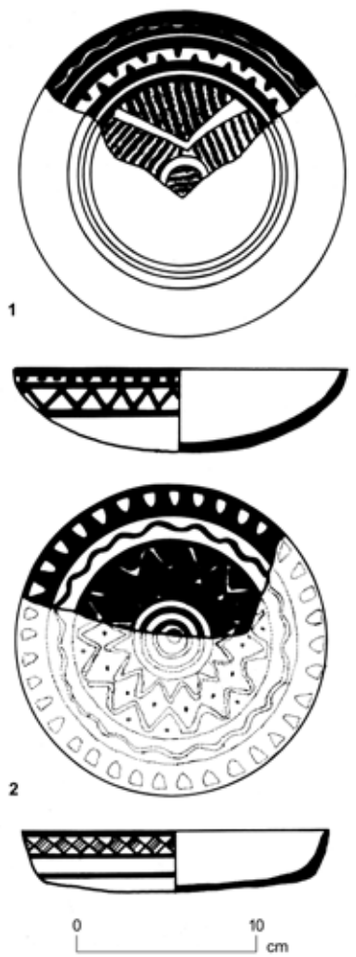


FIGURE 161. Ubaid 1 pottery (reconstructed) from level III, Tell Abada.

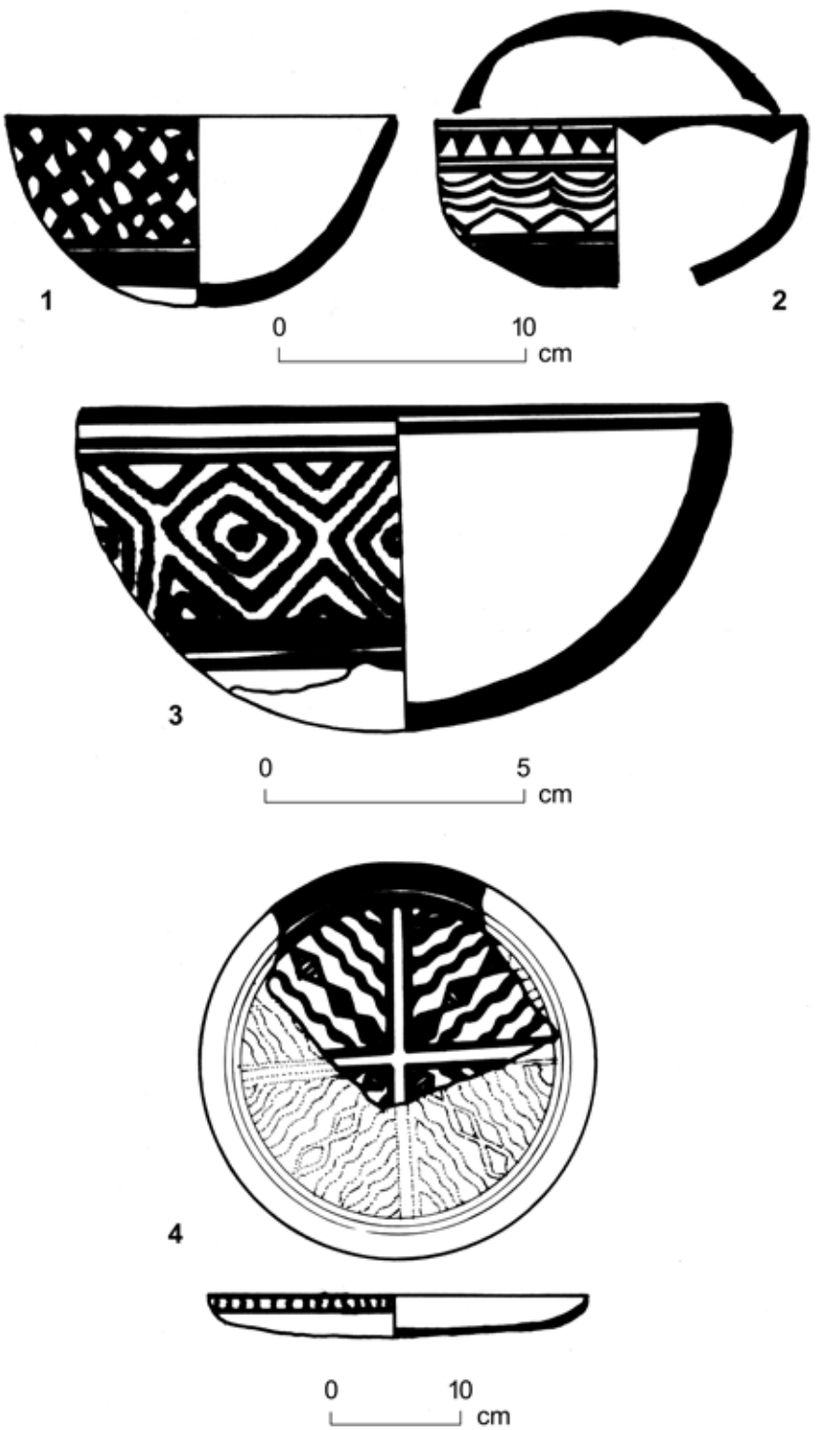


FIGURE 162. Ubaid 1–2 pottery (reconstructed) from level III, Tell Abada.

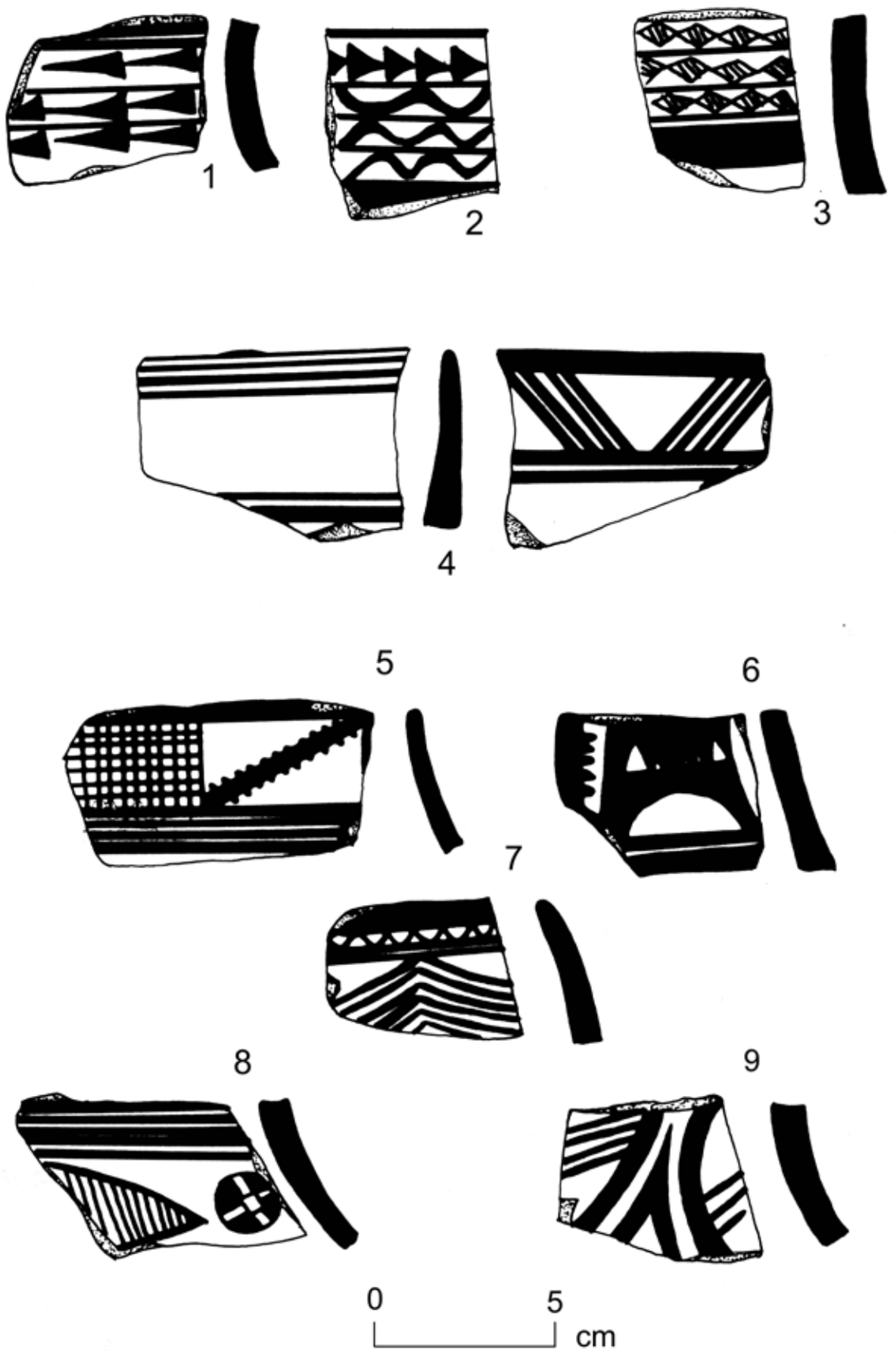


FIGURE 163. Ubaid 1–2 pottery from level III, Tell Abada.

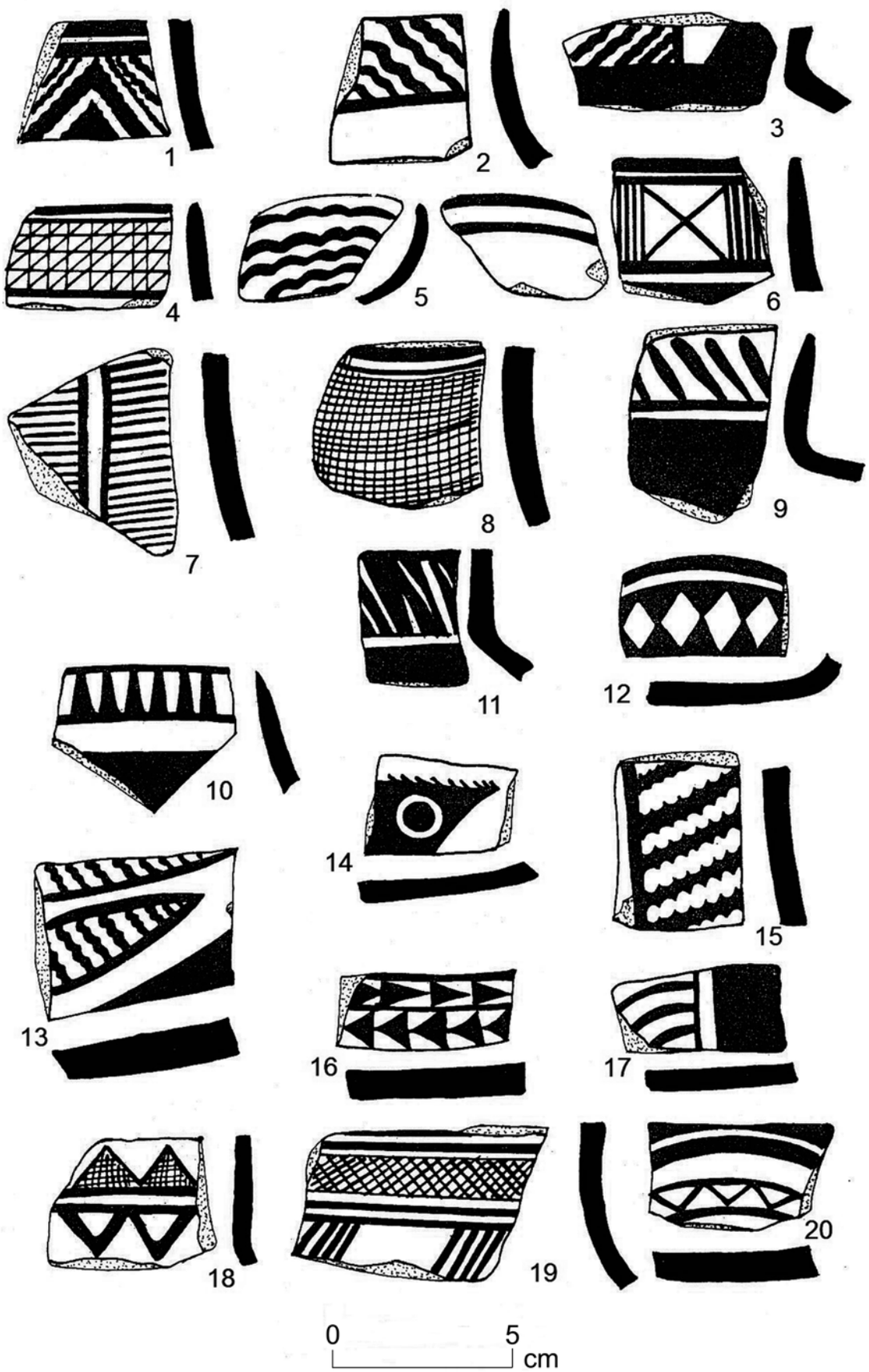


FIGURE 164. Ubaid 1–2 pottery from level III, Tell Abada.

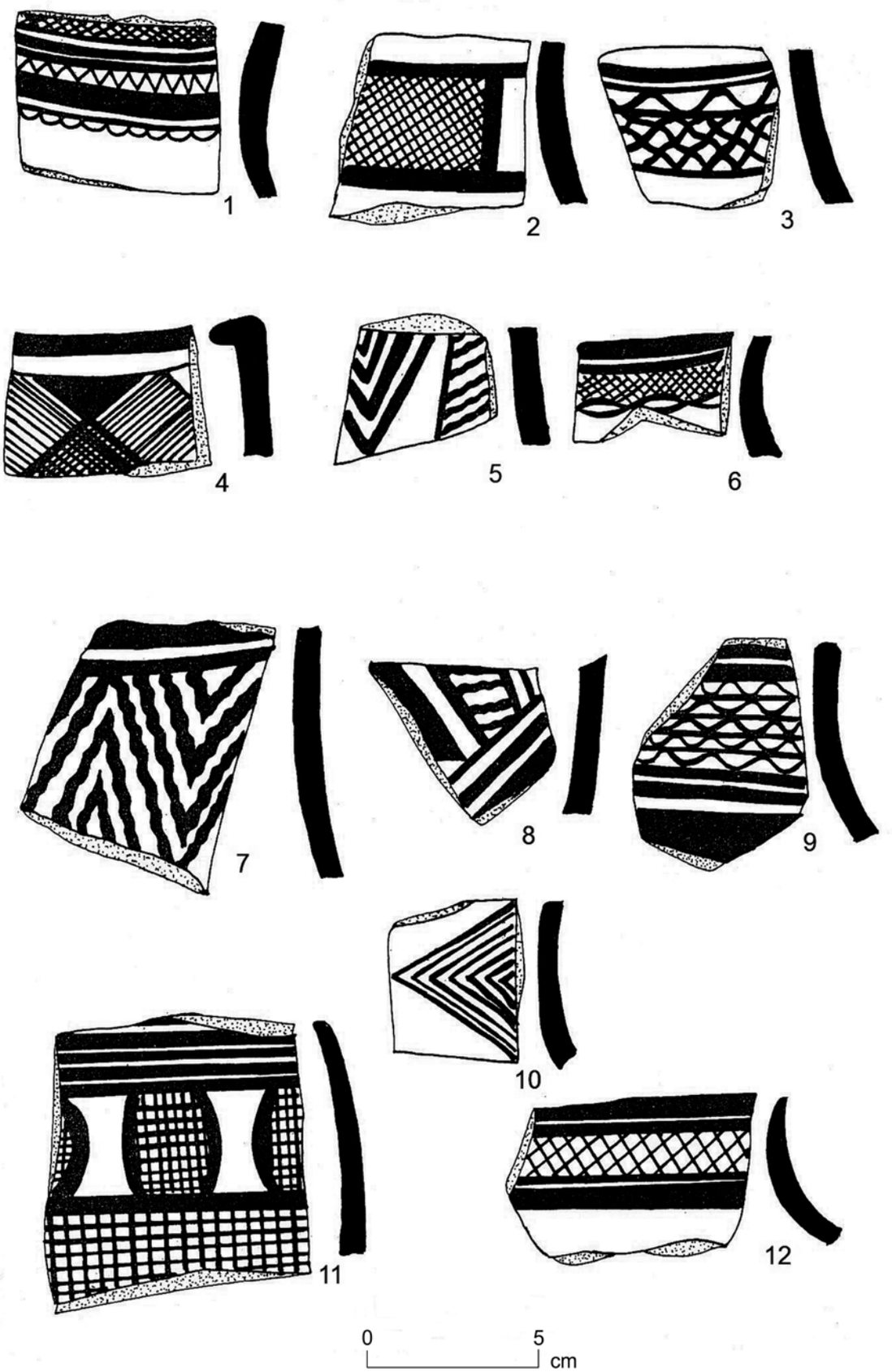


FIGURE 165. Ubaid 1–2 pottery from level III, Tell Abada.

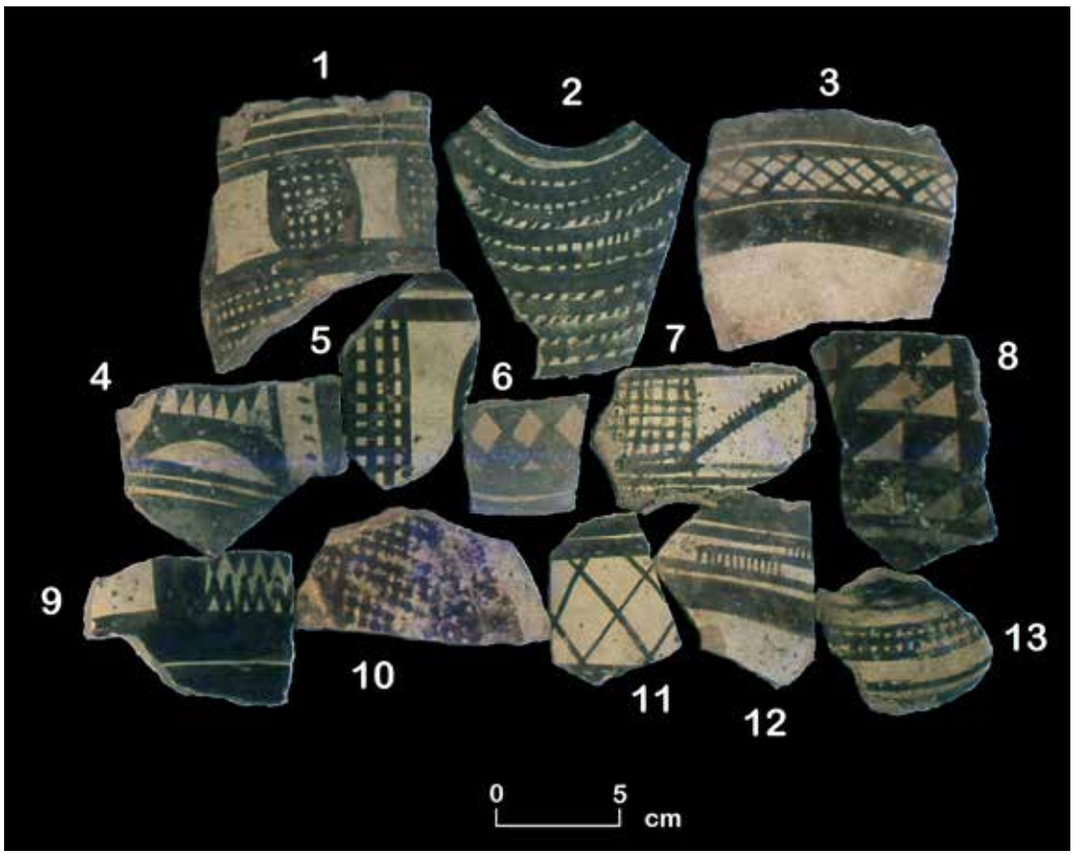


FIGURE 166. Ubaid 1–2 pottery from level III, Tell Abada.

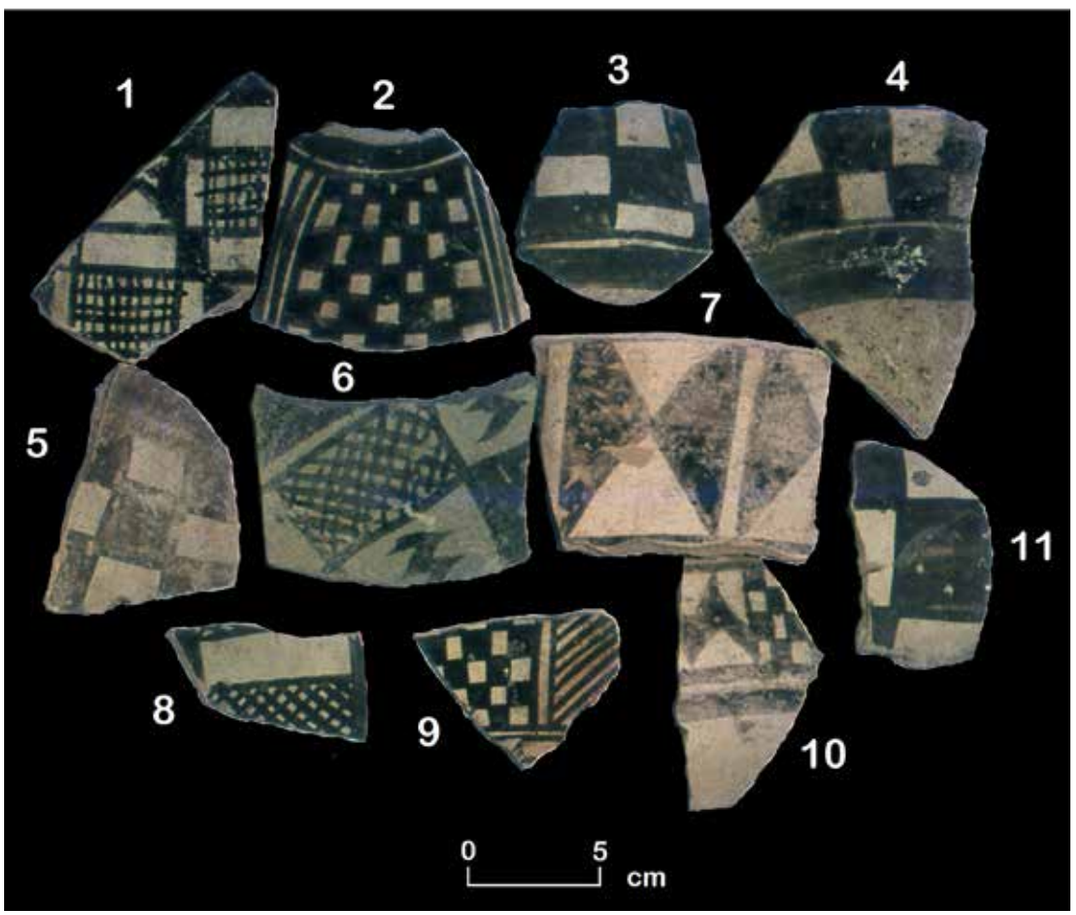


FIGURE 167. Ubaid 1–2 pottery from level III, Tell Abada.

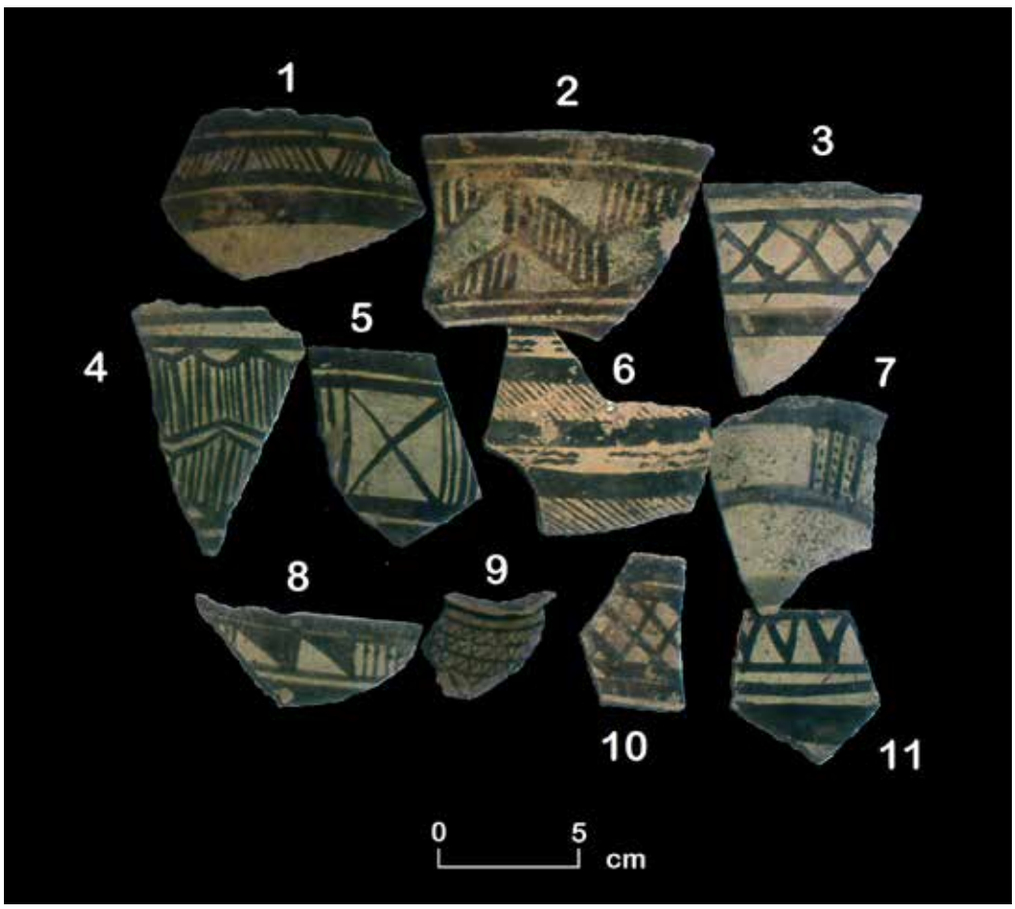


FIGURE 168. Ubaid 1–2 pottery from level III, Tell Abada.

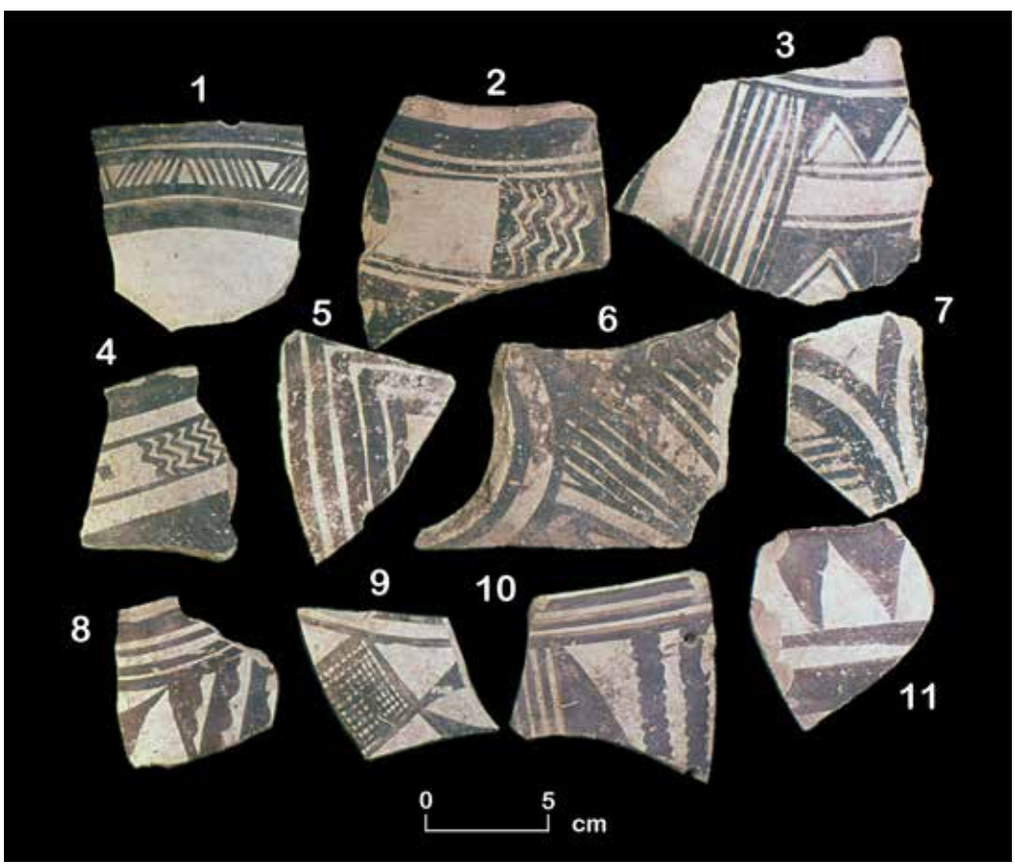


FIGURE 169. Ubaid 1-2 pottery from level III, Tell Abada.

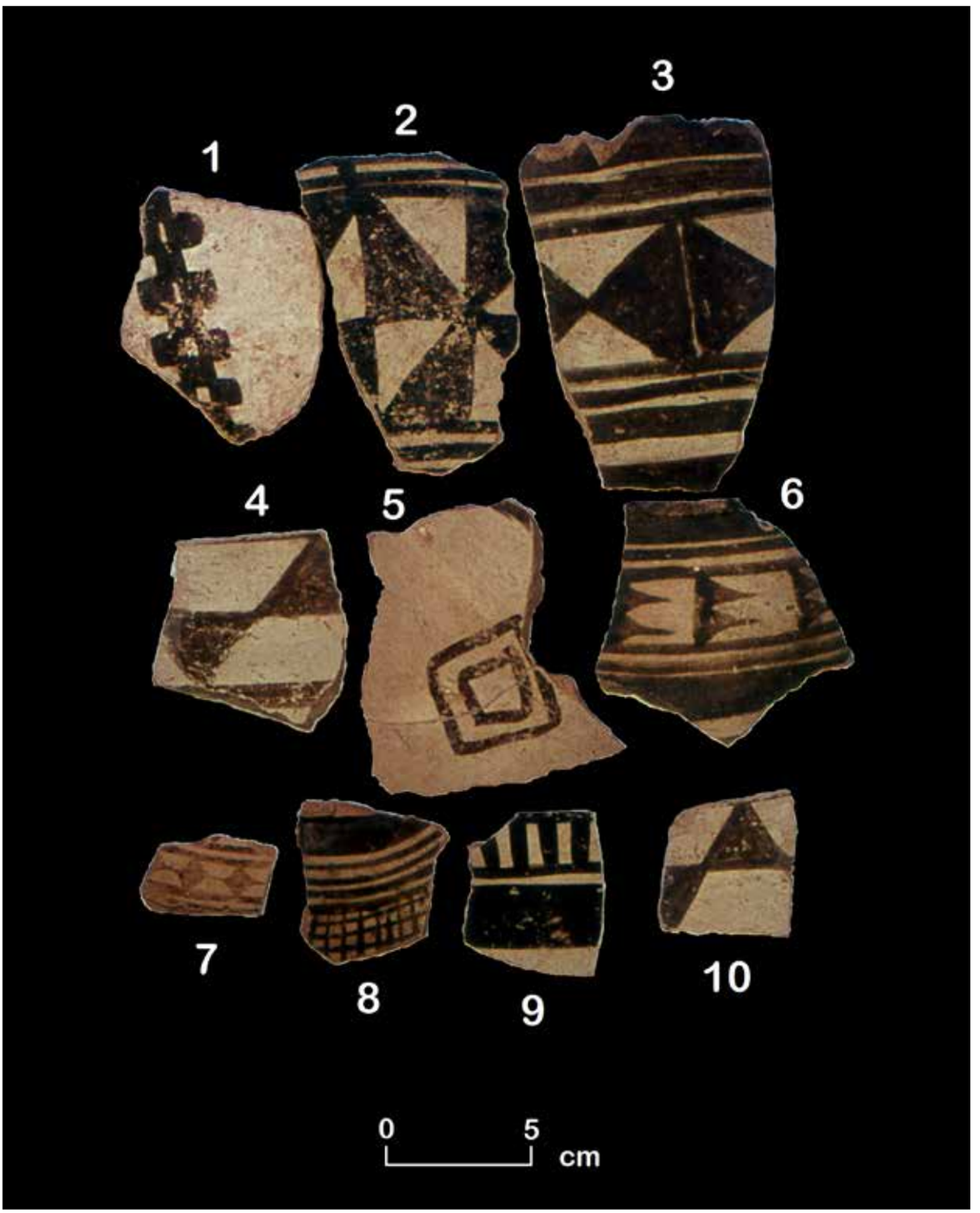


FIGURE 170. Ubaid 1–2 pottery from level III, Tell Abada.

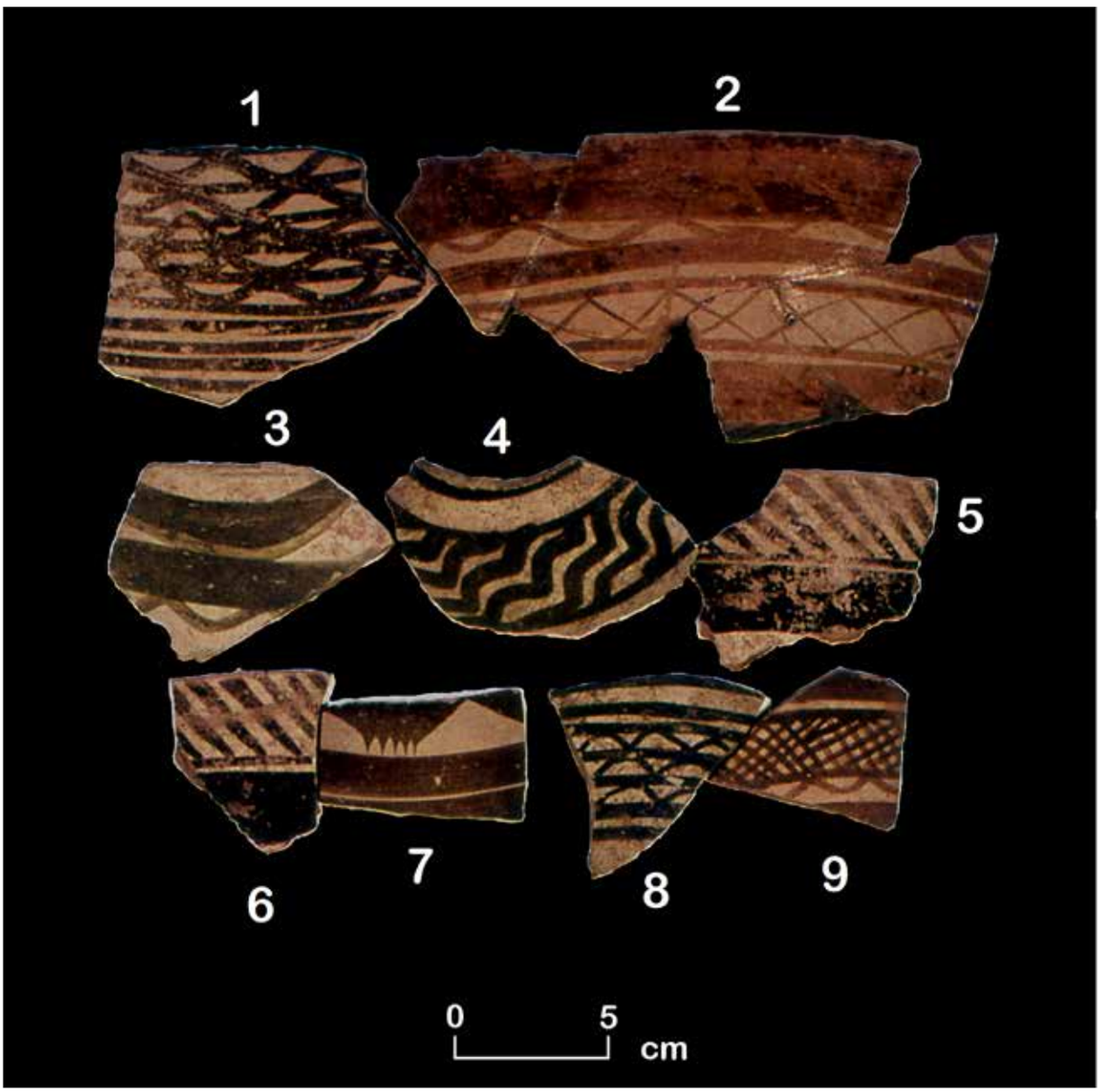


FIGURE 171. Ubaid 1–2 pottery from level III, Tell Abada.

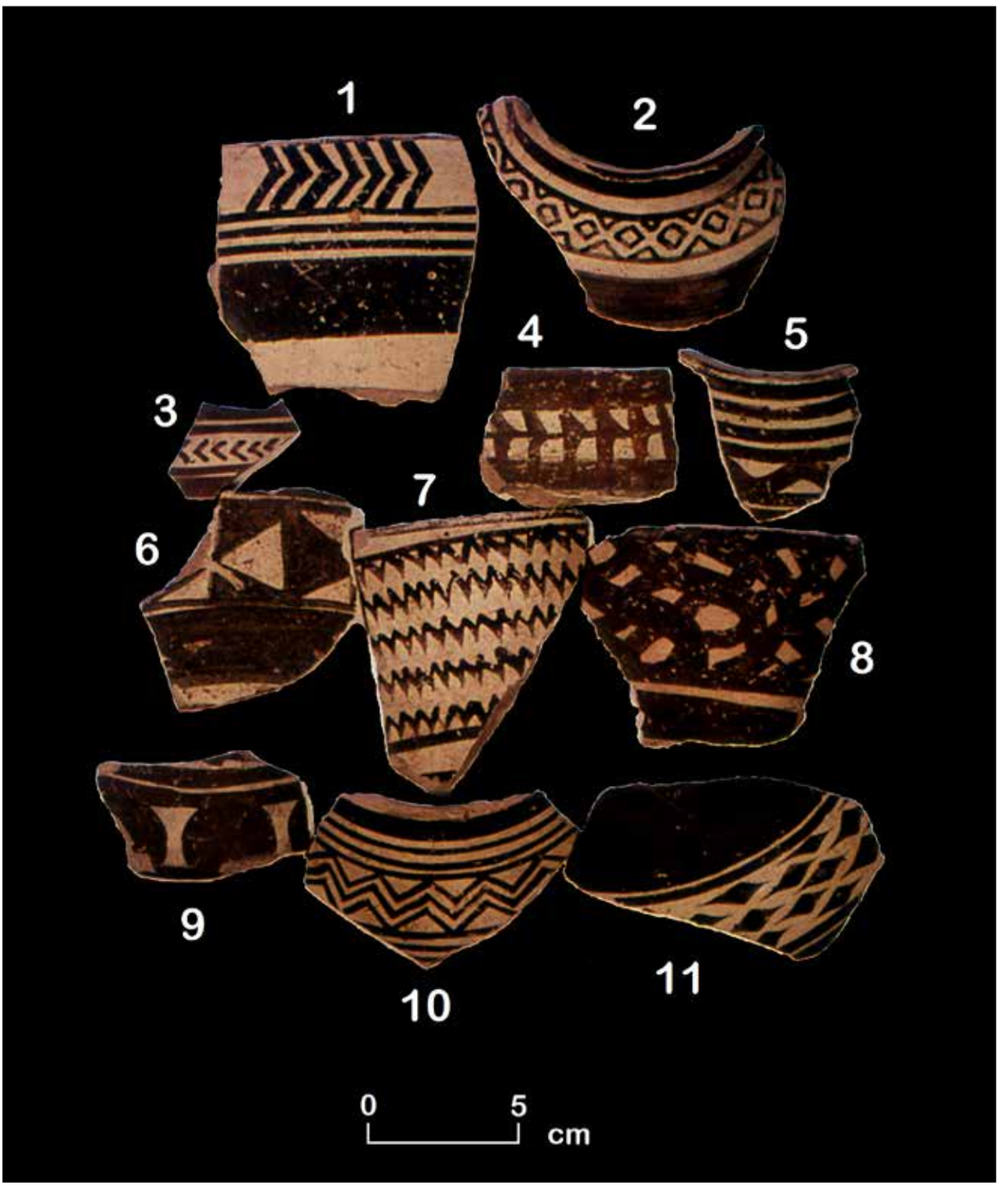


FIGURE 172. Ubaid 1–2 pottery from level III, Tell Abada.

FIGURE 173. Ubaid 1–2 pottery from level III, Tell Abada.

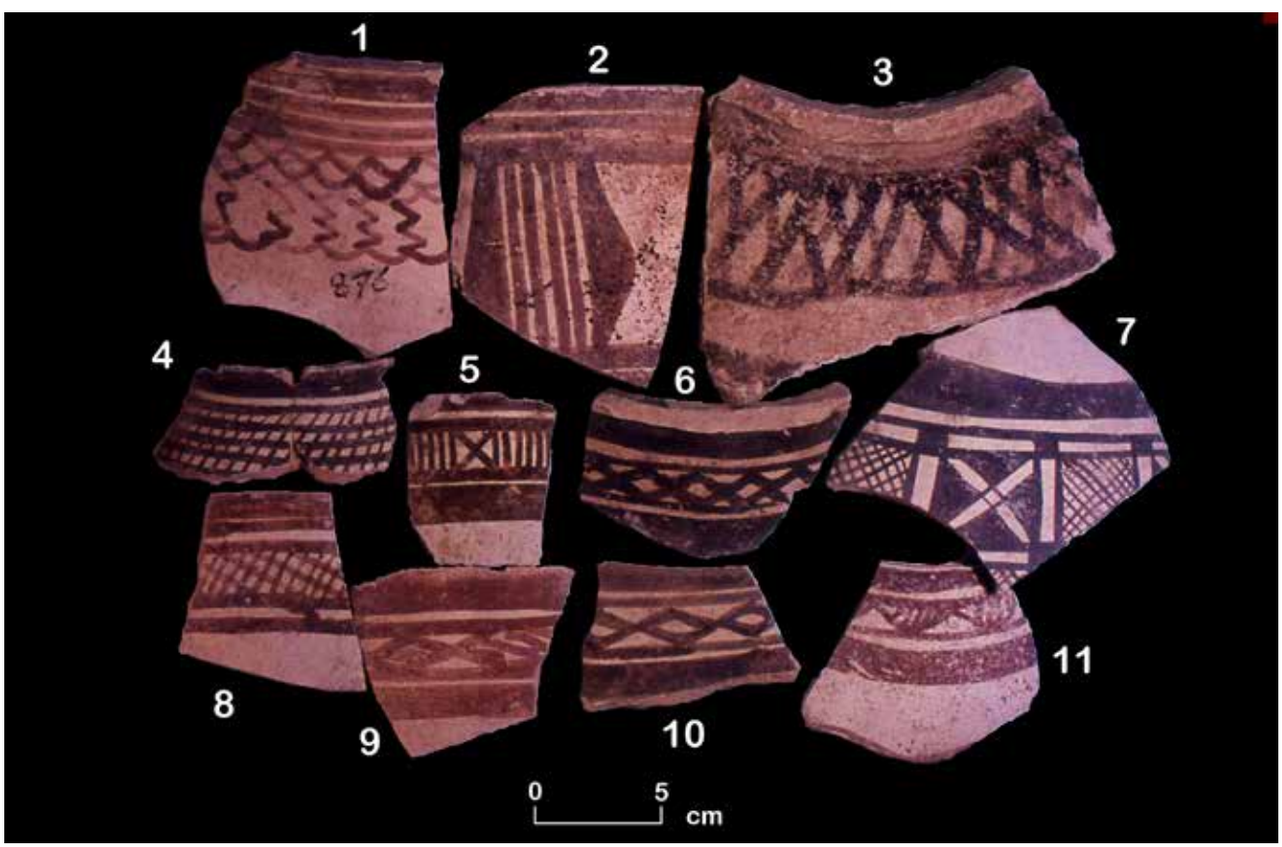


FIGURE 174. Ubaid 1–2 pottery from level III, Tell Abada.

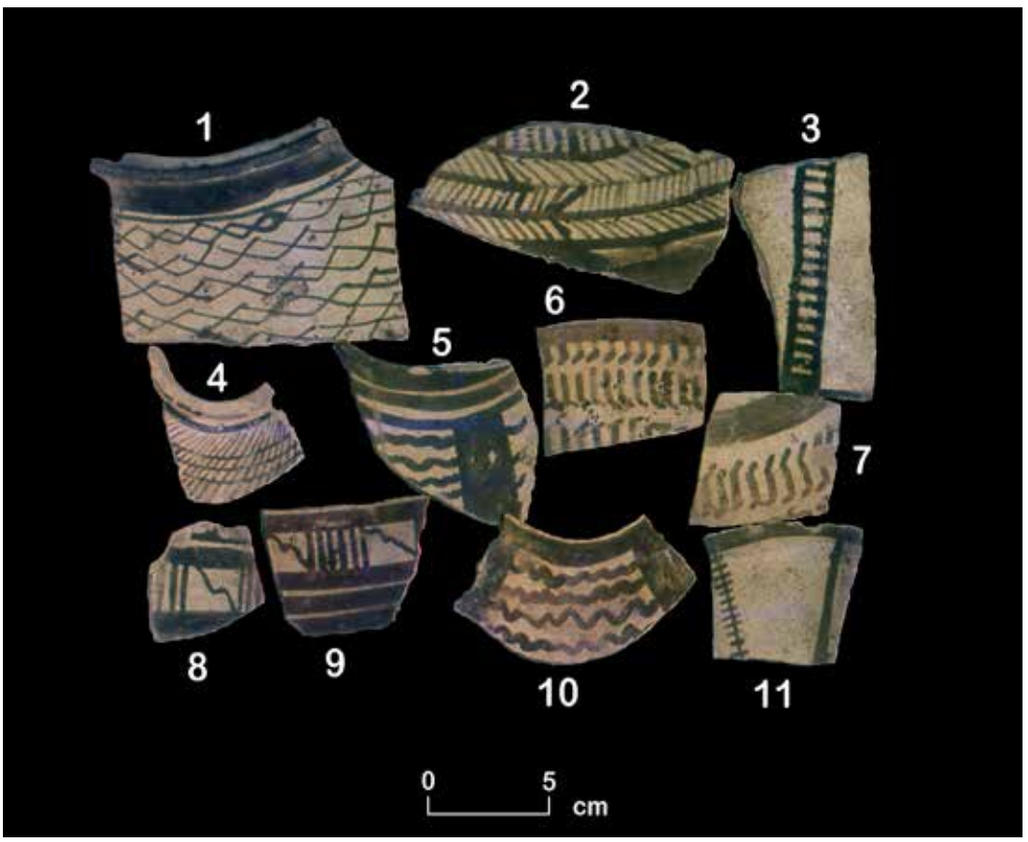


FIGURE 175. Ubaid 1–2 pottery from level III, Tell Abada.

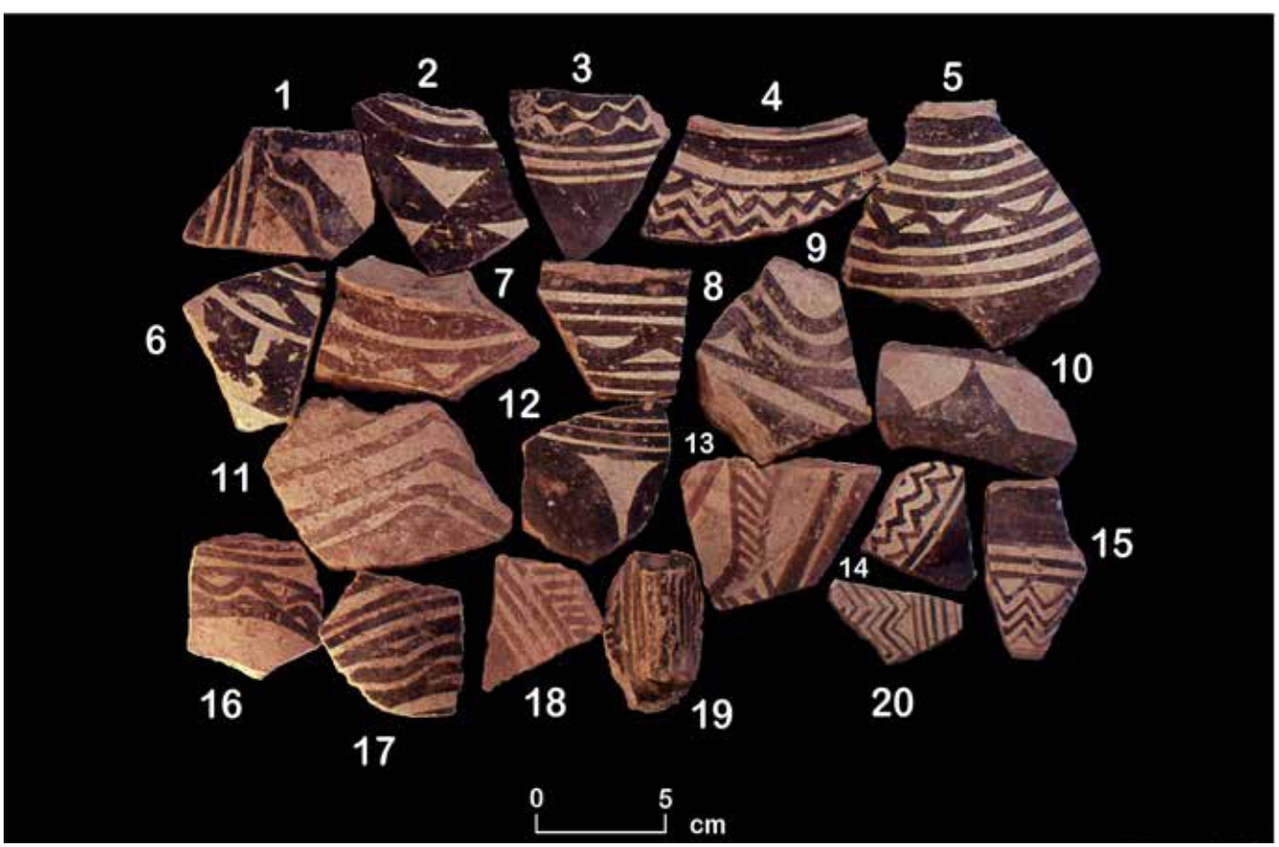


FIGURE 176. Ubaid 1–2 pottery from level III, Tell Abada.

FIGURE 177. Ubaid 1–2 pottery from level III, Tell Abada.

FIGURE 178. Ubaid 1–2 pottery from level III, Tell Abada.

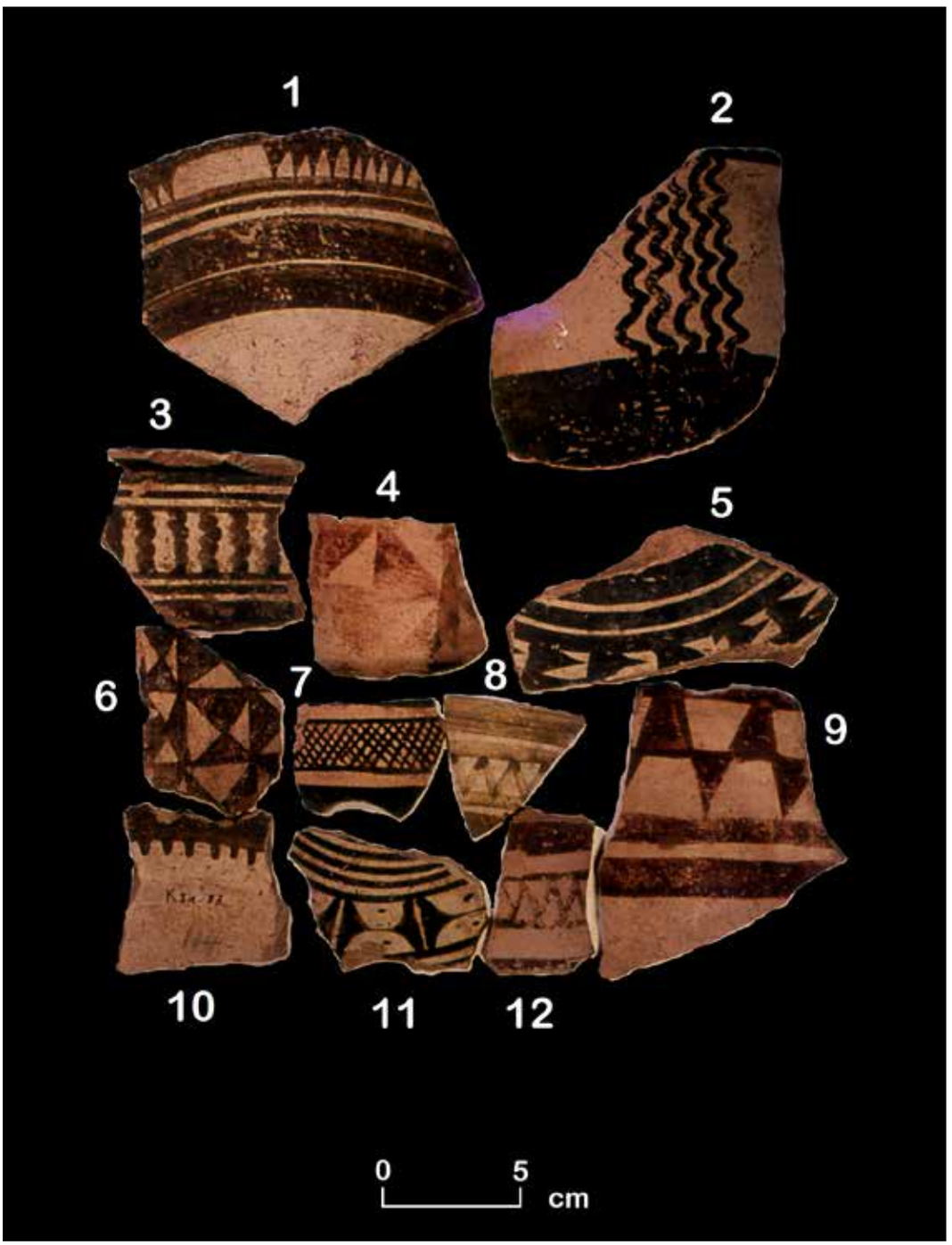


FIGURE 179. Ubaid 1–2 pottery from level III, Tell Abada.

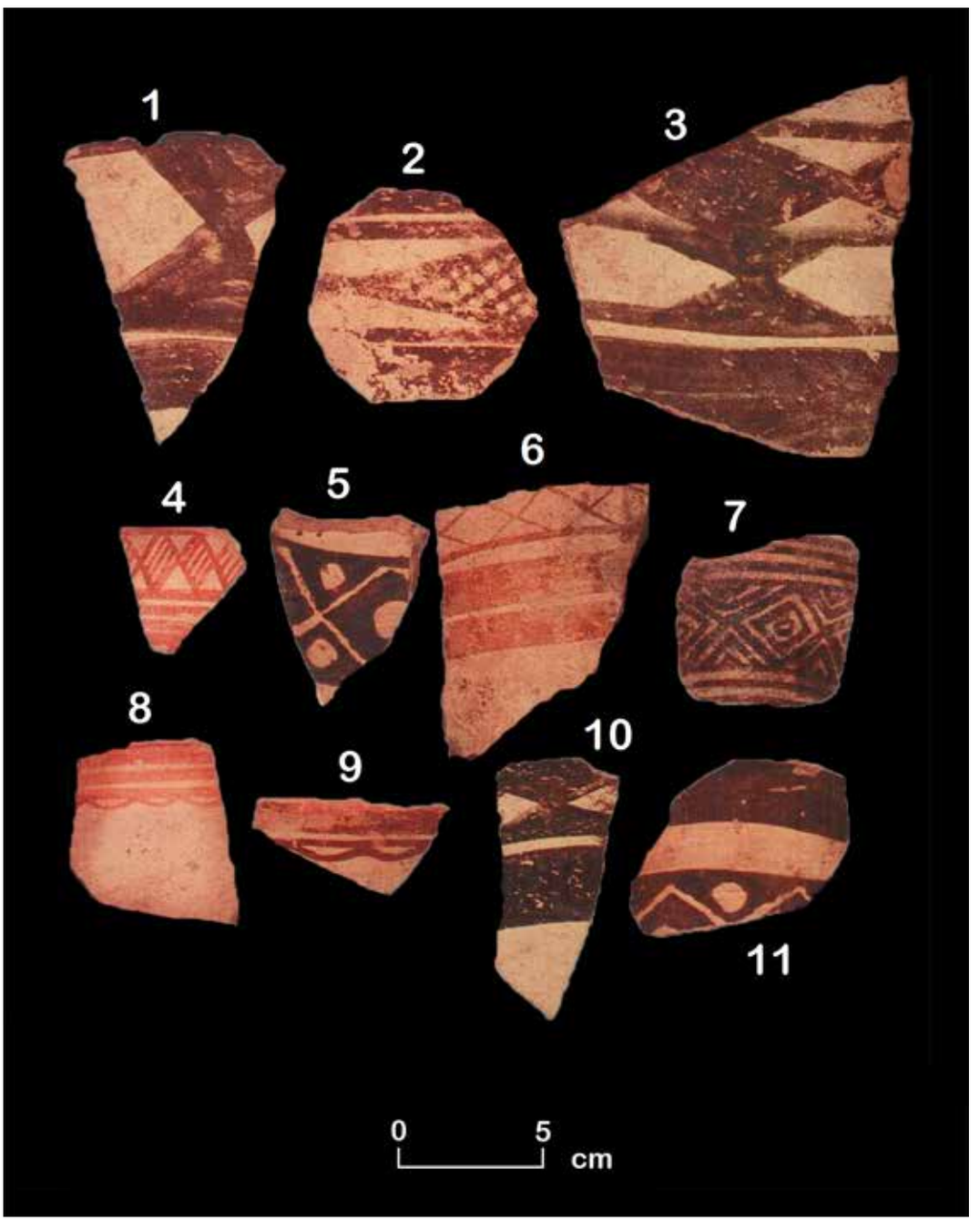


FIGURE 180. Ubaid 1–2 pottery from level III, Tell Abada.

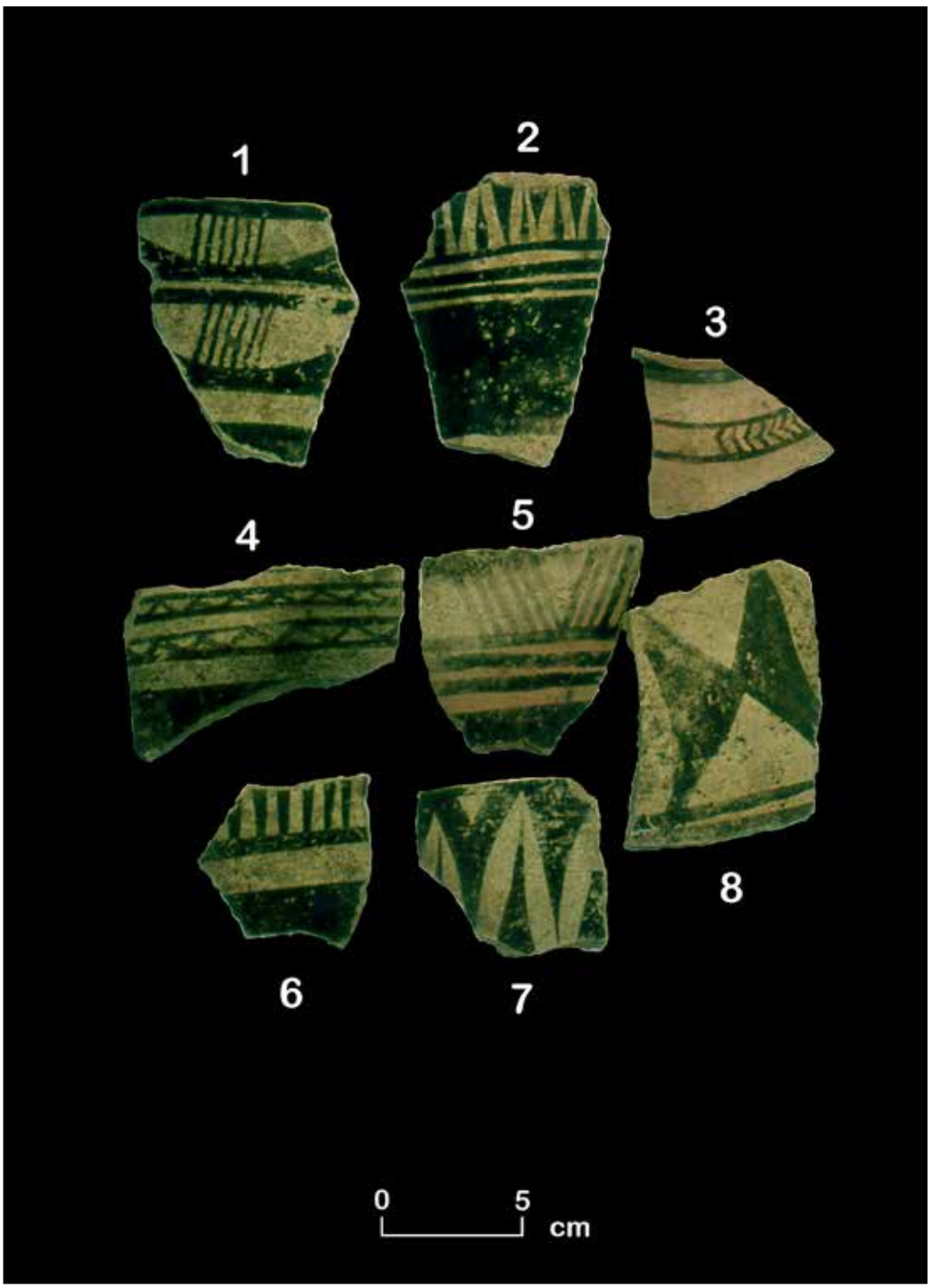


FIGURE 181. Ubaid 1–2 pottery from level III, Tell Abada.

FIGURE 182. Ubaid 1–2 pottery from level III, Tell Abada.

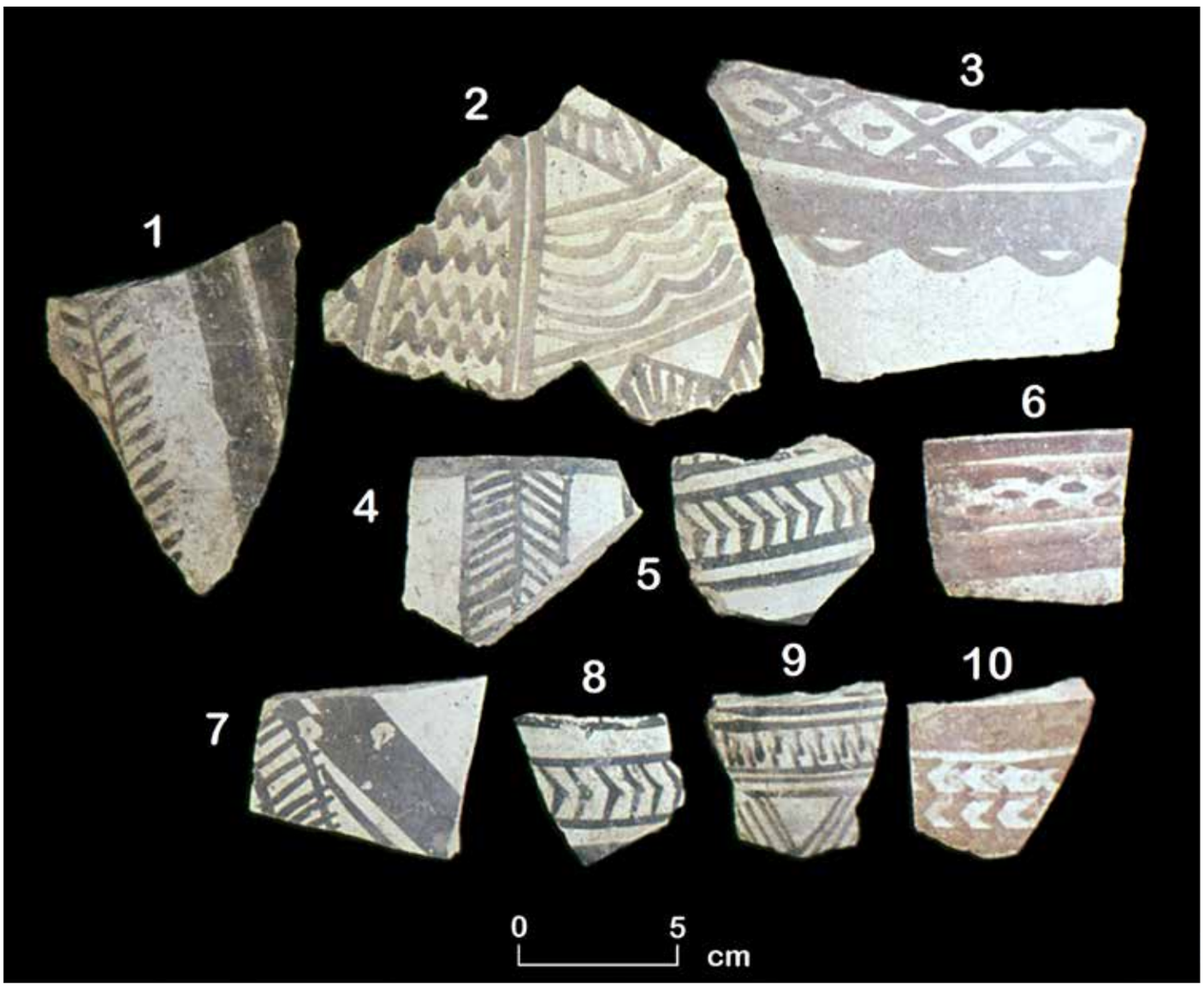


FIGURE 183. Ubaid 1–2 pottery from level III, Tell Abada.

FIGURE 184. Ubaid 1–2 pottery from level III, Tell Abada.

FIGURE 185. Ubaid 1–2 pottery from level III, Tell Abada.

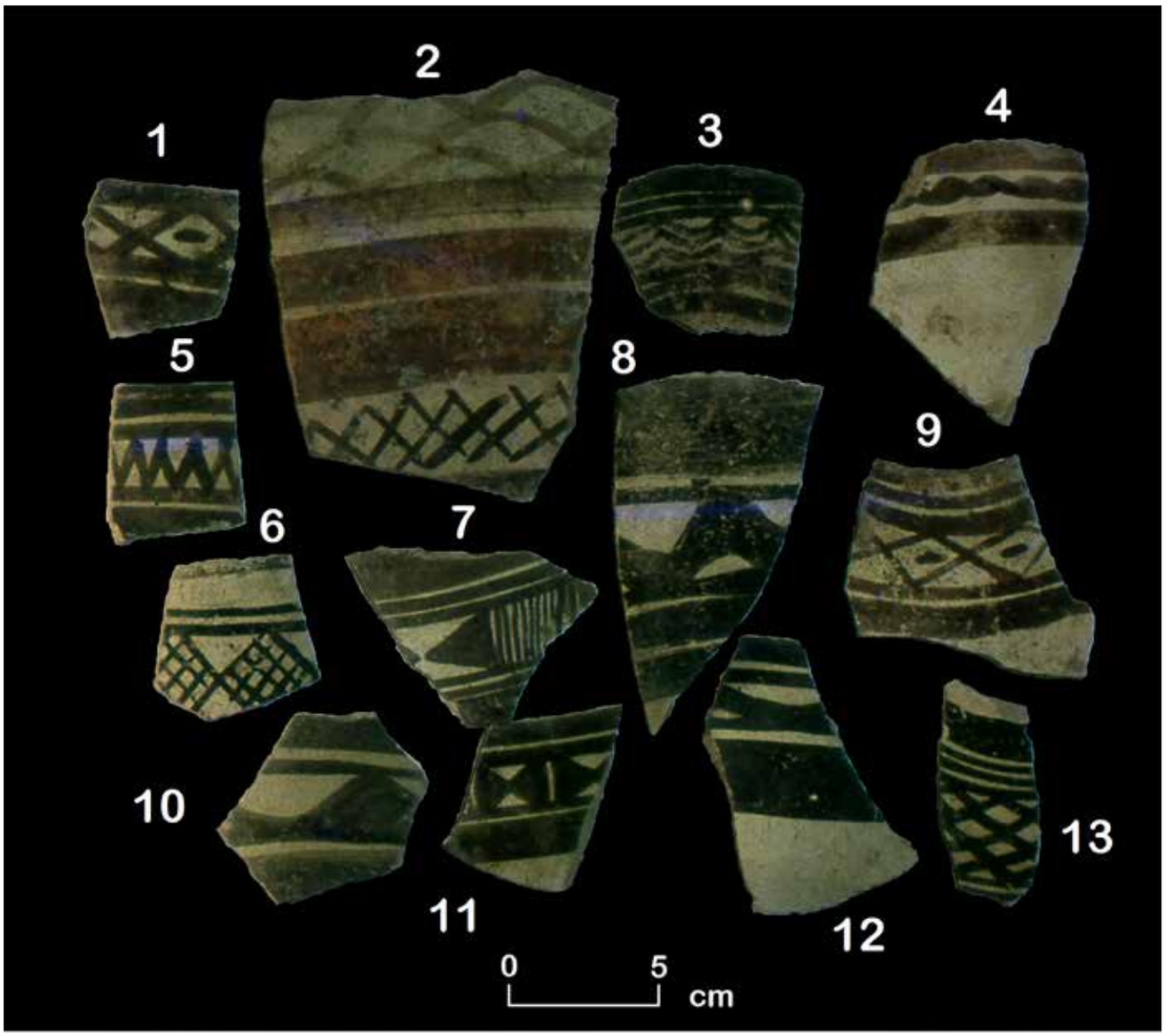


FIGURE 186. Ubaid 1–2 pottery from level III, Tell Abada.

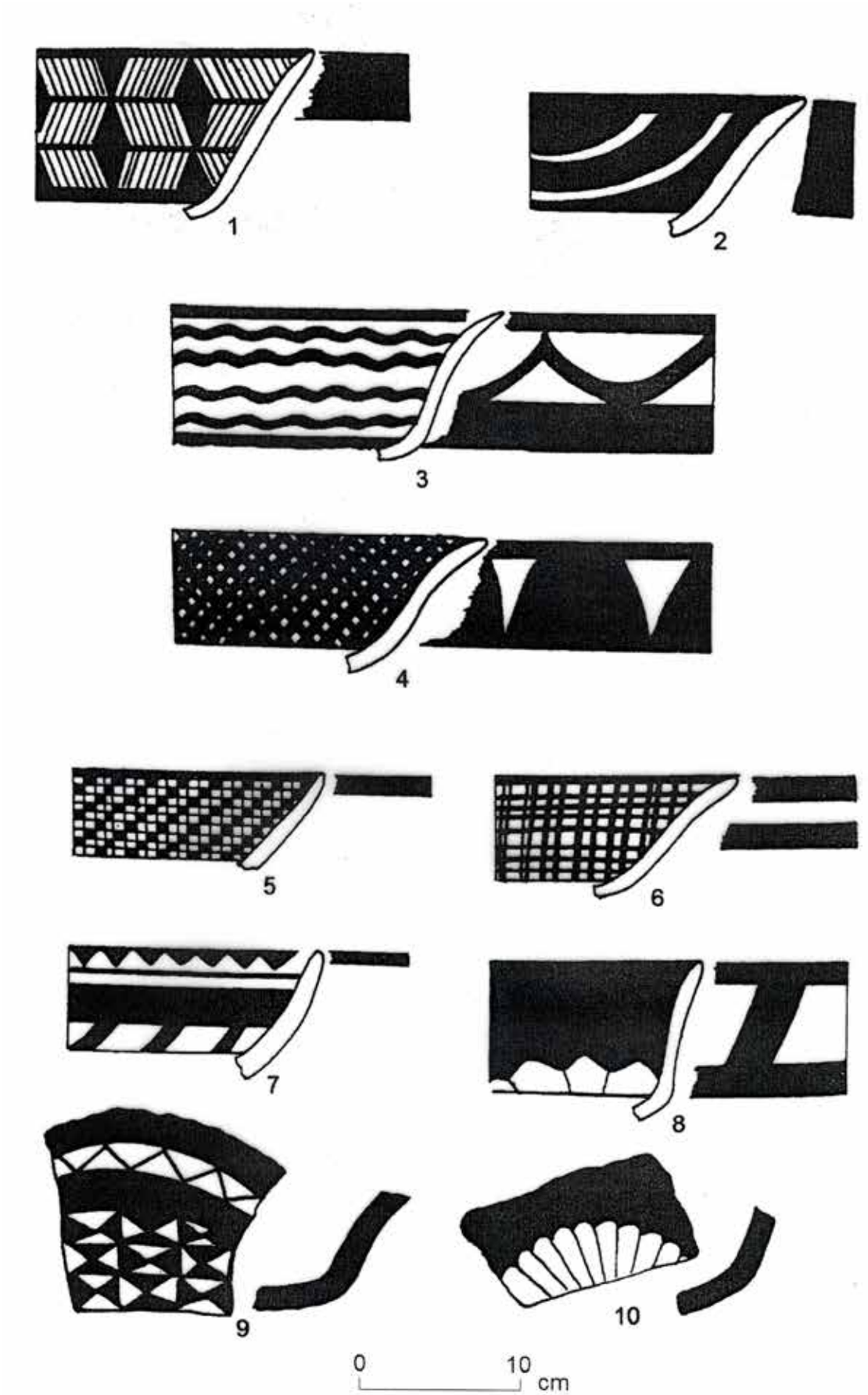


FIGURE 187. Ubaid 2 pottery from level III, Tell Abada.

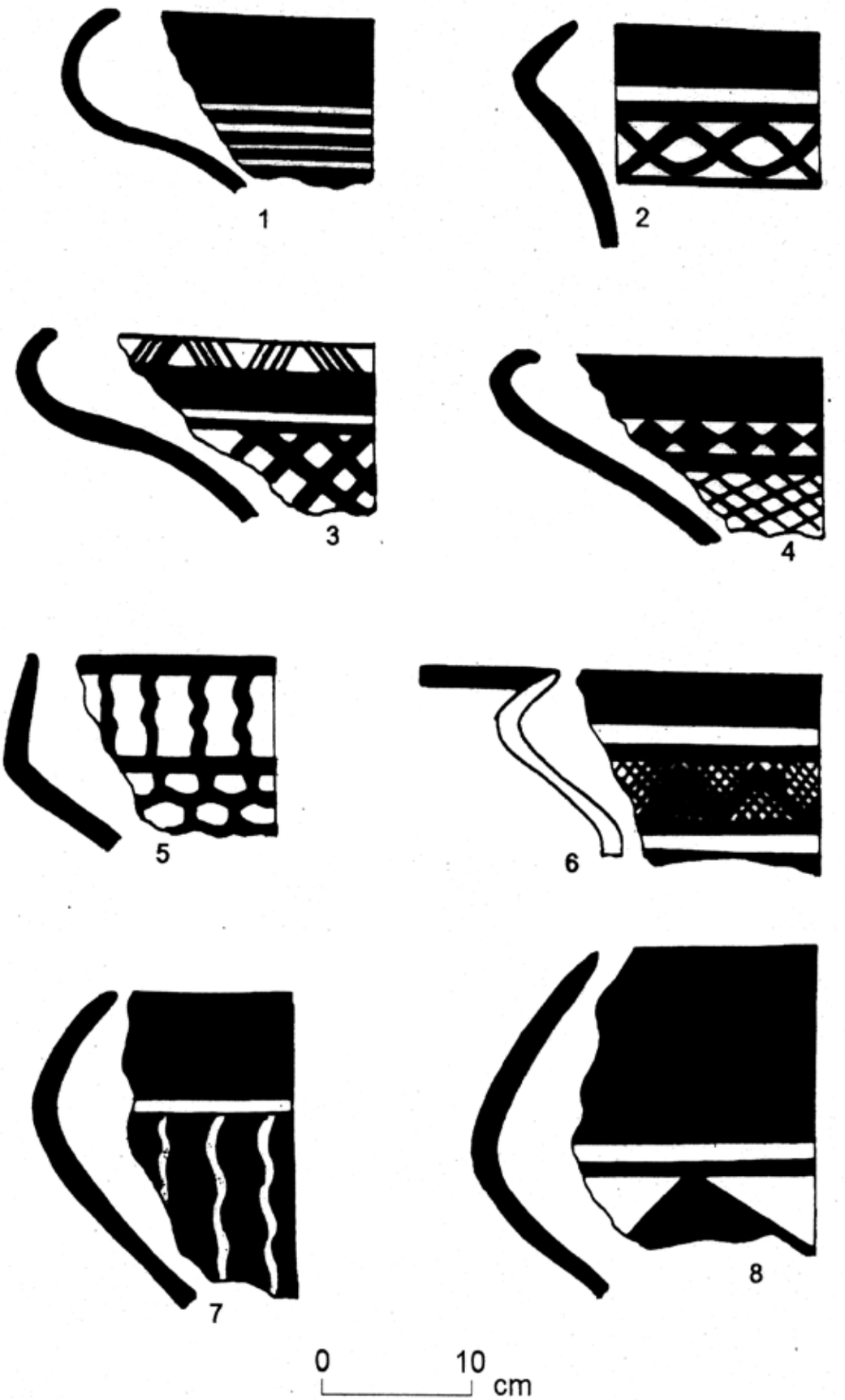


FIGURE 188. Ubaid 2 pottery from level III, Tell Abada.

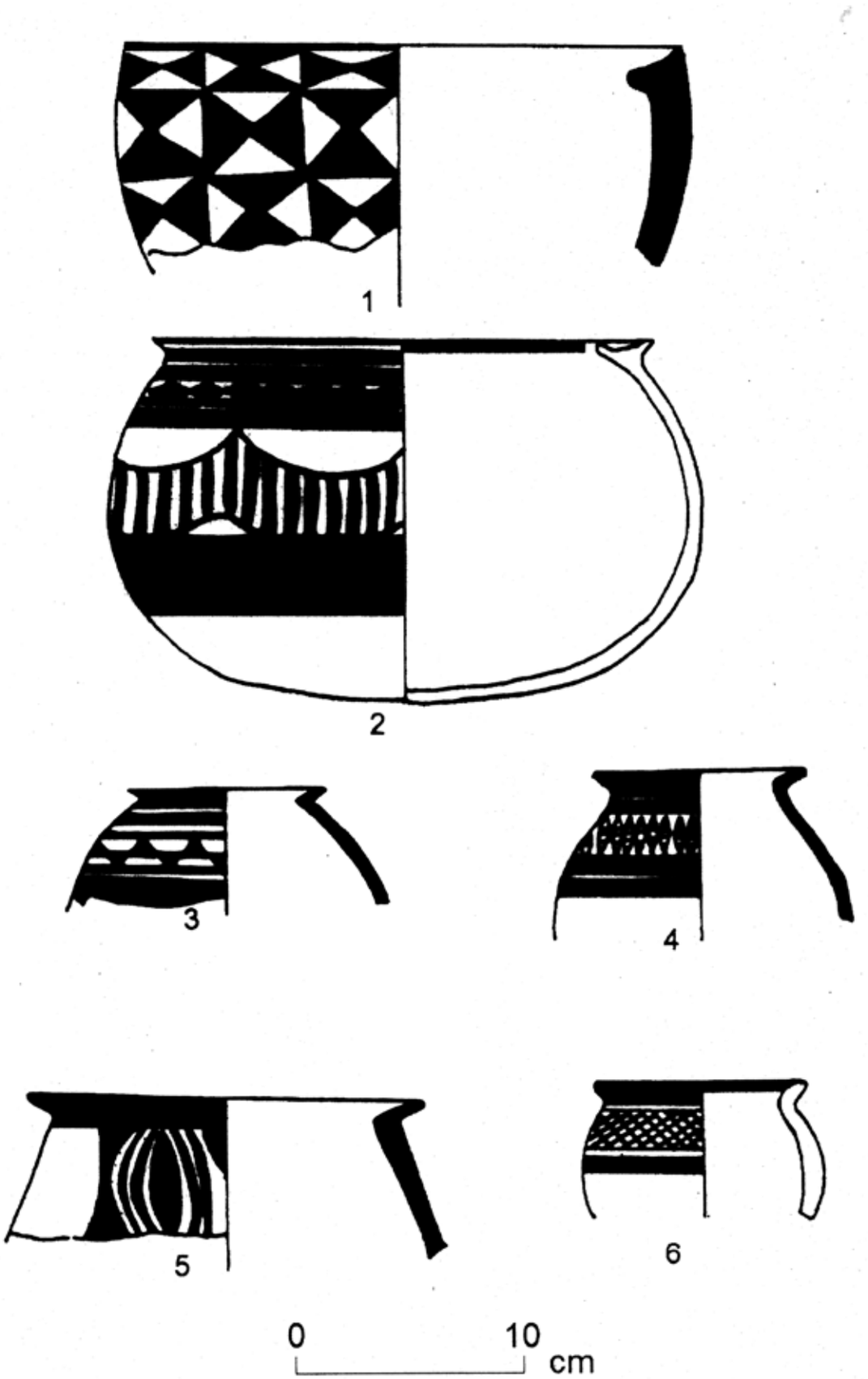


FIGURE 189. Ubaid 2 pottery from level III, Tell Abada.

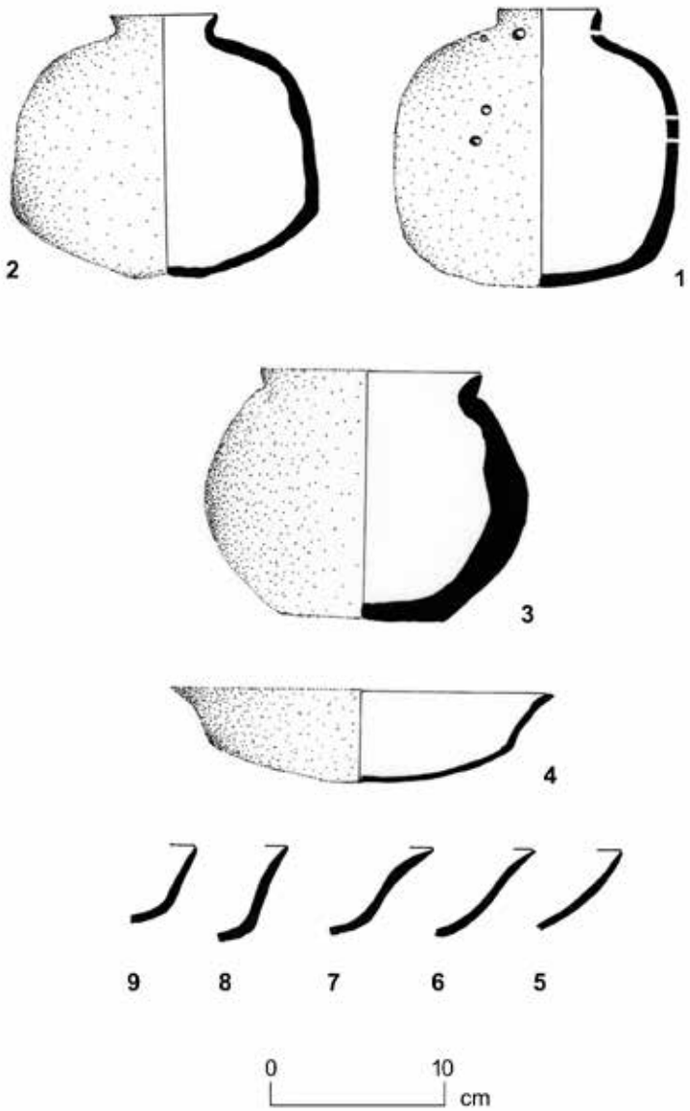


FIGURE 190. Plain Ubaid I–2 pottery from level III, Tell Abada.

FIGURE 191. Ubaid I–2 pottery, large plain jar from level III, Tell Abada.

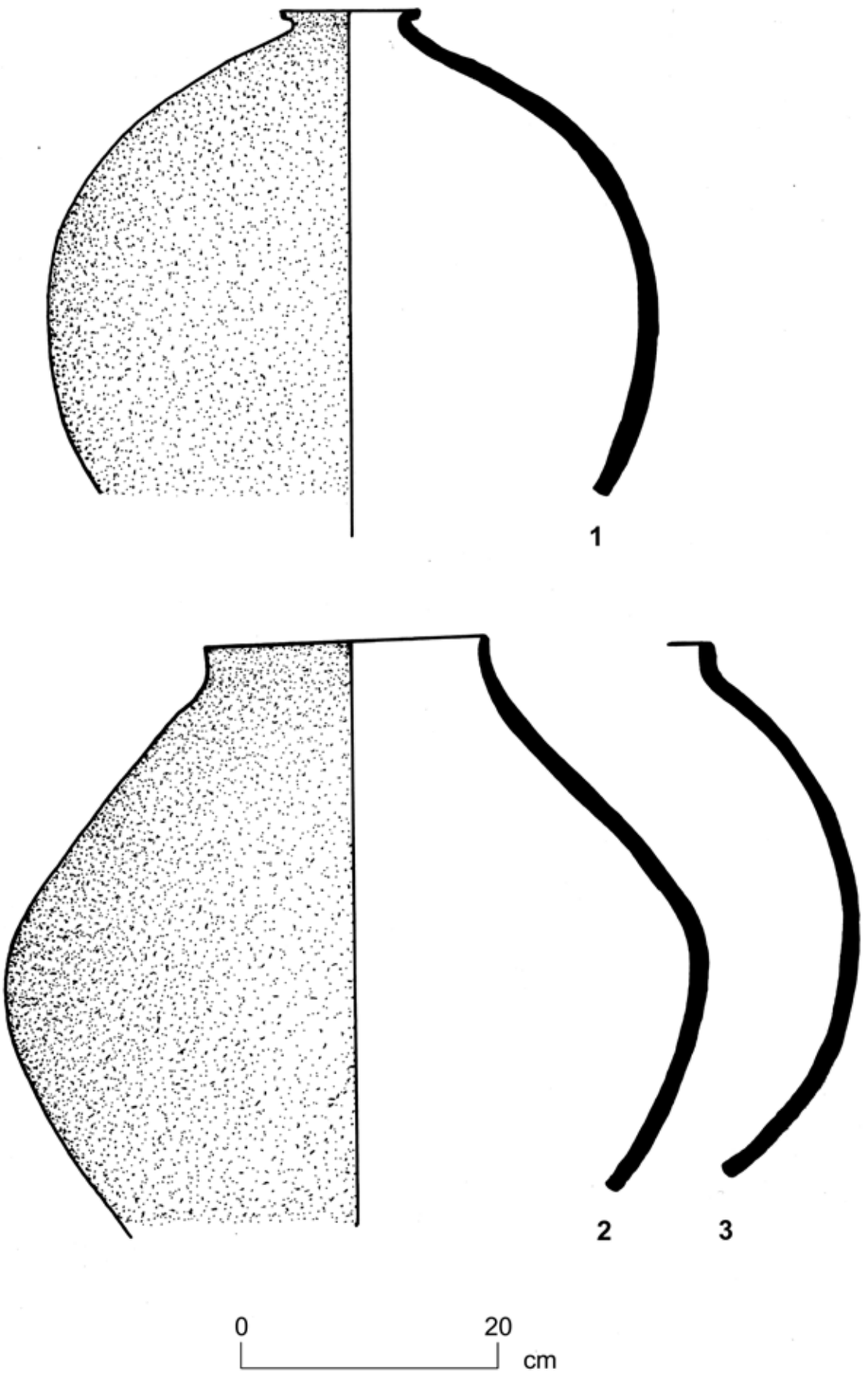


FIGURE 192. Ubaid I–2 pottery, plain jars from level III, Tell Abada.

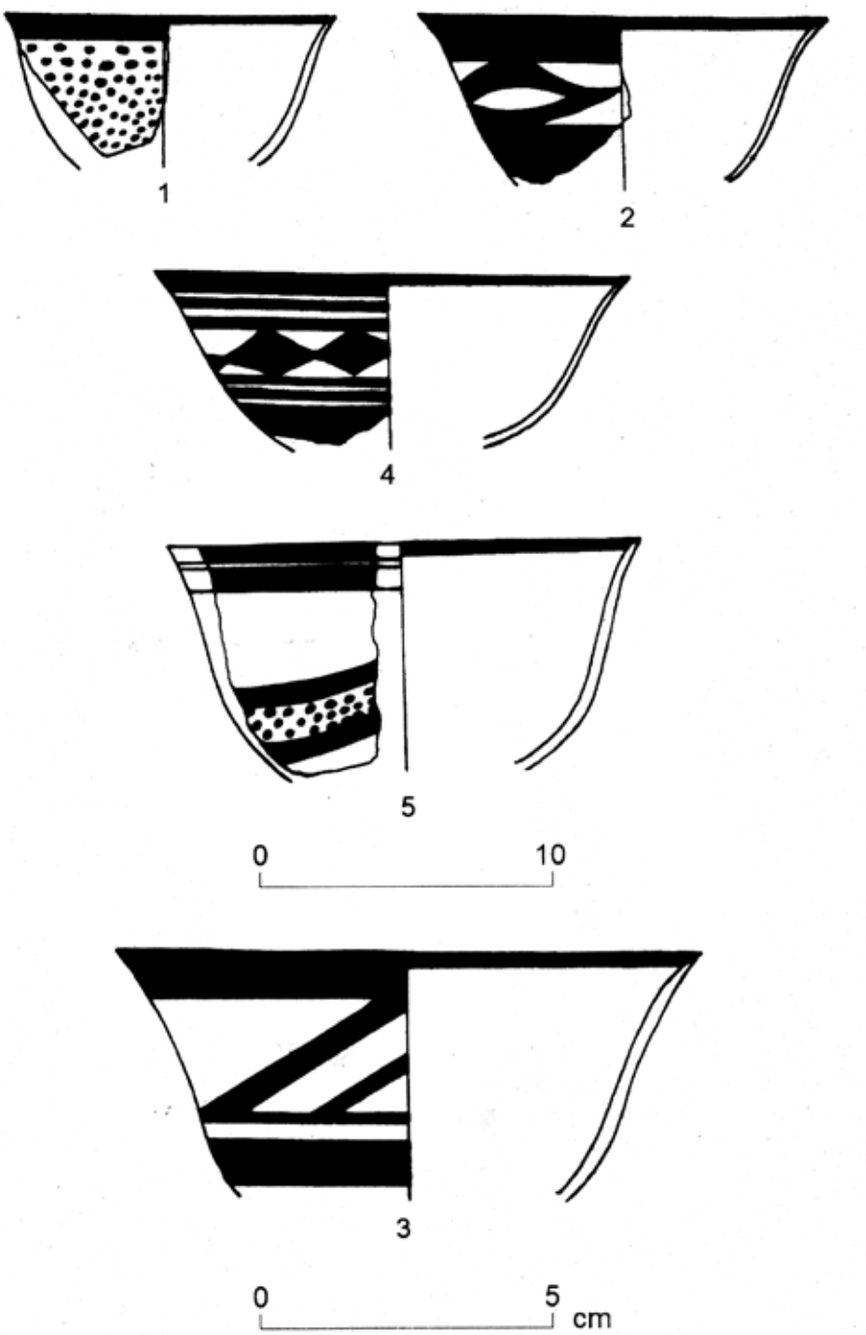


FIGURE 193. Ubaid 2–3 pottery, bowl type 1 from level II, Tell Abada.

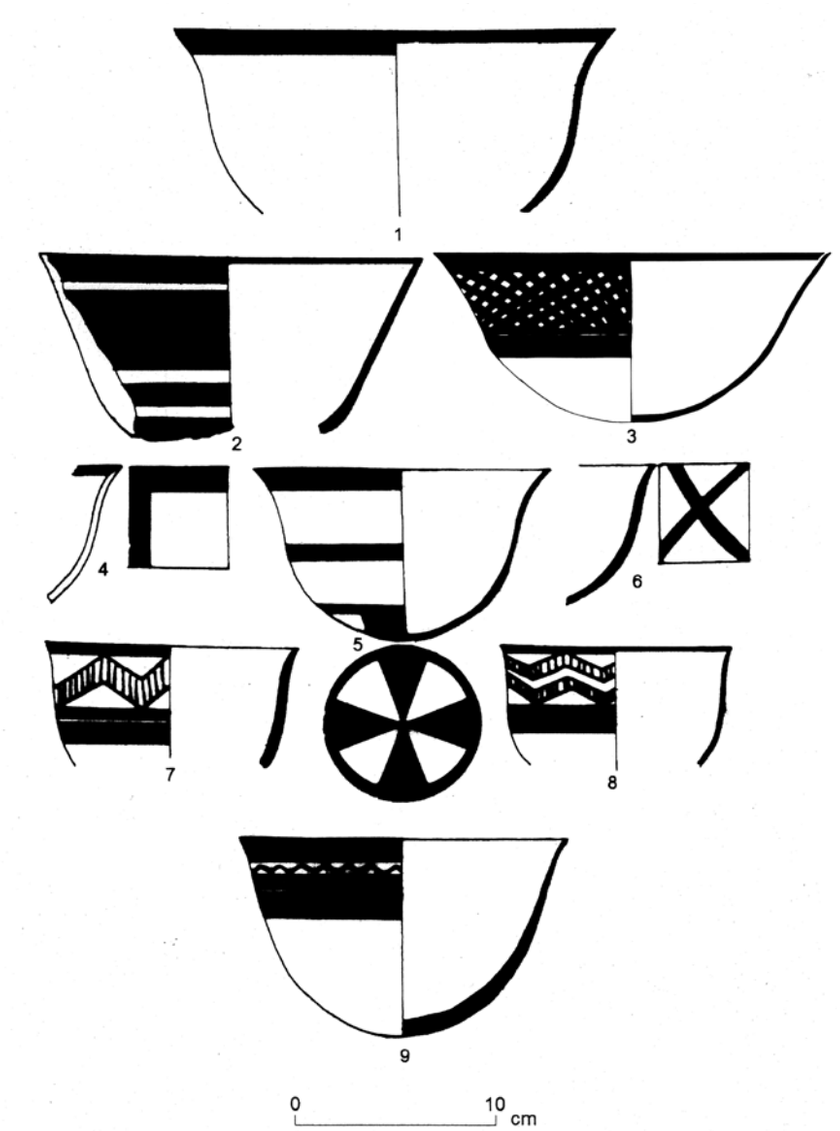


FIGURE 194. Ubaid 2–3 pottery, bowl type 1 from level II, Tell Abada.

FIGURE 195. Ubaid 2–3 pottery, bowl type 1 from level II, Tell Abada.

FIGURE 196. Ubaid 2–3 pottery, painted sherds from level II, Tell Abada.

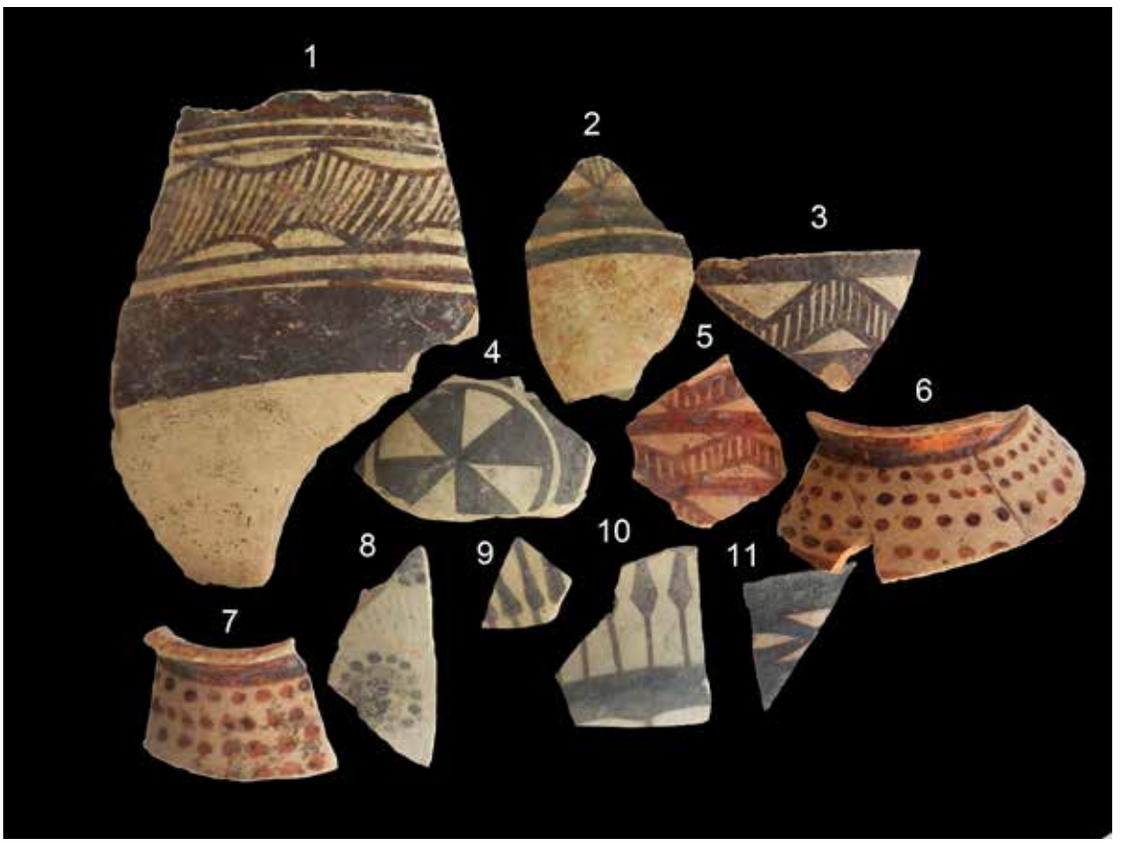


FIGURE 197. Painted motifs on sherds belonging to bowl type 1, from level I, Tell Abada.

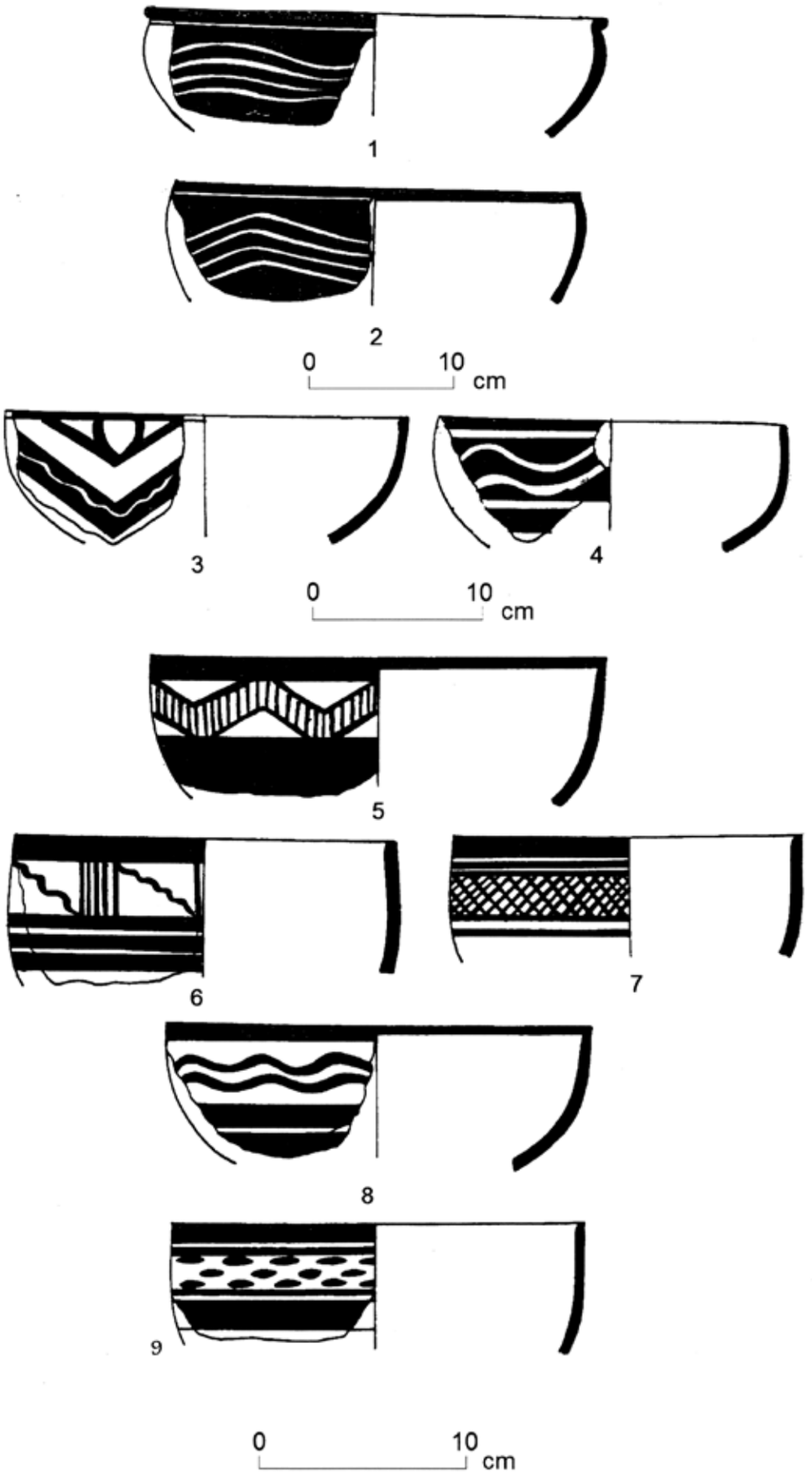


FIGURE 198. Ubaid 2–3 pottery, bowl type 2 (reconstructed) from level II, Tell Abada.

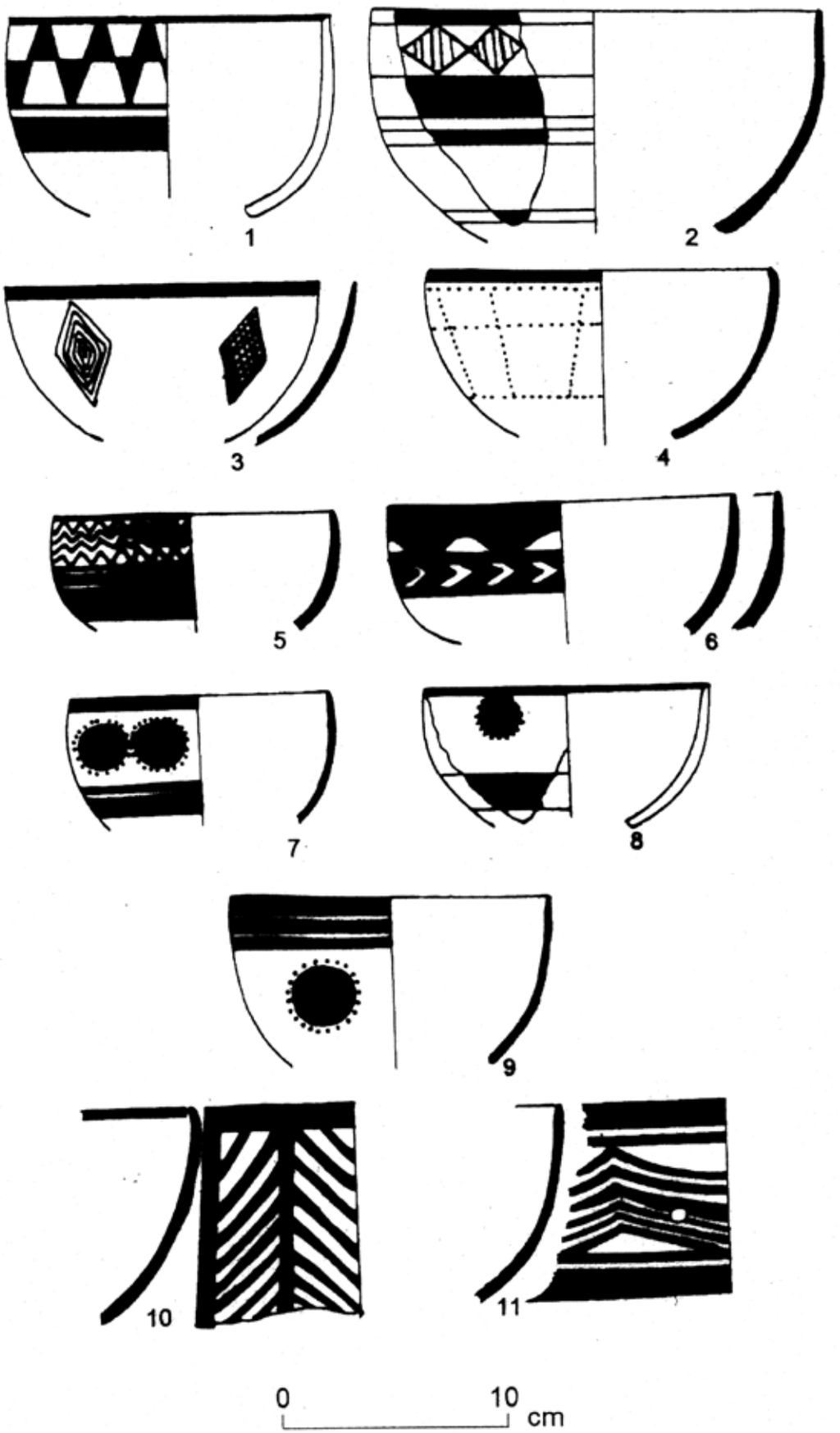


FIGURE 199. Ubaid 2–3 pottery, bowl type 2 (reconstructed) from level II, Tell Abada.

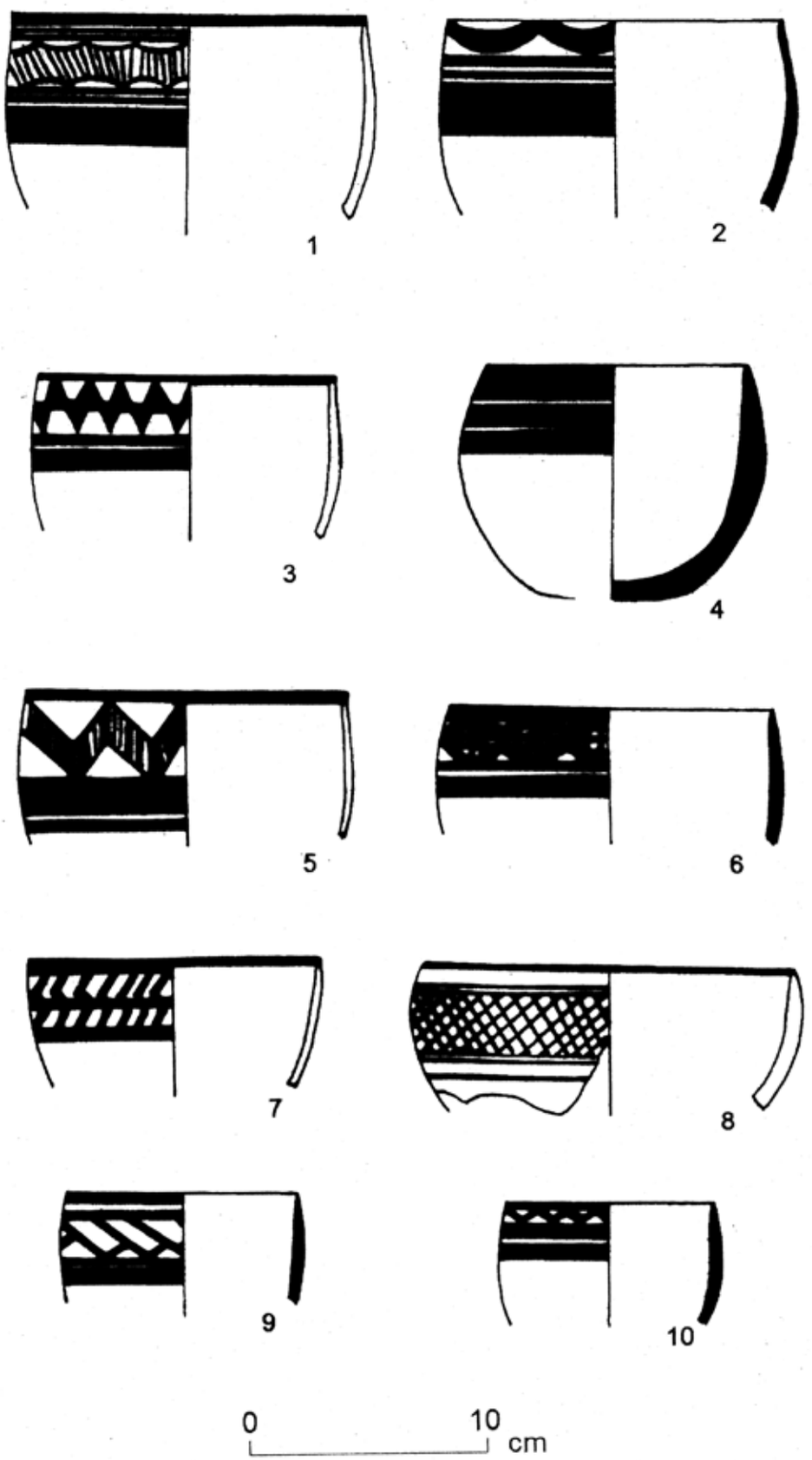


FIGURE 200. Ubaid 2–3 pottery, bowl type 2 (reconstructed) from level I, Tell Abada.

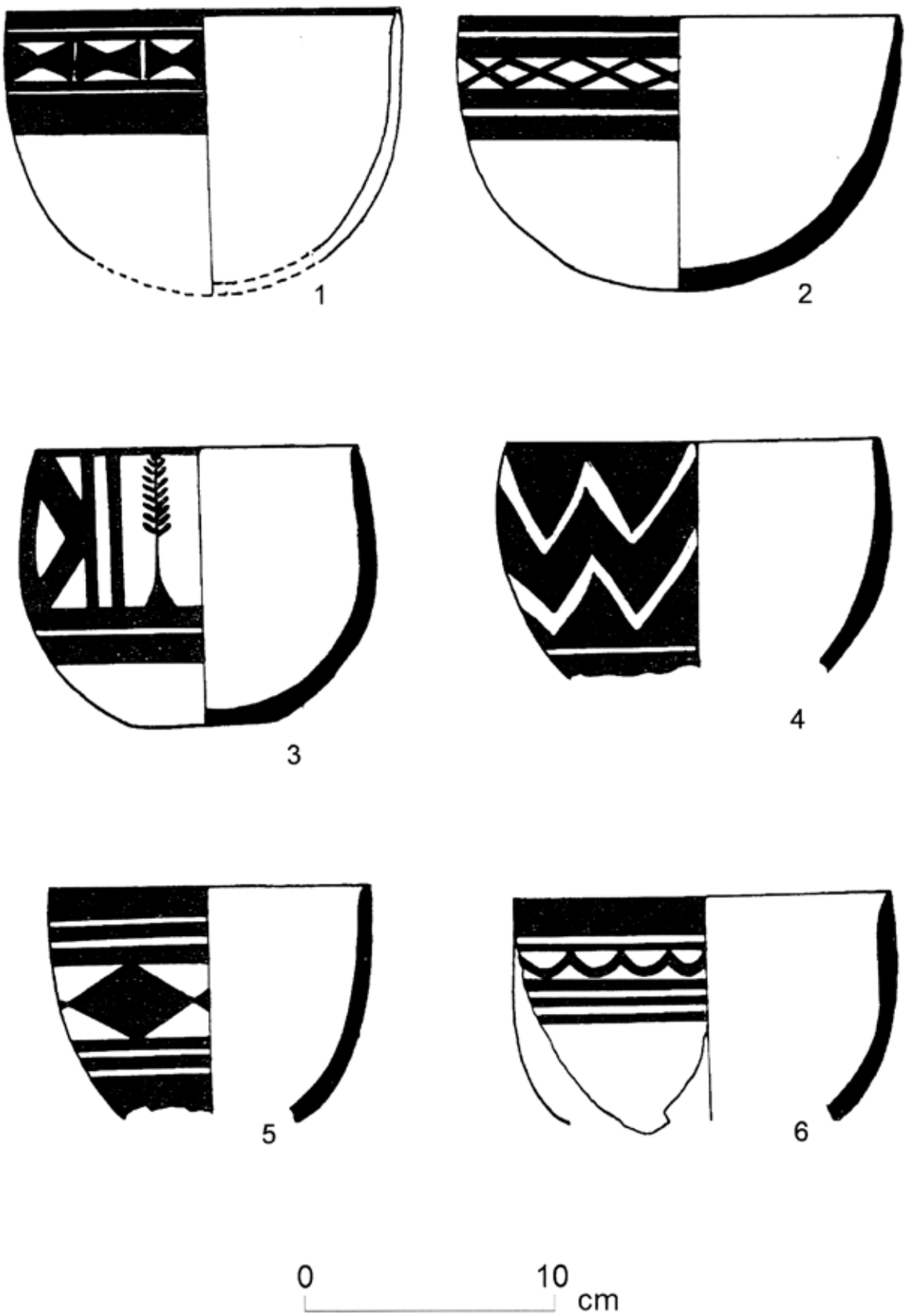


FIGURE 201. Ubaid 2–3 pottery, bowl type 2 (reconstructed) from level I, Tell Abada.

FIGURE 202. Ubaid 2–3 pottery, hemispherical bowl bearing geometrical and floral motifs (fig. 201: 3) from level I, Tell Abada.

FIGURE 203. Ubaid 2–3 pottery, hemispherical bowl with over-all painted decoration (fig. 201: 4) from level I, Tell Abada.

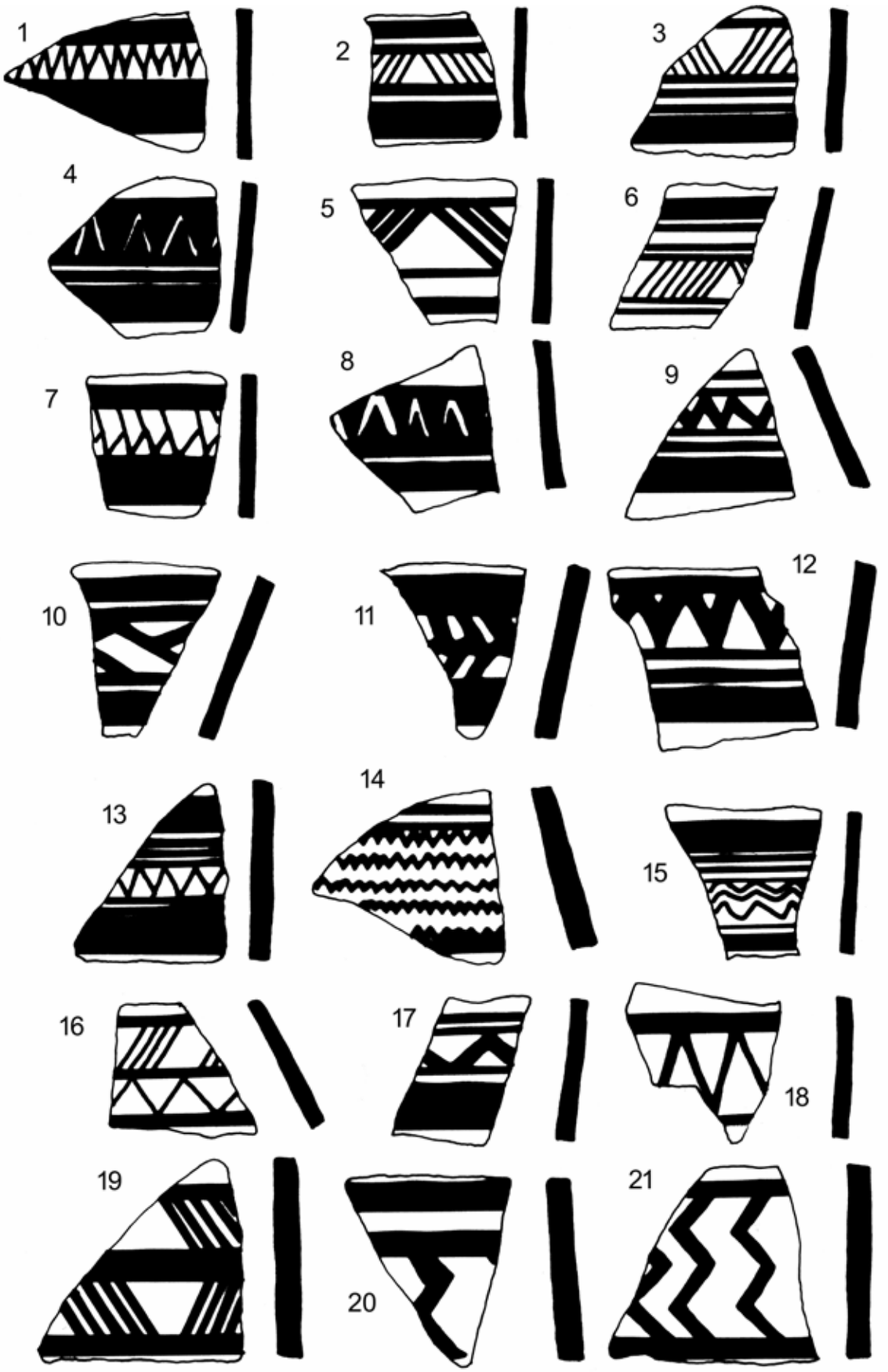


FIGURE 204. Ubaid 2–3 painted motifs on sherds, bowl type 2 from level II, Tell Abada.

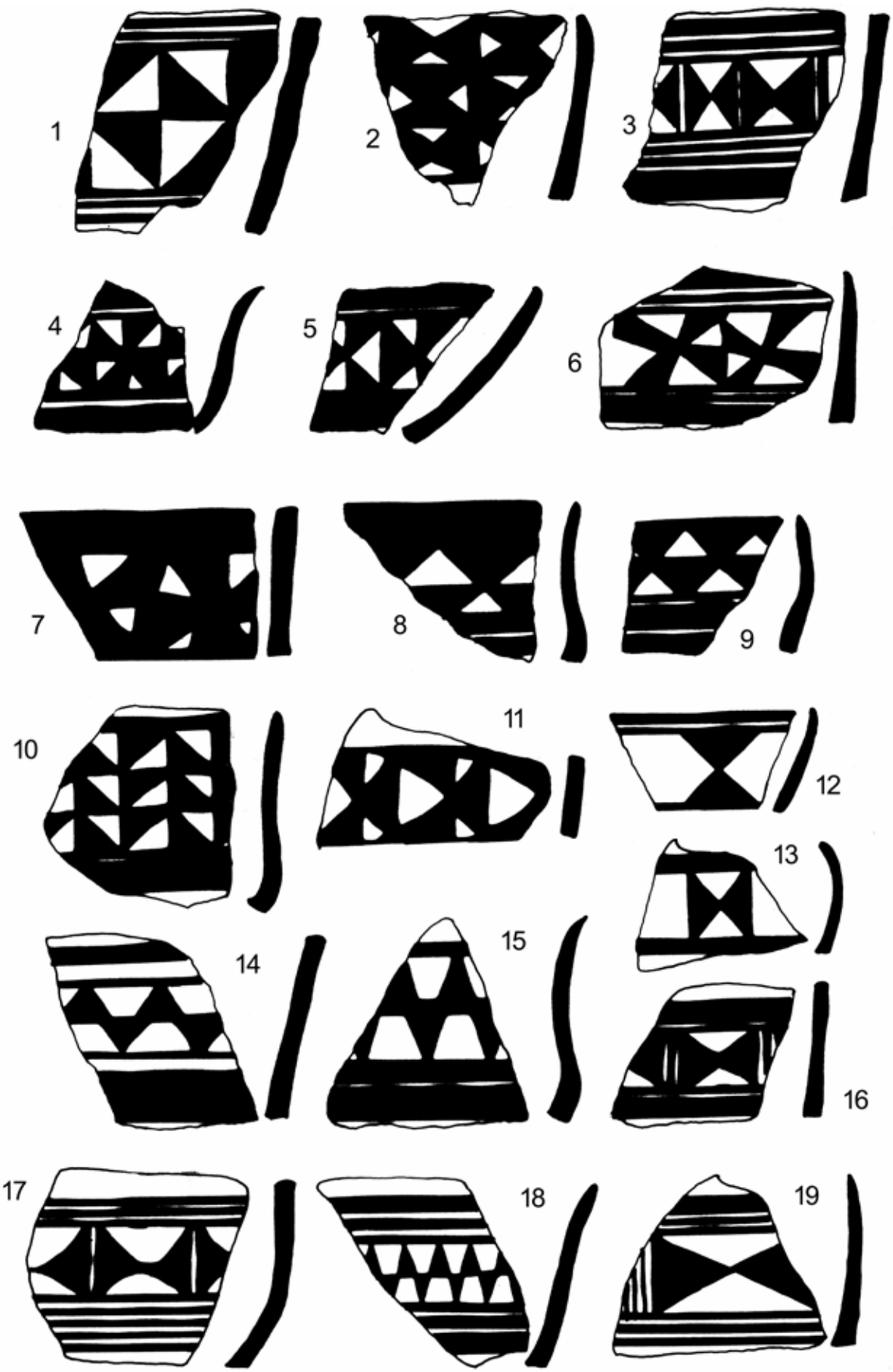


FIGURE 205. Ubaid 2–3 painted motifs on sherds, bowl type 2 from level II, Tell Abada.

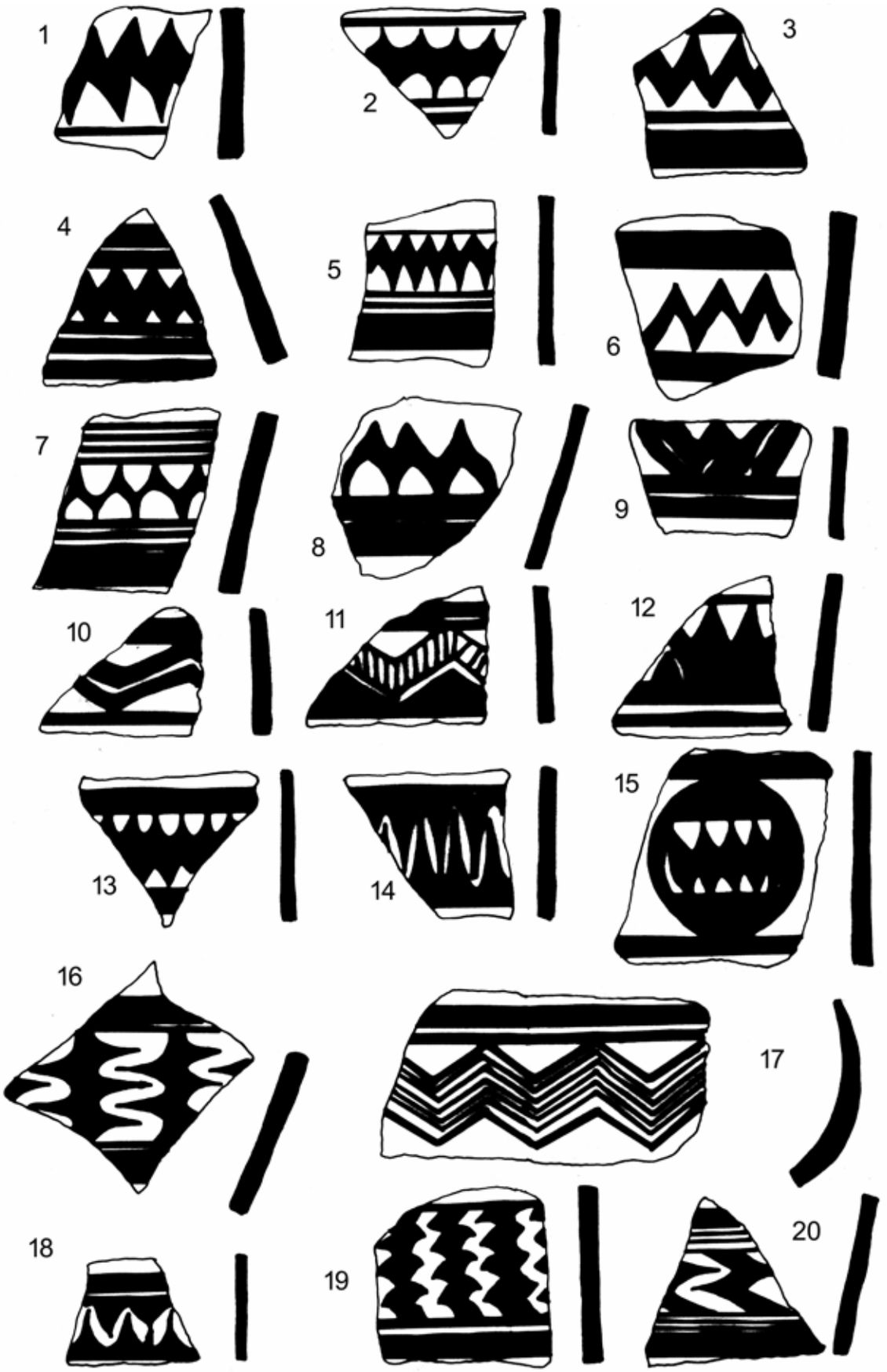


FIGURE 206. Ubaid 2–3 painted motifs on sherds, bowl type 2 from level I, Tell Abada.

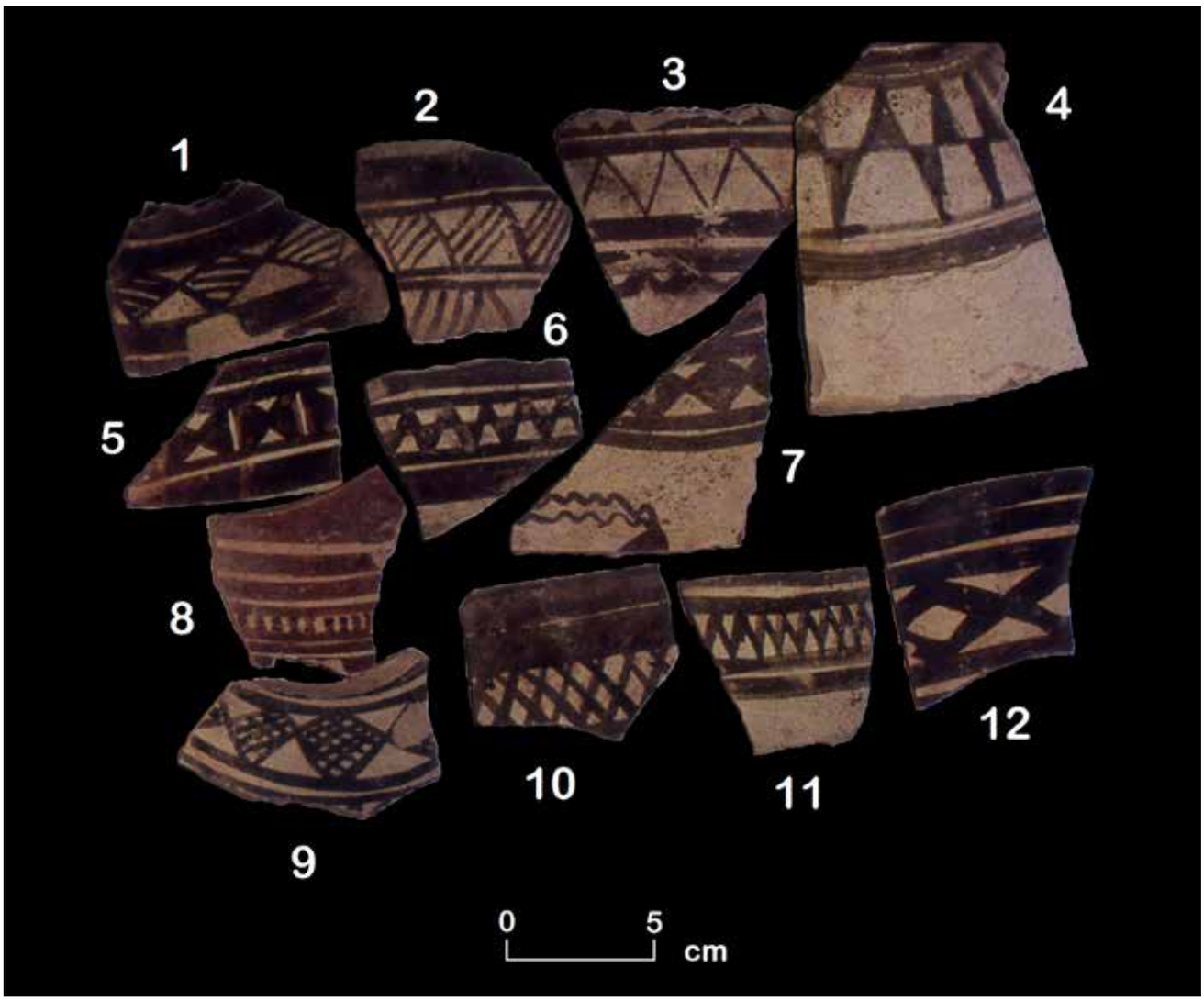


FIGURE 207. Ubaid 2–3 painted motifs on sherds from levels I–II, Tell Abada.

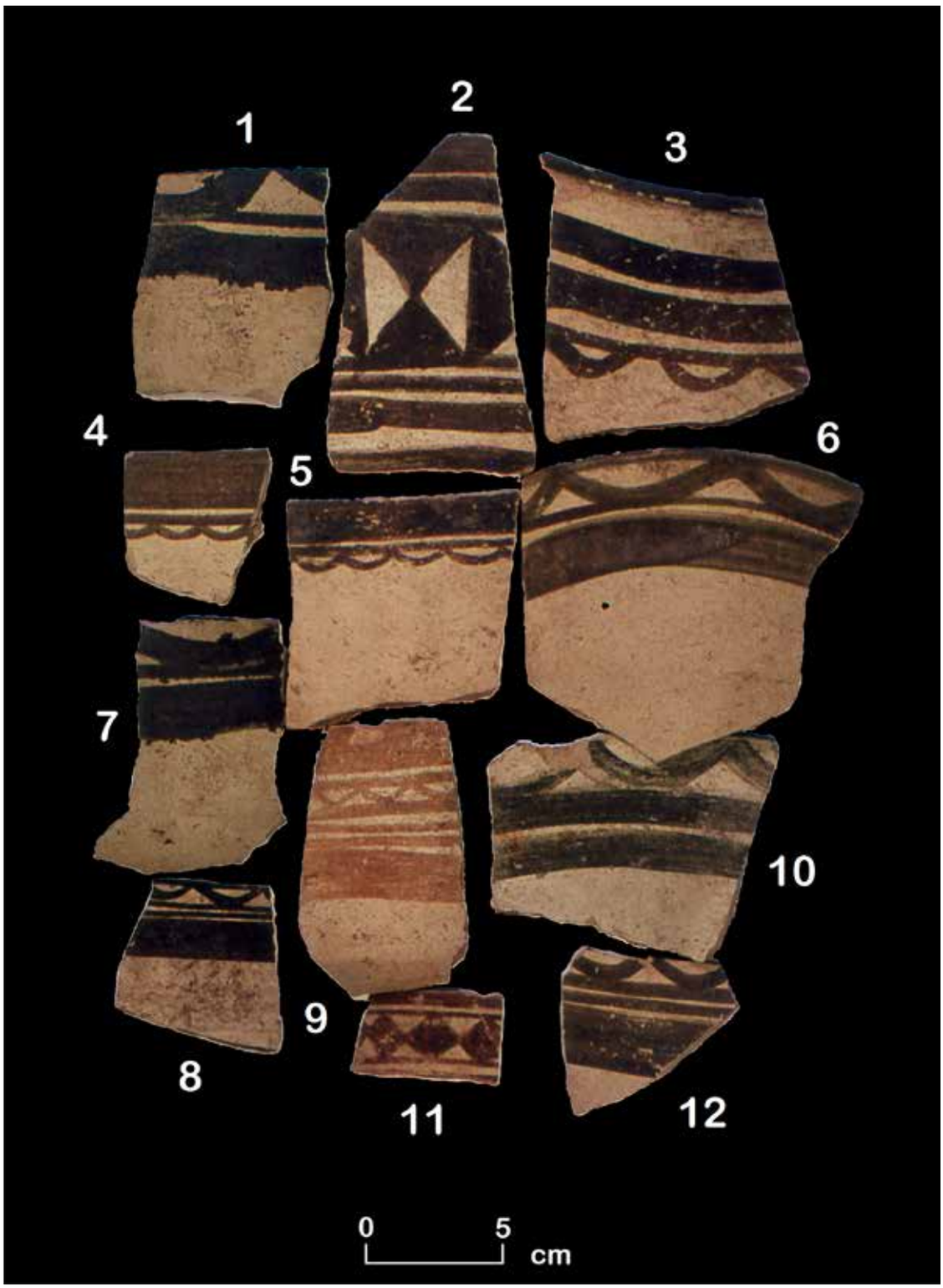


FIGURE 208. Ubaid 2–3 painted motifs on sherds from levels I–II, Tell Abada.

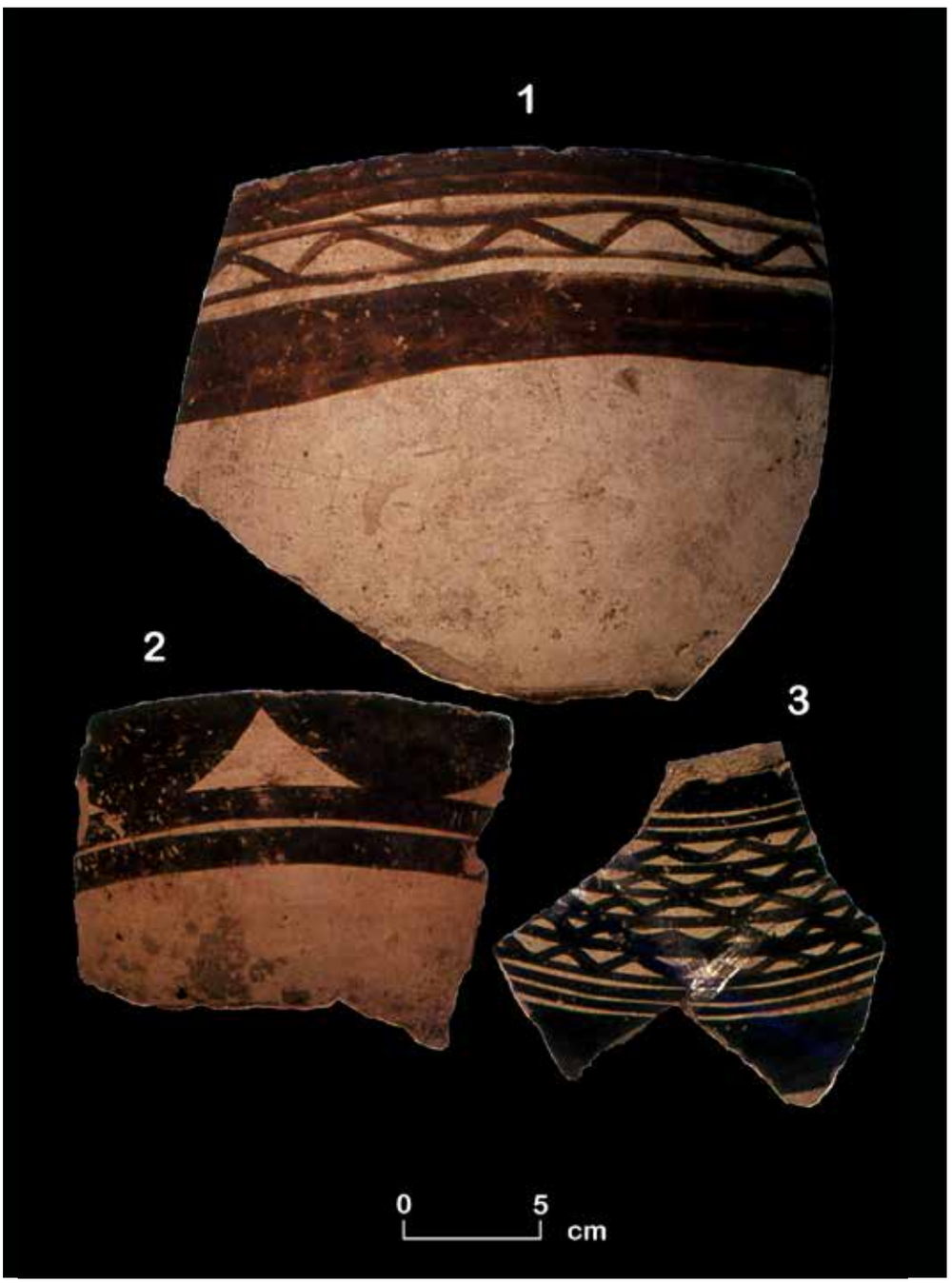


FIGURE 209. Ubaid 2–3 painted motifs on sherds from levels I–II, Tell Abada.

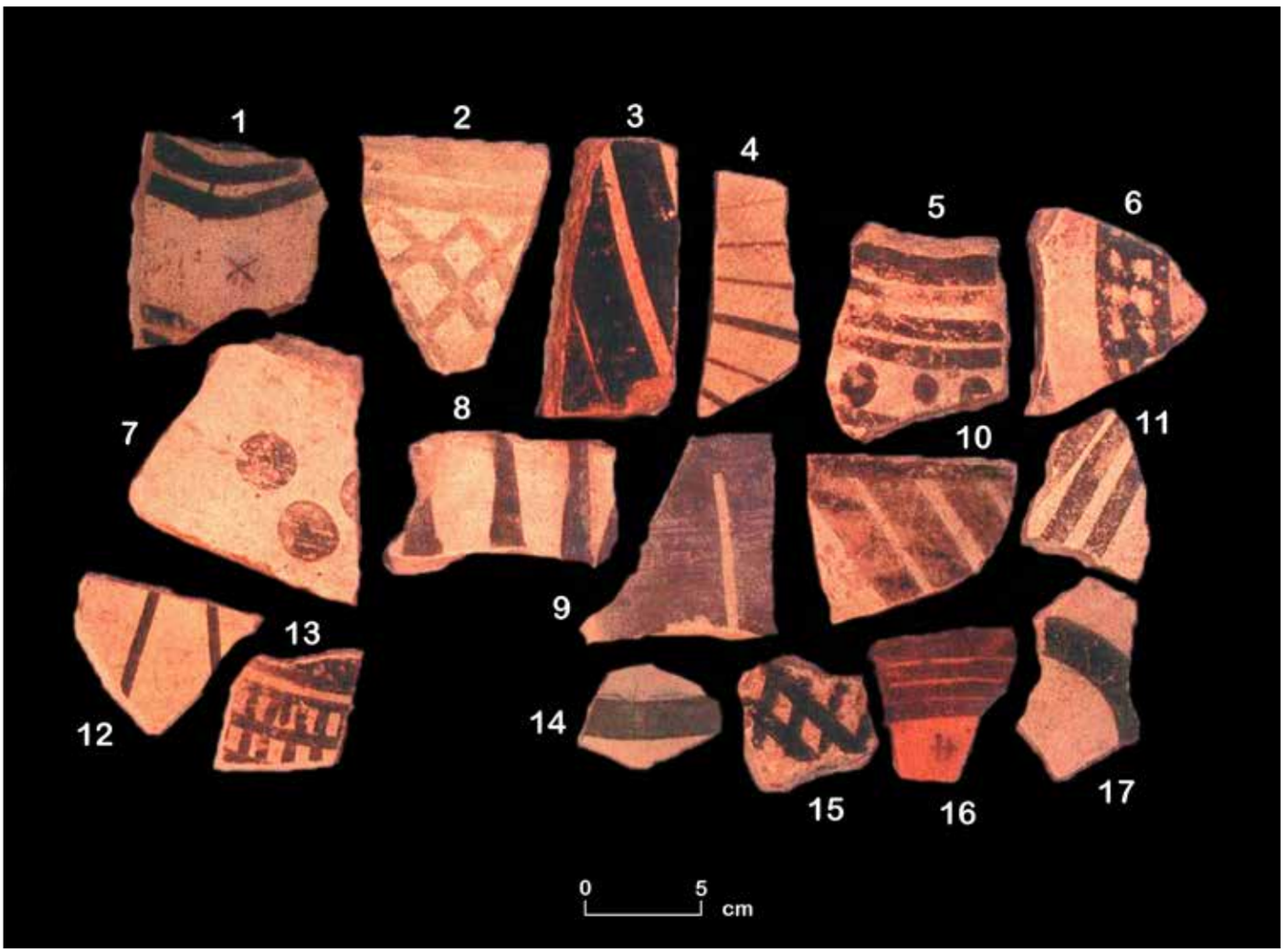


FIGURE 210. Ubaid 2–3 painted motifs on sherds from levels I–II, Tell Abada.

FIGURE 211. Ubaid 2–3 painted motifs on sherds from levels I–II, Tell Abada.

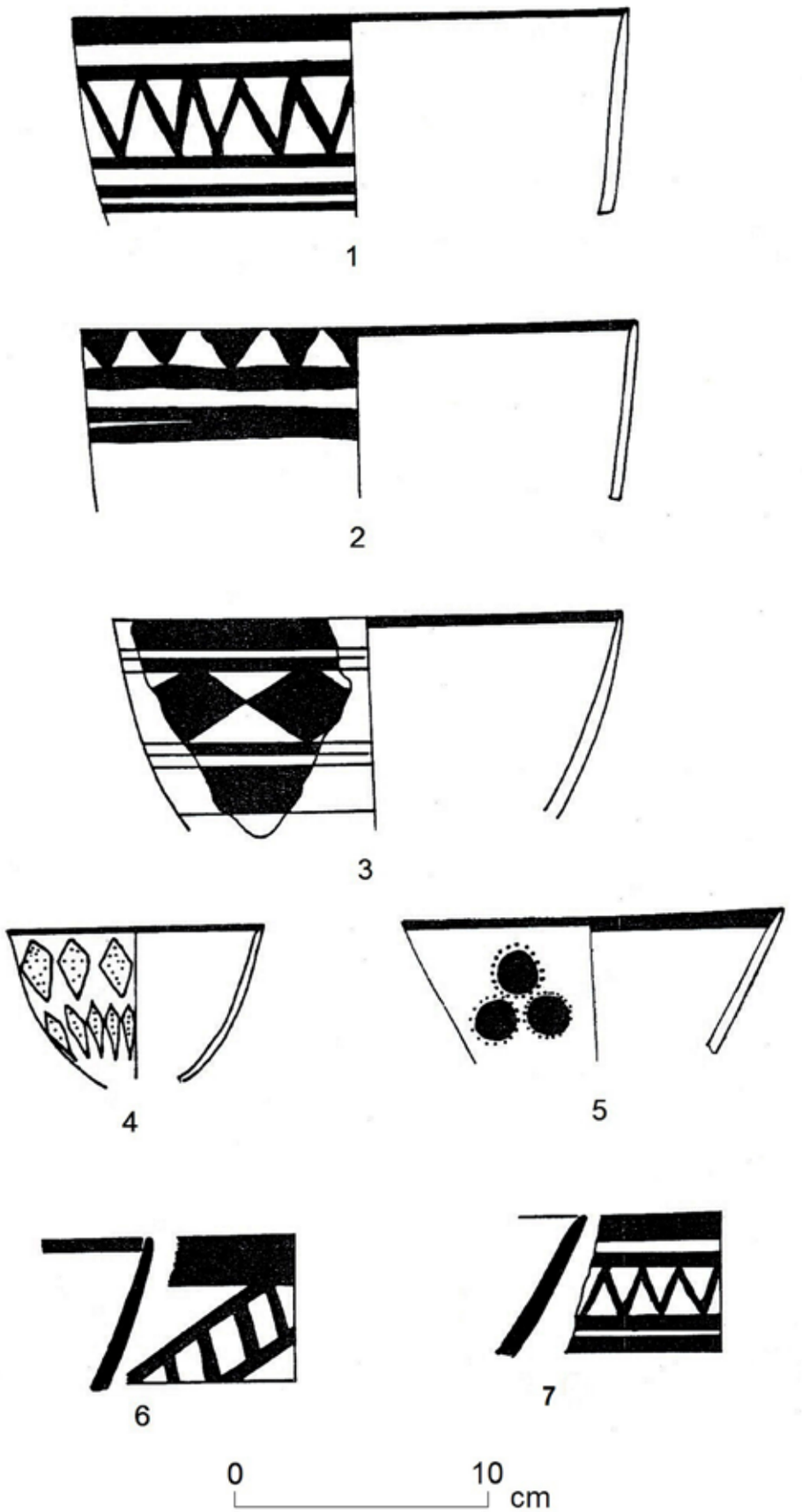


FIGURE 212. Ubaid 2–3 pottery, bowl type 3 (reconstructed) from levels I–II, Tell Abada.

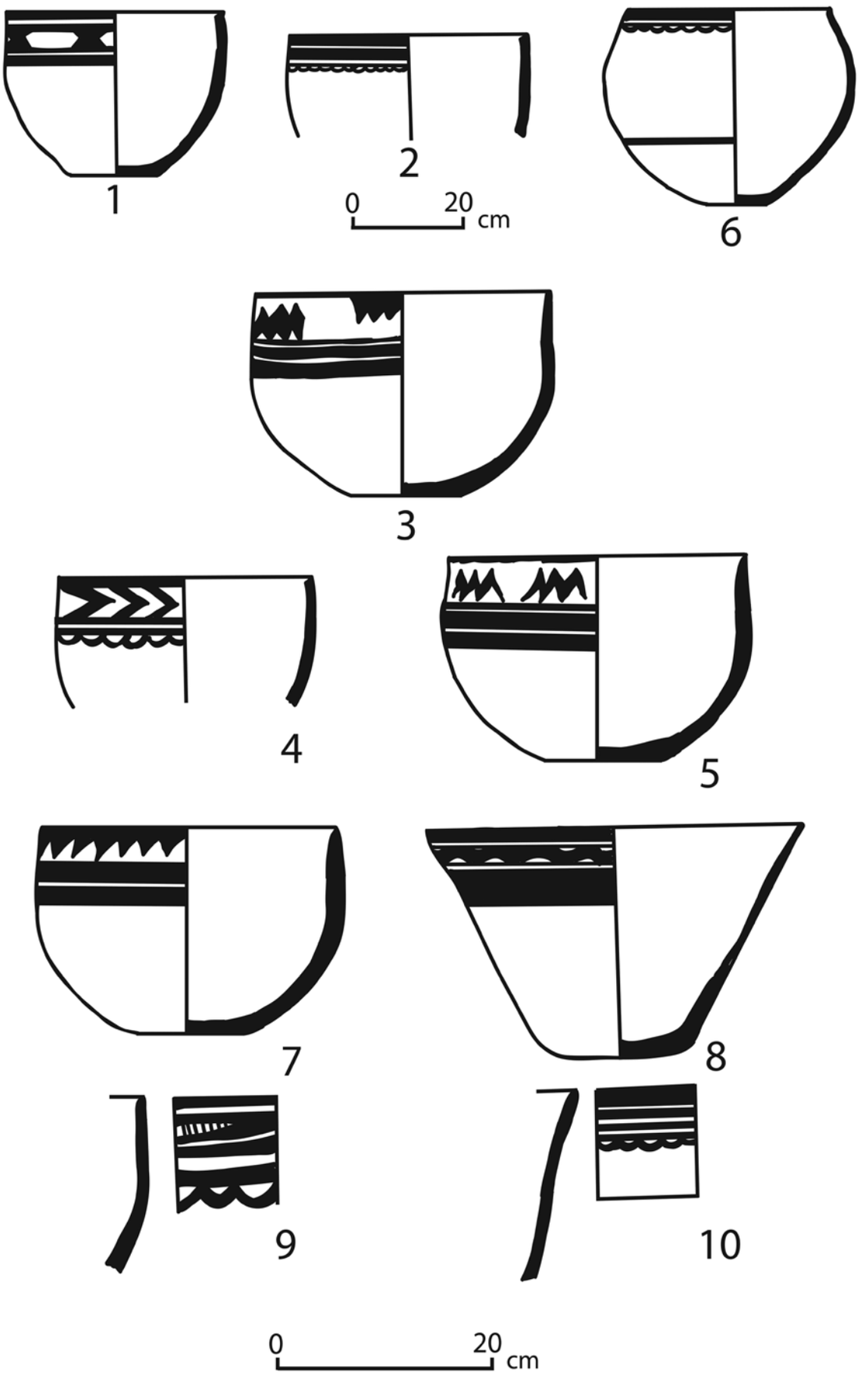


FIGURE 213. Ubaid 3 pottery, bowl type 4 from level II, Tell Abada.

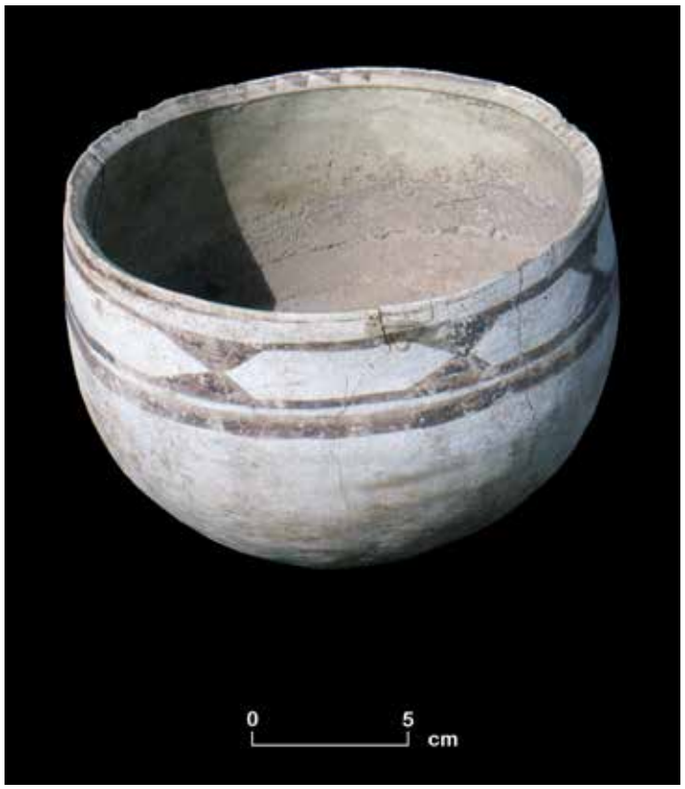


FIGURE 214. Ubaid 3 pottery, large bowl bearing painted decoration (fig. 213: 1) from level II, Tell Abada.

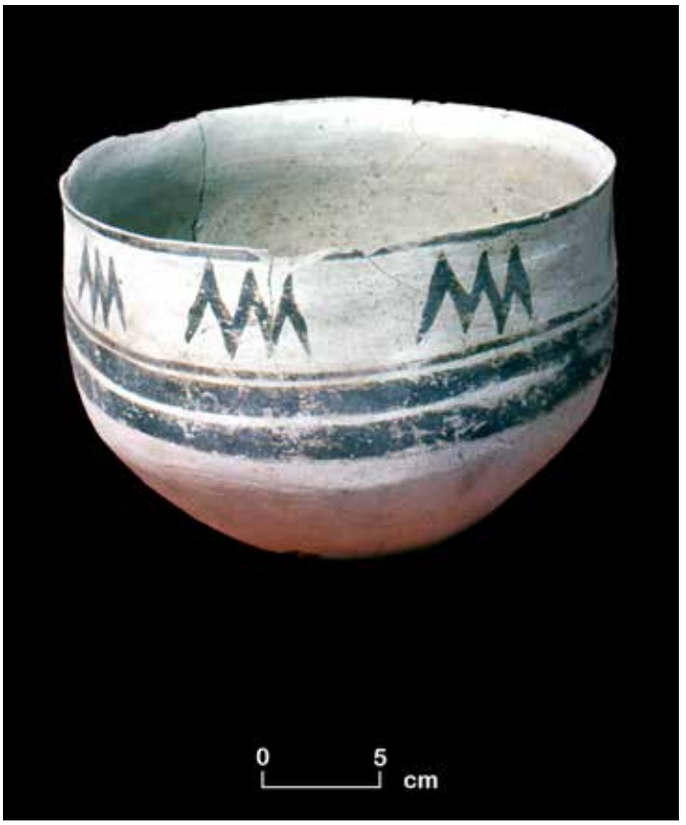


FIGURE 215. Ubaid 3 pottery, large bowl (fig. 213: 3) from level II, Tell Abada.

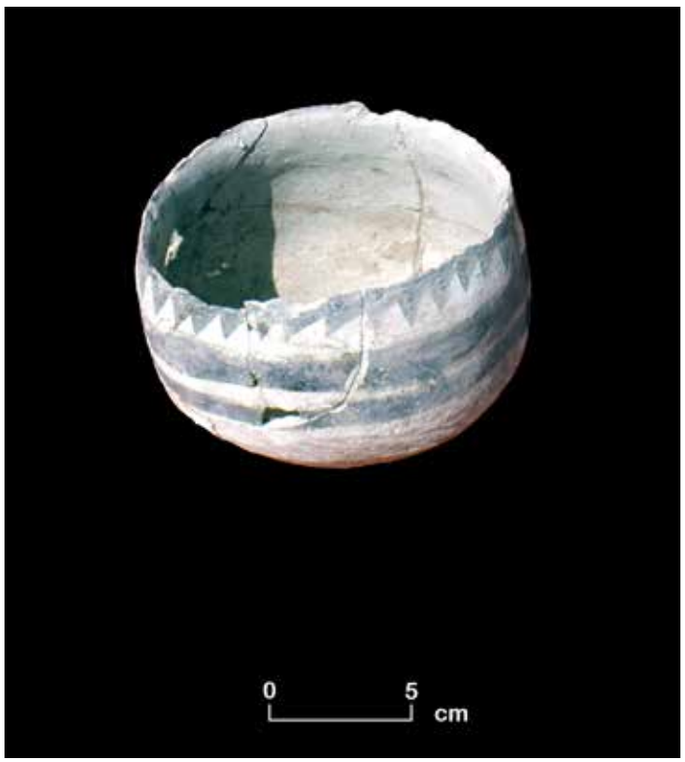


FIGURE 216. Ubaid 3 pottery, large bowl (fig. 213: 7) from level II, Tell Abada.

FIGURE 217. Ubaid 3 pottery, large burial urn (fig. 213: 8) from level II, Tell Abada.

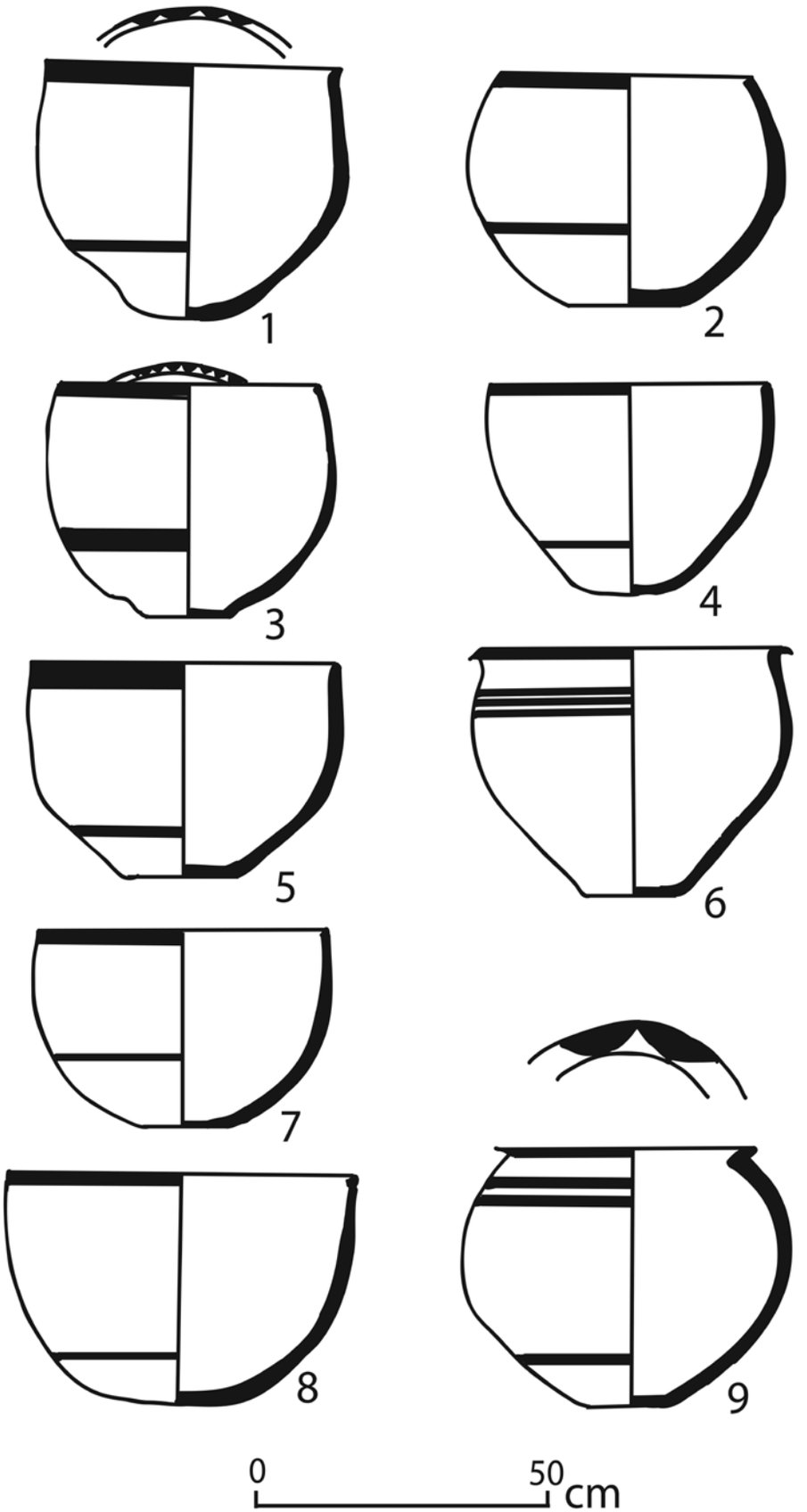


FIGURE 218. Ubaid 3 pottery, bowl type 4 from level I, Tell Abada.

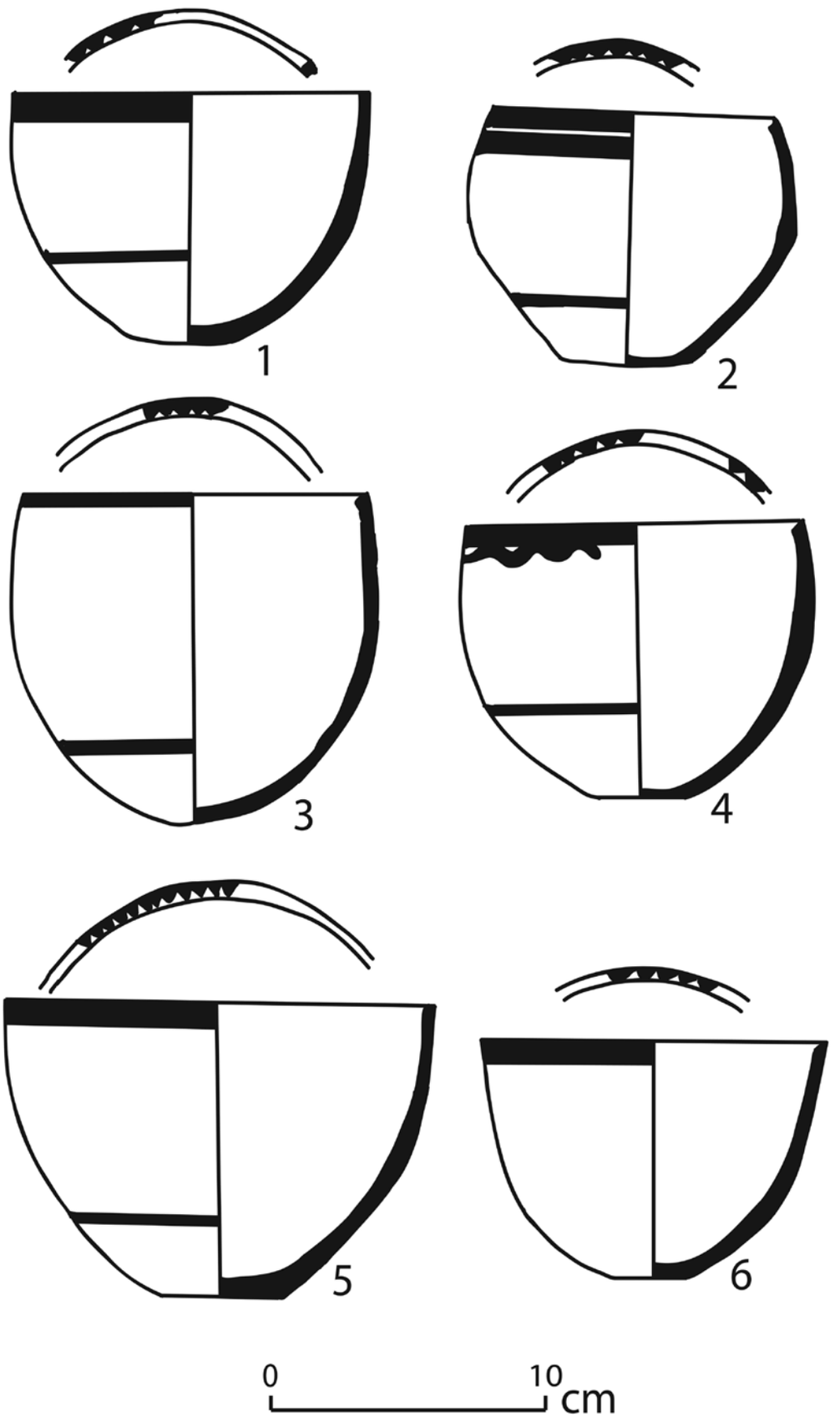


FIGURE 219. Ubaid 3 pottery, bowl type 4 from level I, Tell Abada.

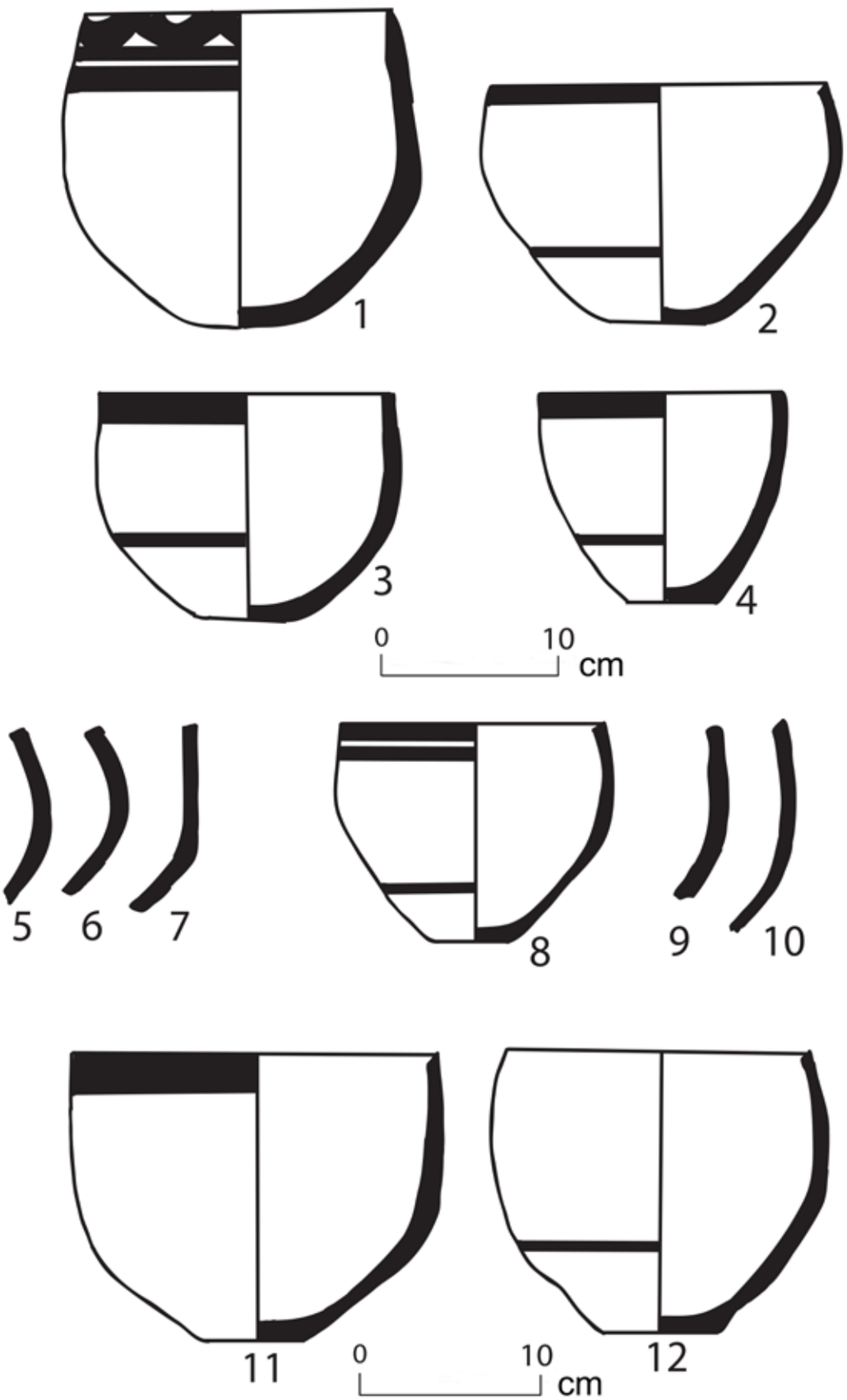


FIGURE 220. Ubaid 3 pottery, bowl type 4 from level I, Tell Abada.

FIGURE 221. Ubaid 2–3 pottery, bowl type 5, from levels I–II, Tell Abada.

FIGURE 222. Ubaid 2–3 pottery, scoop from level II, Tell Abada.

FIGURE 223. Ubaid 2–3 pottery, scoop from level I, Tell Abada.

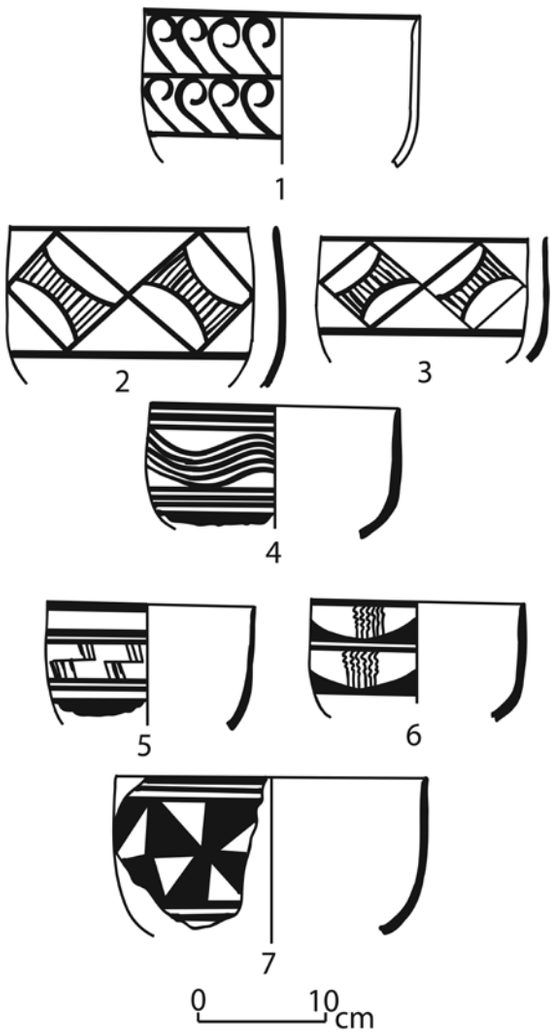


FIGURE 224. Ubaid 2–3 pottery, bowl type 6 (reconstructed) from level II, at Tell Abada.

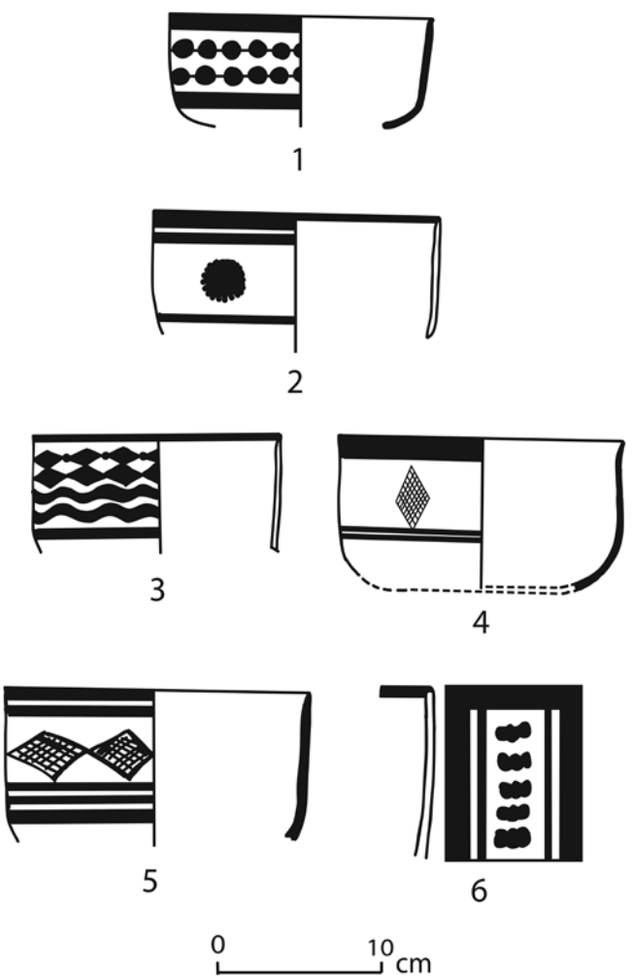


FIGURE 225. Ubaid 2–3 pottery, bowl type 6 (reconstructed) from level I, at Tell Abada.

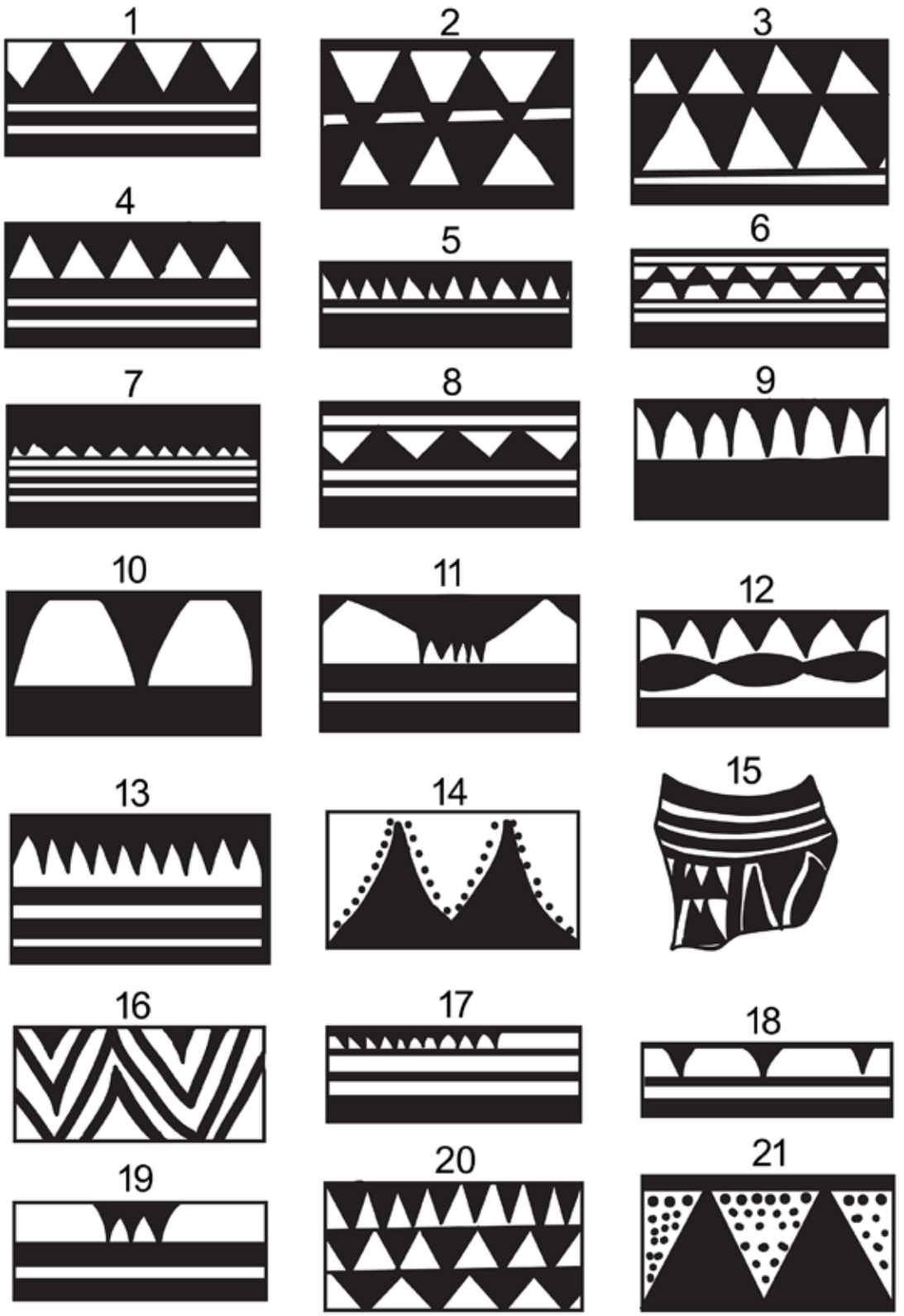


FIGURE 226. Ubaid 2–3 pottery, painted motifs on sherds, bowl type 6 from level II, Tell Abada.

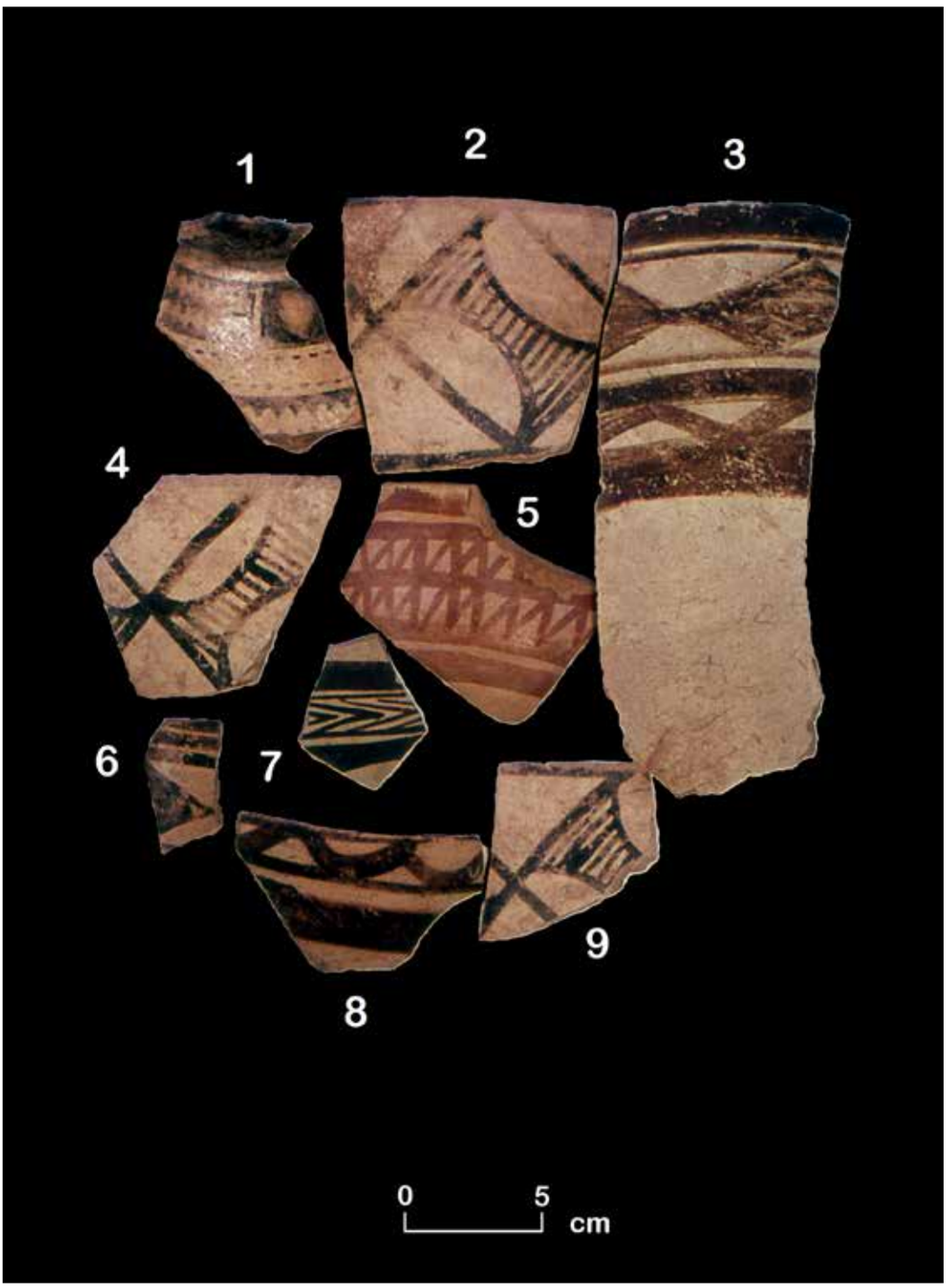


FIGURE 227. Ubaid 2–3 pottery, painted sherds from levels II, Tell Abada.

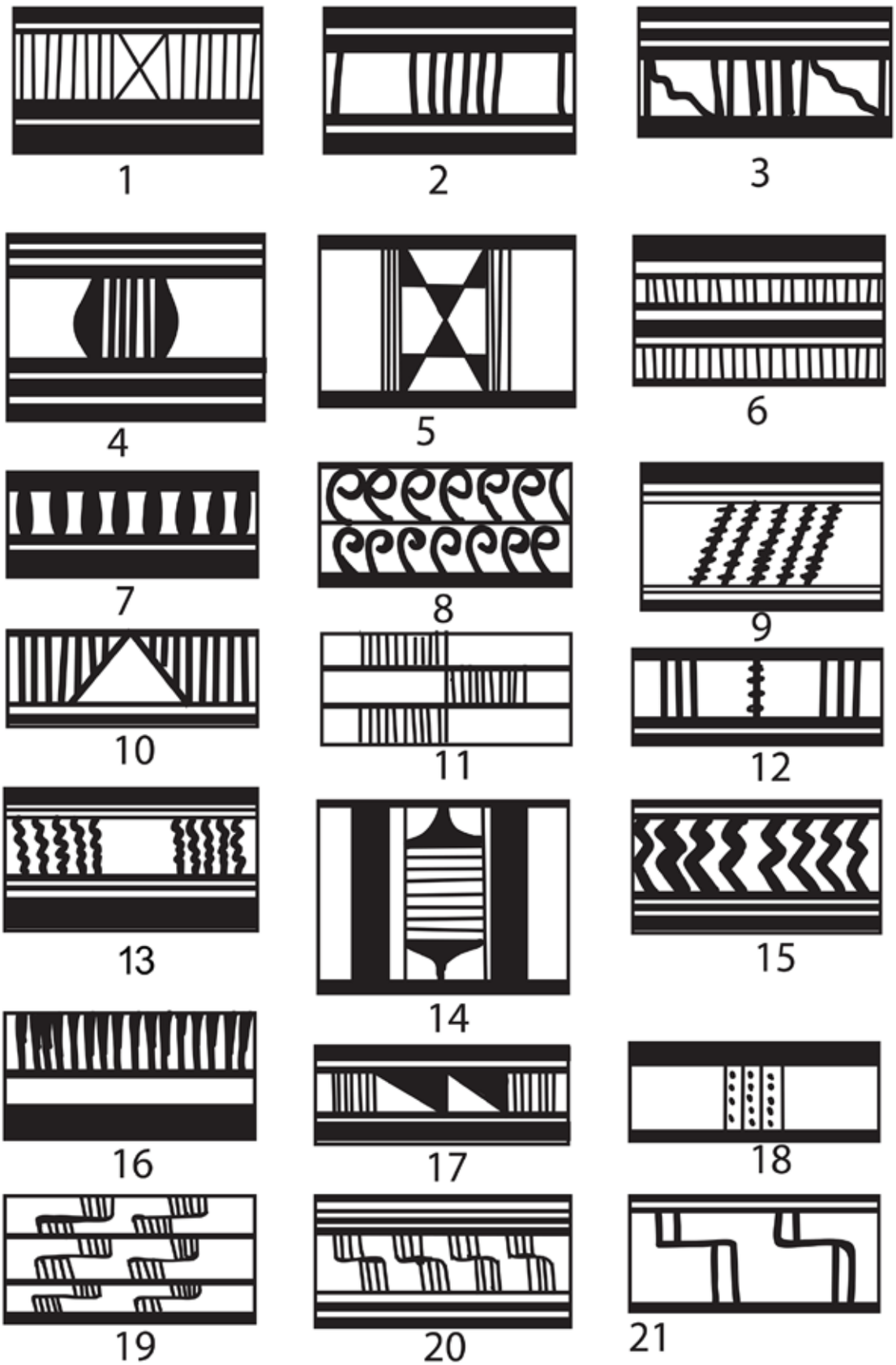


FIGURE 228. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

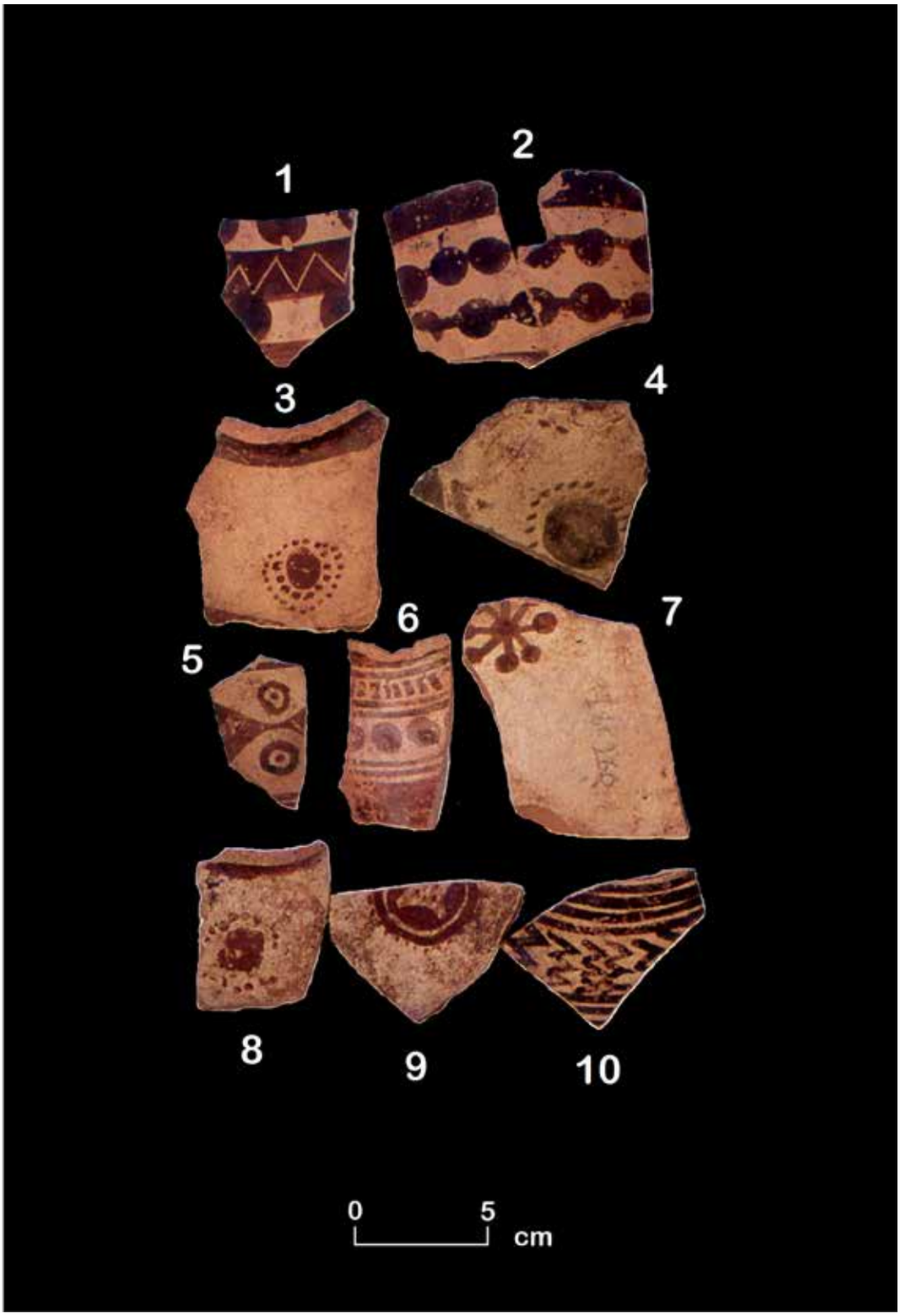


FIGURE 229. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

FIGURE 230. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

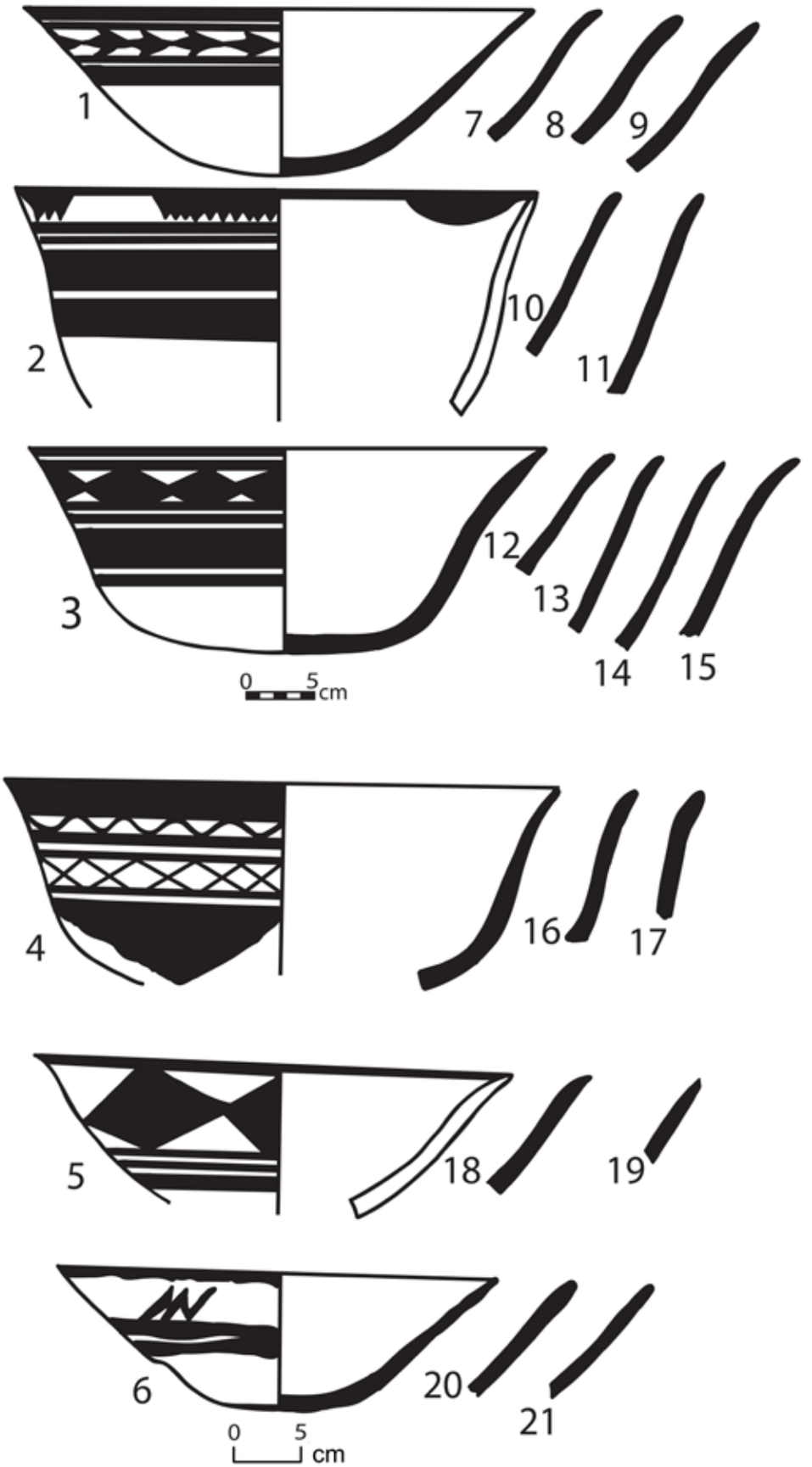


FIGURE 231. Ubaid 2–3 pottery, bowl type 7 from levels I (5–6), II (1–4). Plain bowls (7–21) (reconstructed) from levels I–II, Tell Abada.

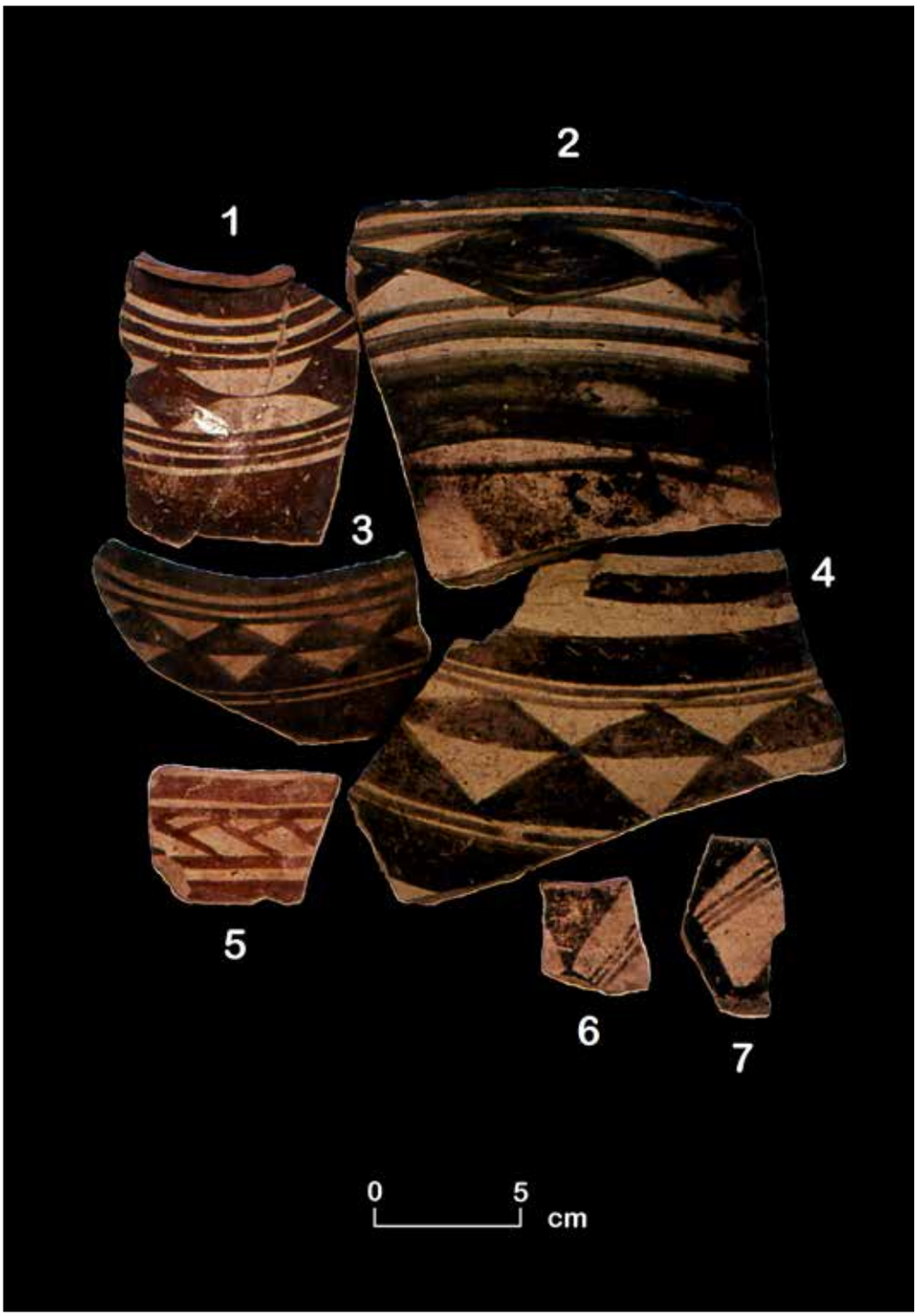


FIGURE 232. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

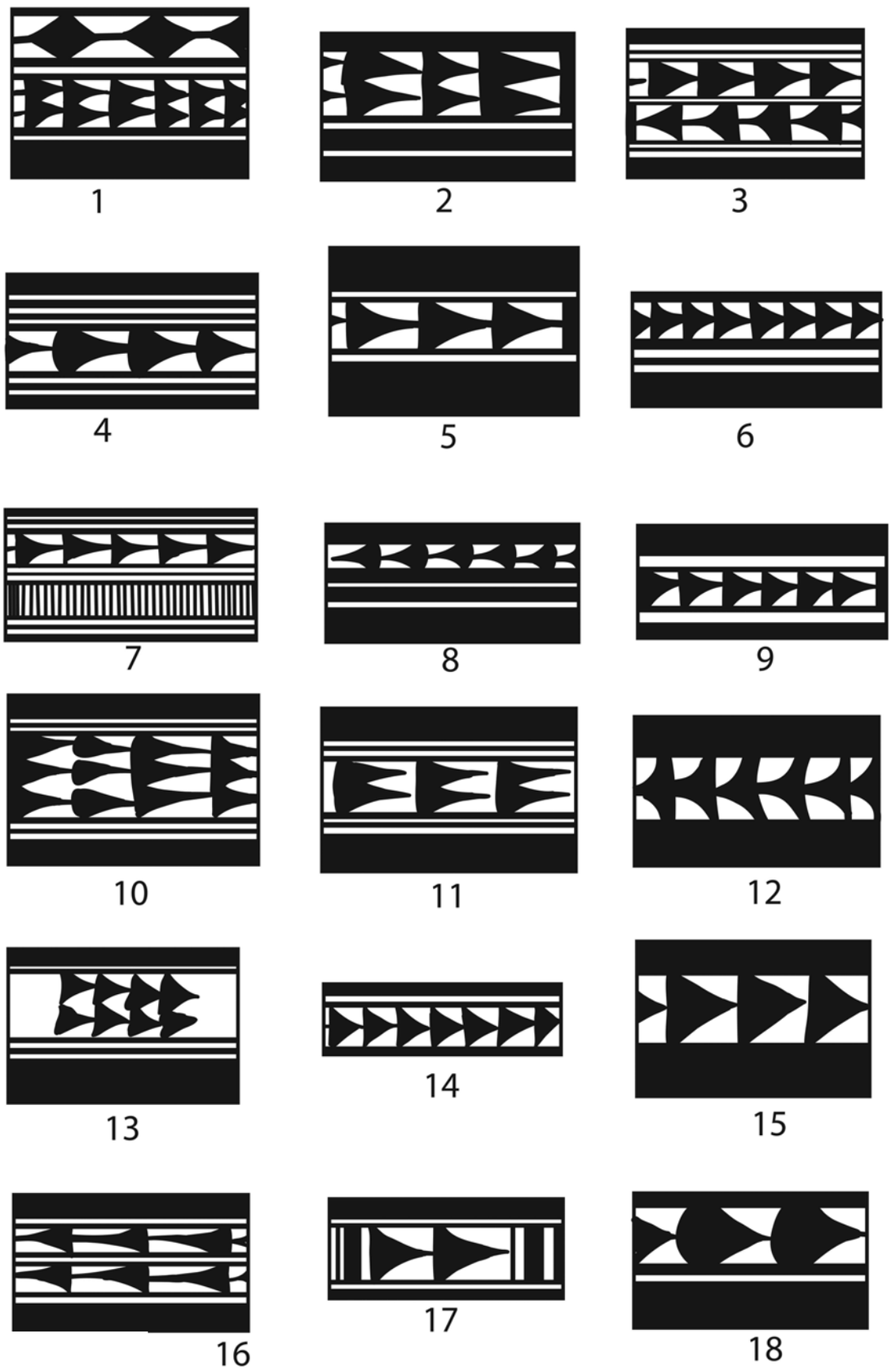


FIGURE 233. Ubaid 2–3 pottery, painted motifs on sherds from levels I–II, Tell Abada.

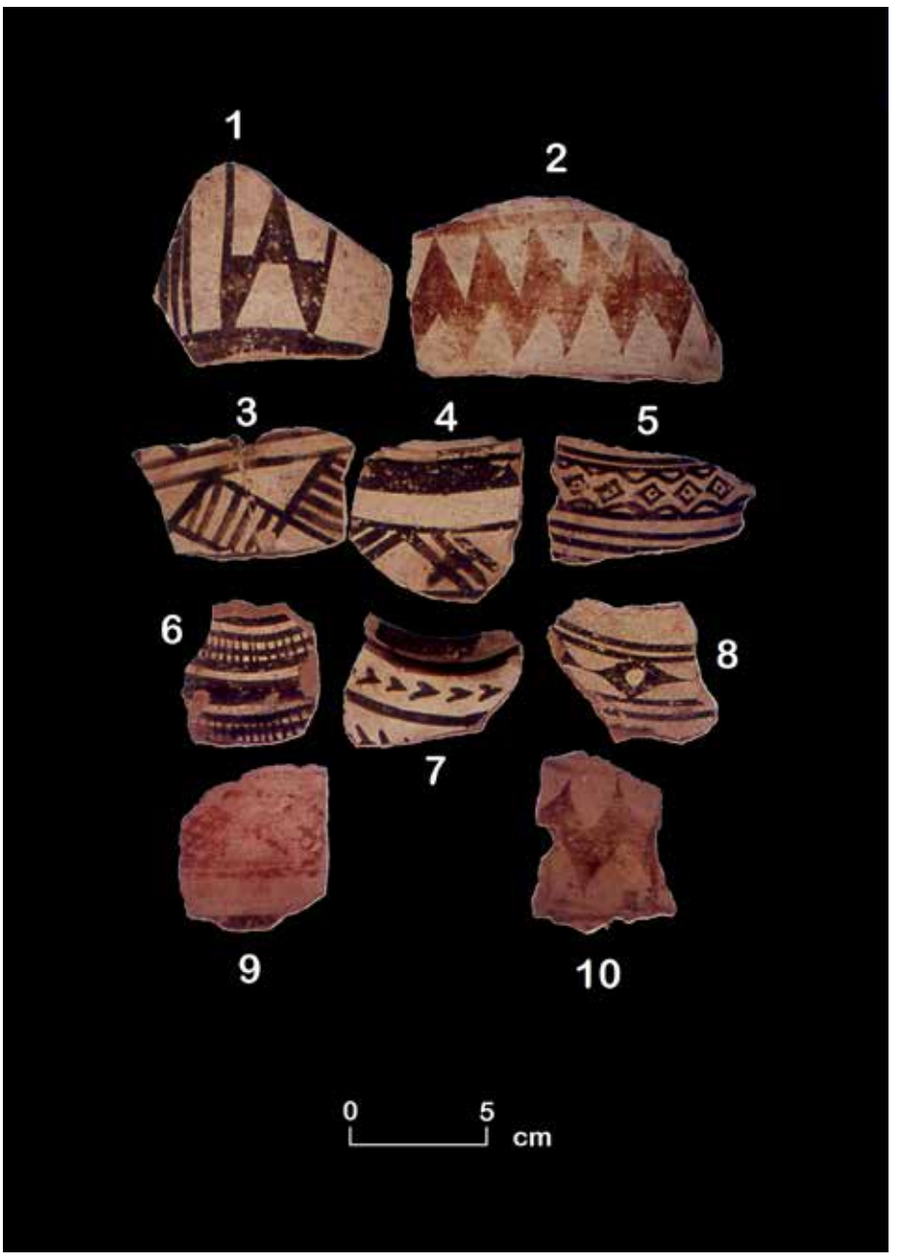


FIGURE 234. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

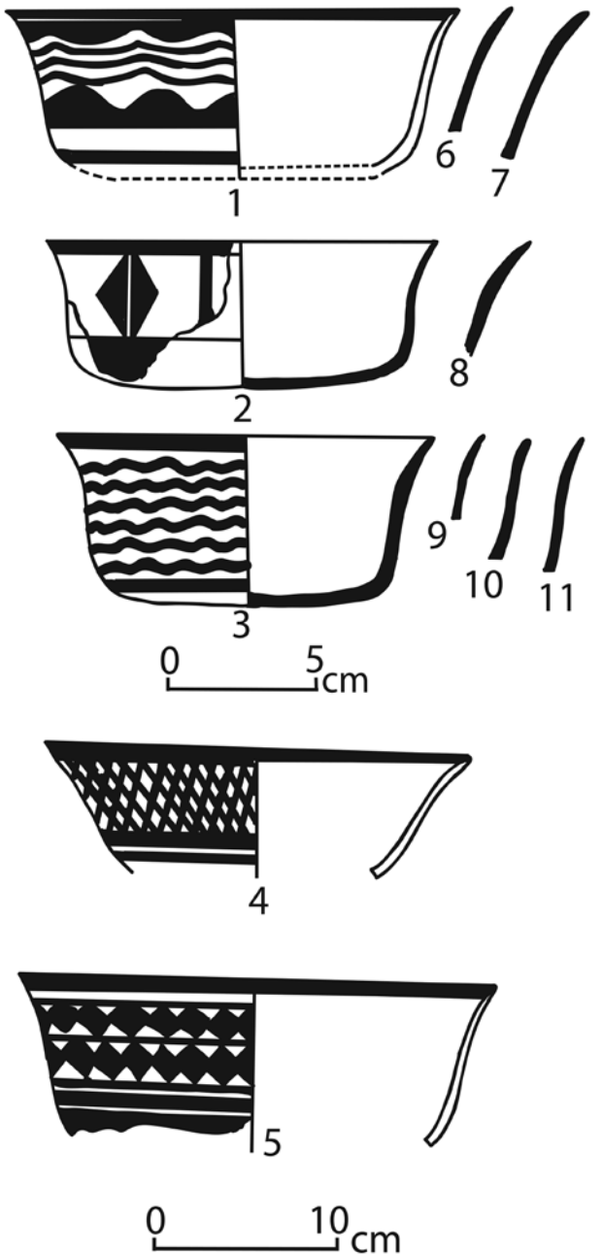


FIGURE 235. Ubaid 2–3 pottery, bowl type 8, levels I (4–5), II (1–3). Plain pottery (reconstructed) from levels I–II (6–11), Tell Abada.

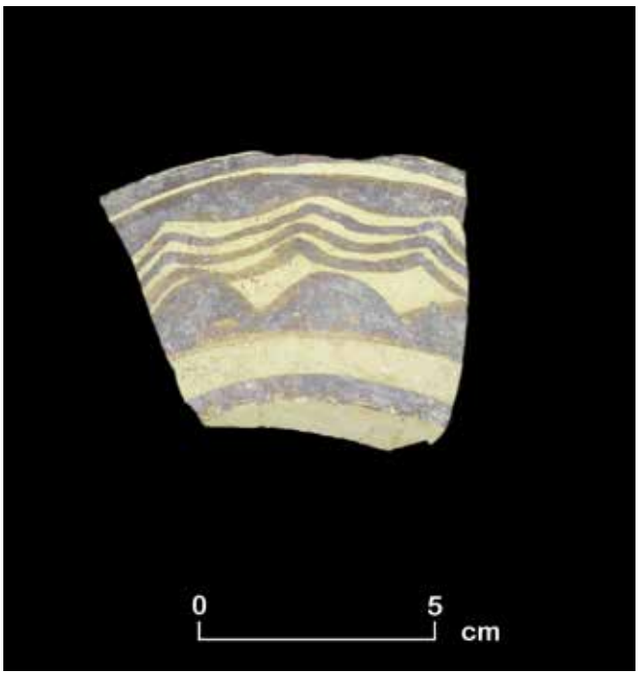


FIGURE 236. Ubaid 2–3 pottery, part from a wide-mouthed, thin-walled bowl (fig. 235: 1) from level II, Tell Abada.

FIGURE 237. Ubaid 2–3 pottery, part from a wide-mouthed, thin-walled bowl (fig. 235: 3) from level II, Tell Abada.

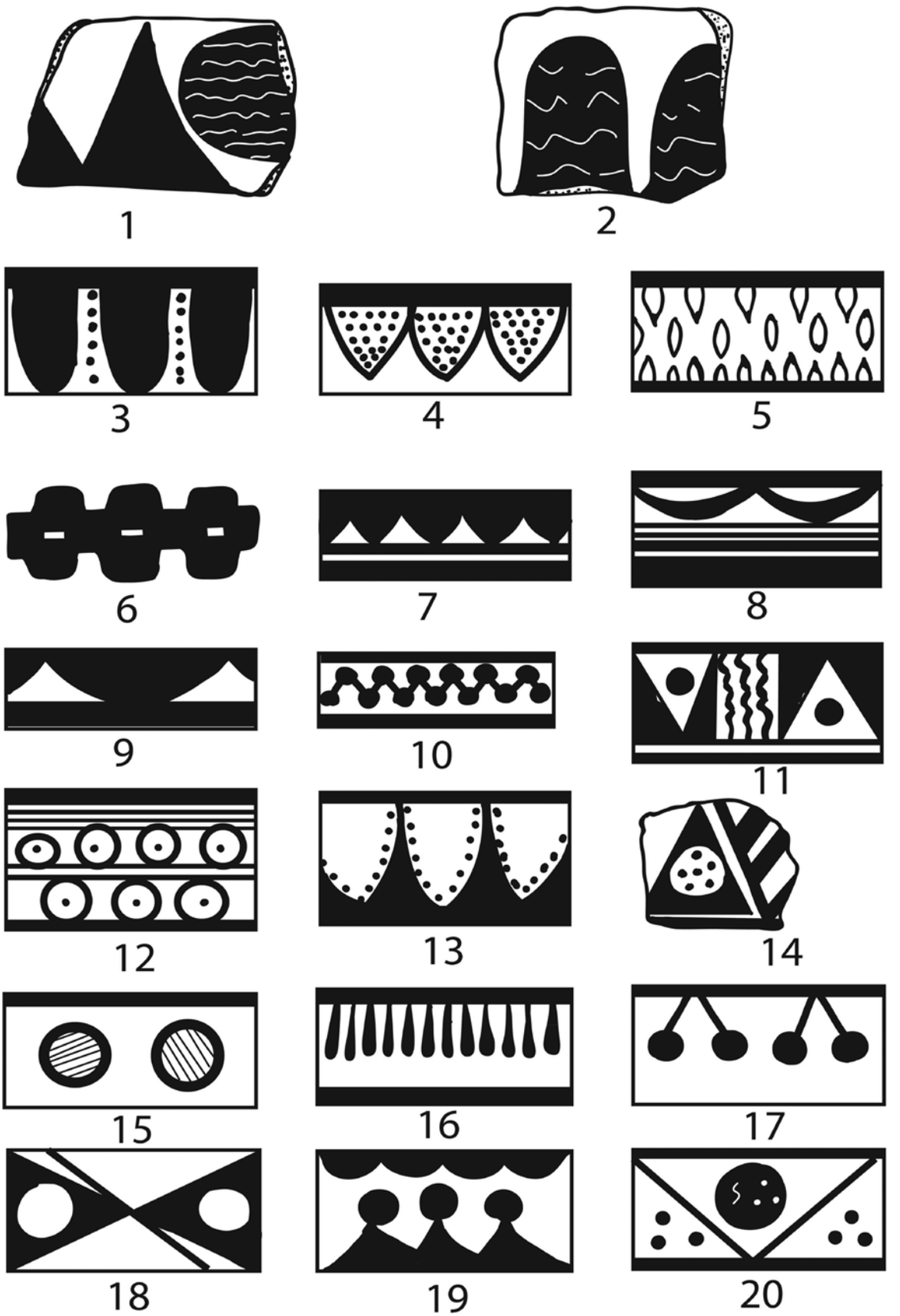


FIGURE 238. Ubaid 2–3 pottery, painted motifs on sherds type 8 from levels I–II, Tell Abada.

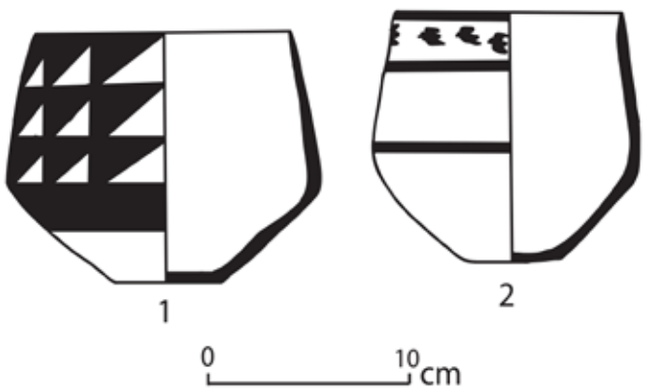


FIGURE 239. Ubaid 2–3 pottery, bowl type 9 from levels I (2), II (1, 3), Tell Abada.

FIGURE 240. Ubaid 1–2 pottery, large, deep bowl with all-over decoration (fig. 239: 1) from level II, Tell Abada.

FIGURE 241. Ubaid 2–3 pottery, large, deep bowl with all-over decoration (fig. 239: 3) level II, Tell Abada.

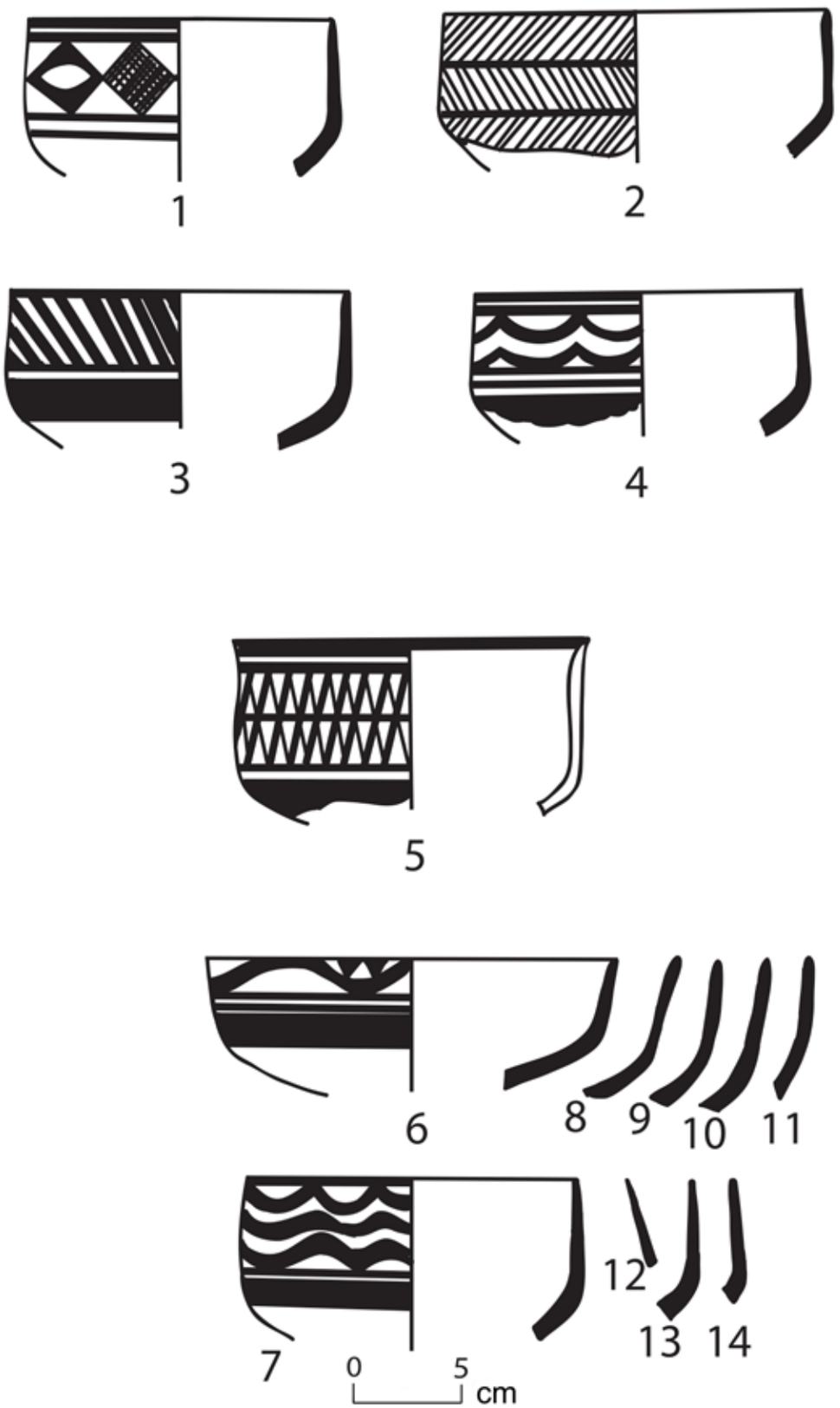


FIGURE 242. Ubaid 2–3 pottery, bowl type 10 (reconstructed) from level II (1–7). Plain bowls from level II (8–14), Tell Abada.

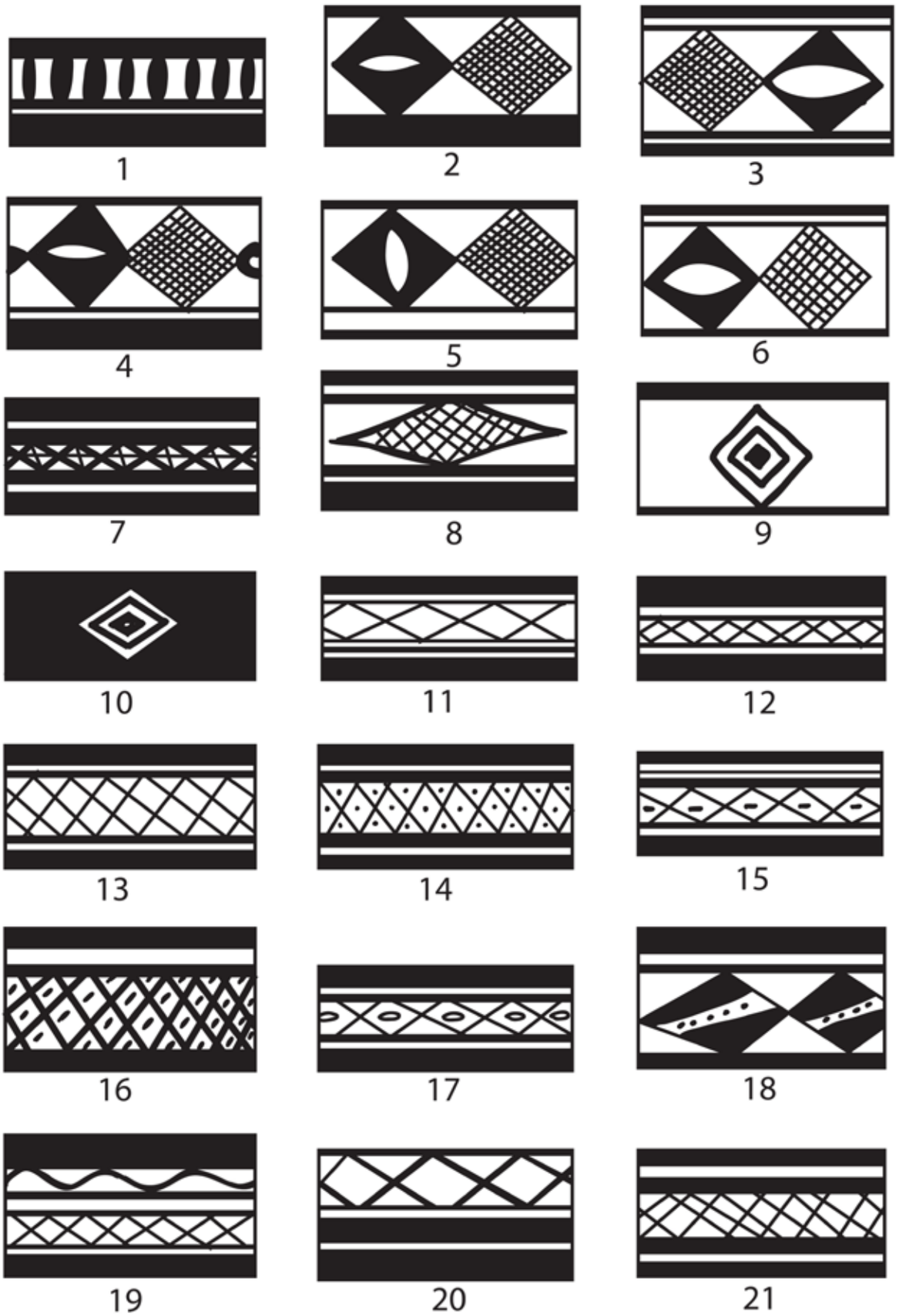


FIGURE 243. Ubaid 2–3 pottery, painted motifs on sherds associated with type 10 from level II, Tell Abada.

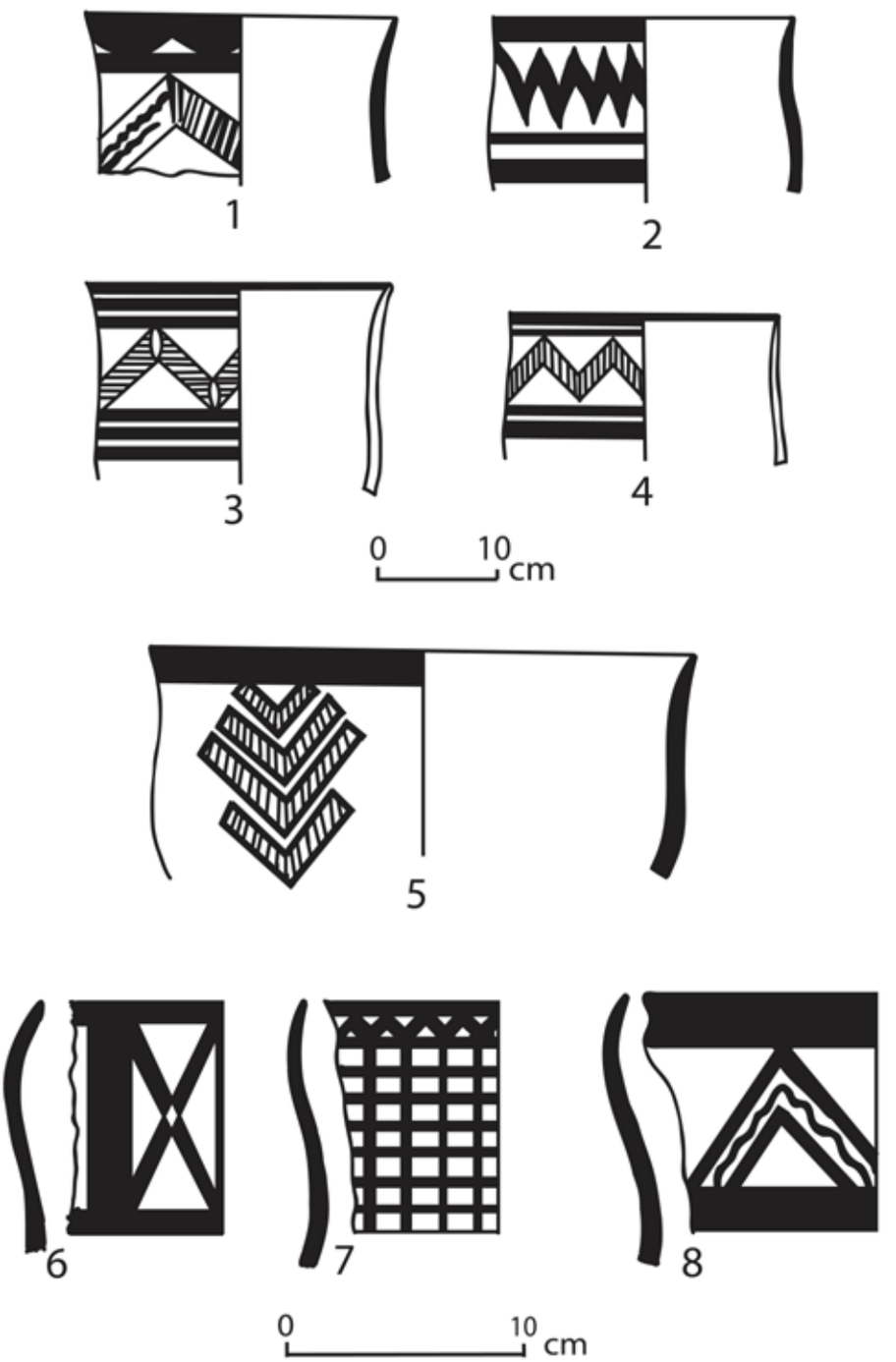


FIGURE 244. Ubaid 2–3 pottery, bowl type 11 (reconstructed) from level II, Tell Abada.

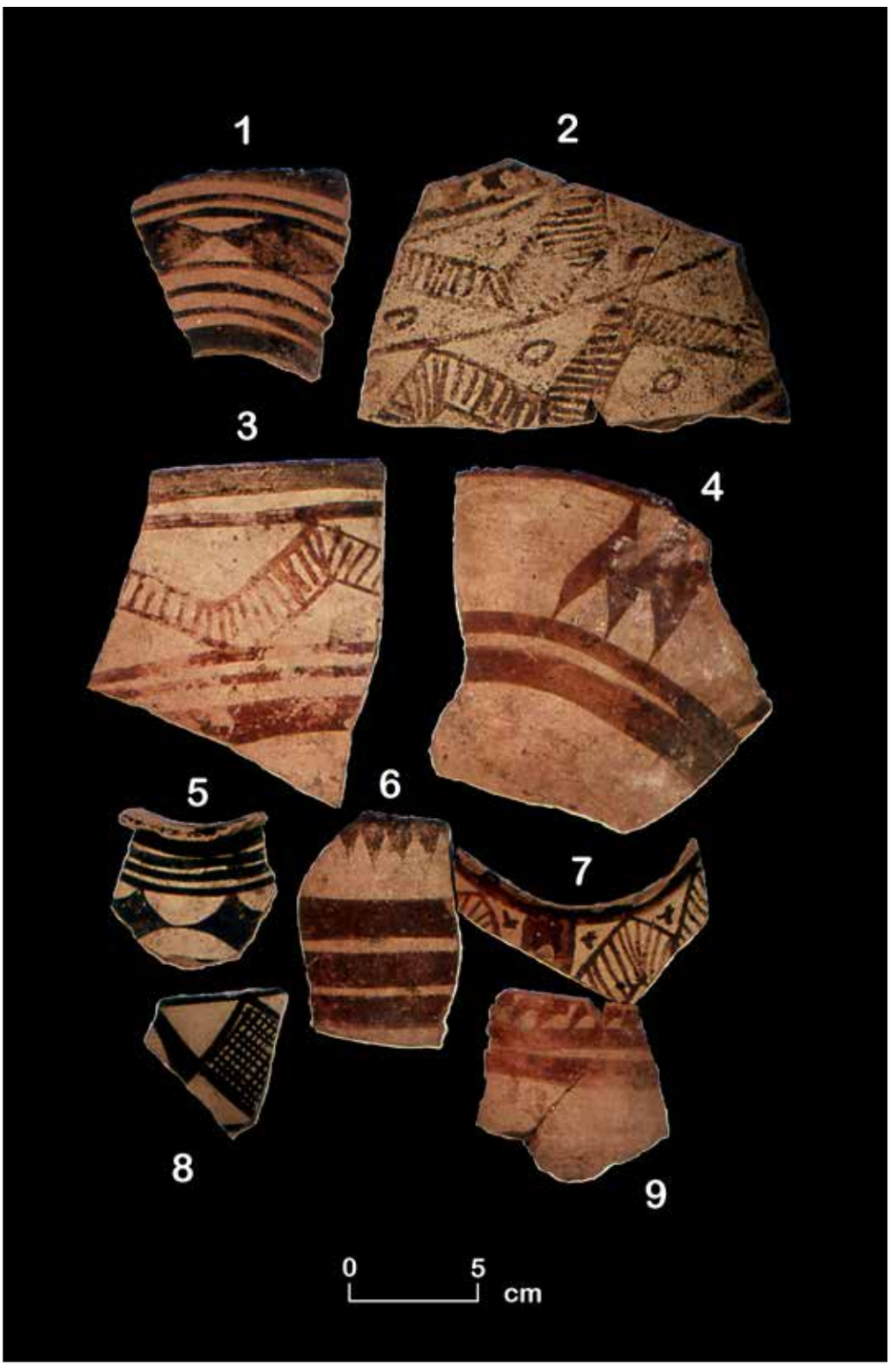


FIGURE 245. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

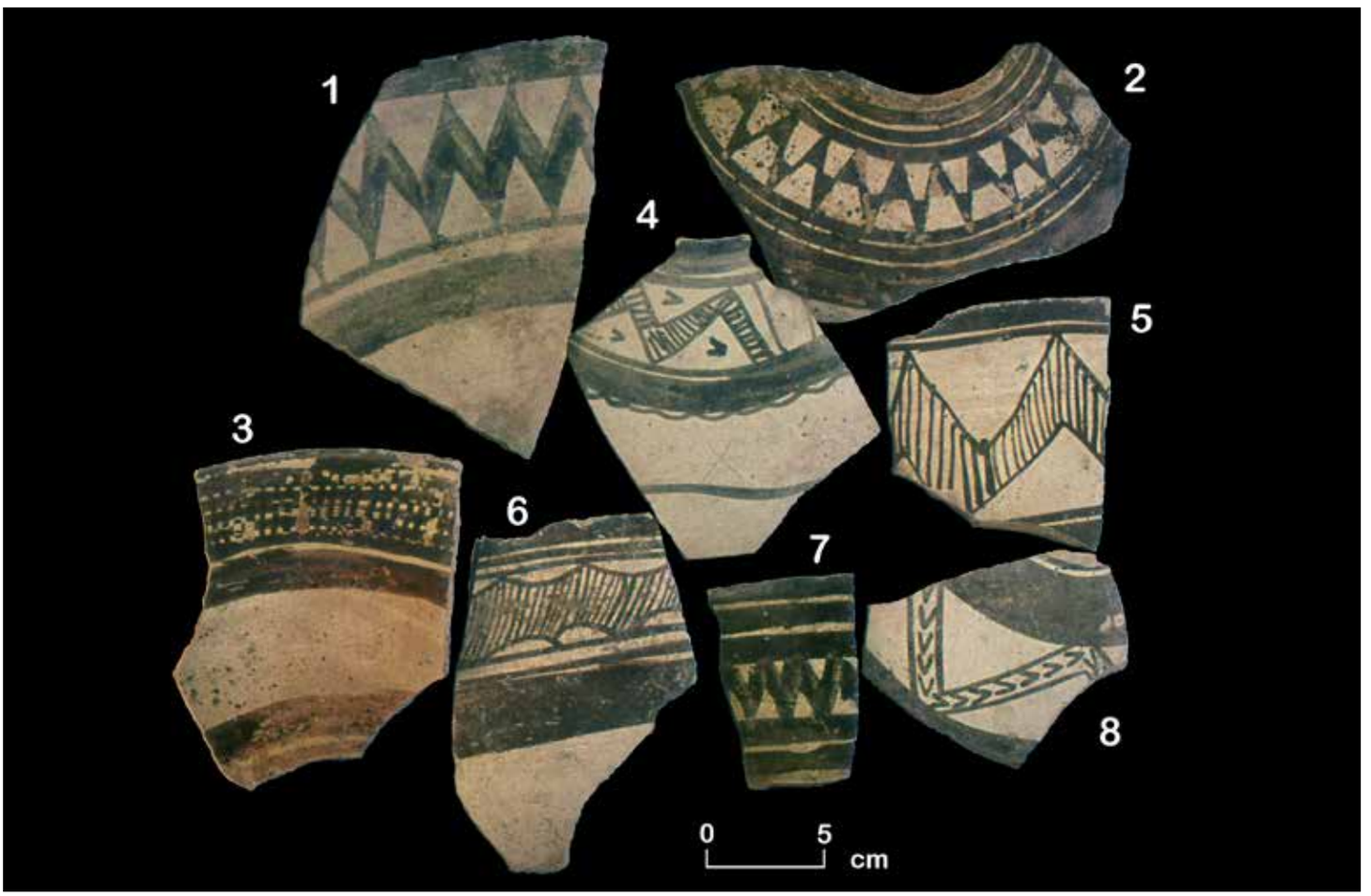


FIGURE 246. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

FIGURE 247. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

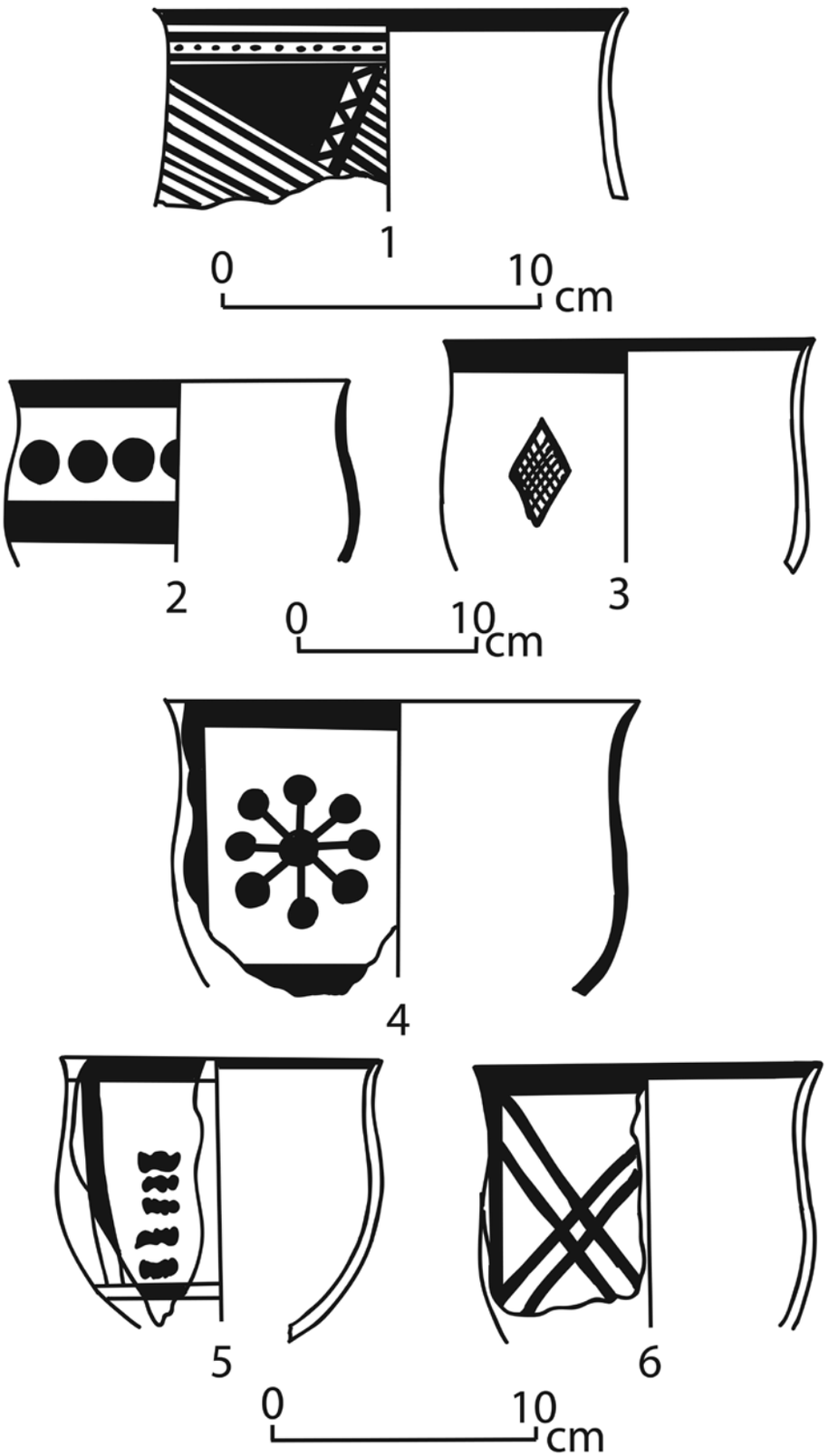


Figure 248. Ubaid 2–3 pottery, bowl type 12 from level II, Tell Abada (reconstructed).

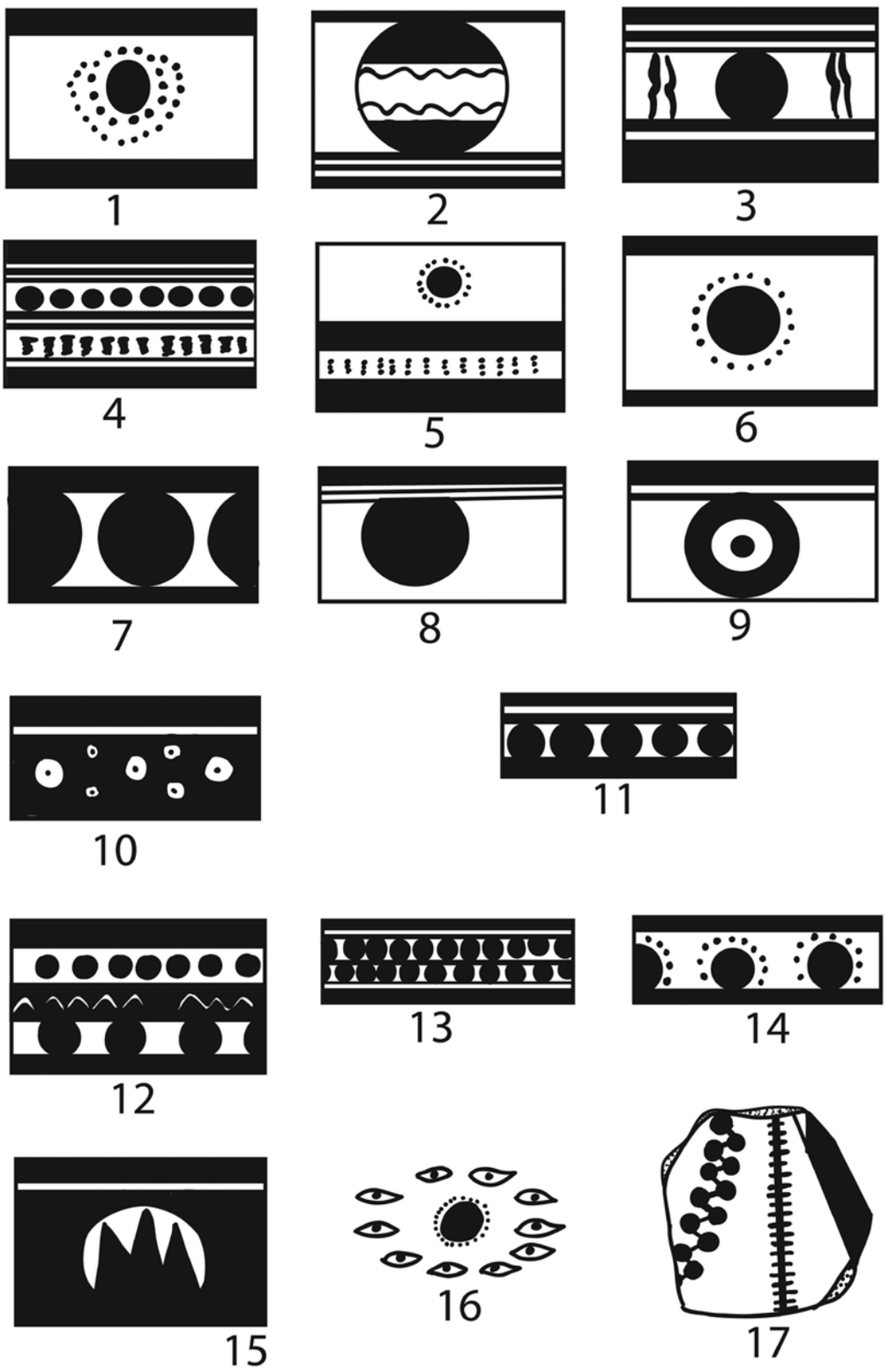


FIGURE 249. Ubaid 2–3 pottery, painted motifs on sherds associated with type 12 from level II, Tell Abada.

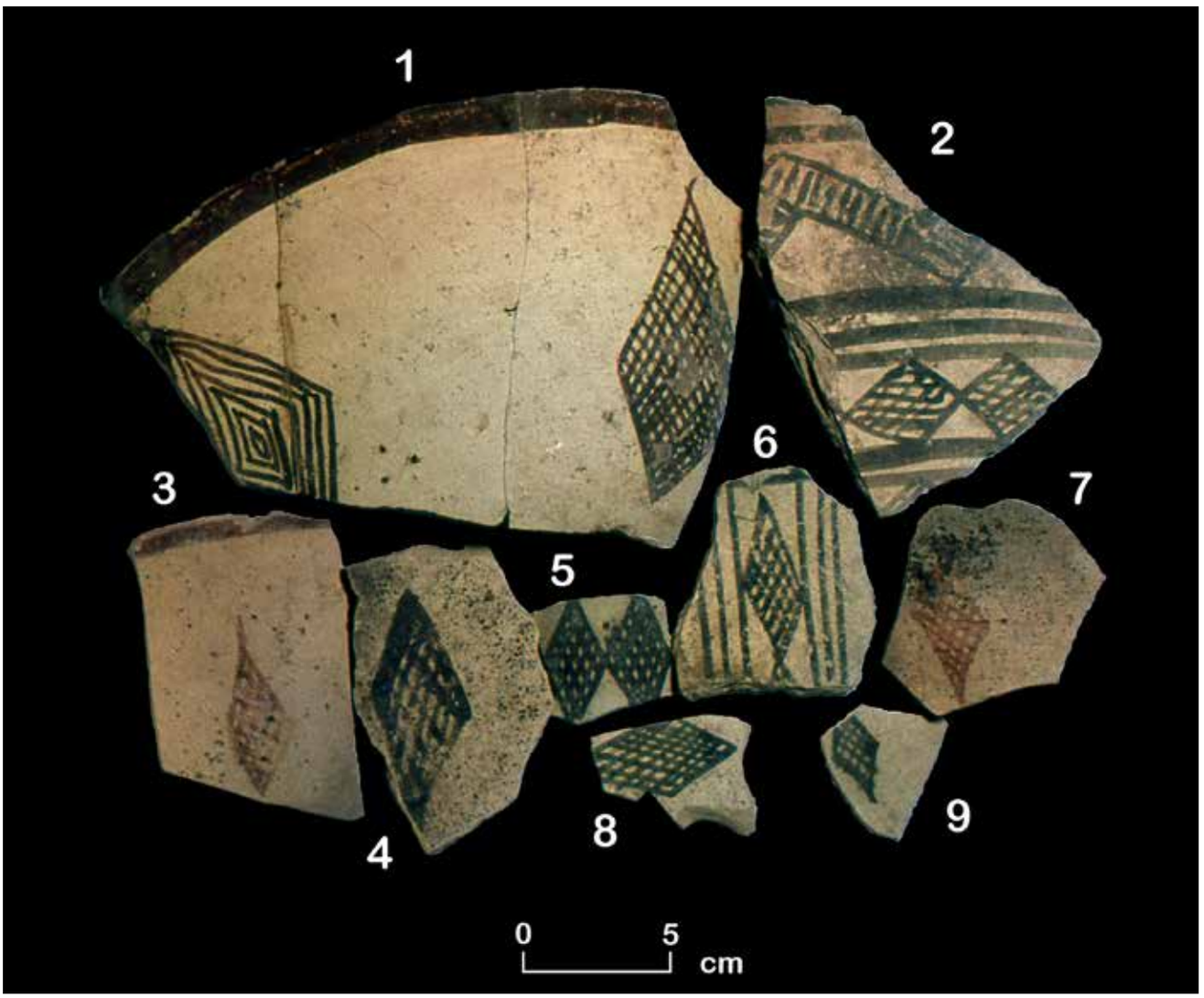


FIGURE 250. Ubaid 2–3 pottery, painted sherds belong to bowl type 12 from level II, Tell Abada.

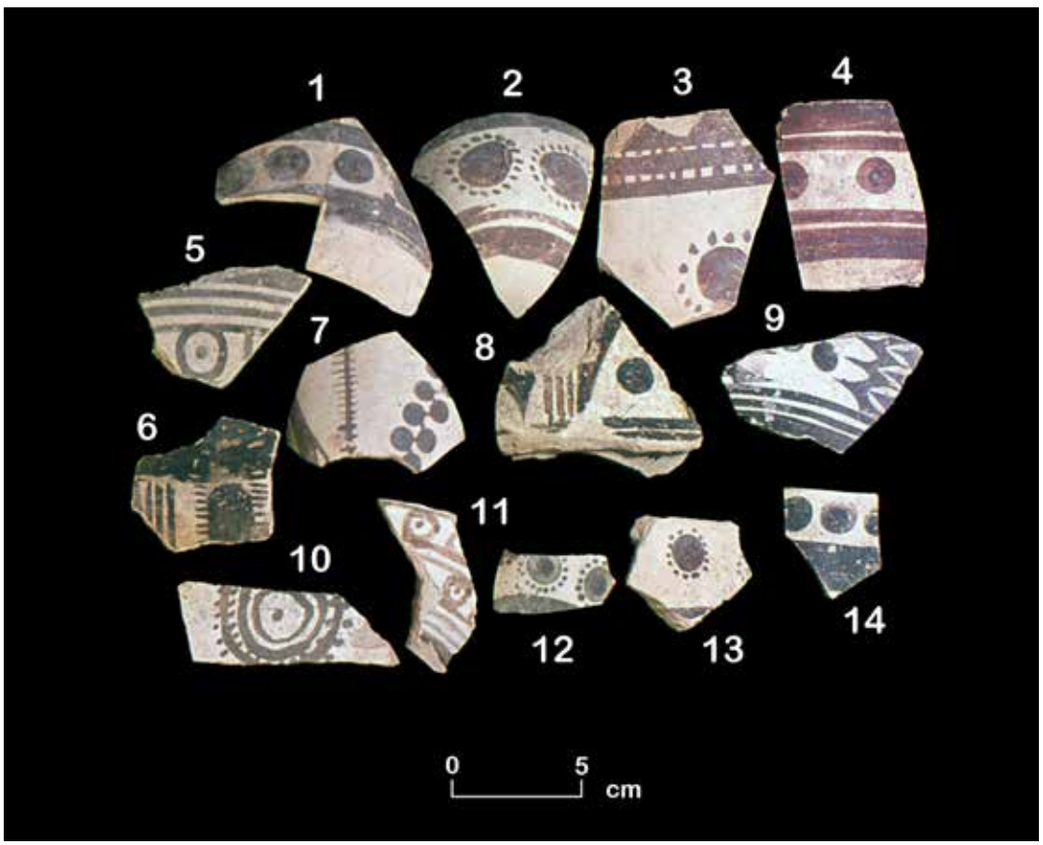


FIGURE 251. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

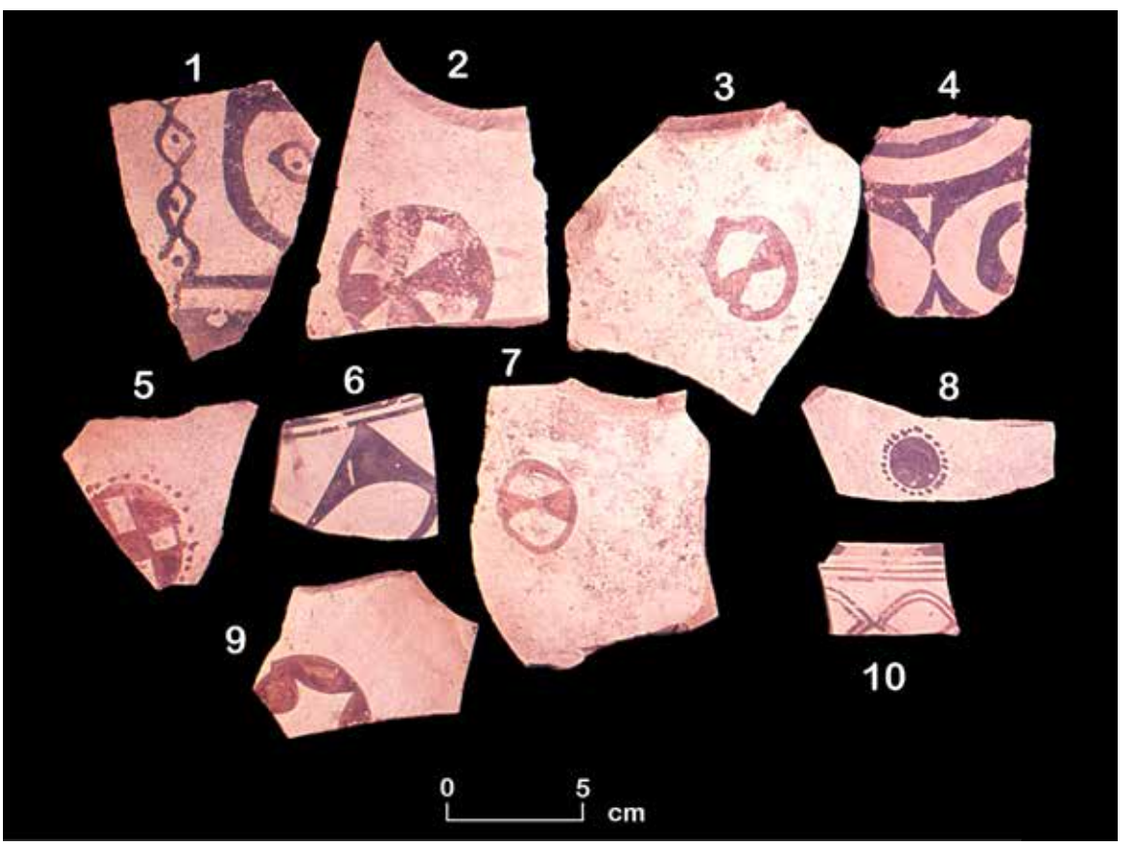


FIGURE 252. Ubaid 2–3 pottery, painted sherds from levels I–II, Tell Abada.

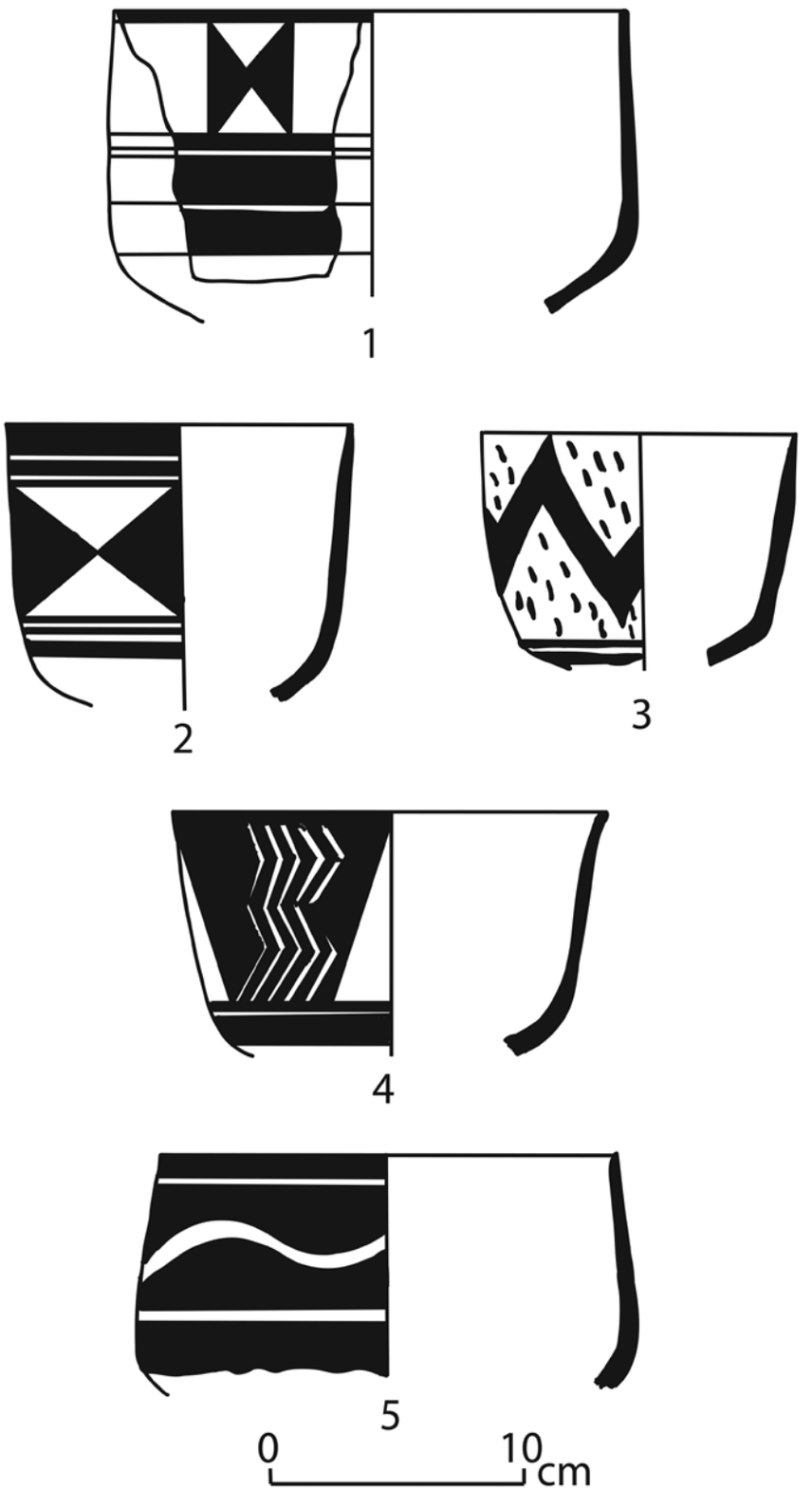


FIGURE 253. Ubaid 2–3 pottery, bowl type 13 (reconstructed) from level II, Tell Abada.

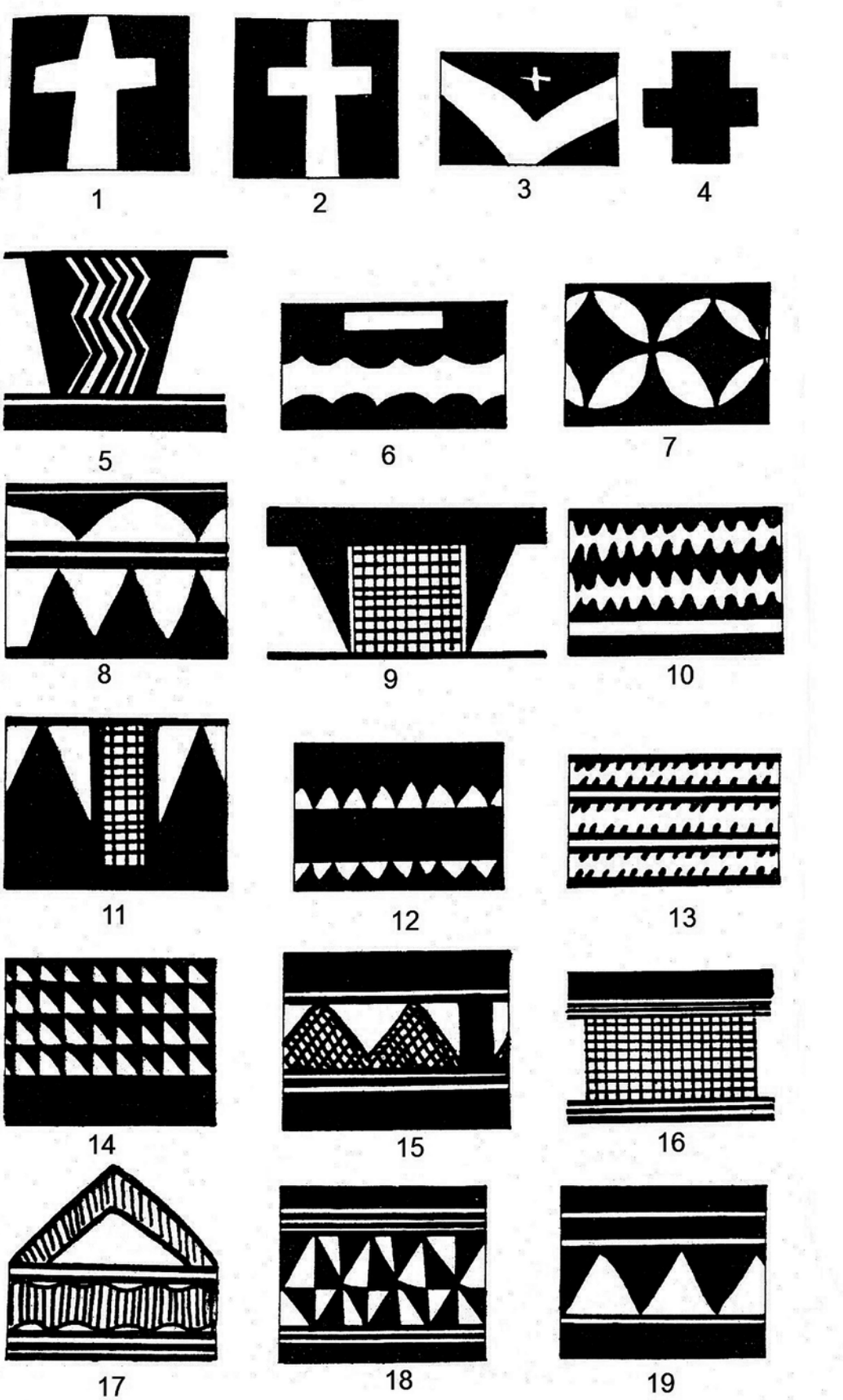


FIGURE 254. Ubaid 2–3 pottery, painted motifs associated with type 13 from level II, Tell Abada.

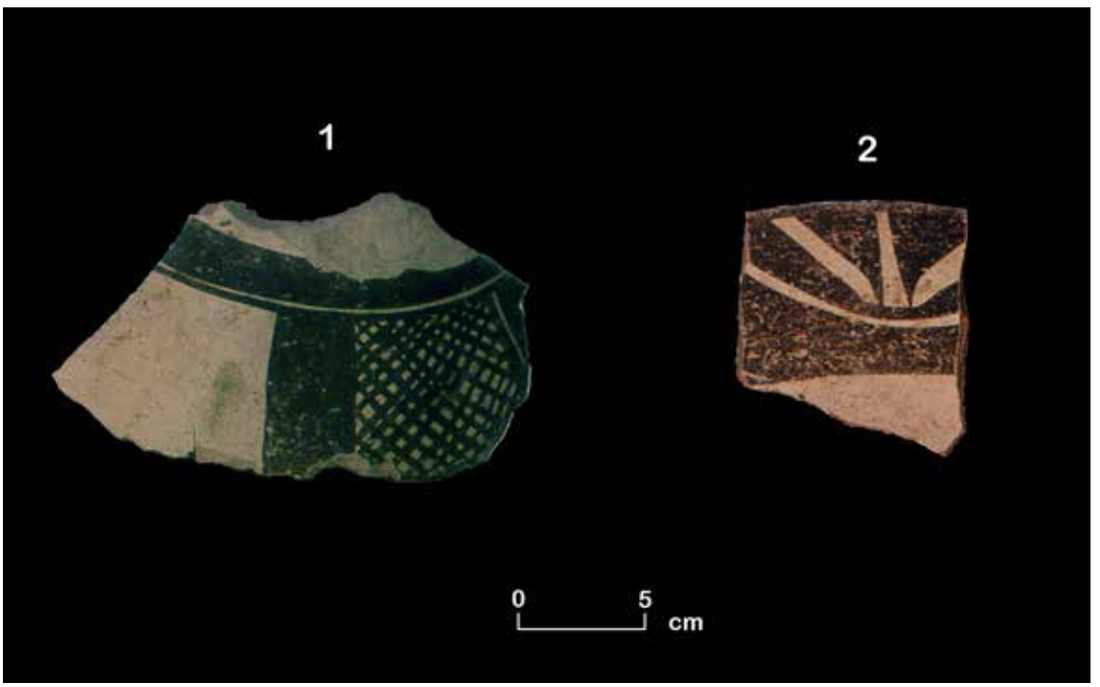


FIGURE 255. Ubaid 2–3 pottery, bowl type 14 from level II, Tell Abada.

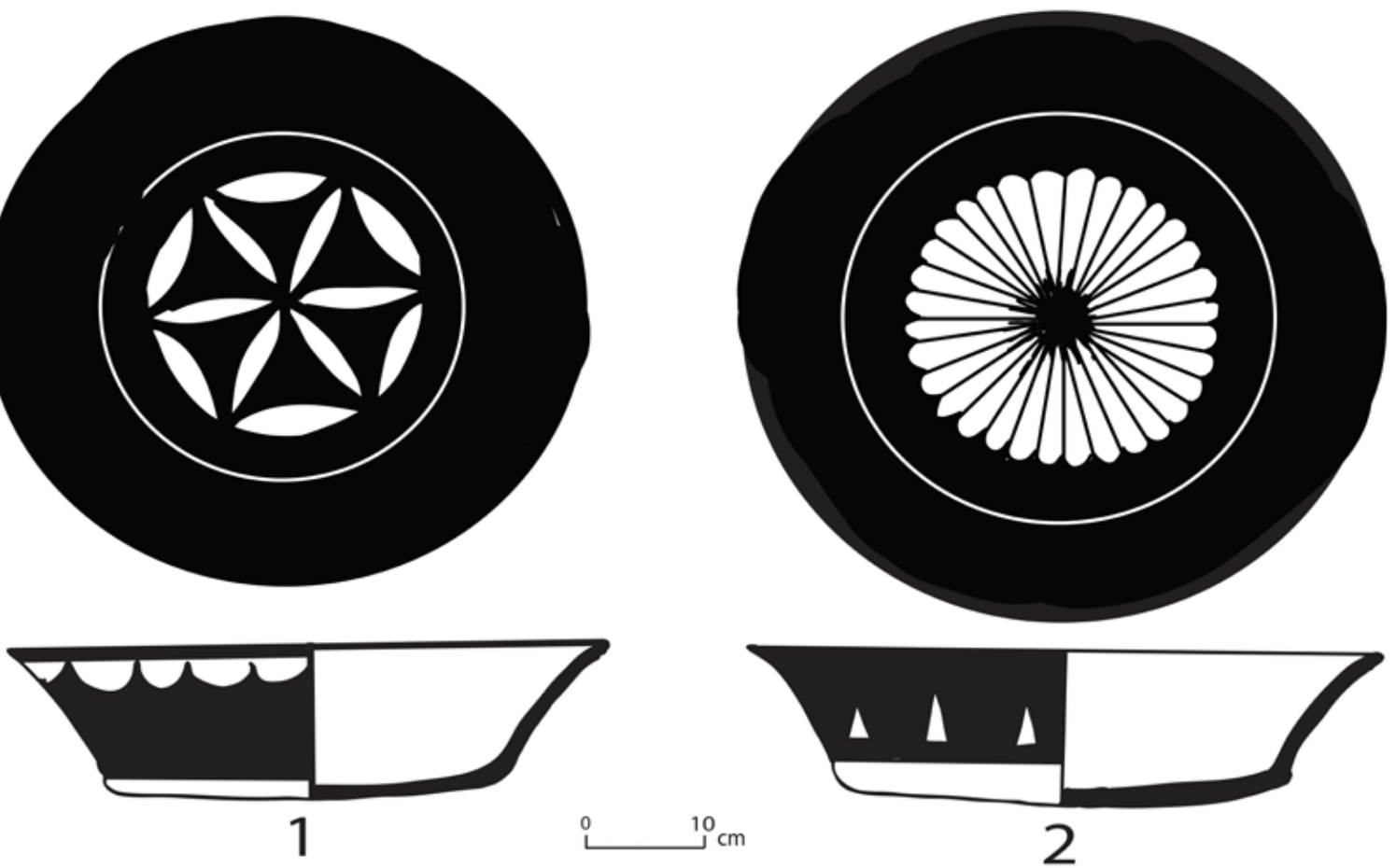


FIGURE 256. Ubaid 2 pottery, bowl type 14 (reconstructed) from level II, Tell Abada.

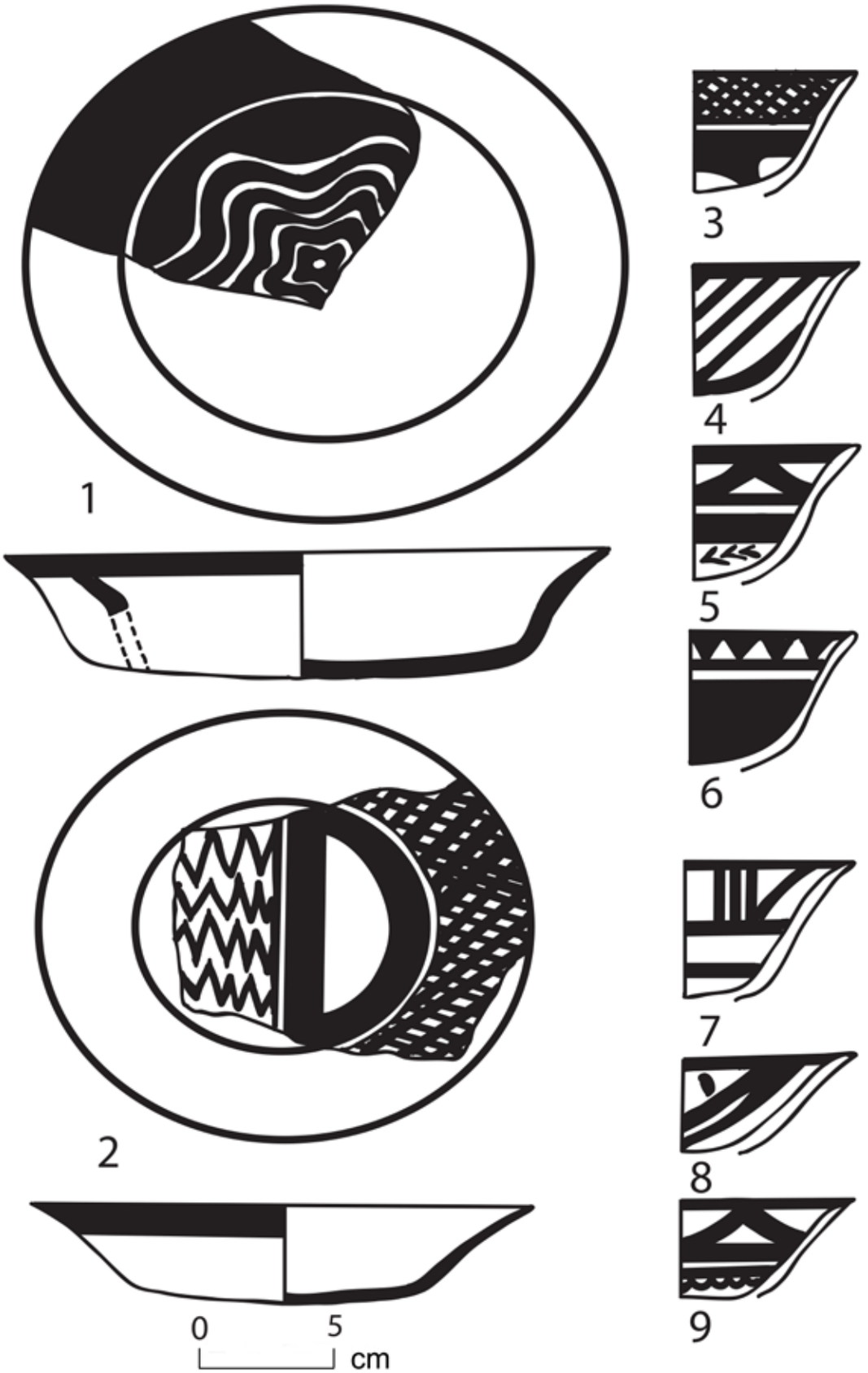


FIGURE 257. Ubaid 2 pottery, bowl type 14 from level II, Tell Abada.

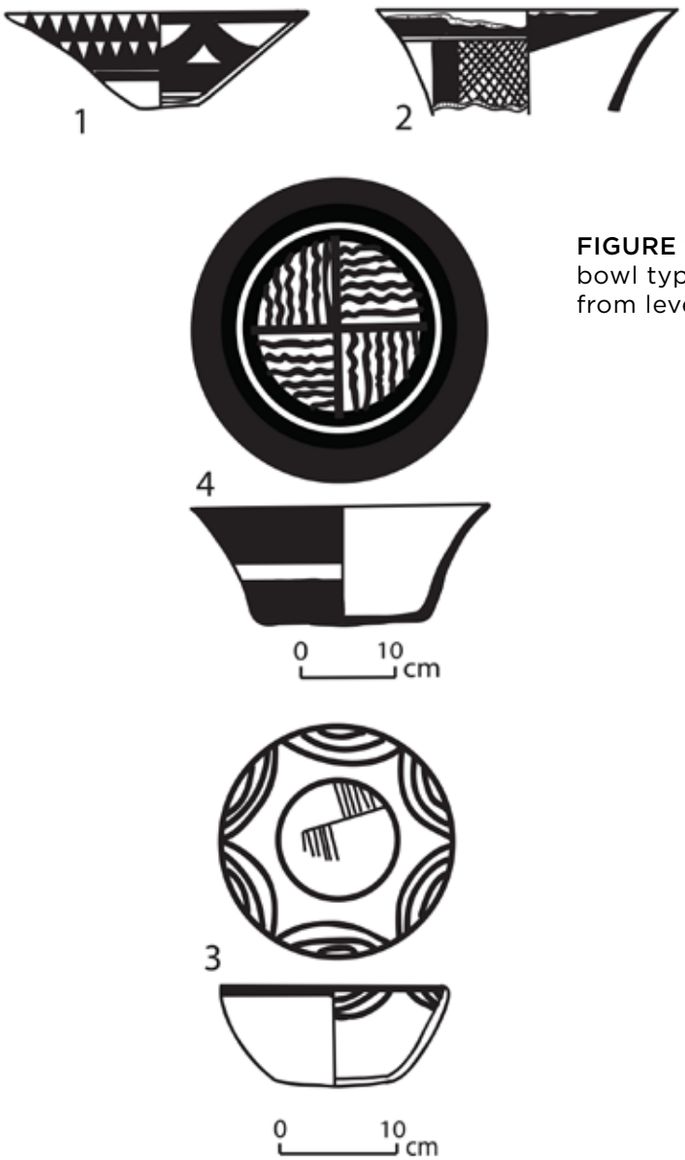


FIGURE 258. Ubaid 2 pottery, bowl type 14 (reconstructed) from level II, Tell Abada.

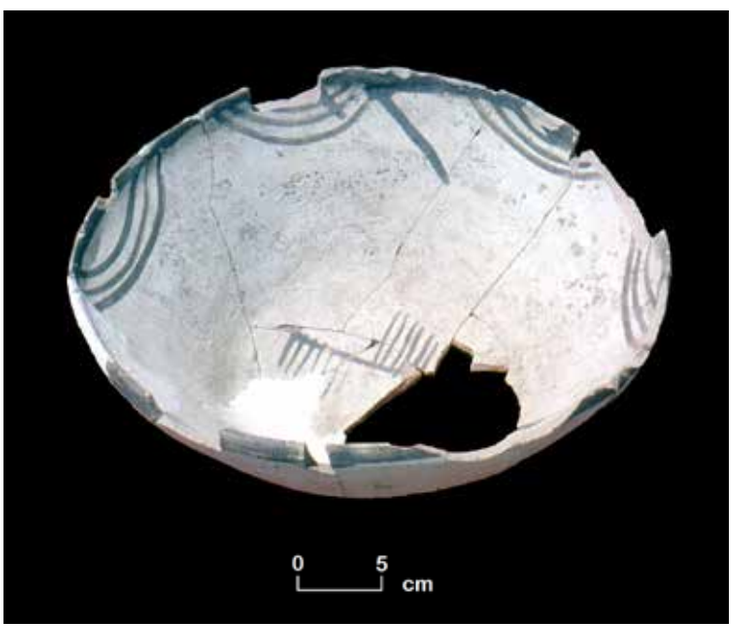


FIGURE 259. Ubaid 2 pottery, large, open mouthed bowl (fig. 258: 3) from level II, Tell Abada.

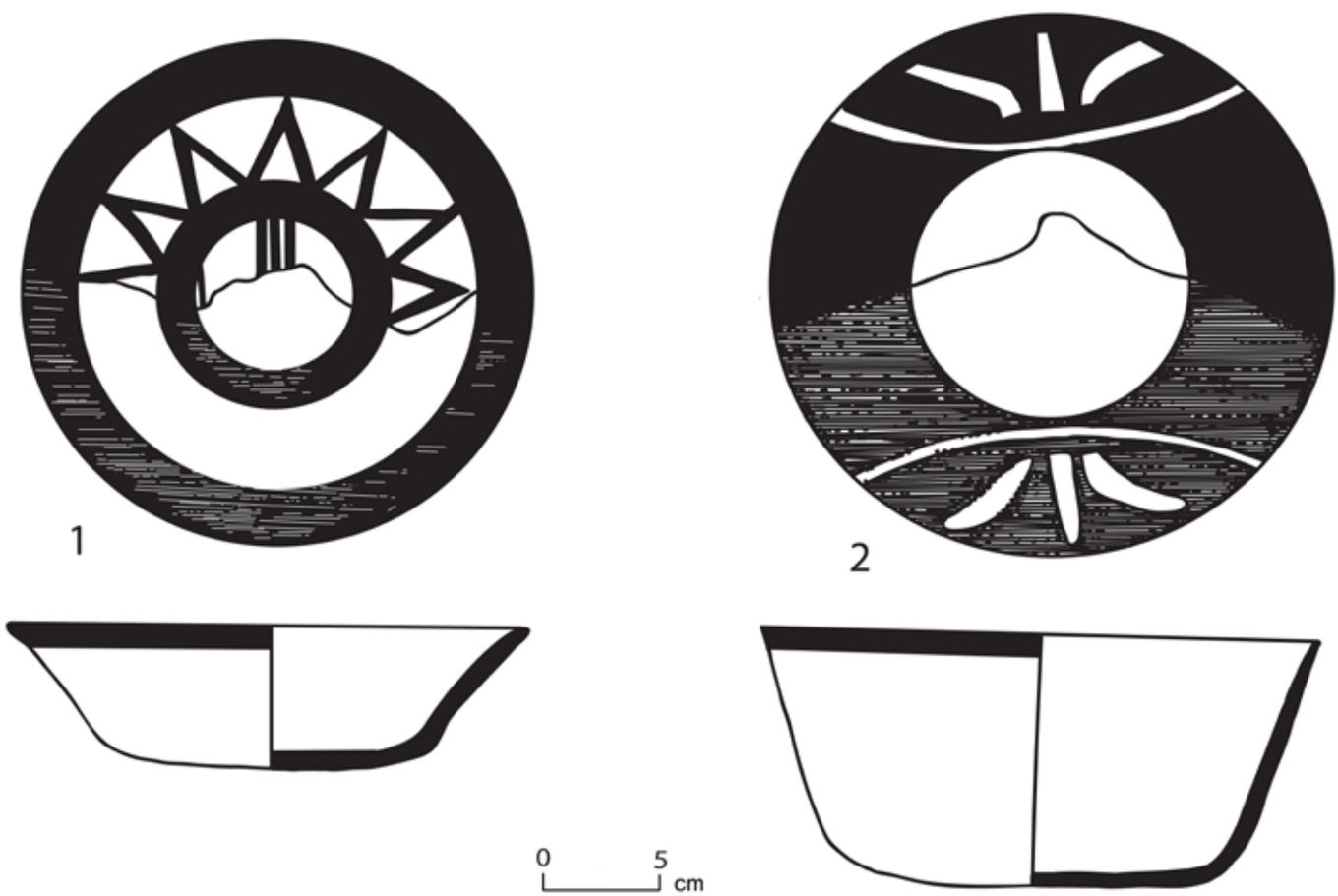


FIGURE 260. Ubaid 2 pottery, bowl type 14 from level II, Tell Abada.

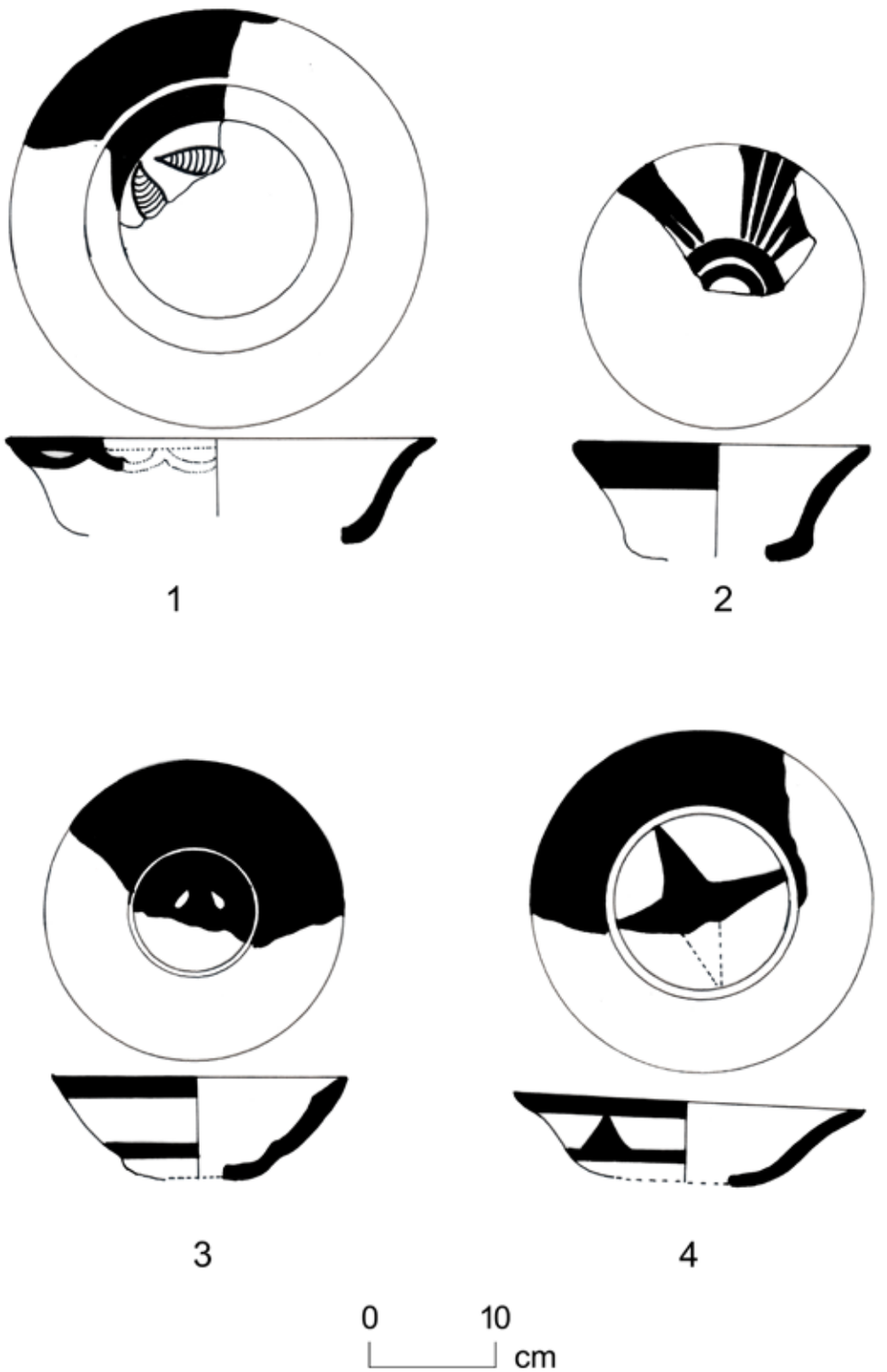


FIGURE 261. Ubaid 2 pottery, bowl type 14 (reconstructed) from level II, Tell Abada.

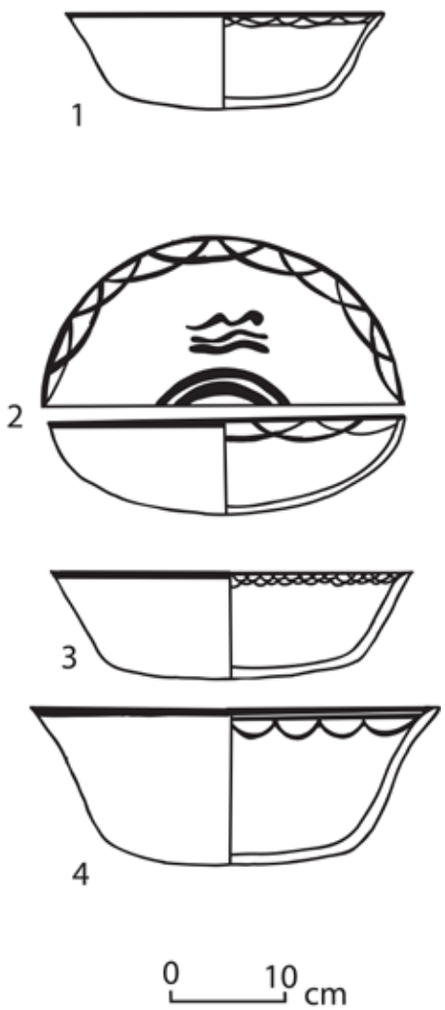


FIGURE 262. Ubaid 2 pottery, bowl type 14 (reconstructed) from level II, Tell Abada.

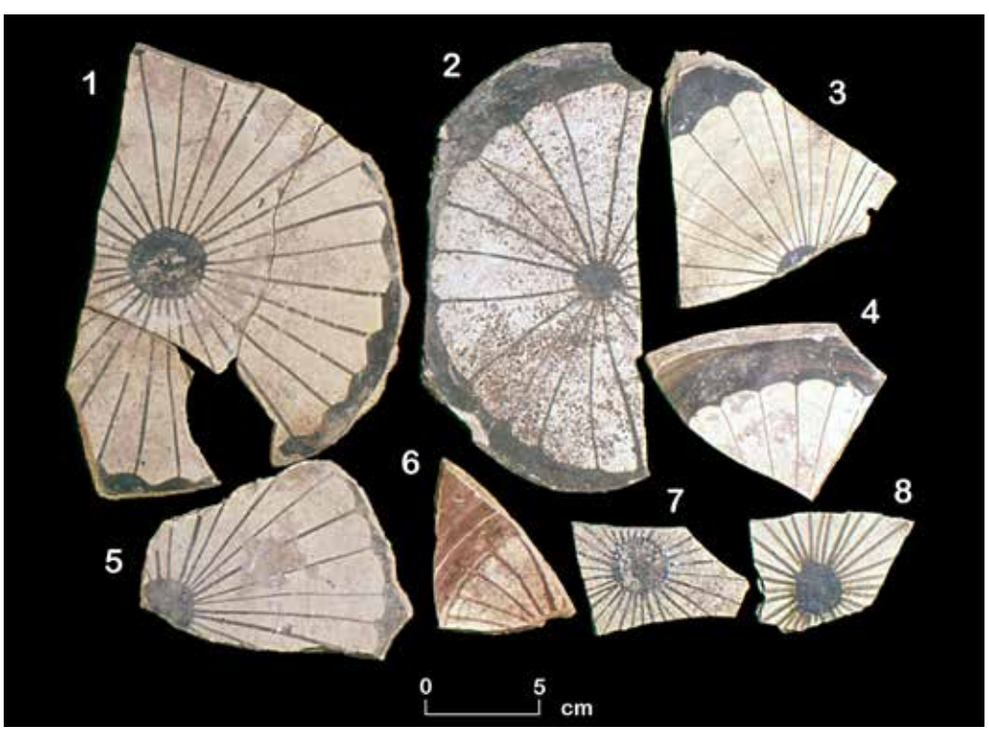


FIGURE 263. Ubaid 2 pottery, sherds belong to bowl type 14, level II, Tell Abada.

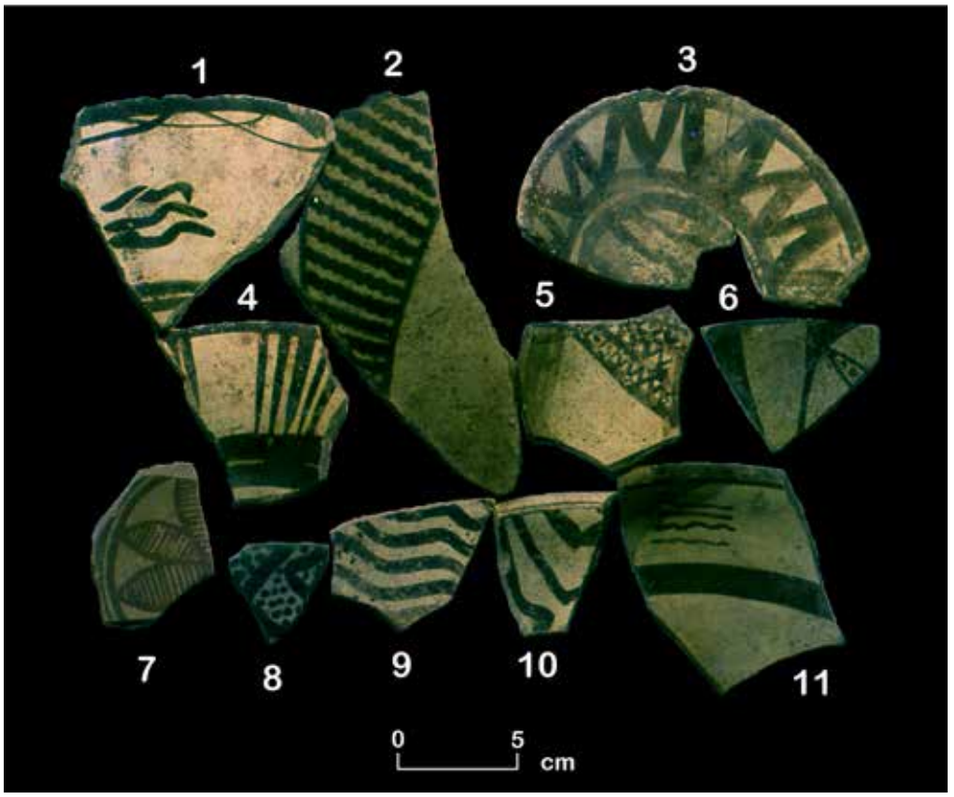


FIGURE 264. Ubaid 2–3 pottery, sherds belong to bowl type 14 from level II, Tell Abada.

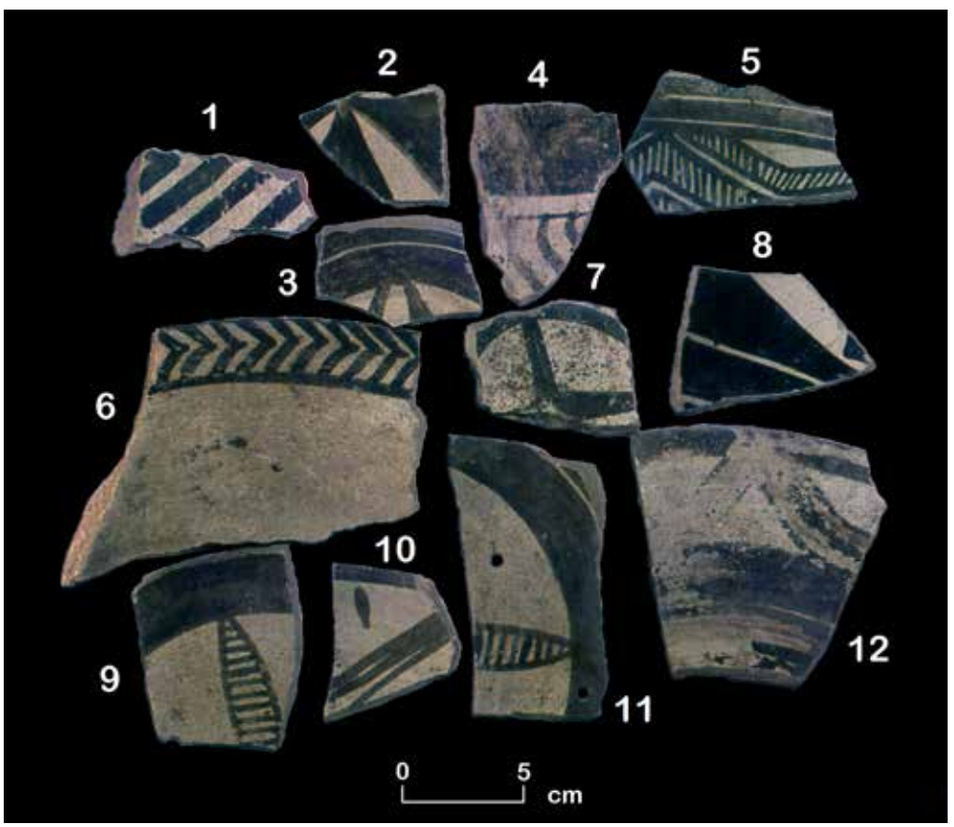


FIGURE 265. Ubaid 2–3 pottery, sherds belong to bowl type 14 from level II, Tell Abada.

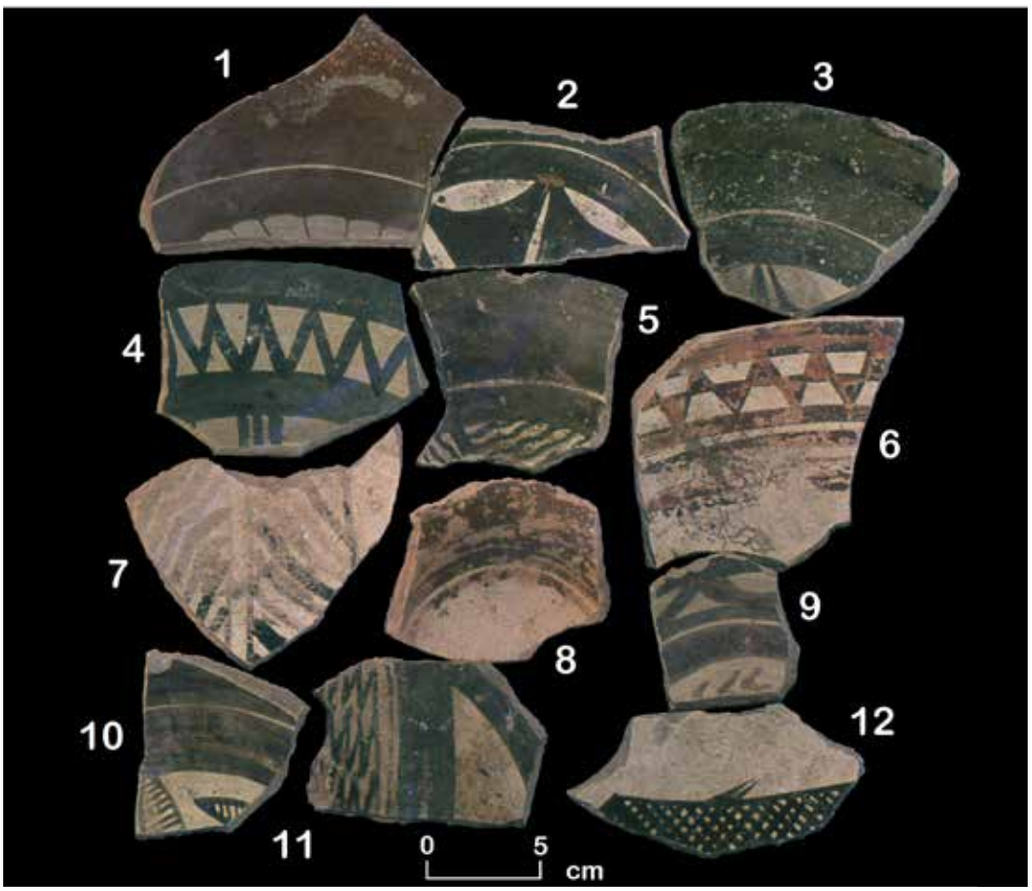


FIGURE 266. Ubaid 2 pottery, sherds belong to bowl type 14 from level II, Tell Abada.

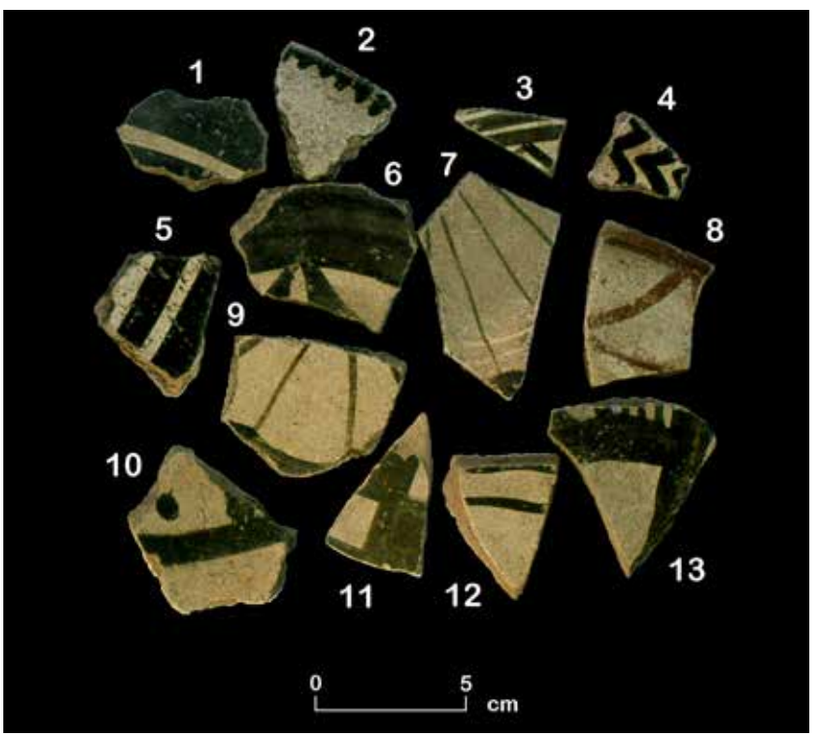


FIGURE 267. Ubaid 2 pottery, sherds belong to bowl type 14 from level II, Tell Abada.

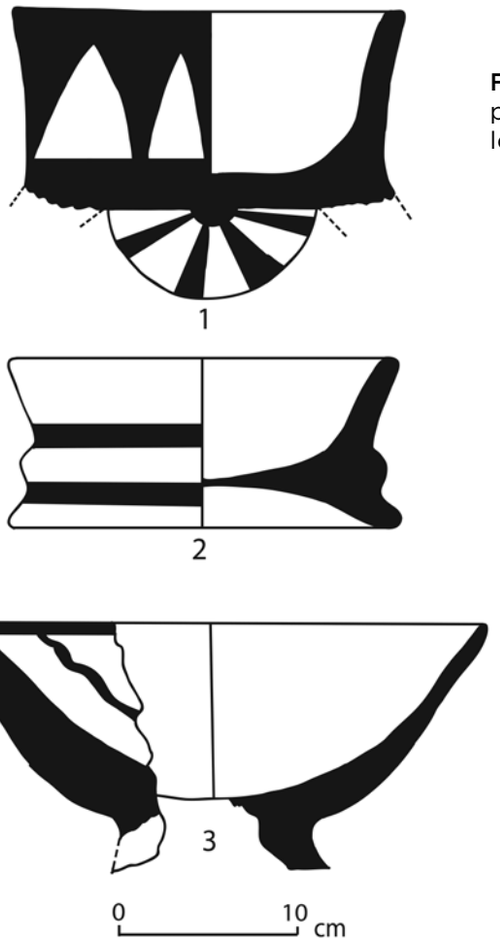


FIGURE 268. Ubaid 2 pottery, bowl type 15 from level II, Tell Abada.

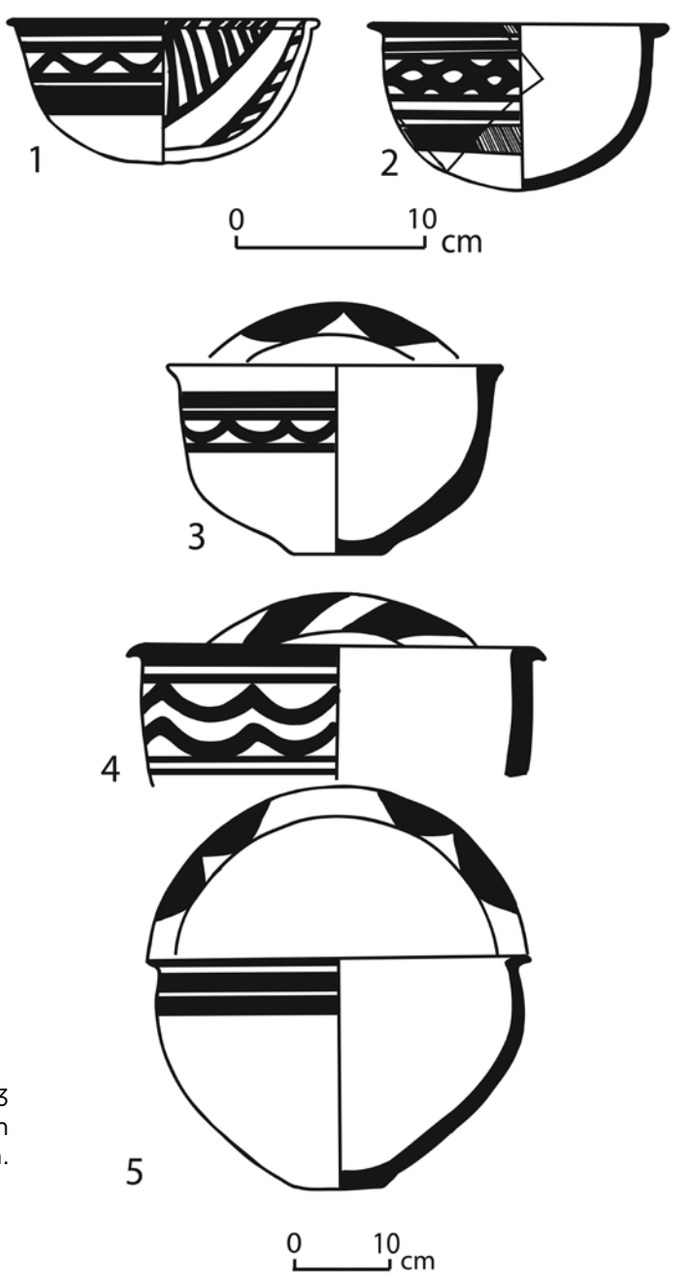


FIGURE 269. Ubaid 2–3 pottery, bowl type 16 from level I, Tell Abada.

FIGURE 270. Ubaid 2–3 pottery, bowl type 16 (fig. 269: 1) from level I, Tell Abada.

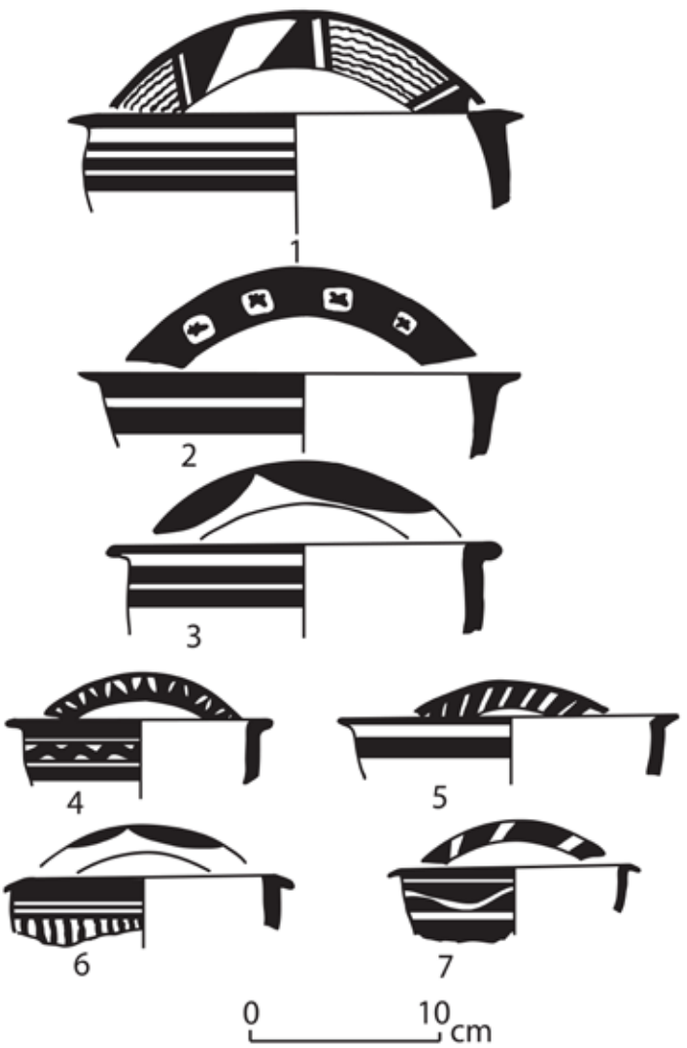


FIGURE 271. Ubaid 2–3 pottery, bowl type 16 from level I, Tell Abada.

FIGURE 272. Ubaid 2–3 pottery, bowl type 16 from level I, Tell Abada.

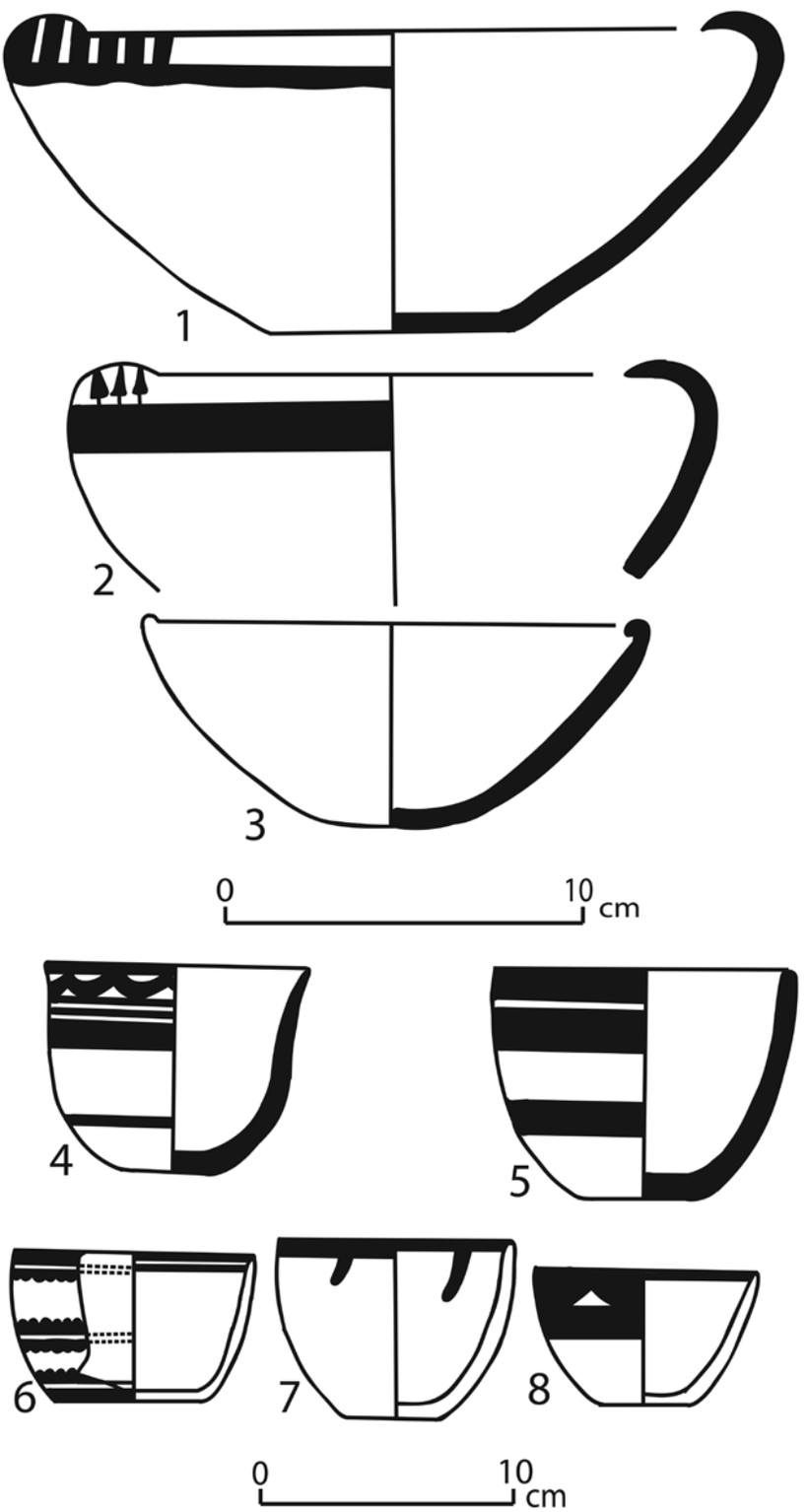


FIGURE 273. Ubaid 2–3 pottery, bowl type 17 (1–2) and type 18 (4–8) from level I, Tell Abada.

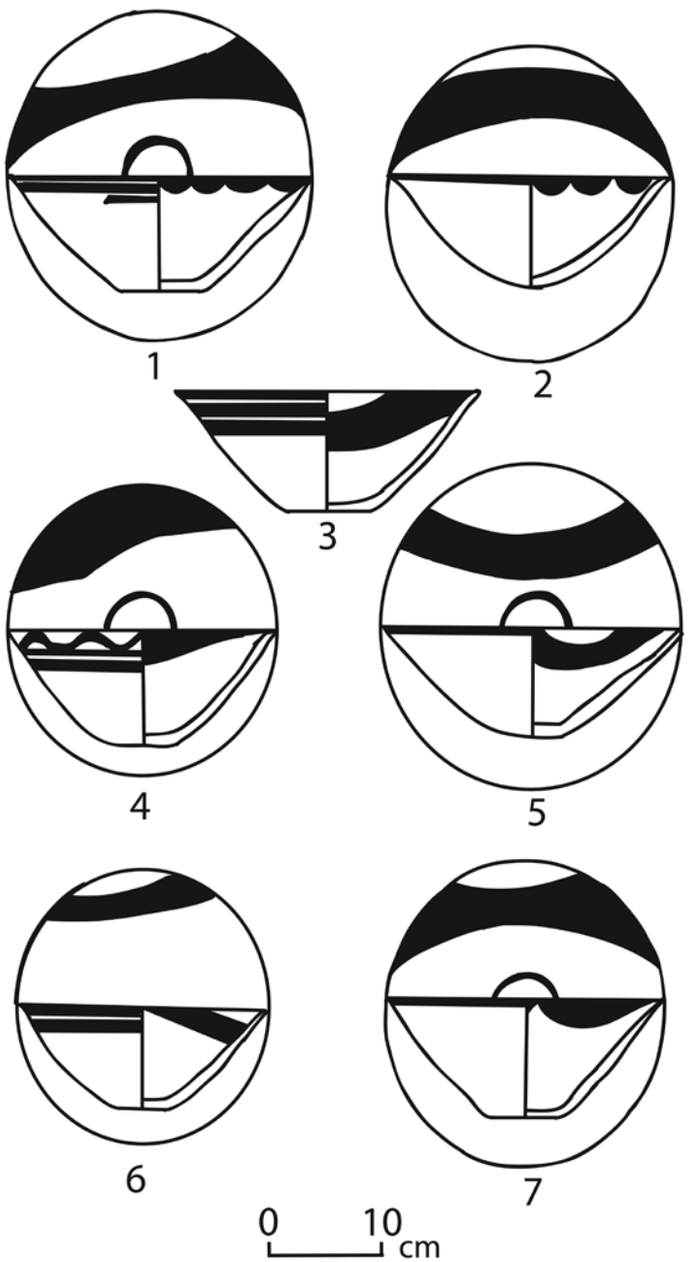


FIGURE 274. Ubaid 3 pottery, bowl type 19 from level I, Tell Abada.

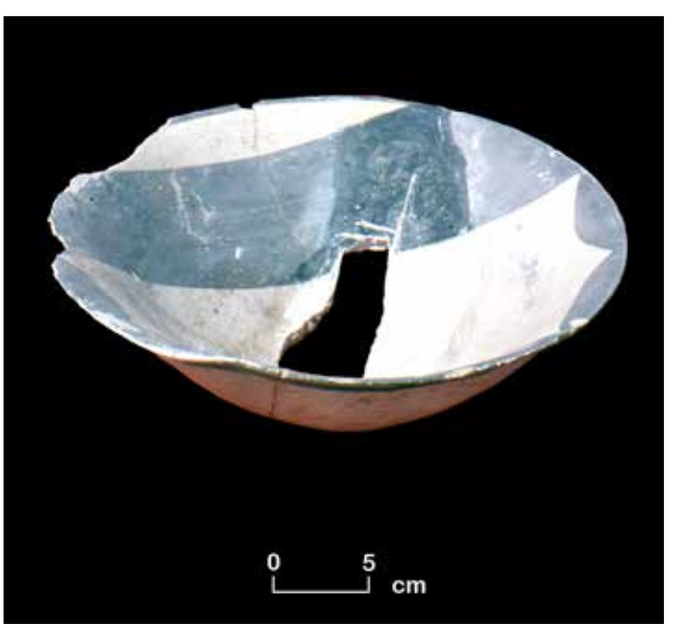


FIGURE 275. Ubaid 3 pottery, bowl type 19 (fig. 274: 2) from level I, Tell Abada.

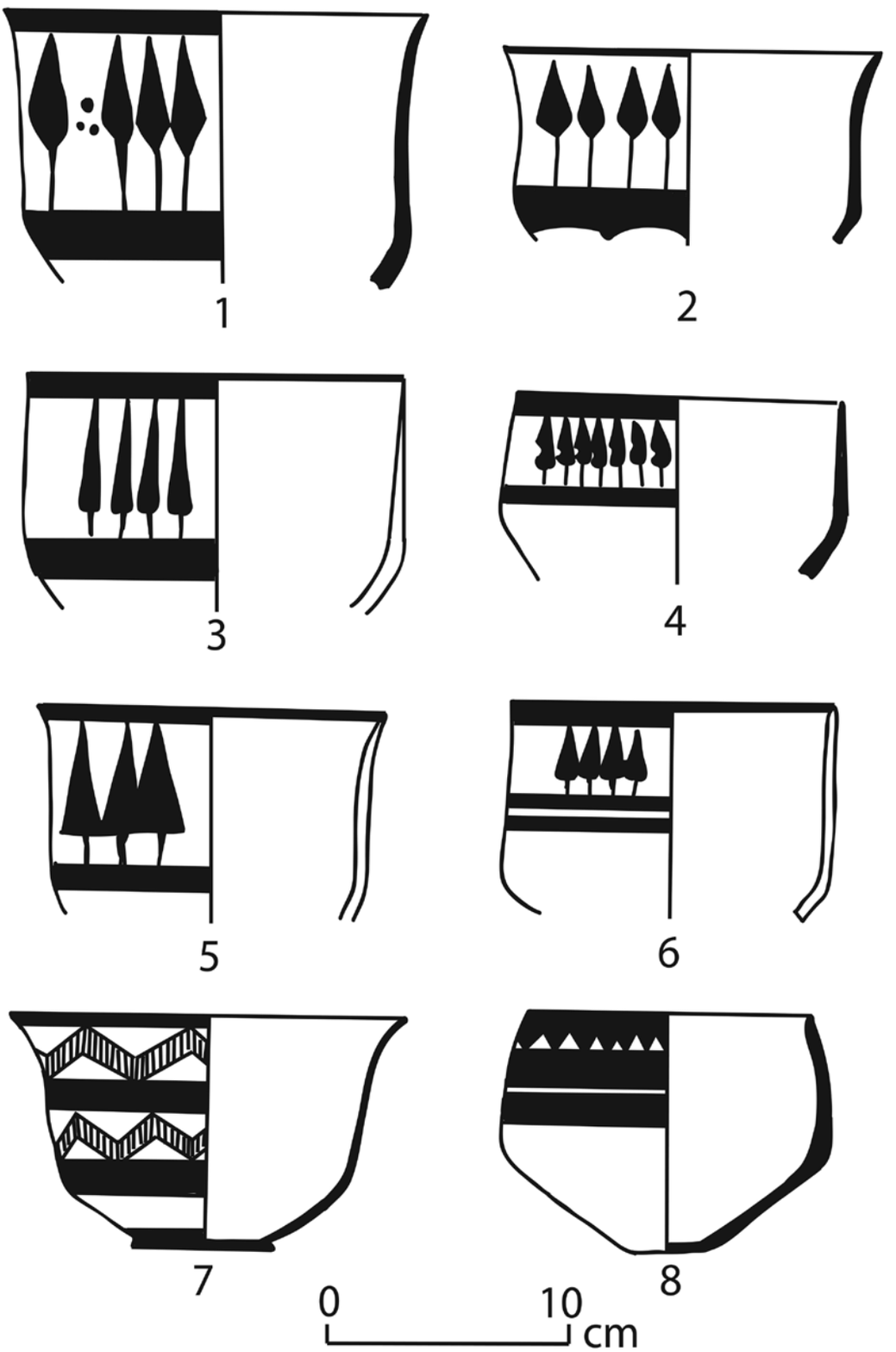


FIGURE 276. Ubaid 3 pottery, bowl type 20 (reconstructed) from level I, Tell Abada.

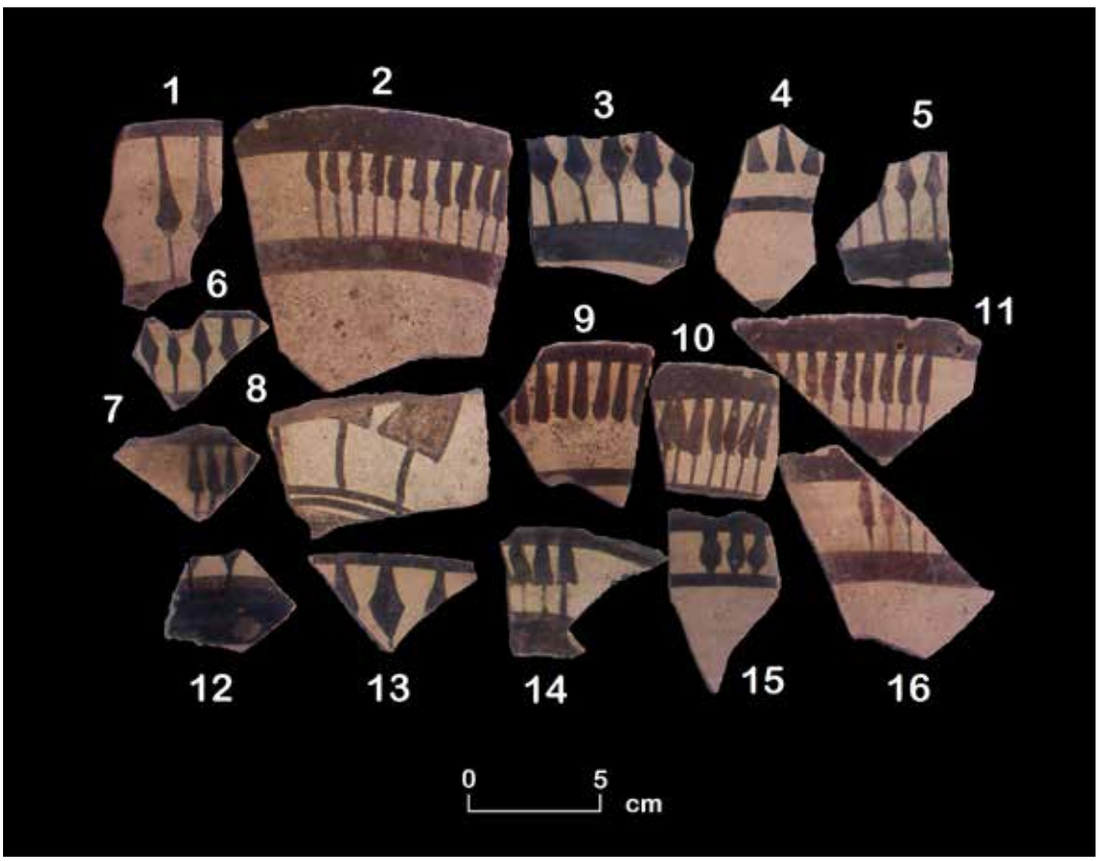


FIGURE 277. Ubaid 3 pottery, painted sherds associated with bowl type 20 from level I, Tell Abada.

FIGURE 278. Ubaid 3 pottery, delicate bowl type 20 (fig. 276: 7) from level I, Tell Abada.

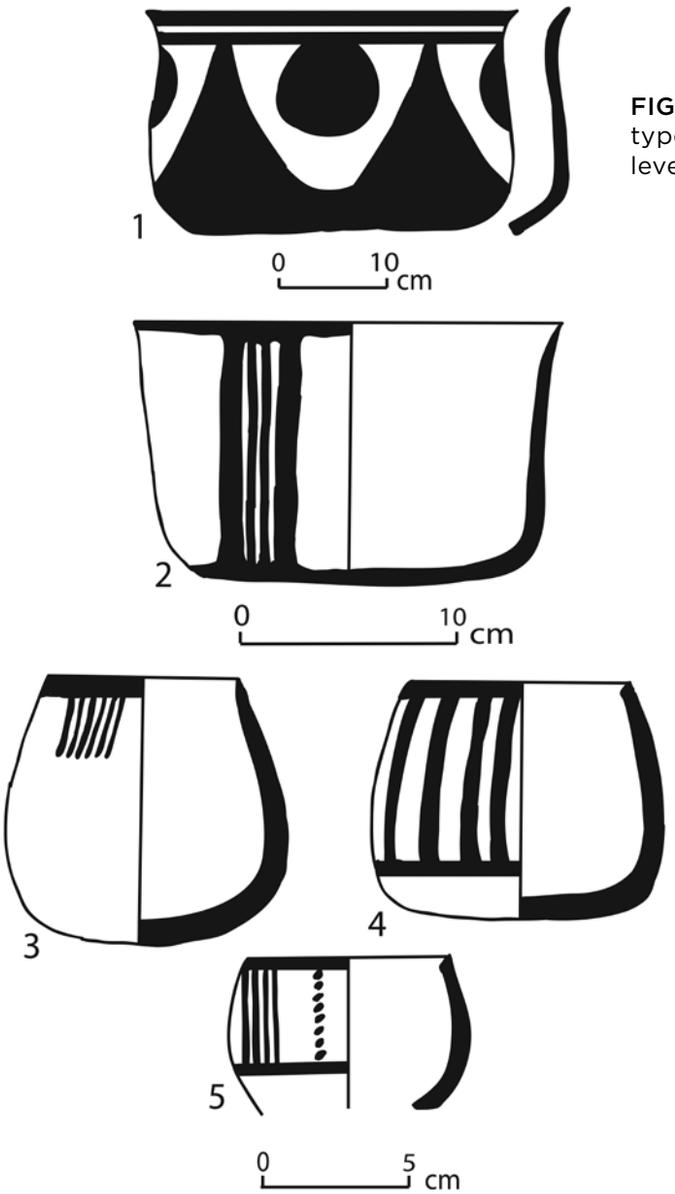


FIGURE 279. Ubaid 3 pottery, bowl type 21 (1–2) and type 22 (3–5) from level I, Tell Abada.

FIGURE 280. Ubaid 3 pottery, large painted bowl bearing all-over painted decoration (fig. 279: 1) from level I, Tell Abada.

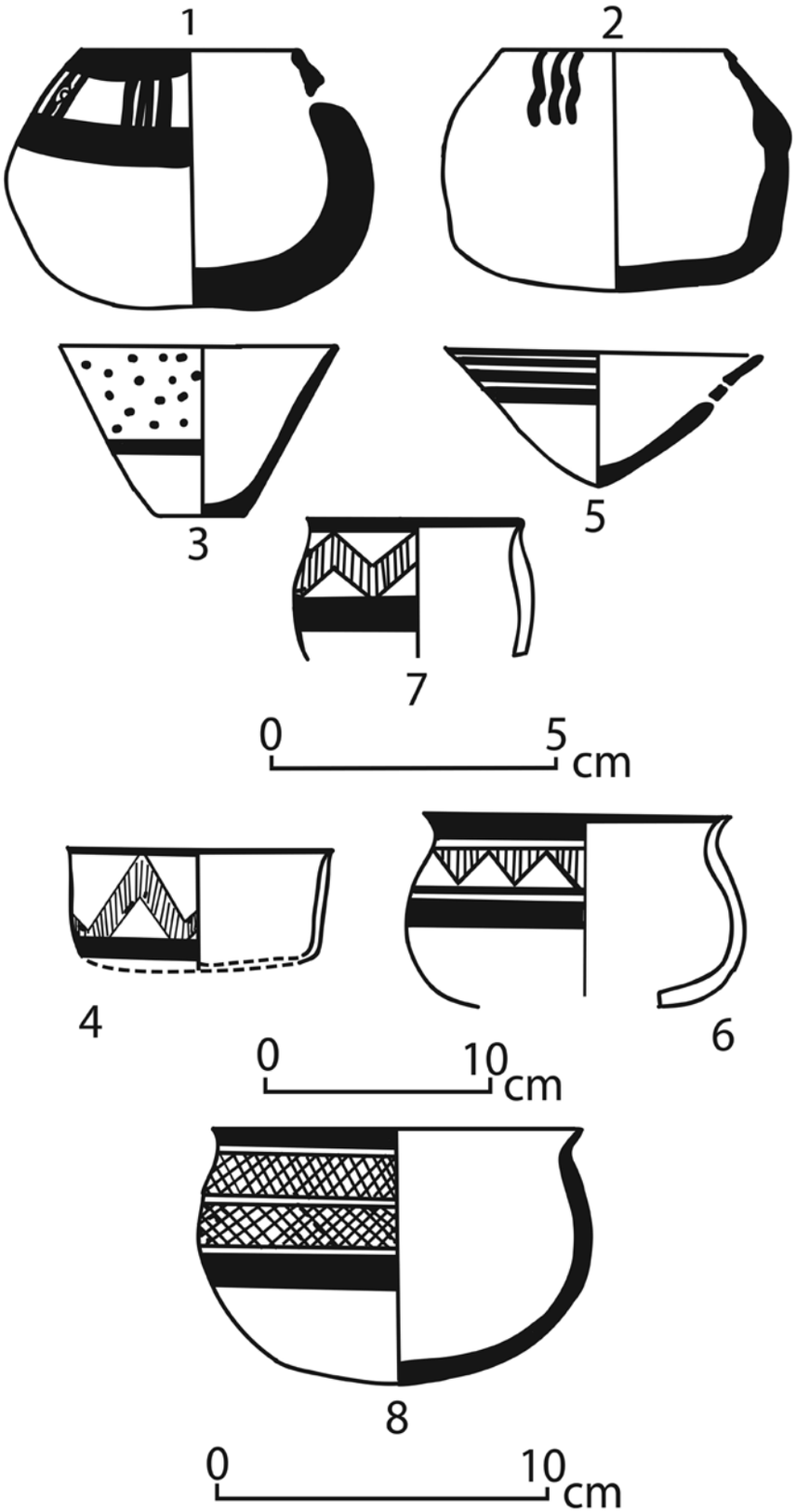


FIGURE 281. Ubaid 3 pottery, miniatures, type 23 (1–3); miscellaneous, type 24 (4–9); from level II, Tell Abada.

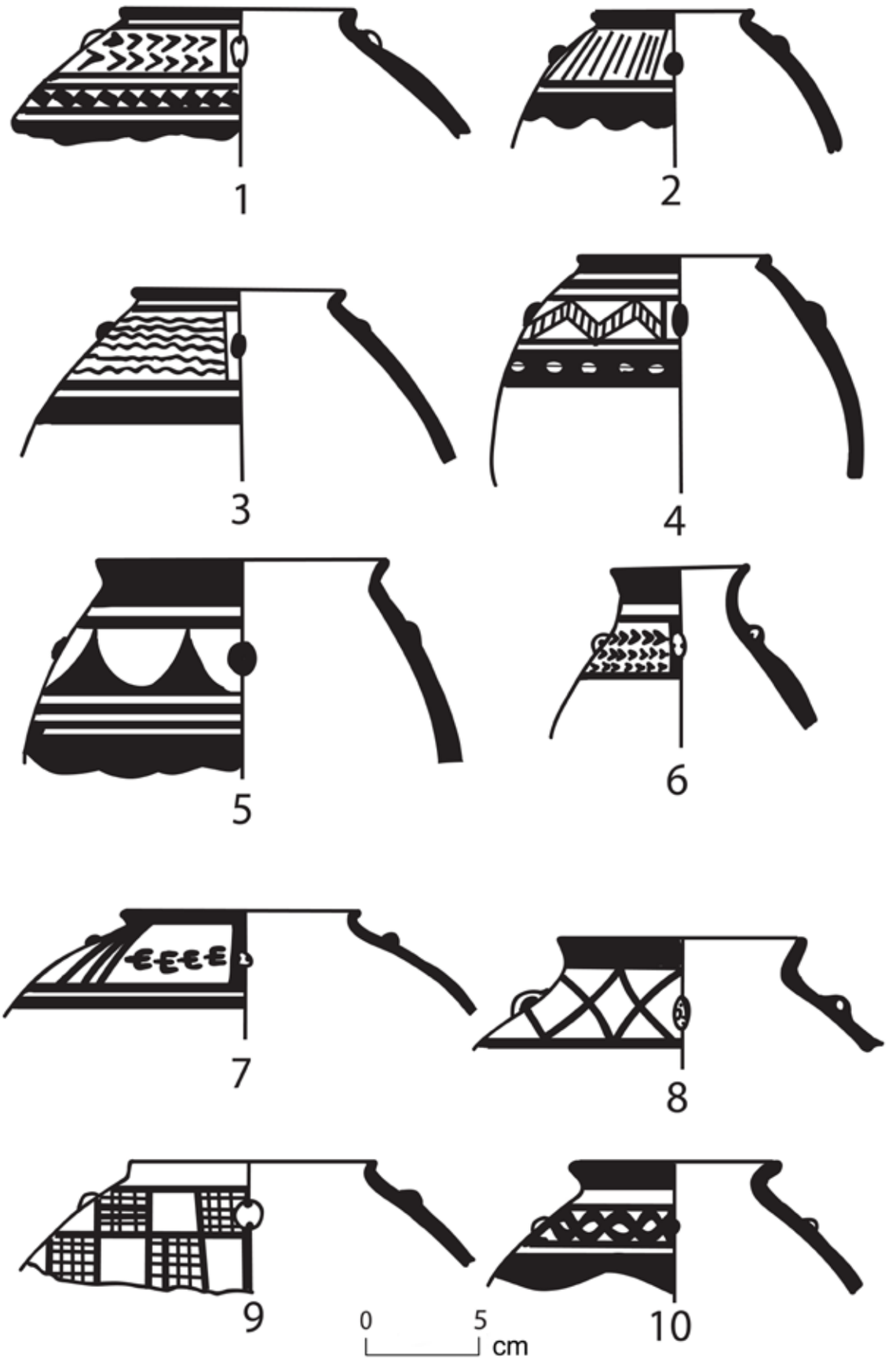


FIGURE 282. Ubaid 3 pottery, jar type 1 from level II, Tell Abada.

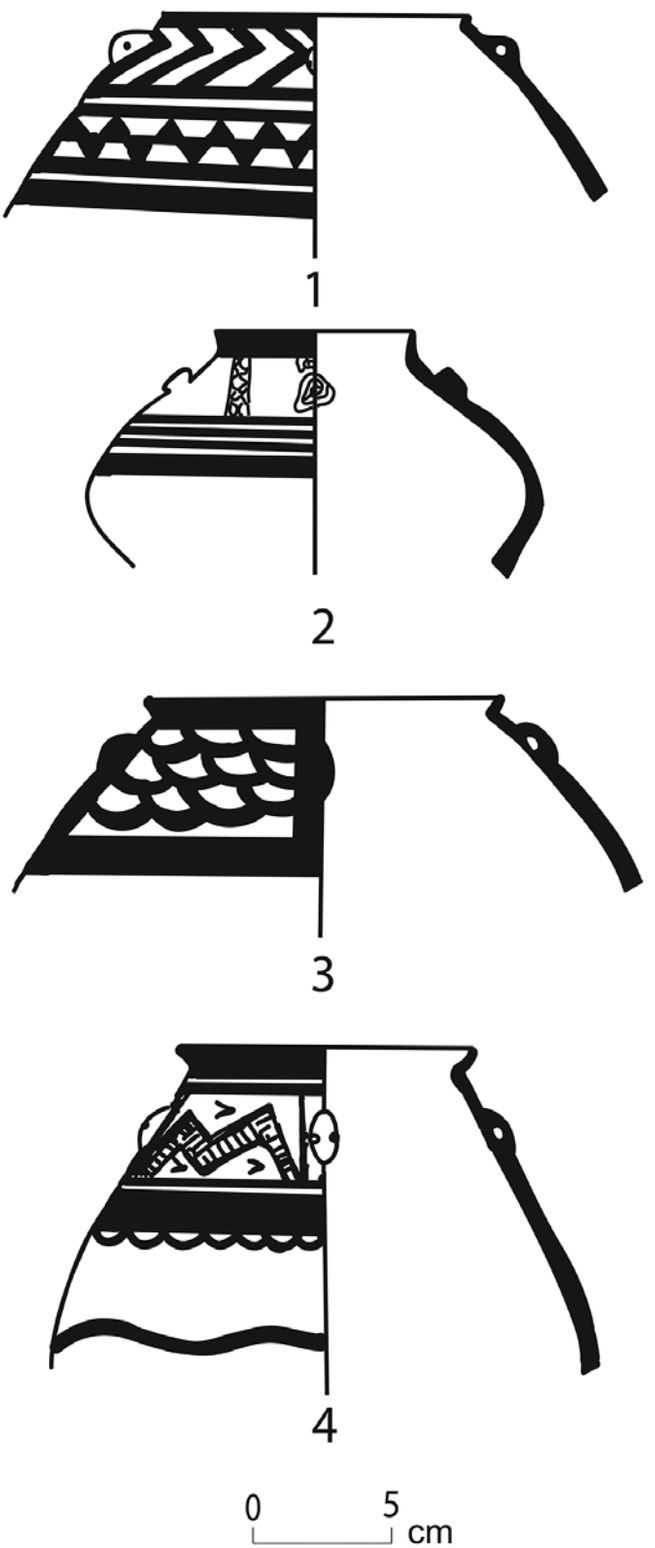


FIGURE 283. Ubaid 3 pottery, jar type 1 from level II, Tell Abada.

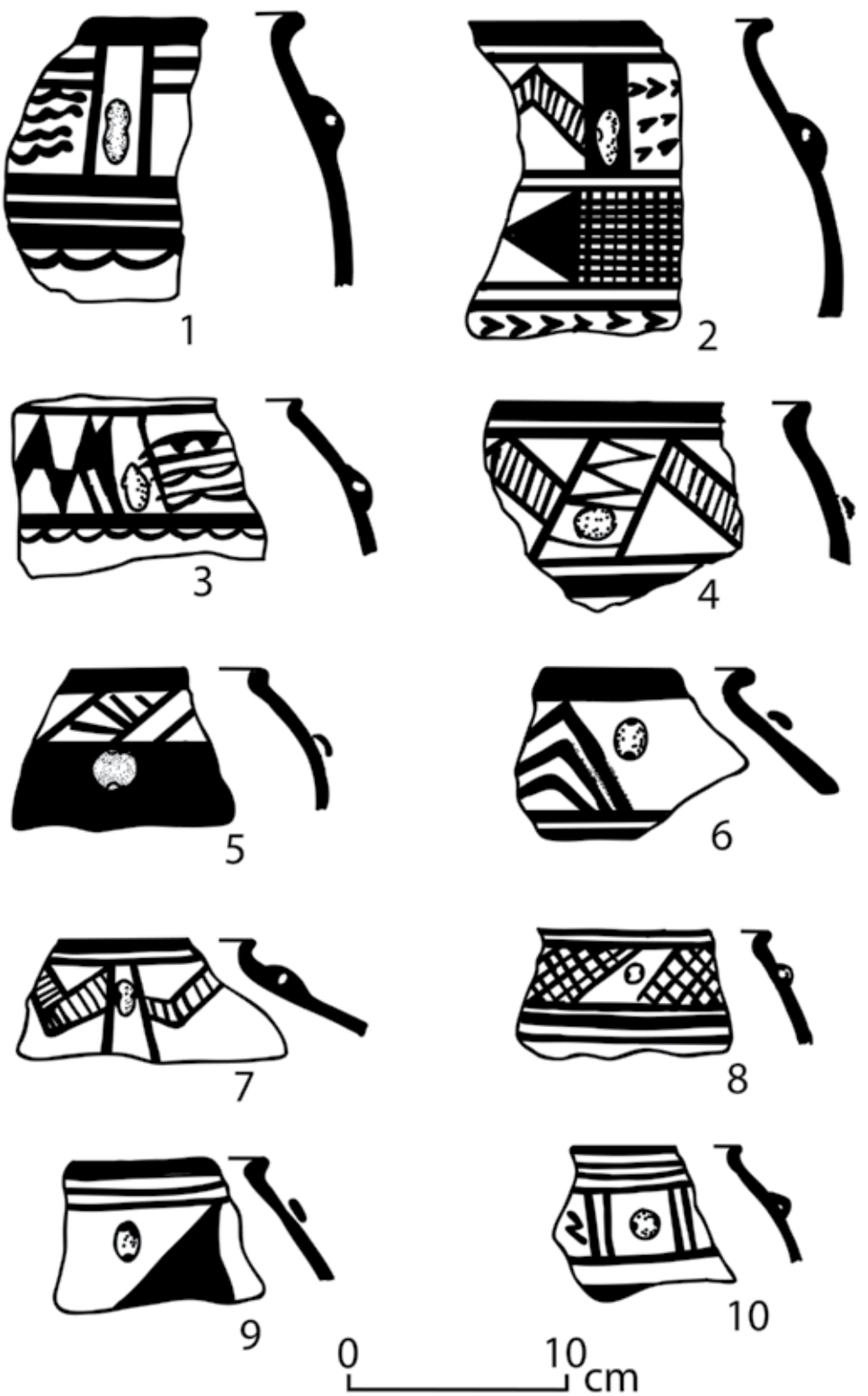


FIGURE 284. Ubaid 3 pottery, jar type 1 from level II, Tell Abada.

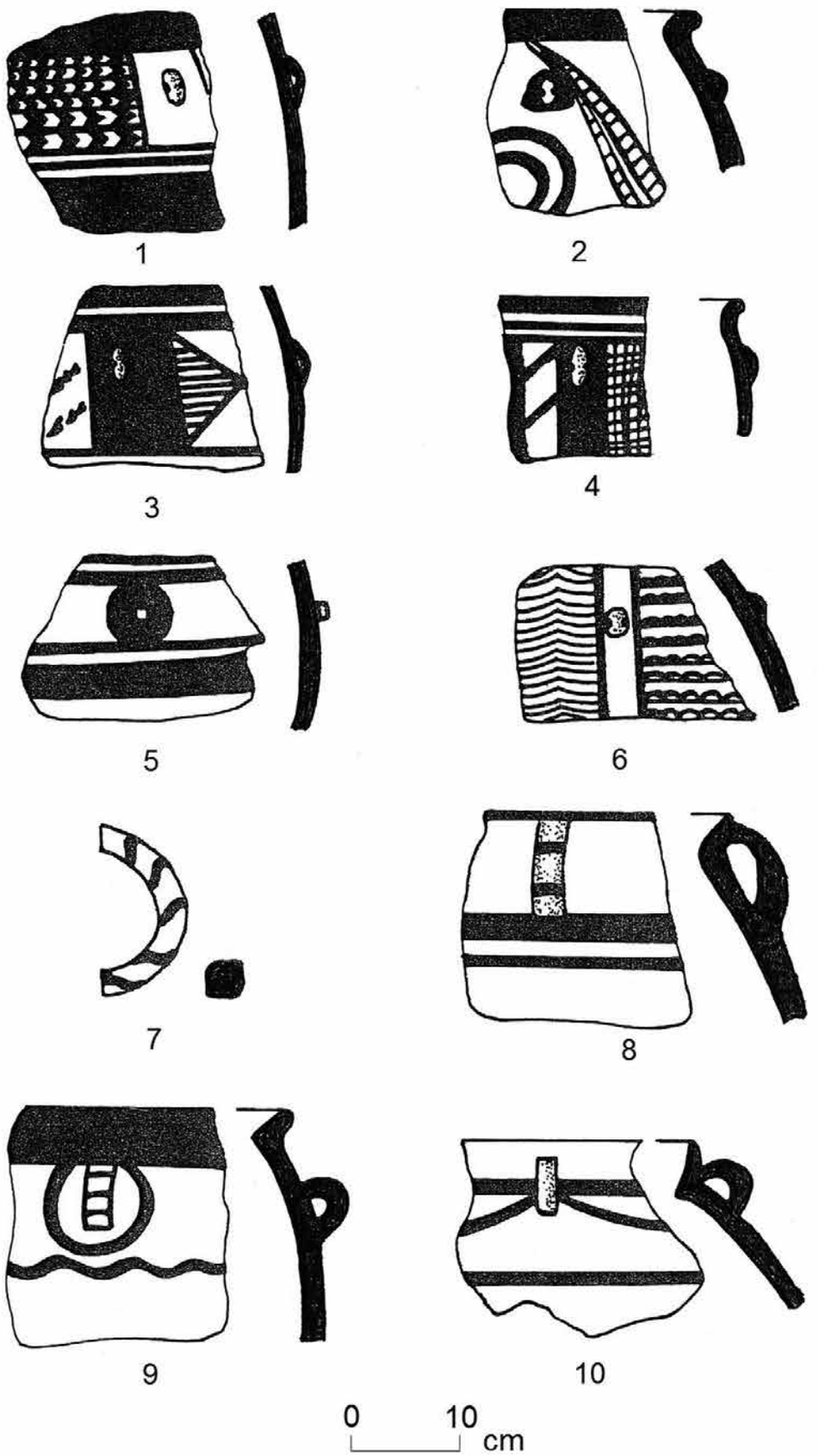


FIGURE 285. Ubaid 3 pottery, jar type 1 (1–6); type 2 (7–10); from level II, Tell Abada.

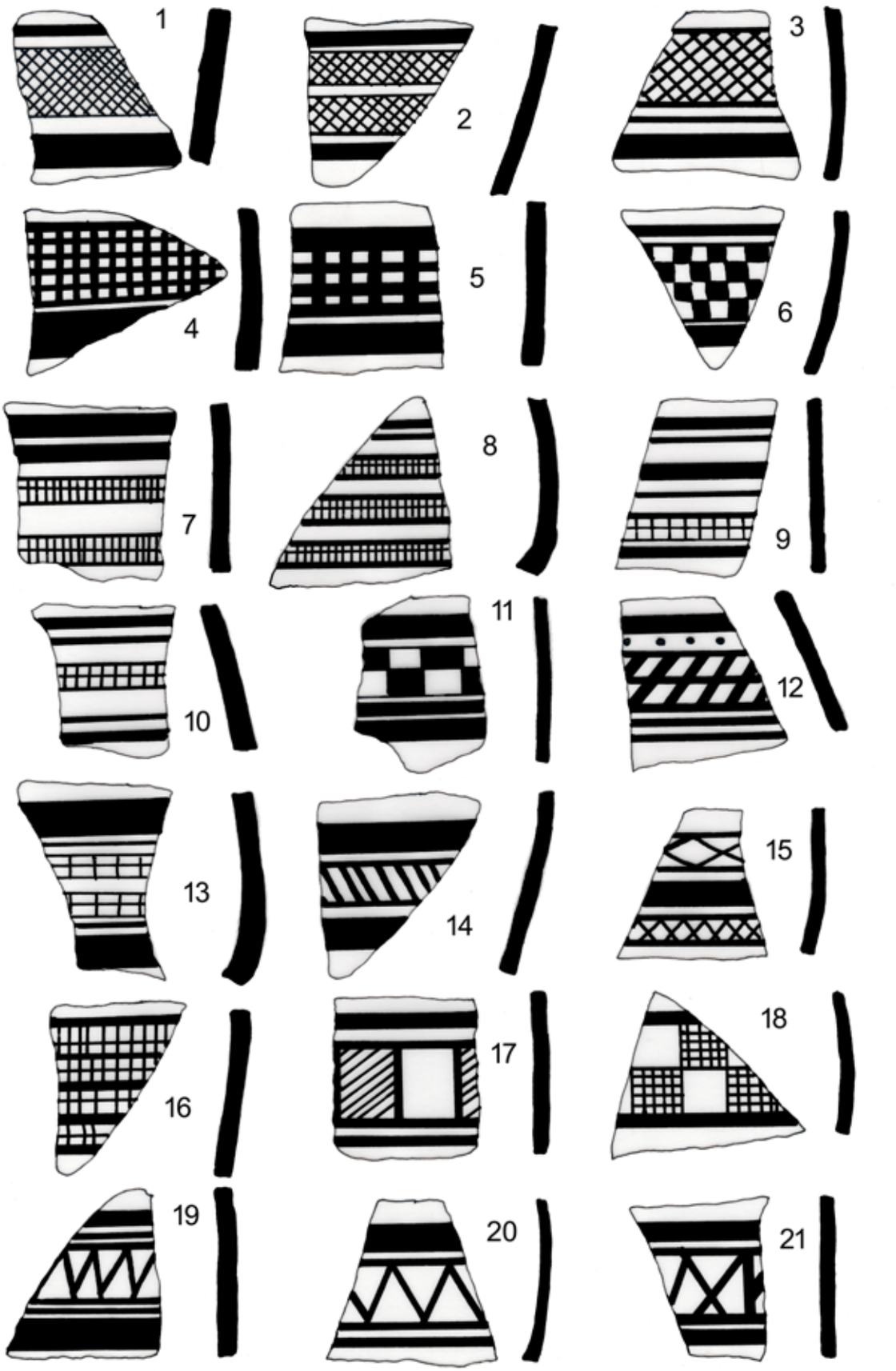


FIGURE 286. Ubaid 3 pottery, painted motifs on sherds belong to type 1 from level II, Tell Abada.

FIGURE 287. Ubaid 3 pottery, painted pottery sherds belong to jar type 1 from level II, Tell Abada.

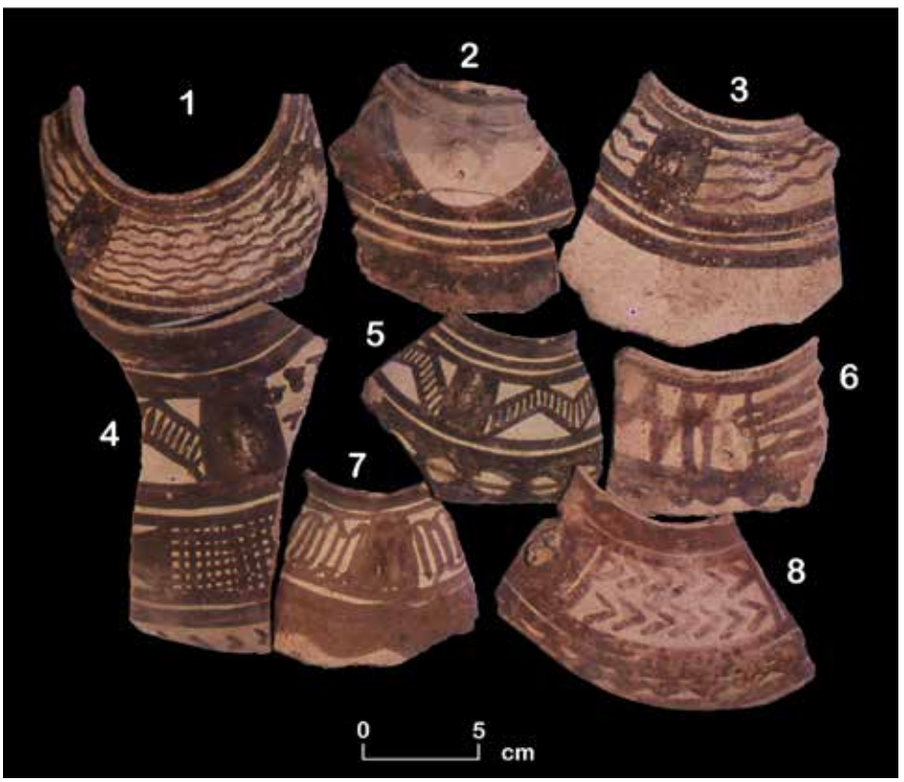


FIGURE 288. Ubaid 3 pottery, painted pottery sherds belong to jar type 1 from level II, Tell Abada.

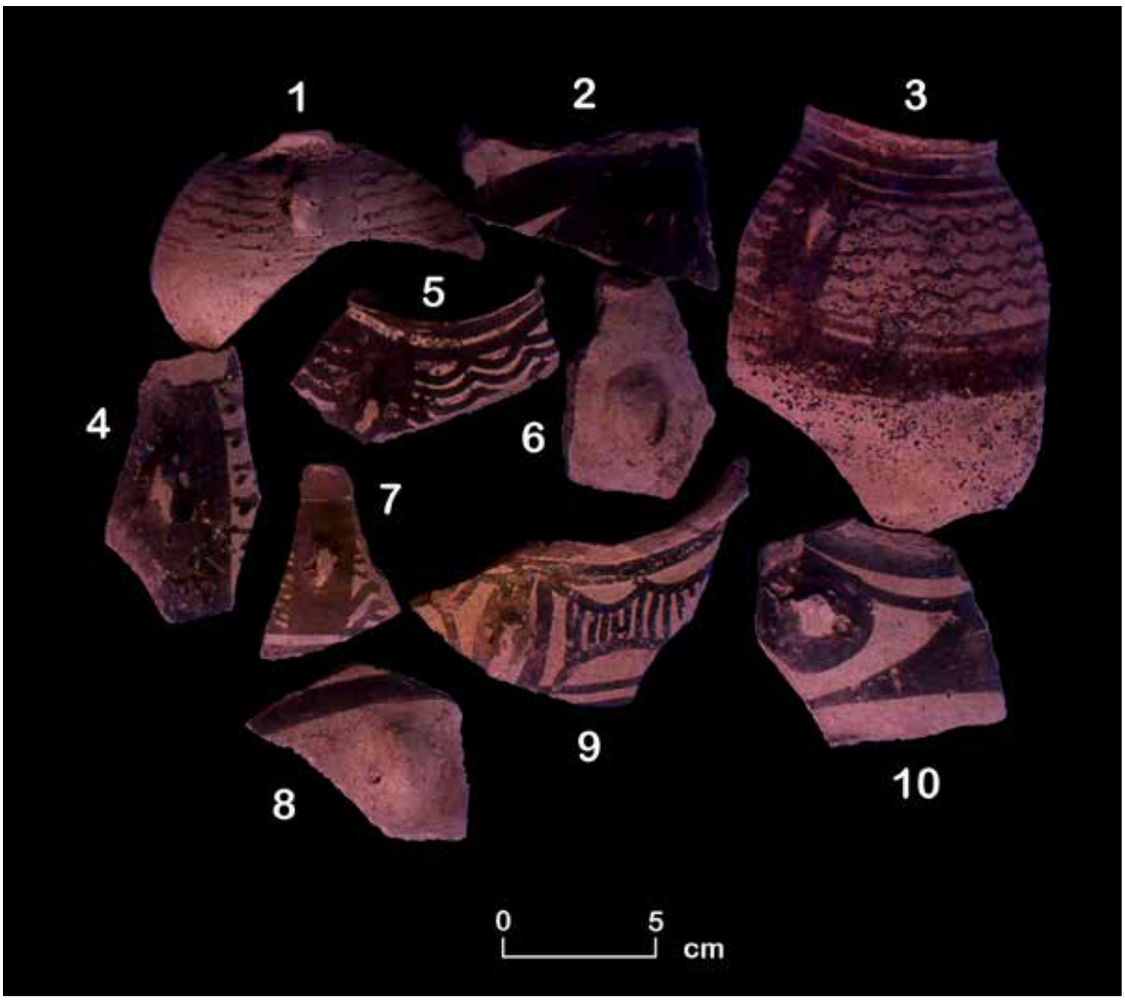


FIGURE 289. Ubaid 3 pottery, painted pottery sherds belong to jar type 1 from level II, Tell Abada.

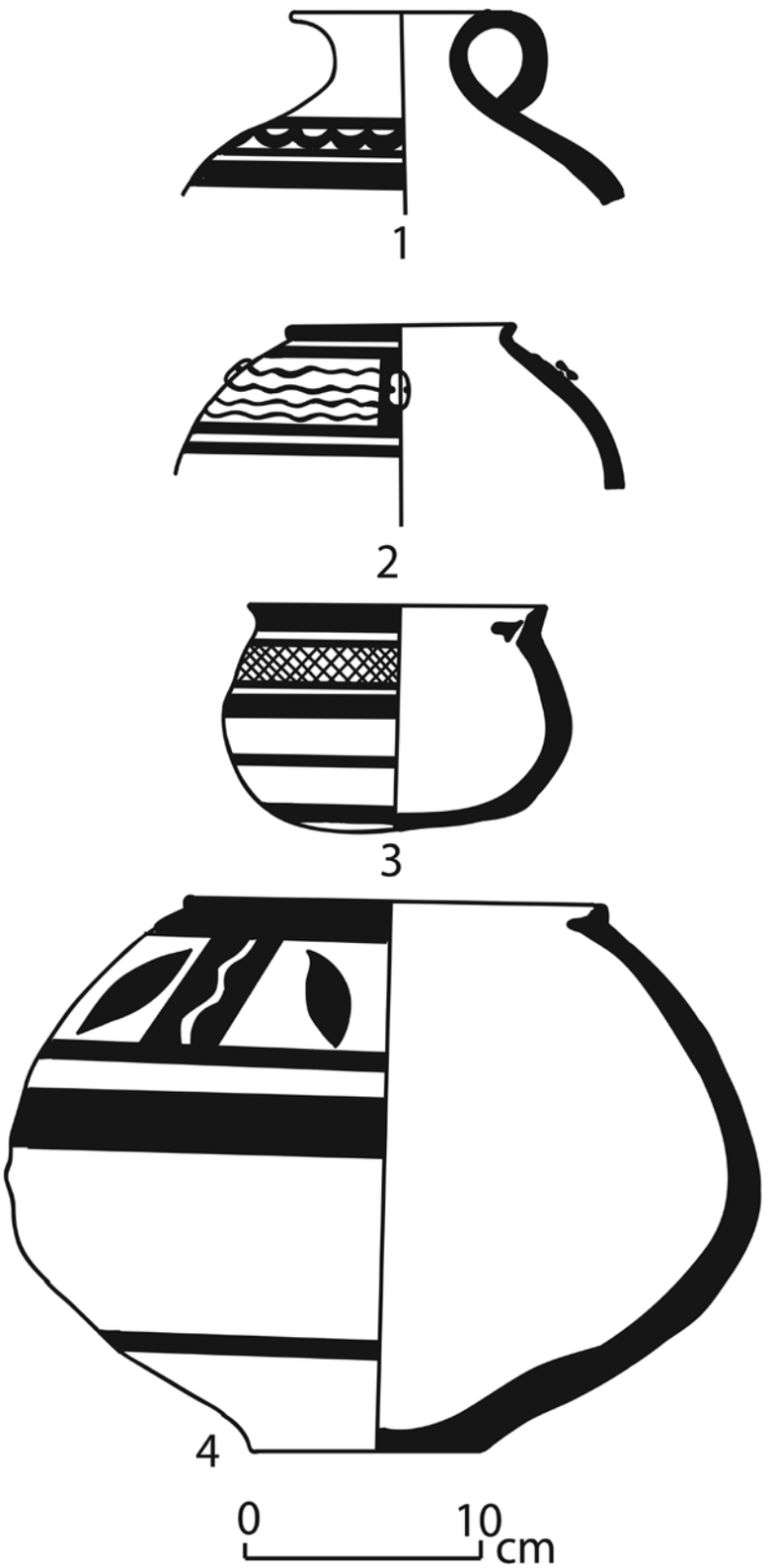


FIGURE 290. Ubaid 3 pottery, jar types 1 (1), 2 (2), 3 (3–4 [fig. 58]) from level I, Tell Abada.

FIGURE 291. Ubaid 3 pottery, painted sherds belong to type 1 from level I, Tell Abada.

FIGURE 292. Ubaid 3 pottery, jar type 3 (fig. 290: 3) from level I, Tell Abada.

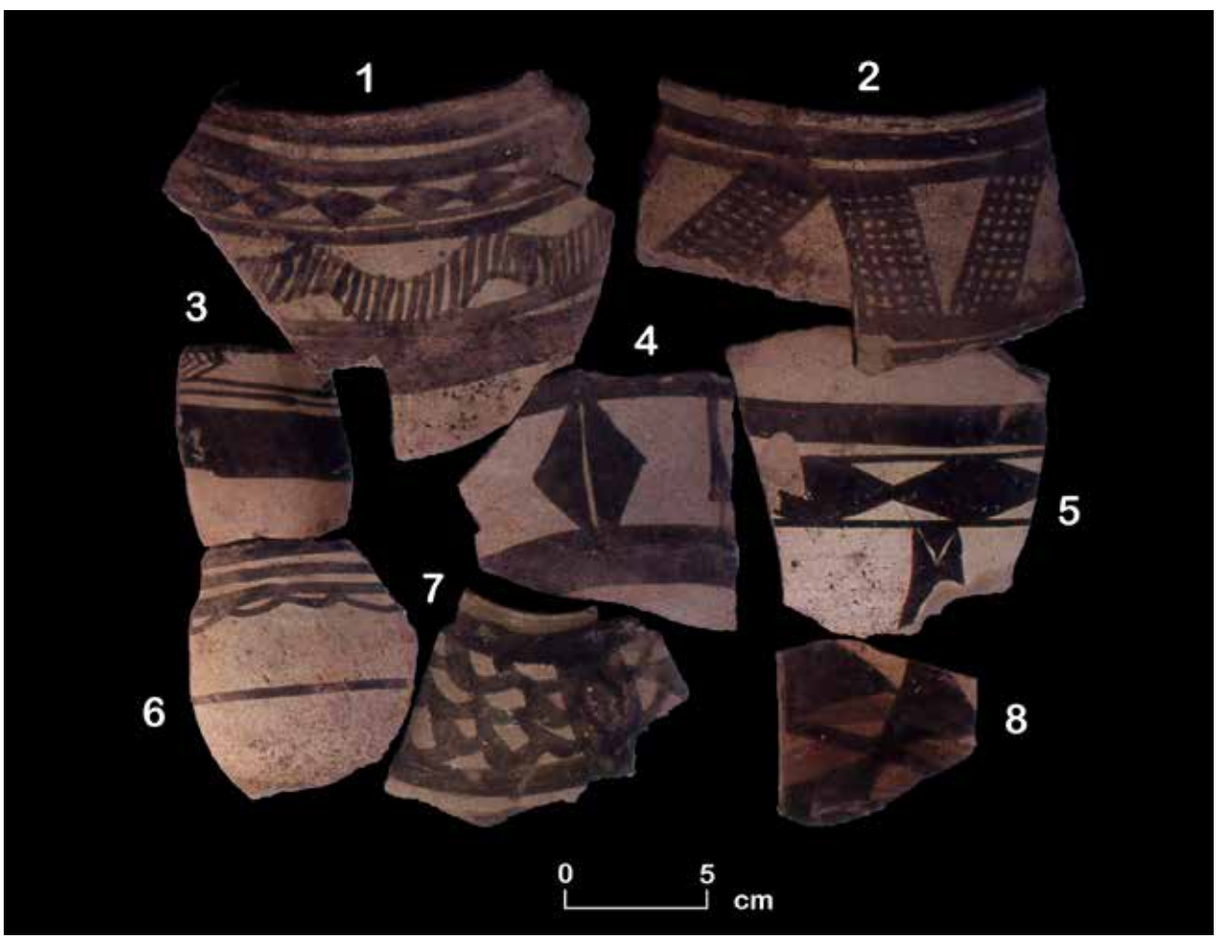


FIGURE 293. Ubaid 3 pottery, painted pottery sherds from levels I–II, Tell Abada.

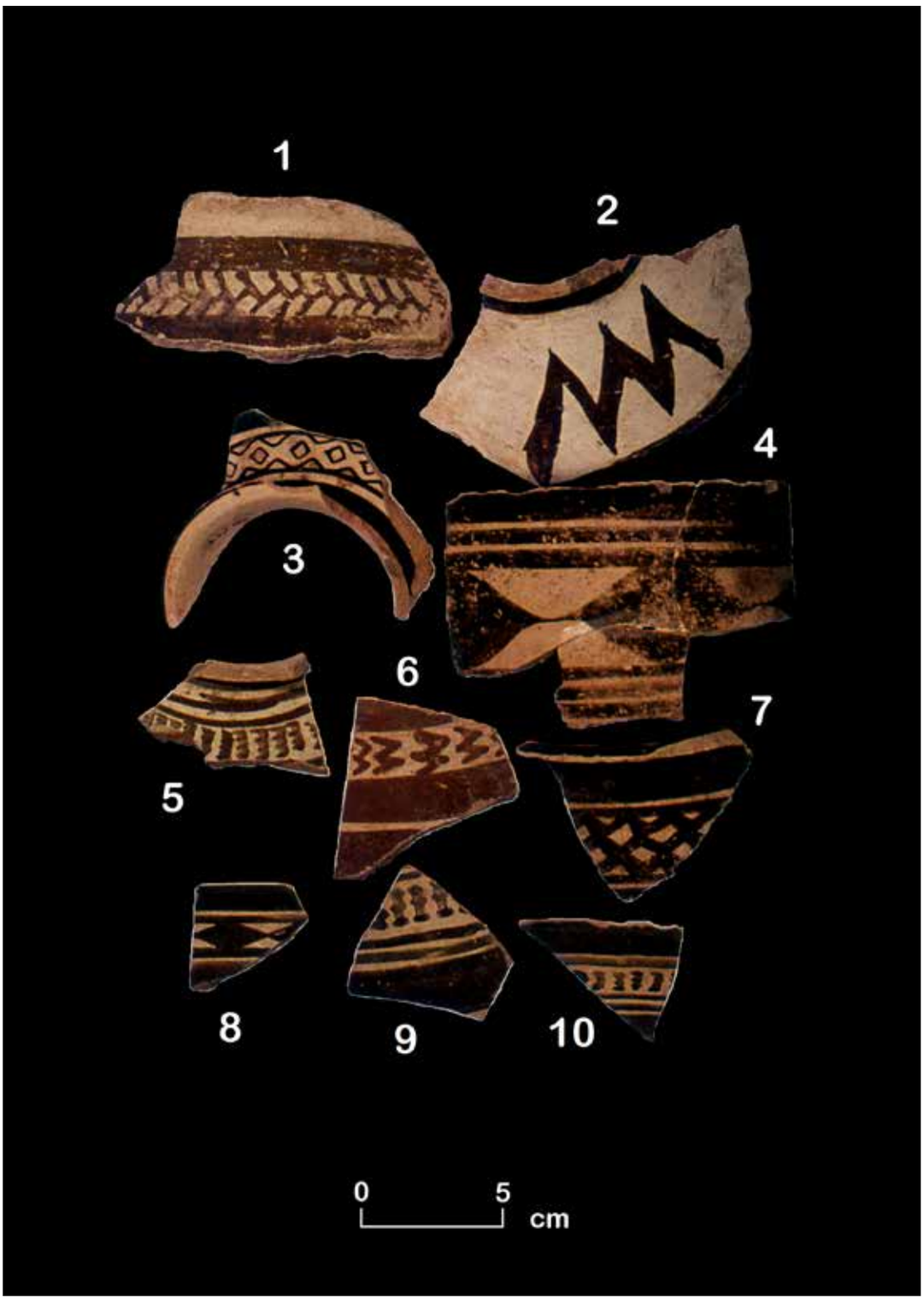


FIGURE 294. Ubaid 3 pottery, painted pottery sherds from levels I–II, Tell Abada.

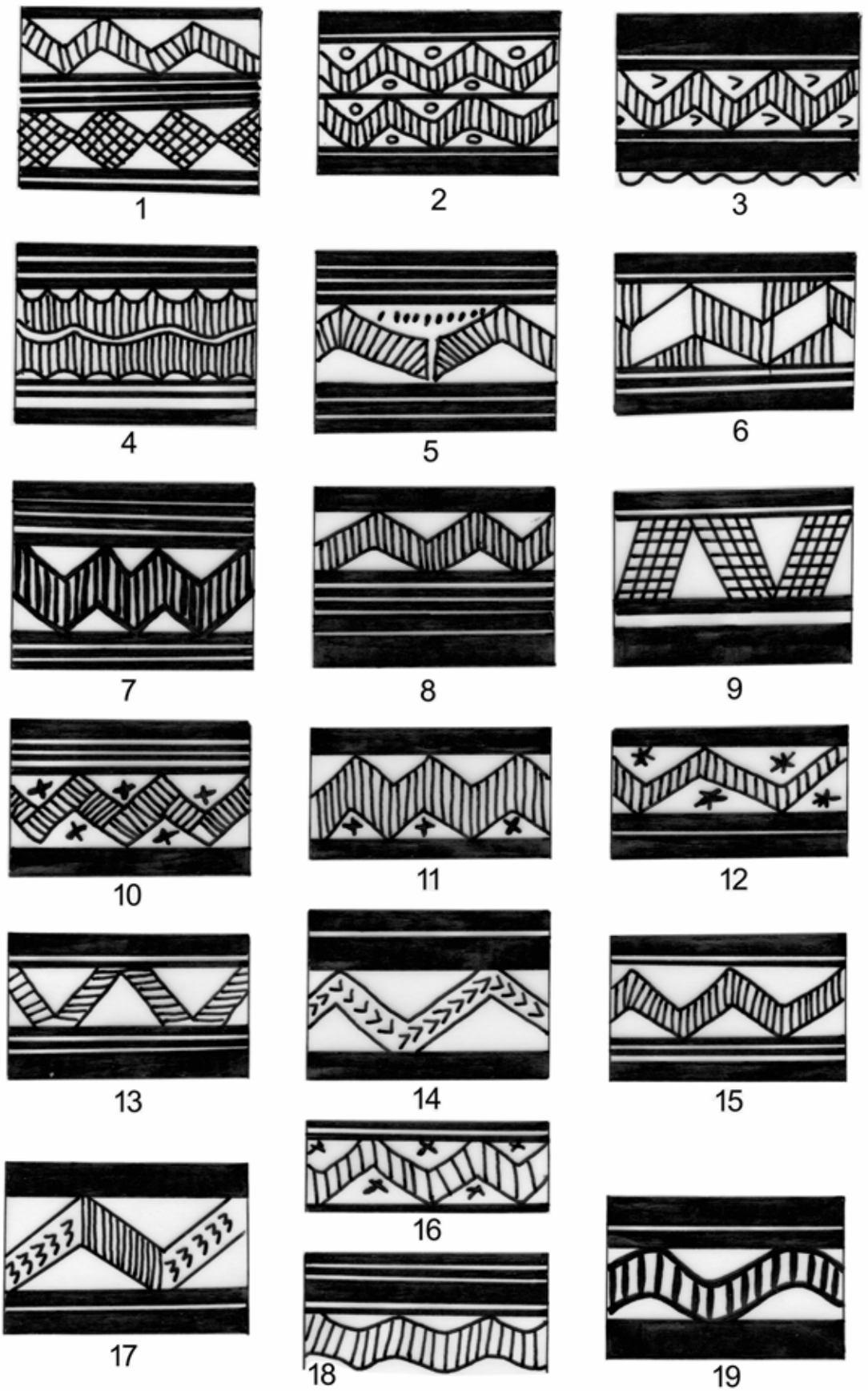


FIGURE 295. Ubaid 3 pottery, painted motifs on sherds from levels I–II, Tell Abada.

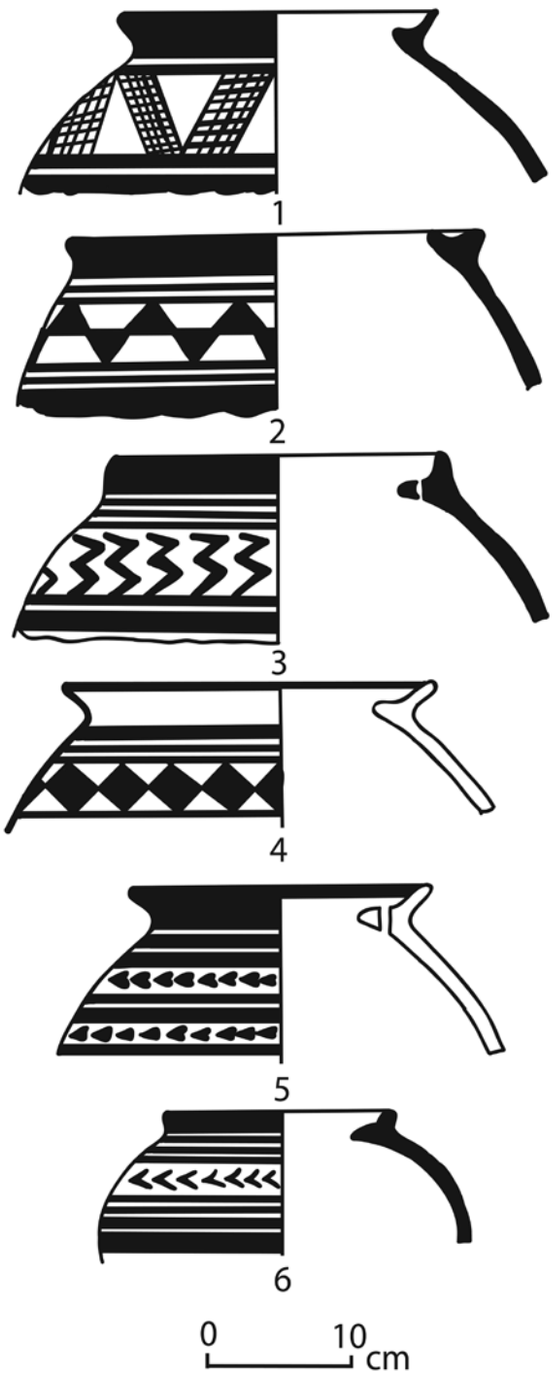


FIGURE 296. Ubaid 3 pottery, jar type 3 from level II, Tell Abada.

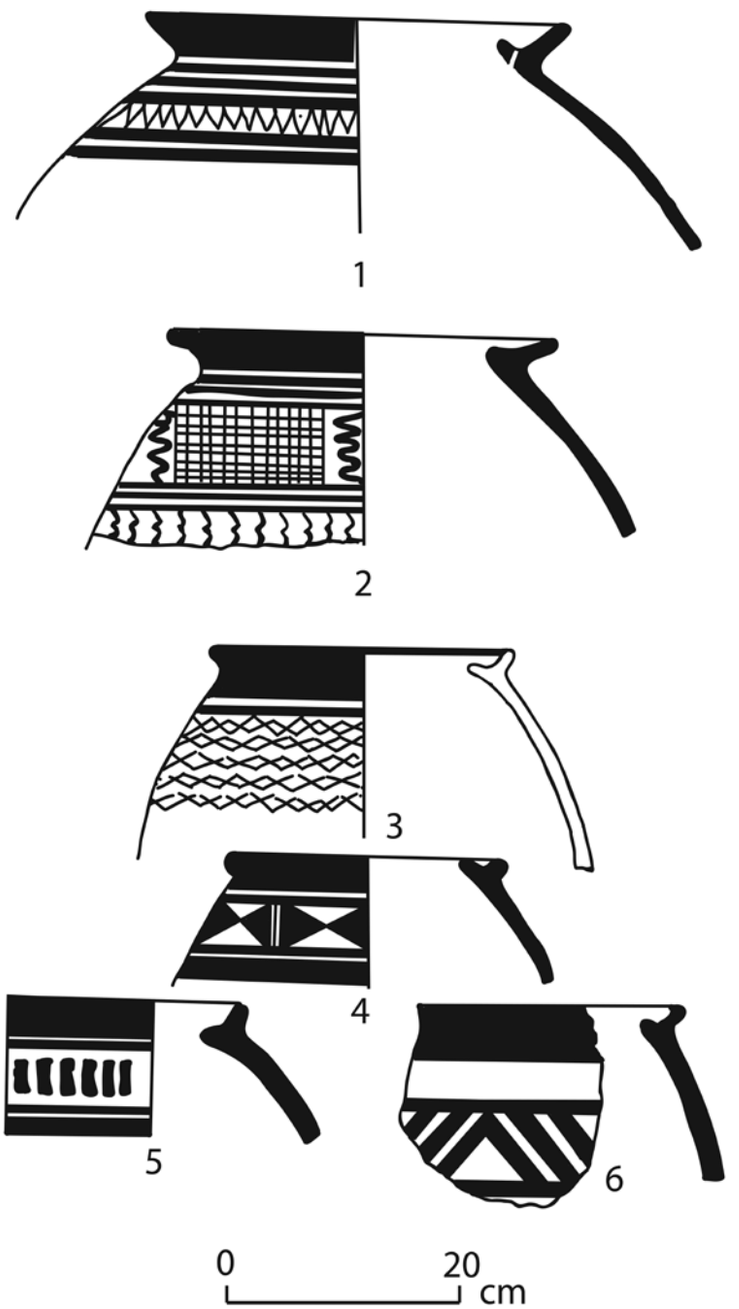


FIGURE 297. Ubaid 3 pottery, jar type 3 from level II, Tell Abada.

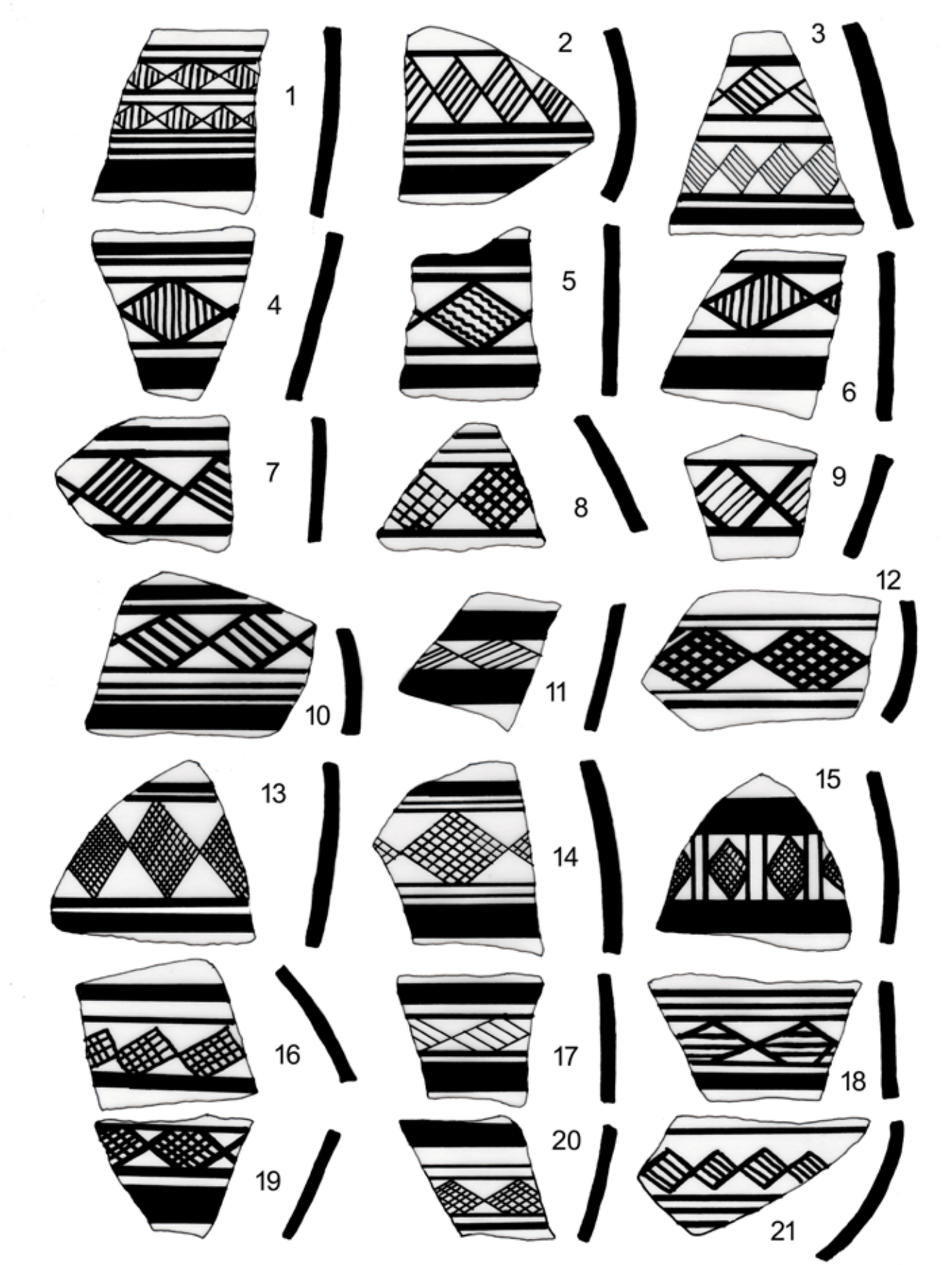


FIGURE 298. Ubaid 3 pottery, painted motifs on sherds belong to jar type 3 from level II, Tell Abada.

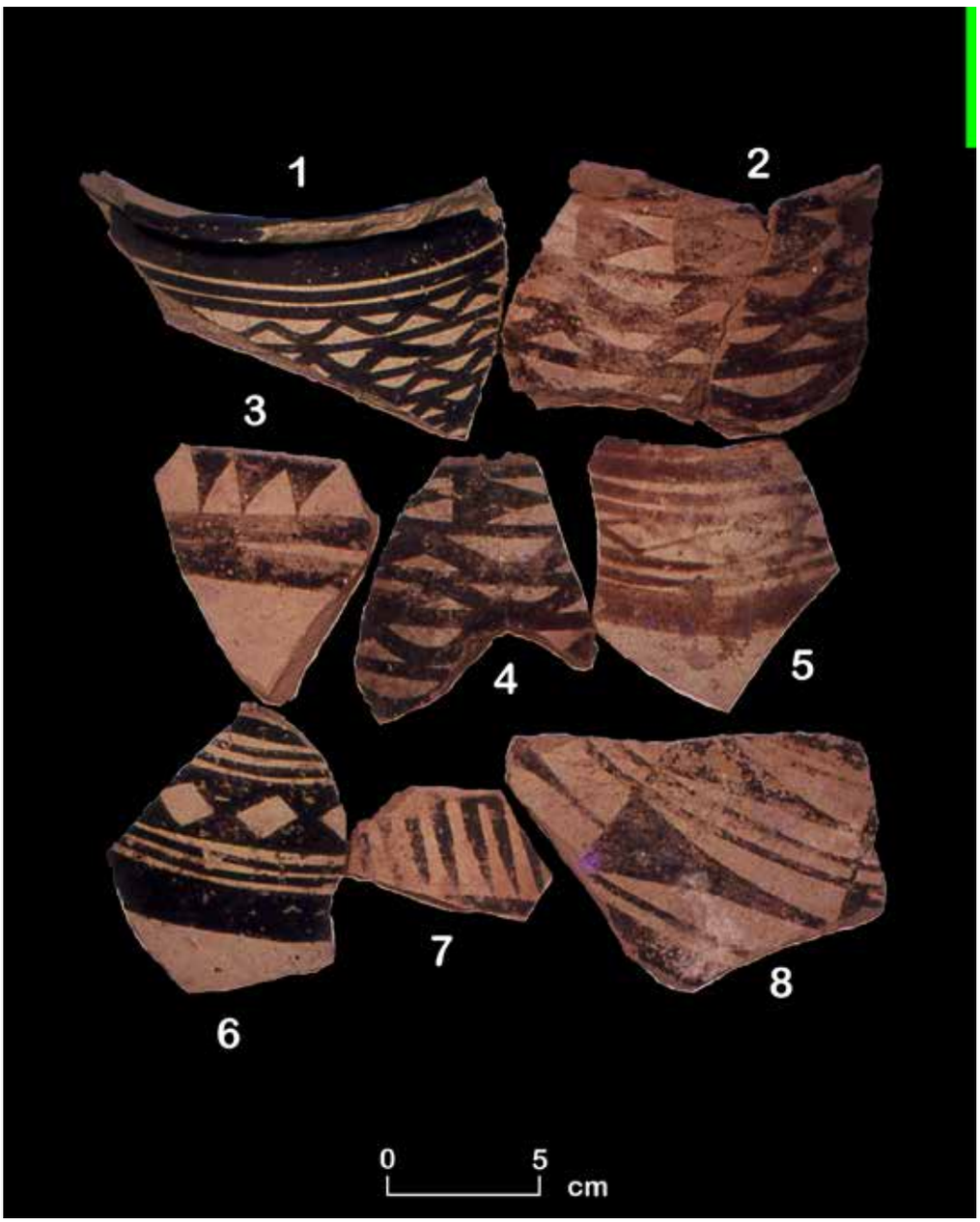


FIGURE 299. Ubaid 3 pottery, painted pottery sherds belong to jar type 3 from level II, Tell Abada.

FIGURE 300. Ubaid 3 pottery, painted pottery sherds belong to jar type 3 from level II, Tell Abada.

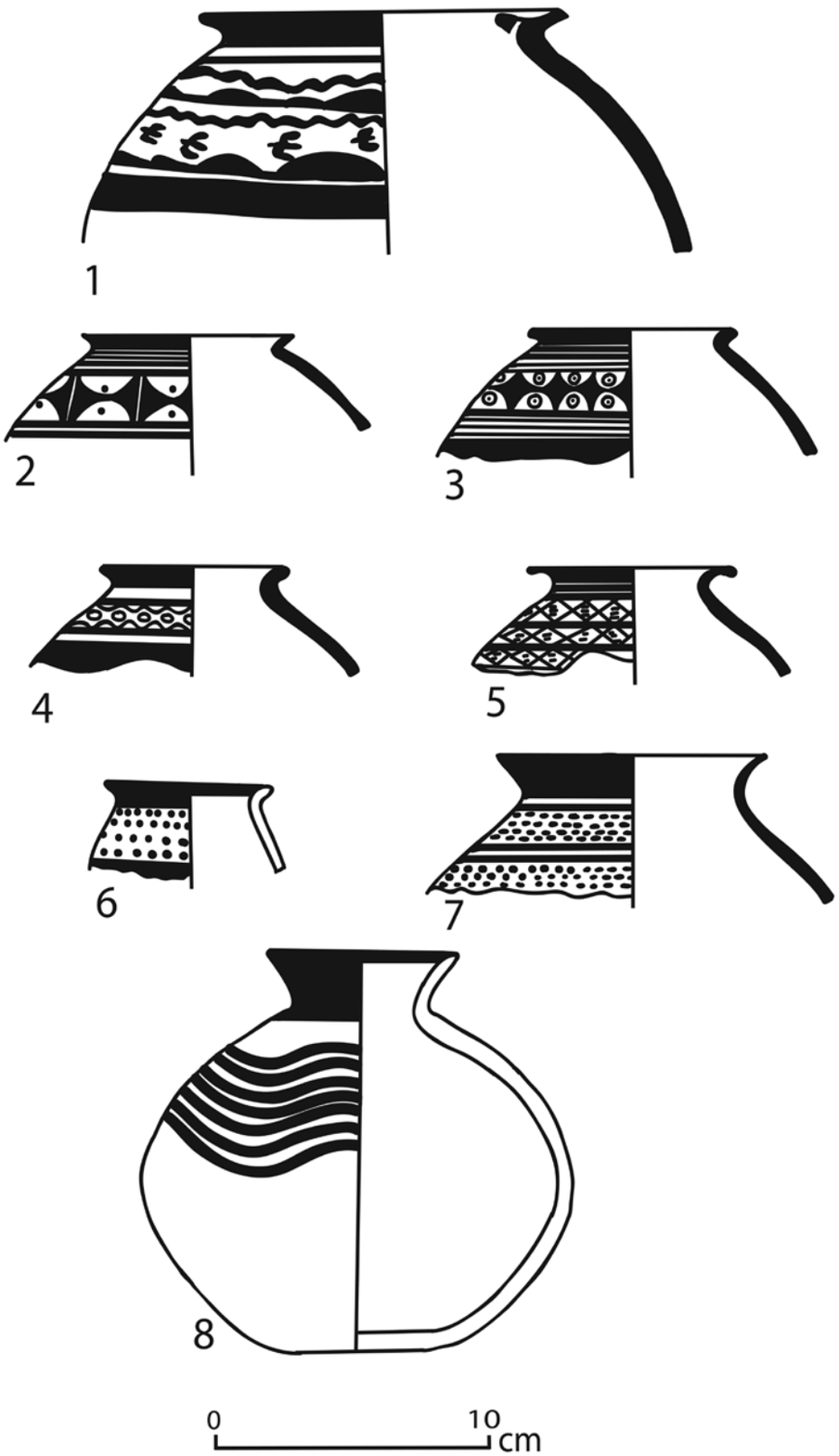


FIGURE 301. Ubaid 3 pottery, jar types 3 (1), 4 (2–8) from level II, Tell Abada.

FIGURE 302. Ubaid 3 pottery, jar type 4 (fig. 301: 8) from level II, Tell Abada.

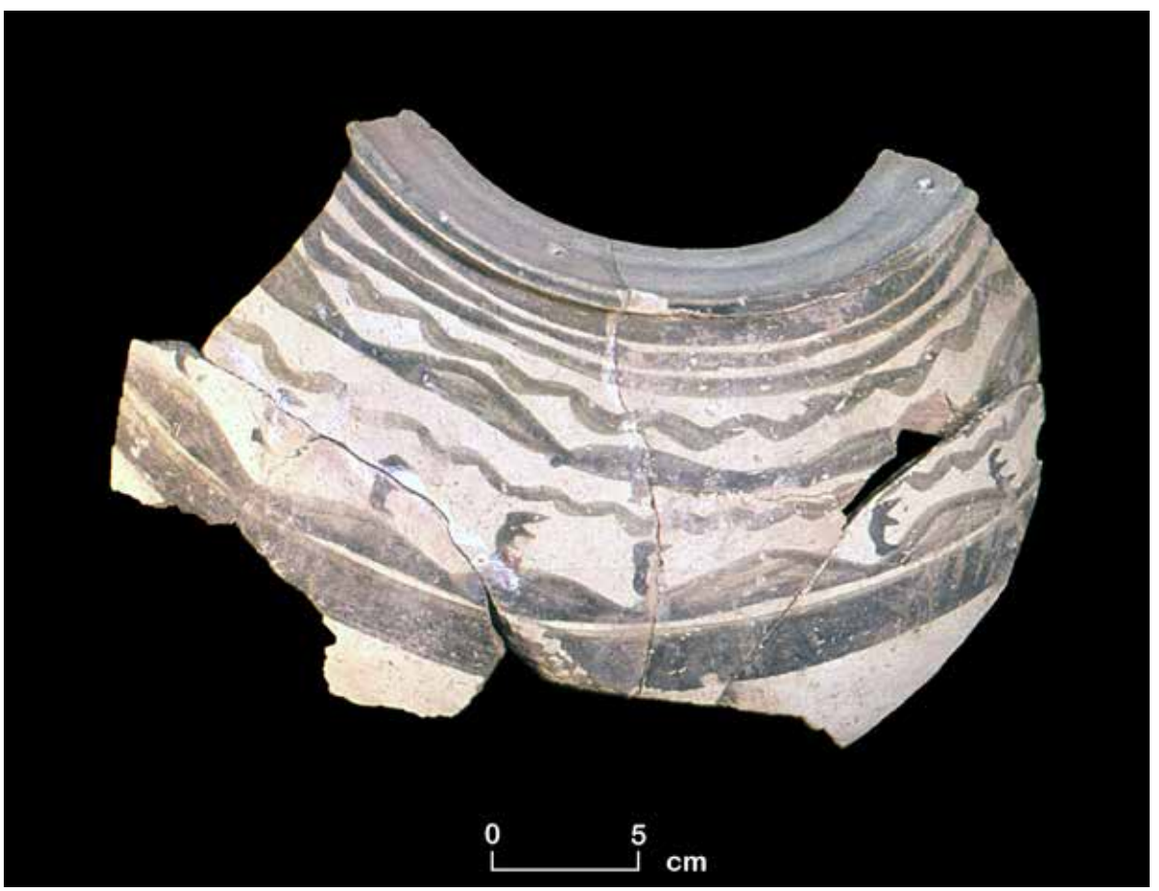


FIGURE 303. Ubaid 3 pottery, jar type 3 (fig. 301: 1) from level II, Tell Abada.

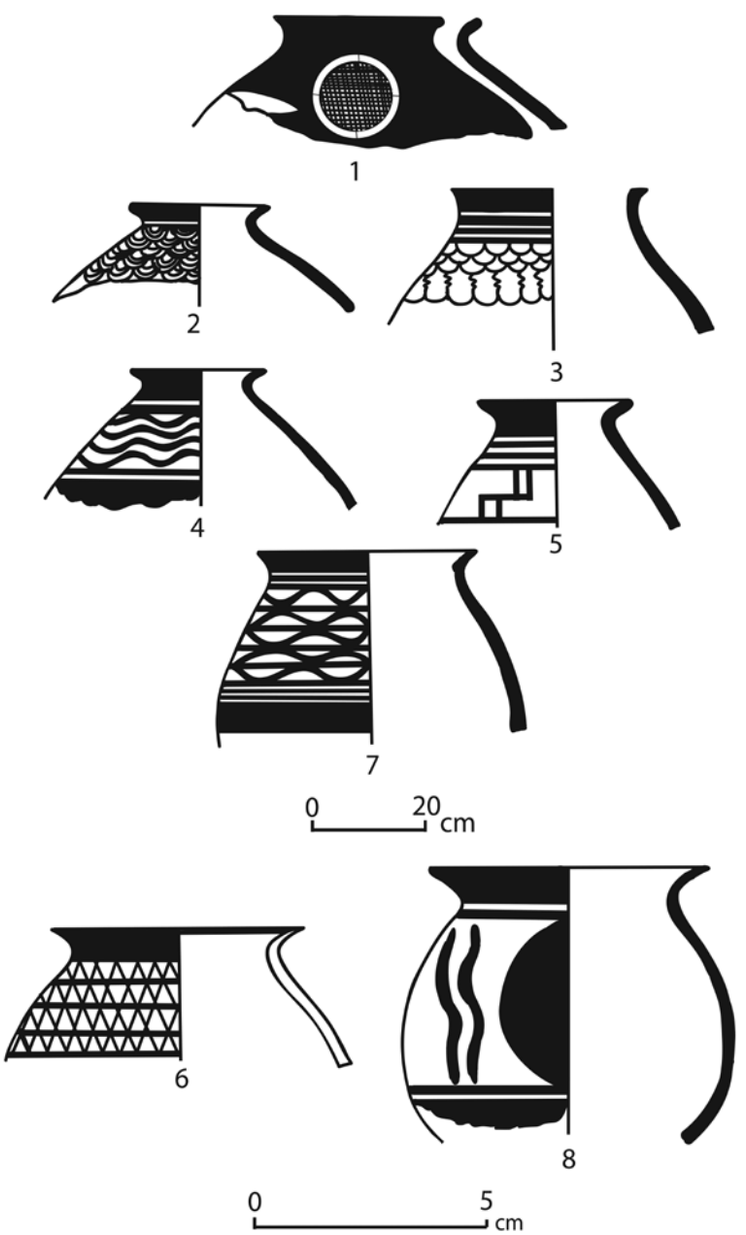


FIGURE 304. Ubaid 3 pottery, jar type 4 from level II, Tell Abada.

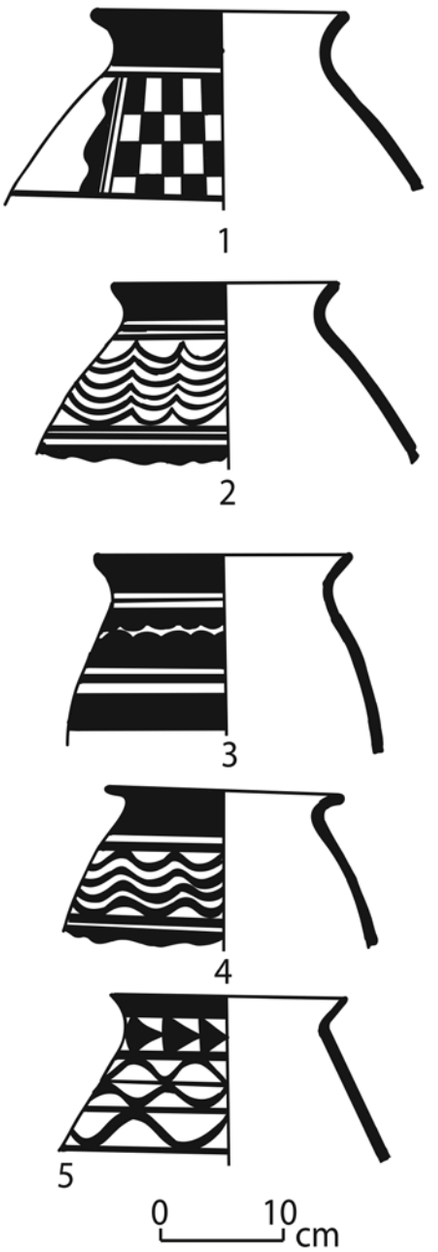


FIGURE 305. Ubaid 3 pottery, jar type 4 from level II, Tell Abada.

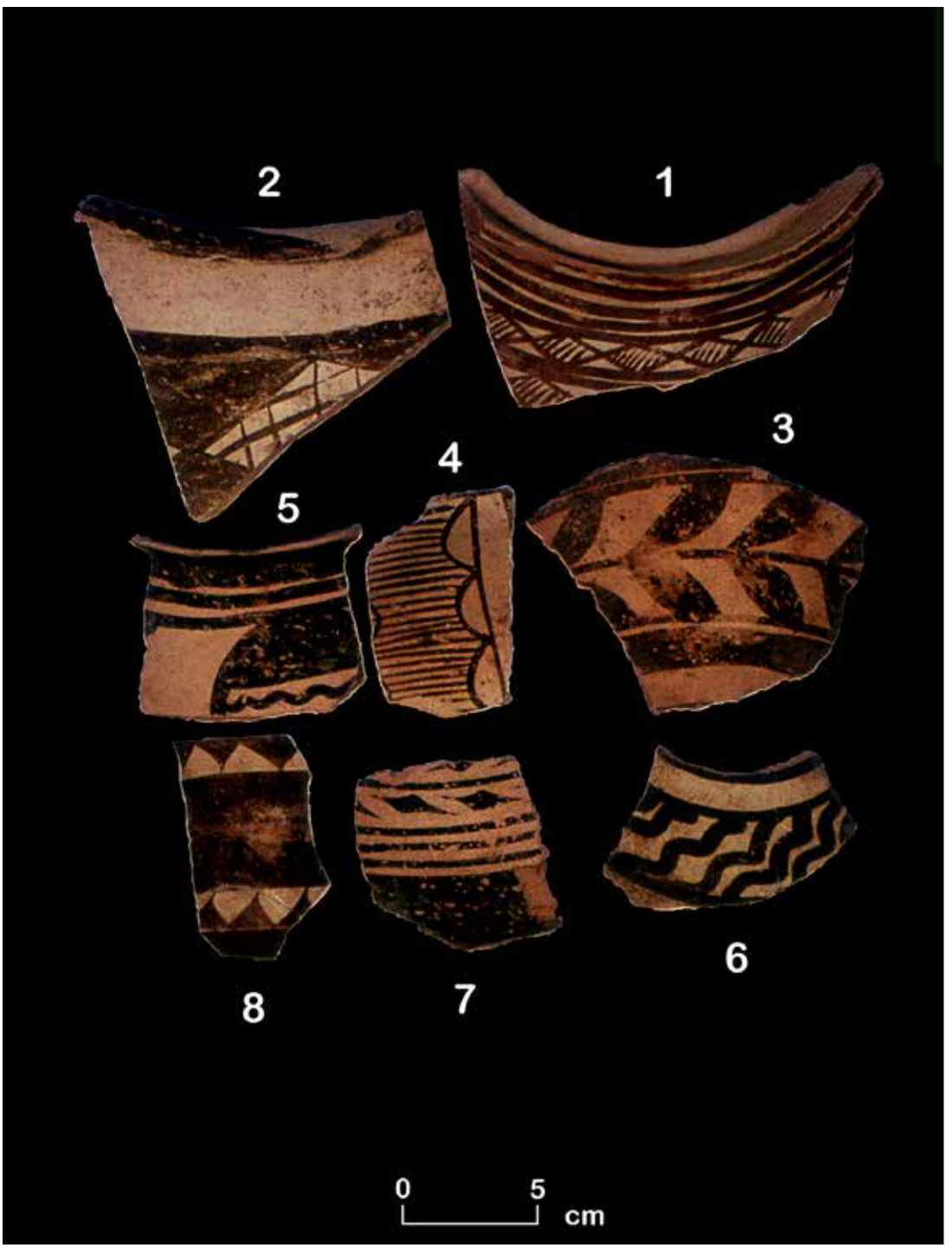


FIGURE 306. Ubaid 3 pottery, painted pottery sherds from level II, Tell Abada.

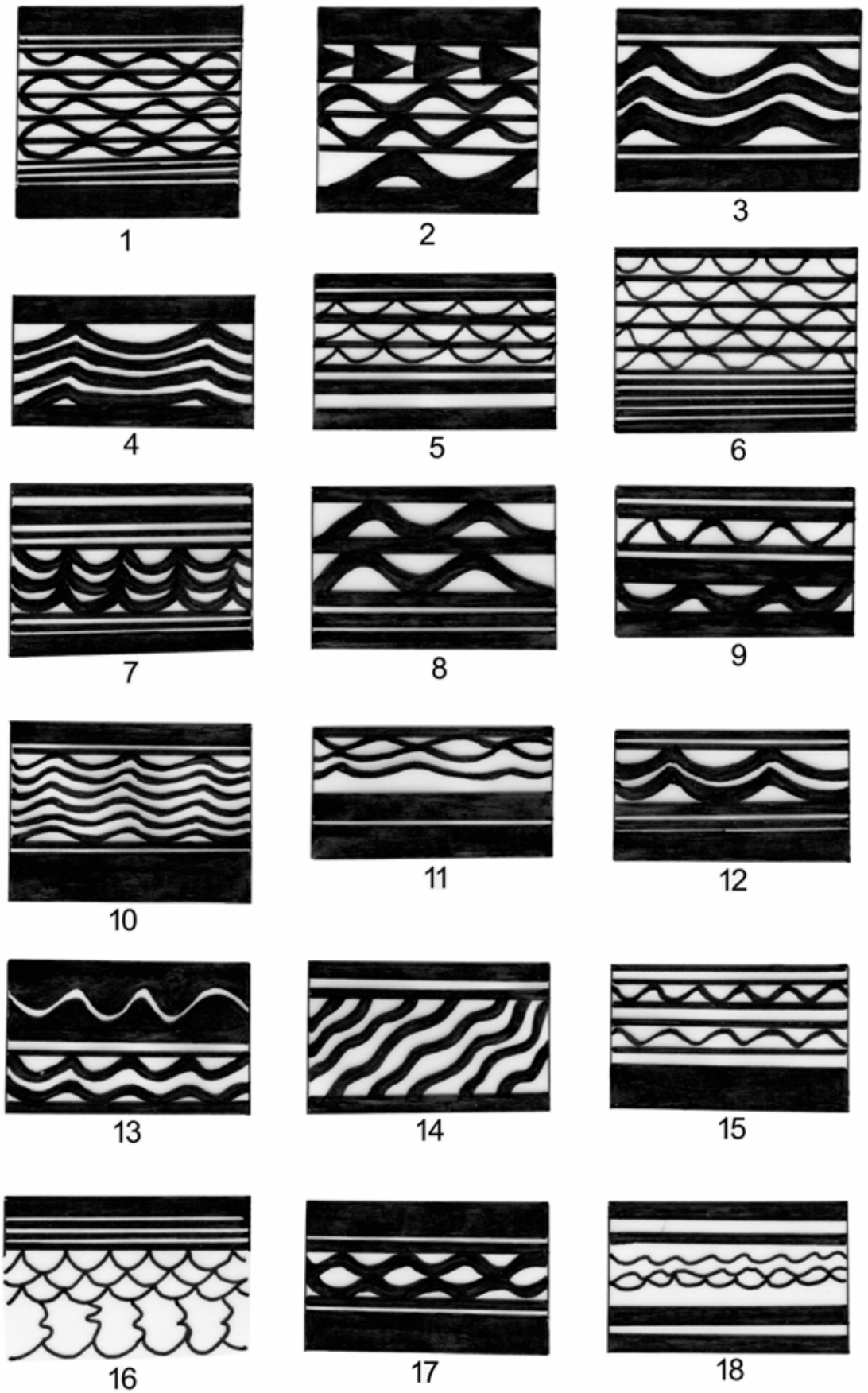


FIGURE 307. Ubaid 3 pottery, painted motifs on pottery sherds from levels I–II, Tell Abada.

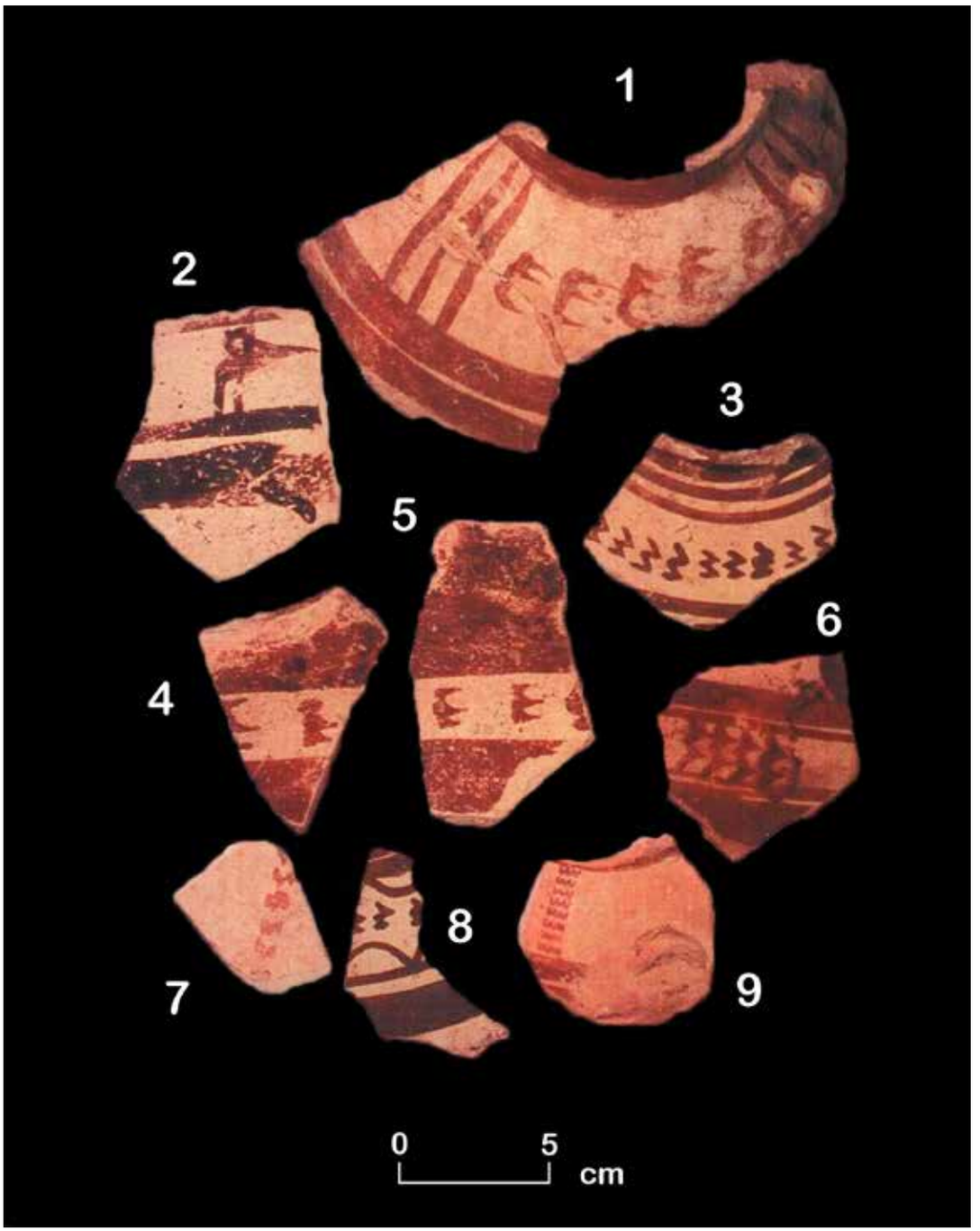


FIGURE 308. Ubaid 3 pottery, painted pottery sherds from levels I–II, Tell Abada.

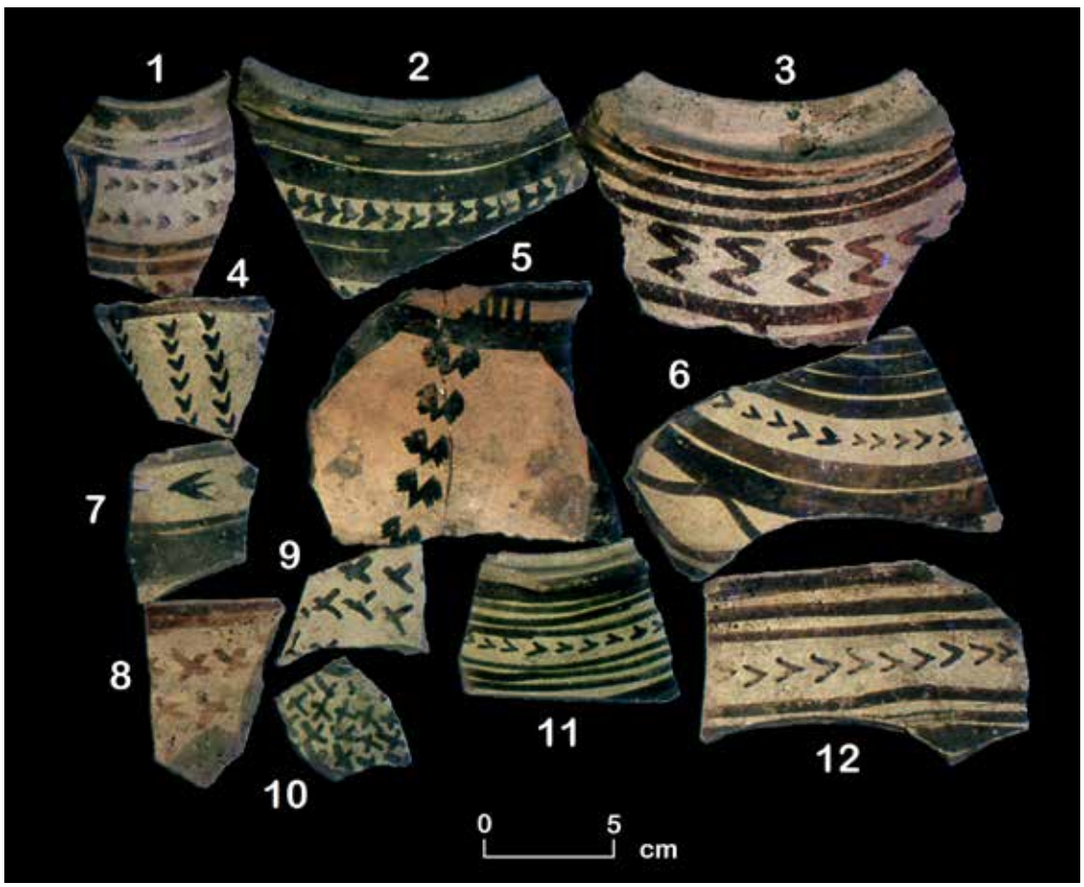


FIGURE 309. Ubaid 3 pottery, painted pottery sherds from levels I–II, Tell Abada.

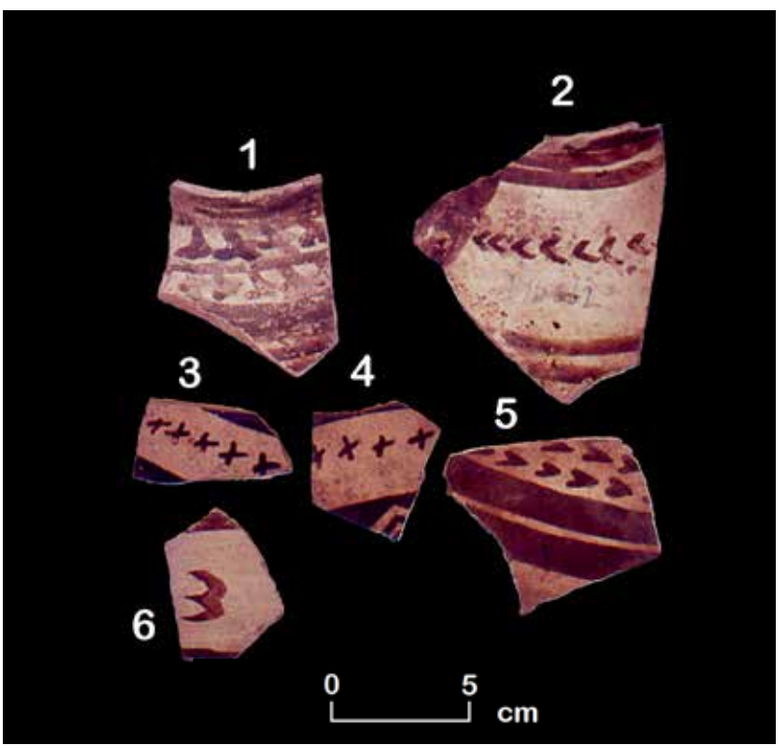


FIGURE 310. Ubaid 3 pottery, painted pottery sherds from levels I–II, Tell Abada.

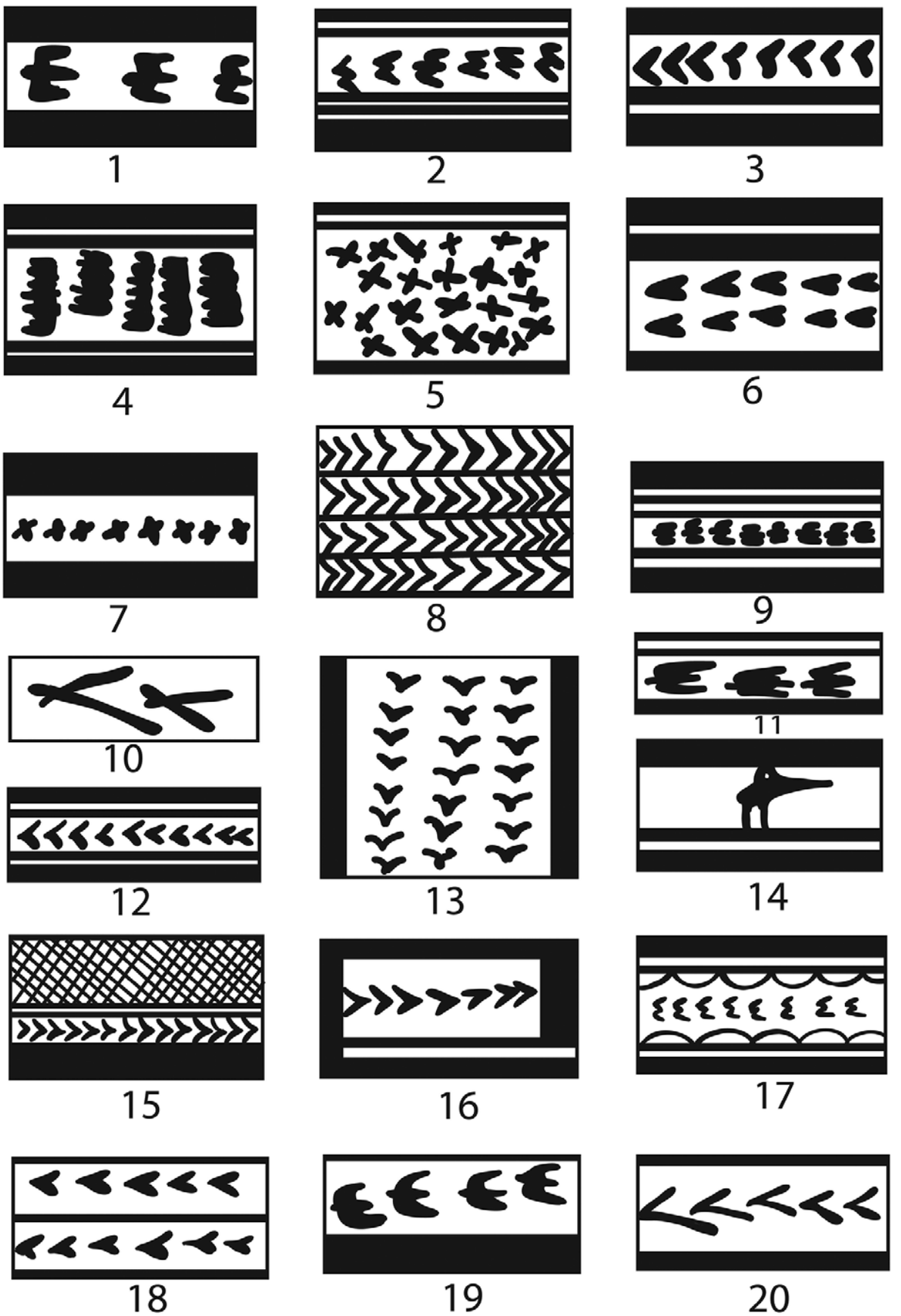


FIGURE 311. Ubaid 3 pottery, painted motifs on pottery sherds from levels I–II, Tell Abada.

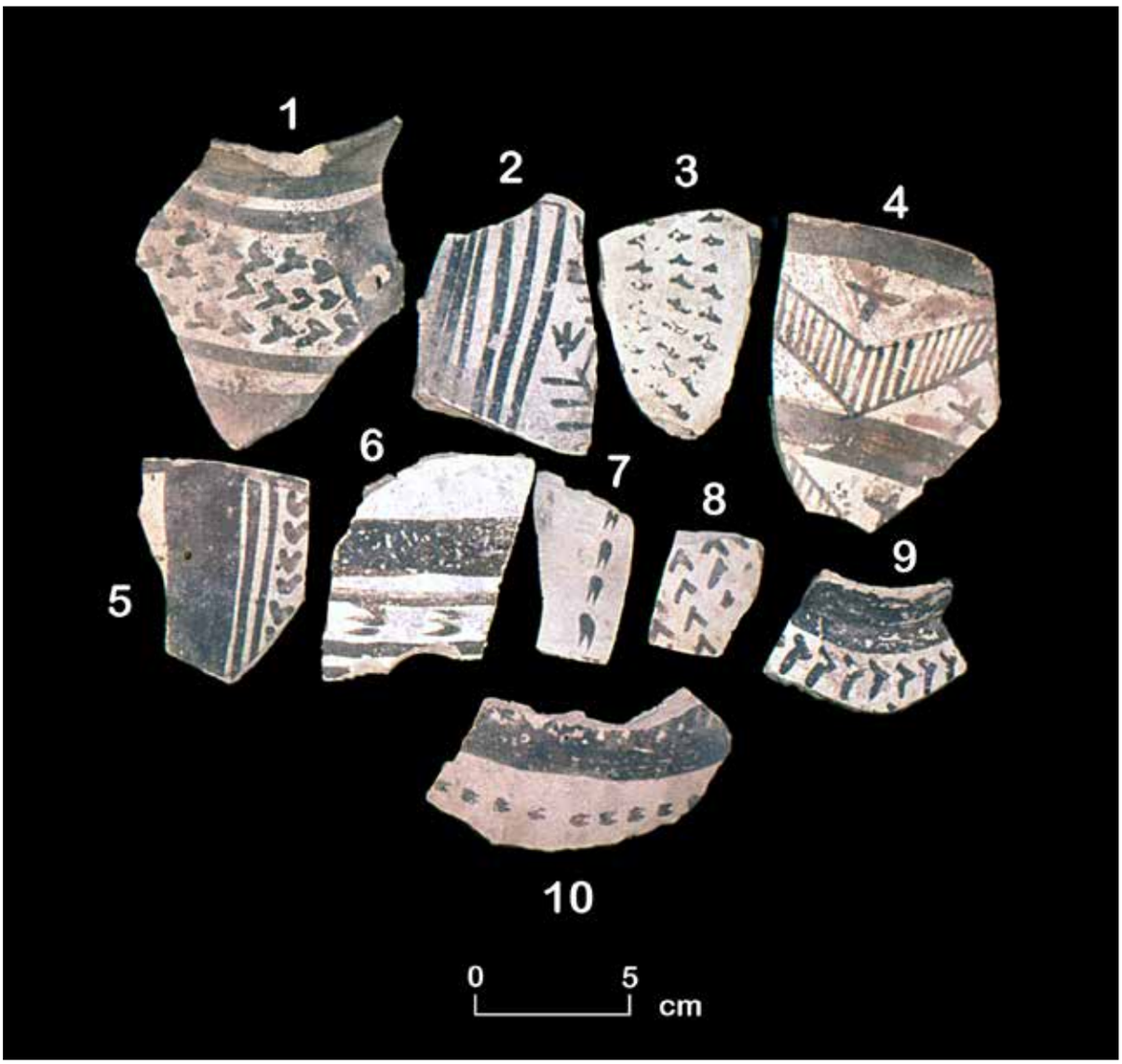


FIGURE 312. Ubaid 3 pottery, painted pottery sherds from levels I–II, Tell Abada.

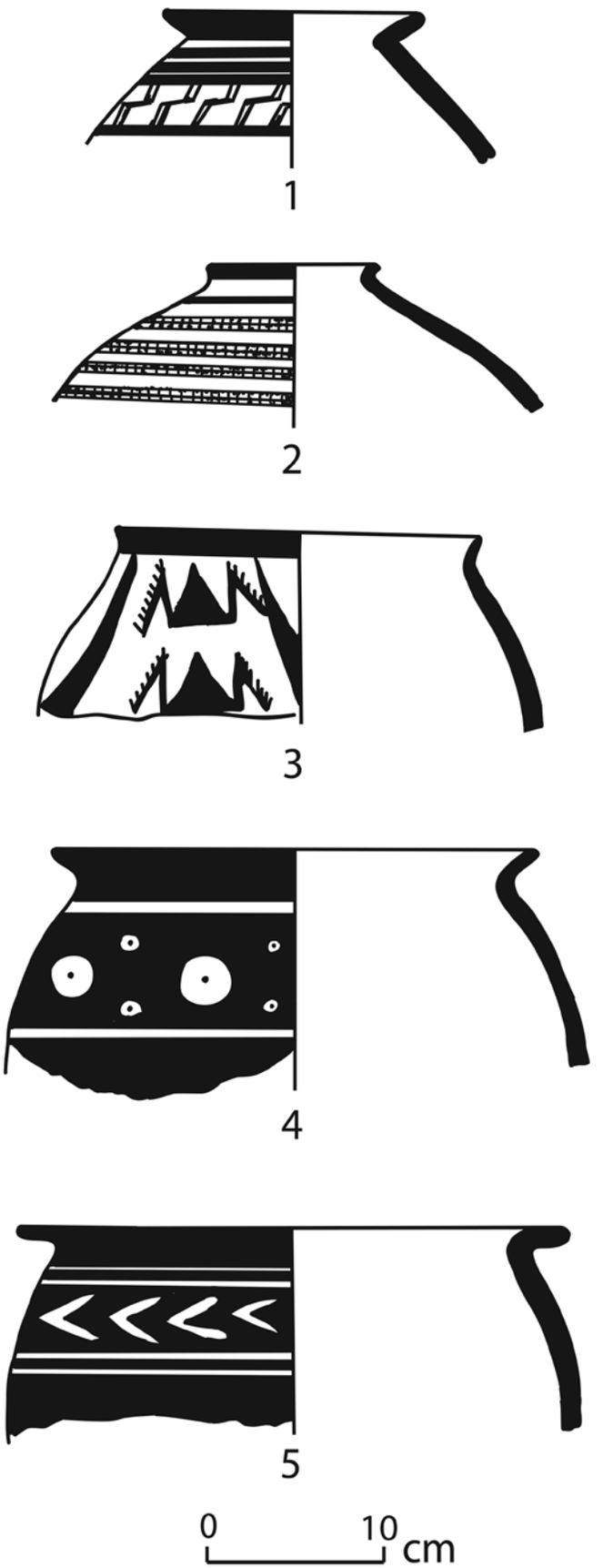


FIGURE 313. Ubaid 3 pottery, jar type 4 from level I, Tell Abada.

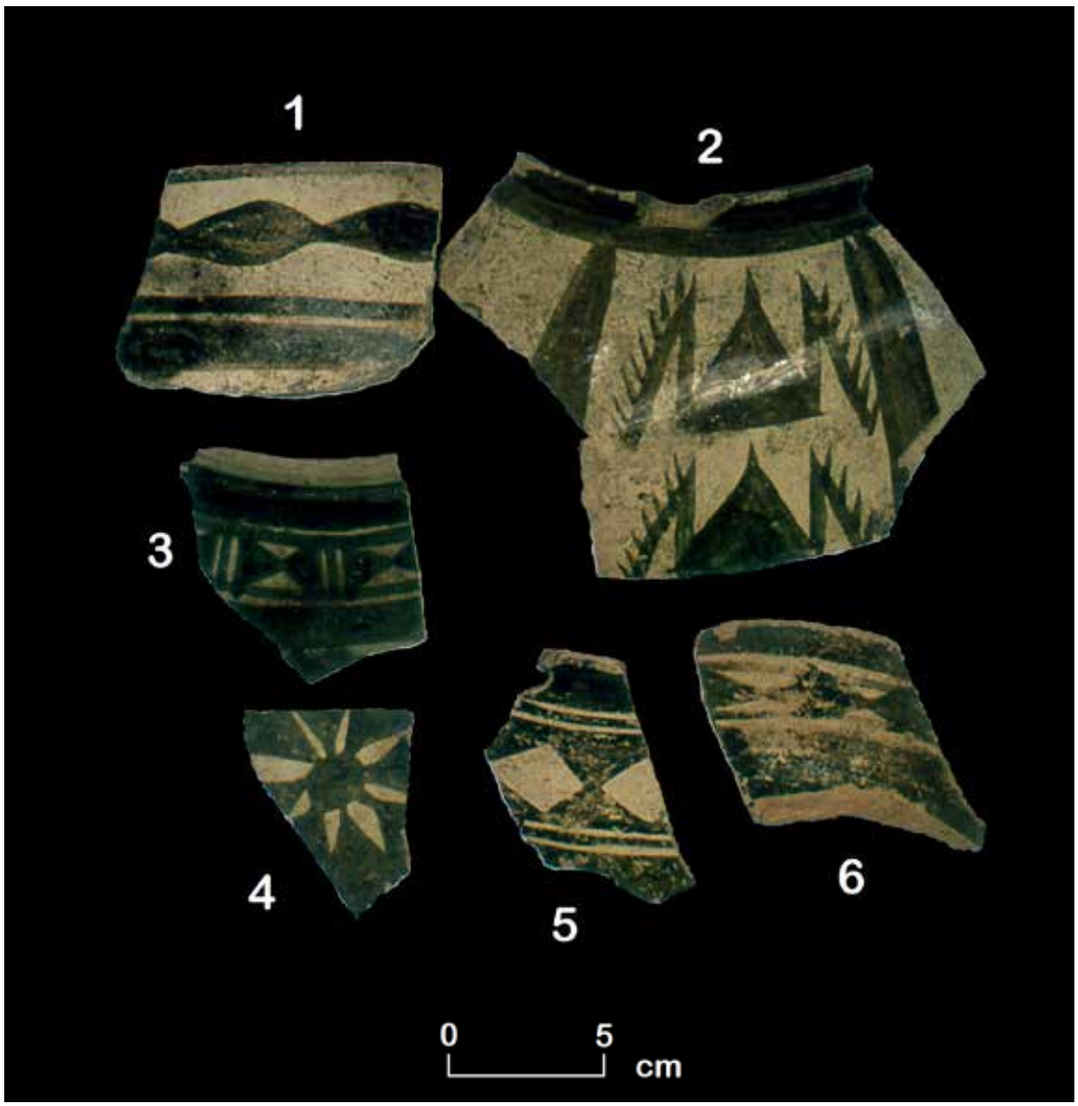


FIGURE 314. Ubaid 3 pottery, painted sherds from level I, Tell Abada.

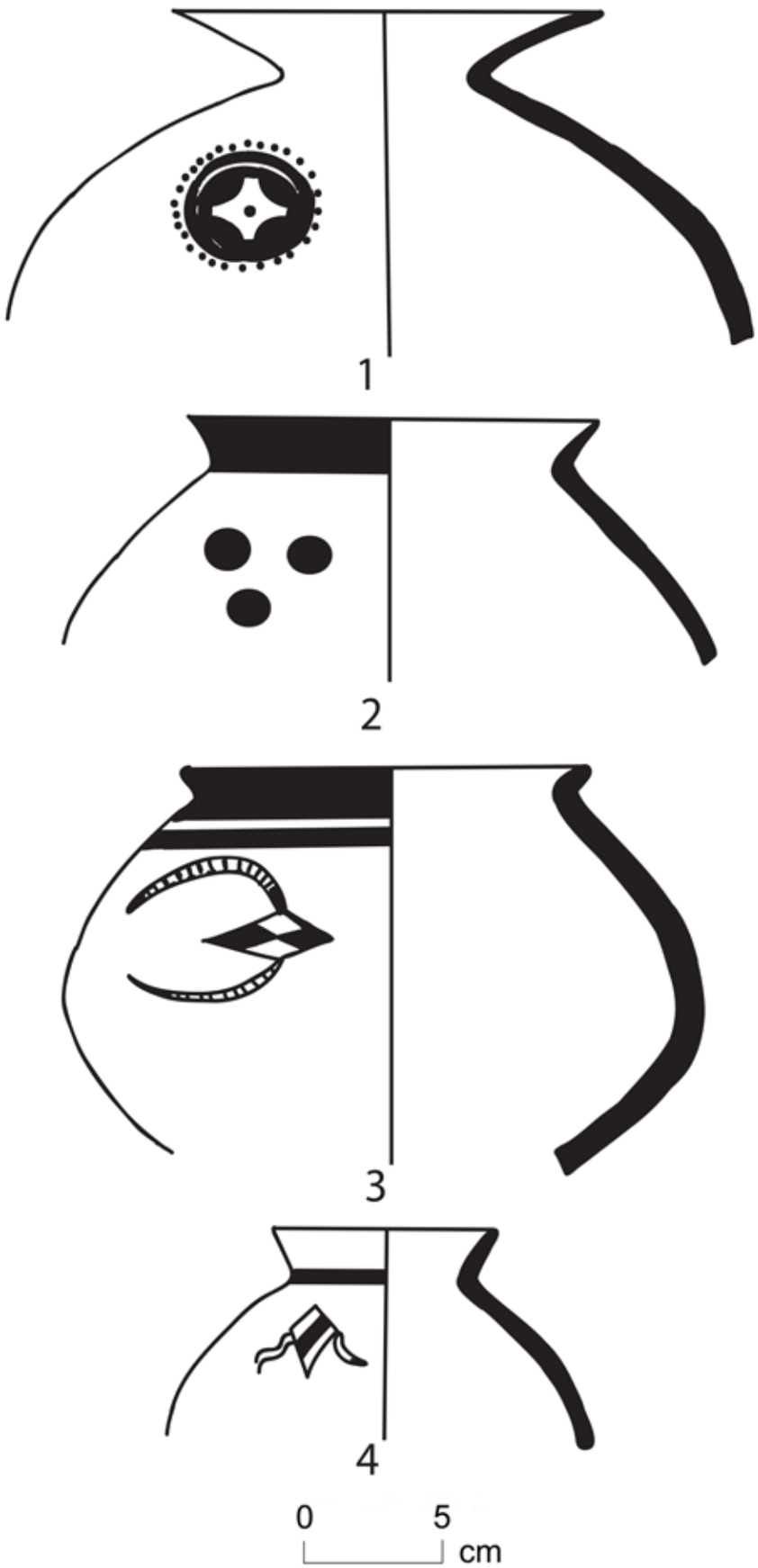


FIGURE 315. Ubaid 3 pottery, jar type 4 from level I, Tell Abada.

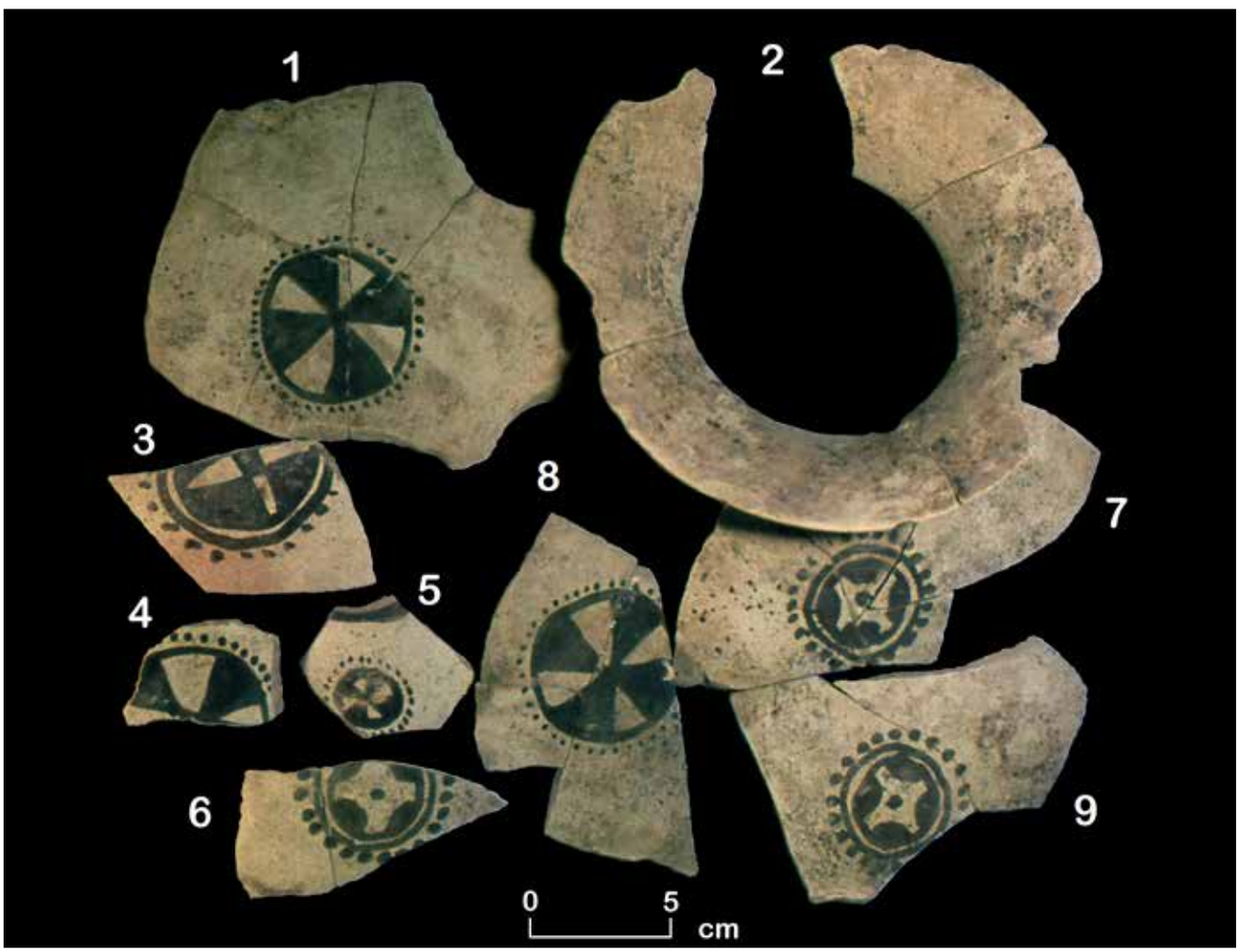


FIGURE 316. Ubaid 3 pottery, sherds belong to jar type 4 from level I, Tell Abada.

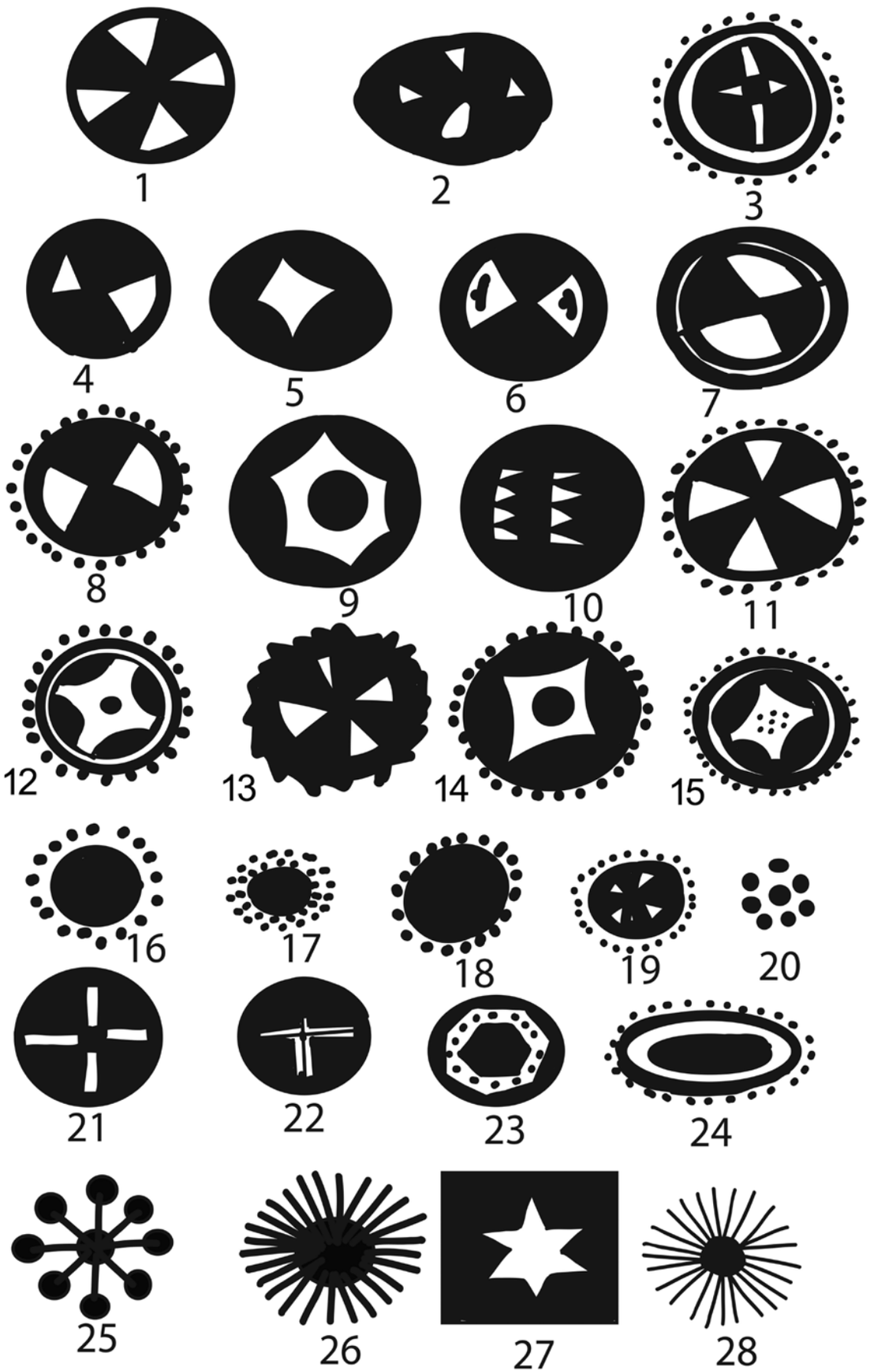


FIGURE 317. Ubaid 3 pottery, painted motifs associated with jar type 4 from level I, Tell Abada.

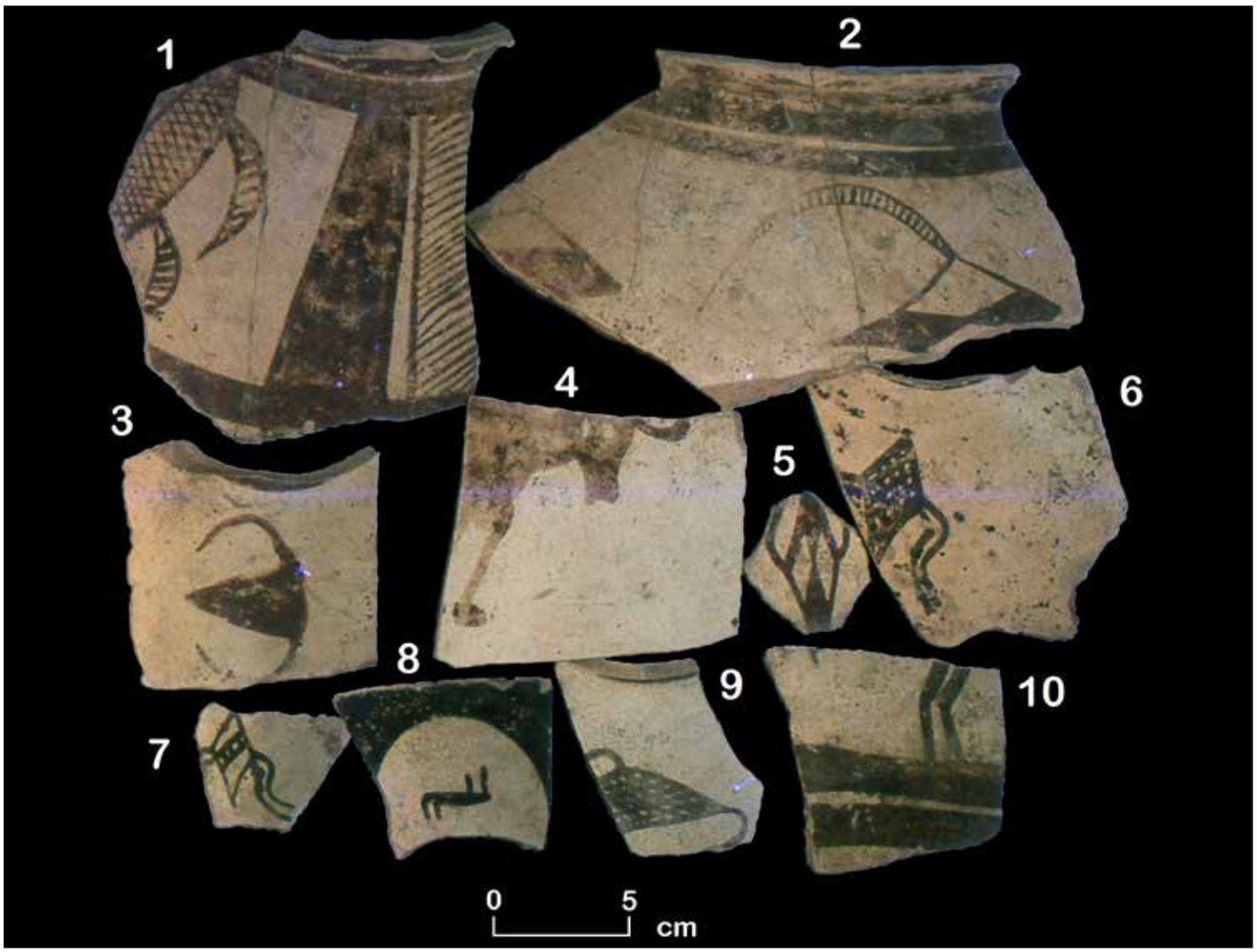


FIGURE 318. Ubaid 3 pottery, sherds bearing “Bukranium” motifs from level I, Tell Abada.

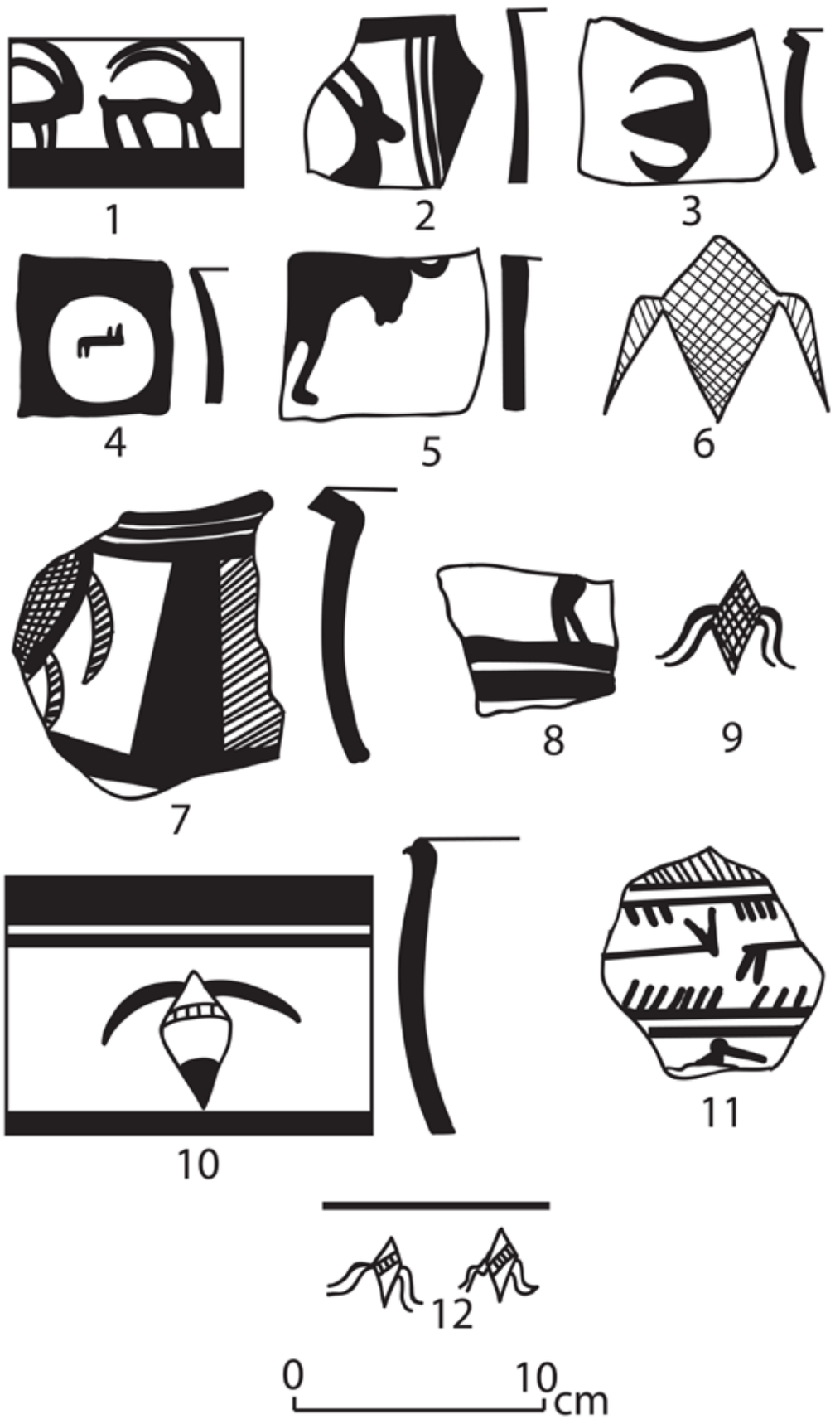


FIGURE 319. Ubaid 3 pottery, painted animal motifs from level I, Tell Abada.

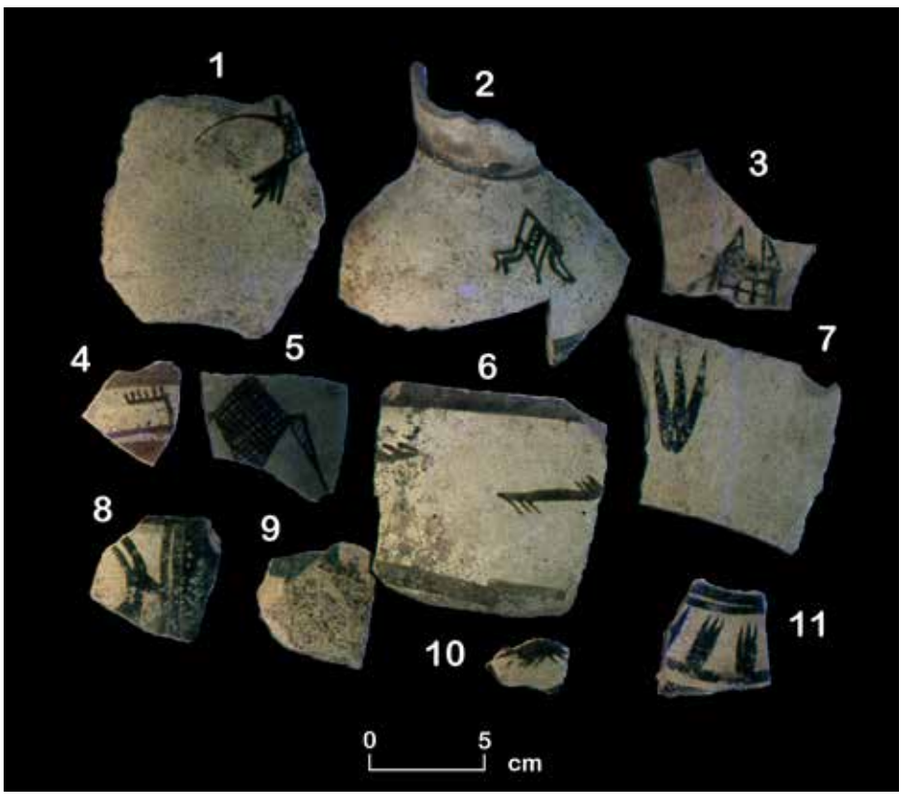


FIGURE 320. Ubaid 3 pottery, painted sherds from level I, Tell Abada.

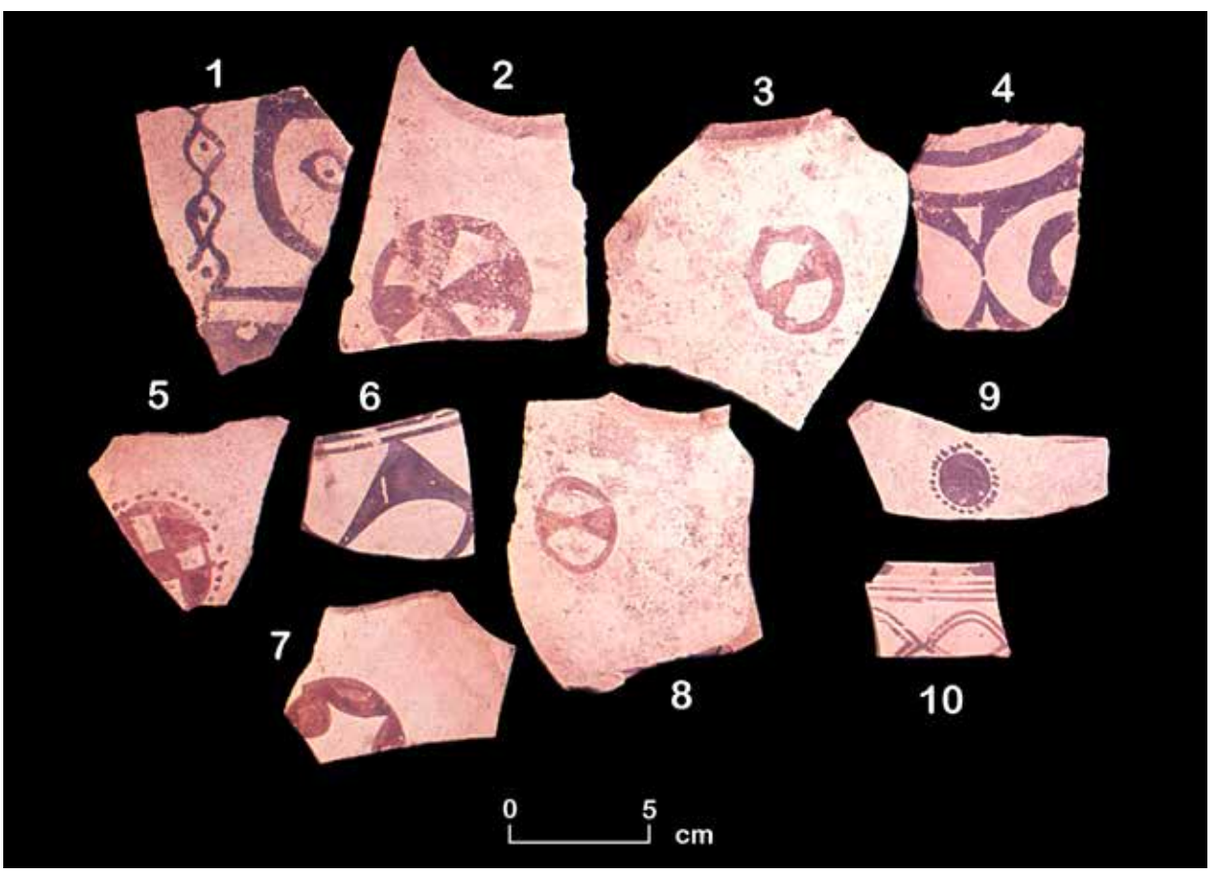


FIGURE 321. Ubaid 3 pottery, painted sherds from level I, Tell Abada.

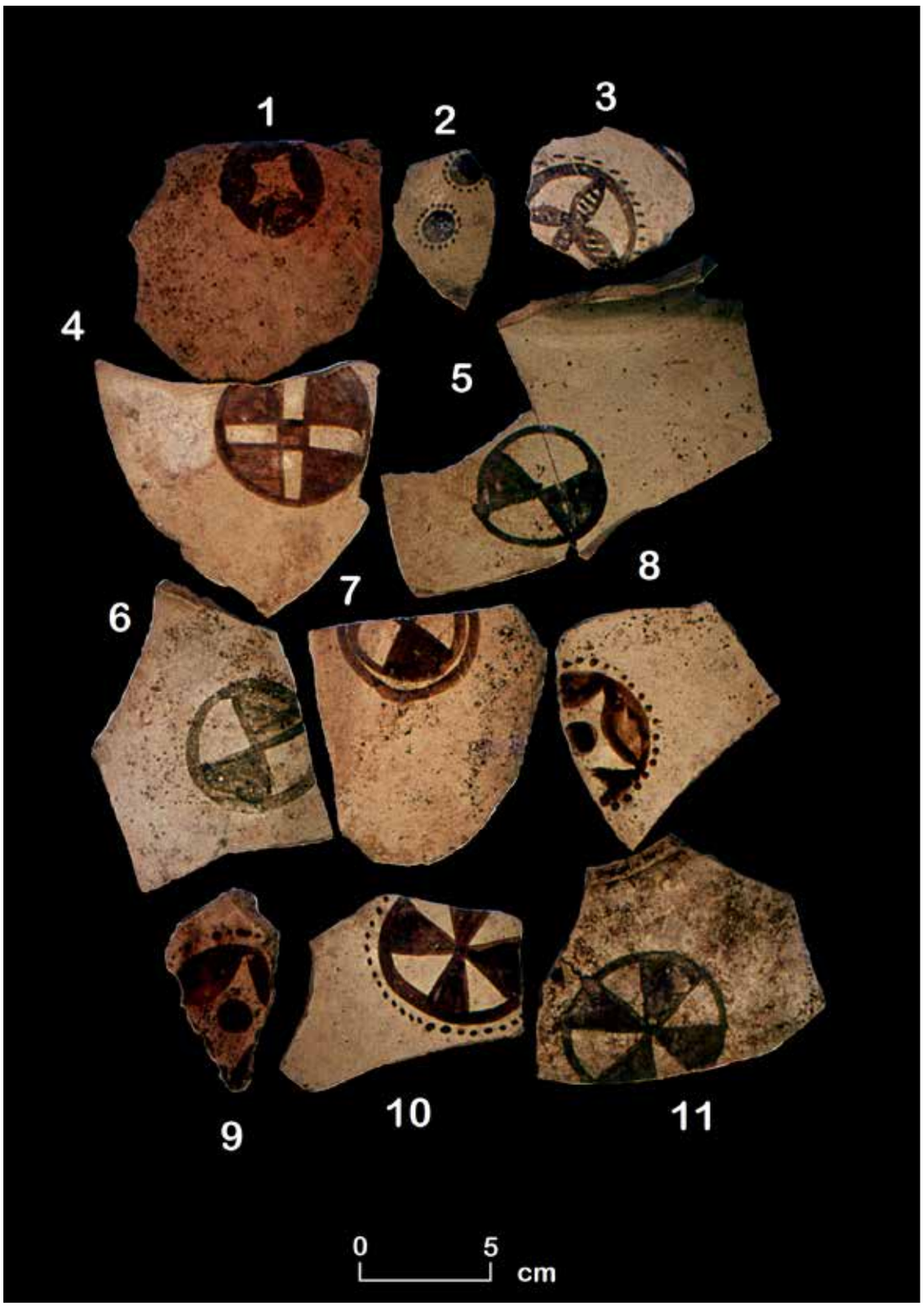


FIGURE 322. Ubaid 3 pottery, painted sherds from level I, Tell Abada.

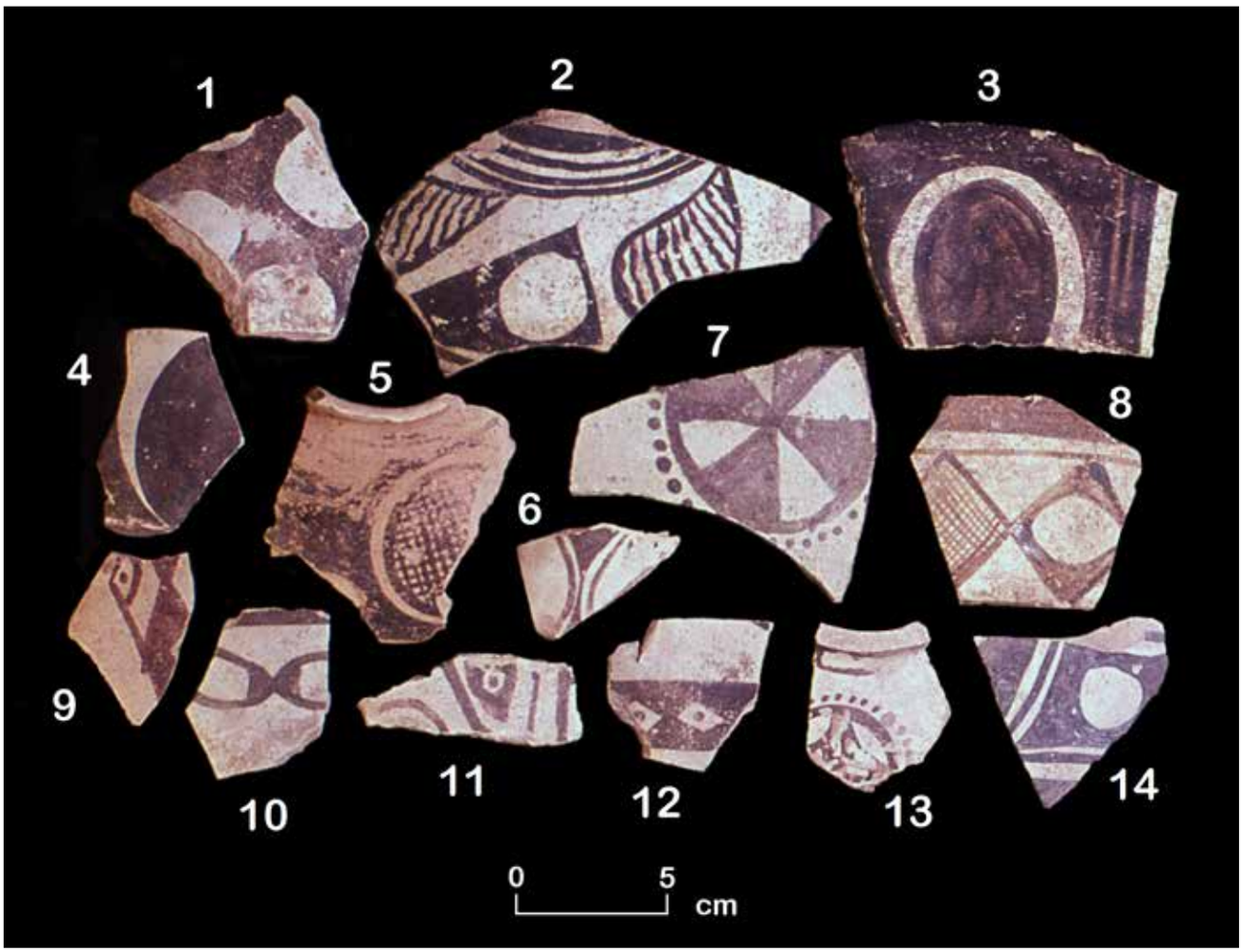


FIGURE 323. Ubaid 3 pottery, painted sherds from level I, Tell Abada.

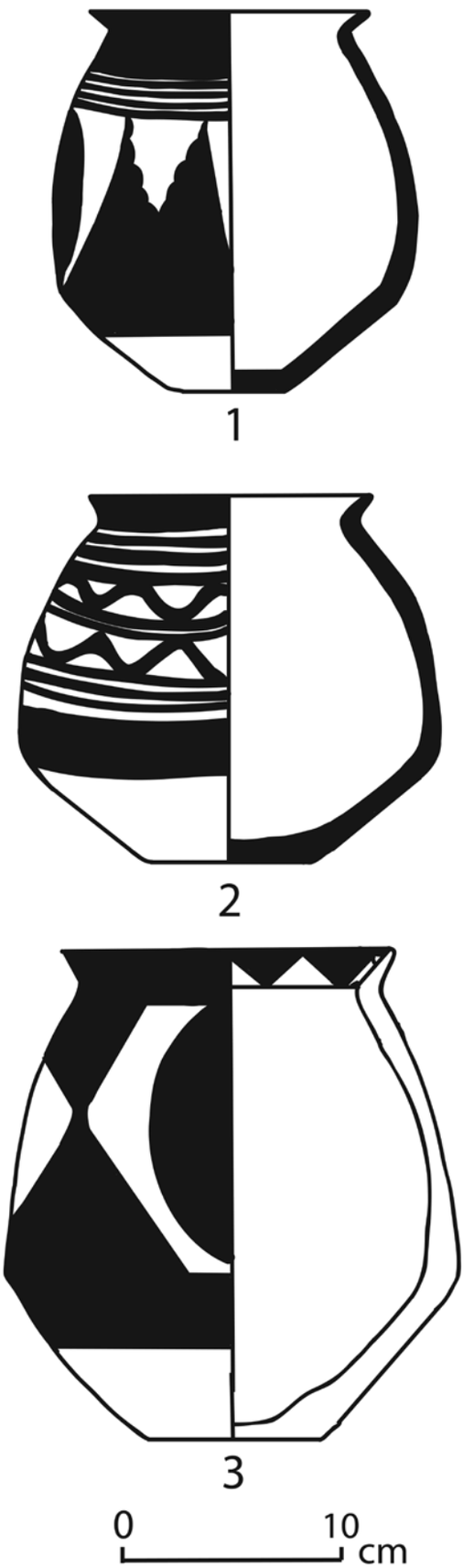


FIGURE 324. Ubaid 3 pottery, jar type 5 from level II, Tell Abada.

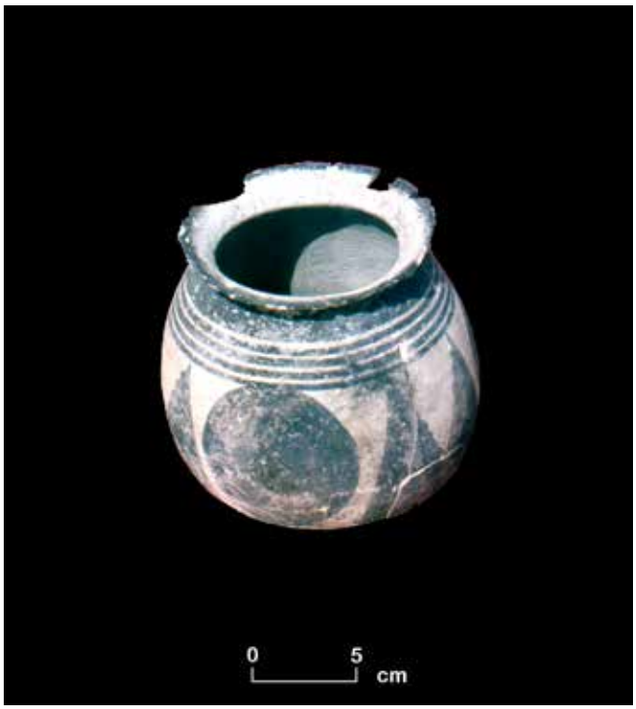


FIGURE 325. Ubaid 3 pottery, carinated jar (fig. 324: 1) from level II, Tell Abada.

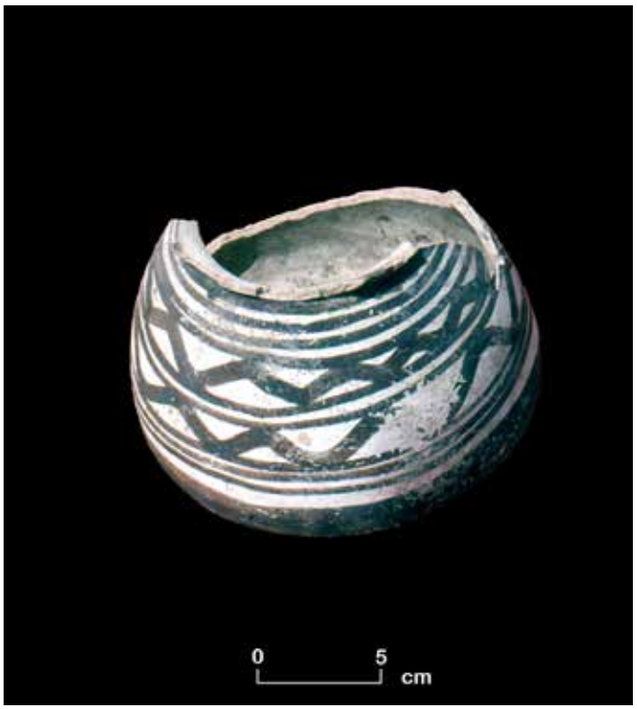


FIGURE 326. Ubaid 3 pottery, carinated jar (fig. 324: 2) from level II, Tell Abada.

FIGURE 327. Ubaid 3 pottery, cups and a jar (fig. 324: 3) from level I, Tell Abada.

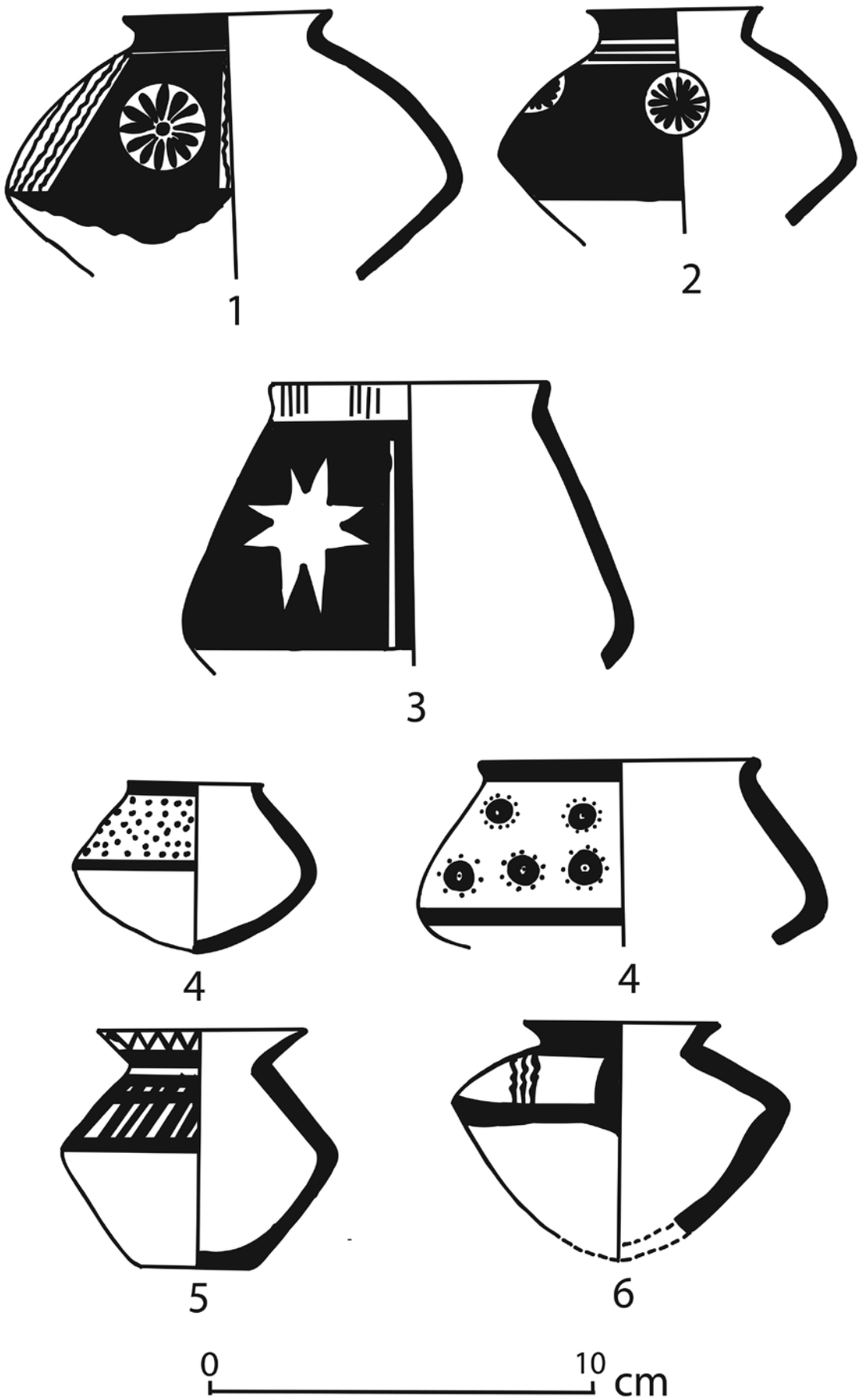


FIGURE 328. Ubaid 3 pottery, jar type 5 from level I, Tell Abada.

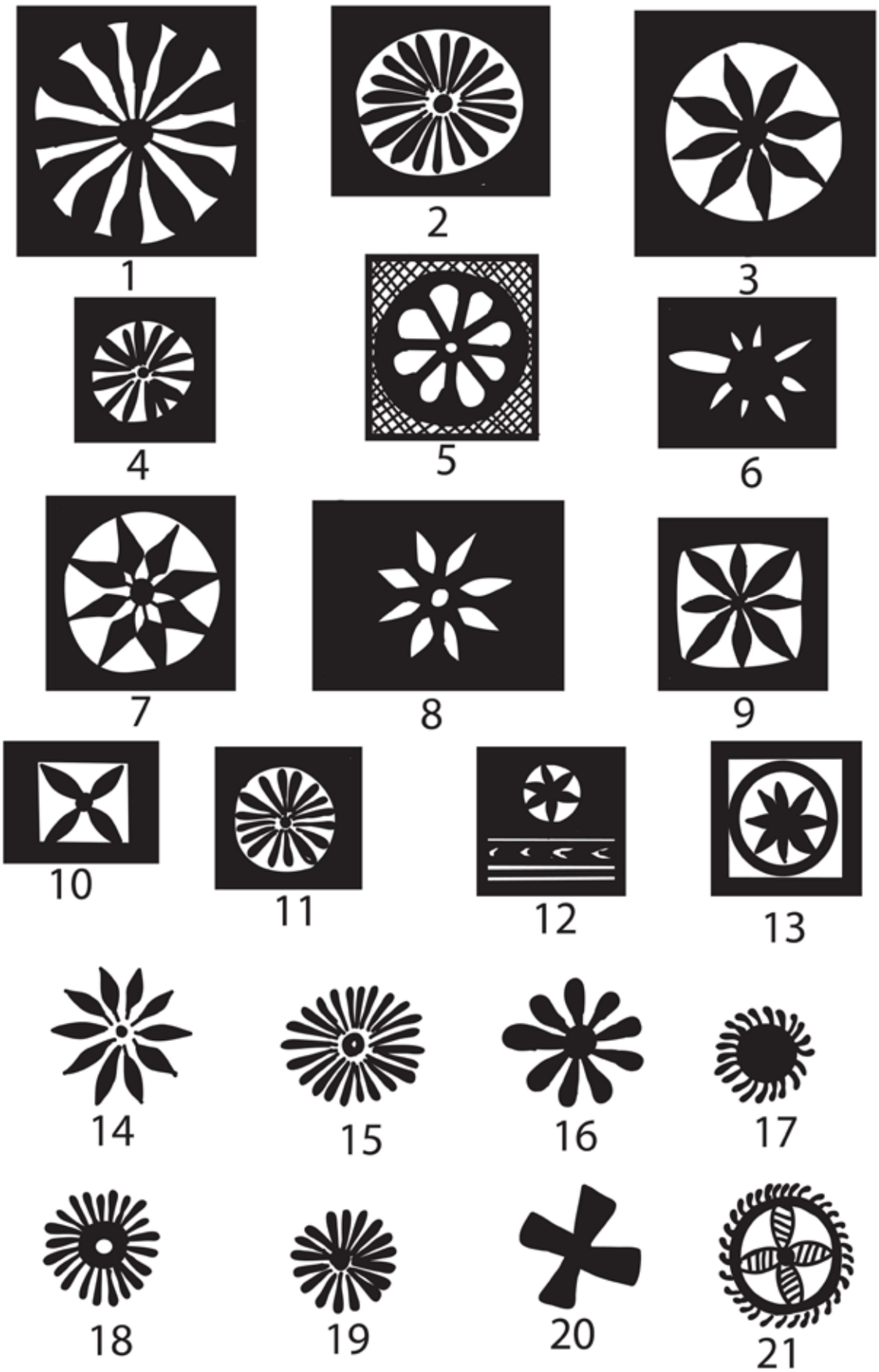


FIGURE 329. Ubaid 3 pottery, painted motifs associated with jar type 5 from level I, Tell Abada.

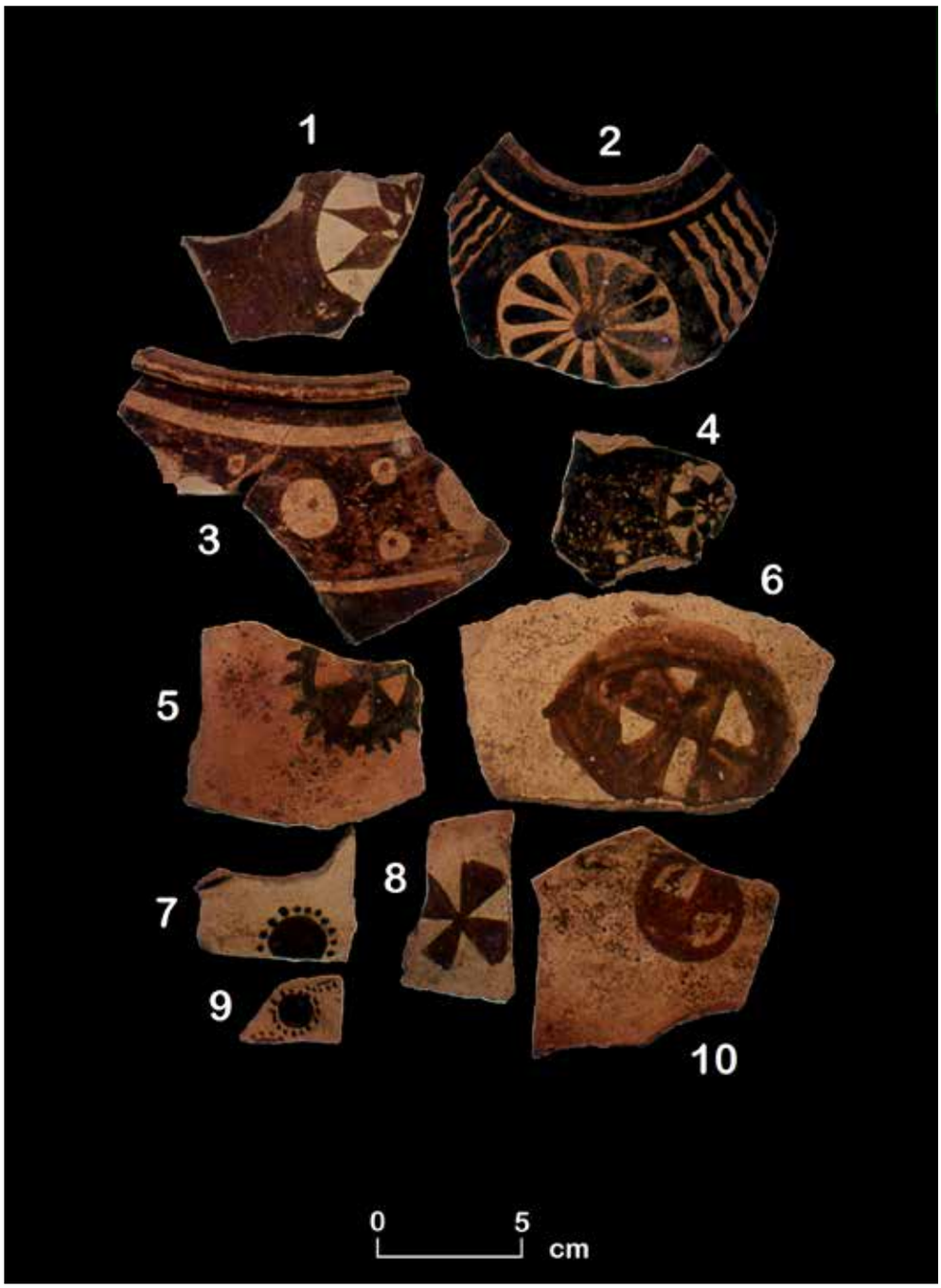


FIGURE 330. Ubaid 3 pottery, painted sherds belong to jar type 5 from level I, Tell Abada.

FIGURE 331. Ubaid 3 pottery, painted sherds belonging to jar type 5 from level I, Tell Abada.

FIGURE 332. Ubaid 3 pottery, painted sherds belonging to jar type 5 from level I, Tell Abada.

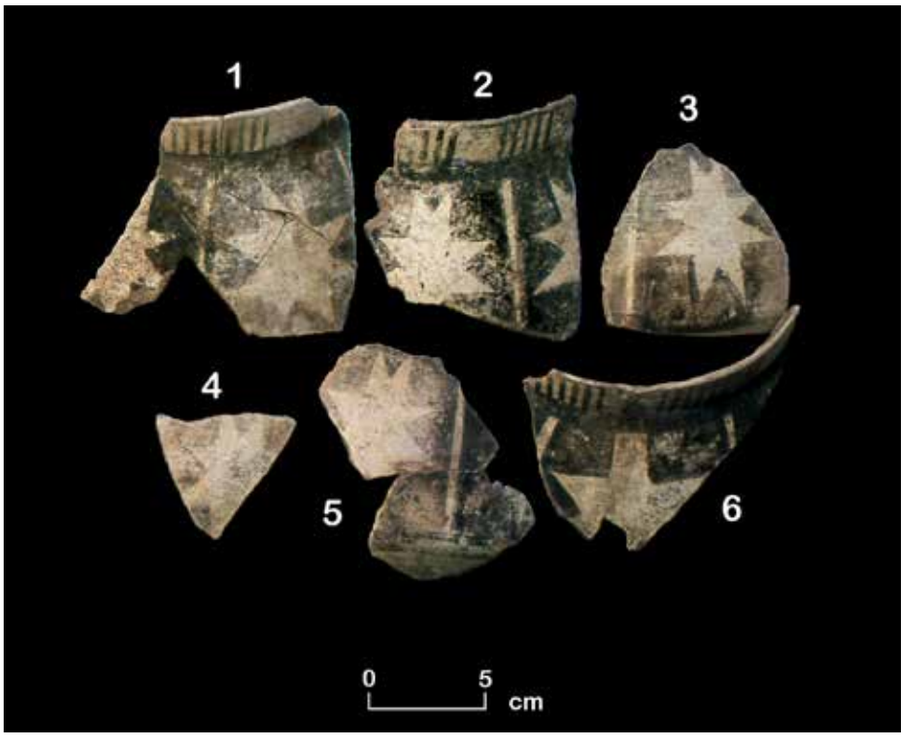


FIGURE 333. Ubaid 3 pottery, painted sherds belong to jar type 5 from level I, Tell Abada.

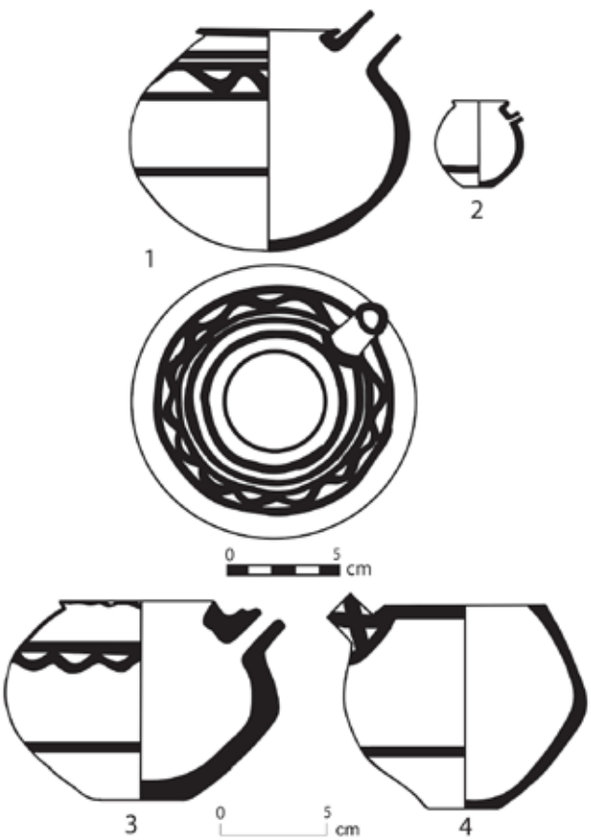


FIGURE 334. Ubaid 3 pottery, jar type 6 from level I, Tell Abada.

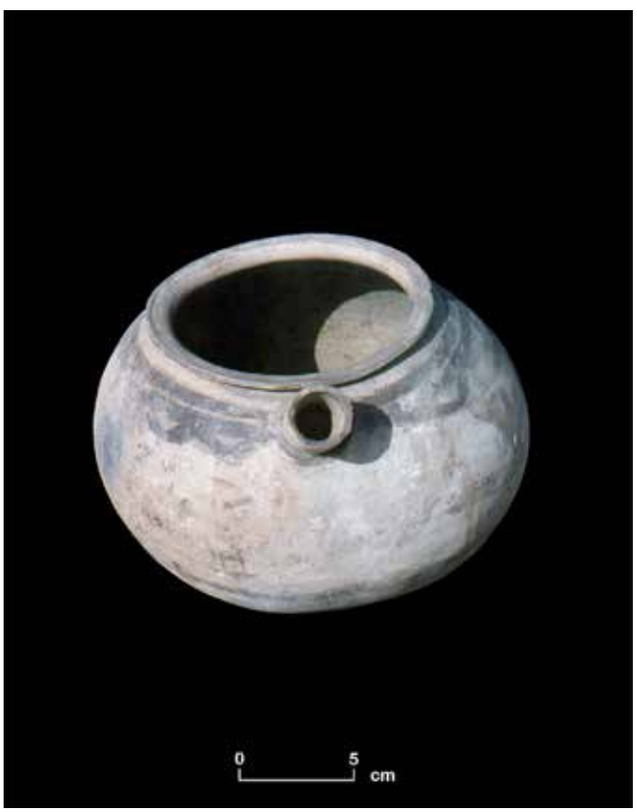


FIGURE 335. Ubaid 3 pottery, spouted jar (fig. 334: 1) from level I, Tell Abada.

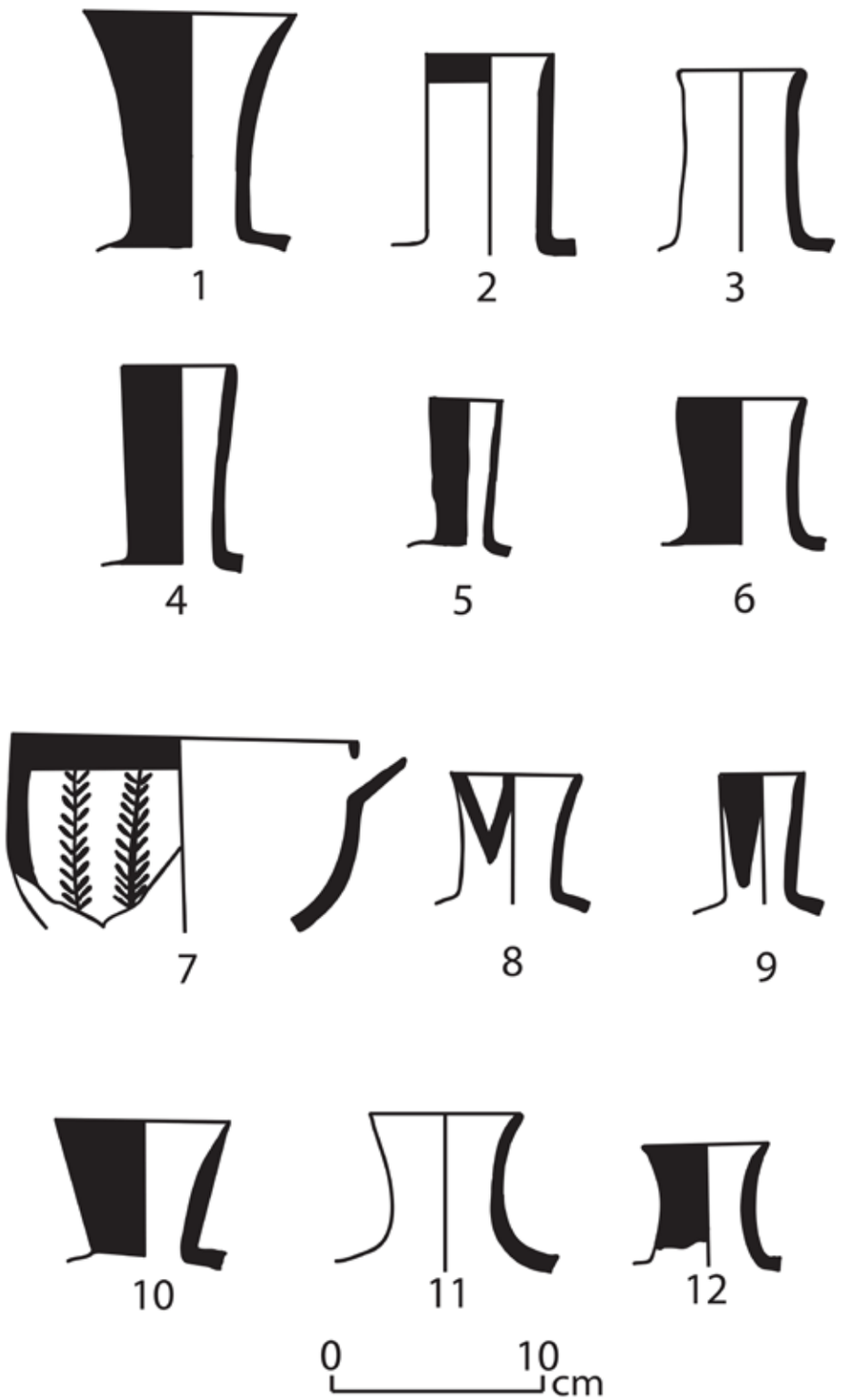


FIGURE 336. Ubaid 3 pottery, spouted vessels and detached spouts from level II, Tell Abada.

FIGURE 337. Ubaid 3 pottery, spouted vessels and detached spouts from level II, Tell Abada.

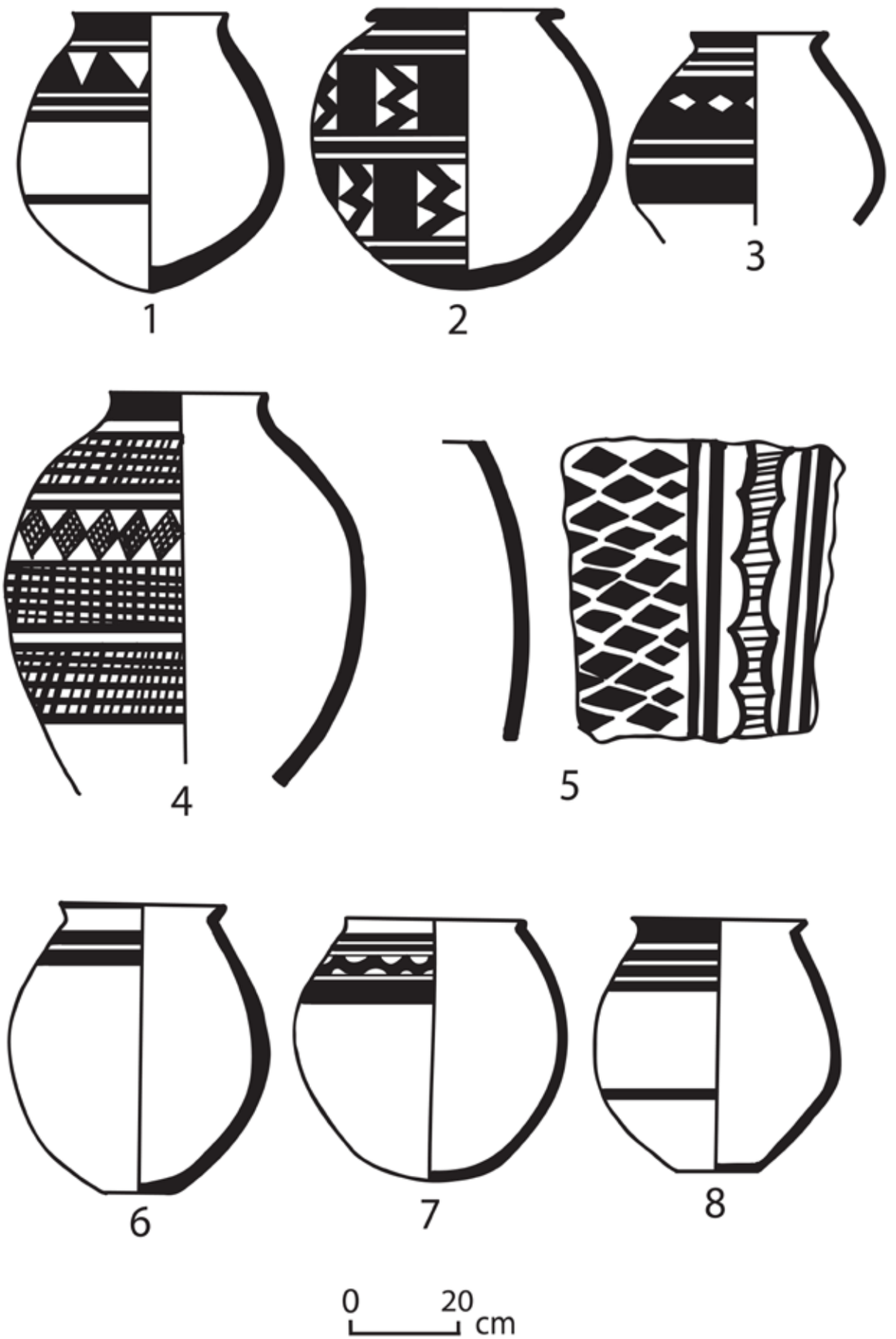


FIGURE 338. Ubaid 3 pottery, jar type 7 from levels I–II, Tell Abada.

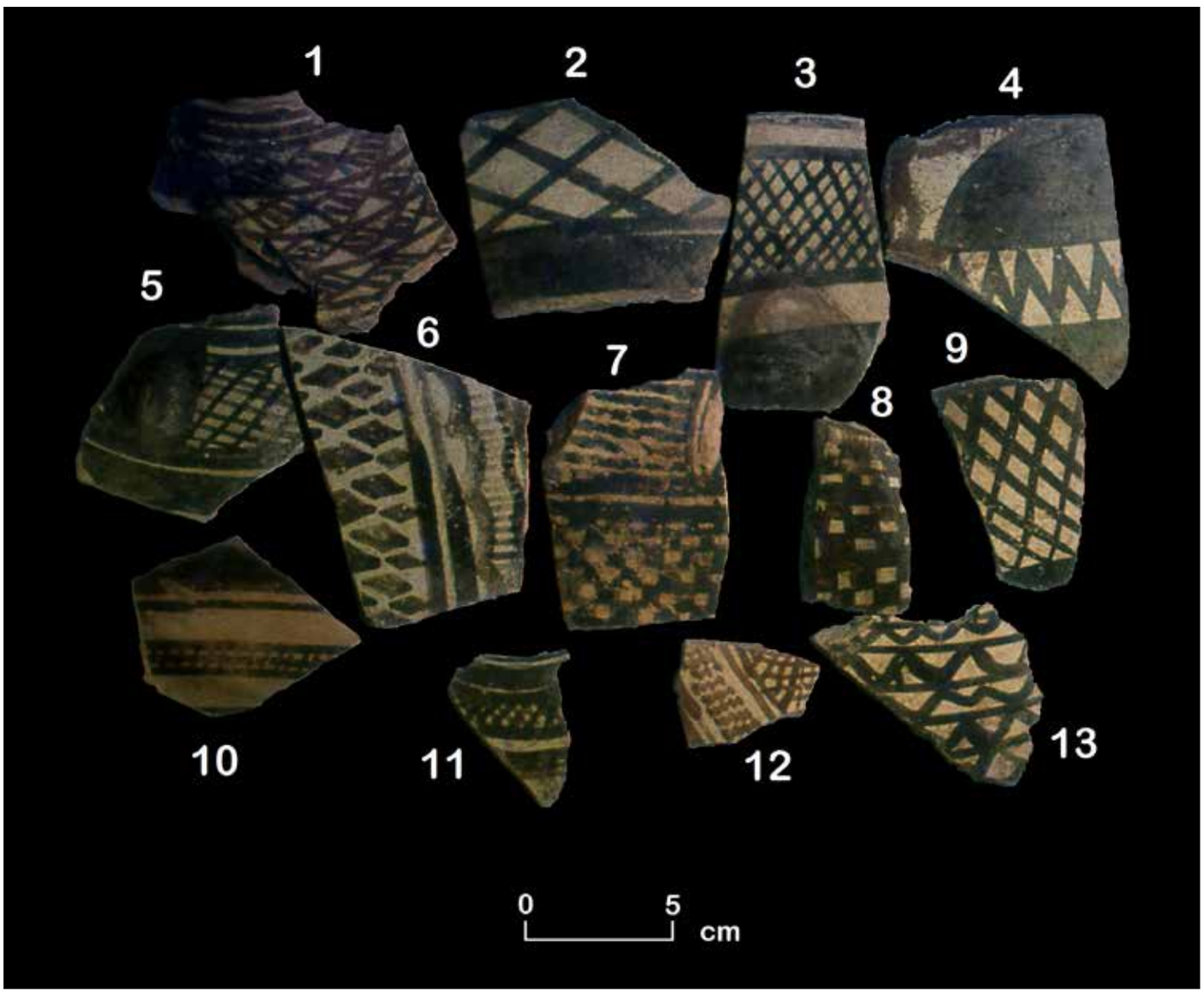


FIGURE 339. Ubaid 3 pottery, painted sherds from levels I (6–8), II (1–5), Tell Abada.

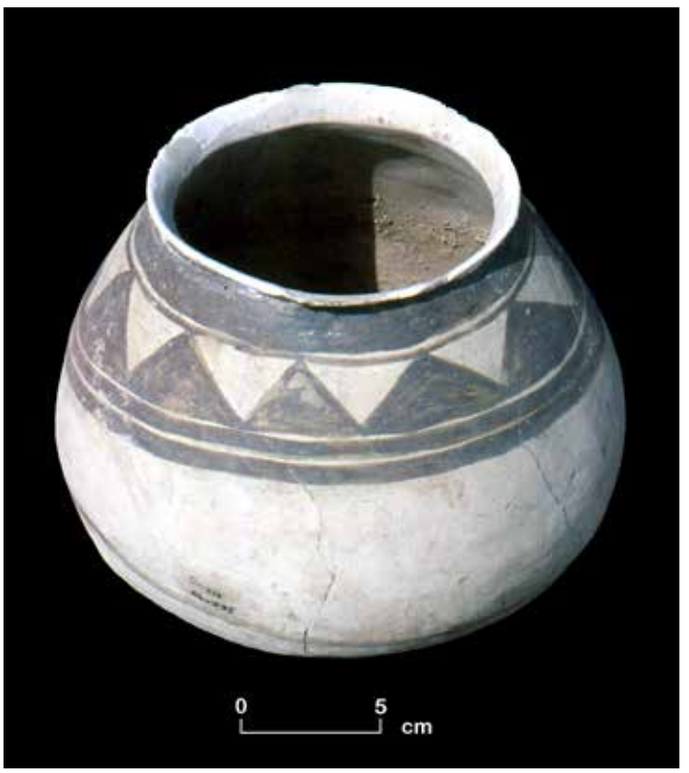


FIGURE 340. Ubaid 3 pottery, large pottery jar (fig. 338: 1) from level II, Tell Abada.

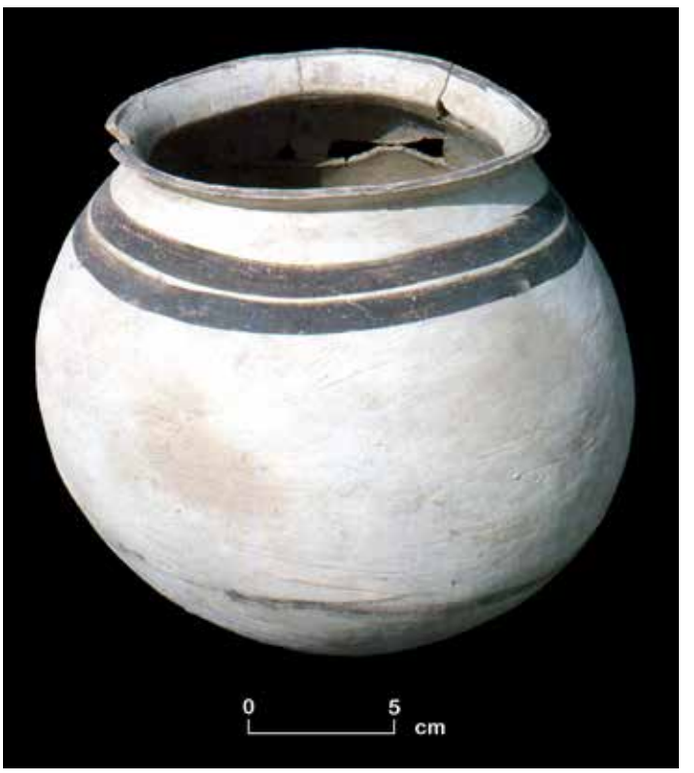


FIGURE 341. Ubaid 3 pottery, large pottery jar (fig. 338: 6) from level I, Tell Abada.

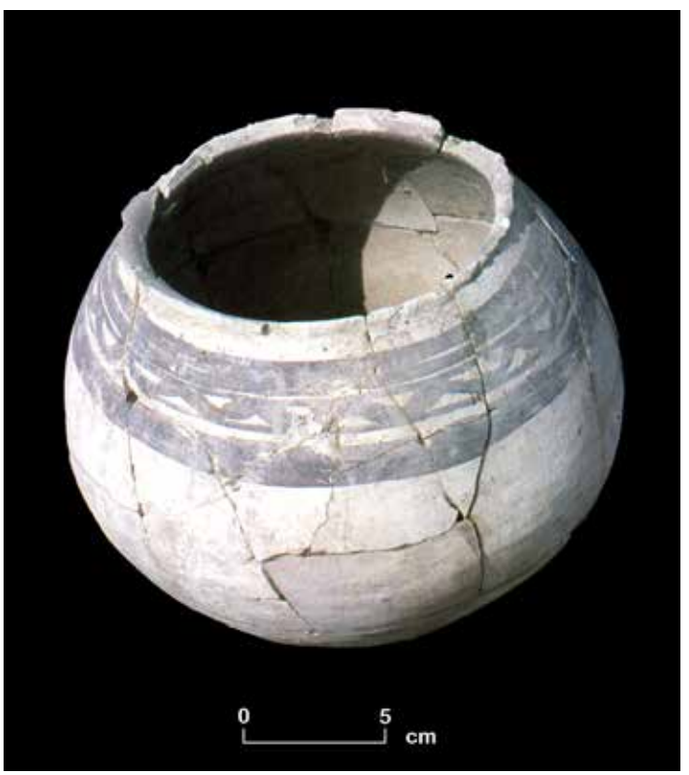


FIGURE 342. Ubaid 3 pottery, large pottery jar (fig. 338: 7) from level I, Tell Abada.

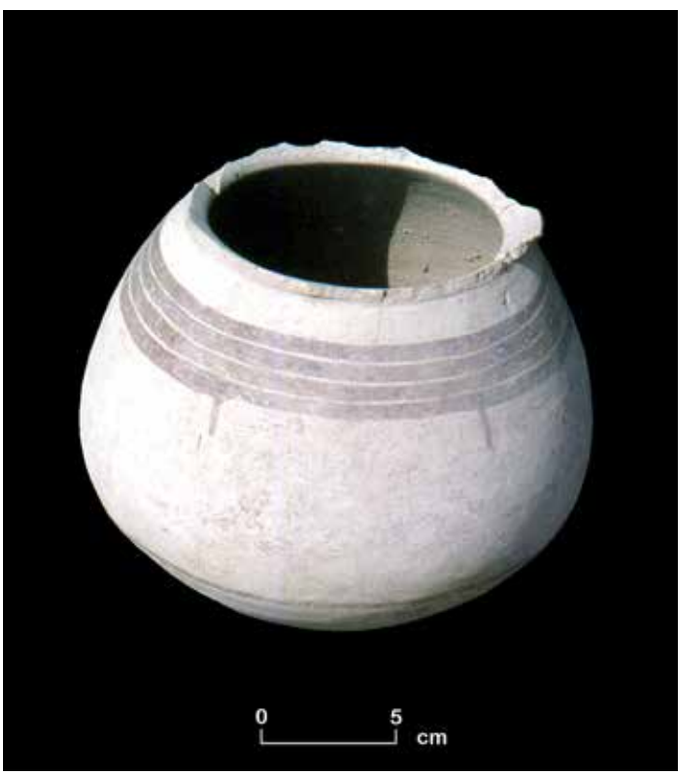


FIGURE 343. Ubaid 3 pottery, large pottery jar (fig. 338: 8) from level I, Tell Abada.

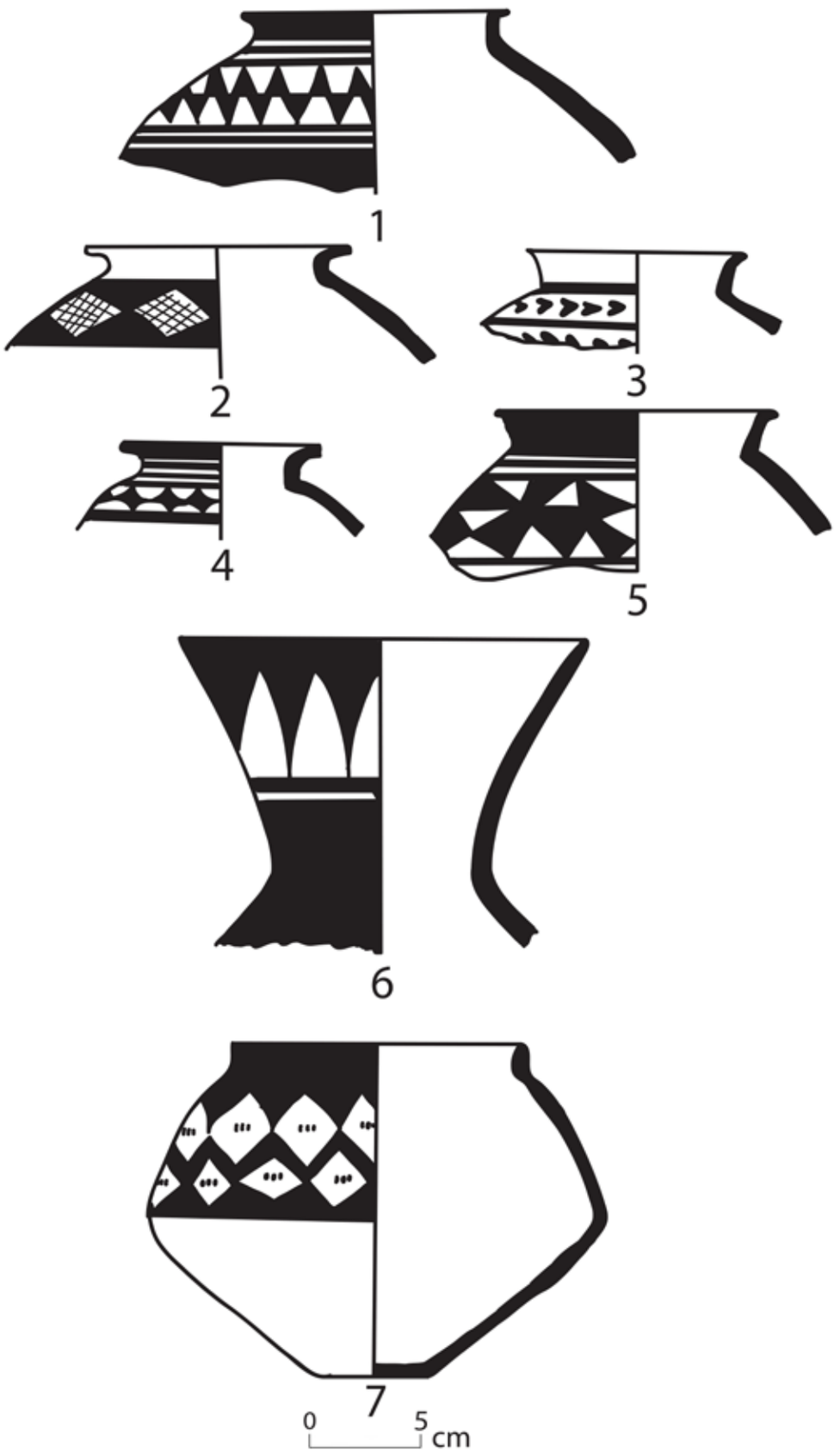


FIGURE 344. Ubaid 3 pottery, jar types 8 from level I (7), level II (1–5), 9 (6), Tell Abada.

FIGURE 345. Ubaid 3 pottery, jar Type 8 (fig. 344: 7) from level I, Tell Abada.

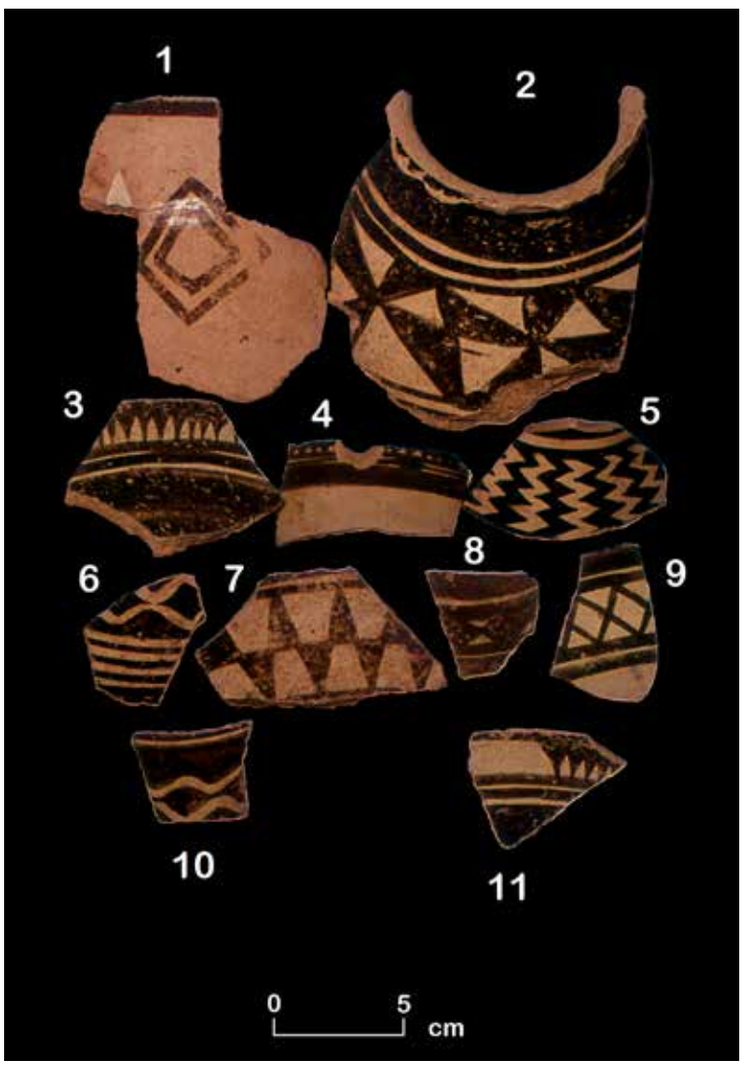


FIGURE 346. Ubaid 3 pottery, painted pottery sherds from level I–II, Tell Abada.

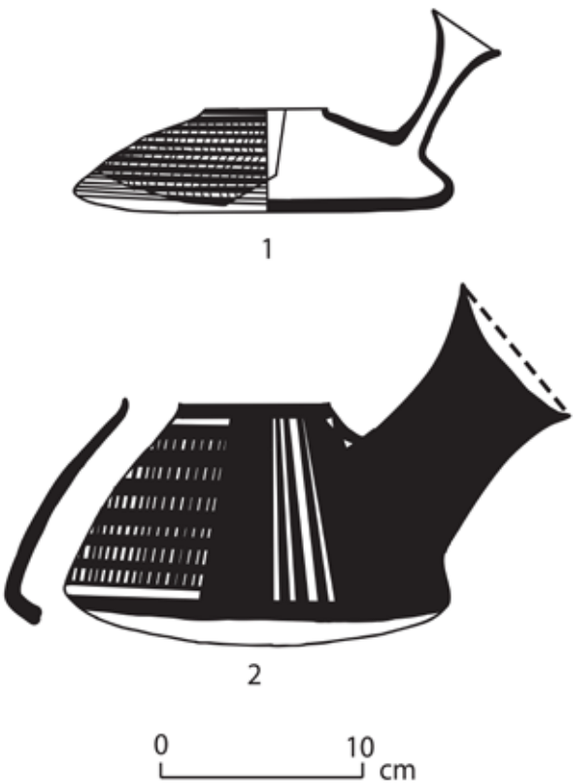


FIGURE 347. Ubaid 2–3 pottery, jar type 10 "Lenticular" jar from level I, Tell Abada.

FIGURE 348. Ubaid 2–3 pottery, jar type 10 (fig. 347: 2) "Lenticular" jar from level I, Tell Abada.

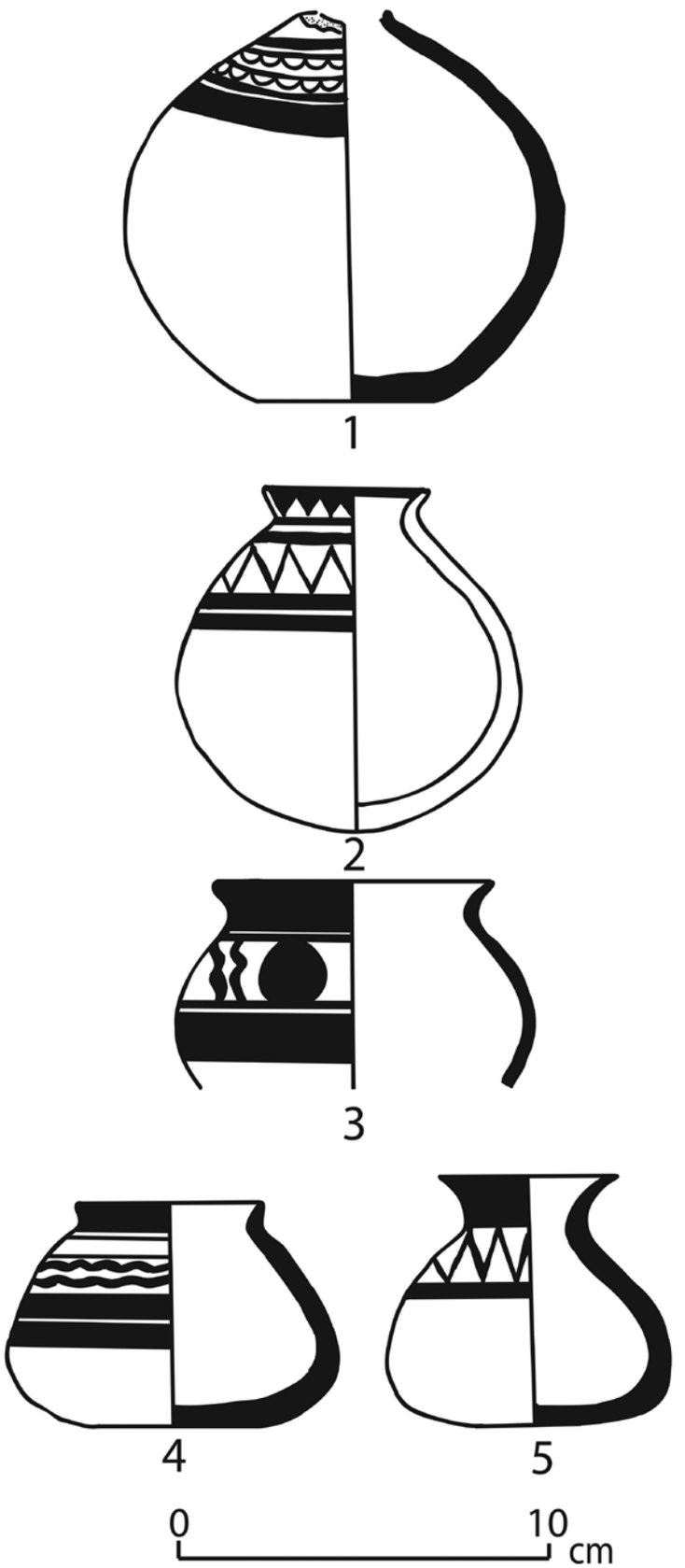


FIGURE 349. Ubaid 3 pottery, jar type 11 (1–2) and type 12 (3–5) from level I, Tell Abada.

FIGURE 350. Ubaid 3 pottery, jar type 11 (fig. 349: 1) from level I, Tell Abada.

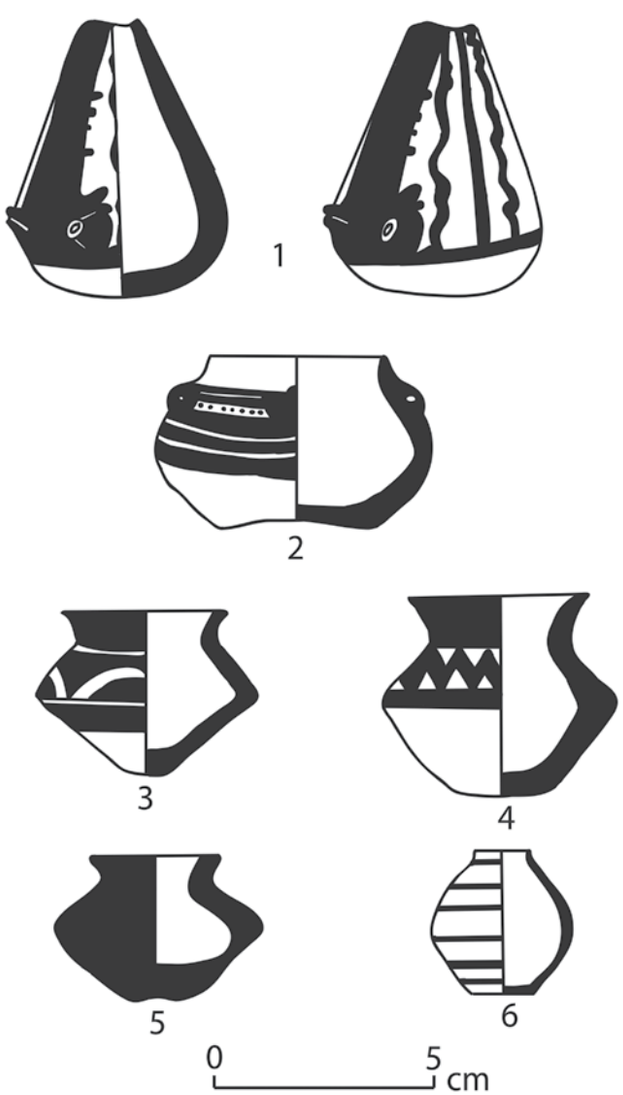


FIGURE 351. Ubaid 3 pottery, jar type 13 from level I, Tell Abada.

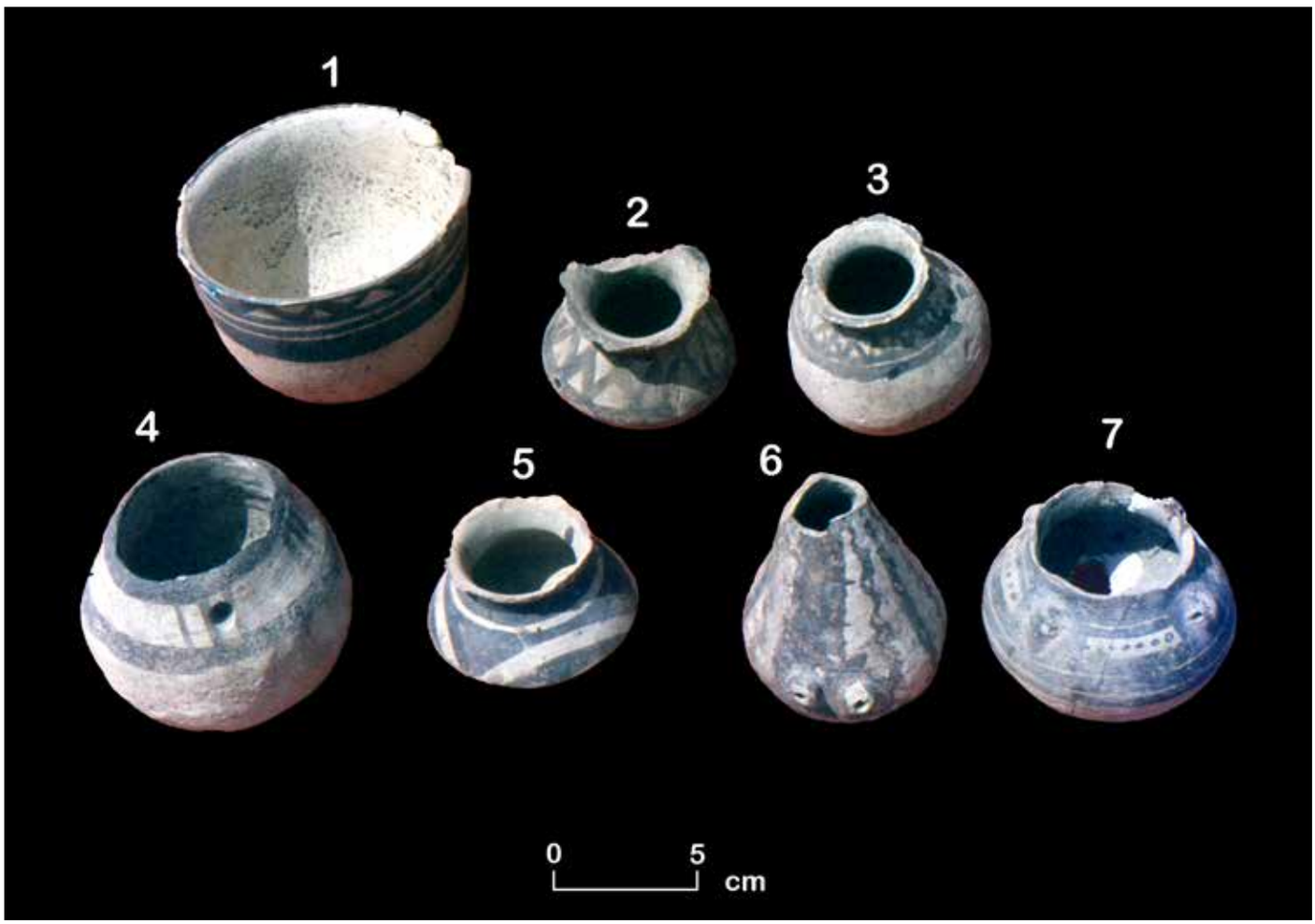


FIGURE 352. Ubaid 3 pottery, collection of jars from level I, Tell Abada.

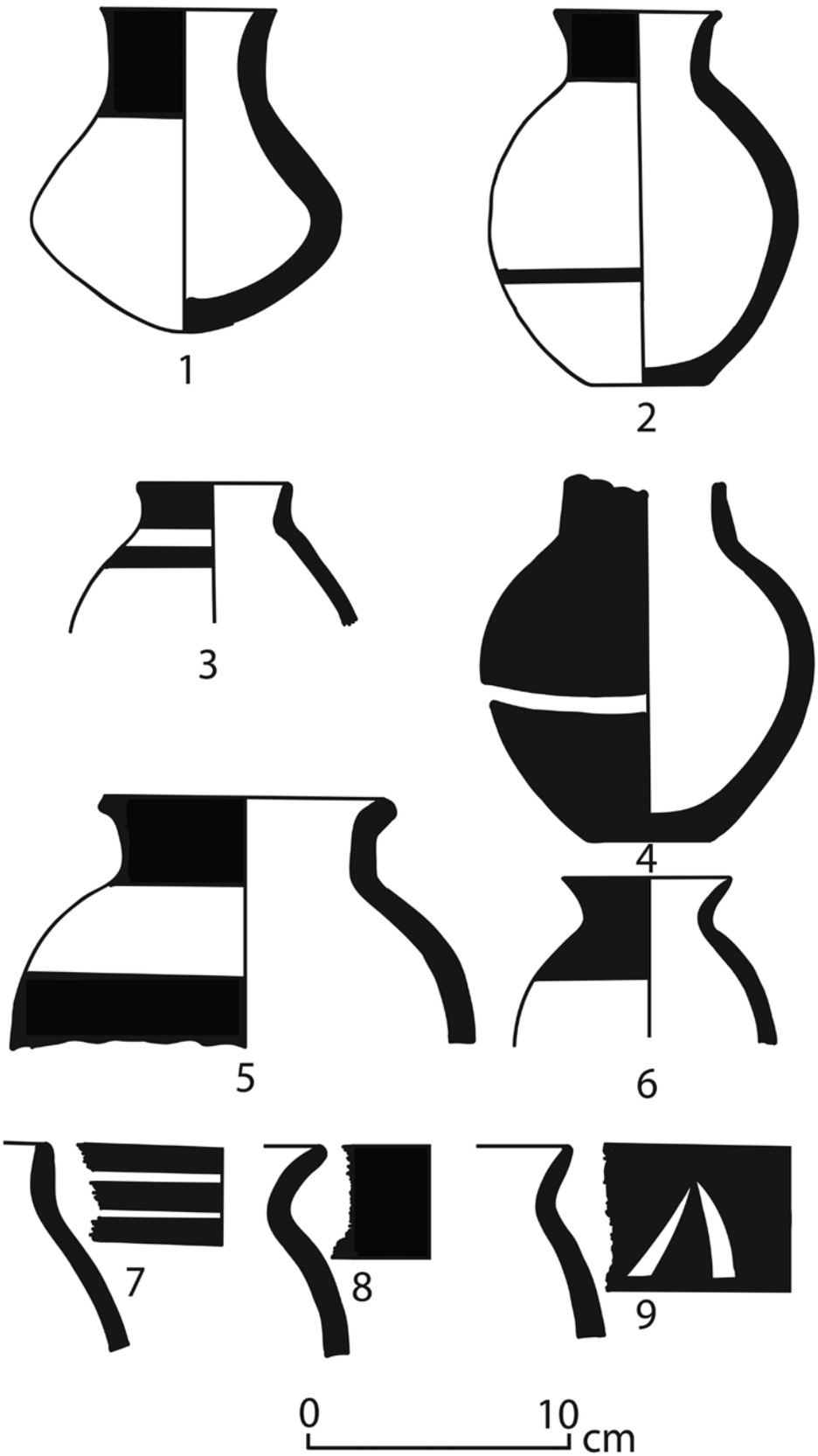


FIGURE 353. Ubaid 3 pottery, jar types 24 (2–4, 6–9) and 25 (1, 5) from level I, Tell Abada.

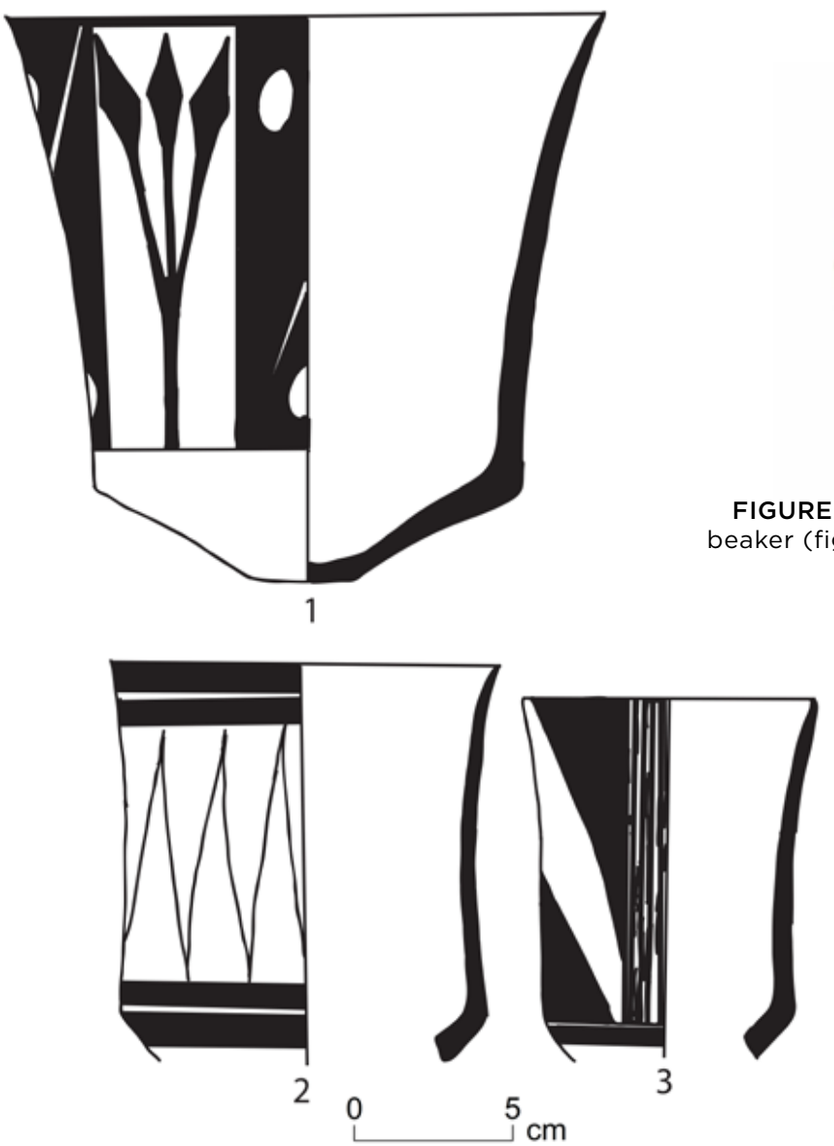


FIGURE 354. Ubaid 3 pottery, beakers (reconstructed) from level II, Tell Abada.

FIGURE 355. Ubaid 3 pottery, a part of beaker (fig. 354:1) from level II, Tell Abada.

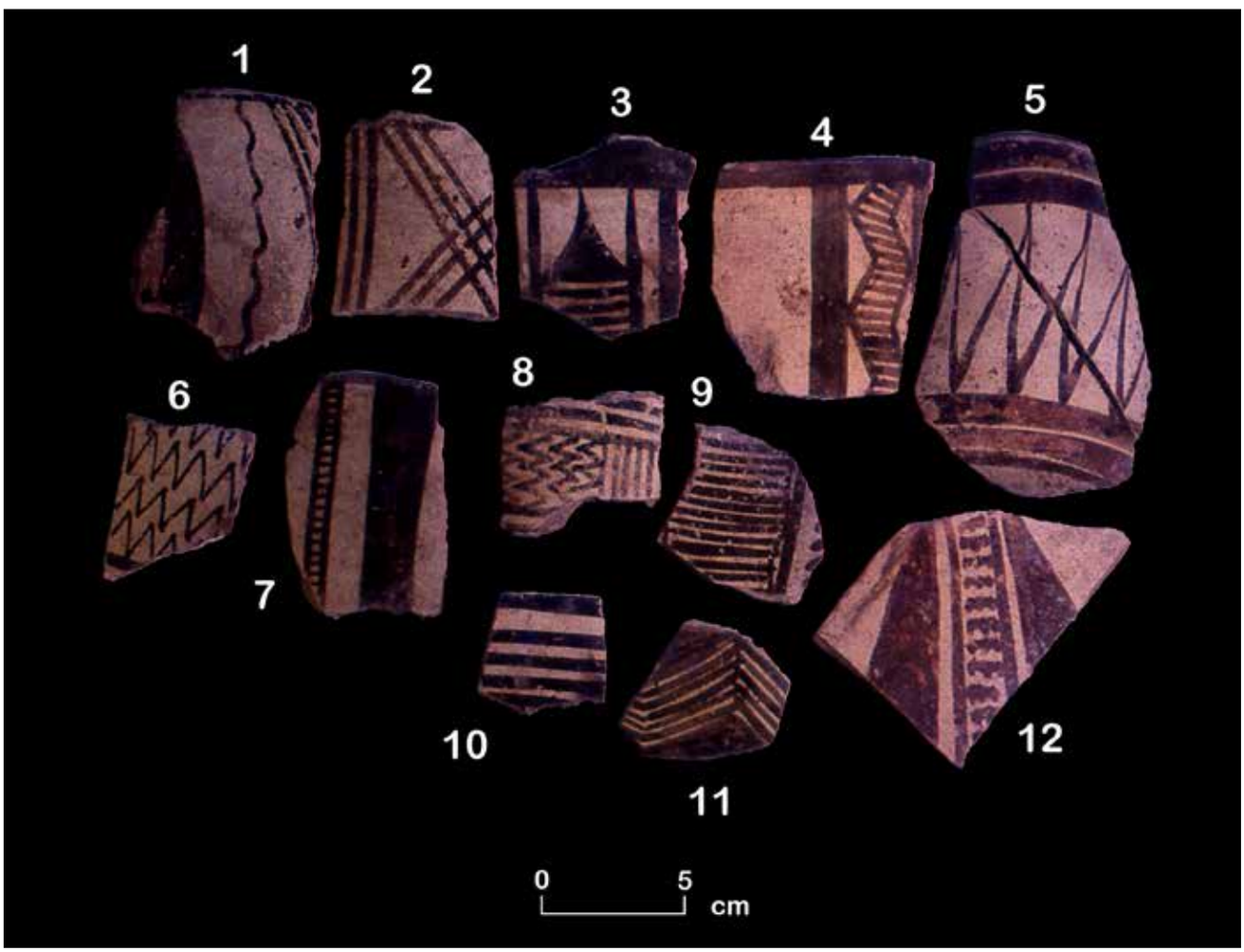


FIGURE 356. Ubaid 3 pottery, painted sherds of beakers (no. 5 is fig. 354: 2) from level II, Tell Abada.

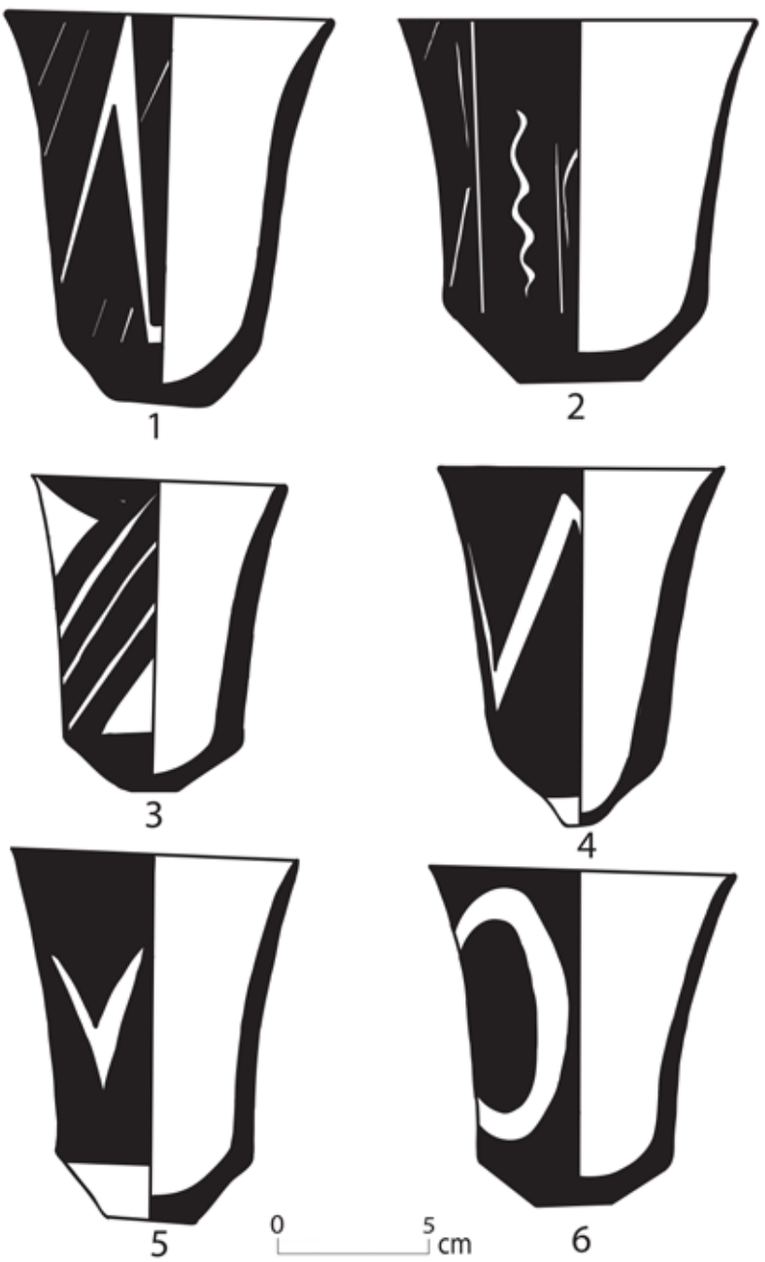


FIGURE 357. Ubaid 3 pottery, beakers from level II, Tell Abada.

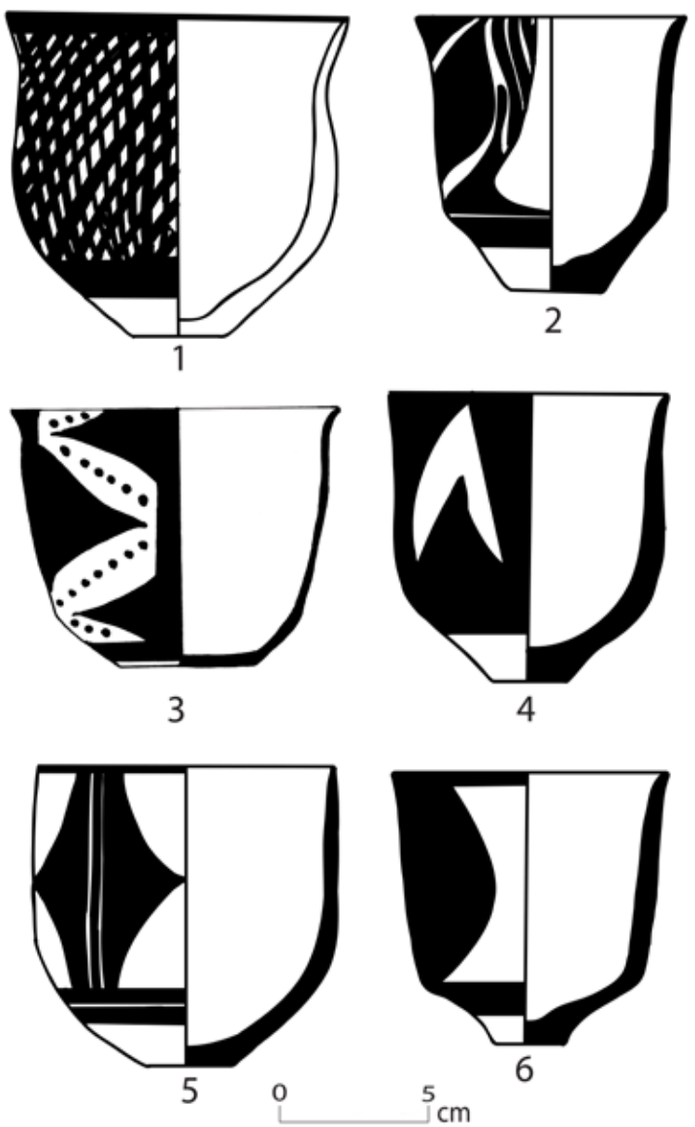


FIGURE 358. Beakers (reconstructed) from level II, Tell Abada.

FIGURE 359. Ubaid 3 pottery, a beaker (fig. 358: 1) from level II, Tell Abada.

FIGURE 360. Ubaid 3 pottery, a delicate beaker (fig. 358: 3) from level II, Tell Abada.

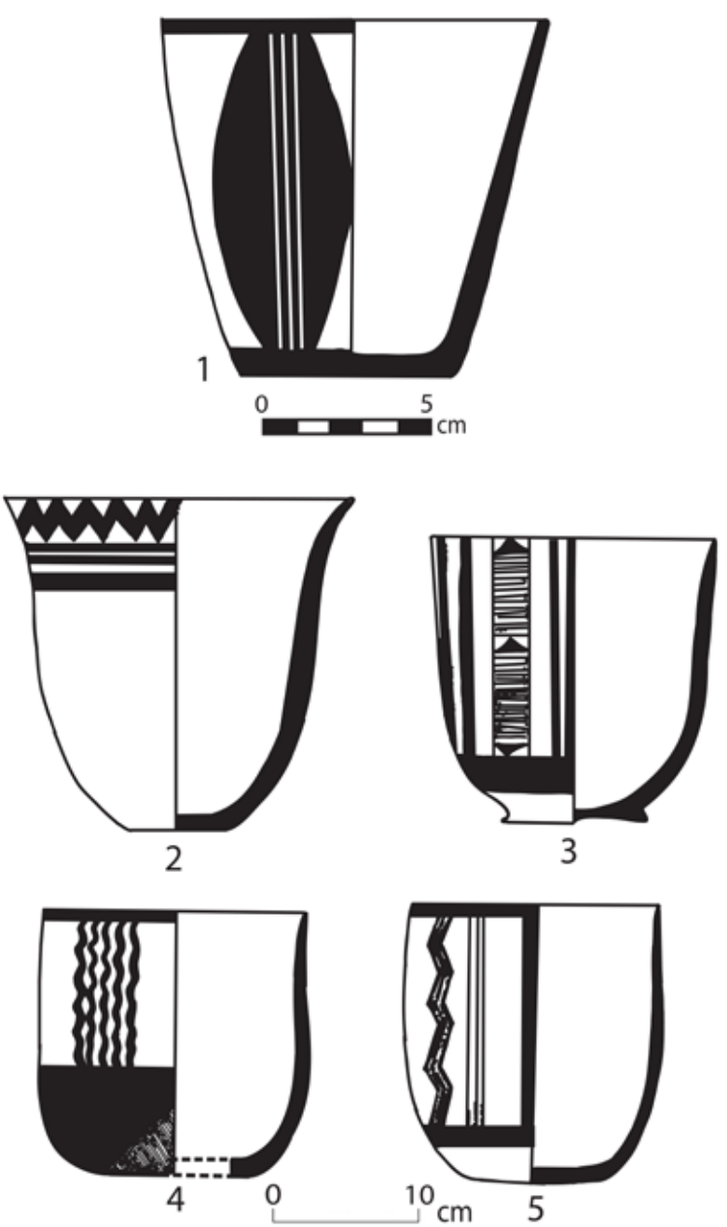


FIGURE 361. Ubaid 3 pottery, beakers from level I, Tell Abada.

FIGURE 362. Ubaid 3 pottery, a beaker (fig. 361: 5) from level I, Tell Abada.

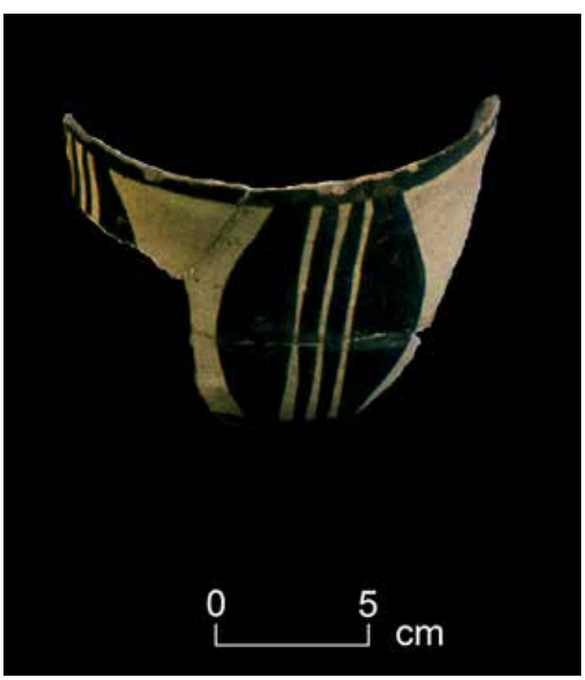


FIGURE 363. Ubaid 3 pottery, a beaker (fig. 361: 1) from level I, Tell Abada.

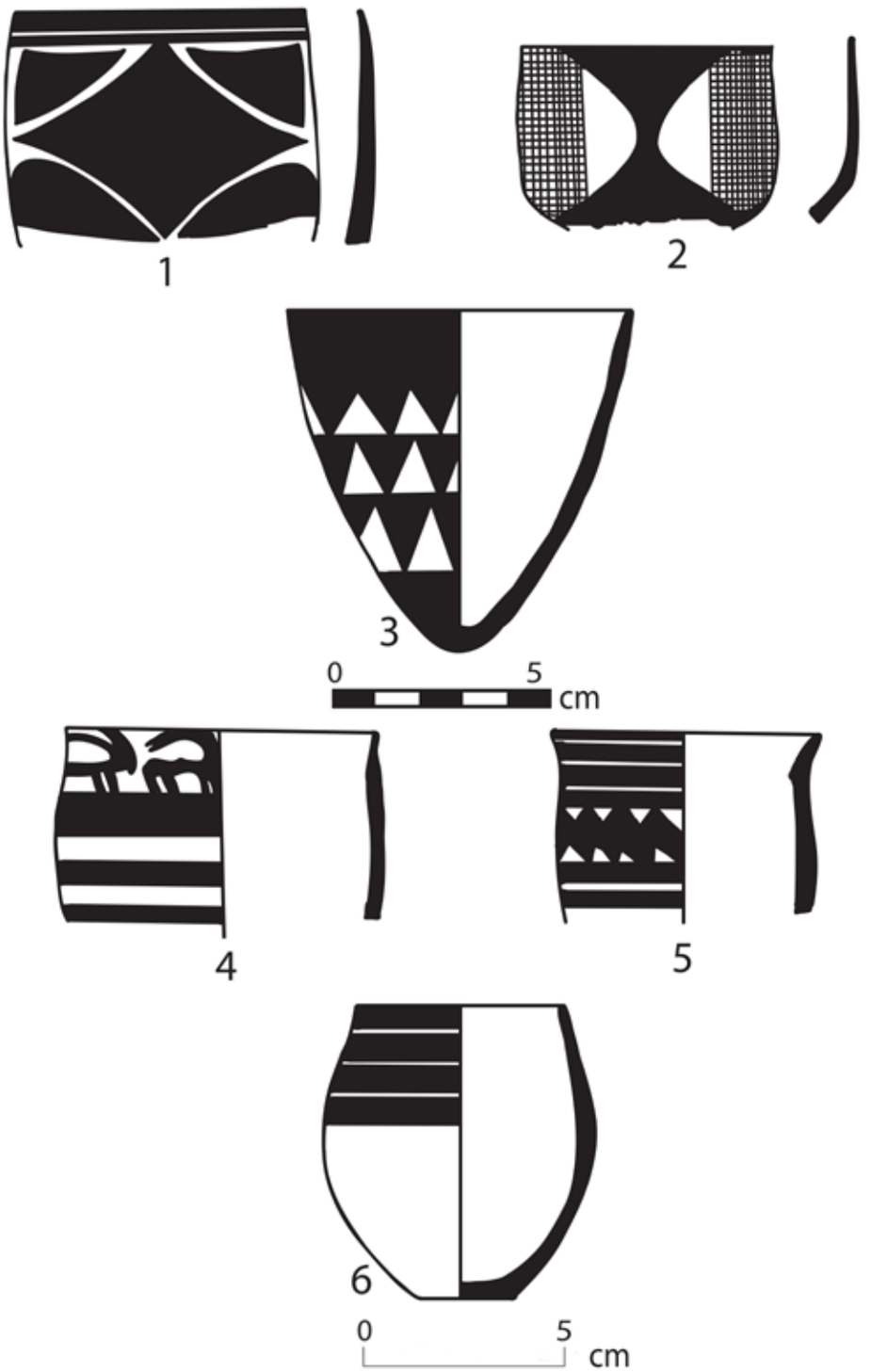


FIGURE 364. Ubaid 3 pottery, beakers and cups from level I, Tell Abada.

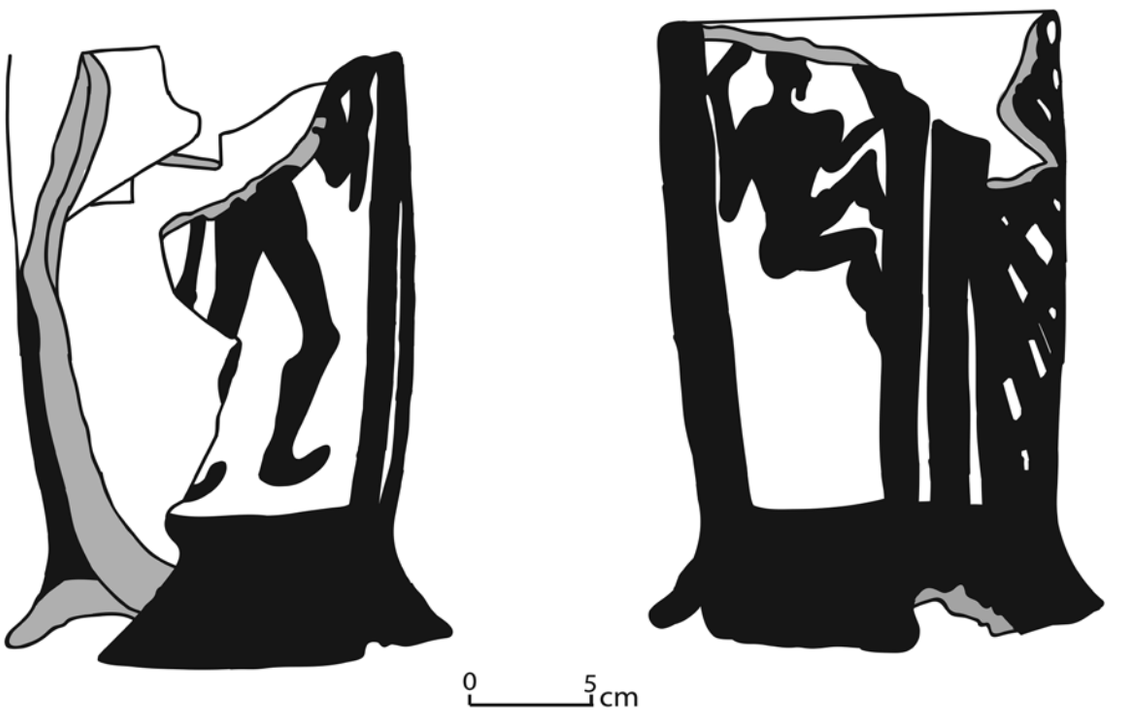


FIGURE 365. Ubaid 3 pottery, beaker from level II, Tell Abada.

FIGURE 366. Ubaid 3 pottery, a unique beaker from level II, Tell Abada.

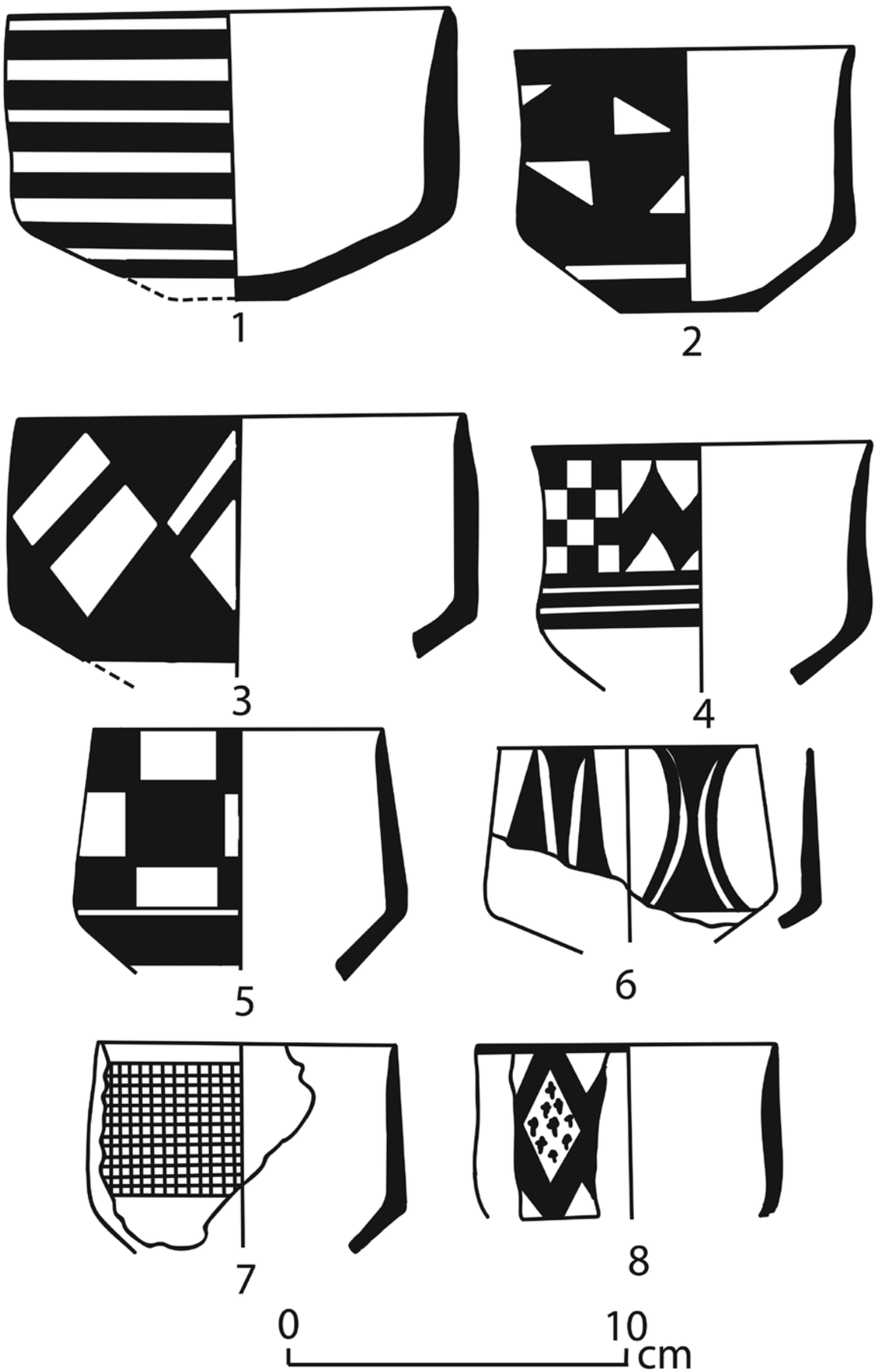


FIGURE 367. Ubaid 3 pottery, cups (reconstructed) from level II, Tell Abada.

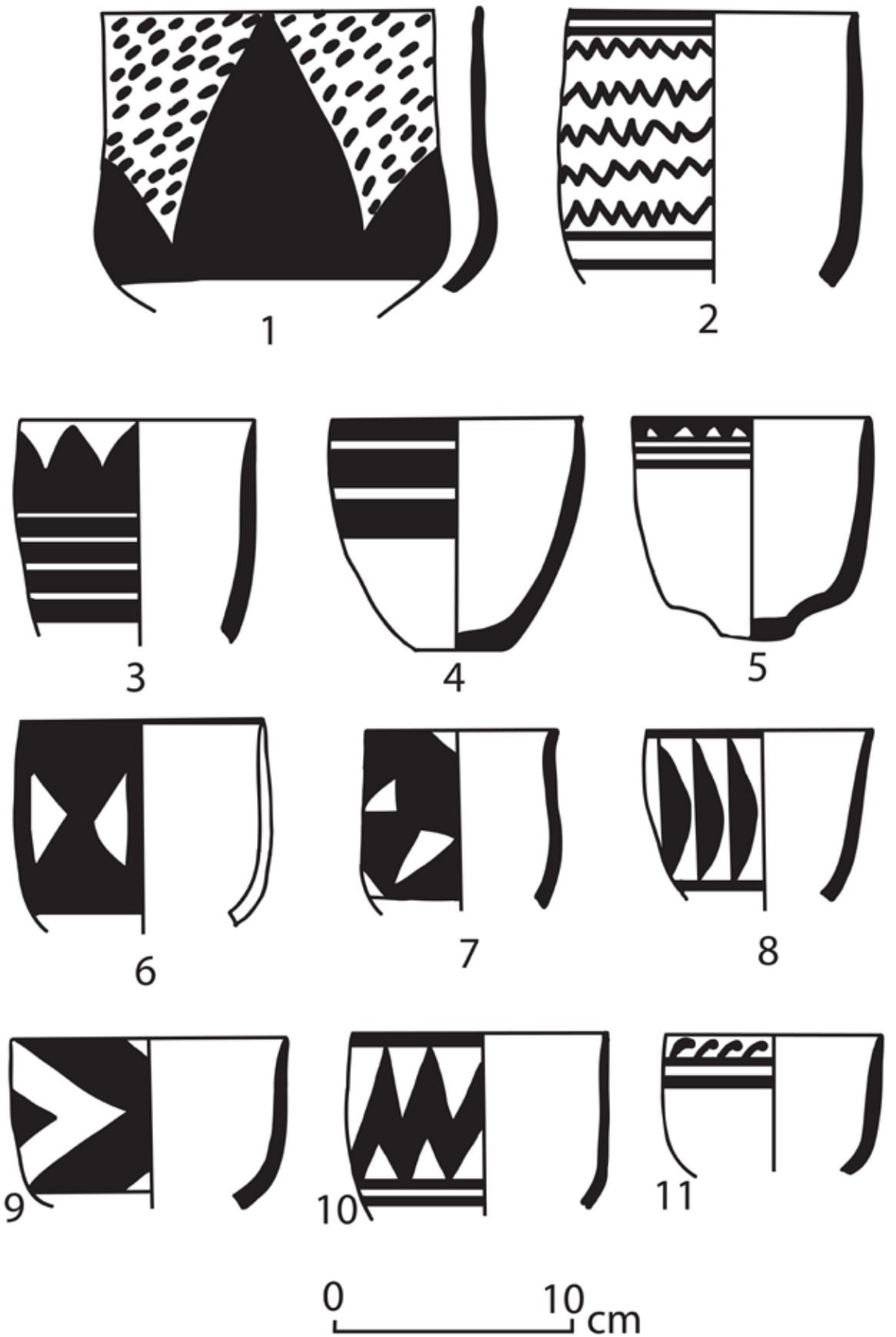


FIGURE 368. Ubaid 3 pottery, cups (reconstructed) from level I, Tell Abada.

FIGURE 369. Ubaid 3 pottery, painted sherds from level I, Tell Abada.

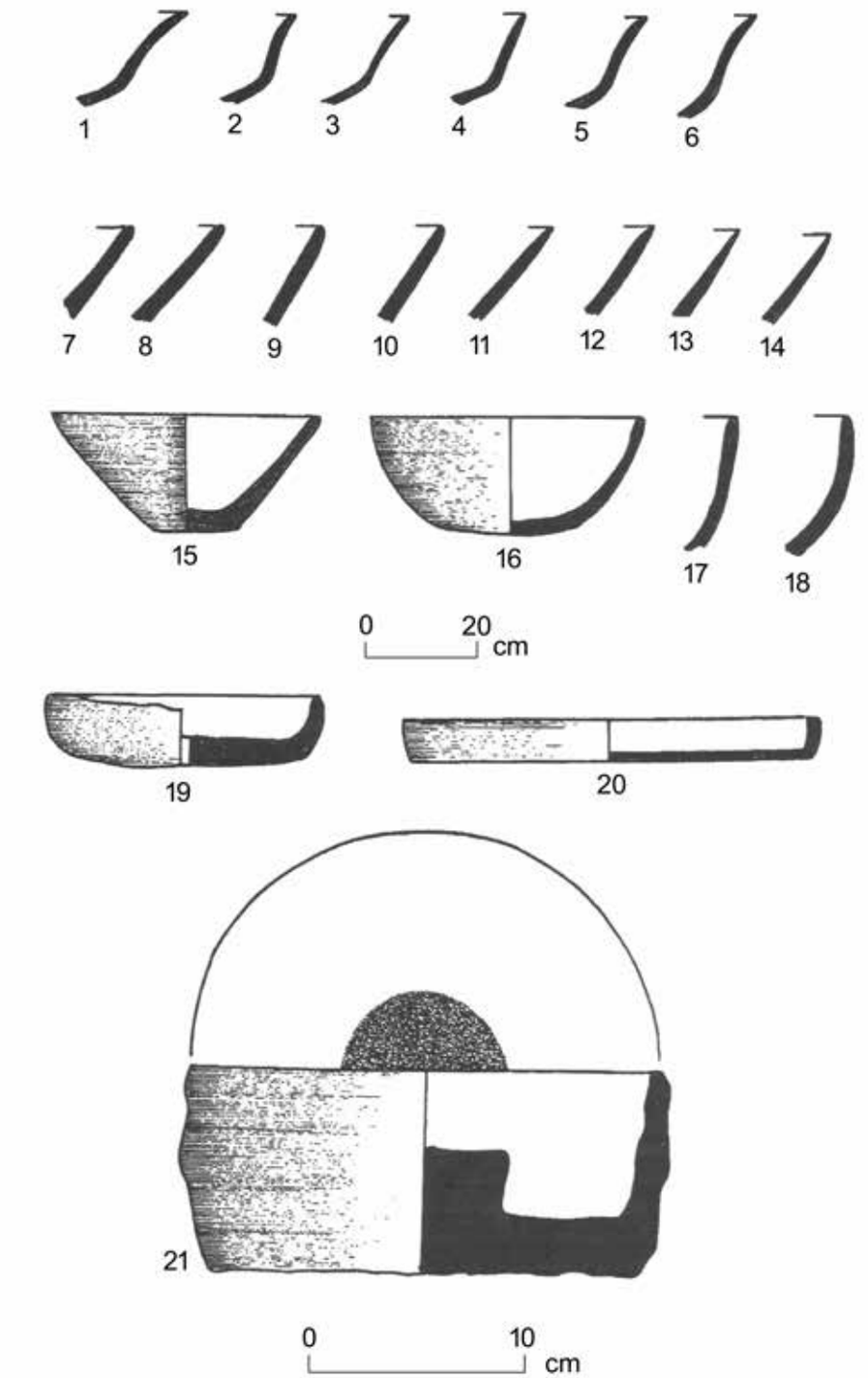


FIGURE 370. Ubaid 3 pottery, plain pottery from level II, Tell Abada.

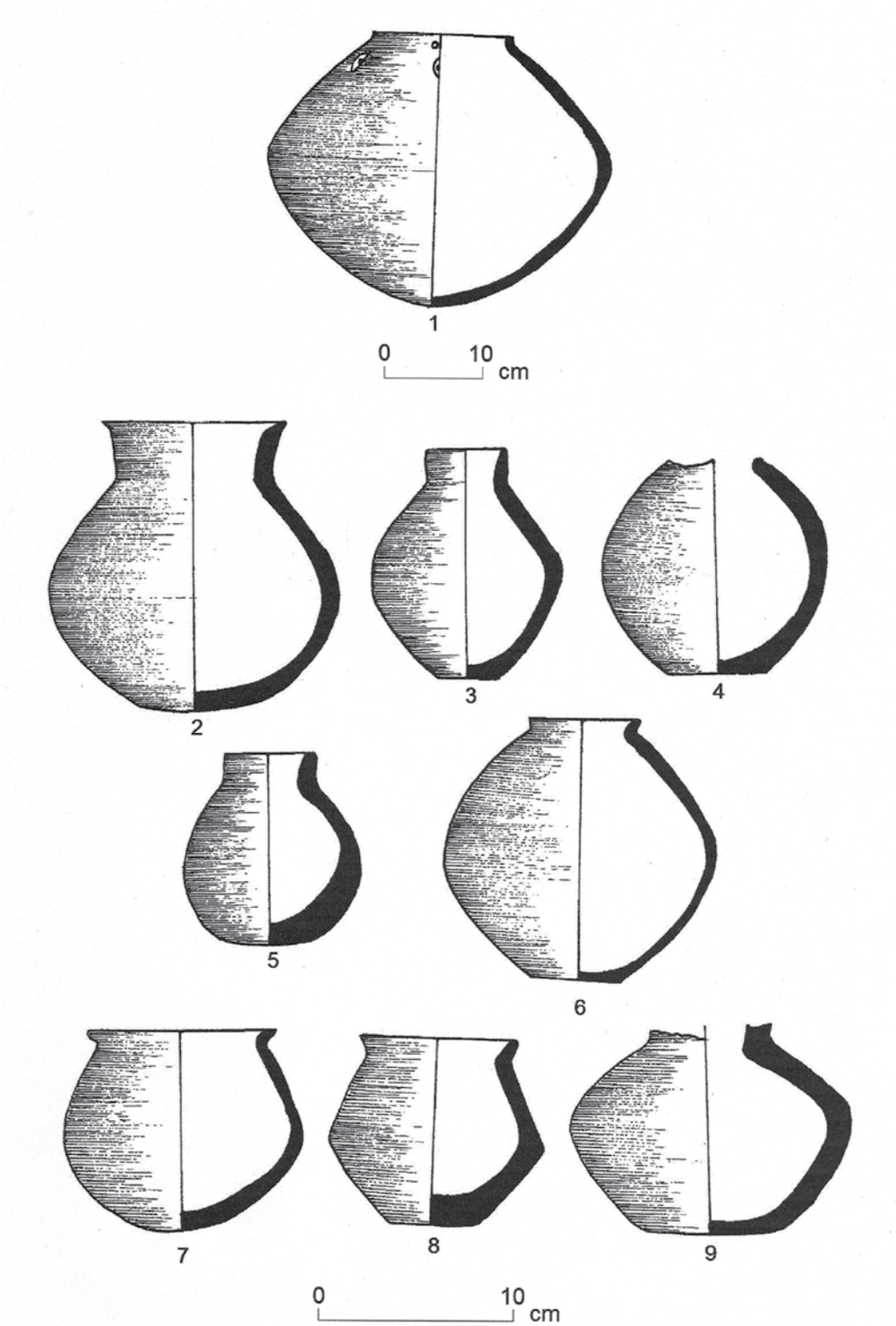


FIGURE 371. Ubaid 3 pottery, plain pottery from level II, Tell Abada.

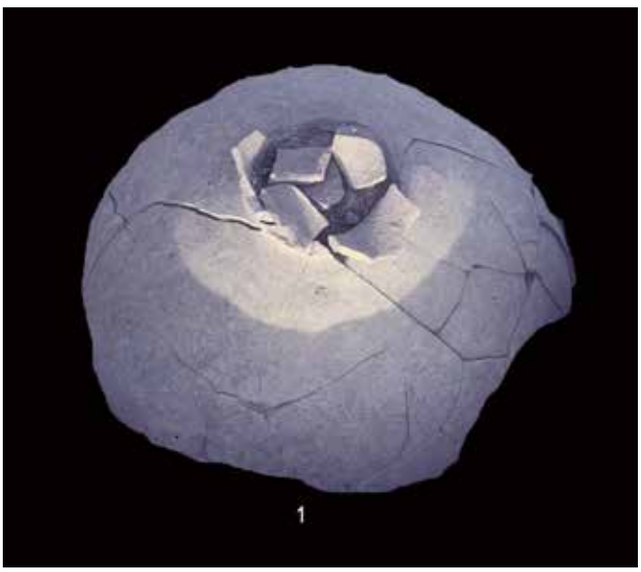


FIGURE 372. Ubaid 3 pottery, large, plain pottery jar from level II, Tell Abada.

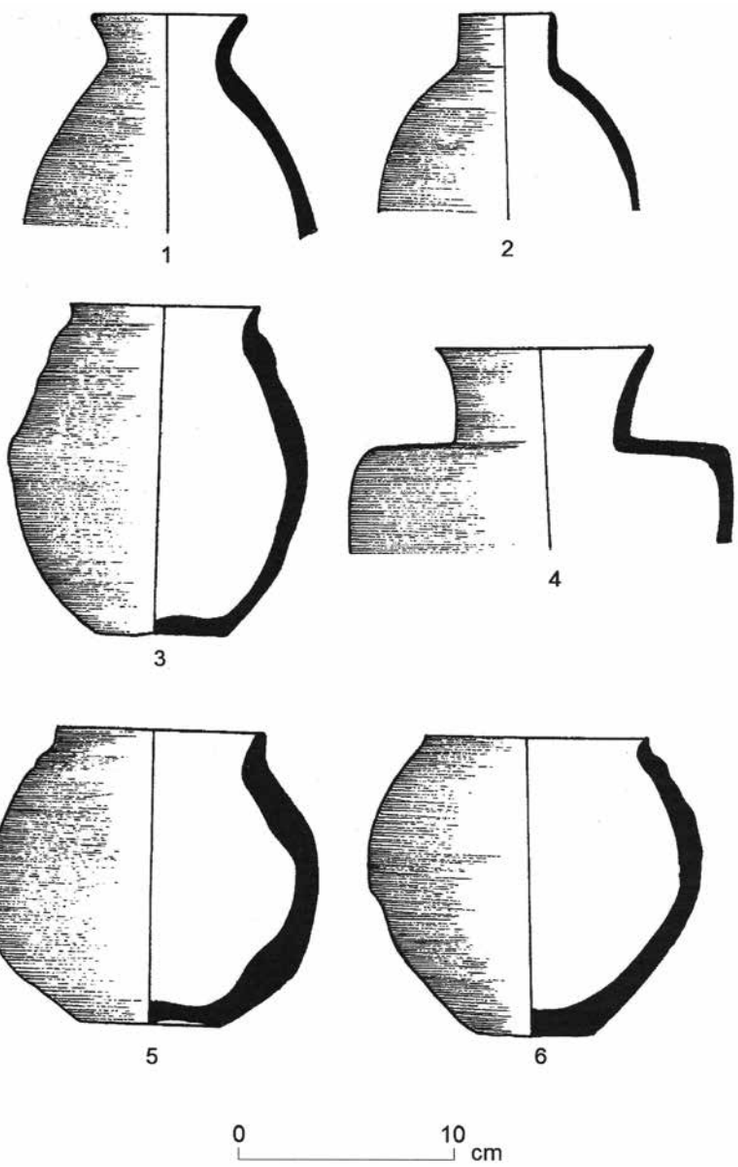


FIGURE 373. Ubaid 3 pottery, plain pottery jars from level II, Tell Abada.

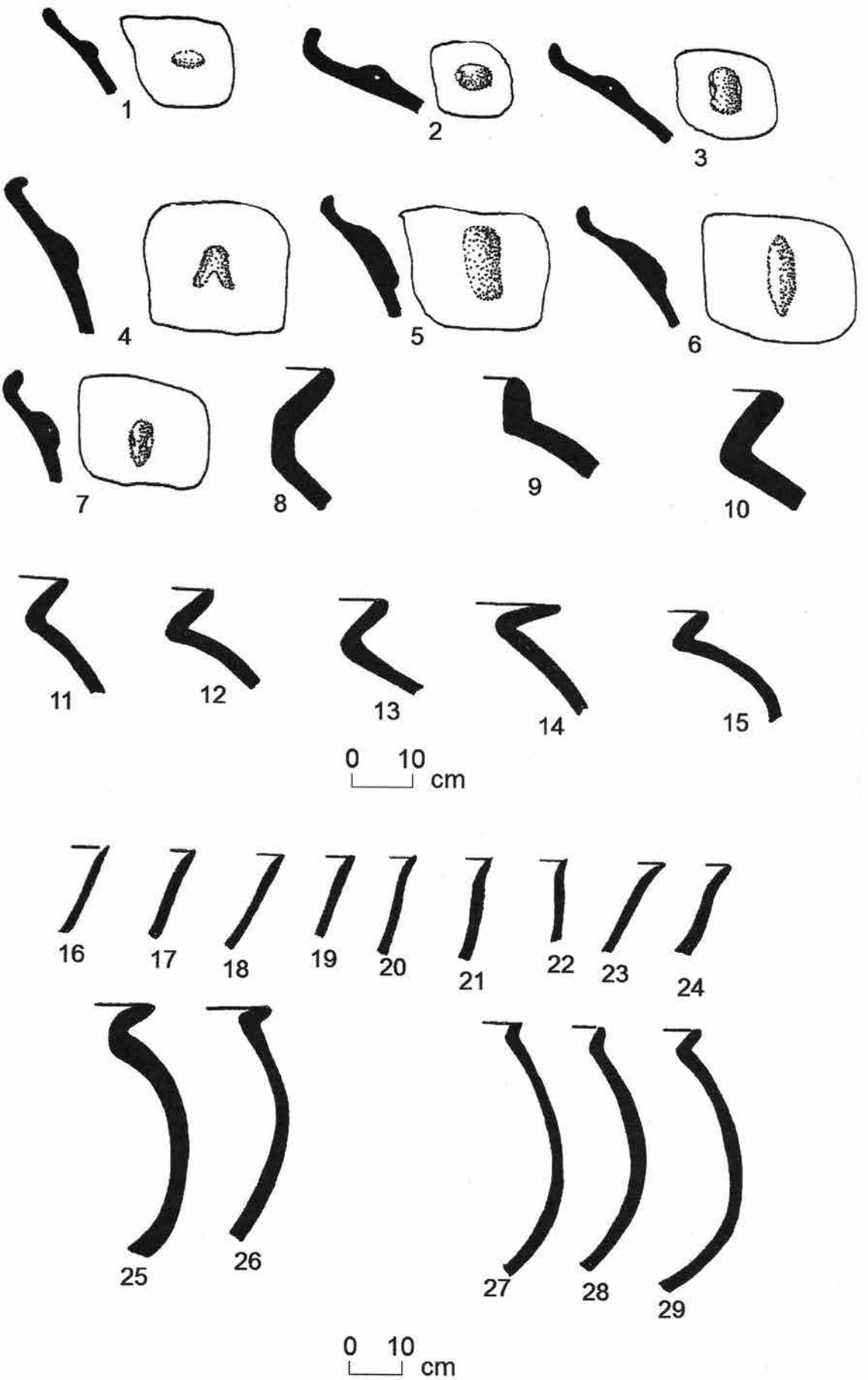


FIGURE 374. Ubaid 3 pottery, plain pottery vessels from levels I (16–29), II (1–15), Tell Abada.

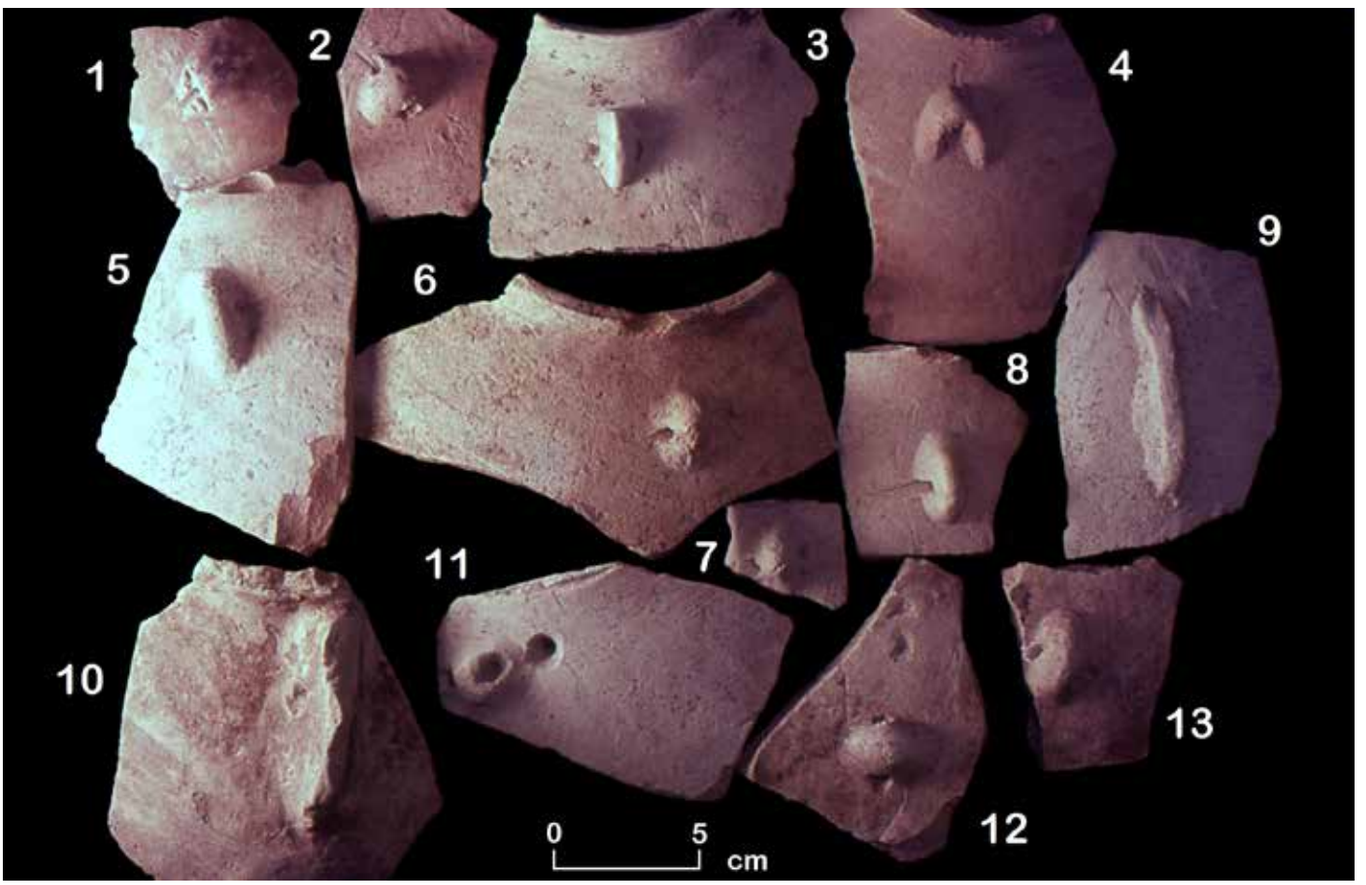


FIGURE 375. Ubaid 3 pottery, plain lugged vessels from levels I–II, at Tell Abada.

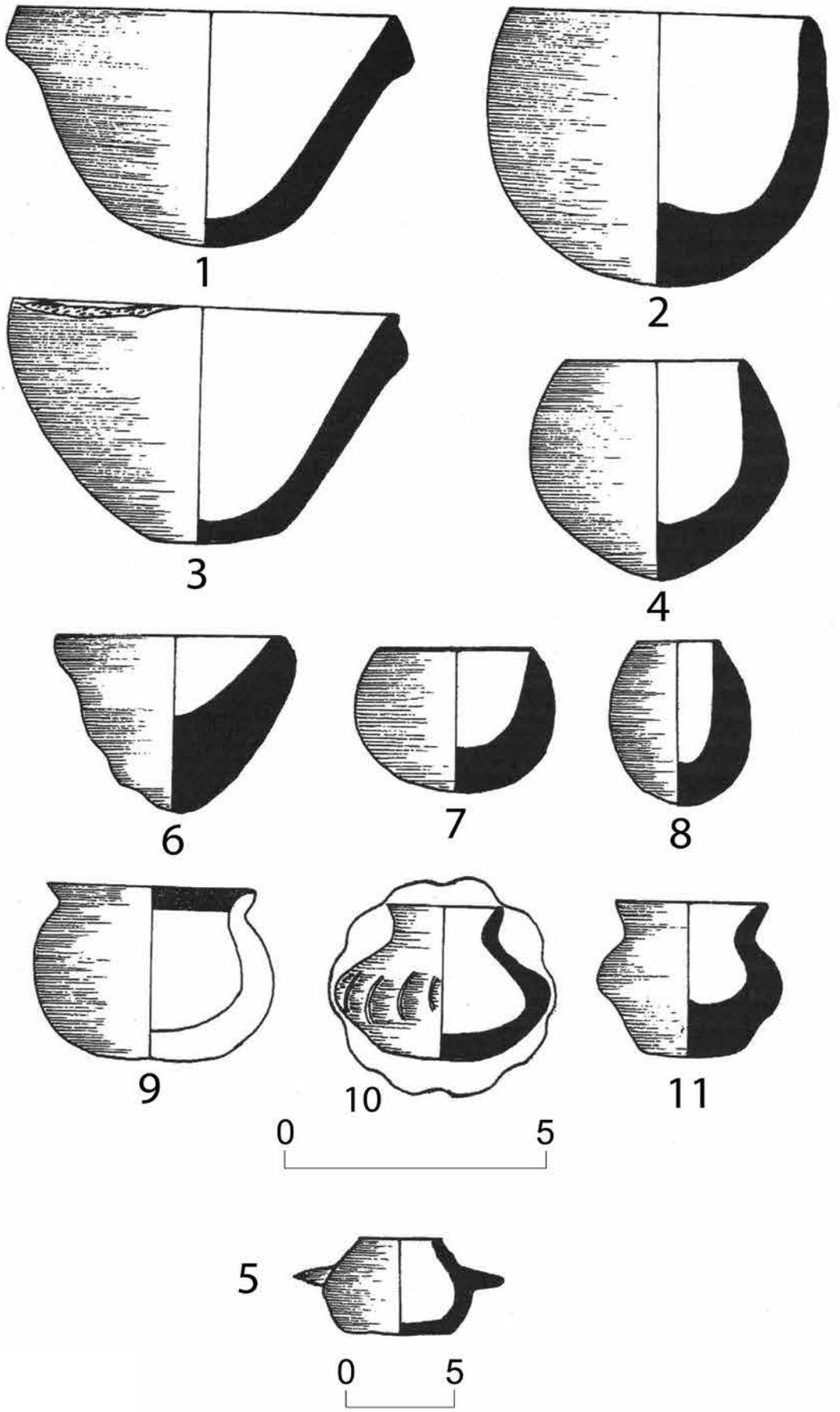


FIGURE 376. Ubaid 3 pottery, plain miniature vessels from level I, Tell Abada.

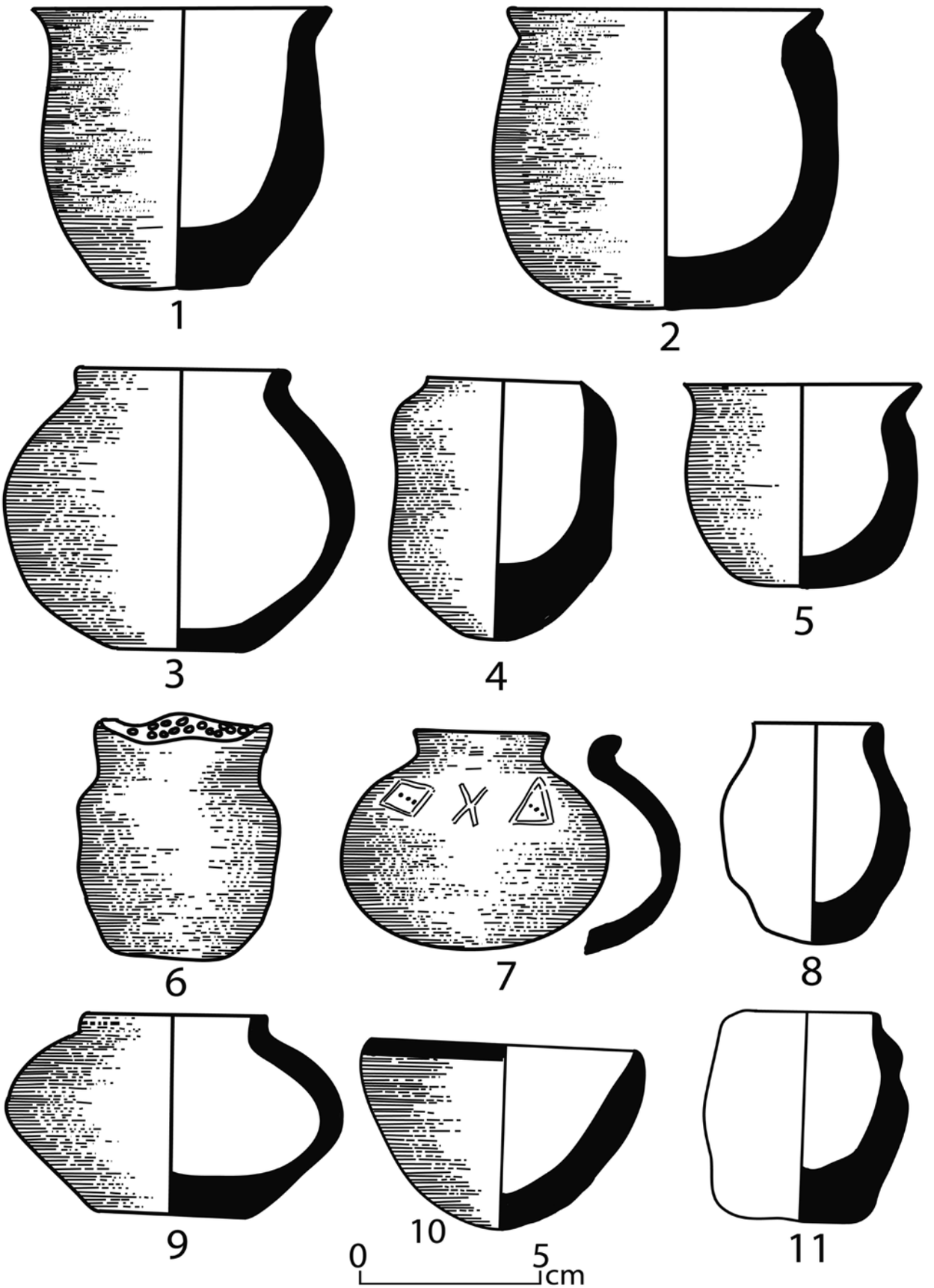


FIGURE 377. Ubaid 3 pottery, plain miniature vessels from level I, Tell Abada.

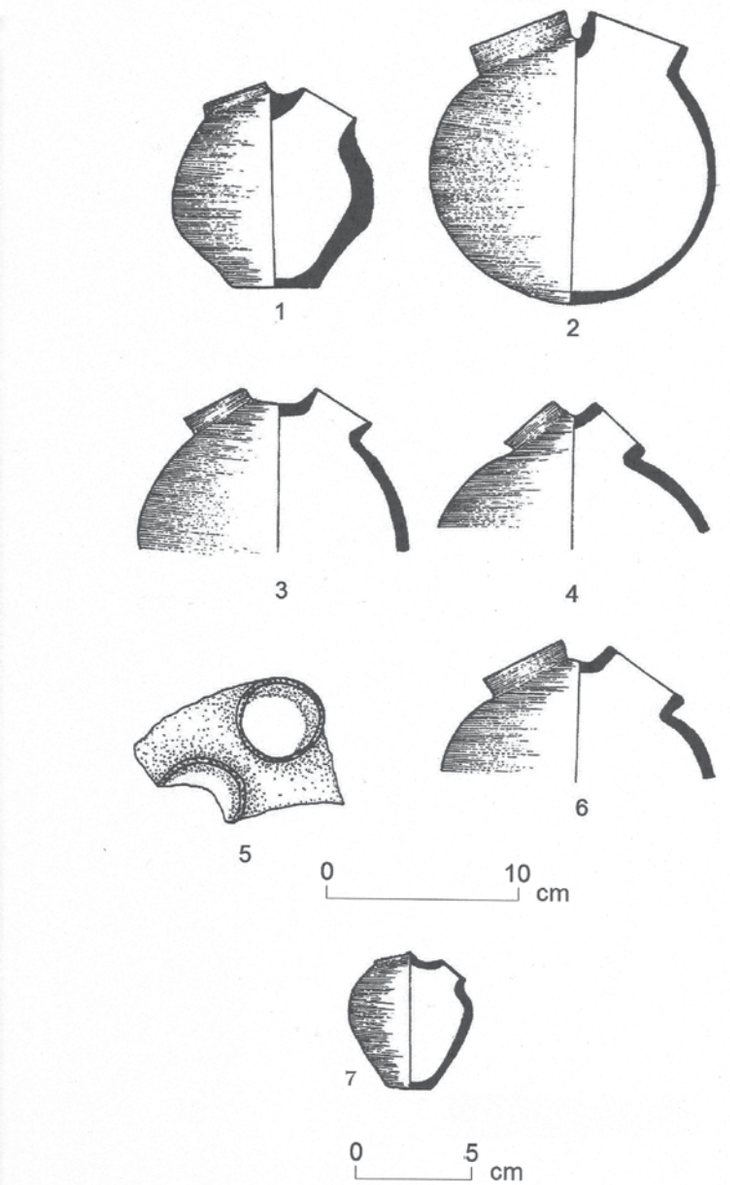


FIGURE 378. Ubaid 3 pottery, double-mouthed jars from level I, Tell Abada.

FIGURE 379. Ubaid 3 pottery, double-mouthed jars (fig. 378: 2) from level I, Tell Abada.

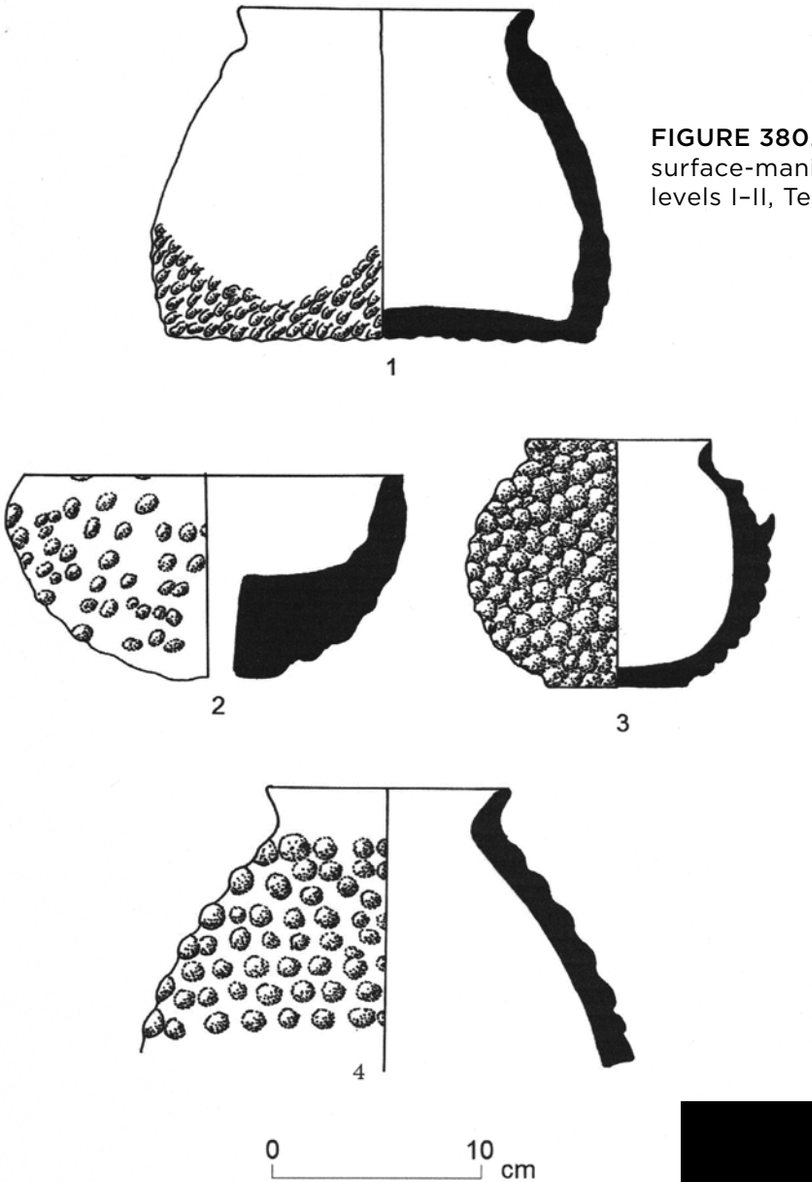


FIGURE 380. Ubaid 3 pottery, surface-manipulated ware from levels I–II, Tell Abada.

FIGURE 381. Ubaid 3 pottery, impressed pottery jar from level I, Tell Abada.

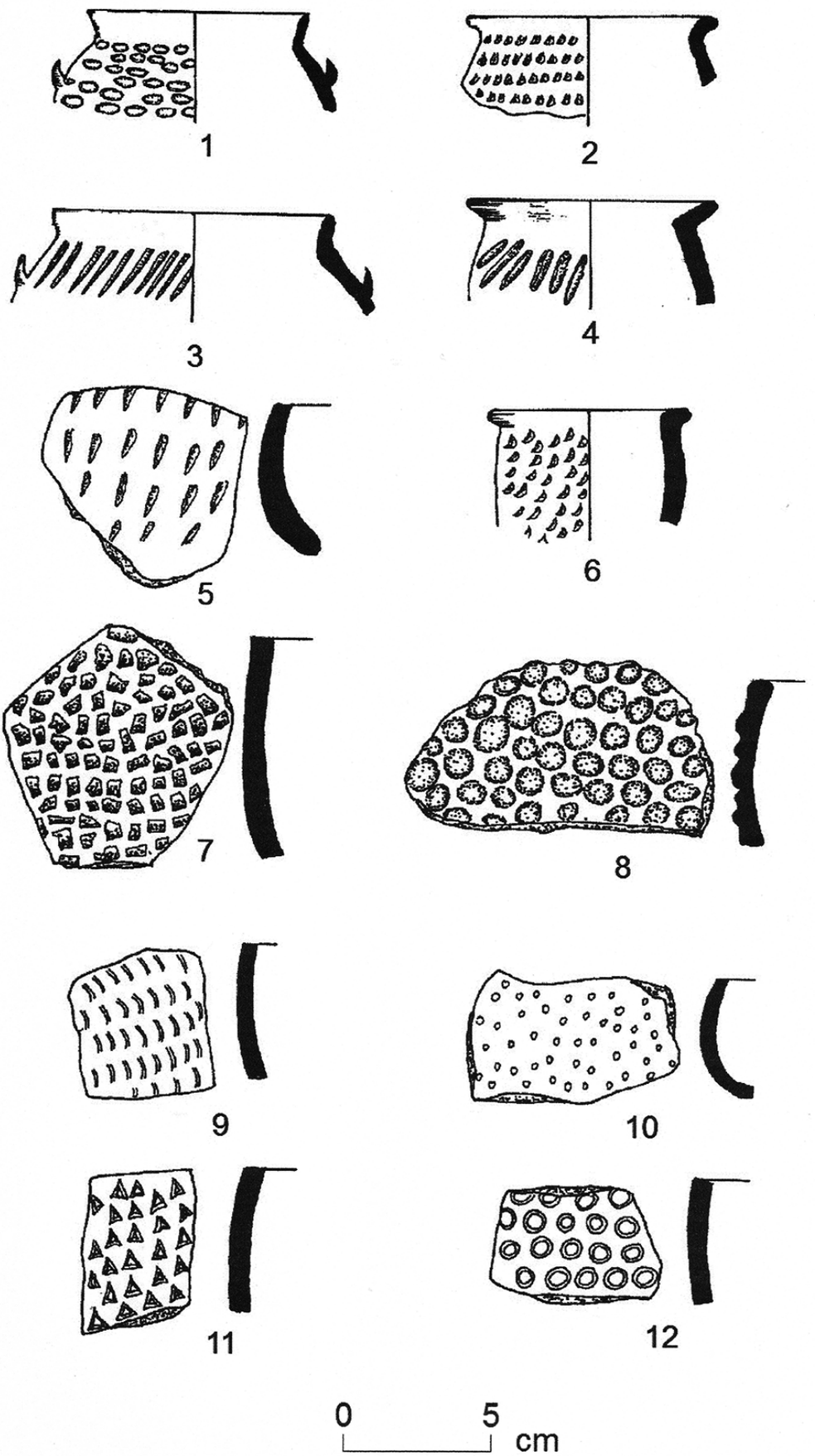


FIGURE 382. Ubaid 3 pottery, impressed ware from levels I–II, Tell Abada.

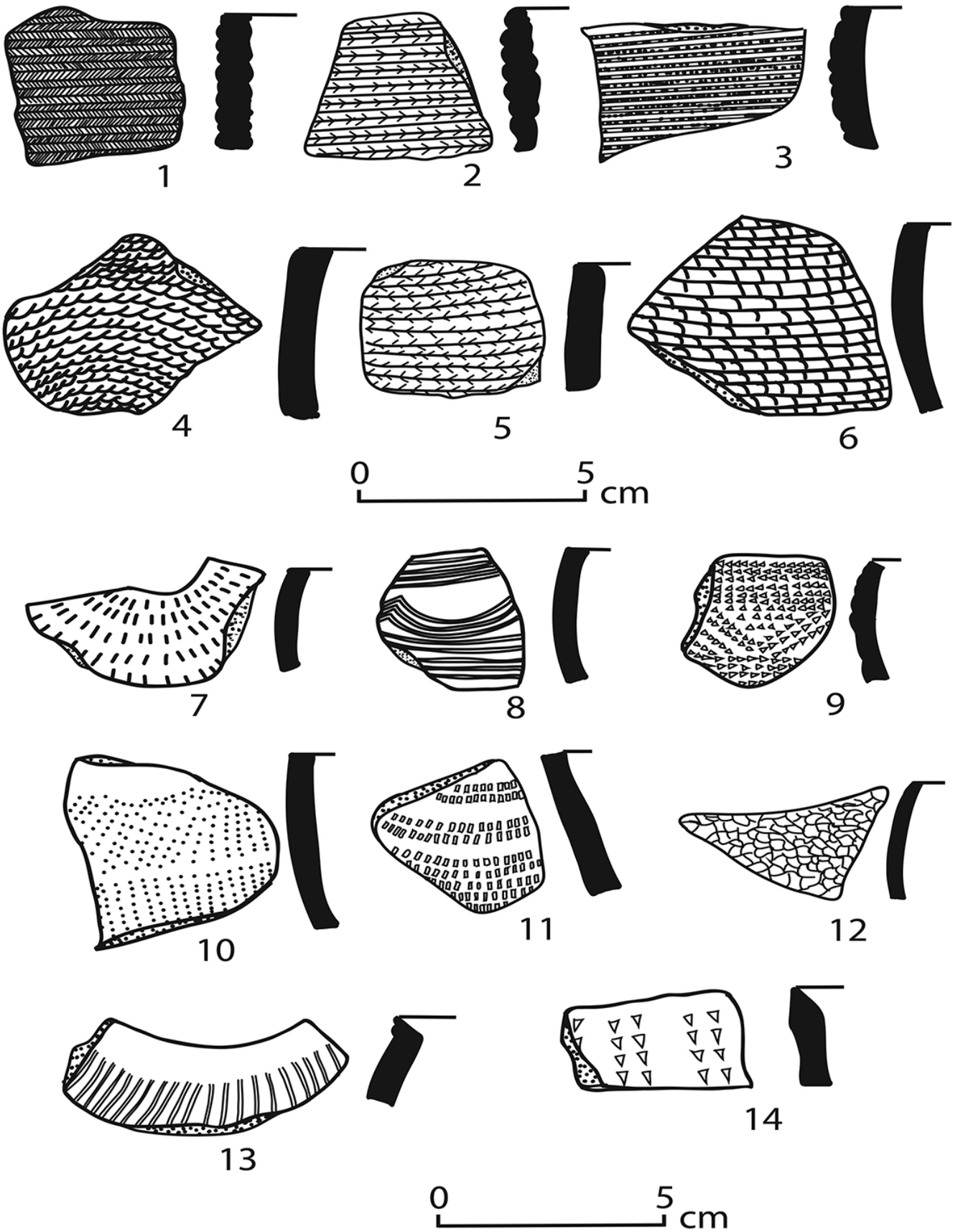


FIGURE 383. Ubaid 3 pottery, impressed and incised ware from levels I–II, Tell Abada.

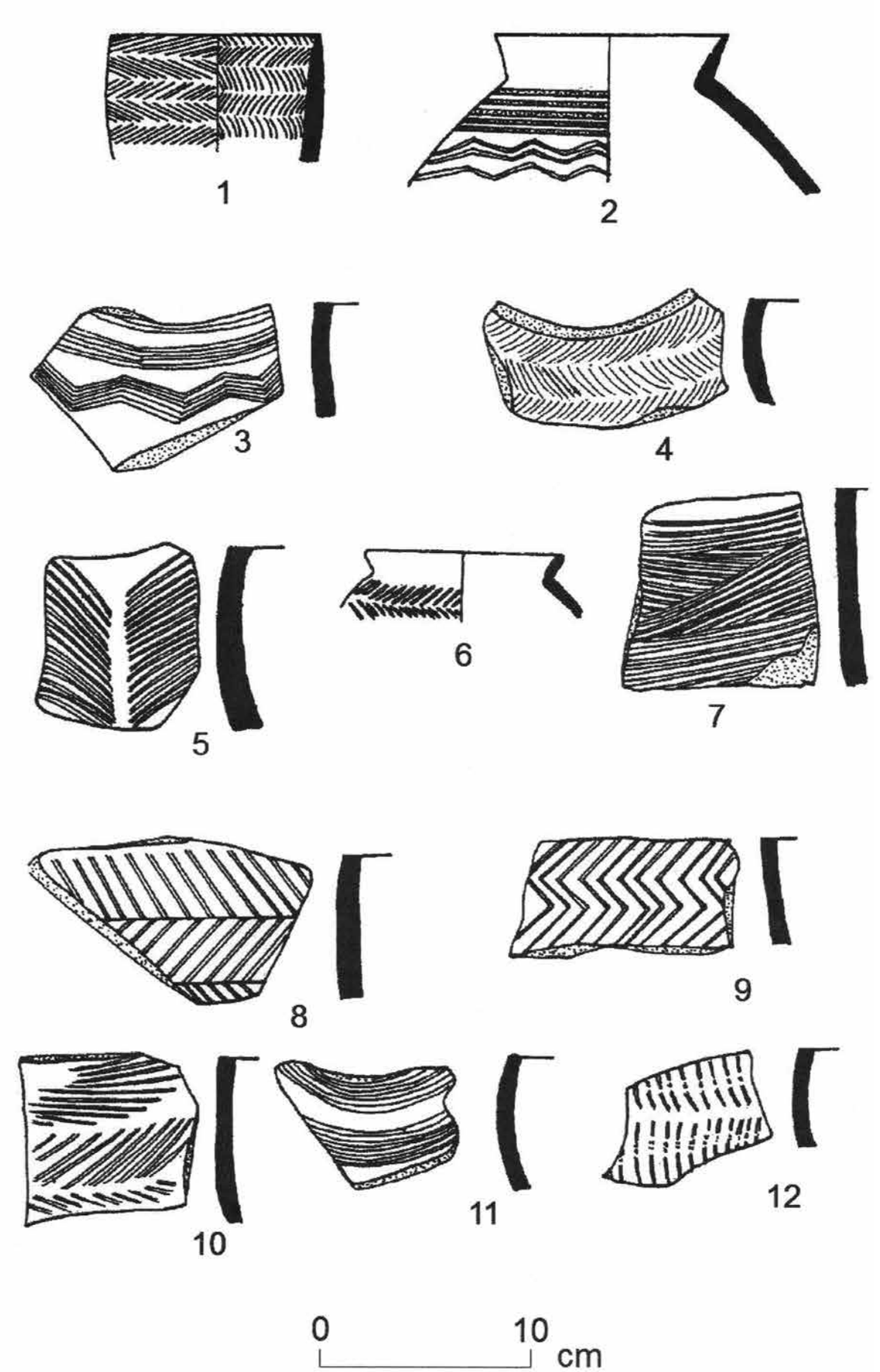


FIGURE 384. Ubaid 3 pottery, incised ware from levels I–II, Tell Abada.

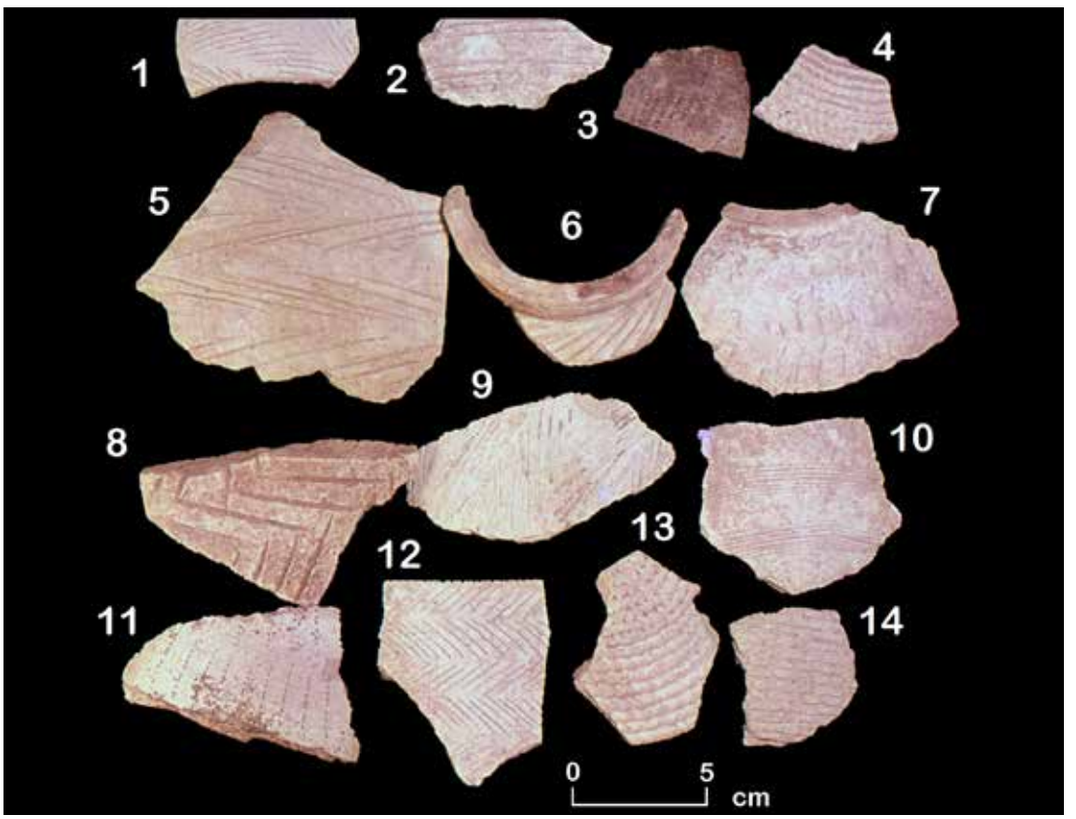


FIGURE 385. Ubaid 3 pottery, selected sherds bearing incised decoration from levels II–I, Tell Abada.

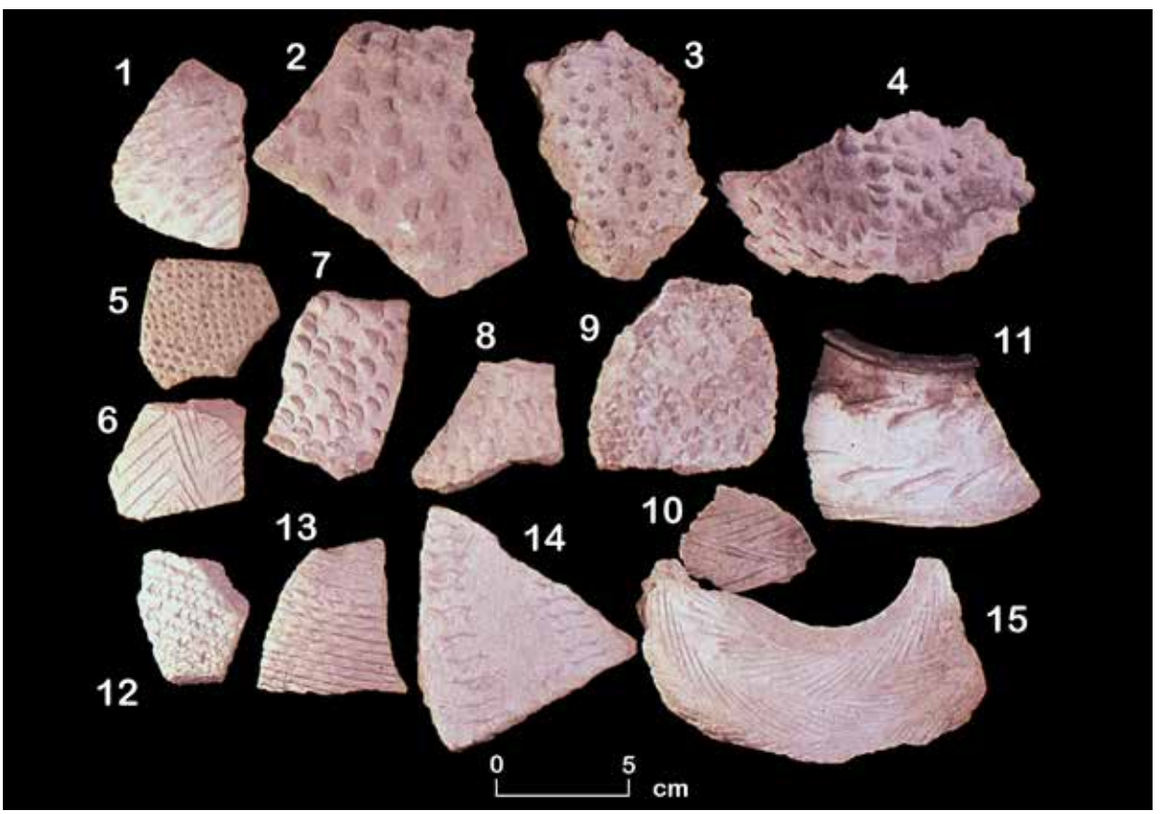


FIGURE 386. Ubaid 3 pottery, selected sherds bearing incised and impressed decoration from levels I–II, Tell Abada.

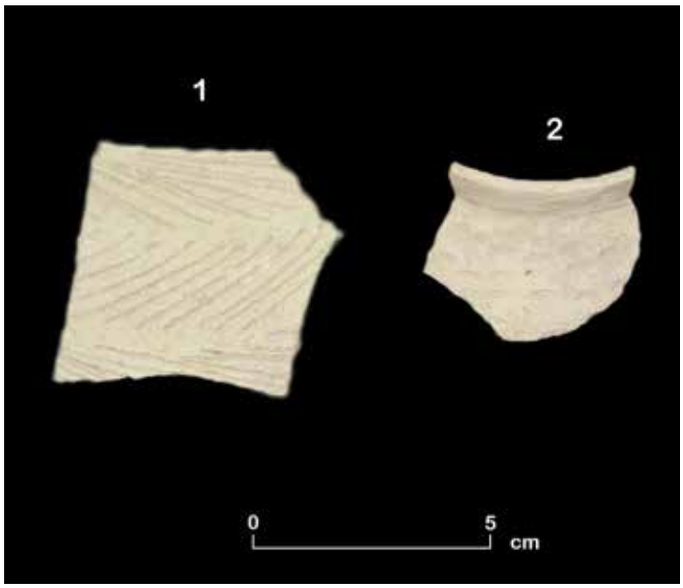


FIGURE 387. Ubaid 3 pottery, two sherds with (1) incised and (2) impressed decoration from level I, Tell Abada.

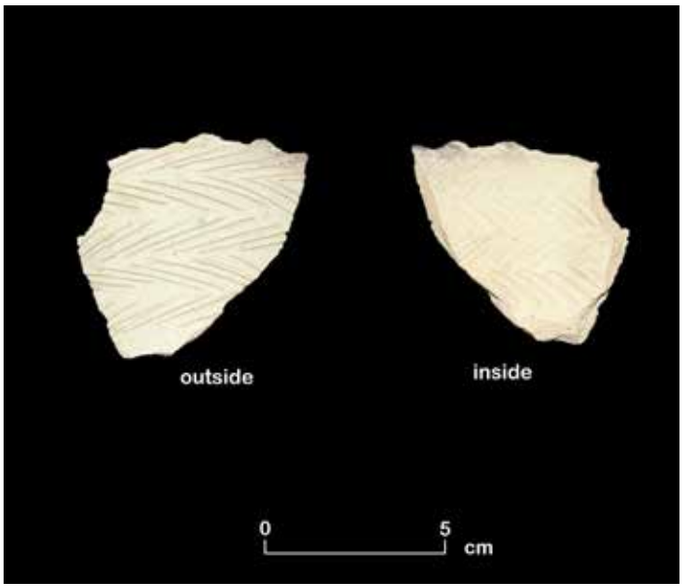


FIGURE 388. Ubaid 3 pottery, pottery sherd bearing incised decoration from both inside and out from level II, Tell Abada.

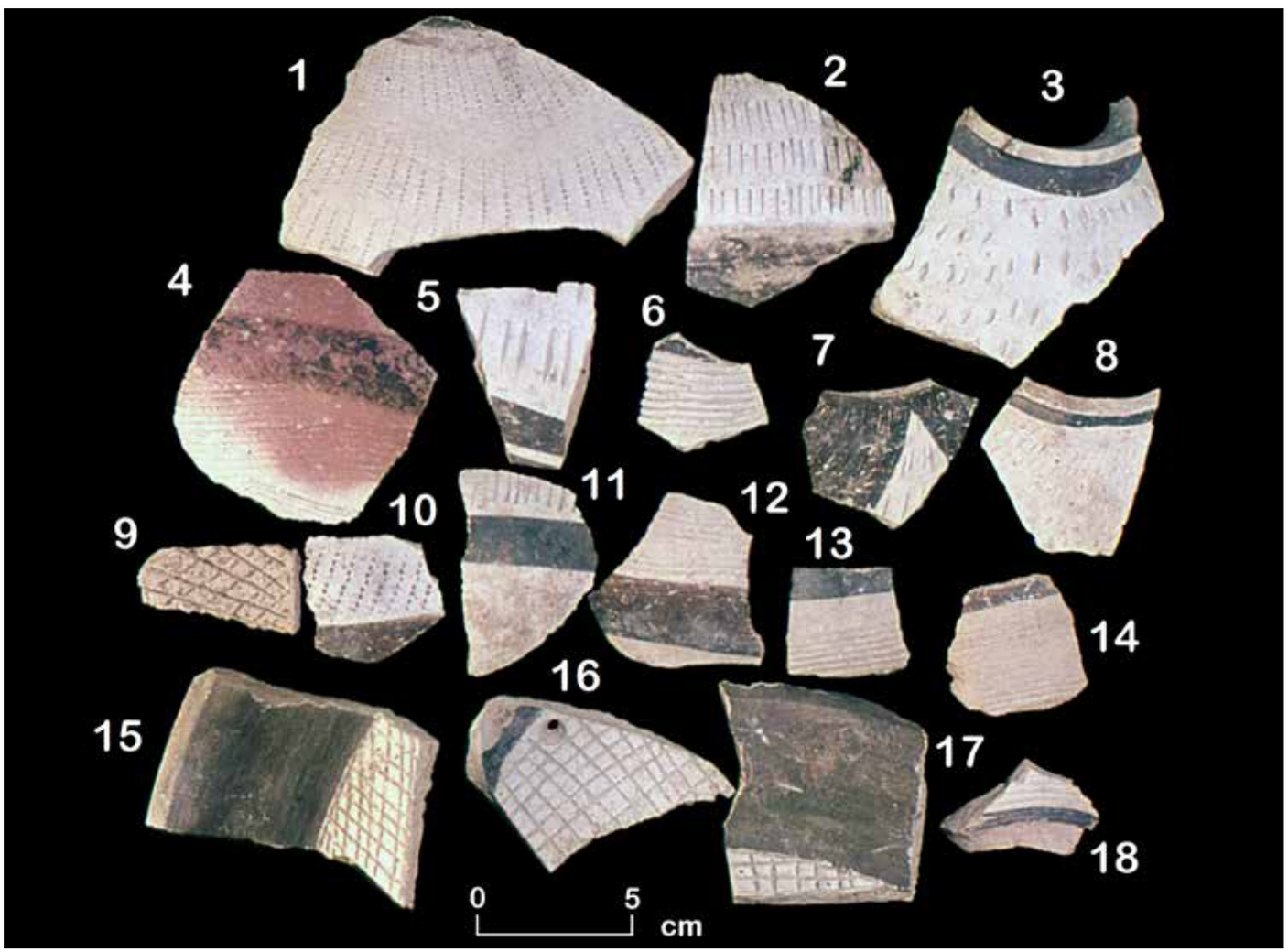


FIGURE 389. Ubaid 3 pottery, selected painted-and-incised/impressed ware from levels I–II, Tell Abada.

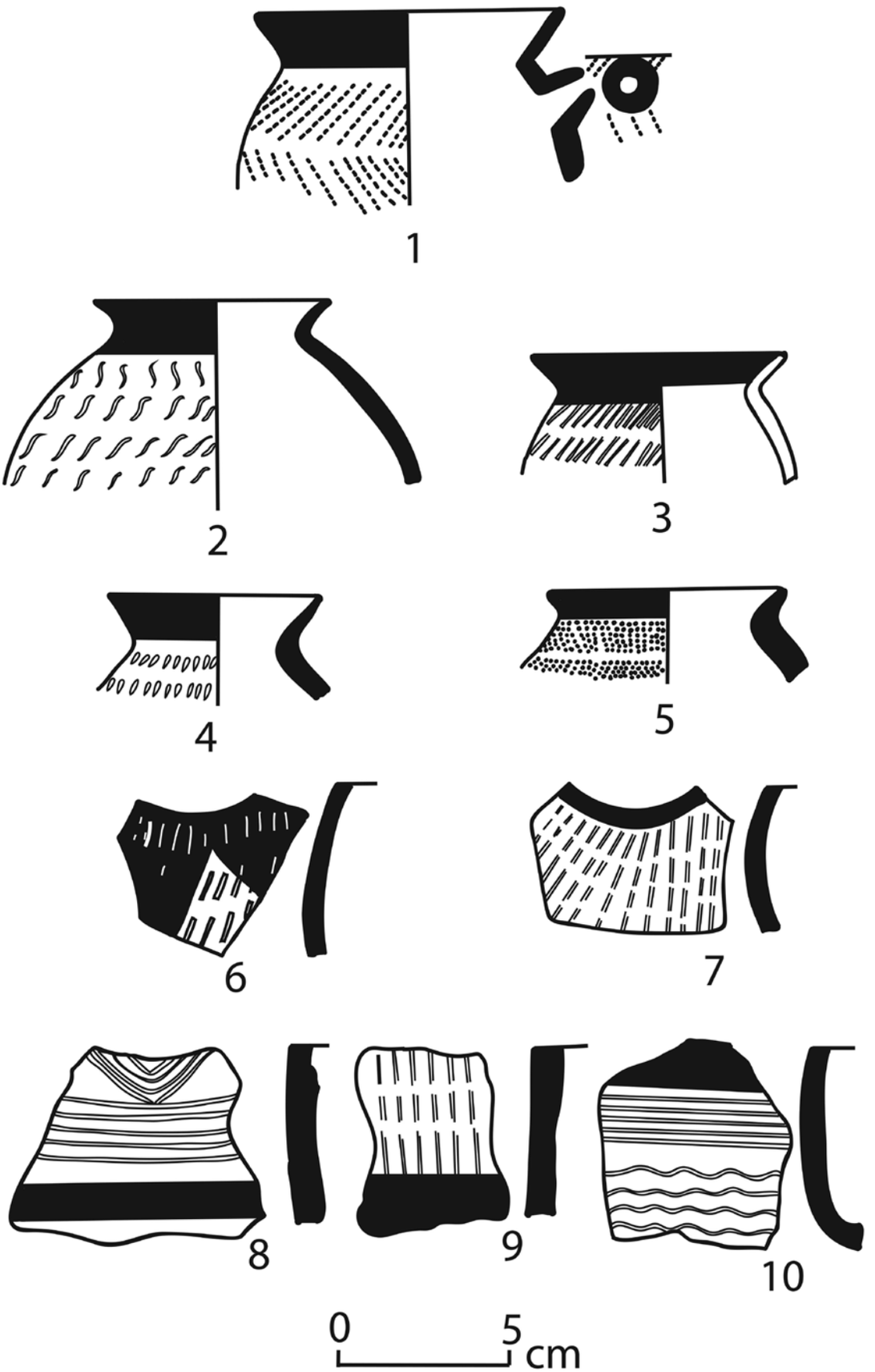


FIGURE 390. Ubaid 3 pottery, painted-and-incised/impressed ware from level II, Tell Abada.

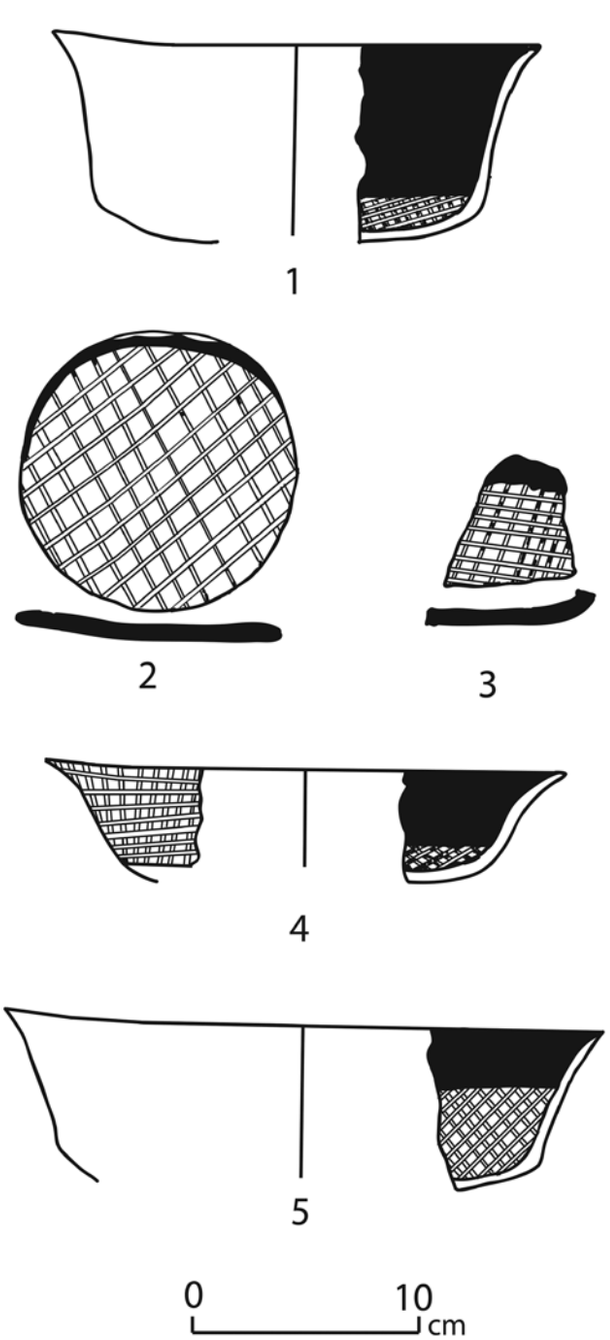


FIGURE 391. Ubaid 3 pottery, painted-and-incised ware from levels I–II, Tell Abada.

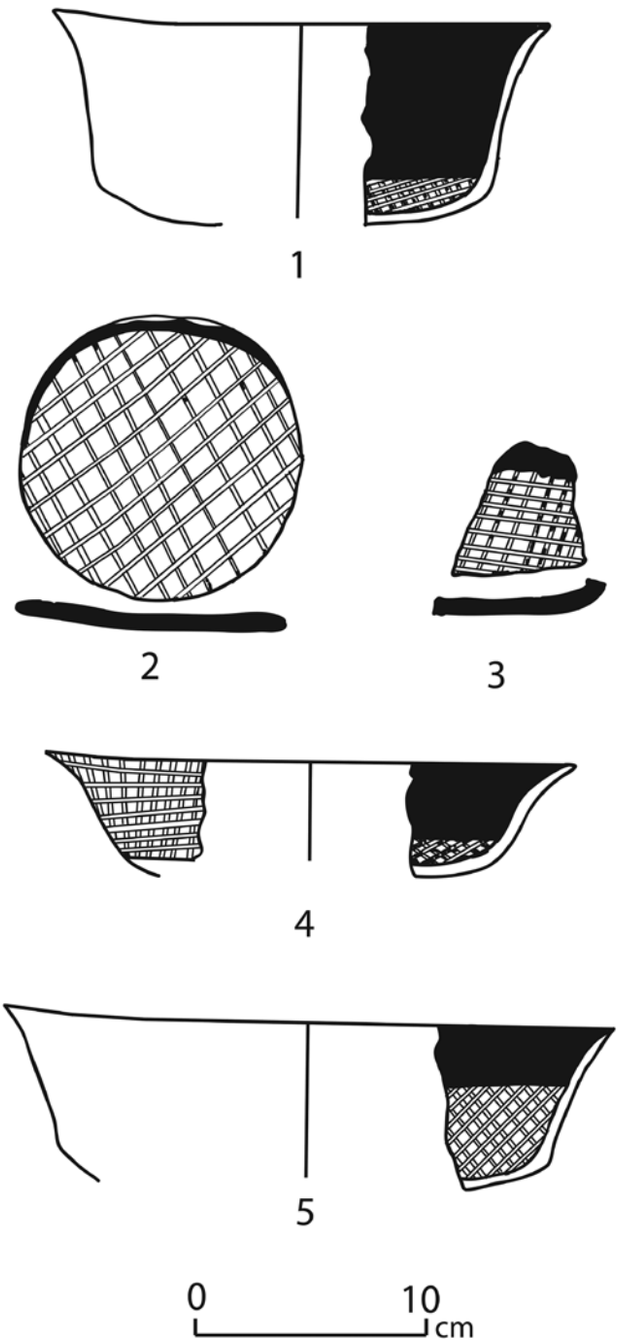


FIGURE 392. Halaf pottery from level II, Tell Abada.

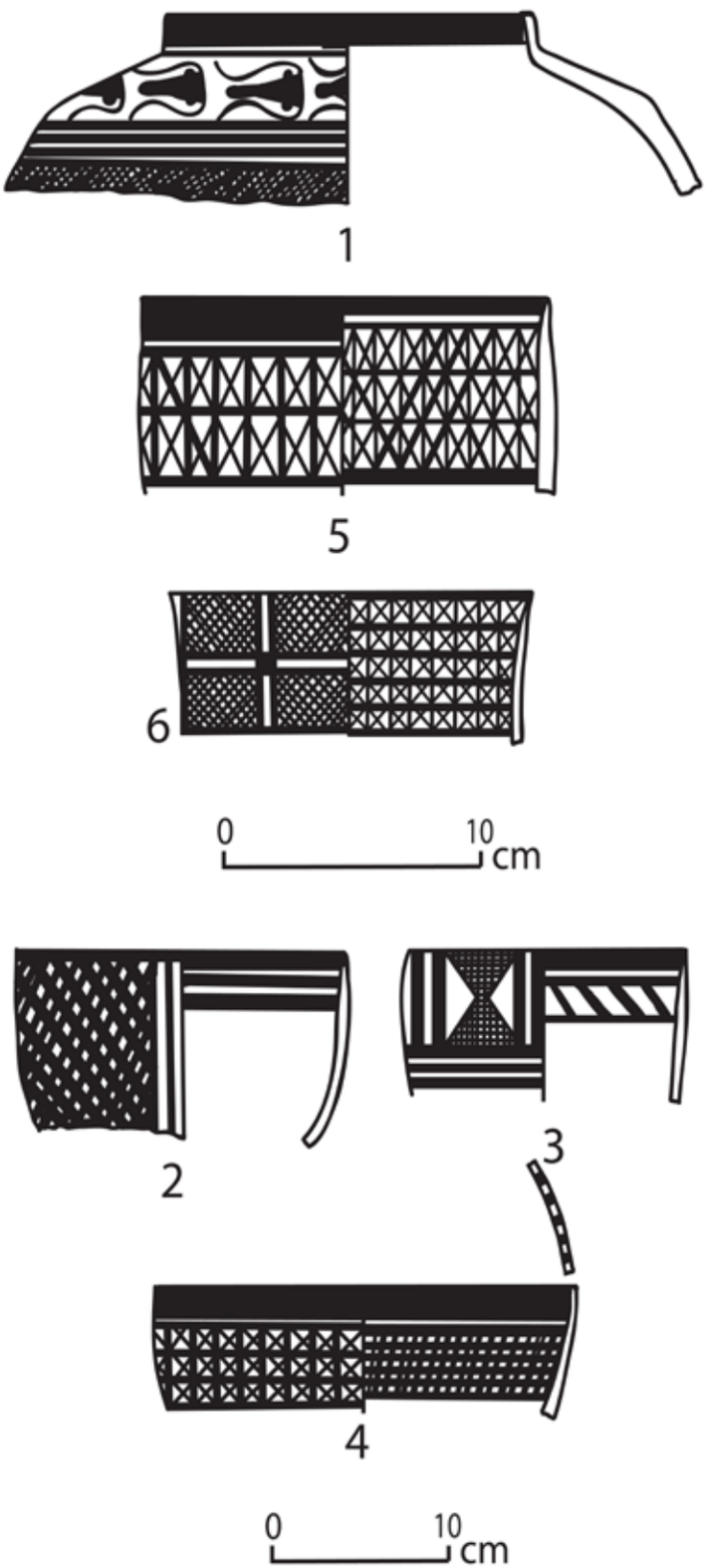


FIGURE 393. Halaf pottery from level II, Tell Abada.

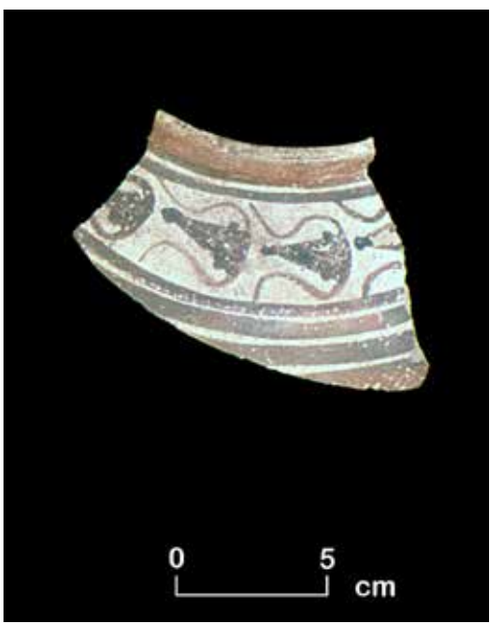


FIGURE 394. Halaf jar bearing distinctive "Bukranium" motif (fig. 393: 1) from level II, Tell Abada.

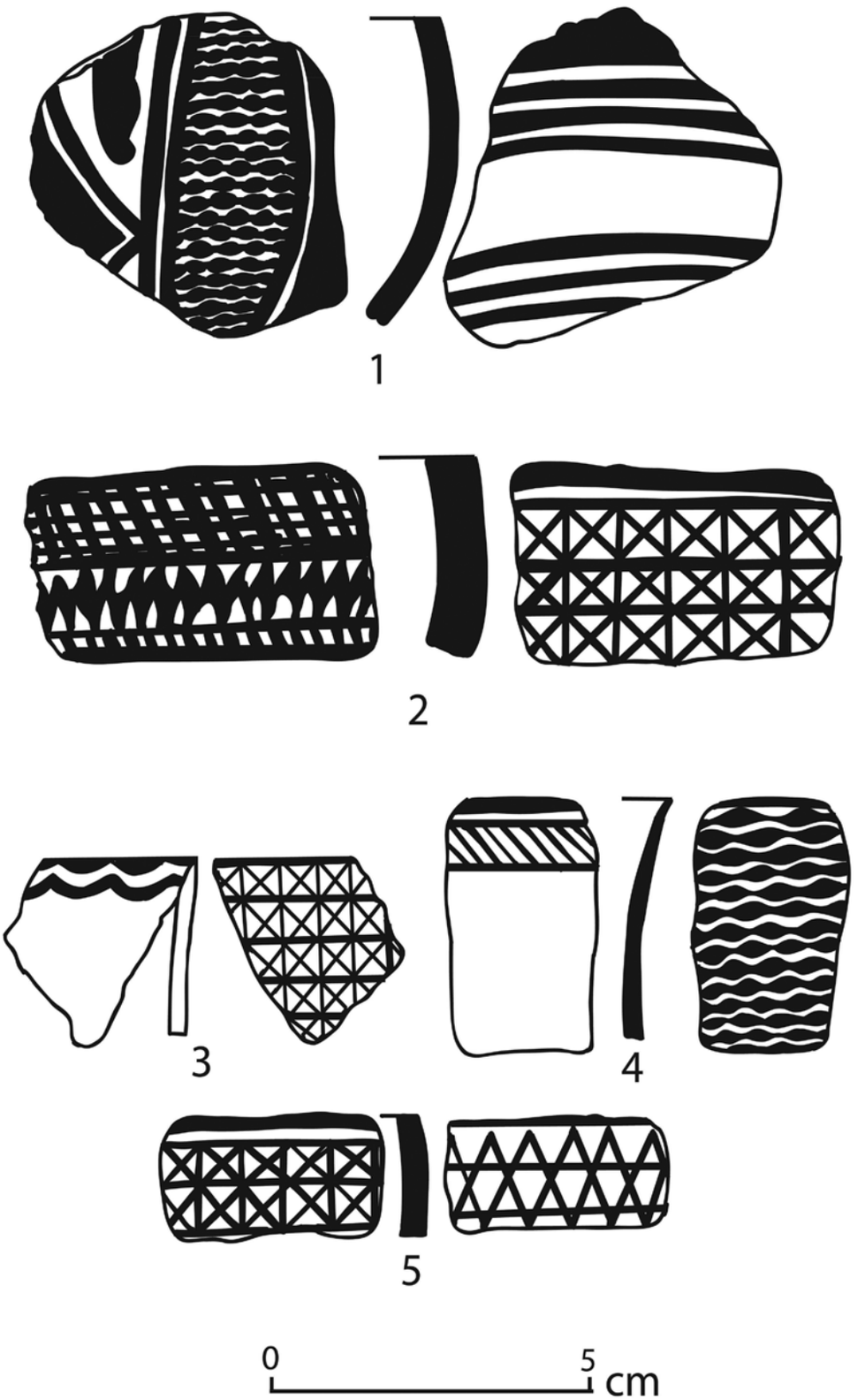


FIGURE 395. Halaf pottery from level II, Tell Abada.

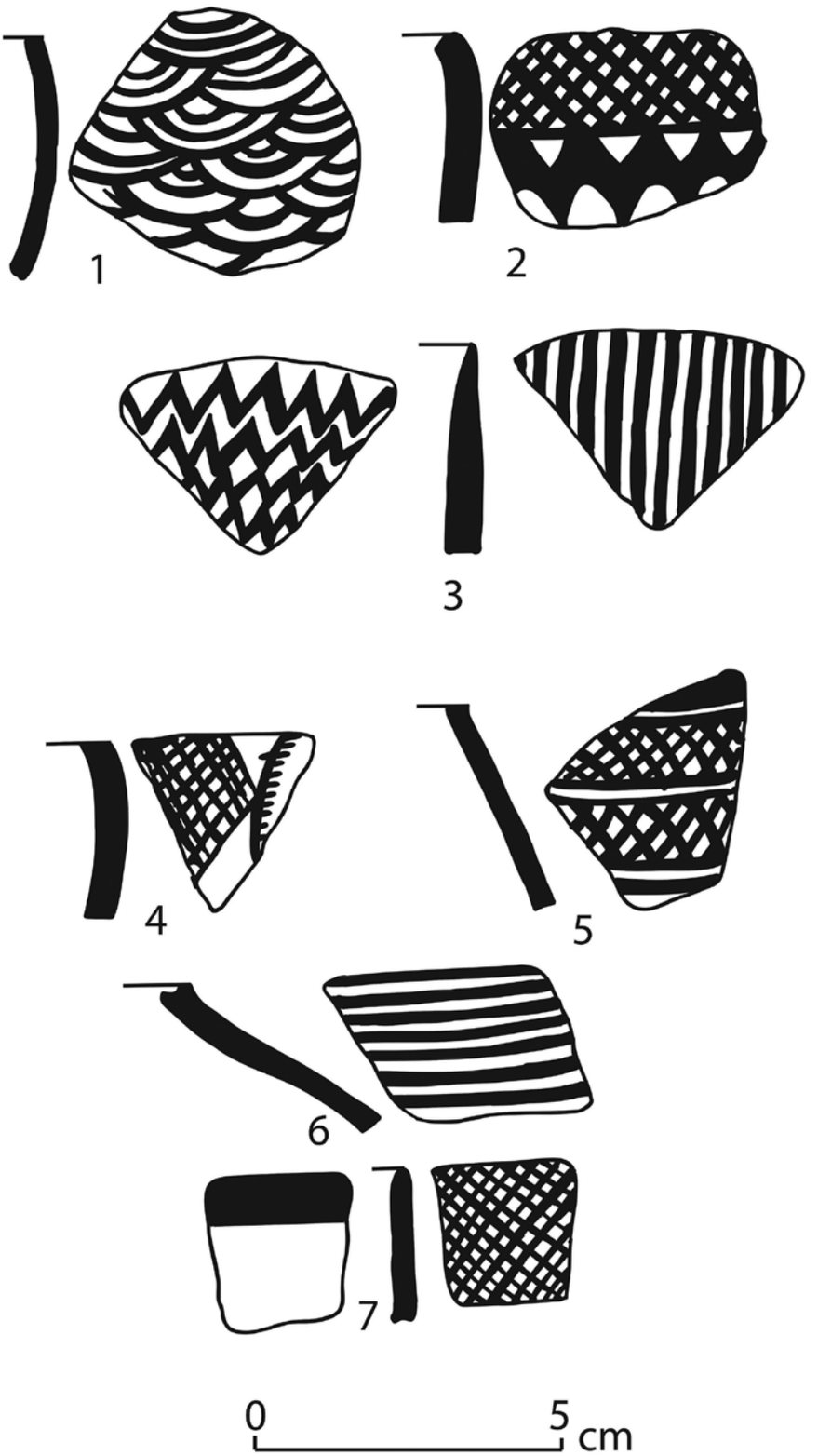


FIGURE 396. Selected Halaf sherds from level II, Tell Abada.

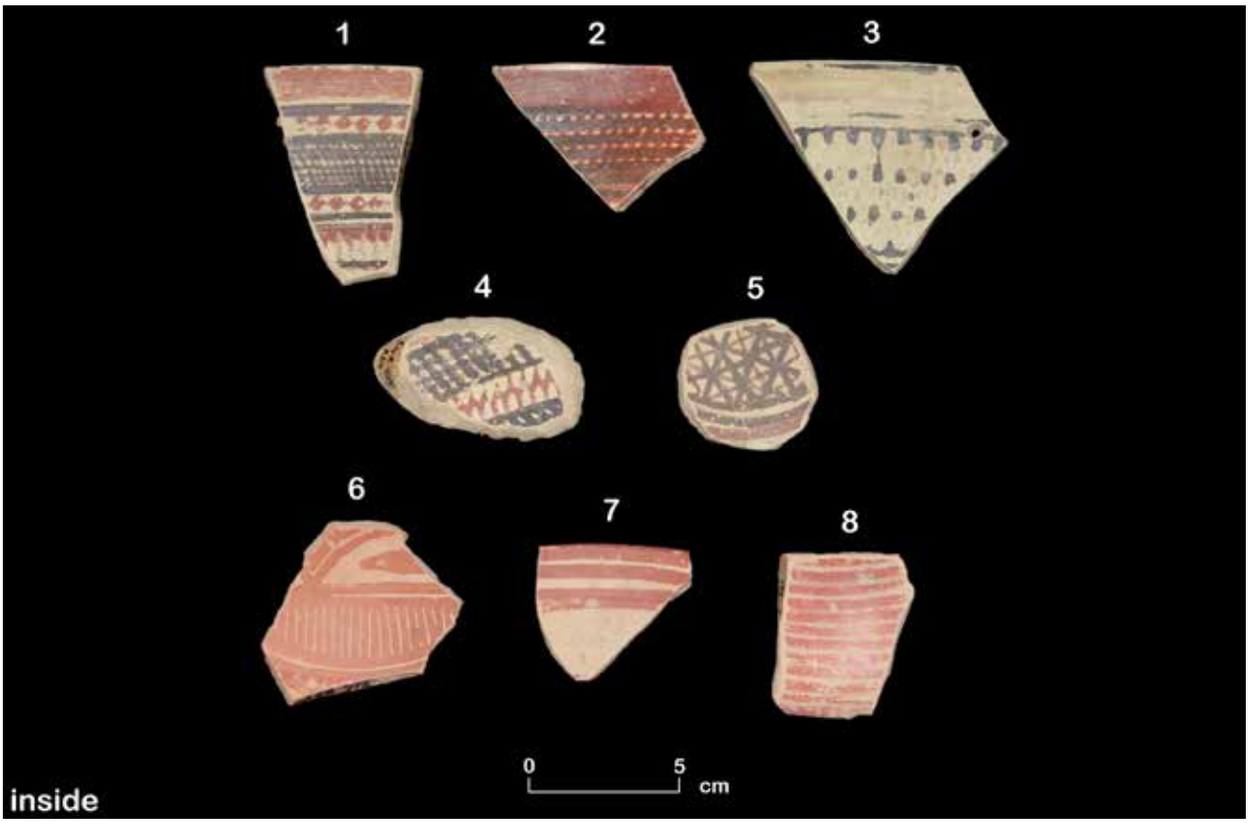


FIGURE 397. Selected Halaf sherds from level II, Tell Abada.

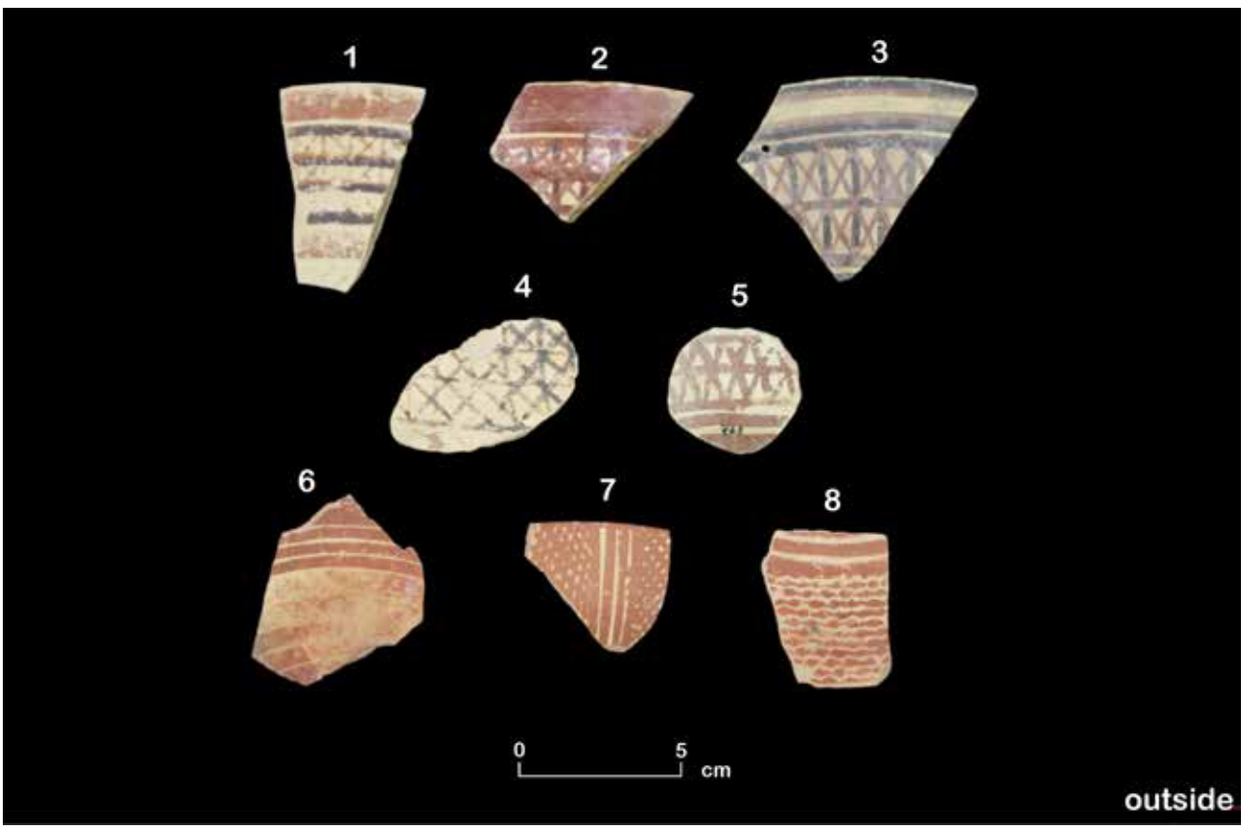


FIGURE 398. Selected Halaf sherds from level II, Tell Abada.

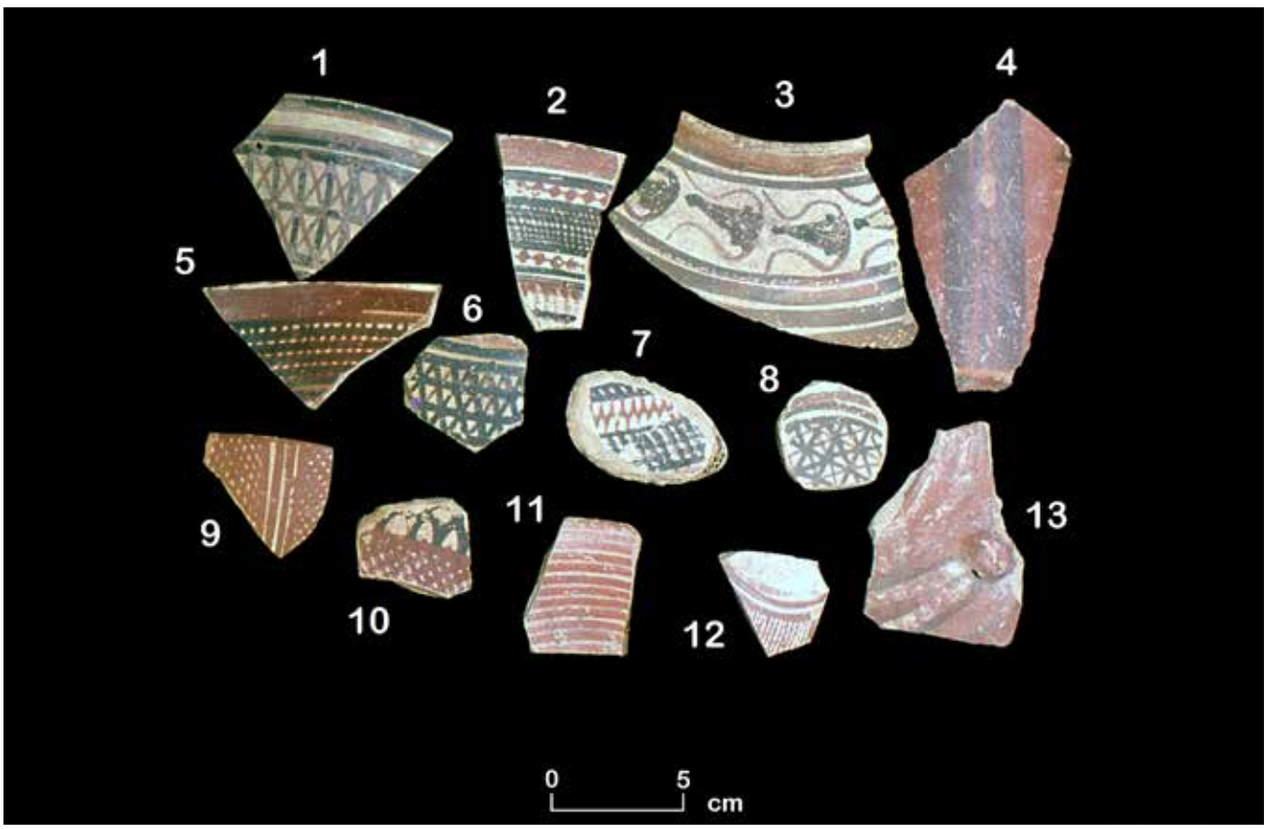


FIGURE 399. Selected Halaf sherds from level II, Tell Abada.

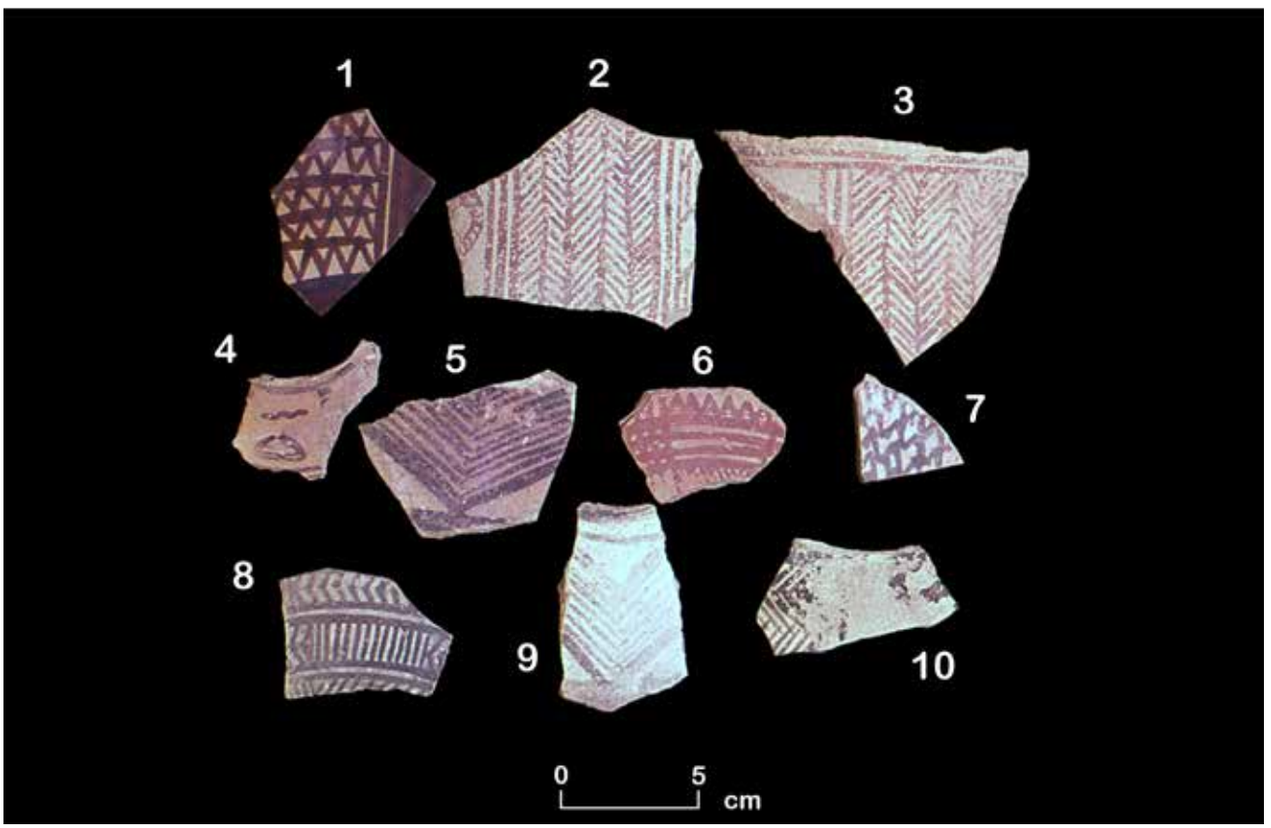


FIGURE 400. Selected Halaf sherds from level II, Tell Abada.

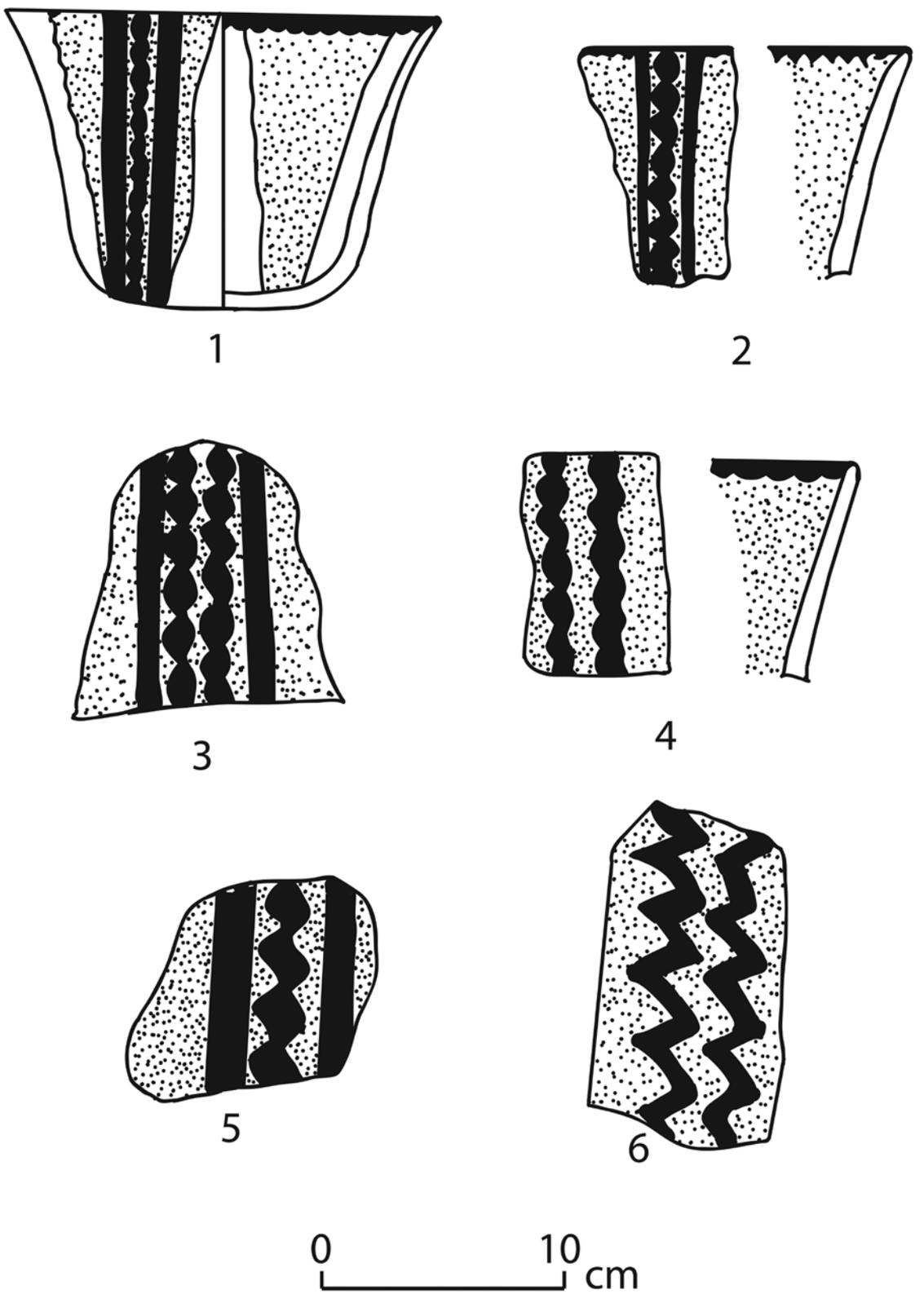


FIGURE 401. Iranian Black-on-Red ware from level II, Tell Abada.

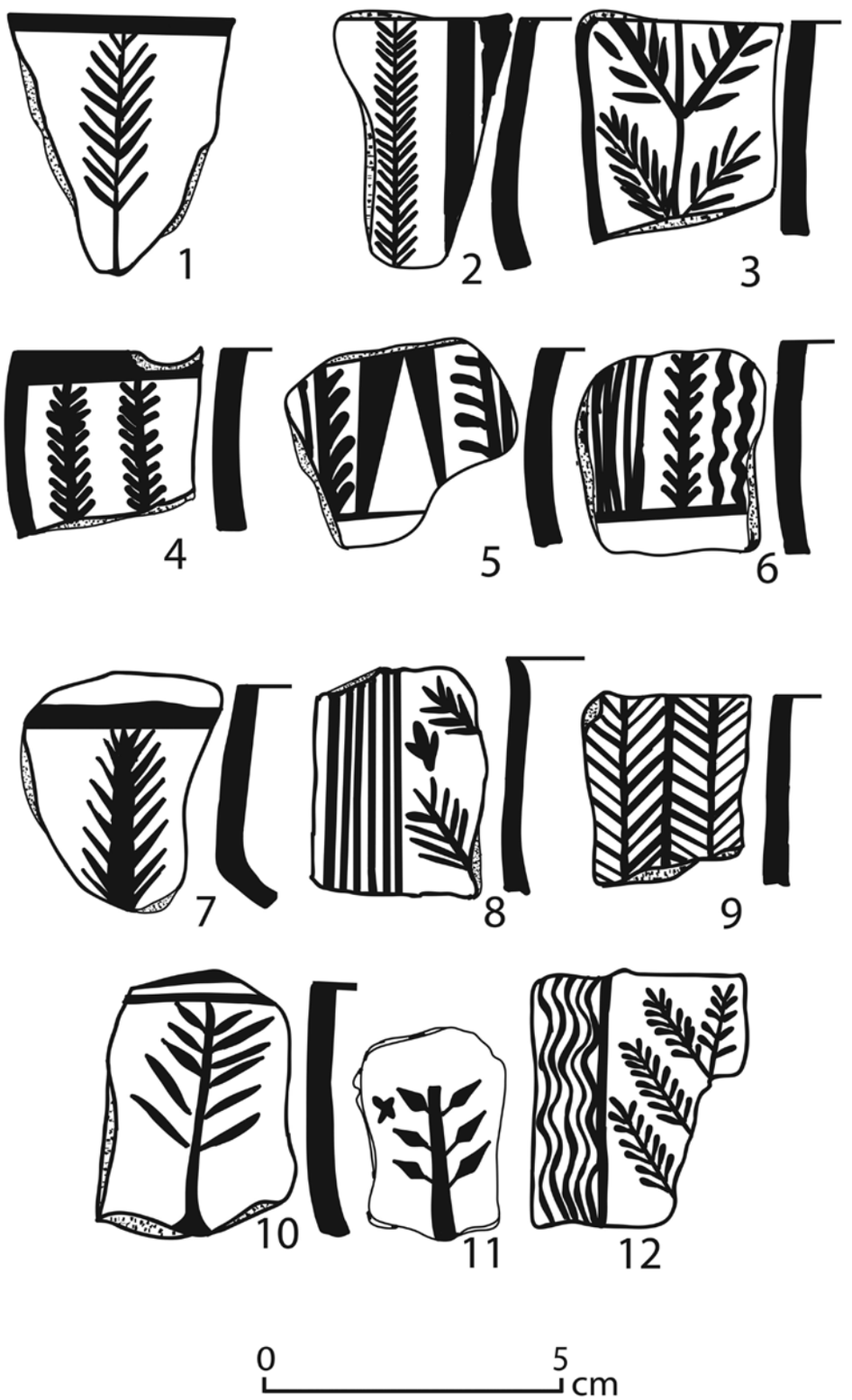


FIGURE 402. Ubaid 3 pottery, selected sherds decorated with floral motifs from level II, Tell Abada.

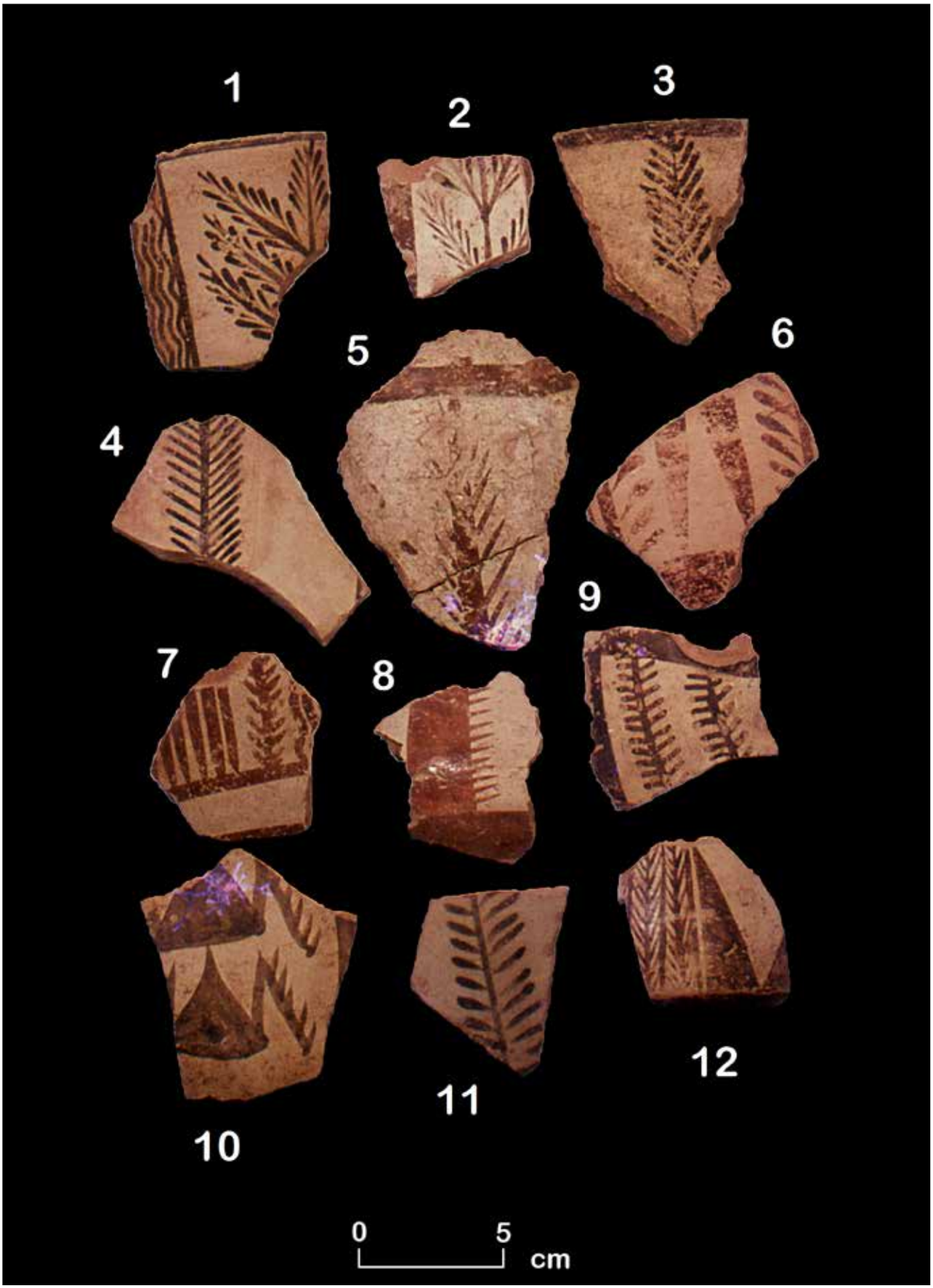


FIGURE 403. Ubaid 3 pottery, selected sherds decorated with floral motifs from level II, Tell Abada.

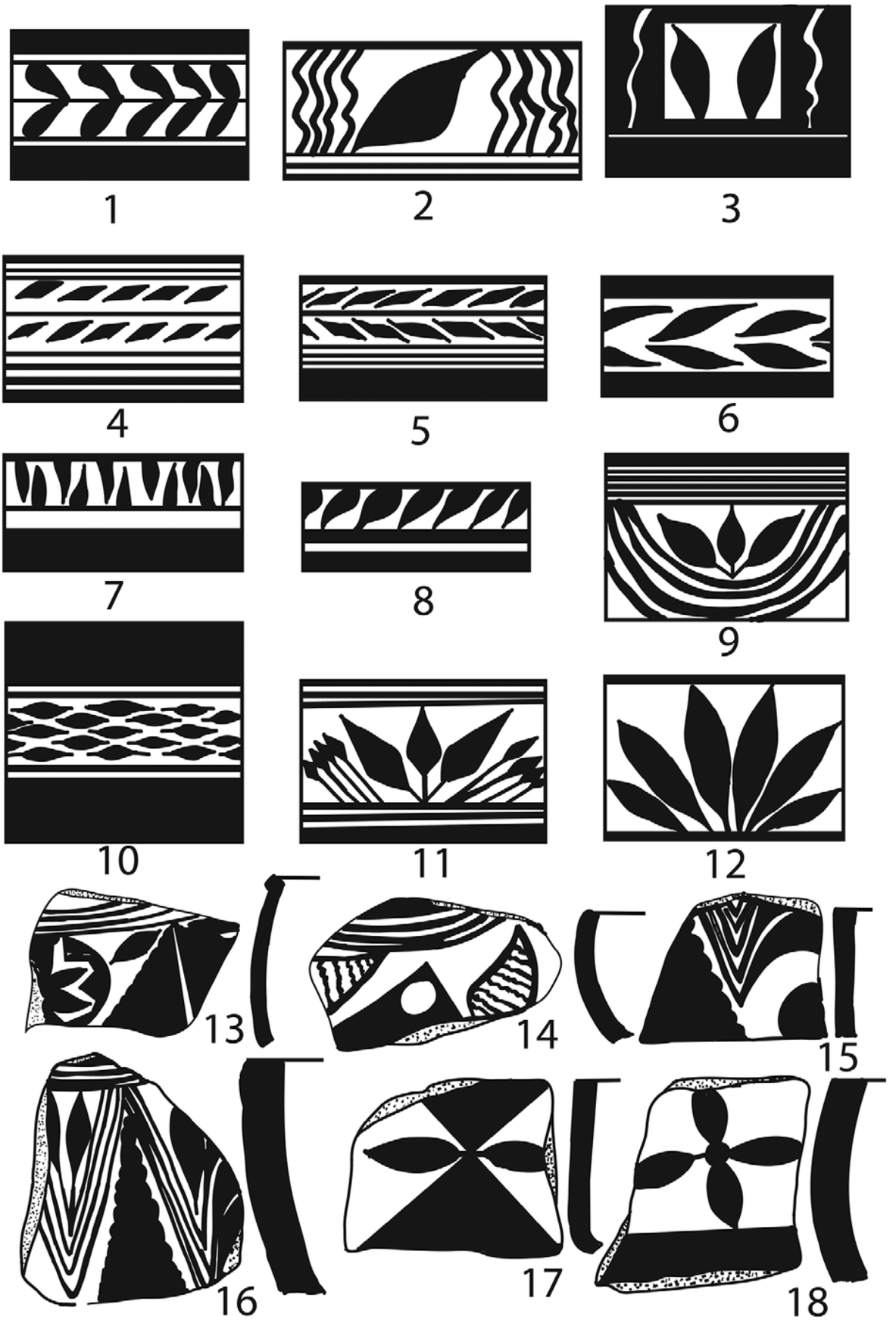


FIGURE 404. Ubaid 3 pottery, selected sherds bearing floral motifs from level II, Tell Abada.

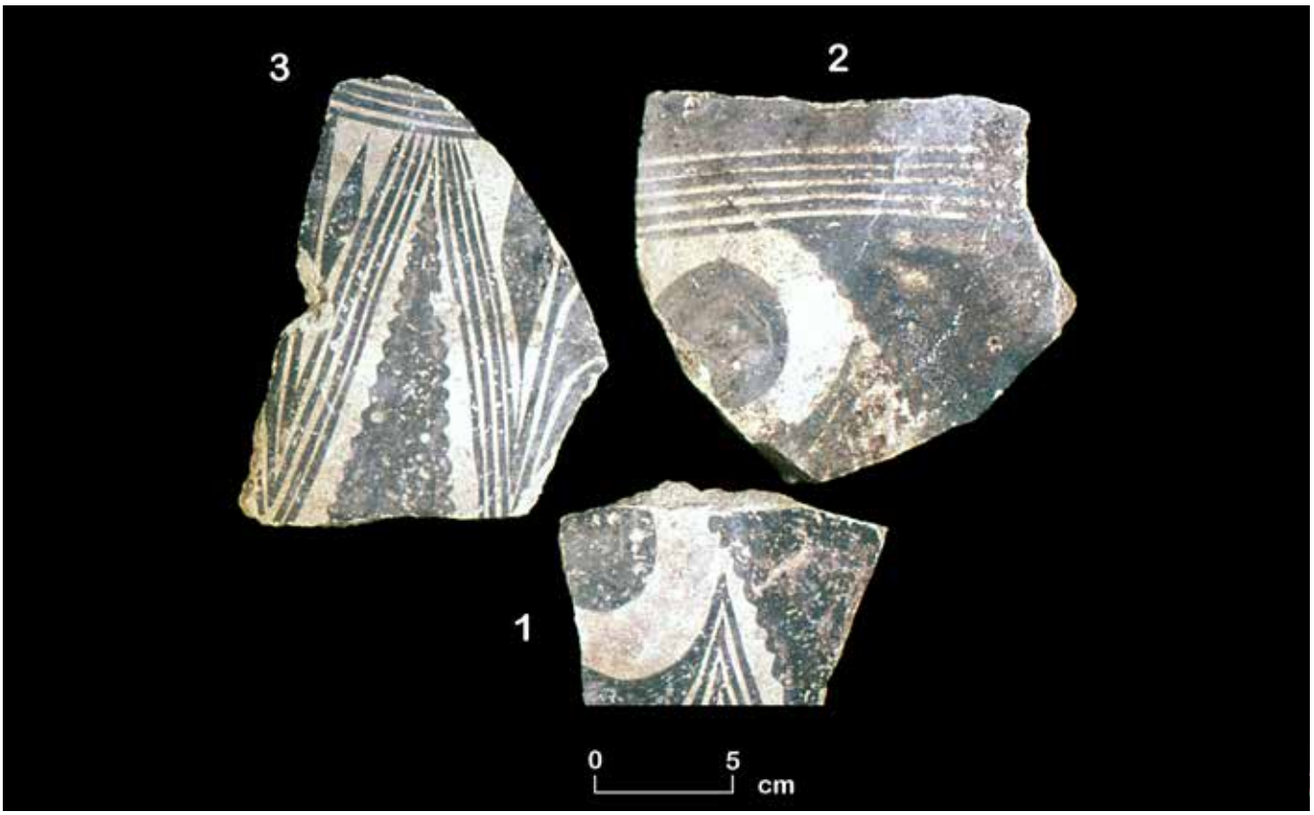


FIGURE 405. Ubaid 3 pottery, selected sherds with variant painted motifs from level II, Tell Abada.

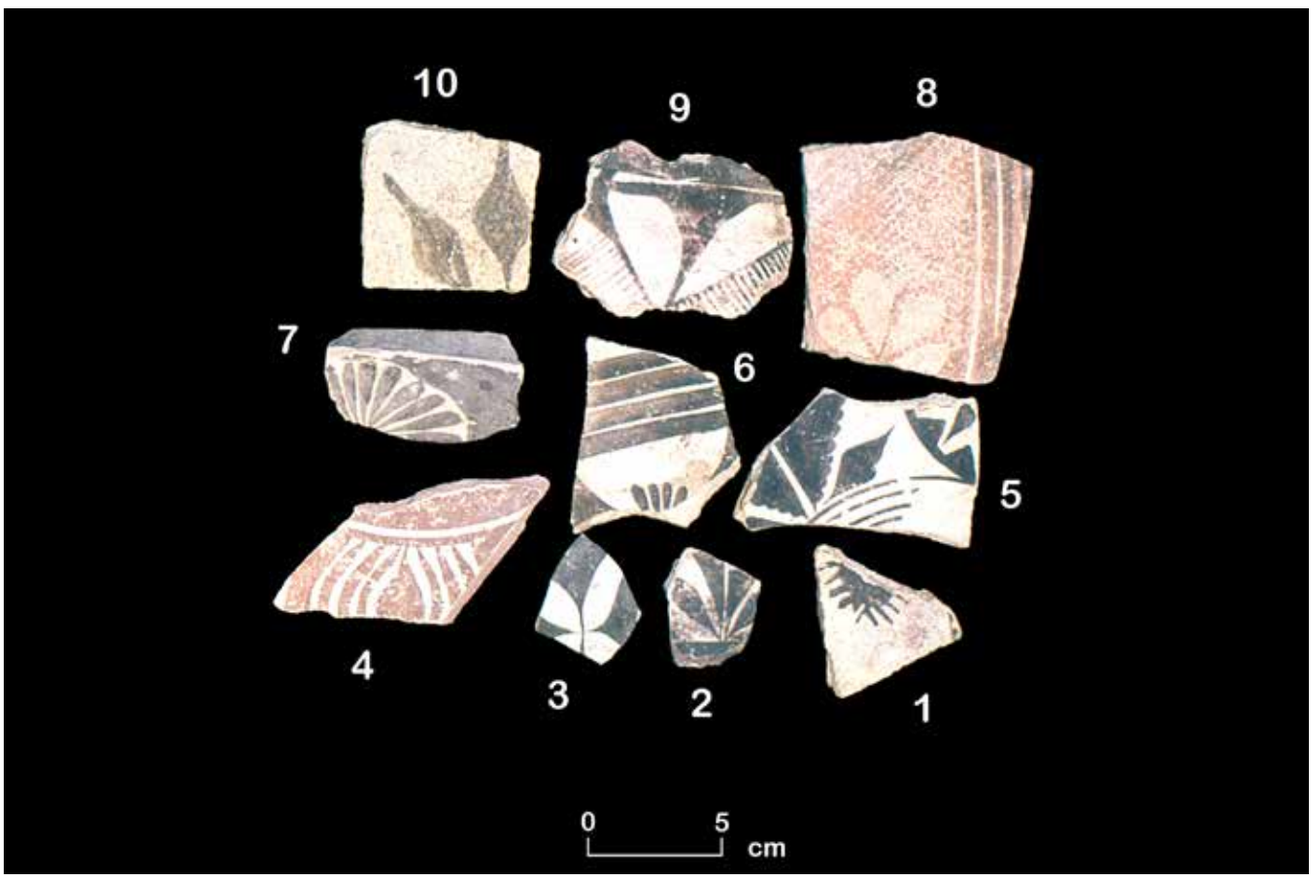


FIGURE 406. Ubaid 3 pottery, selected sherds with variant motifs from level II, Tell Abada.

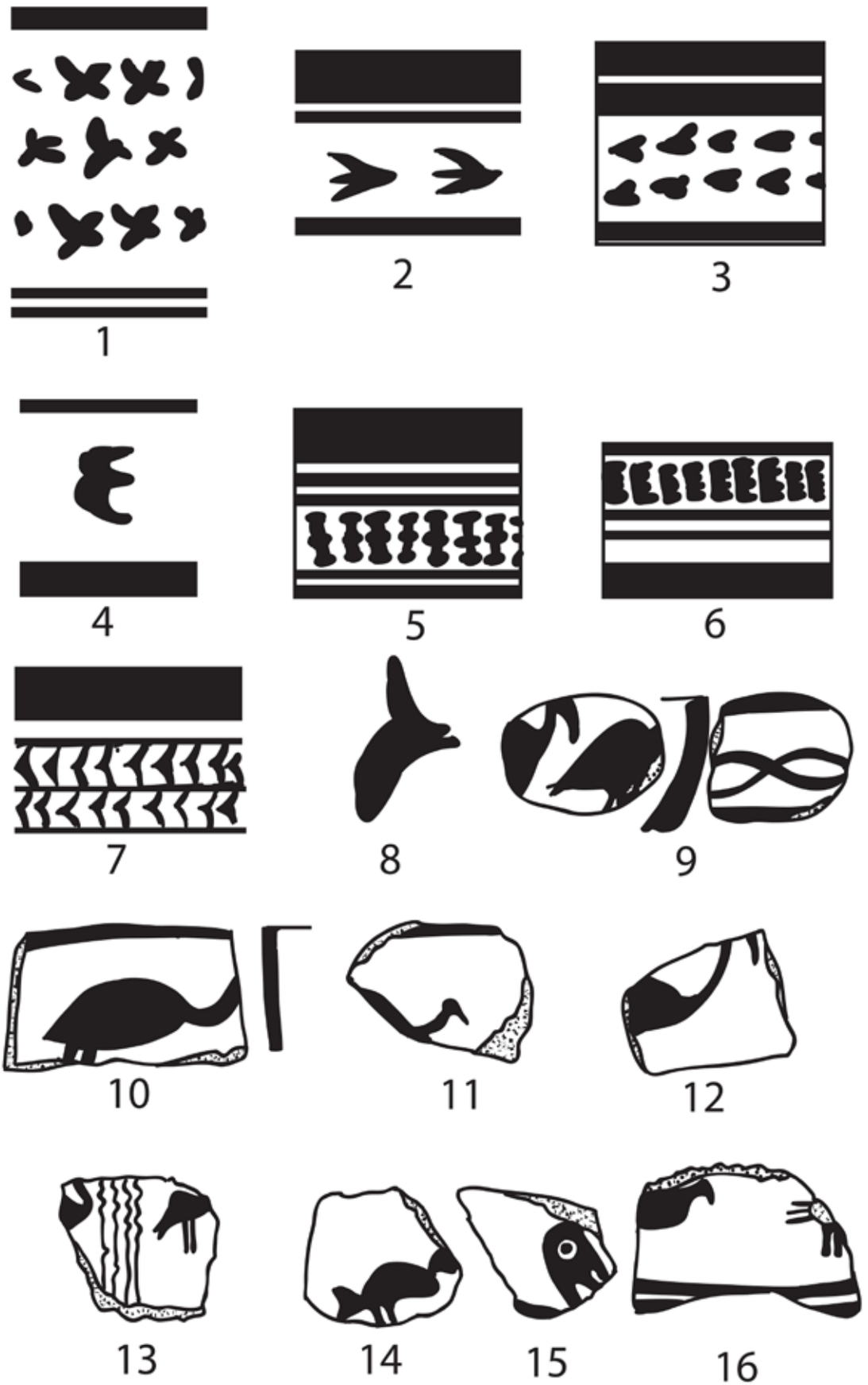


FIGURE 407. Ubaid 3 pottery, selected sherds bearing bird motifs from level II, Tell Abada.

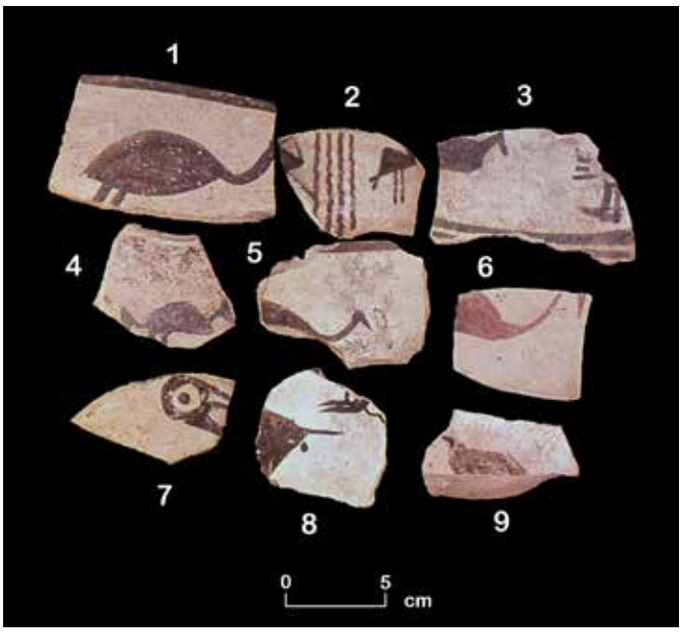


FIGURE 408. Ubaid 3 pottery, selected sherds bearing bird motifs from level II, Tell Abada.

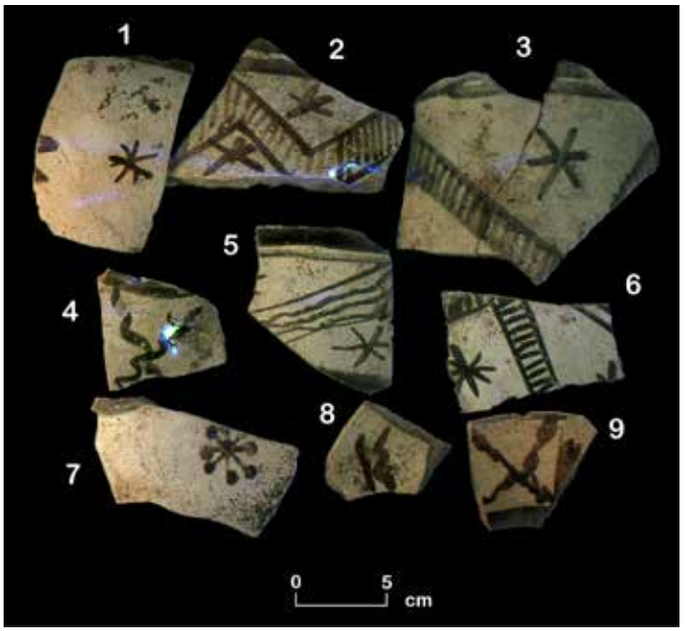


FIGURE 409. Ubaid 3 pottery painted sherds from level I, Tell Abada.

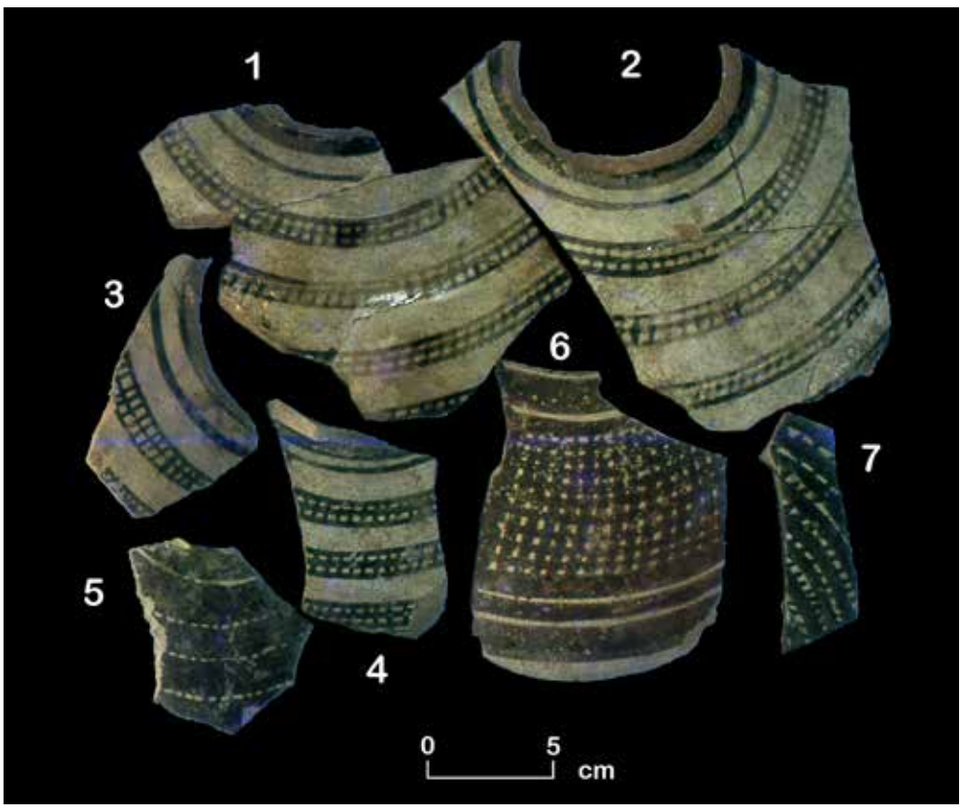


FIGURE 410. Ubaid 3 pottery, painted sherds from level I, Tell Abada.

FIGURE 411. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

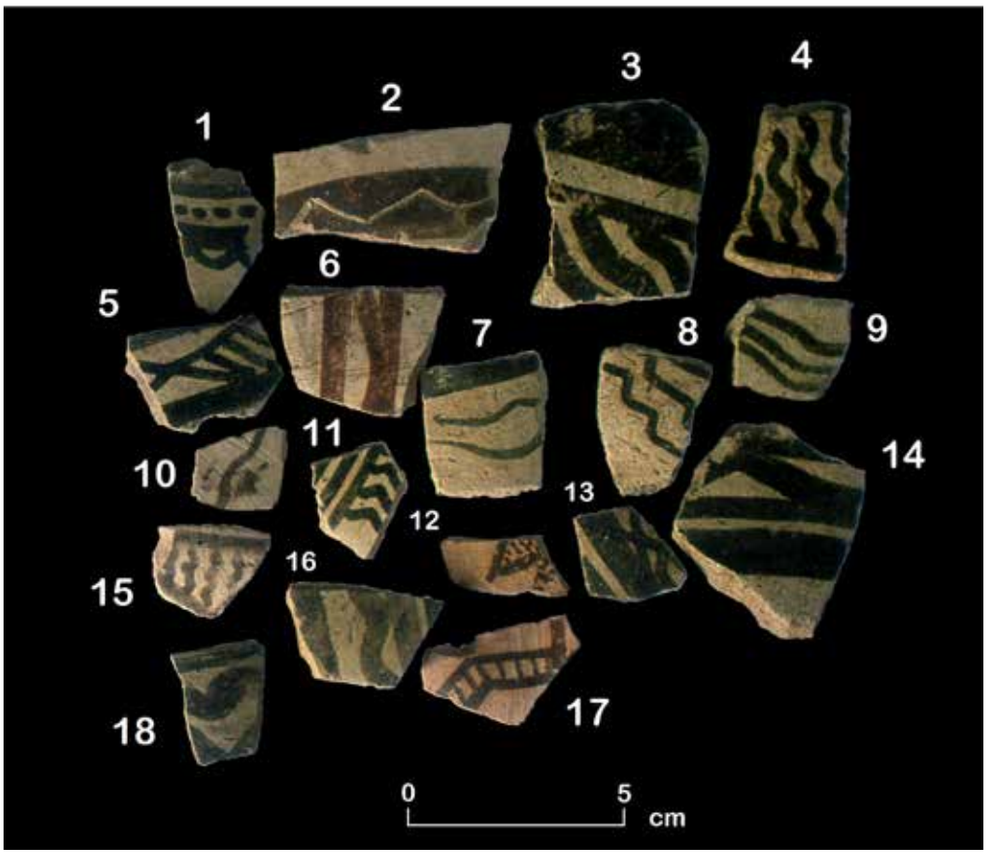


FIGURE 412. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

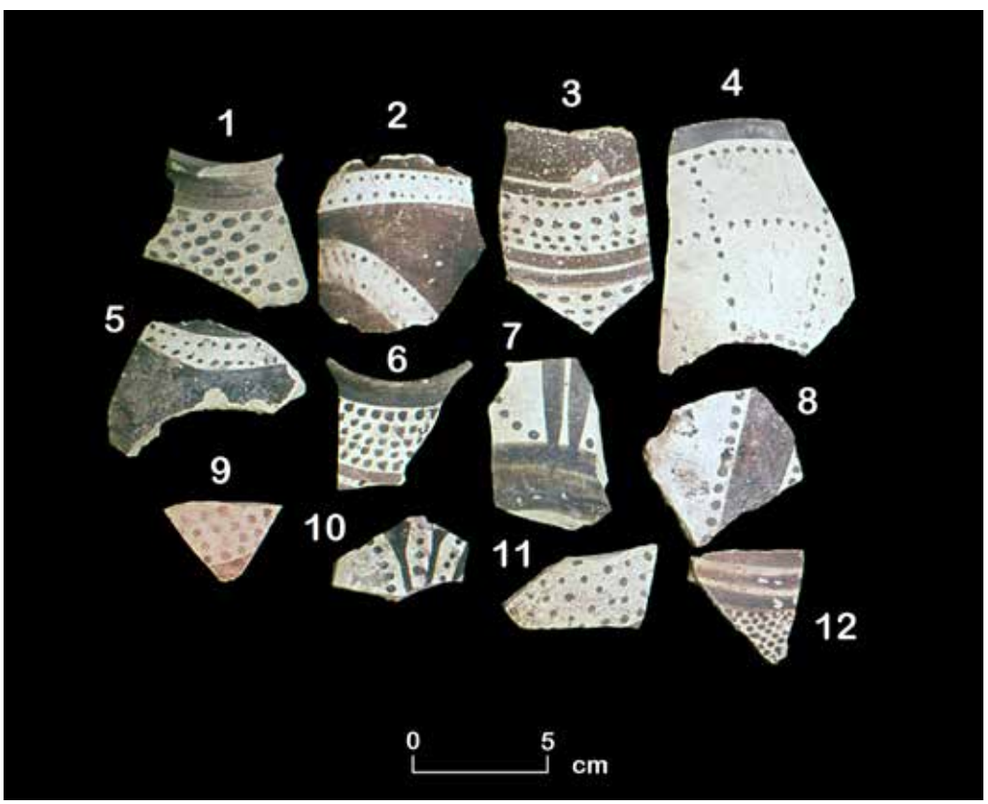


FIGURE 413. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

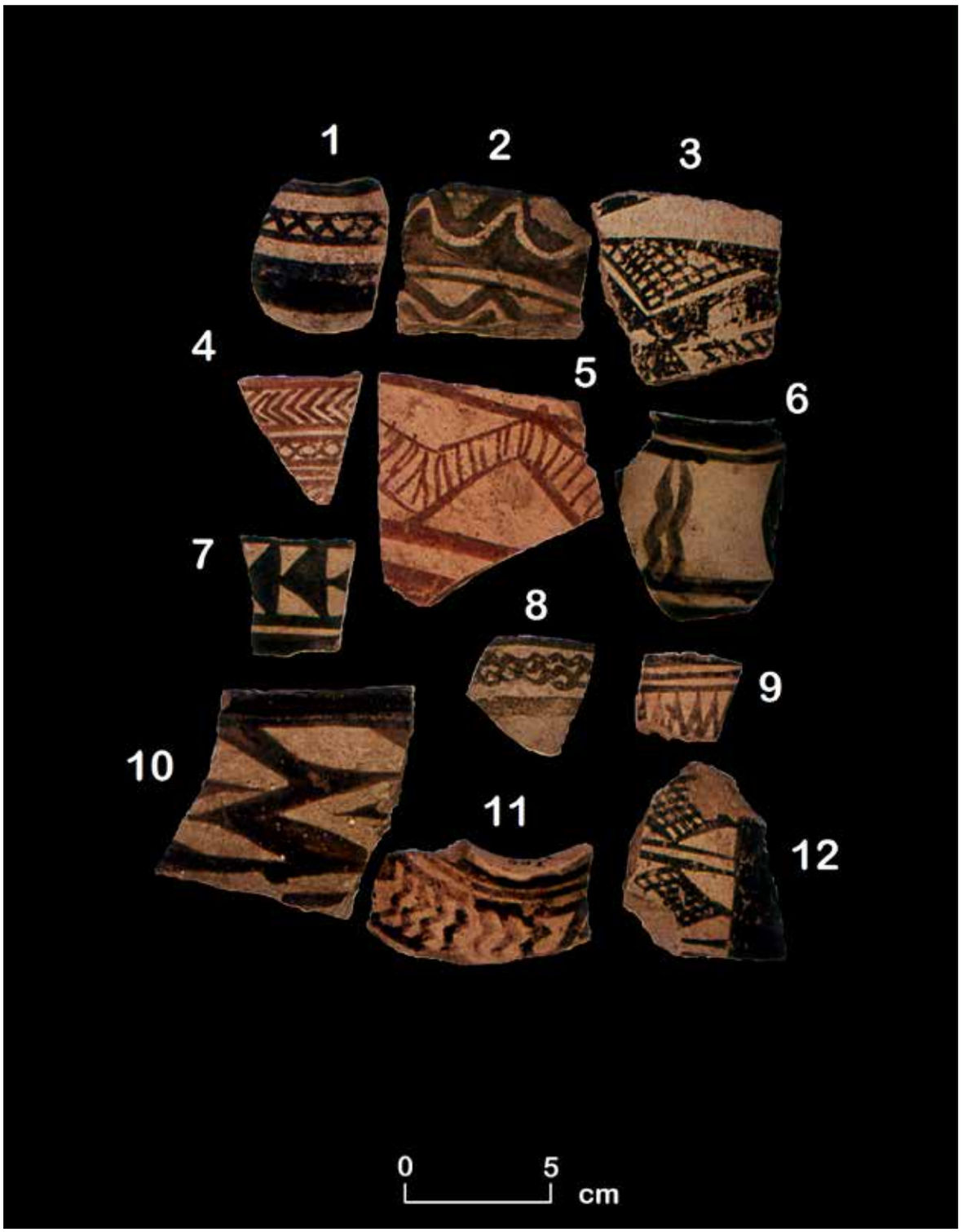


FIGURE 414. Ubaid 3 pottery, paint Painted sherds from levels I–II, Tell Abada.

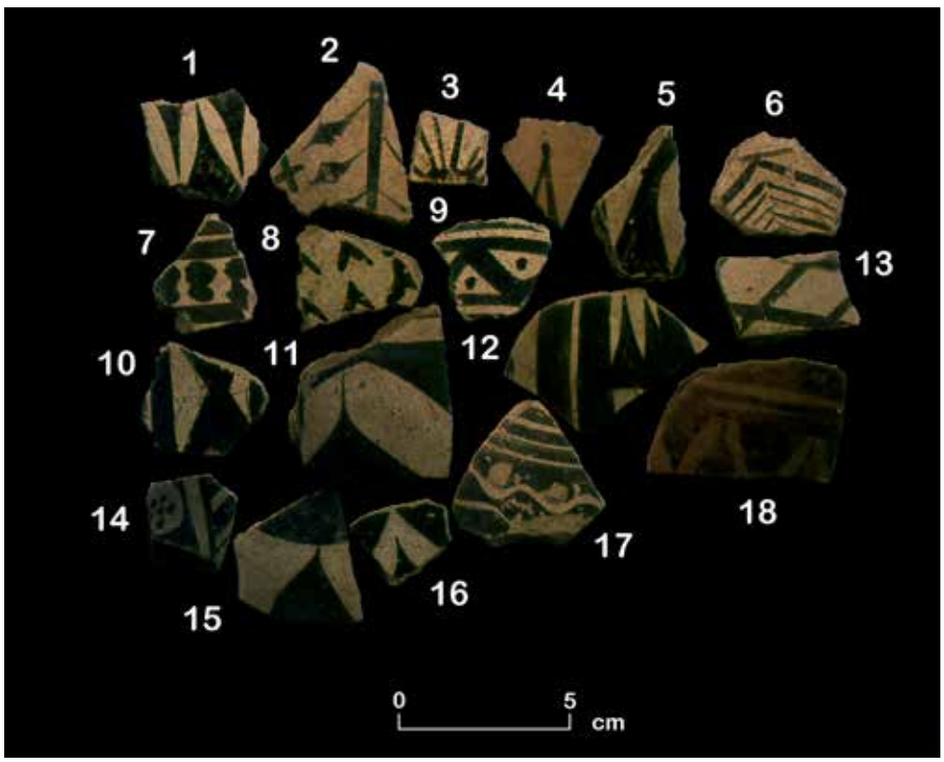


FIGURE 415. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

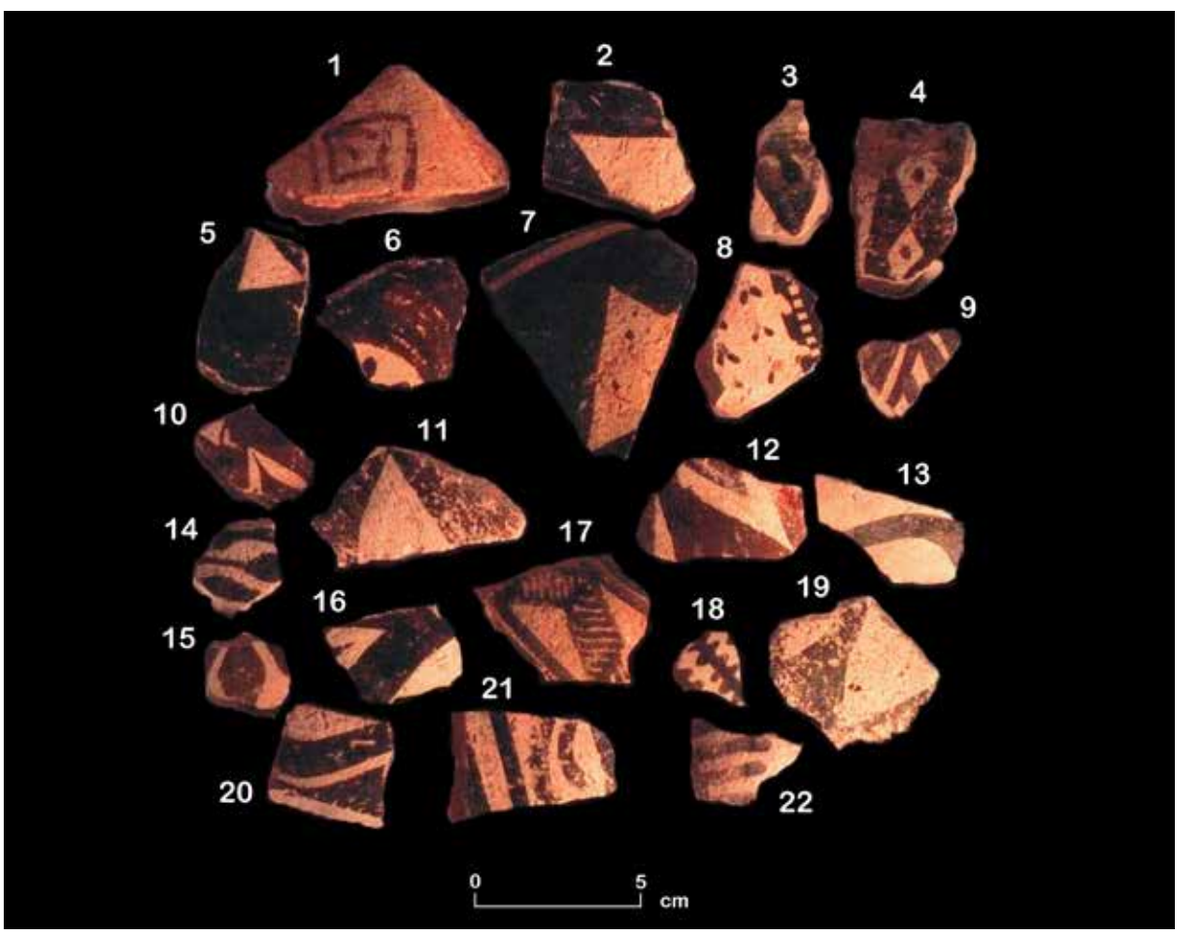


FIGURE 416. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

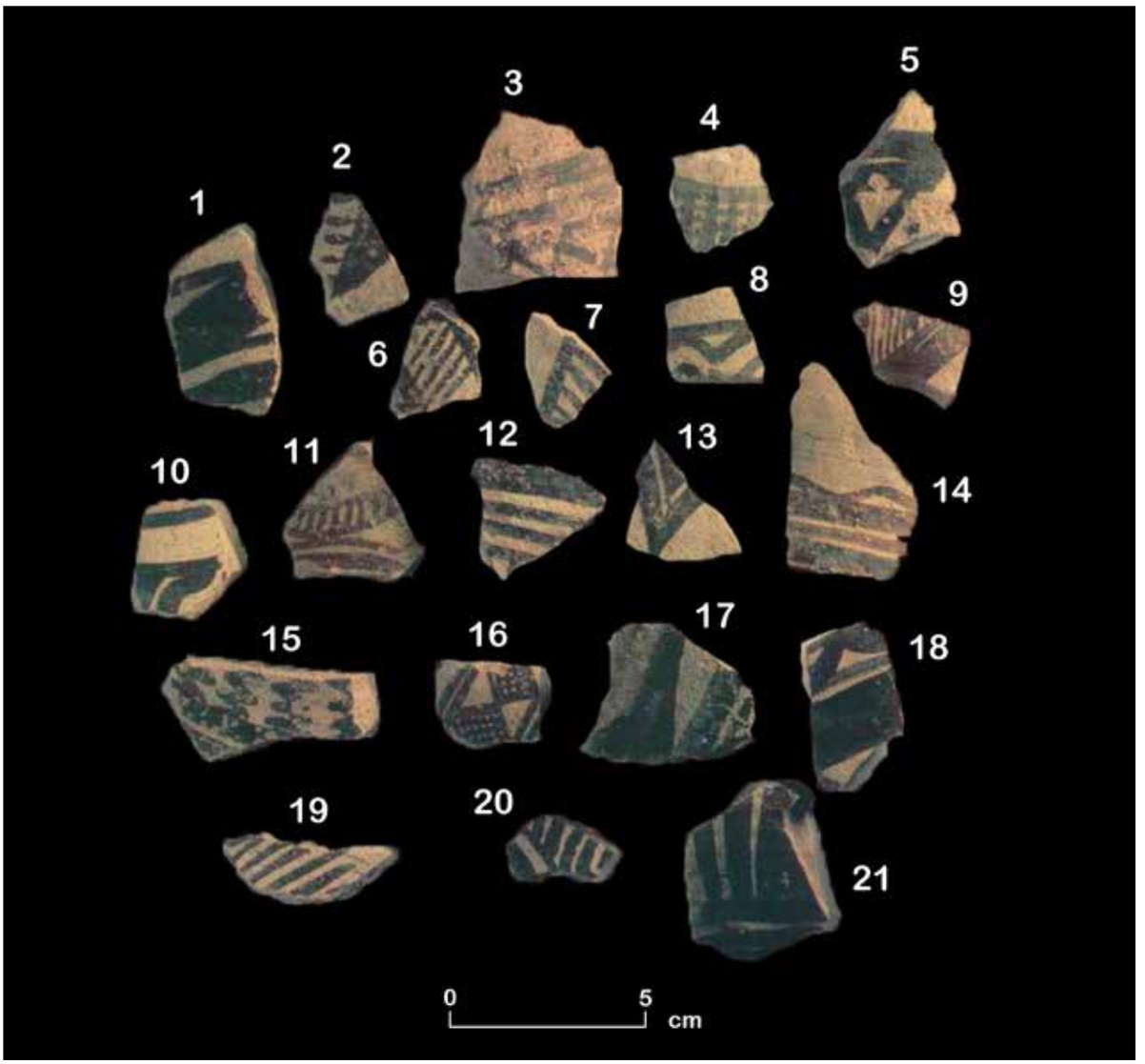


FIGURE 417. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

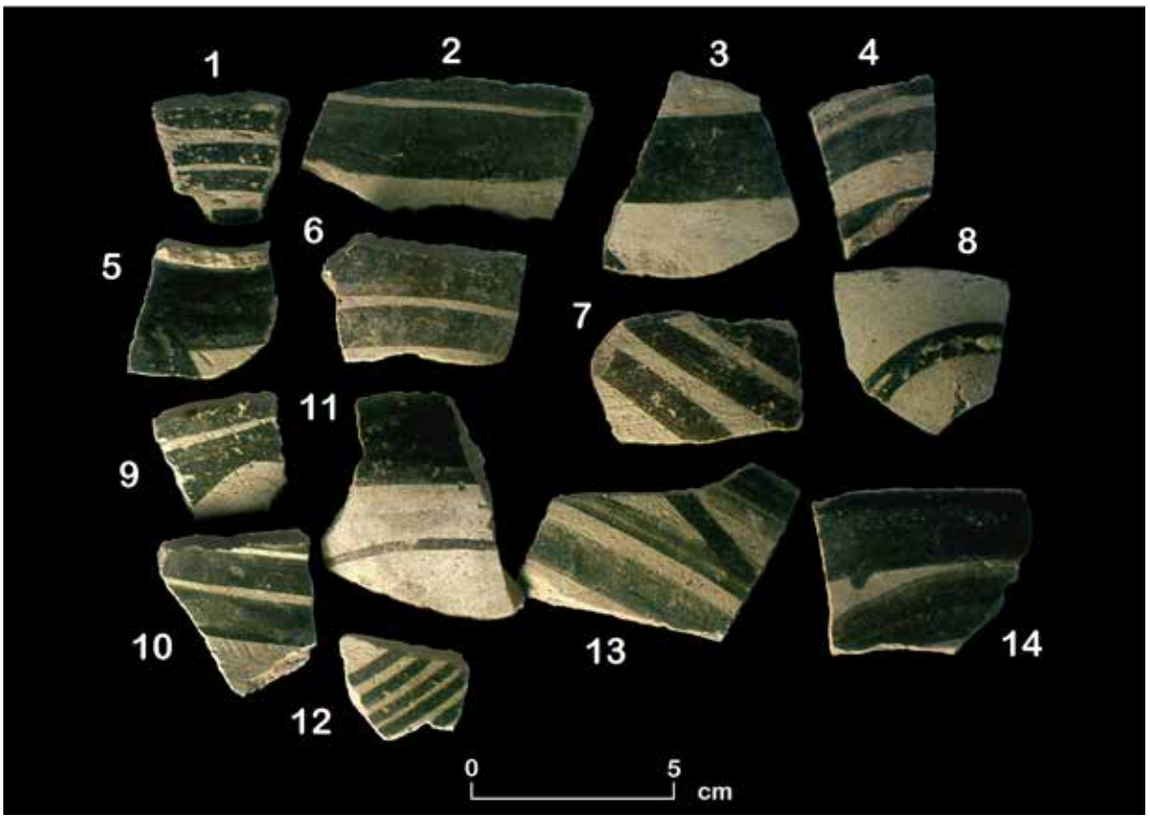


FIGURE 418. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

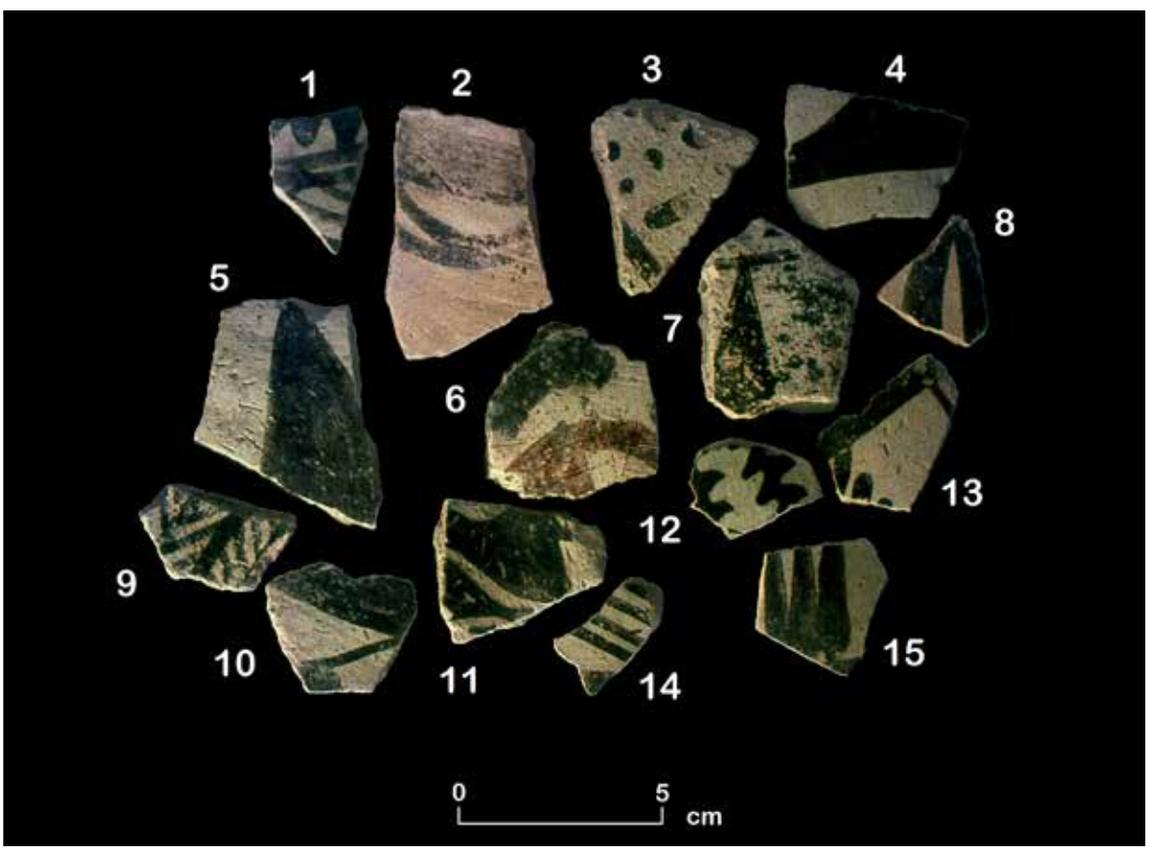


FIGURE 419. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

FIGURE 420. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

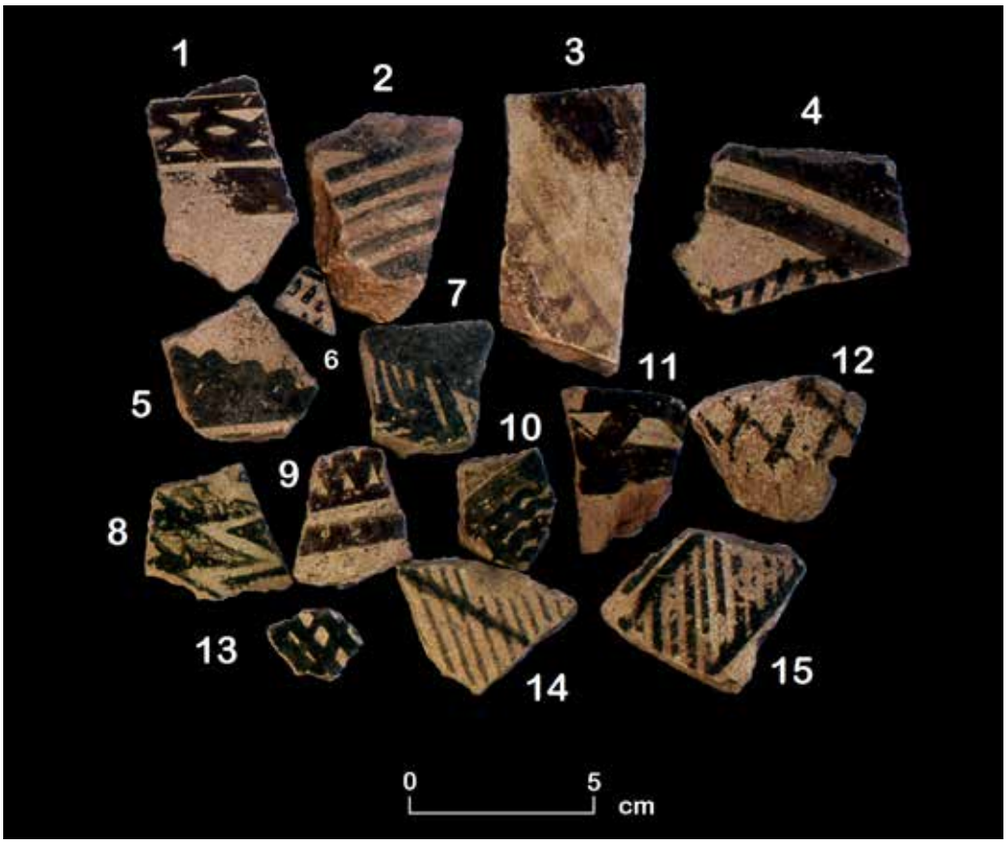


FIGURE 421. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

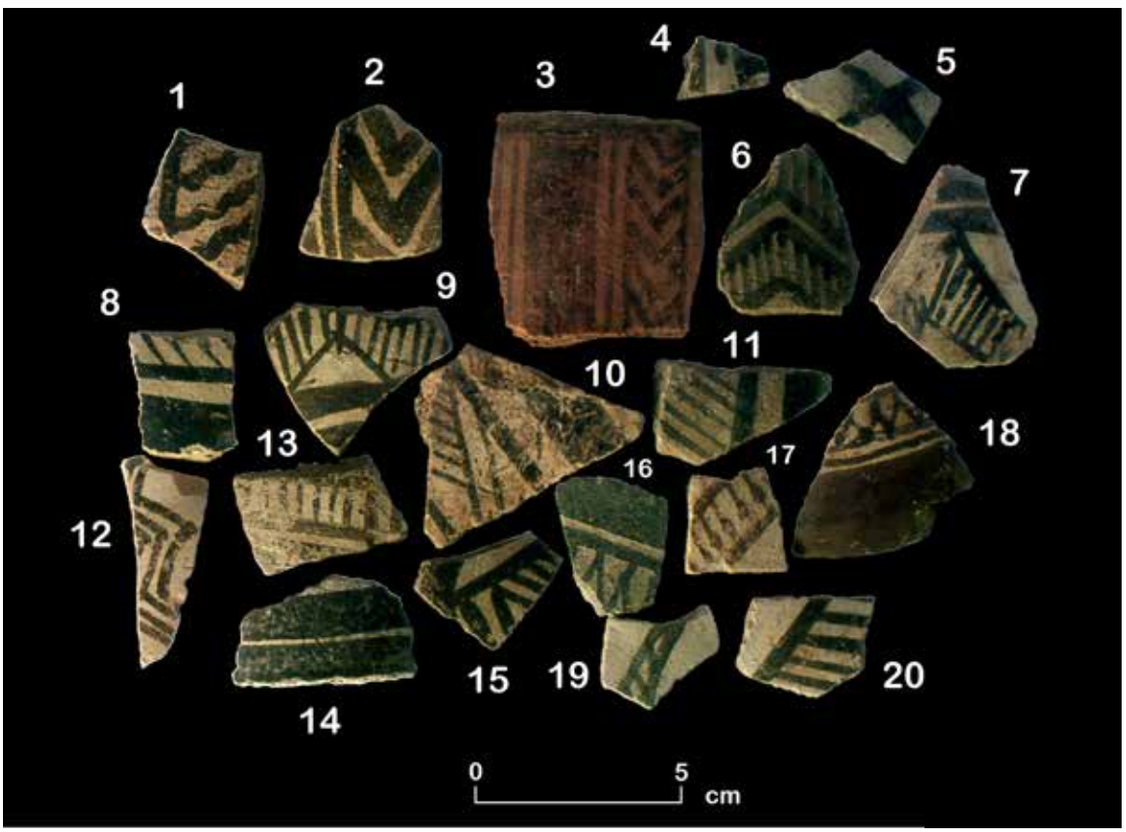


FIGURE 422. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

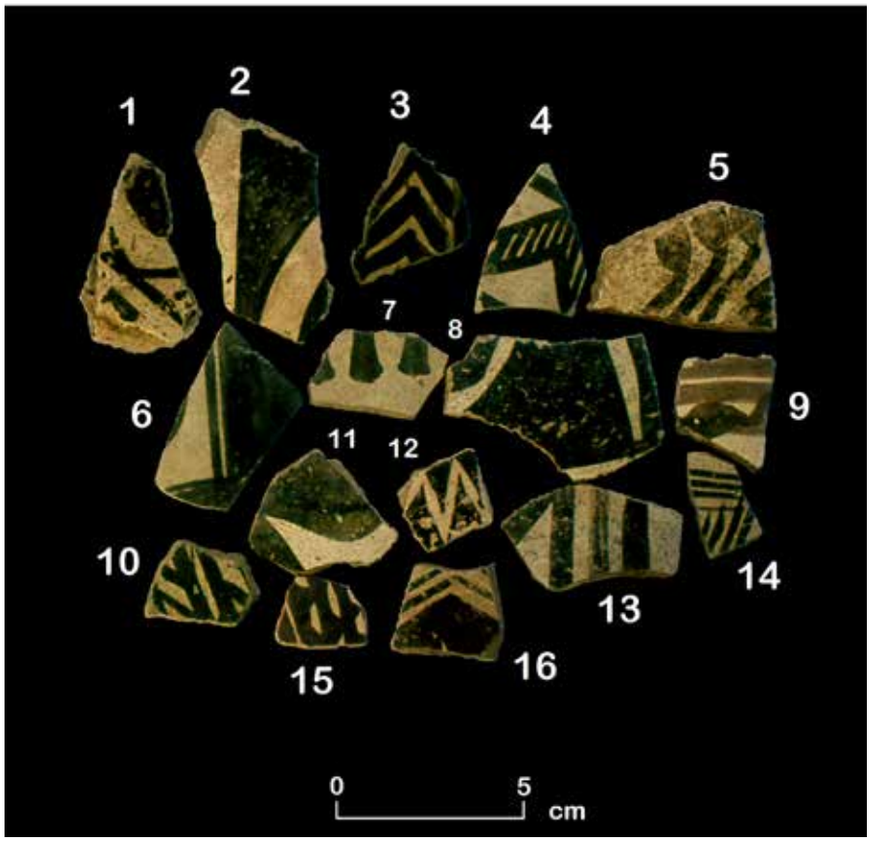


FIGURE 423. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

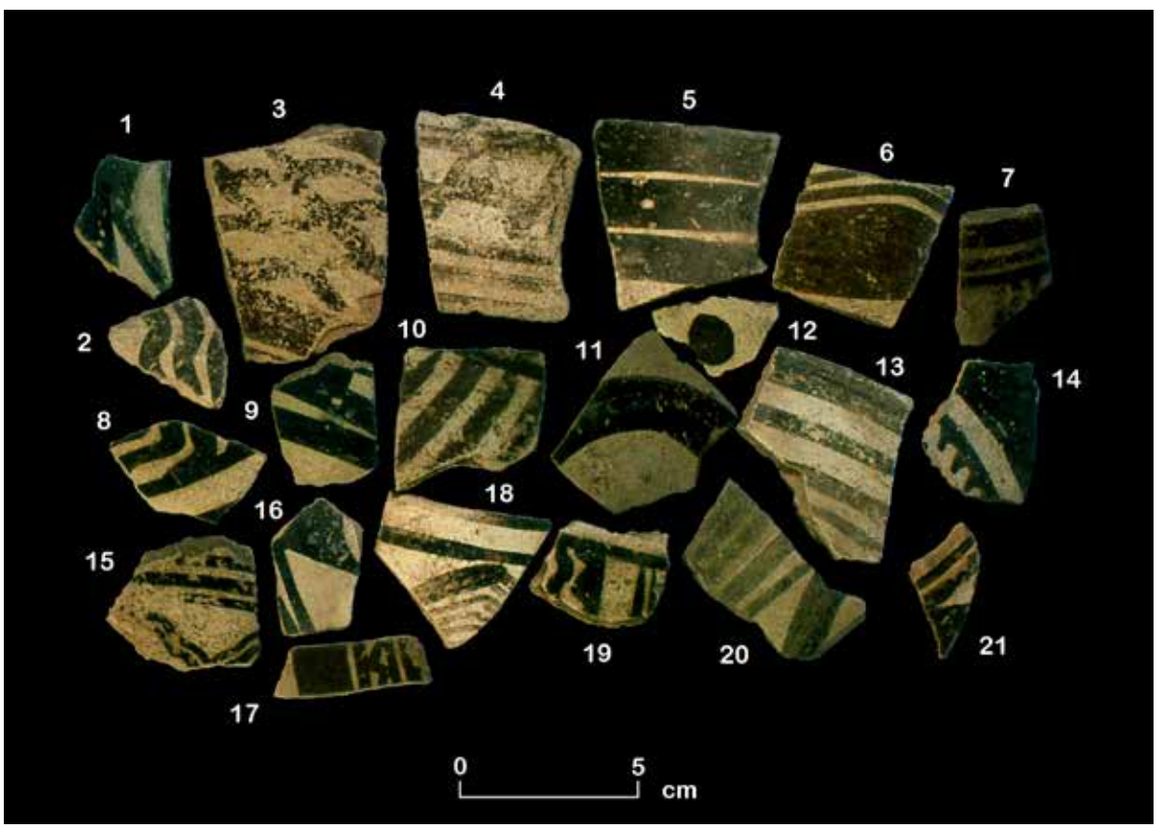


FIGURE 424. Ubaid 3 pottery, painted sherds from levels I–II, Tell Abada.

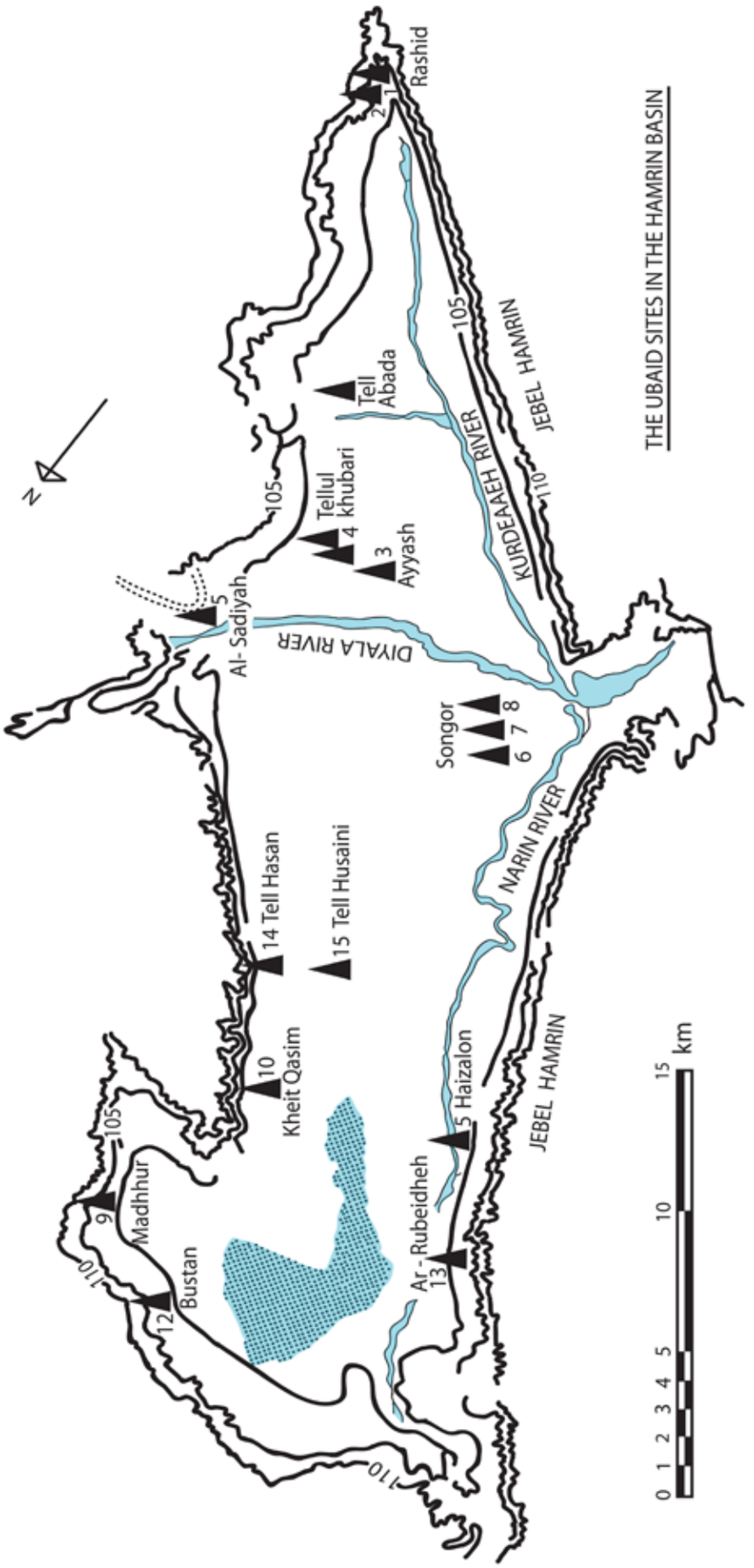


FIGURE 425. Map showing the spatial distribution of the Ubaid sites in the Hamrin region.

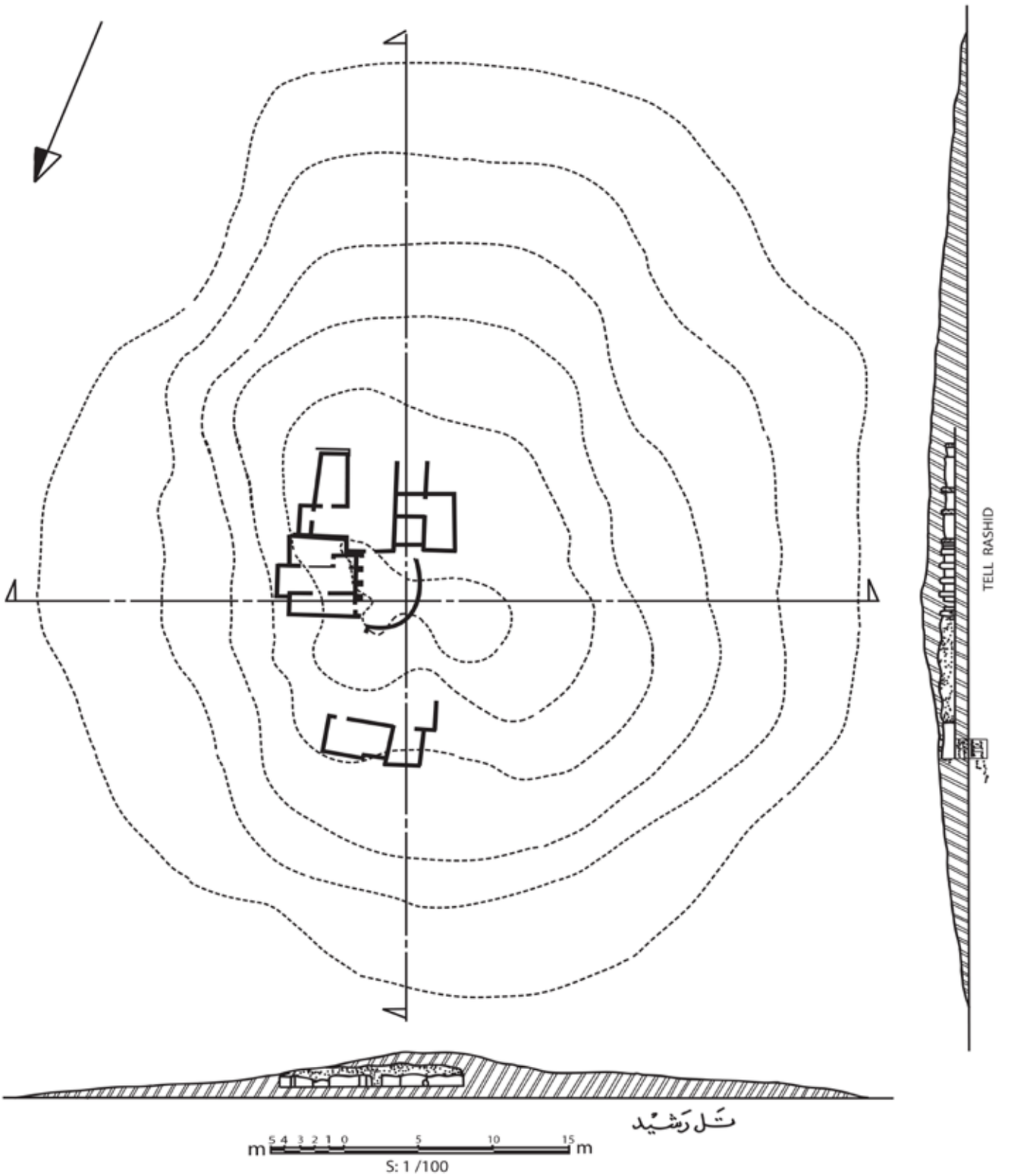


FIGURE 426. Contour, plan and section of level III, Tell Rashid.

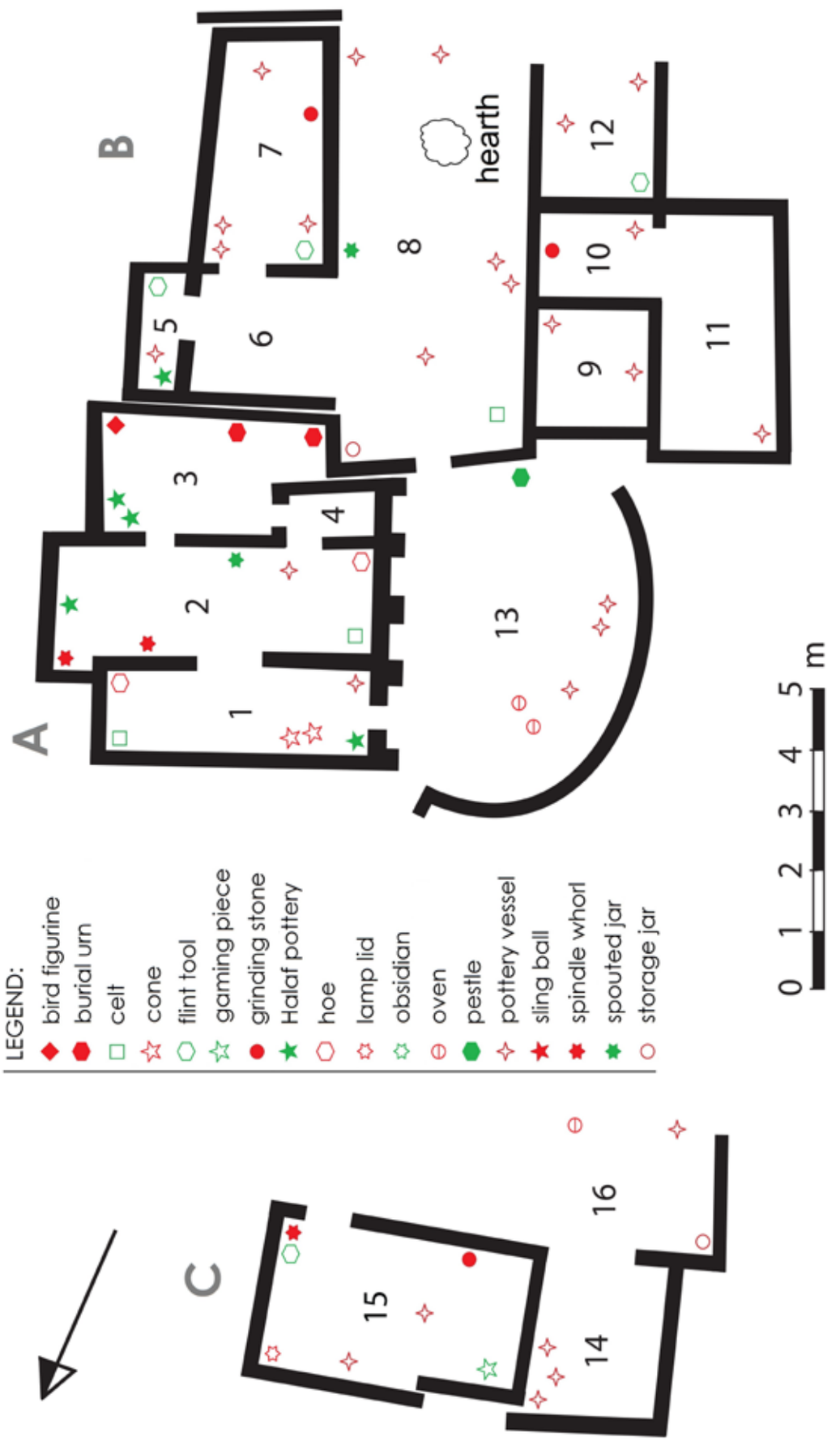


FIGURE 427. Plan of level III, Tell Rashid.

FIGURE 428. Front view of the Southern Building.

FIGURE 429. View of Building B.

FIGURE 430. General view showing both Buildings A and B.

FIGURE 431. General view of Building B.

FIGURE 432. View inside Building A.

FIGURE 433. A room inside Building A.

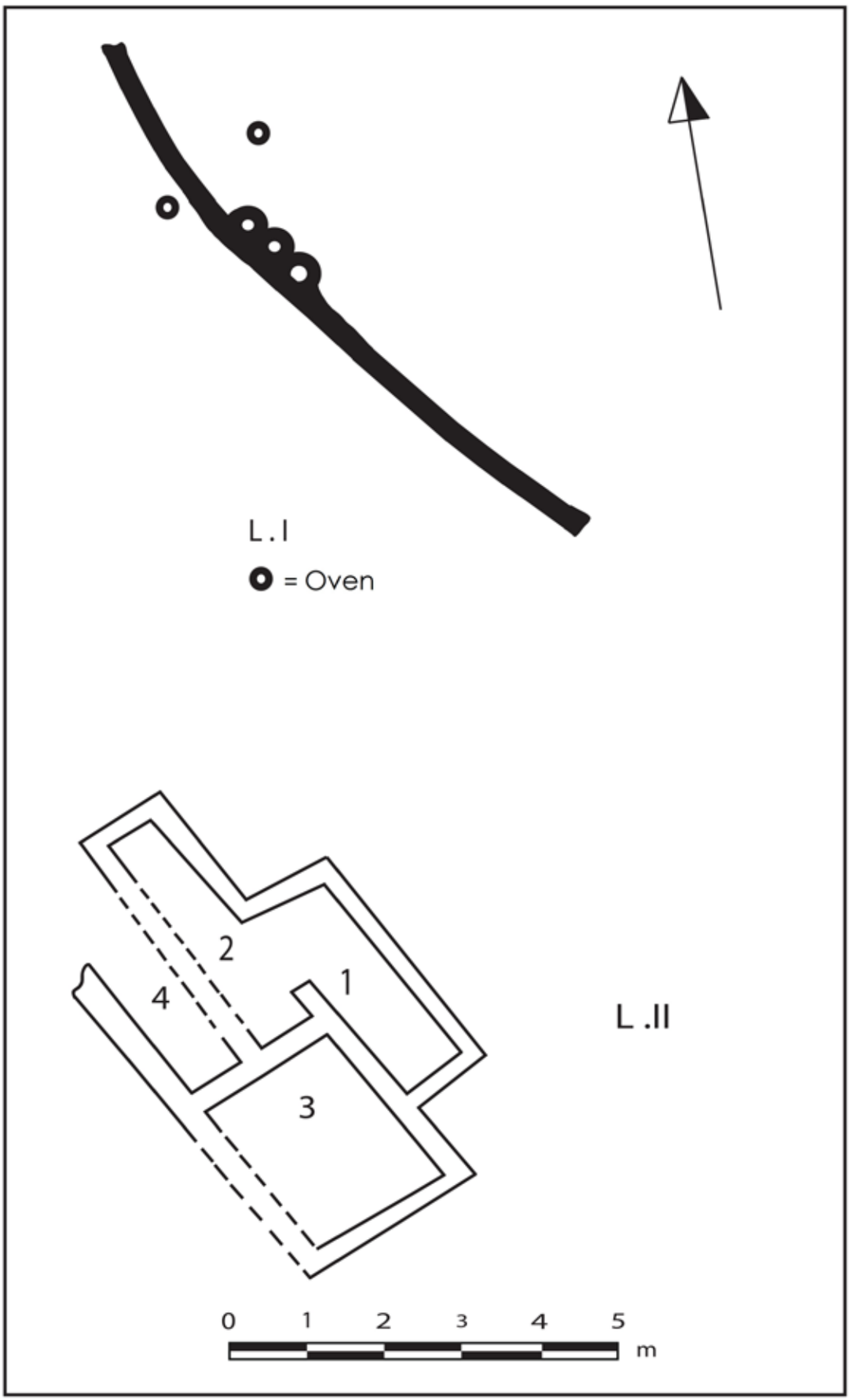


FIGURE 434. Plan of levels I–II, Tell Rashid.

FIGURE 435. View of the Southern Building at level II, Tell Rashid.

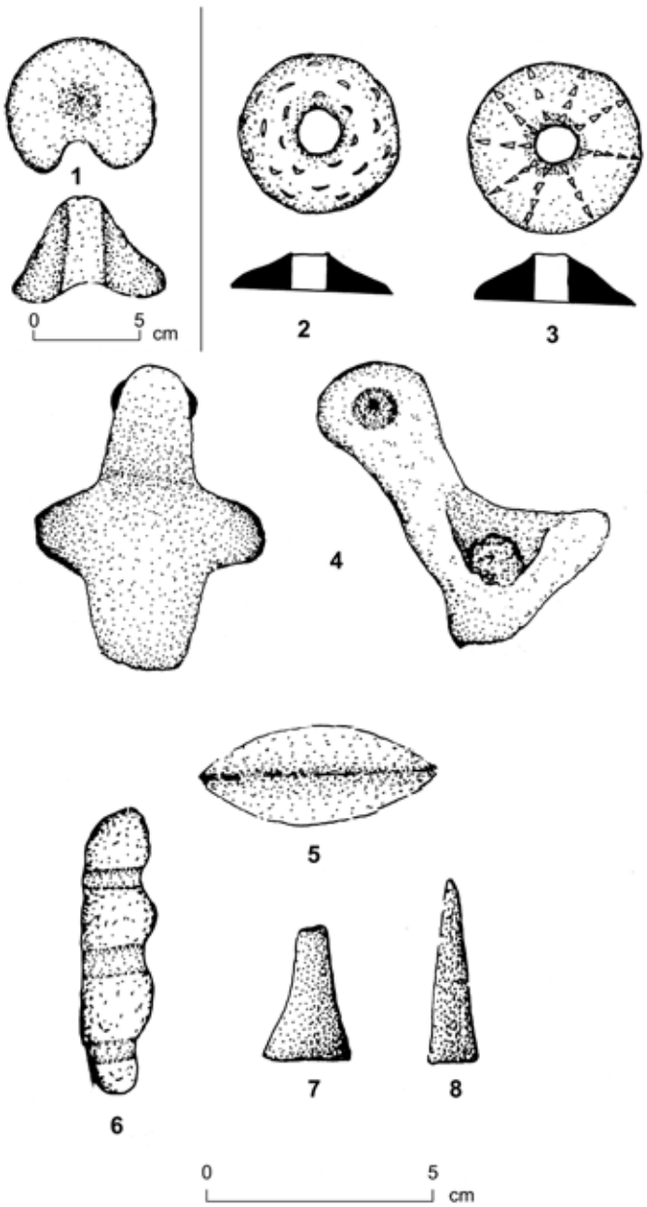


FIGURE 436. Miscellaneous objects from level II, Tell Rashid.

FIGURE 437. Dove-shaped figurine (fig. 436: 4) from level II, Tell Rashid.

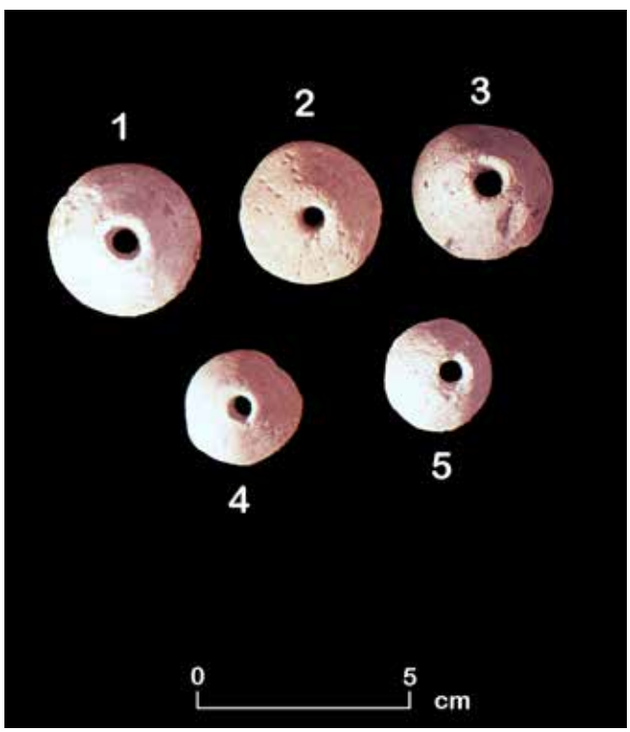


FIGURE 438. Spindle whorls from levels II–III, Tell Rashid.

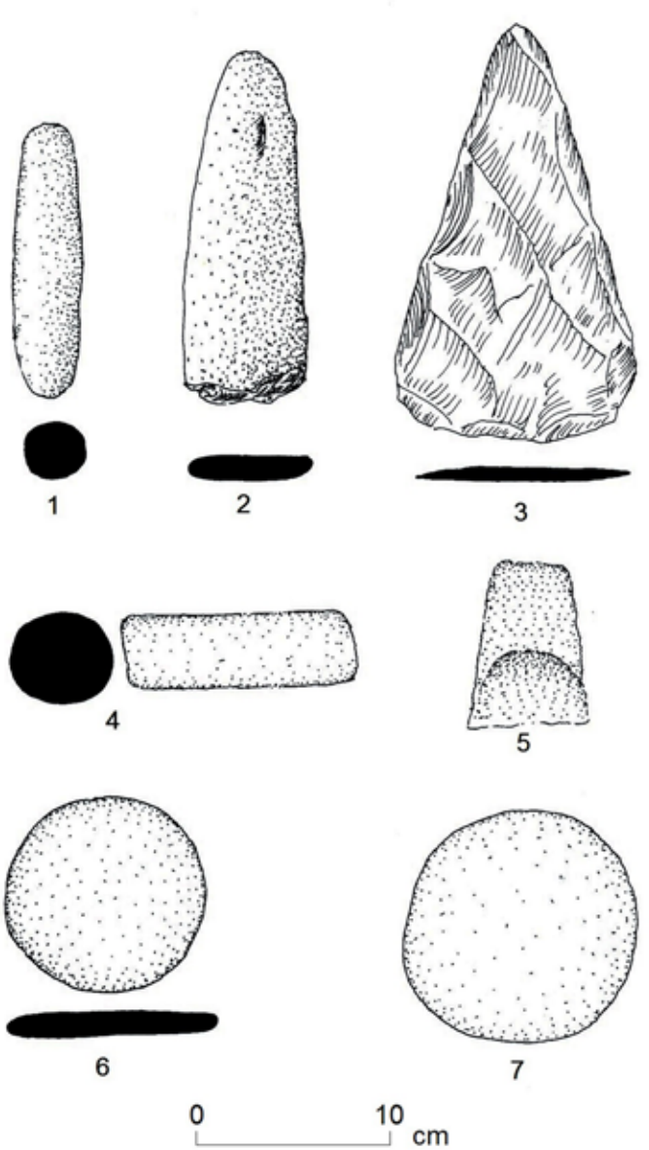


FIGURE 439. Stone tools from level II, Tell Rashid.

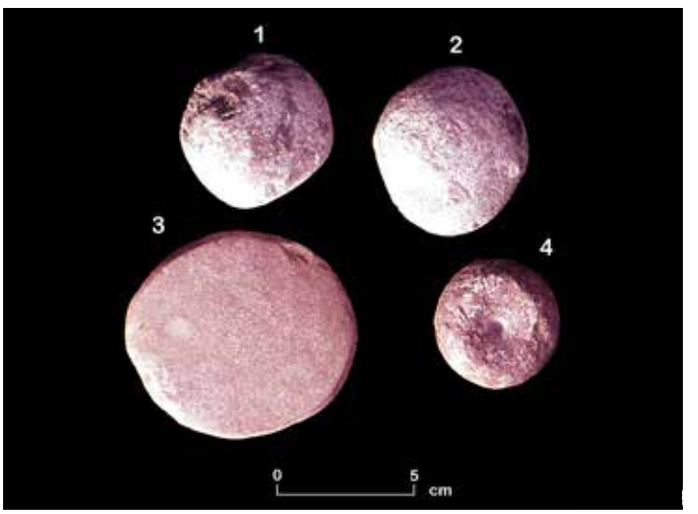


FIGURE 440. Stone tools from level II, Tell Rashid.

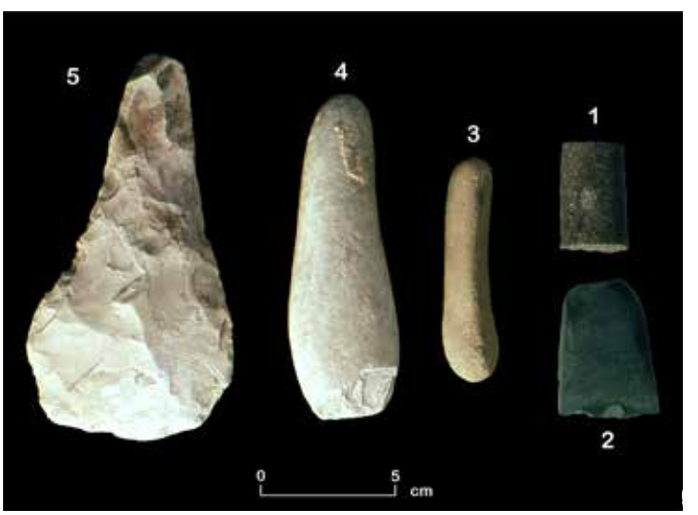


FIGURE 441. Stone tools from levels II–III, Tell Rashid.

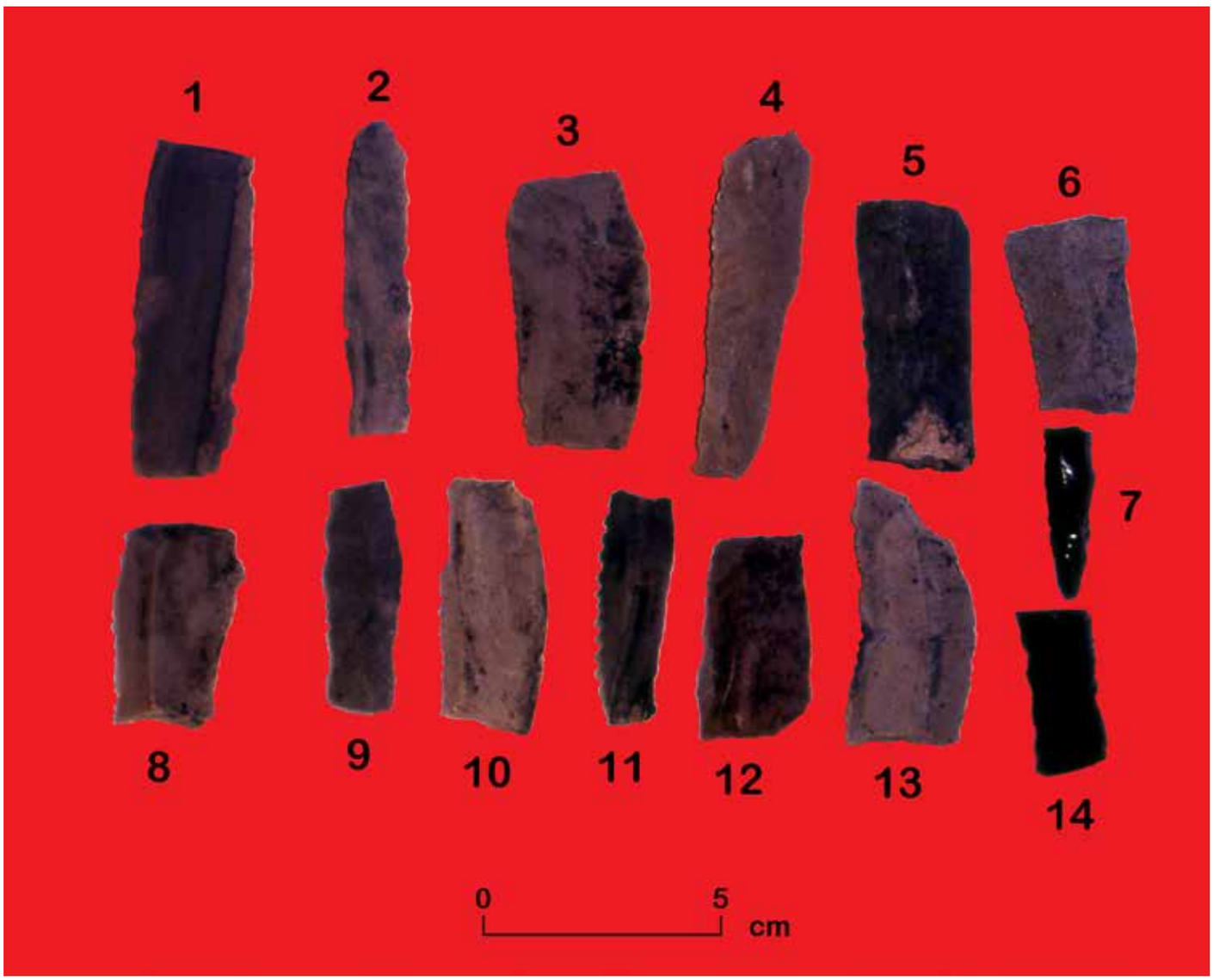


FIGURE 442. Flint tools from level II, Tell Rashid.

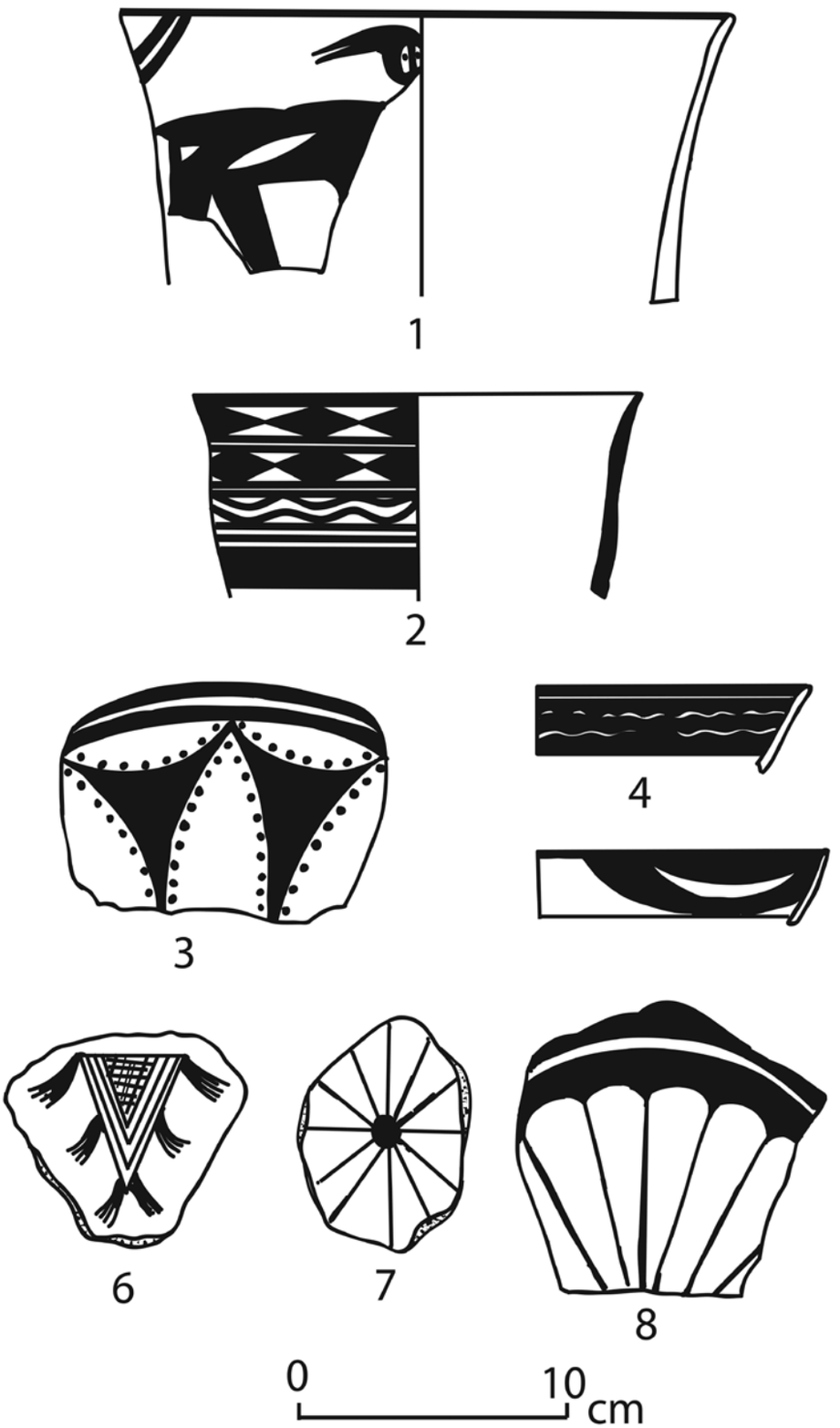


FIGURE 443. Ubaid 2–3 pottery, bowl type 2 from level II, Tell Rashid.

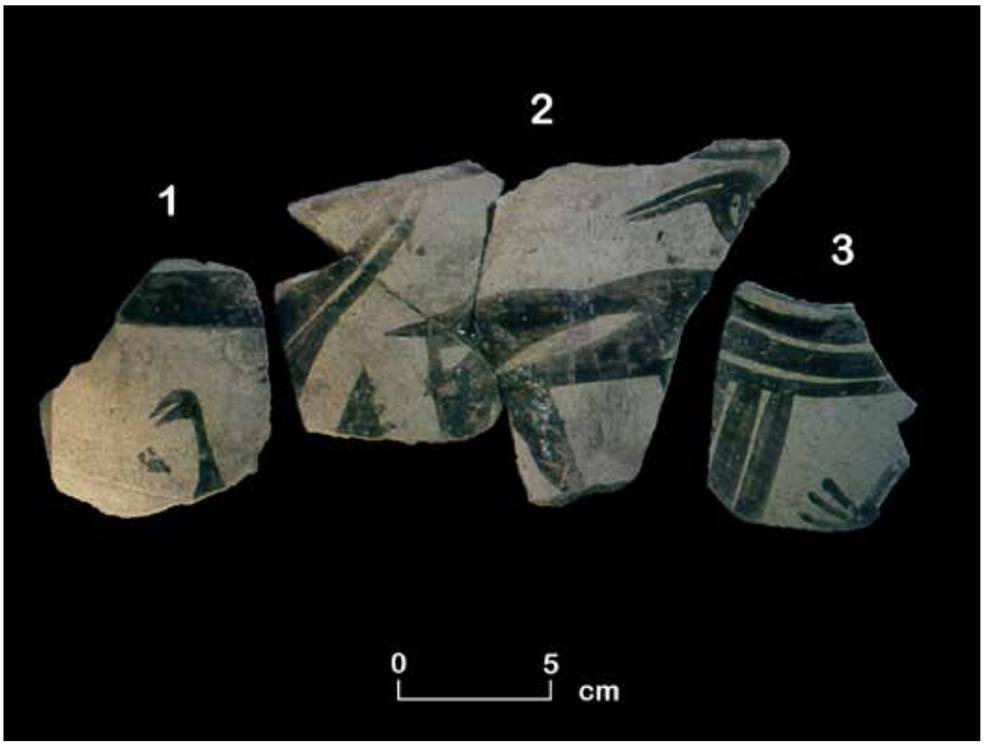


FIGURE 444. Ubaid 2–3 pottery from levels II–III, Tell Rashid.

FIGURE 445. Ubaid 2–3 pottery from levels II–III, Tell Rashid.

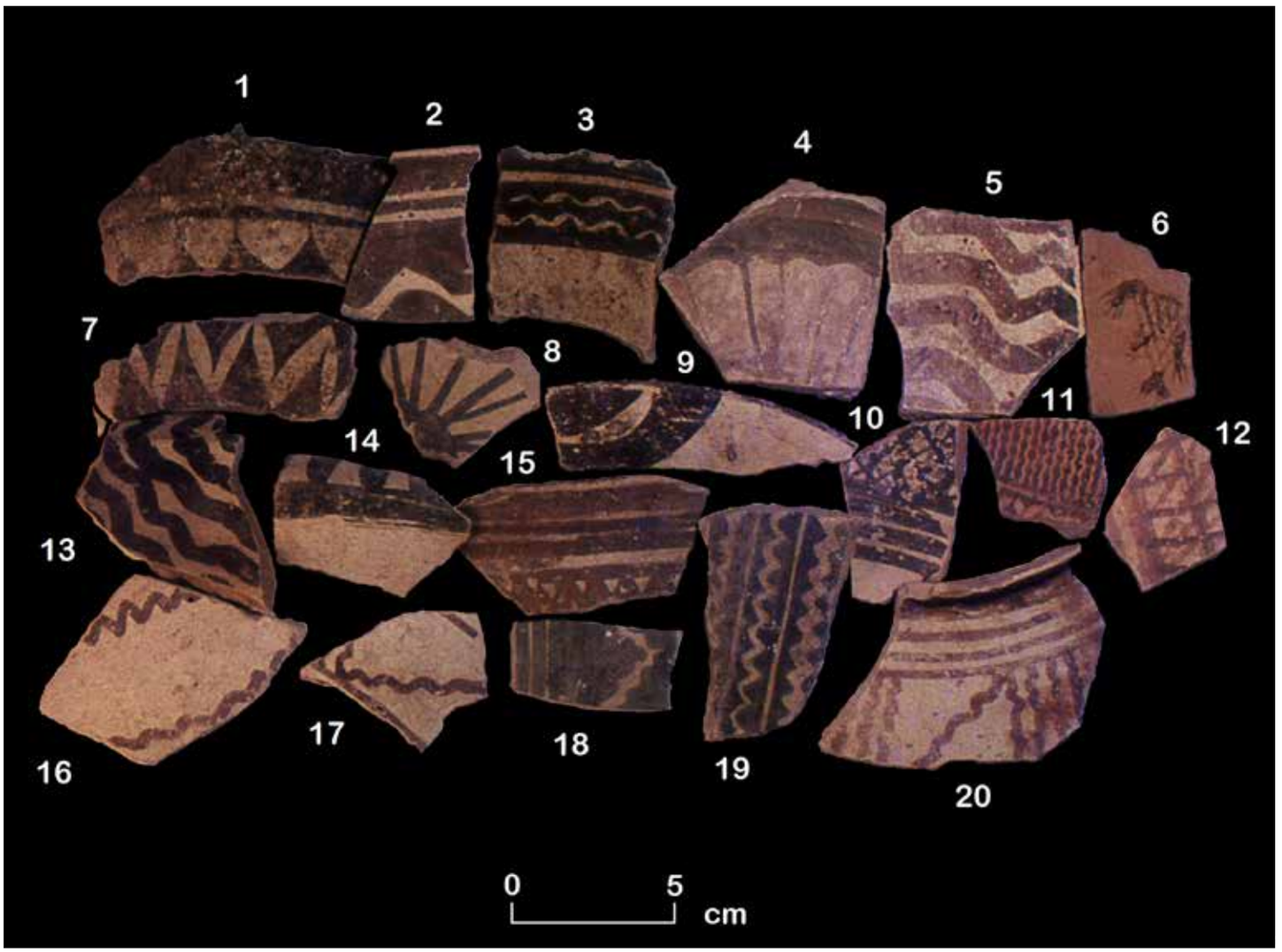


FIGURE 446. Ubaid 2–3 pottery from levels II–III, Tell Rashid.

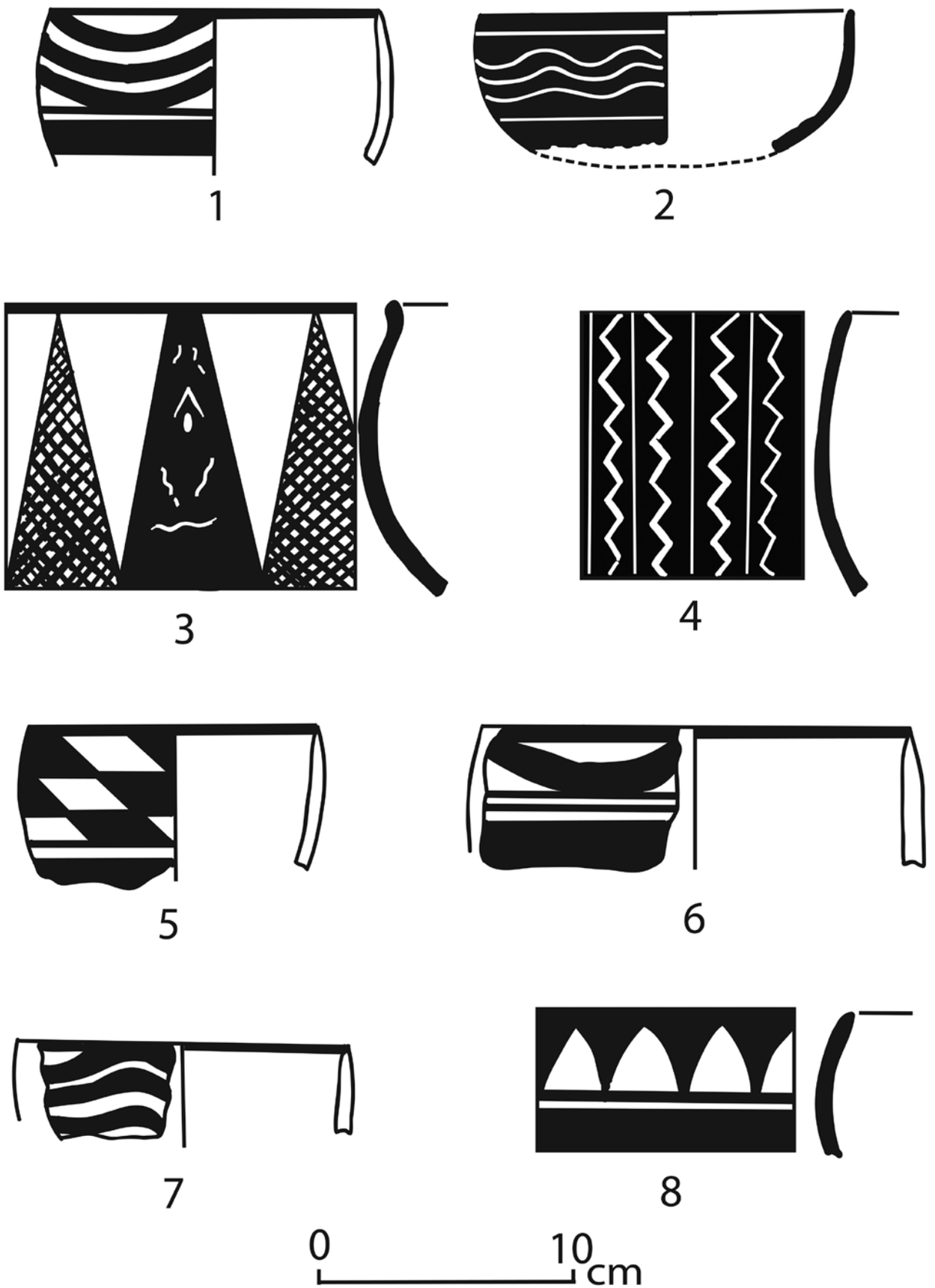


FIGURE 447. Ubaid 2–3 pottery from levels II–III, Tell Rashid.

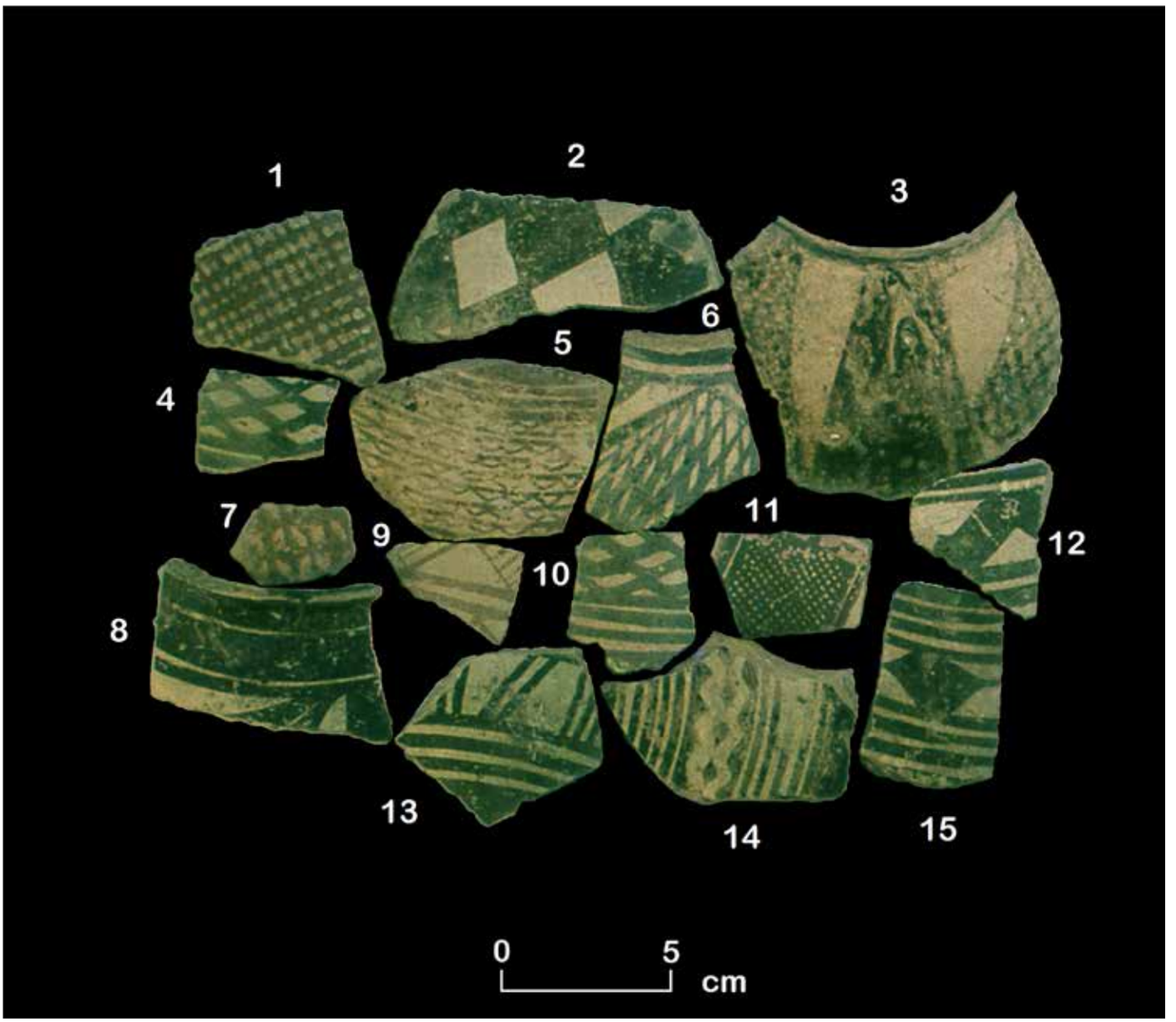


FIGURE 448. Ubaid 2–3 pottery from levels II–III, Tell Rashid.

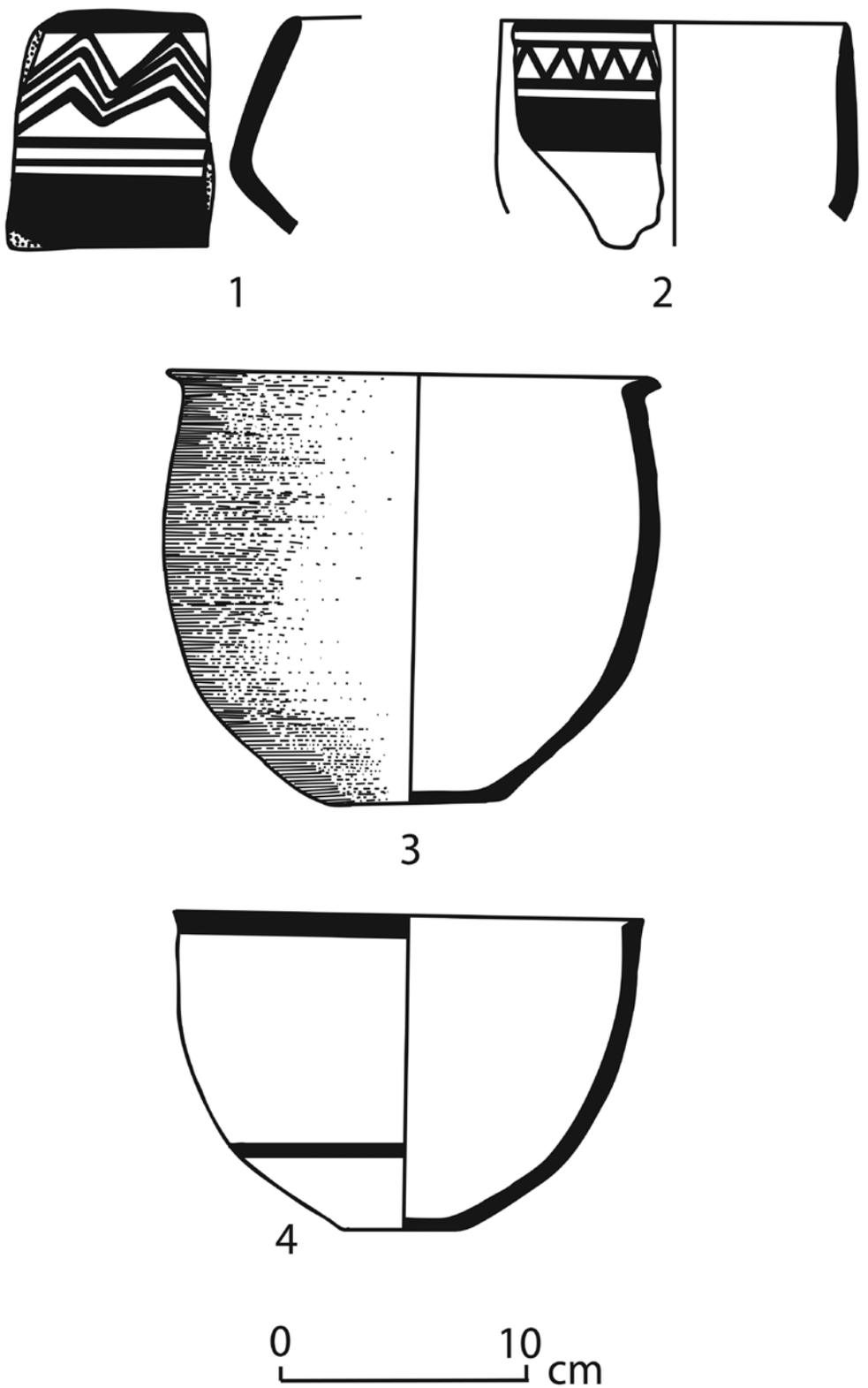


FIGURE 449. Ubaid 3 pottery from levels II–III, Tell Rashid.

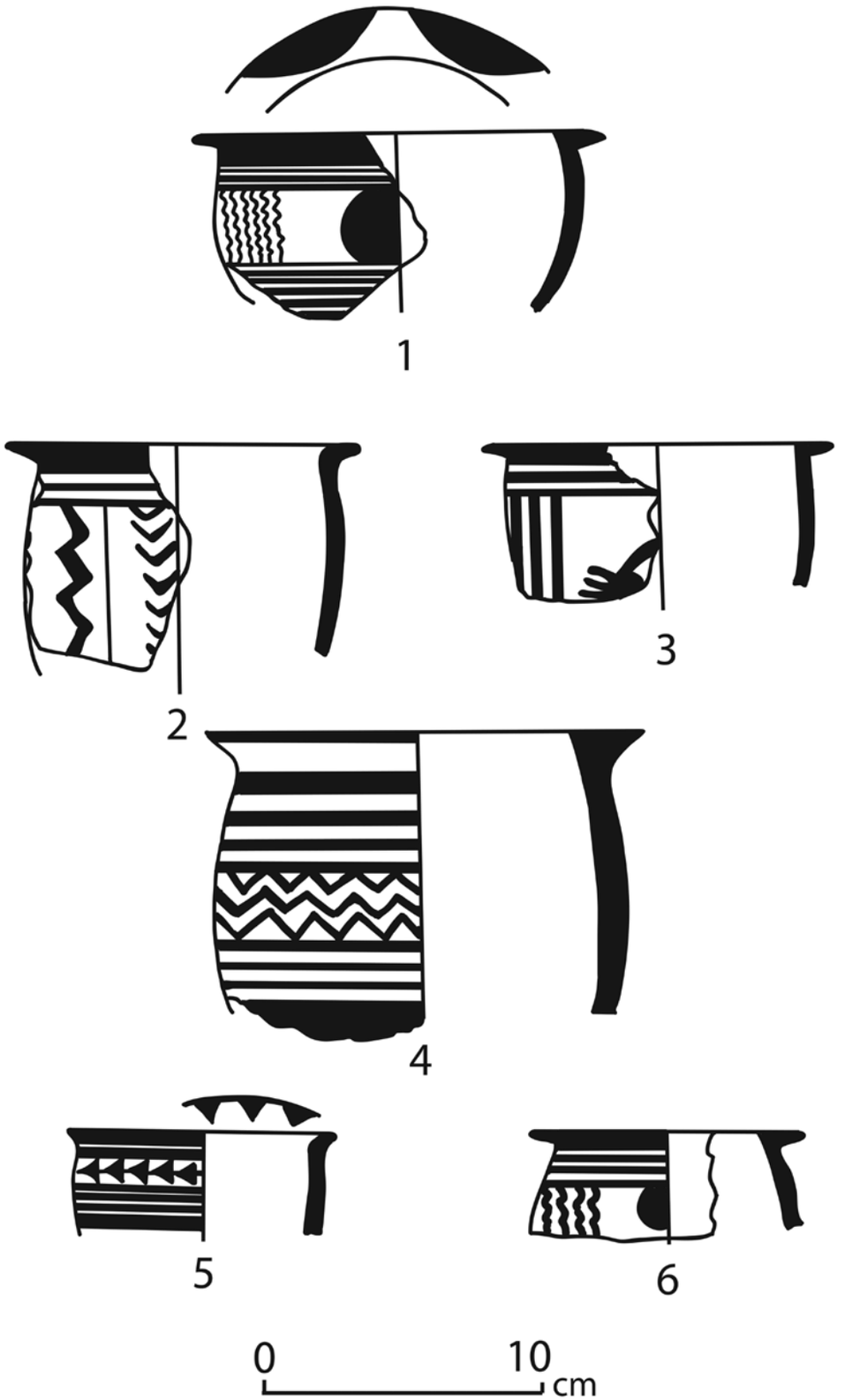


FIGURE 450. Ubaid 3 pottery from levels II–III, Tell Rashid.

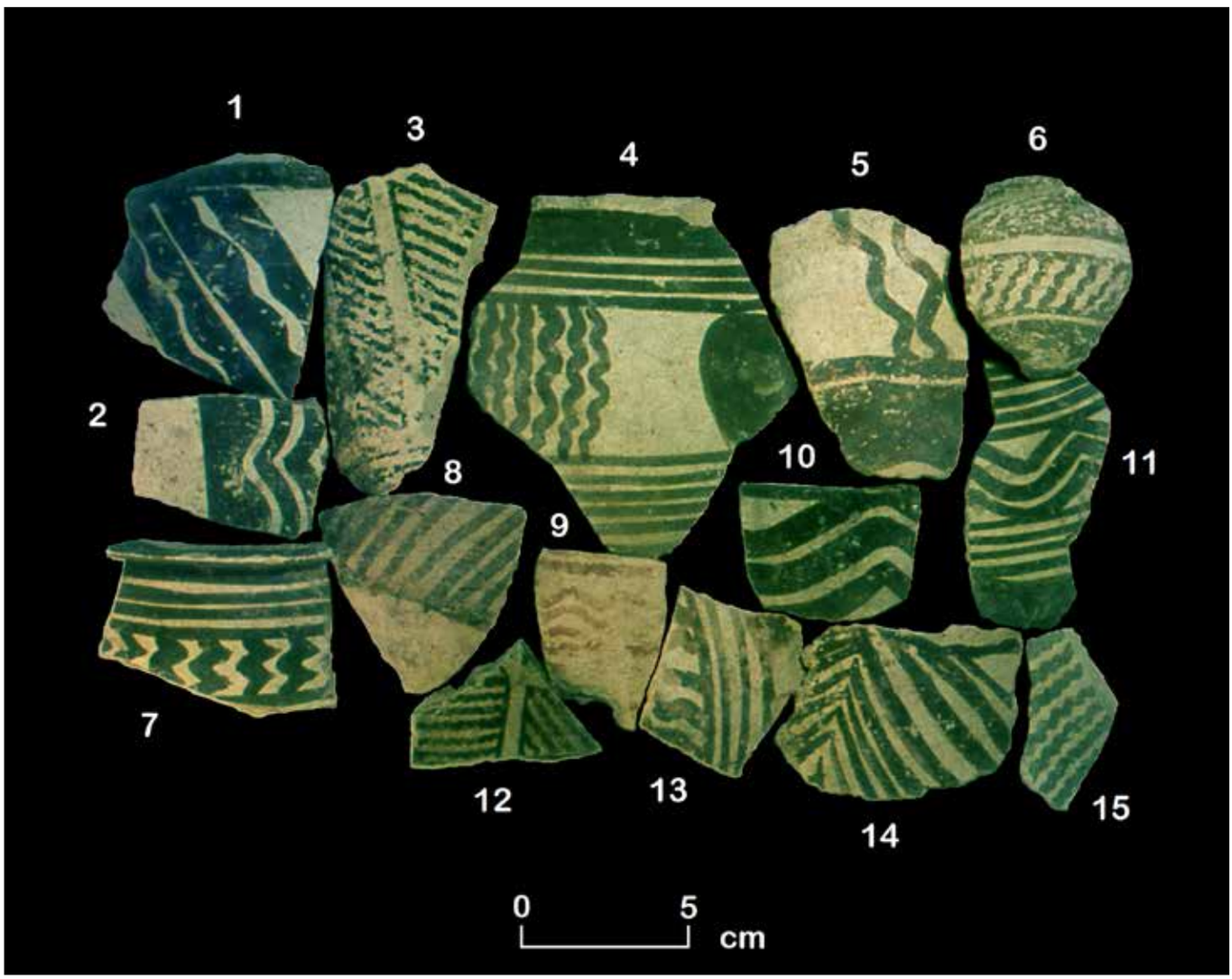


FIGURE 451. Ubaid 3 pottery from levels I–II, Tell Rashid.

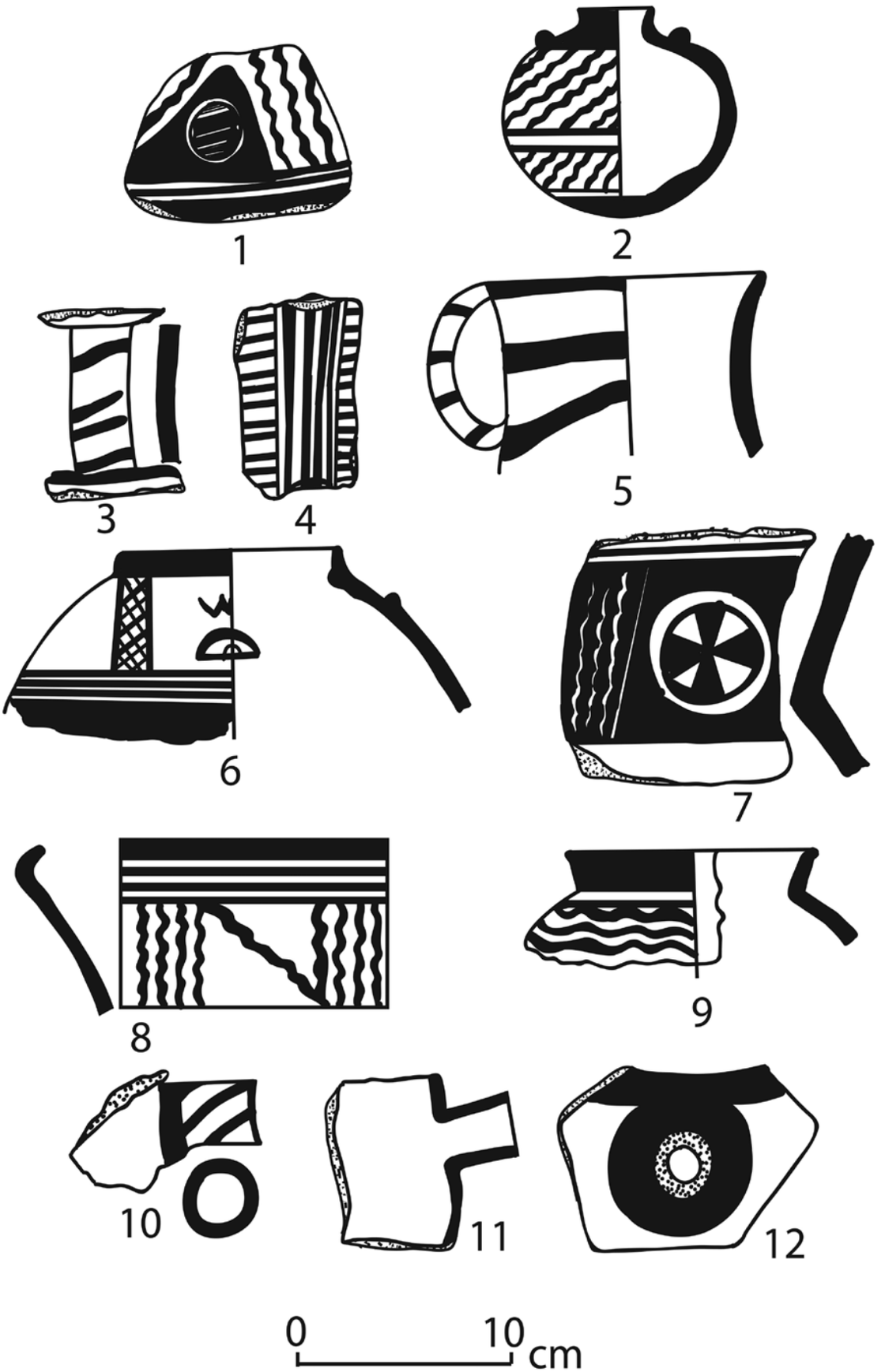


FIGURE 452. Ubaid 2–3 pottery from levels II–III, Tell Rashid.

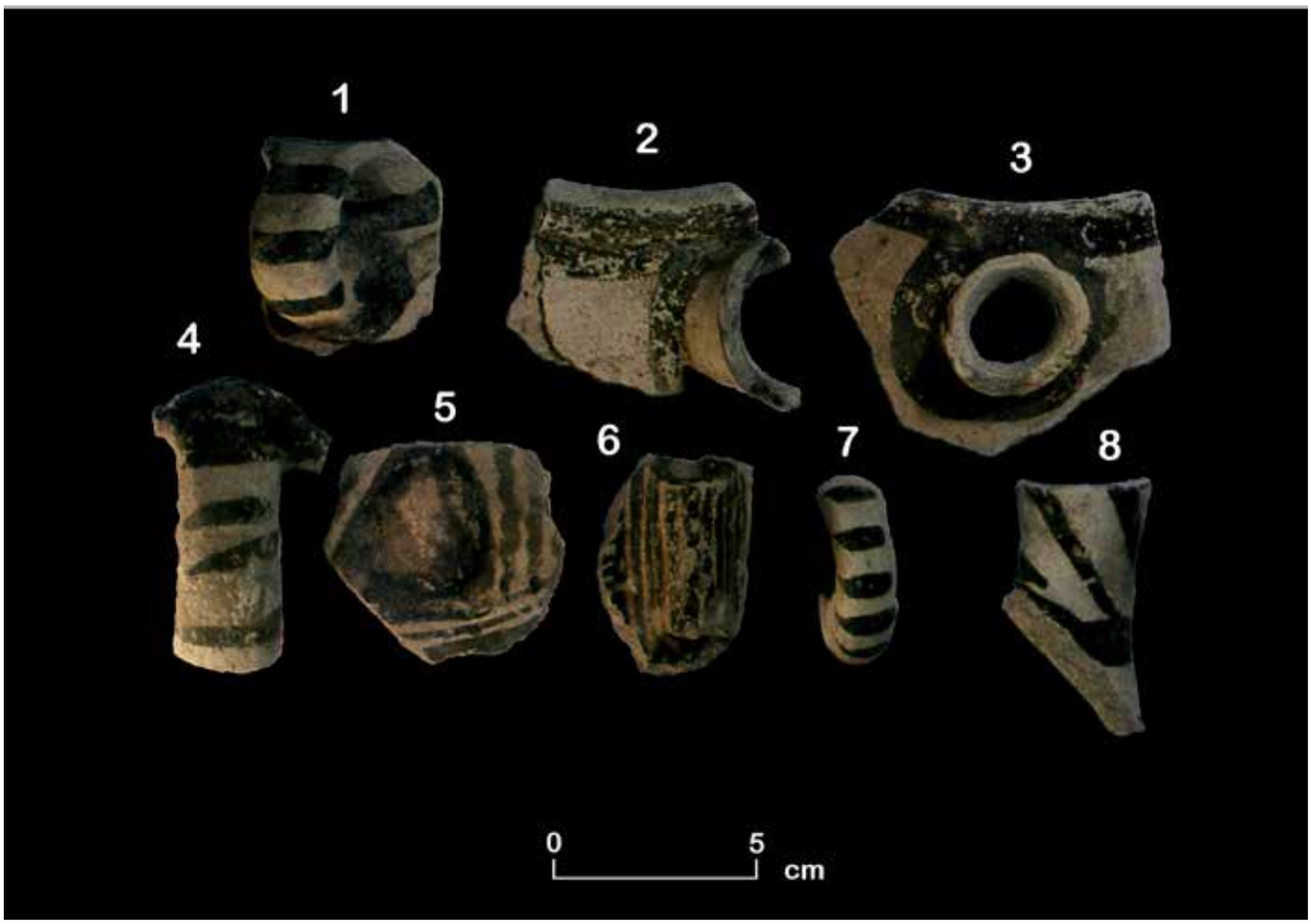


FIGURE 453. Ubaid 3 pottery from level II, Tell Rashid.

FIGURE 454. Ubaid 3 pottery, part of a lugged painted jar (fig. 452: 6) from level II, Tell Rashid.

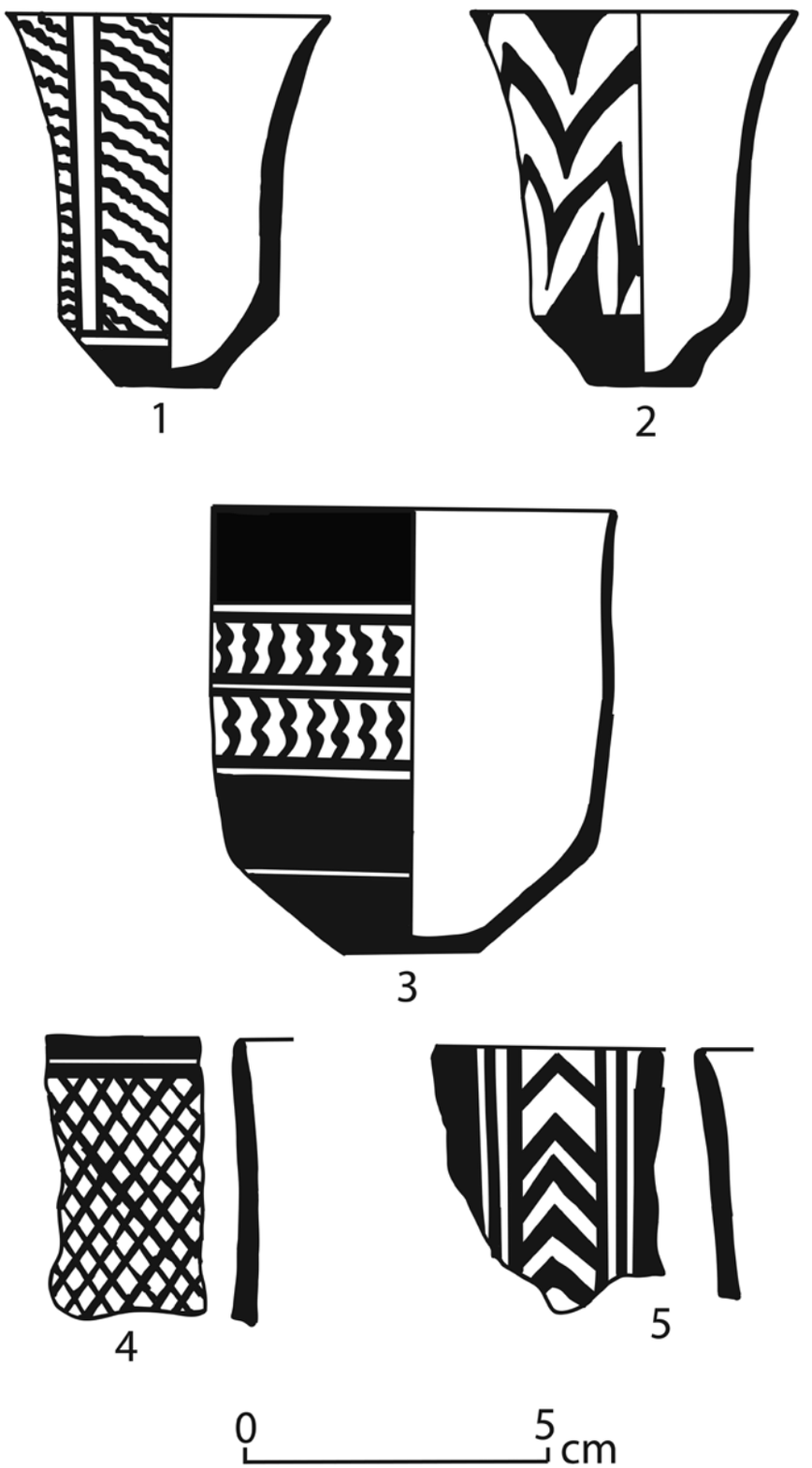


FIGURE 455. Ubaid 3 beakers from levels II–III, Tell Rashid.

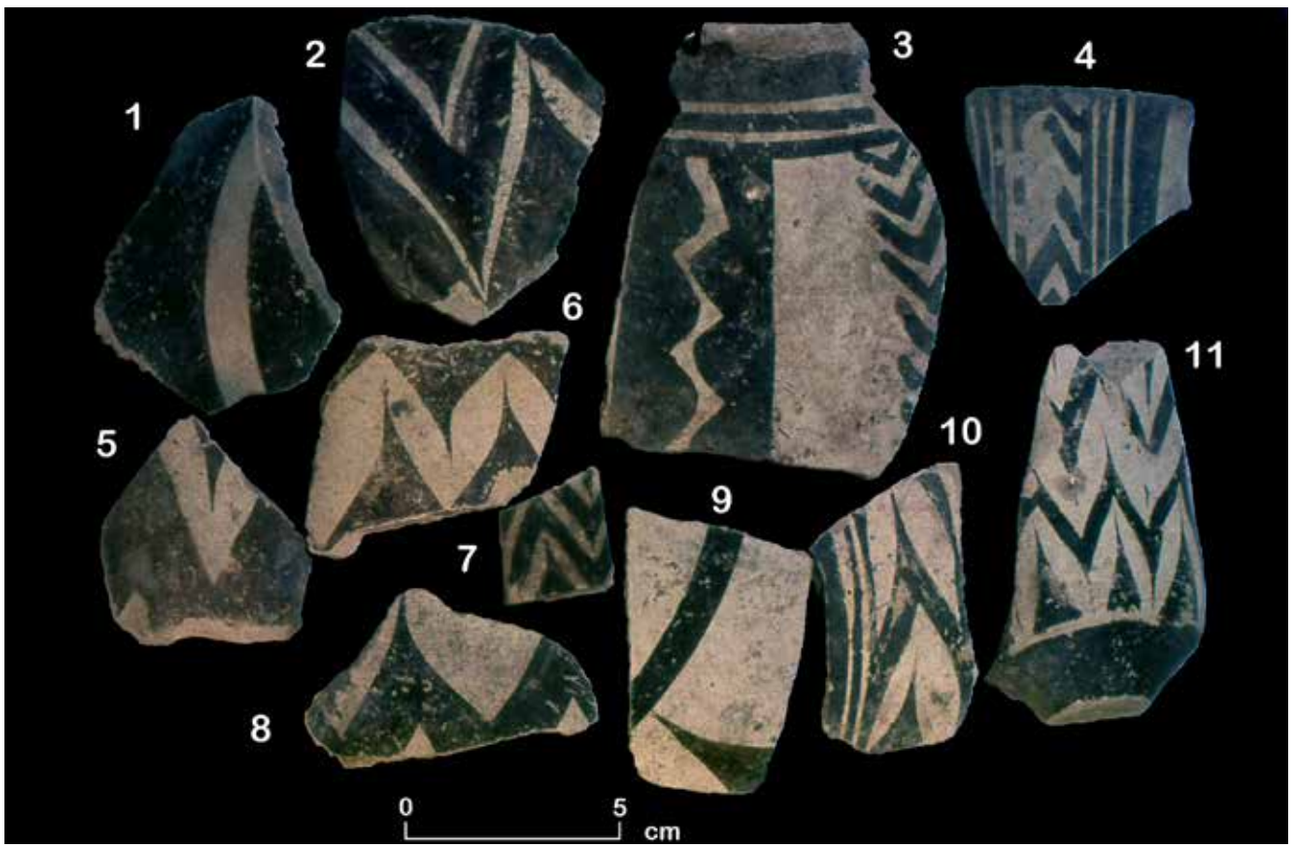


FIGURE 456. Painted Ubaid 3 pottery from levels II–III, Tell Rashid.

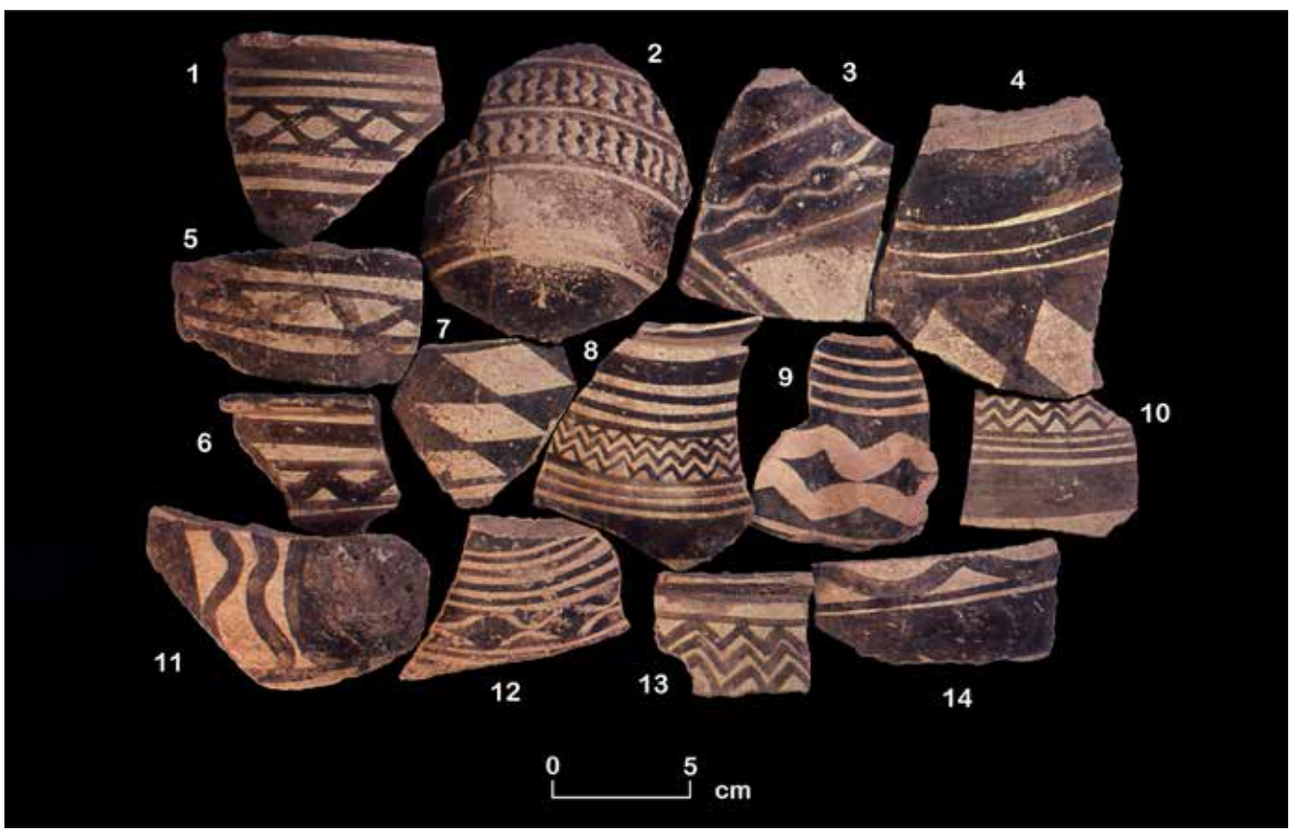


FIGURE 457. Ubaid 3 pottery from levels II–III, Tell Rashid.

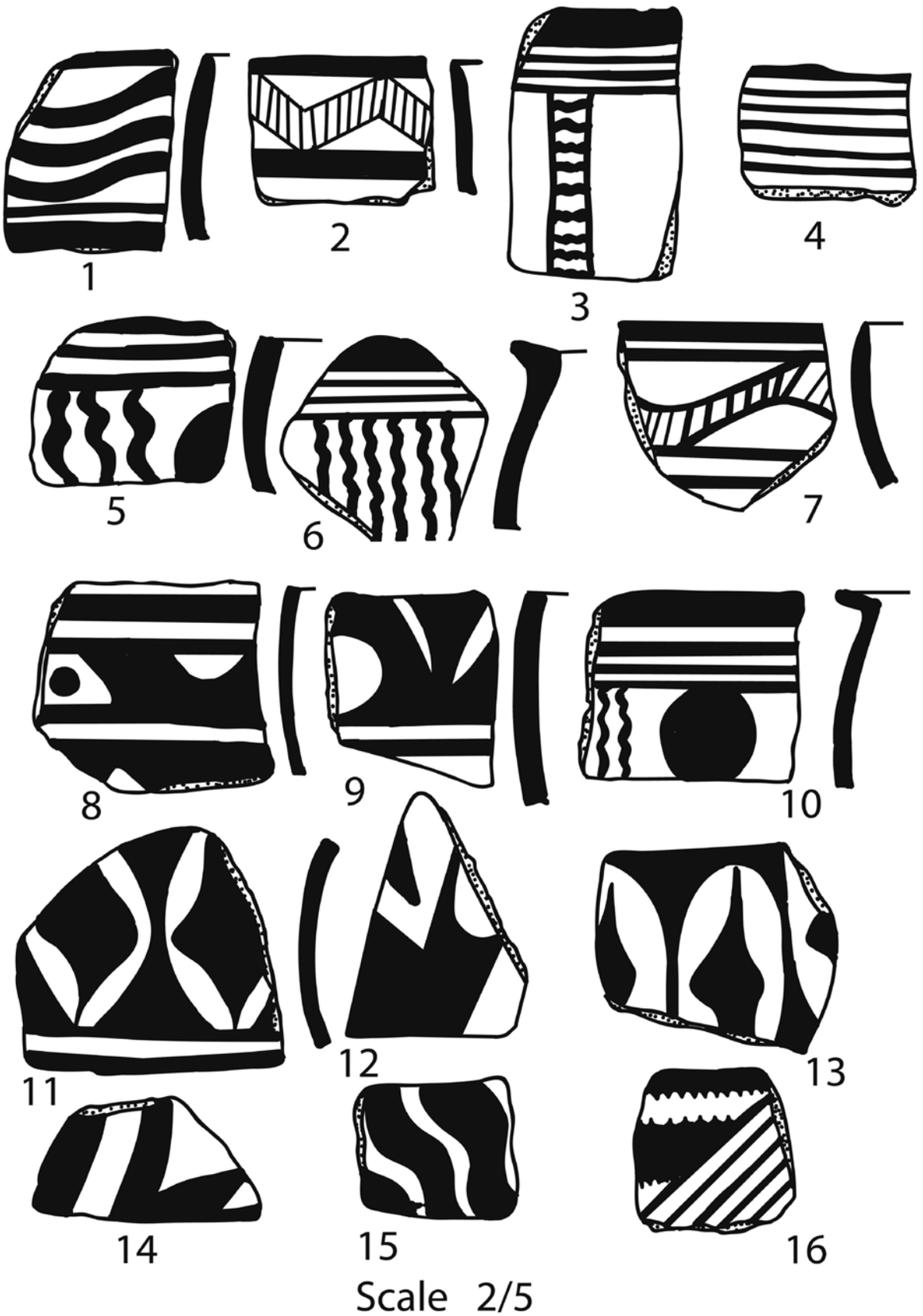


FIGURE 458. Painted Ubaid 3 pottery sherds from levels II–IV, Tell Rashid.

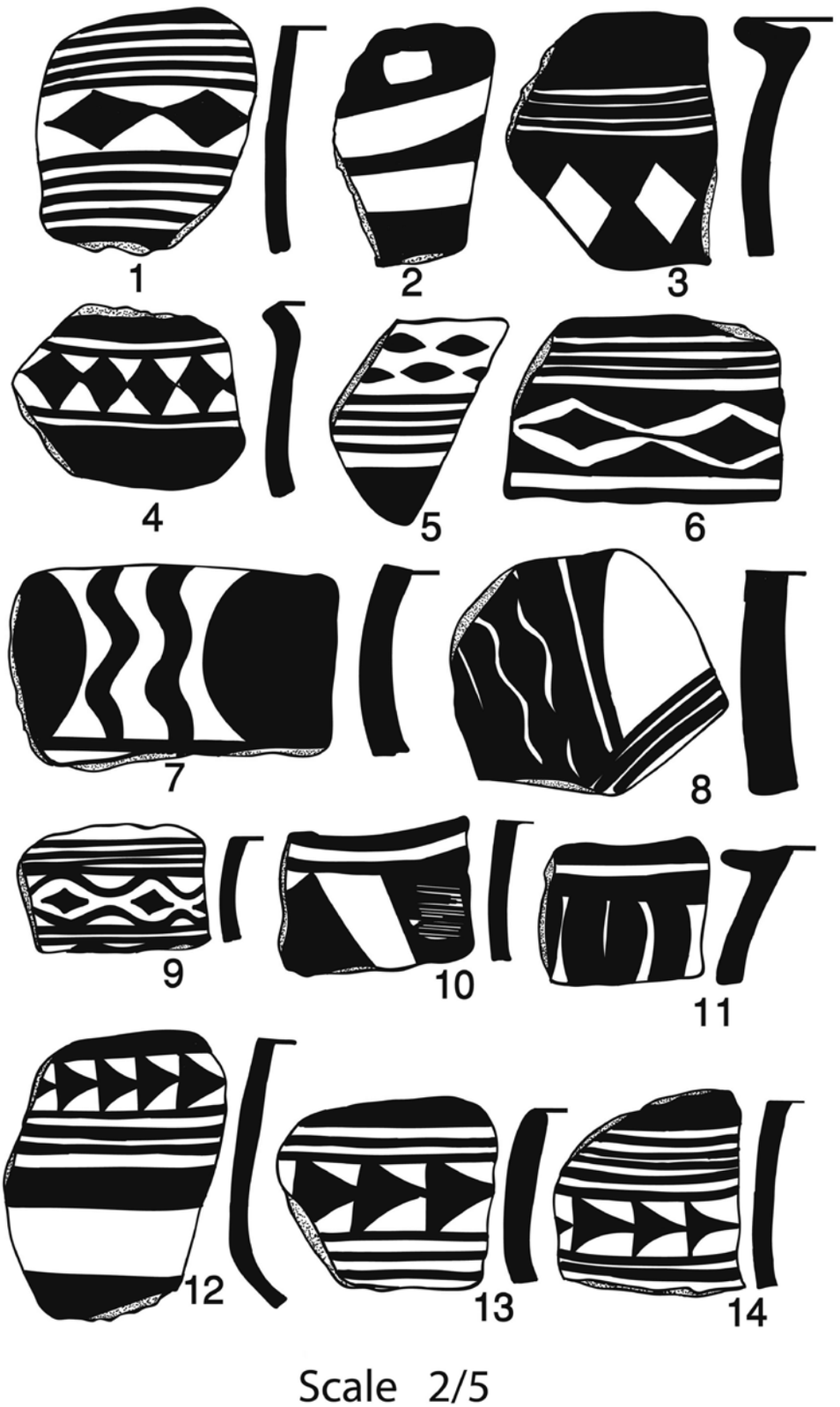


FIGURE 459. Painted Ubaid 3 pottery sherds from levels II–IV, Tell Rashid.

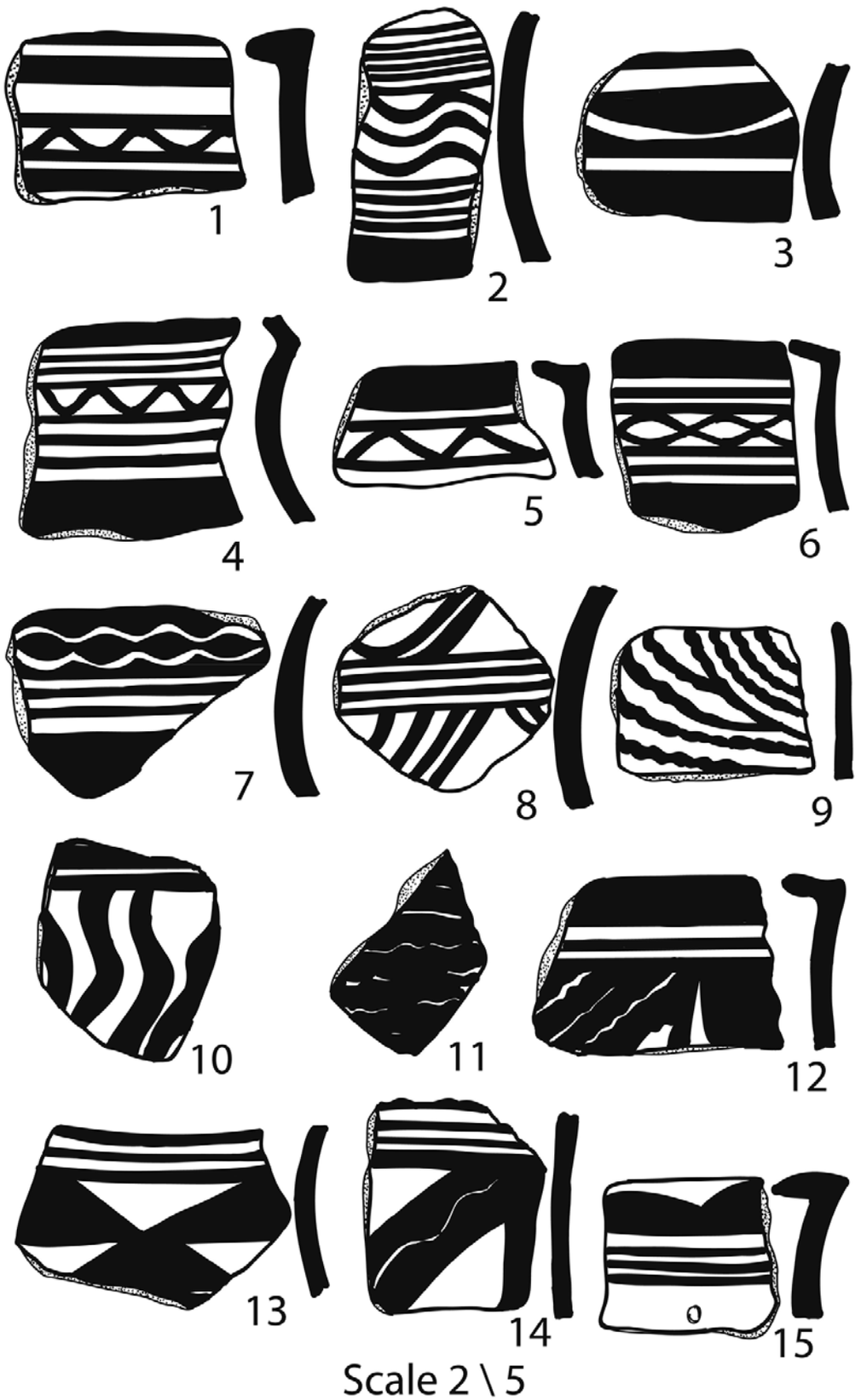


FIGURE 460. Painted Ubaid 3 pottery sherds from levels II–IV, Tell Rashid.

FIGURE 461. Painted Ubaid 3 pottery sherds from levels II–IV, Tell Rashid.

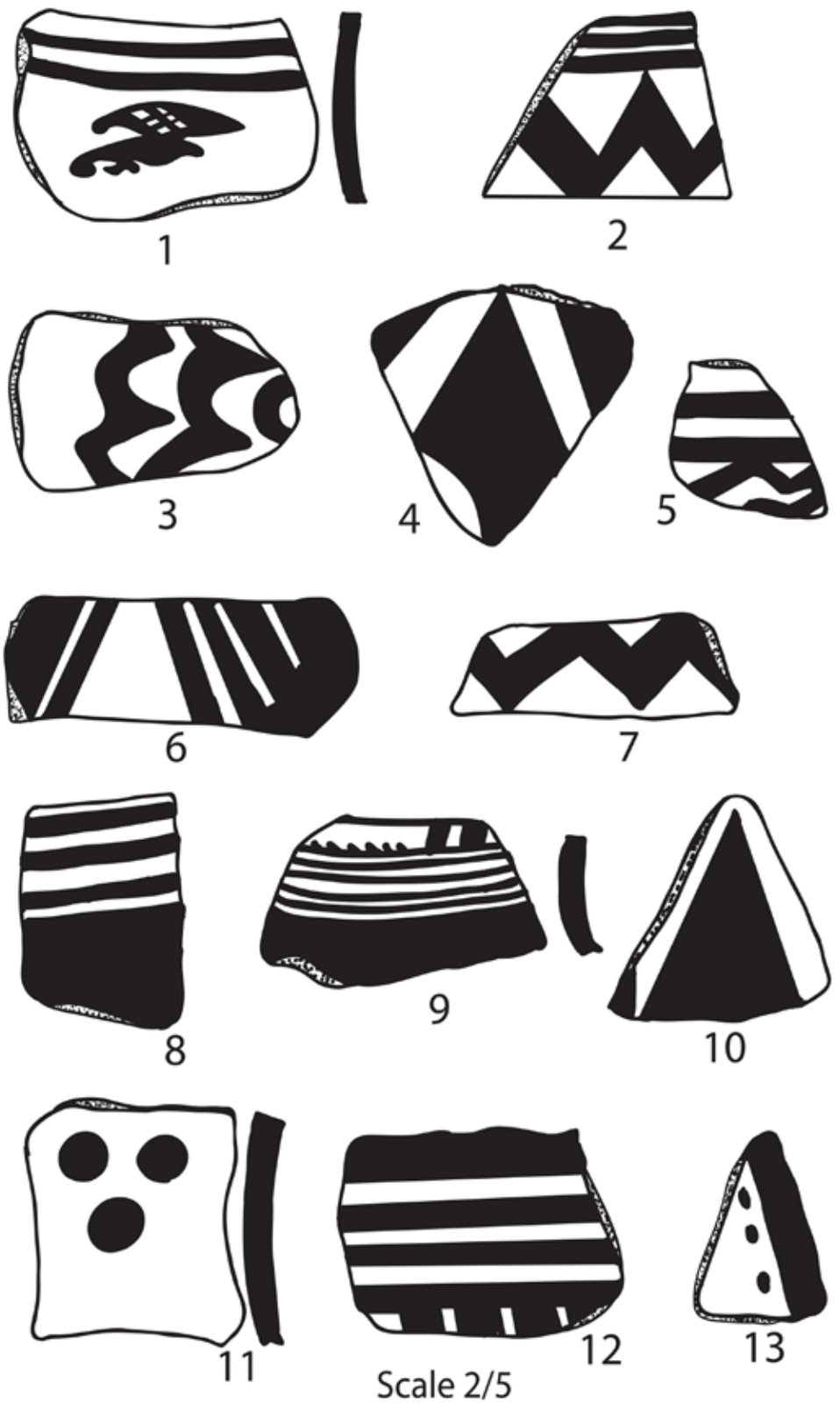


FIGURE 462. Painted pottery Ubaid 3 sherds from levels II–IV, Tell Rashid.

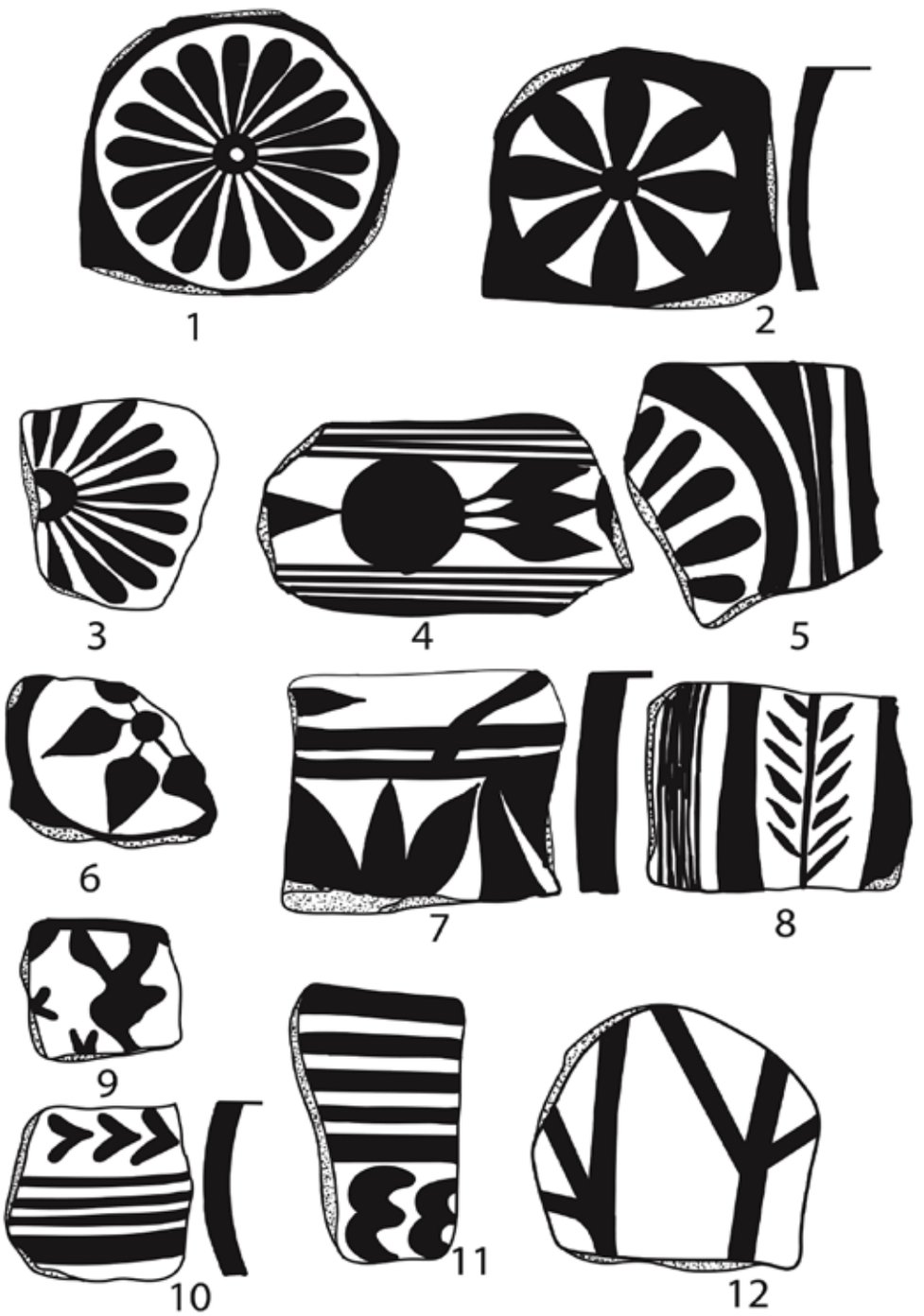


FIGURE 463. Painted Ubaid 3 pottery sherds from levels II–IV, Tell Rashid.

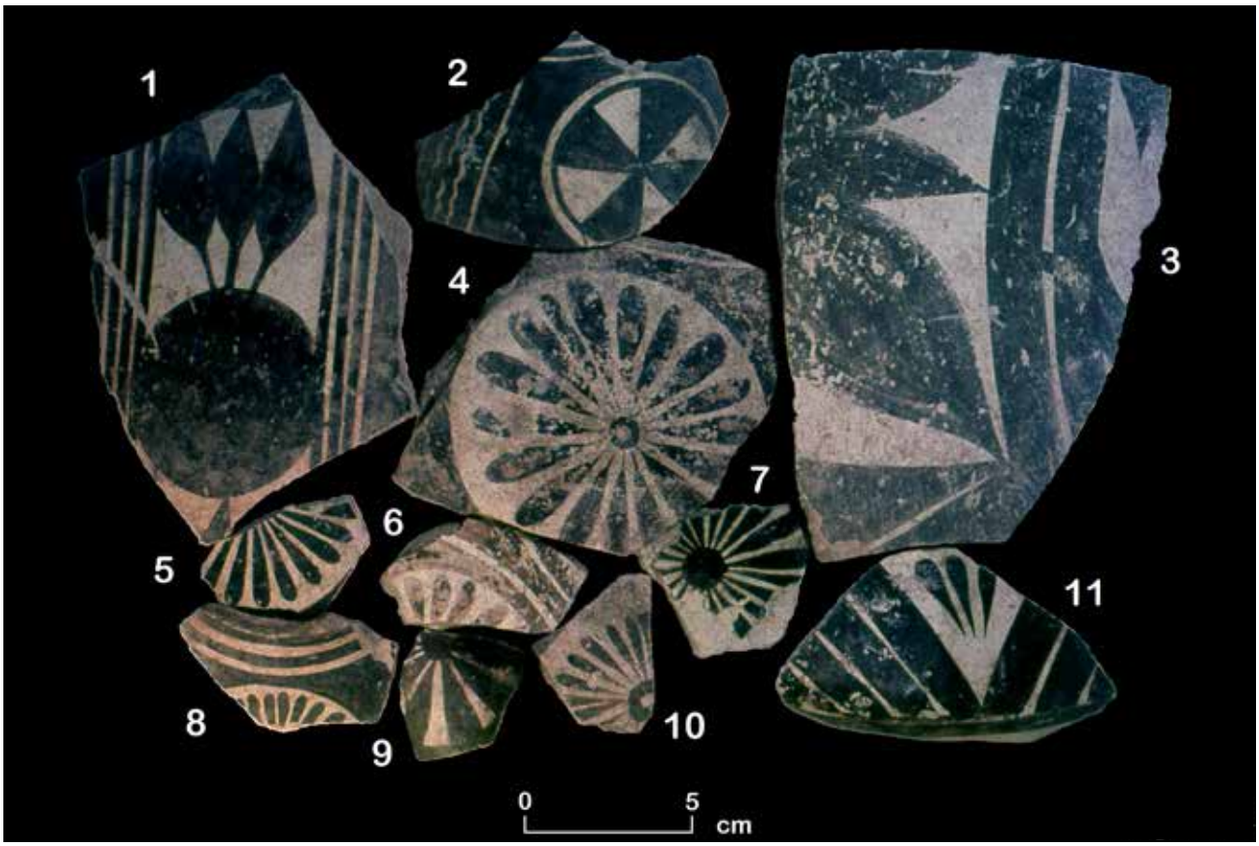


FIGURE 464. Painted Ubaid 3 pottery sherds from levels II–IV, Tell Rashid.

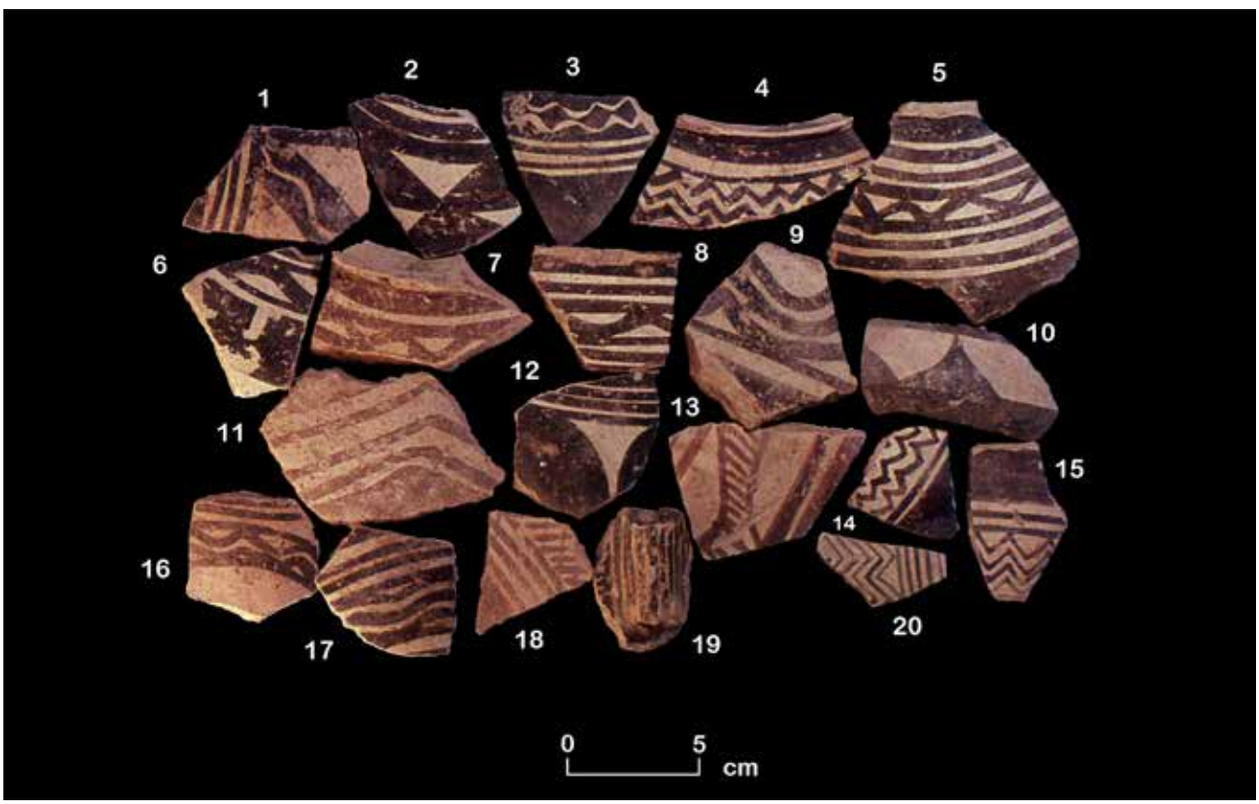


FIGURE 465. Painted pottery sherds from levels II–IV, Tell Rashid.

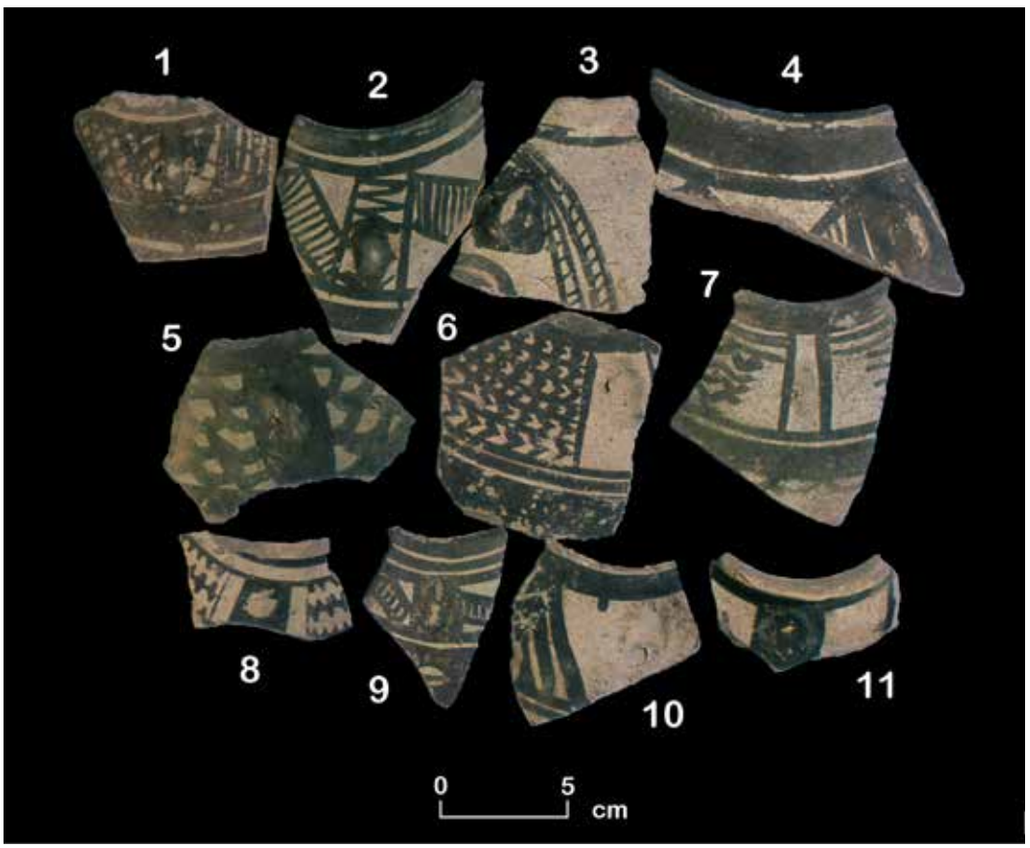


FIGURE 466. Painted pottery sherds from levels II–IV, Tell Rashid.

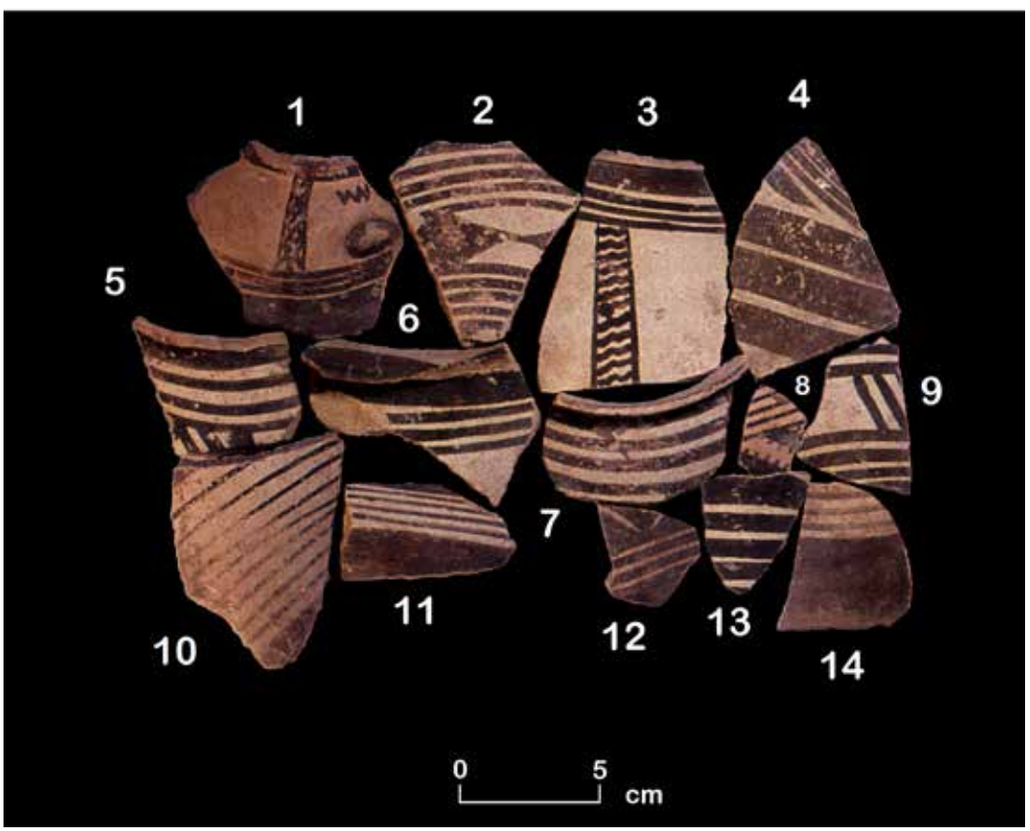


FIGURE 467. Painted pottery sherds from levels II–IV, Tell Rashid.

FIGURE 468. Painted Ubaid 3 pottery sherds from levels II–IV, Tell Rashid.

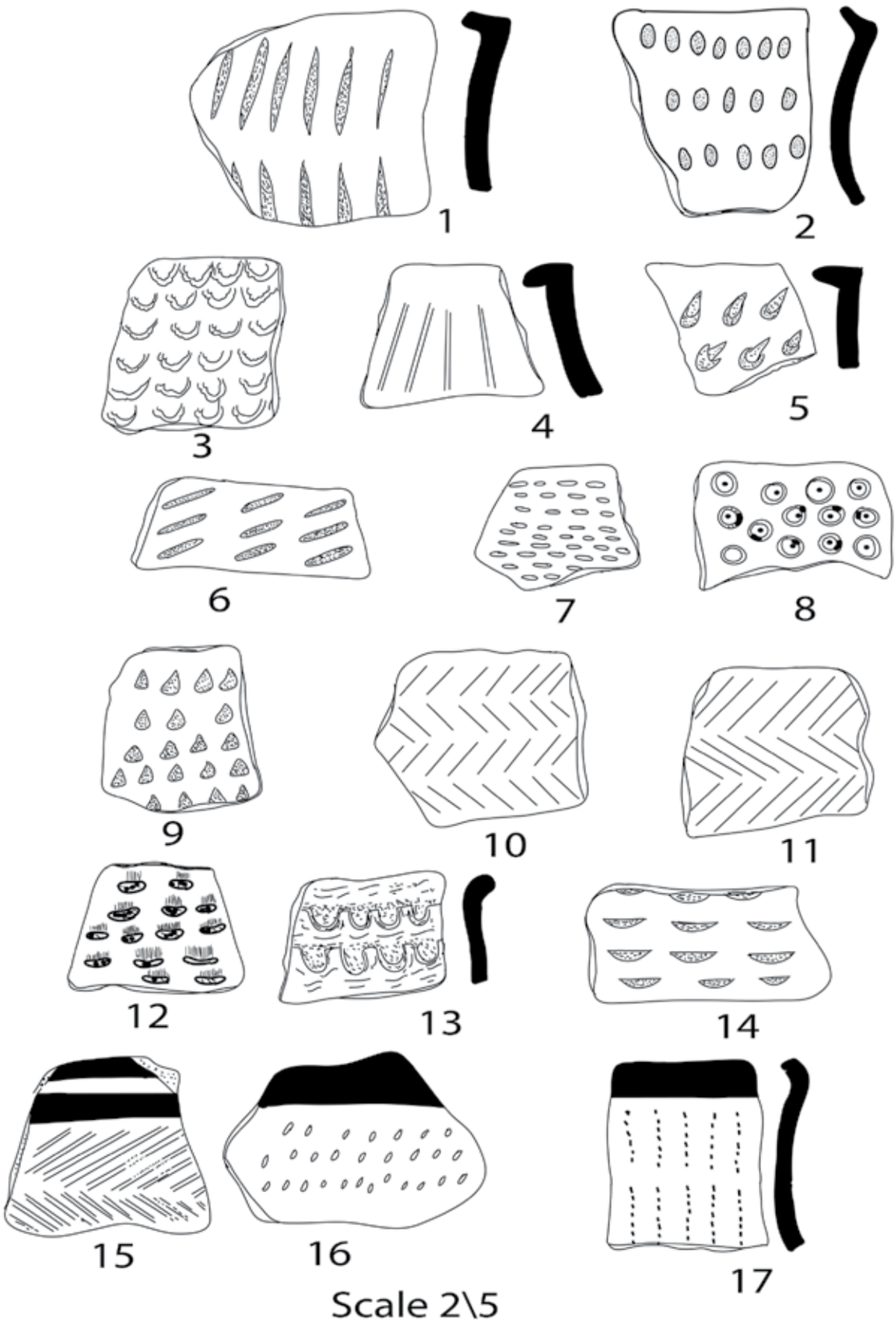


FIGURE 469. Ubaid 3 pottery. Impressed, incised, painted-and-impressed/incised ware from levels II–III, Tell Rashid.

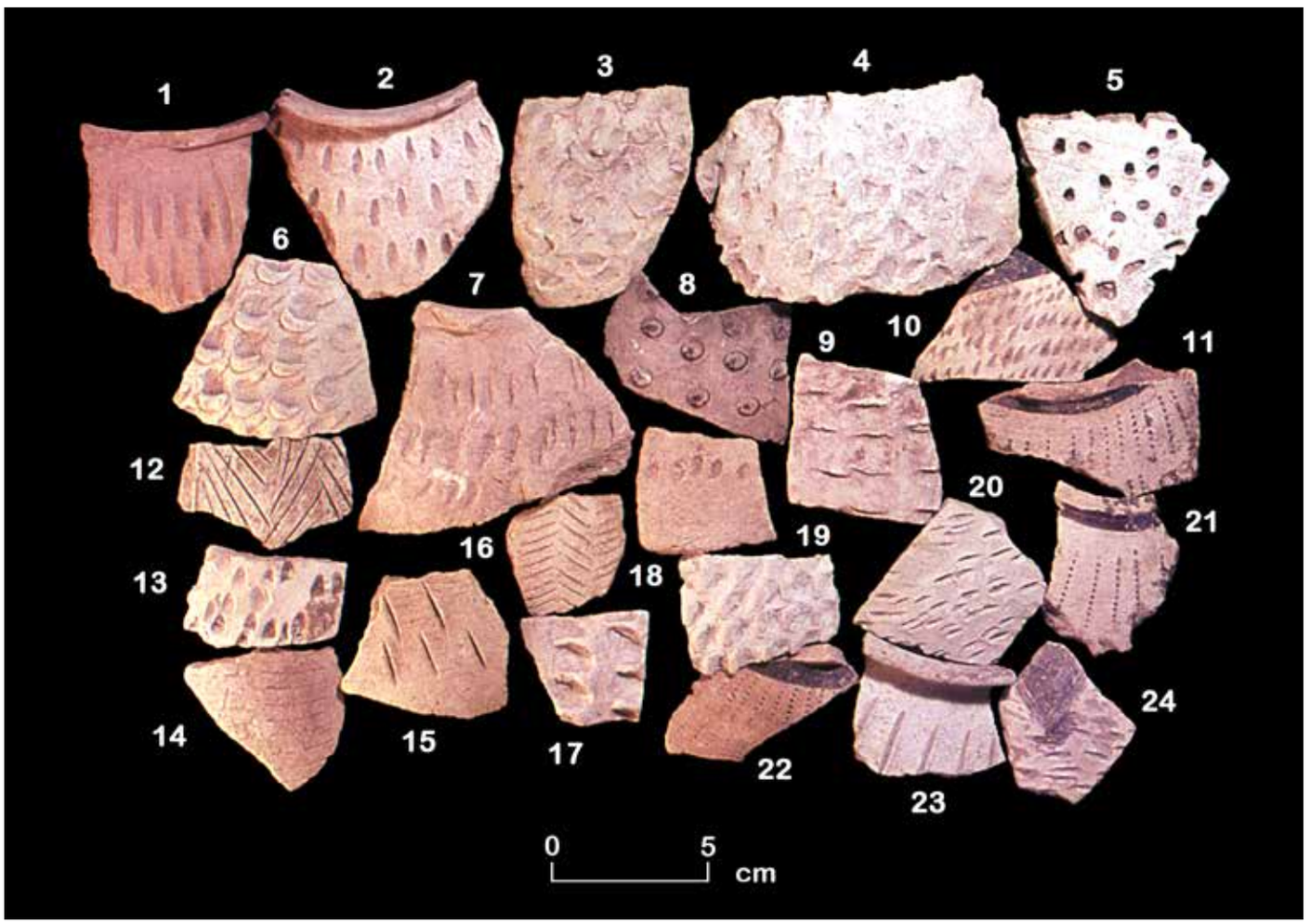


FIGURE 470. Ubaid 3 pottery. Impressed, incised, painted-and-impressed/incised ware from levels II–III, Tell Rashid.

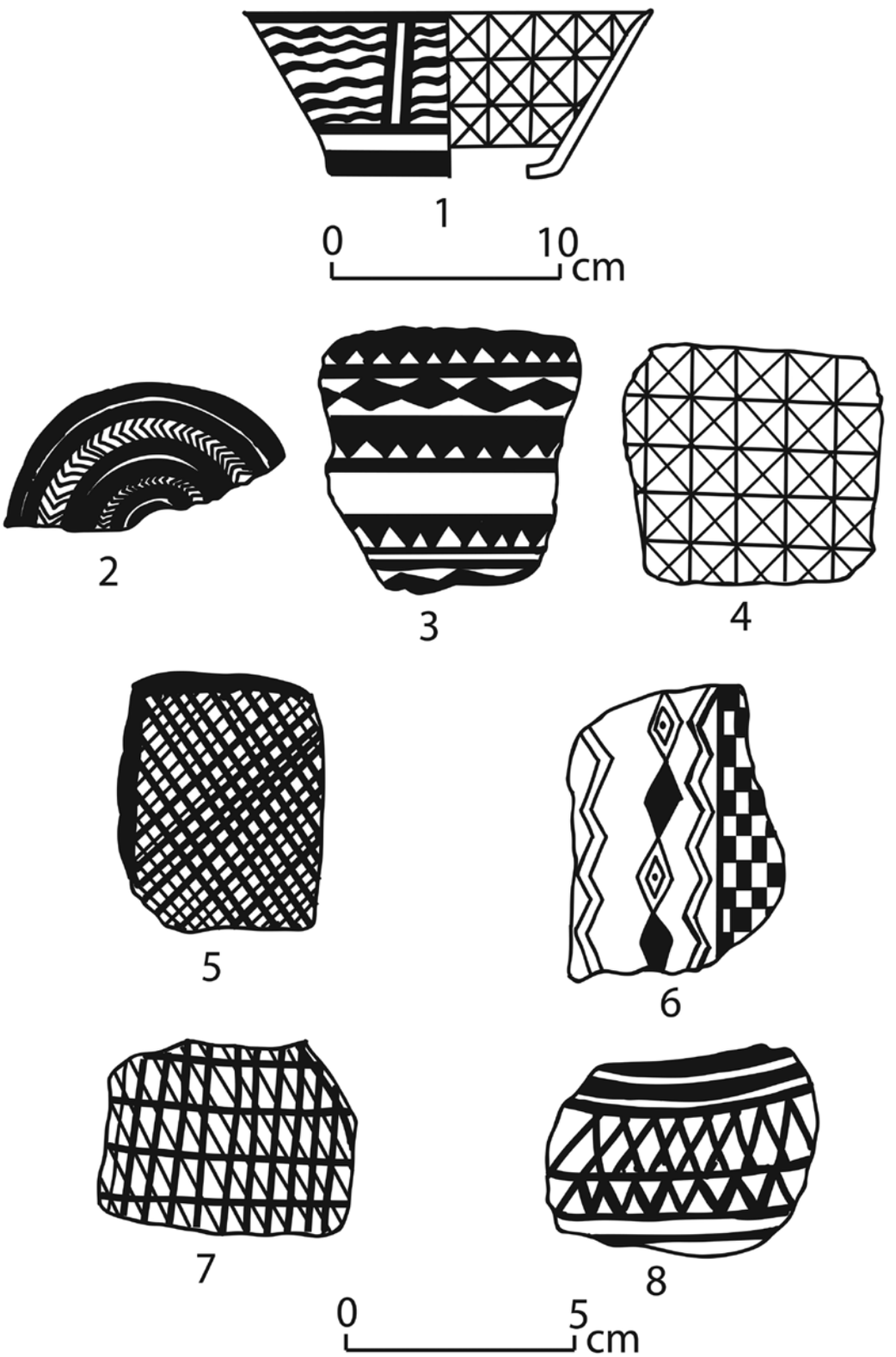


FIGURE 471. Selected Halaf sherds from level III, Tell Rashid.

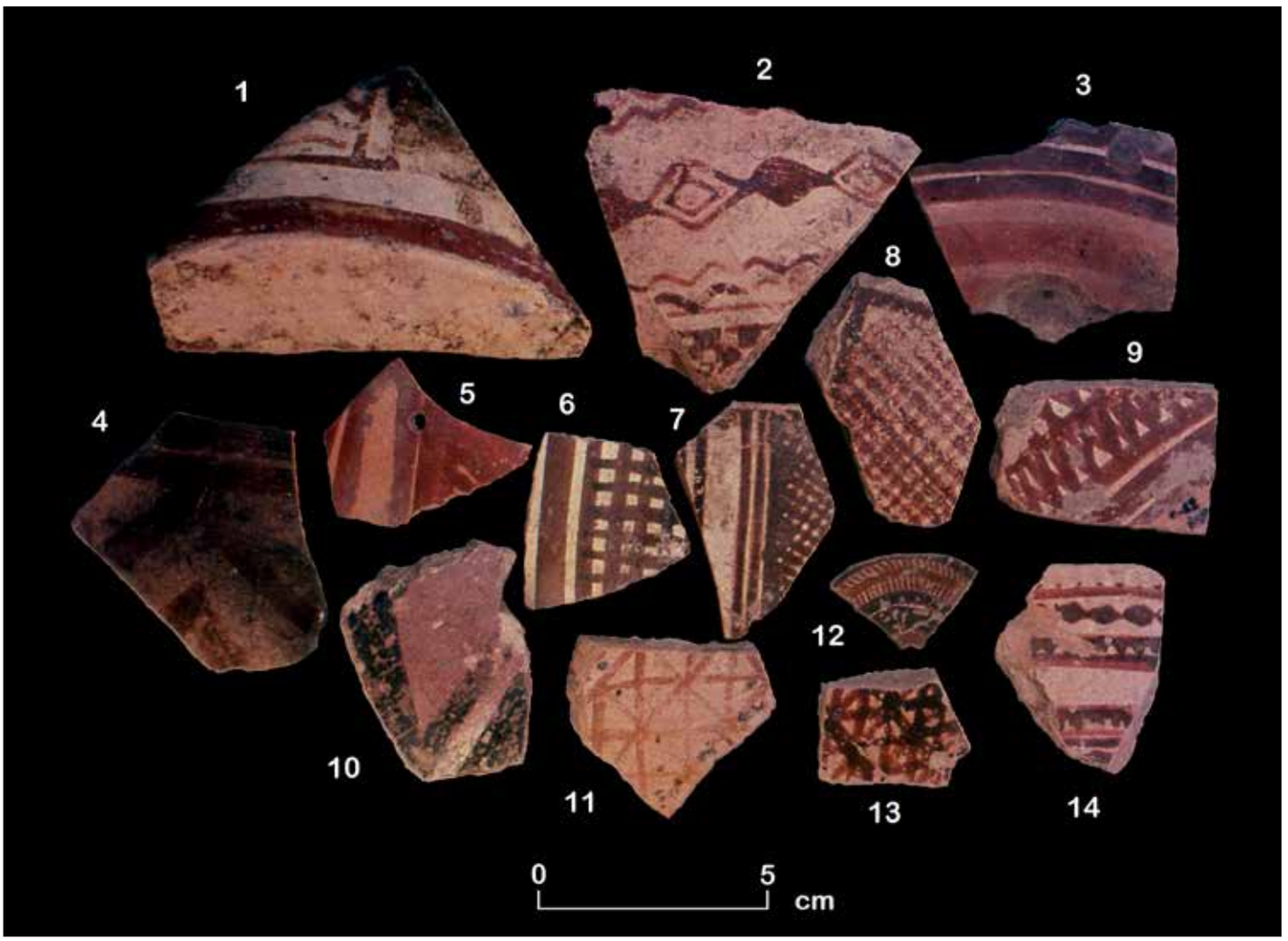


FIGURE 472. Selected Halaf sherds from level III, Tell Rashid.

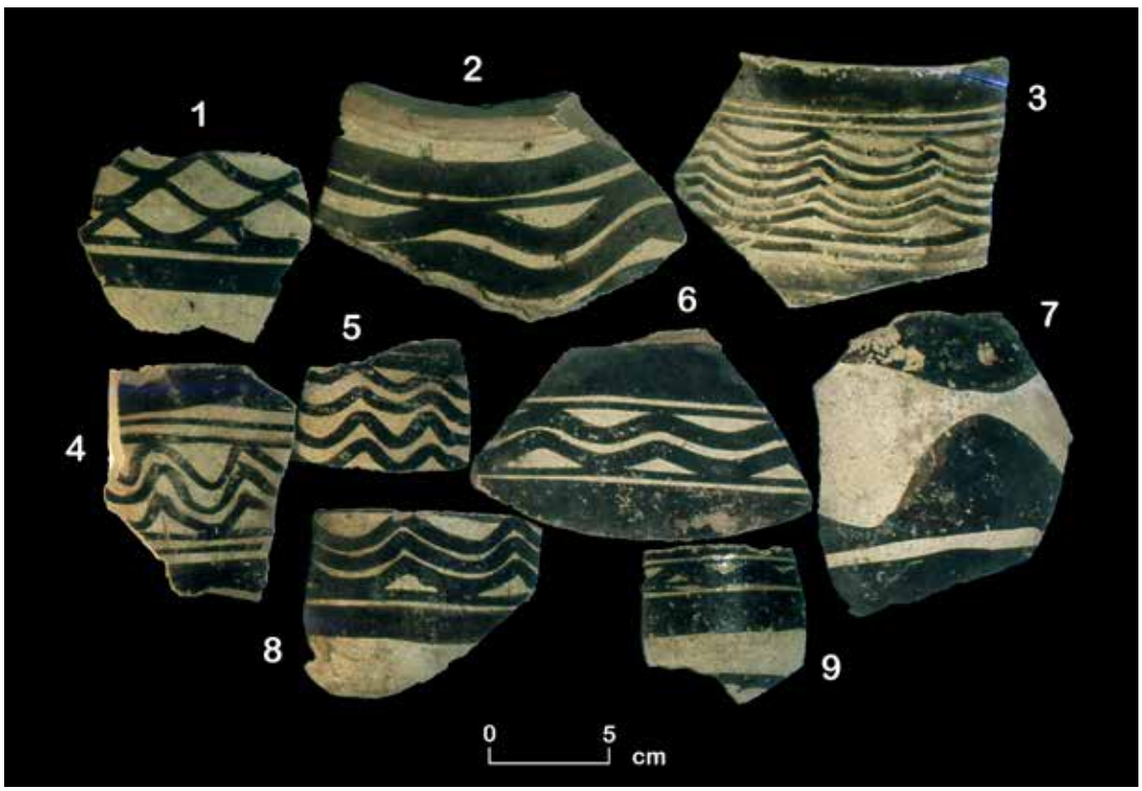


FIGURE 473. Selected Ubaid sherds from TR East

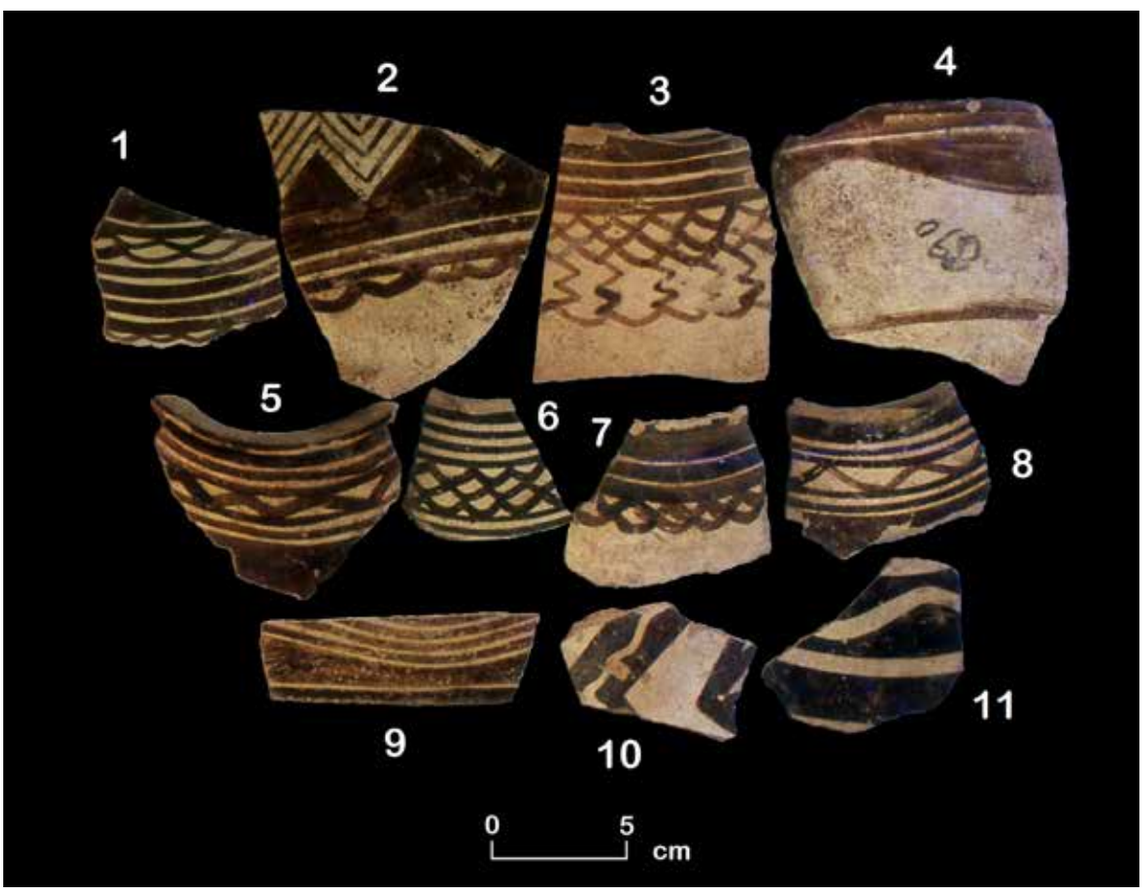


FIGURE 474. Selected Ubaid sherds from TR East.

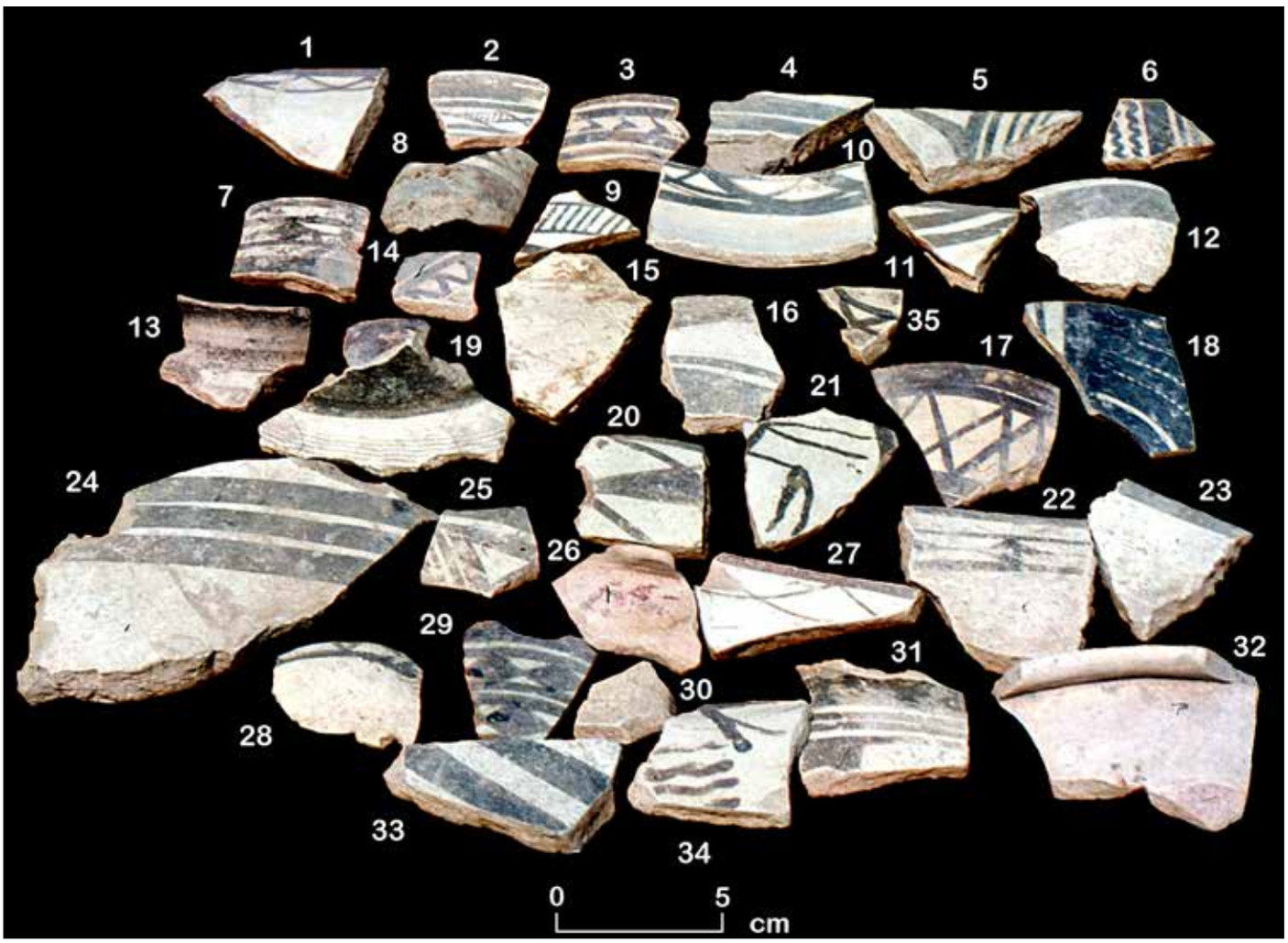


FIGURE 475. Selected Ubaid sherds from Telul al-Khubari.

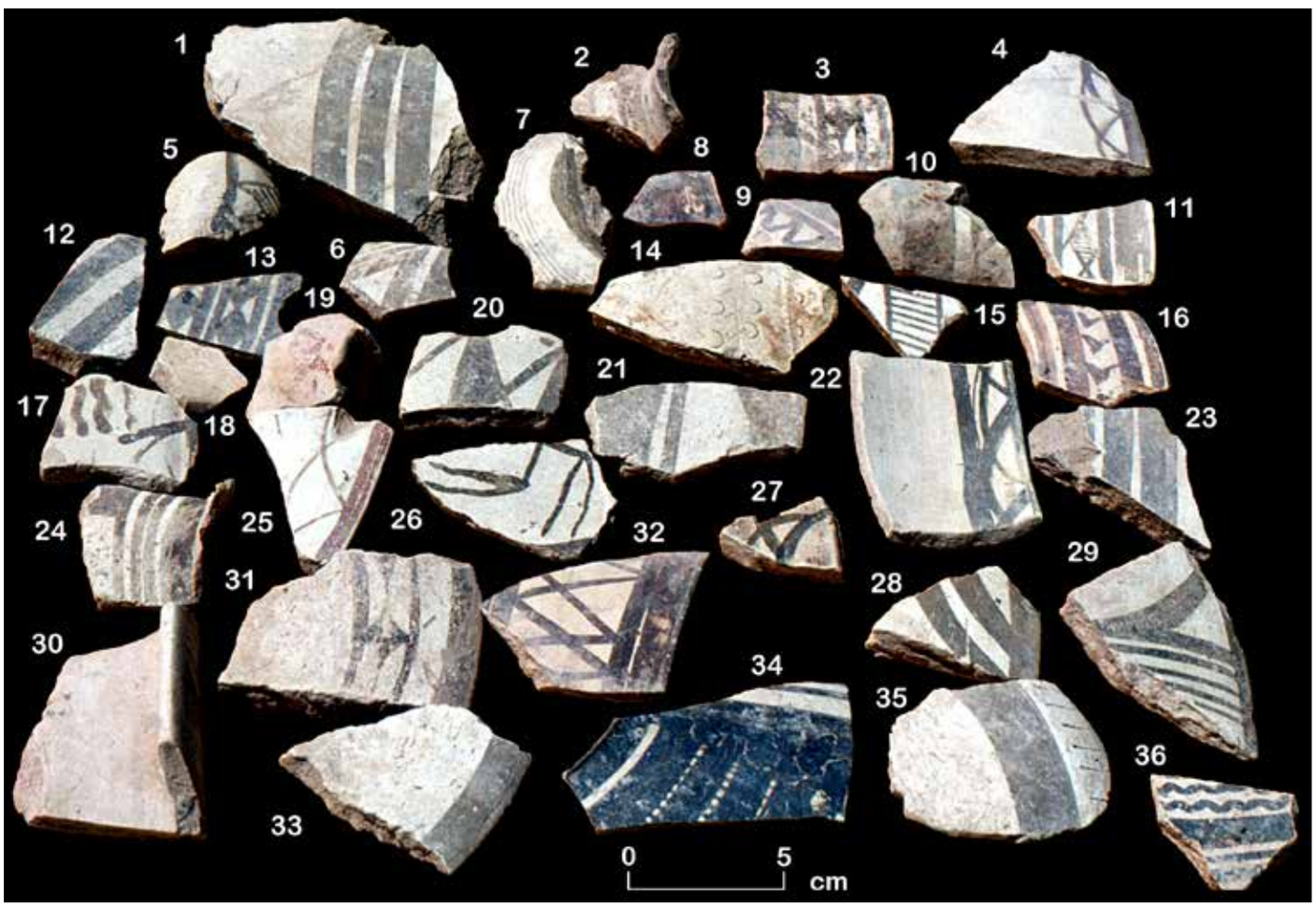


FIGURE 476. Selected Ubaid sherds from Telul al-Khubari.

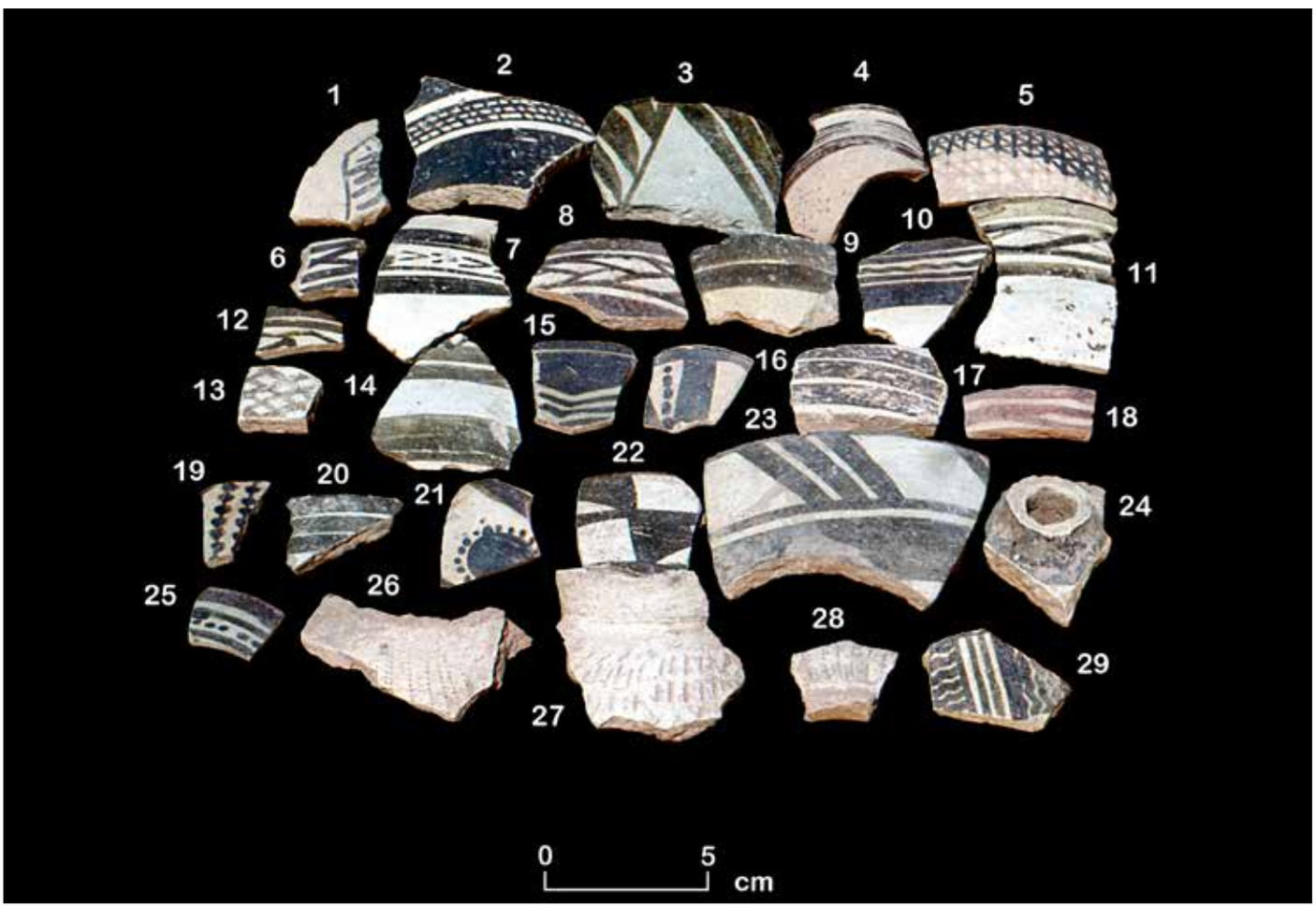


FIGURE 477. Selected Ubaid sherds from Telul al-Khubari.

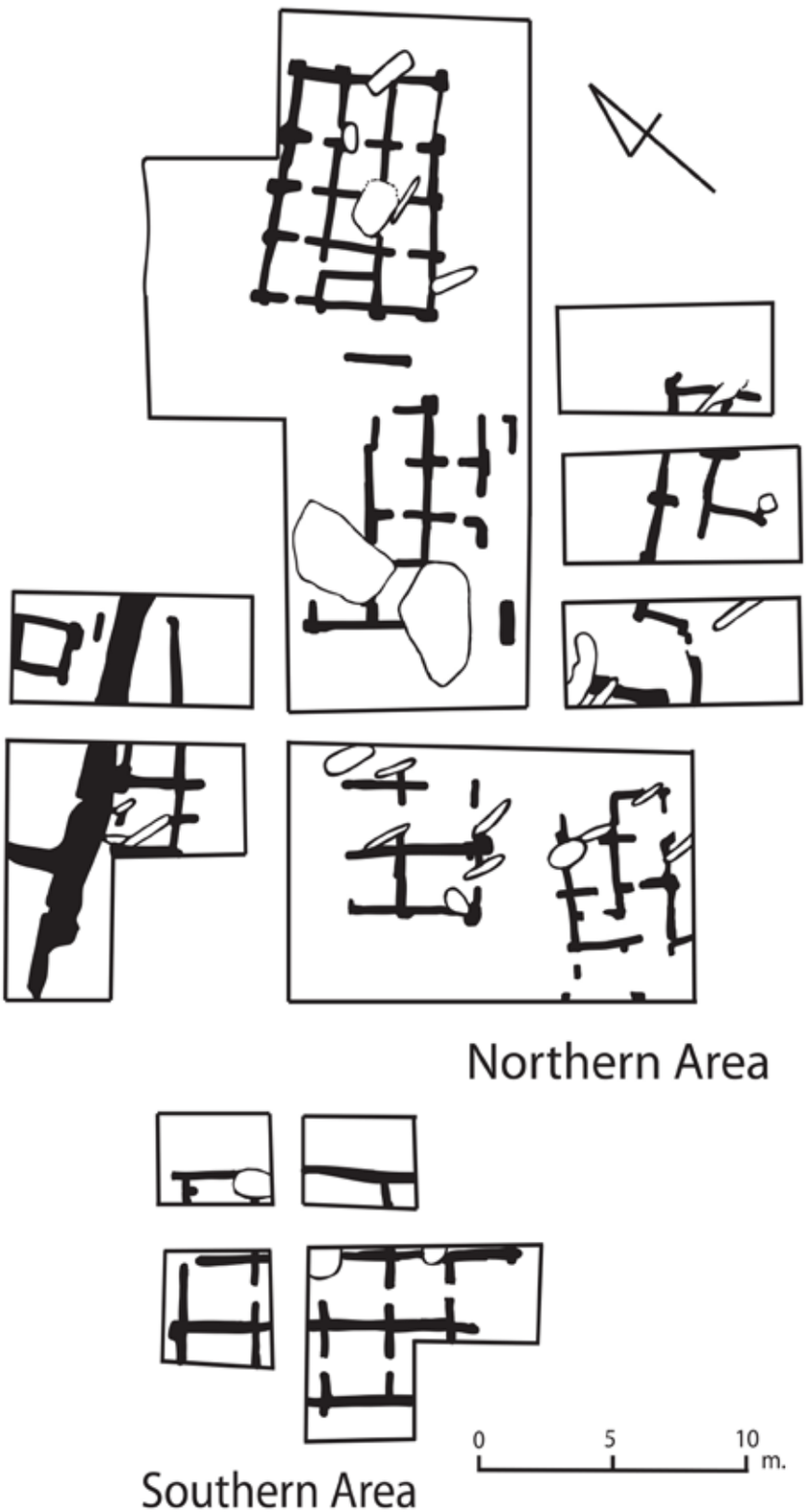


FIGURE 478. Plan of Tell Songor A (lower levels).

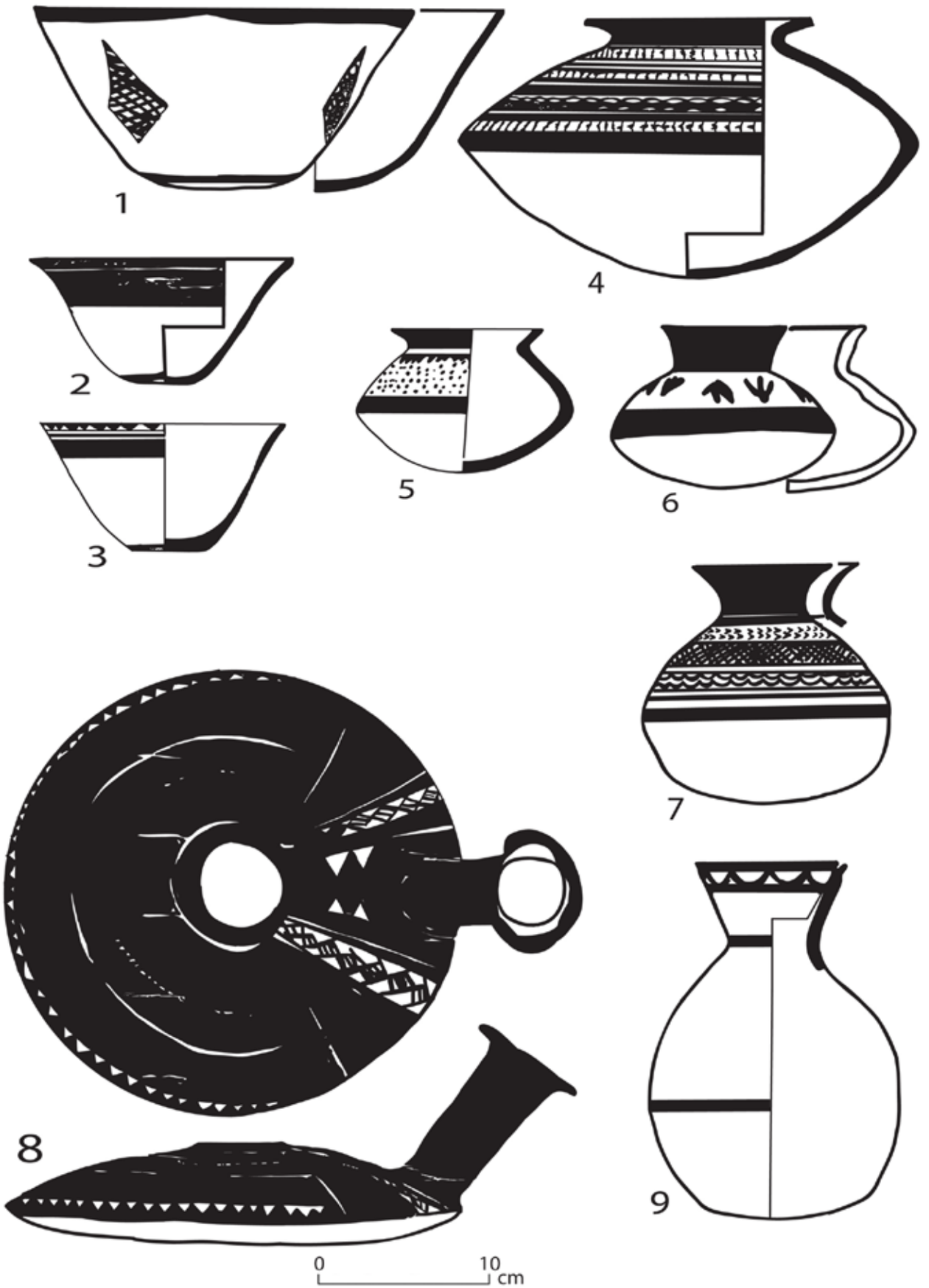


FIGURE 479. Ubaid pottery from Tell Songor A.

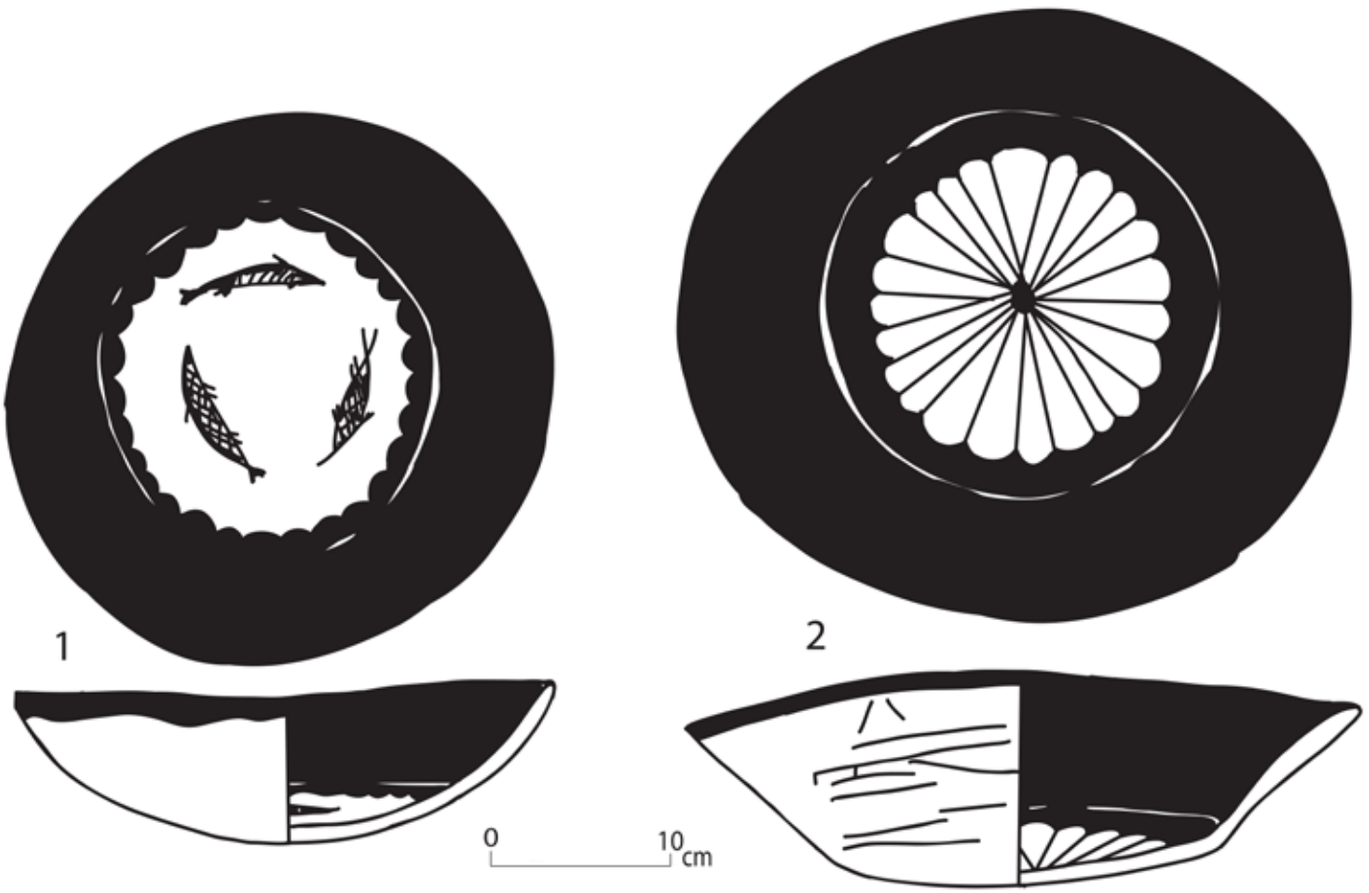


FIGURE 480. Ubaid pottery from Tell Songor A.

FIGURE 481. Ubaid pottery from Tell Songor A.

FIGURE 482. Ubaid pottery from Tell Songor A.

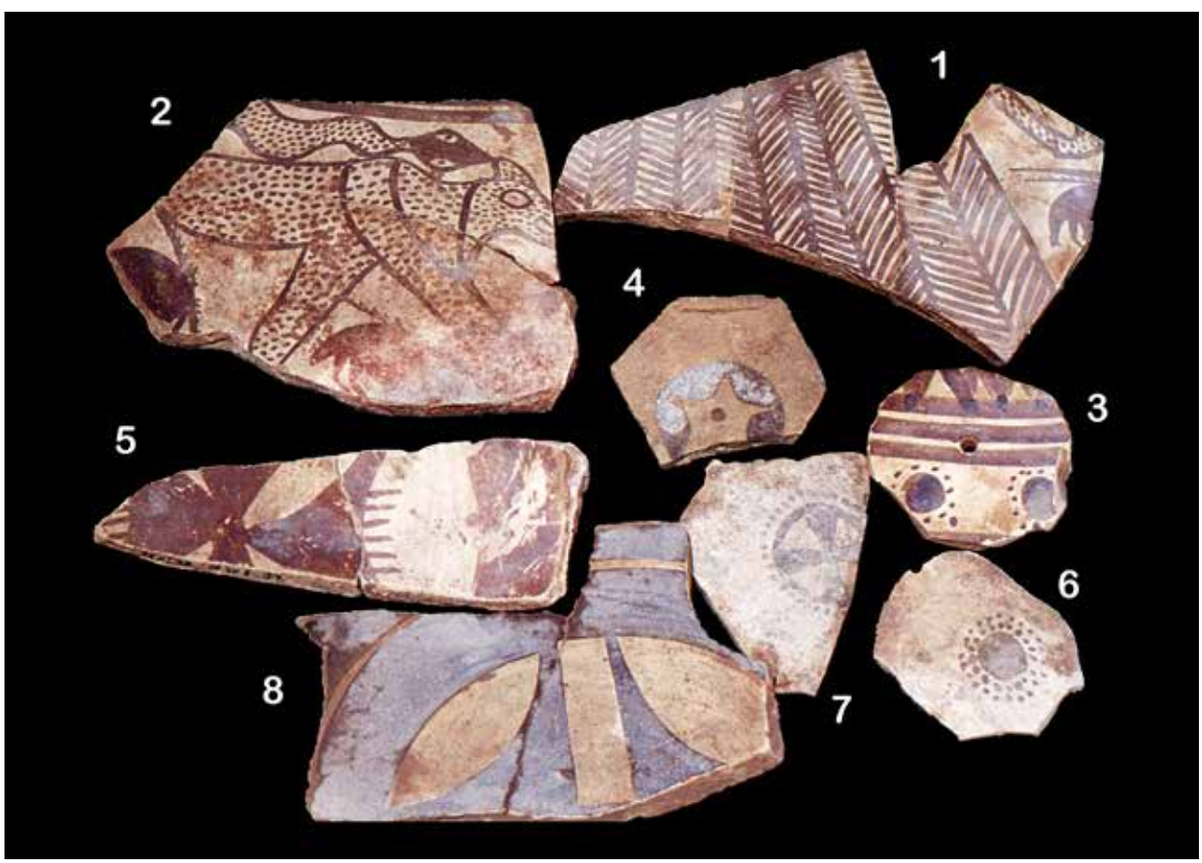


FIGURE 483. Ubaid pottery from Tell Songor A.

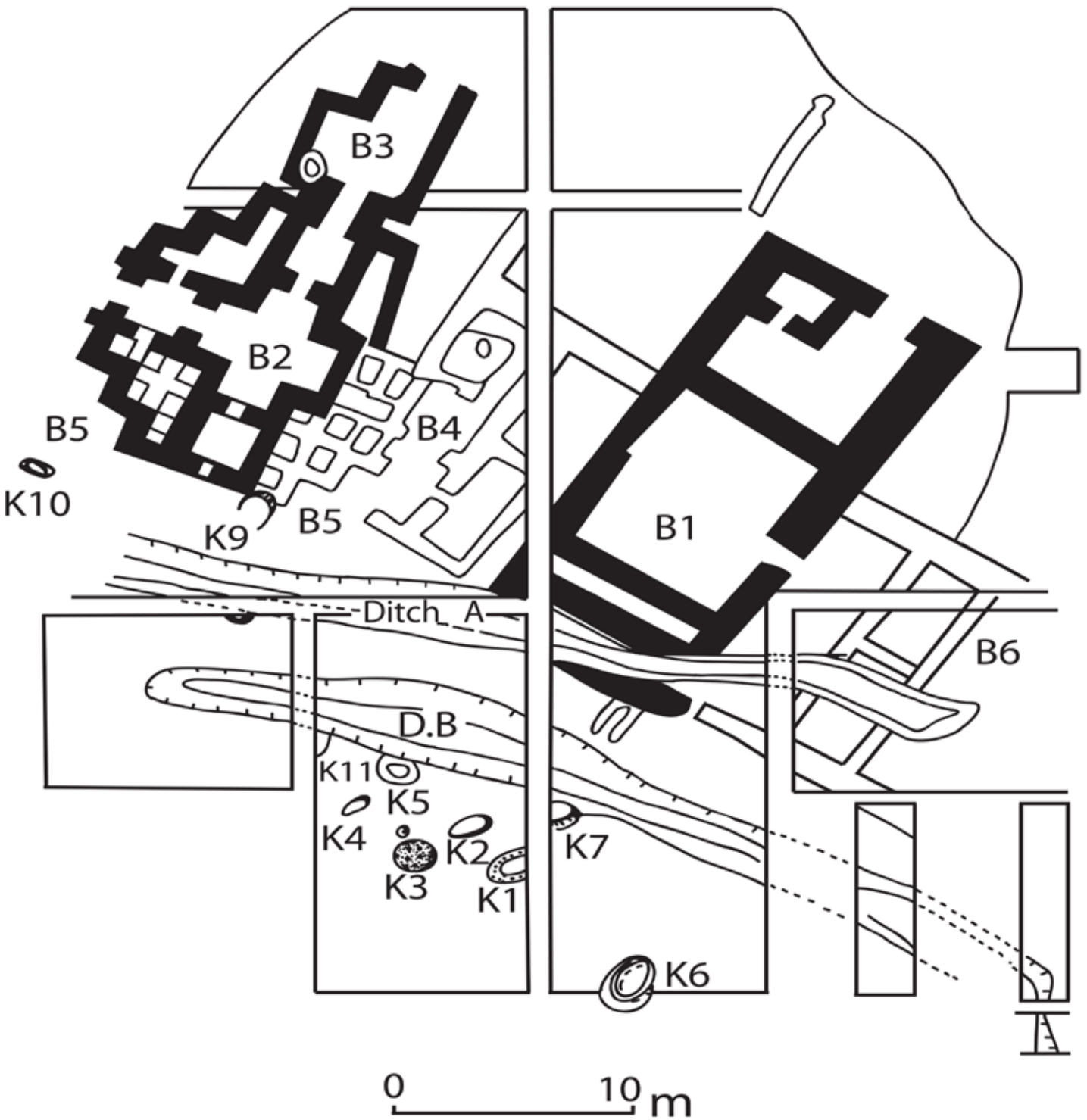


FIGURE 484. Plan of levels I and II, Tell Songor B.

FIGURE 485. Ubaid pottery from Tell Songor B.

FIGURE 486. Ubaid pottery from Tell Songor B.

FIGURE 487. Ubaid pottery from Tell Songor B.

FIGURE 488. Ubaid pottery from Tell Songor B.

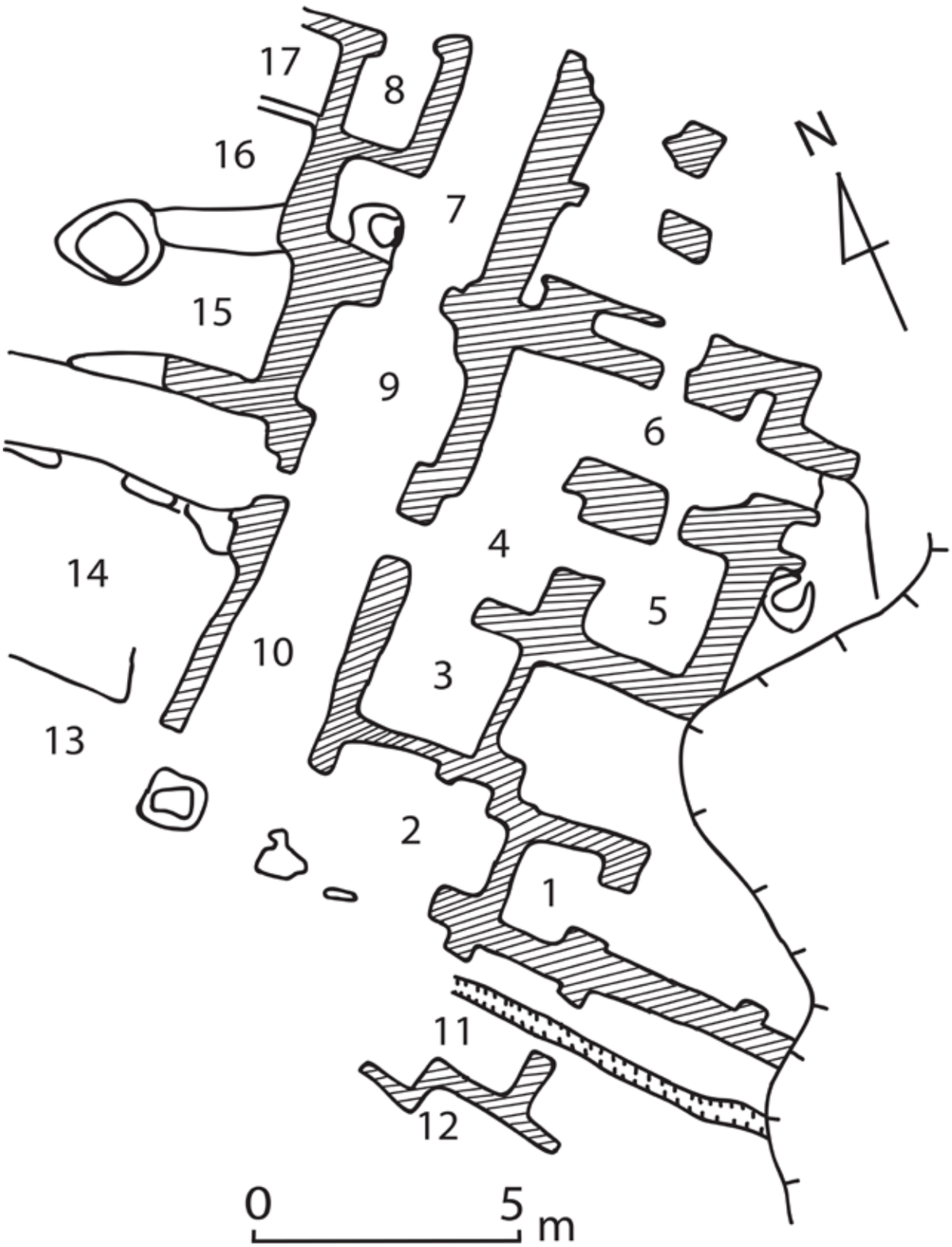


FIGURE 489. Plan of Ubaid building at Tell Songor C.

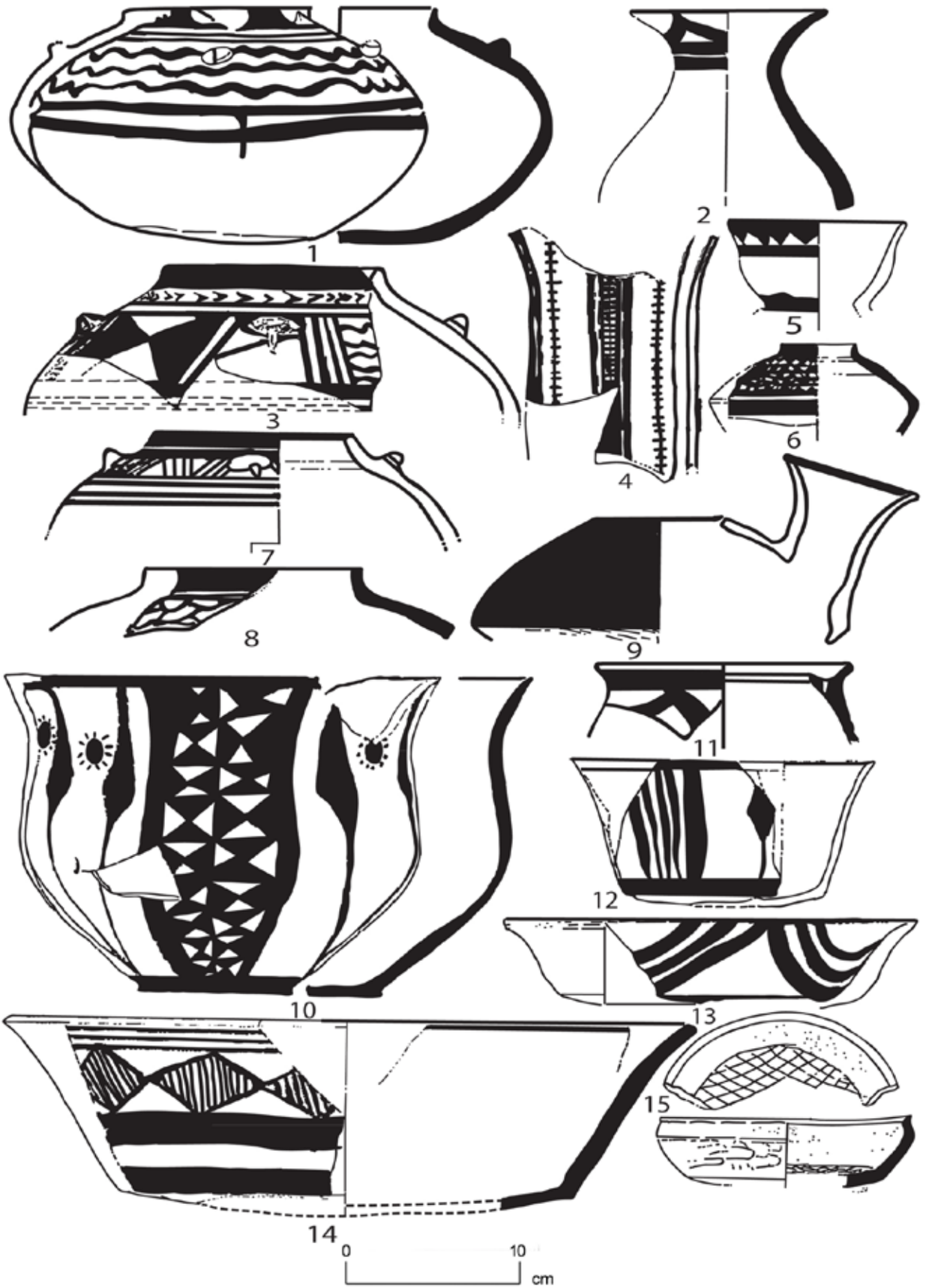


FIGURE 490. Ubaid pottery from Tell Songor C.

FIGURE 491. Ubaid pottery from Tell Songor C.

FIGURE 492. Ubaid pottery from Tell Songor C.

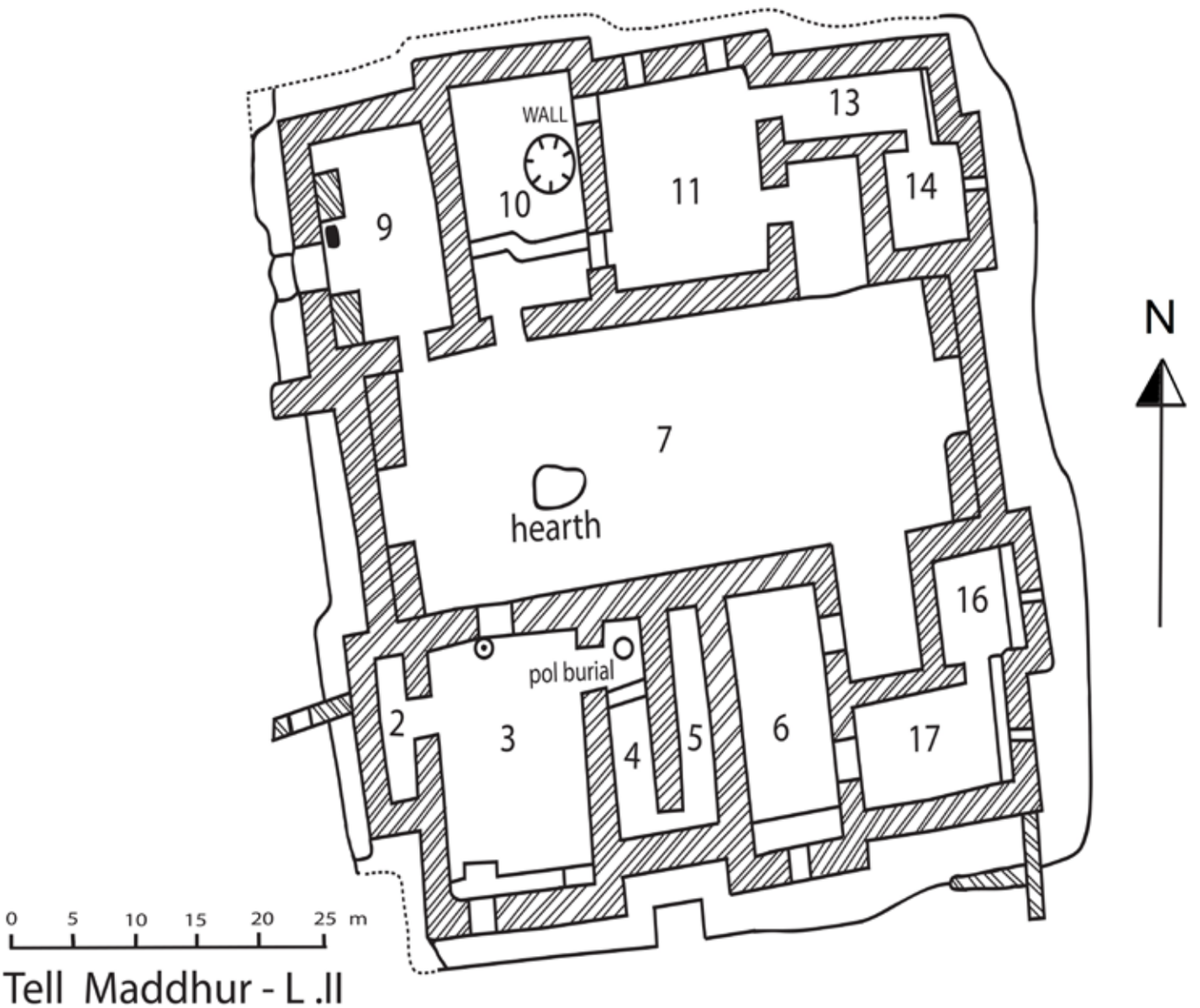


FIGURE 493. Plan of the house in Ubaid level 2, Tell Maddhur.

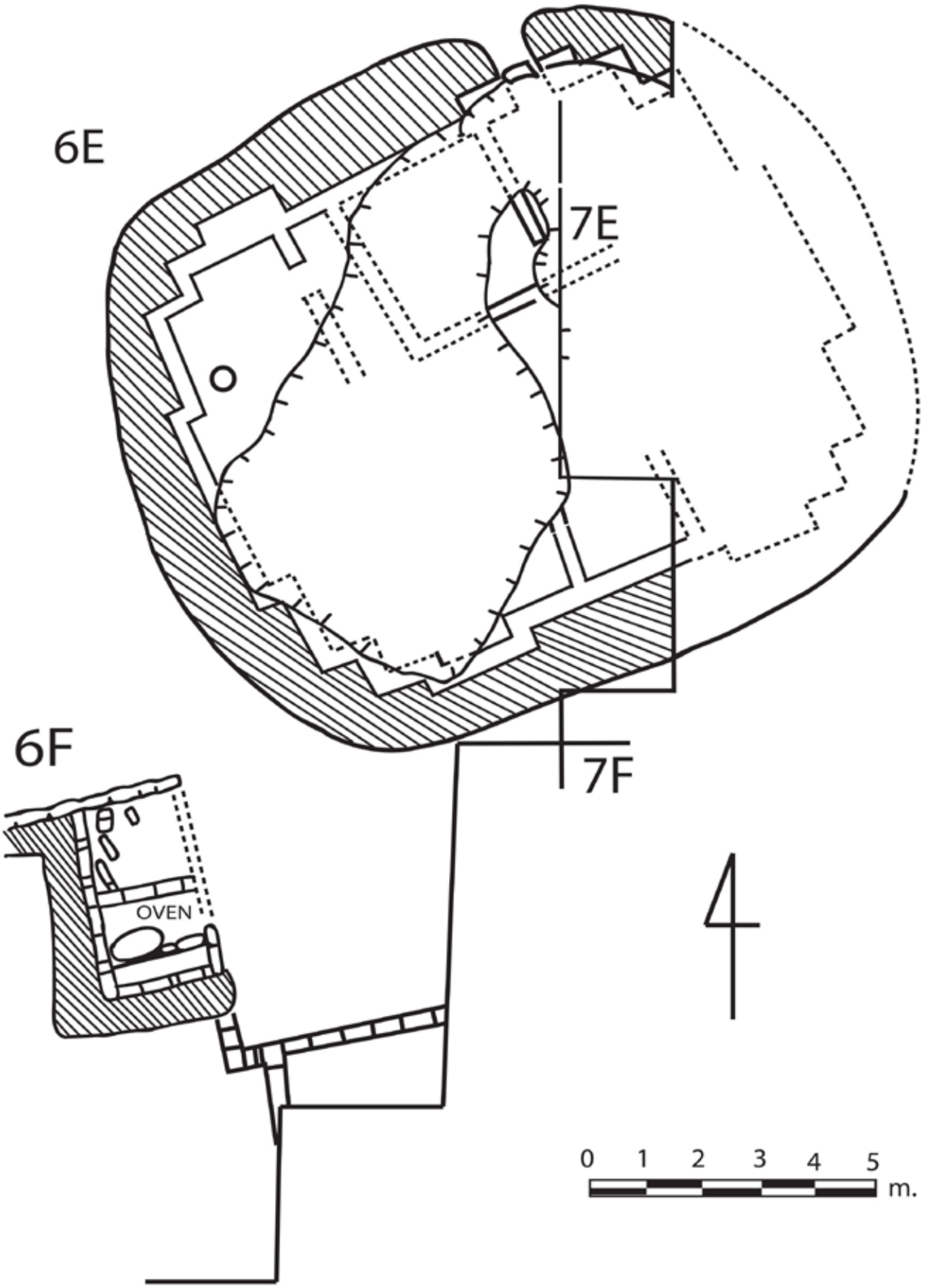


FIGURE 494. Plan of Ubaid level 2 structure at Tell Maddhur.

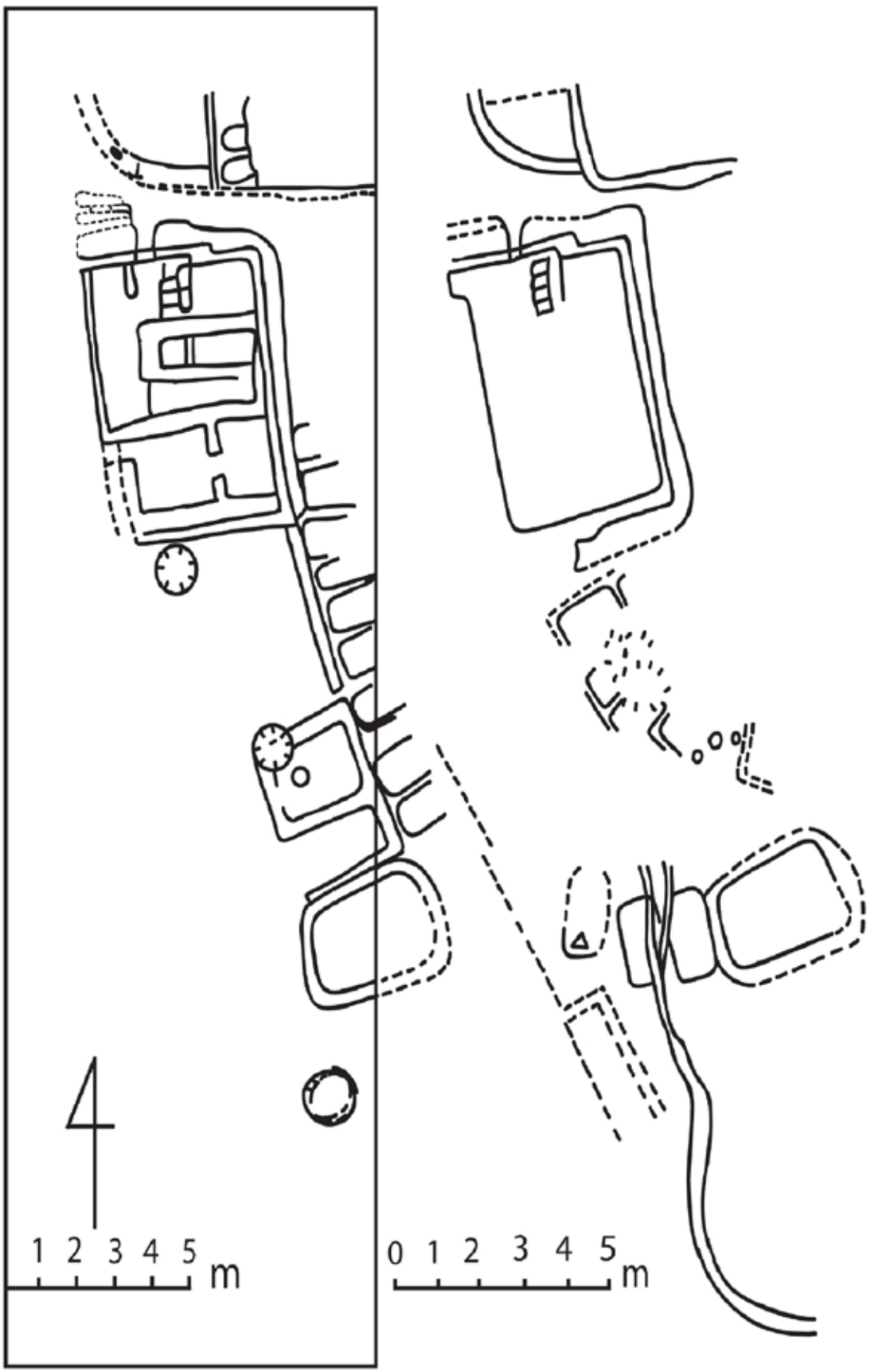


FIGURE 495. Plan of Ubaid level 4 structure at Tell Maddhur.

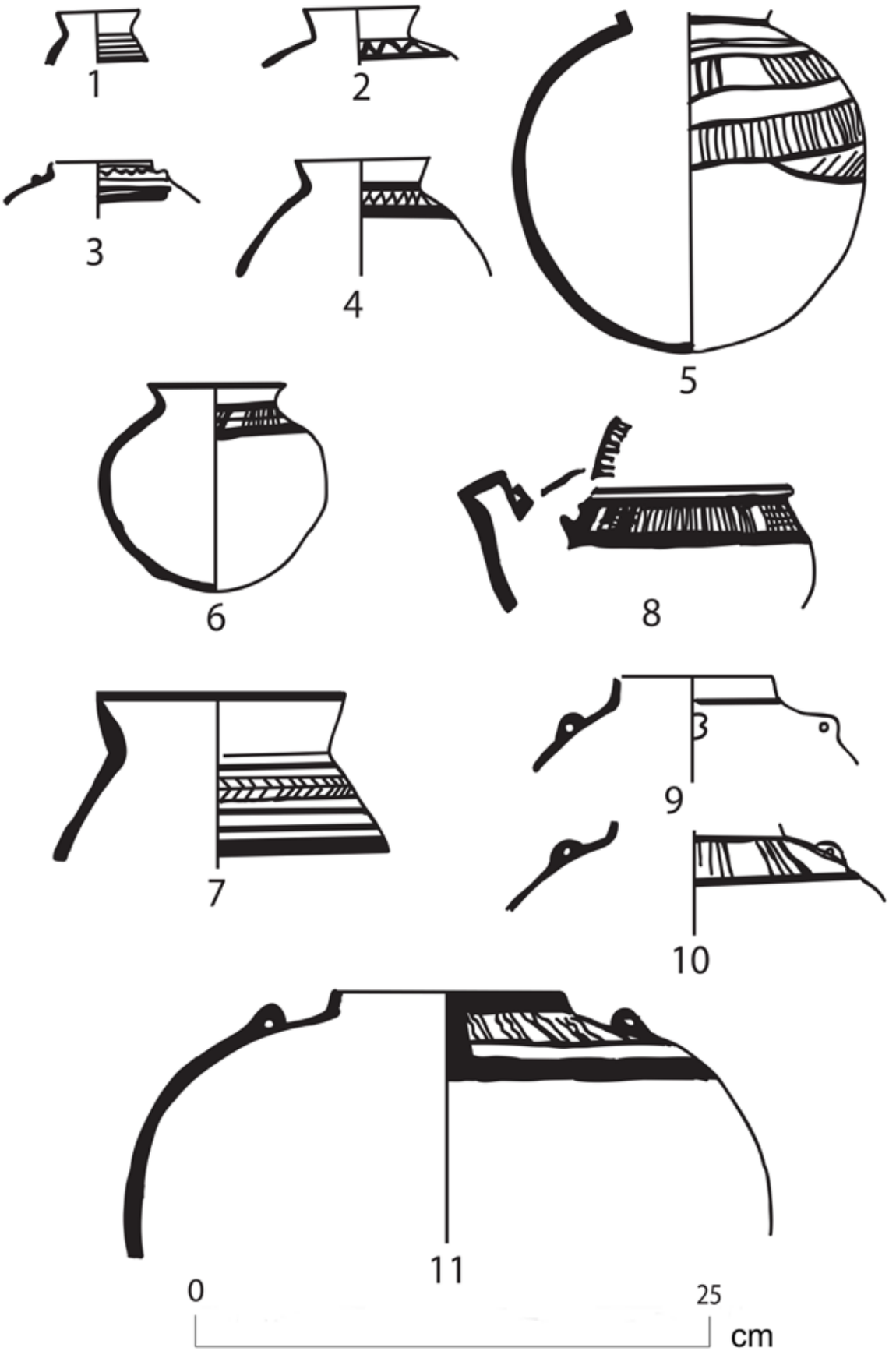


FIGURE 496. Incised and plain pottery from Tell Maddhur.

FIGURE 497. Ubaid painted pottery from Tell Maddhur.

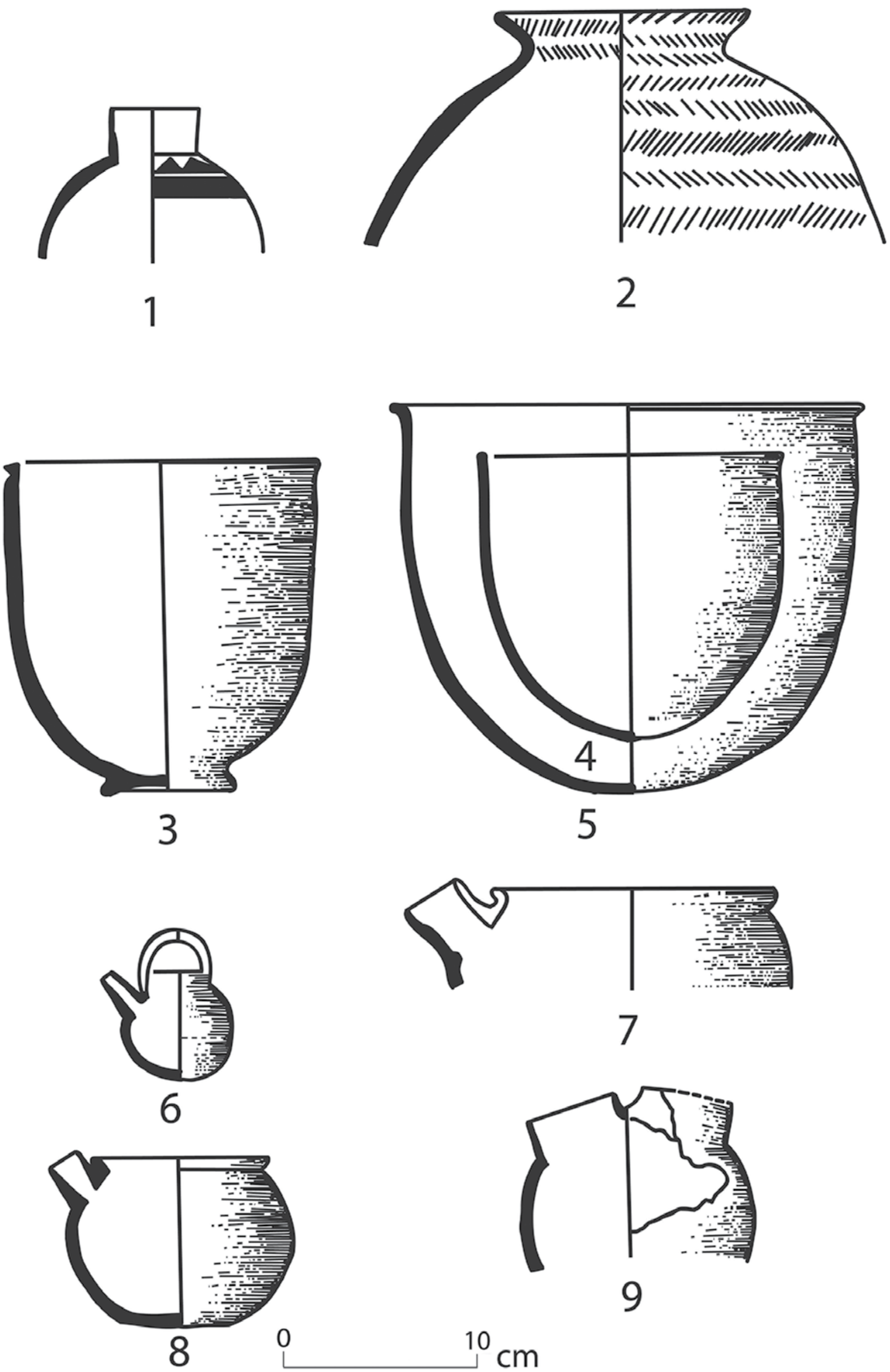


FIGURE 498. Ubaid painted pottery from Tell Maddhur.

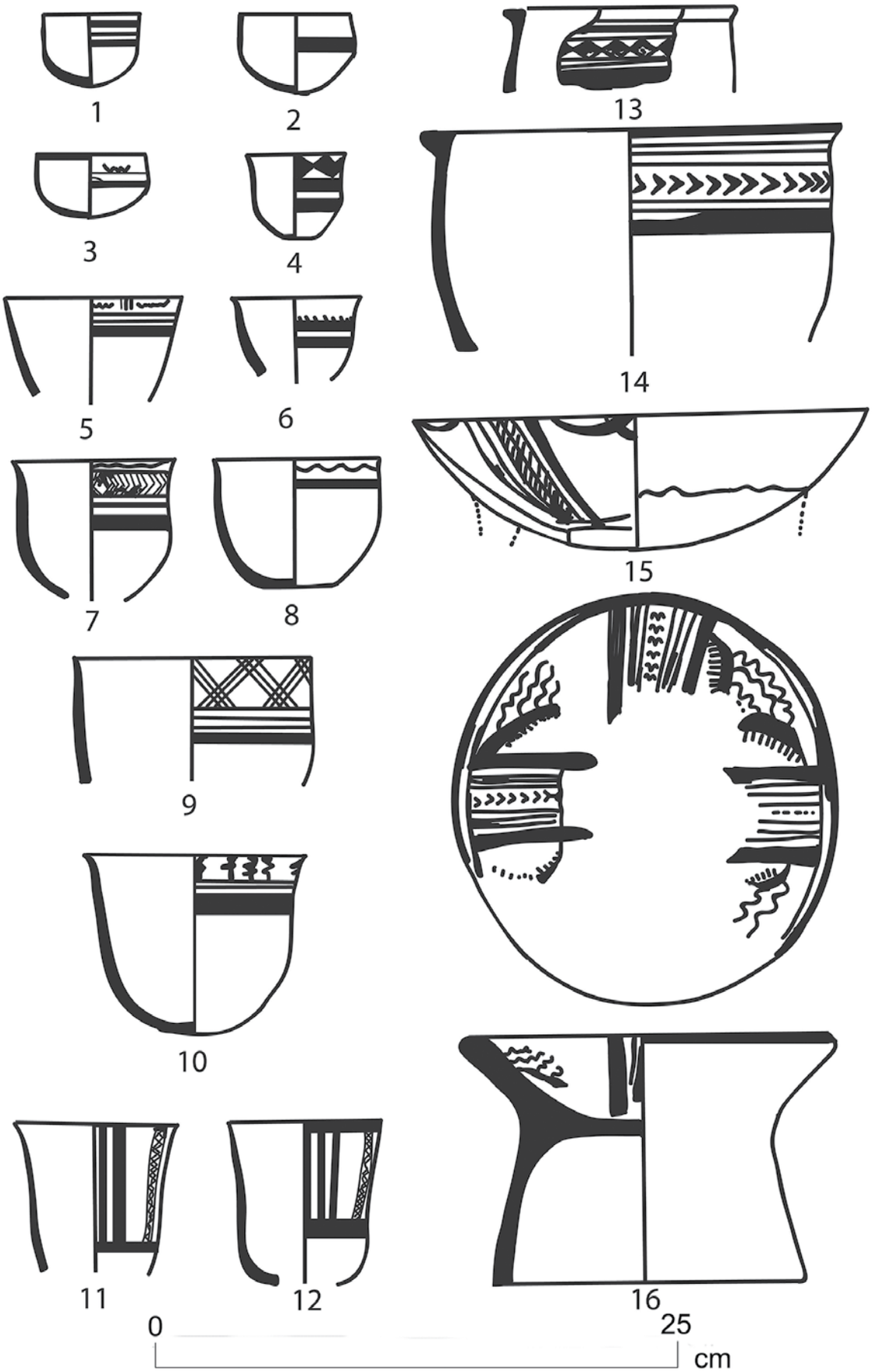


FIGURE 499. Ubaid painted pottery from Tell Maddhur.

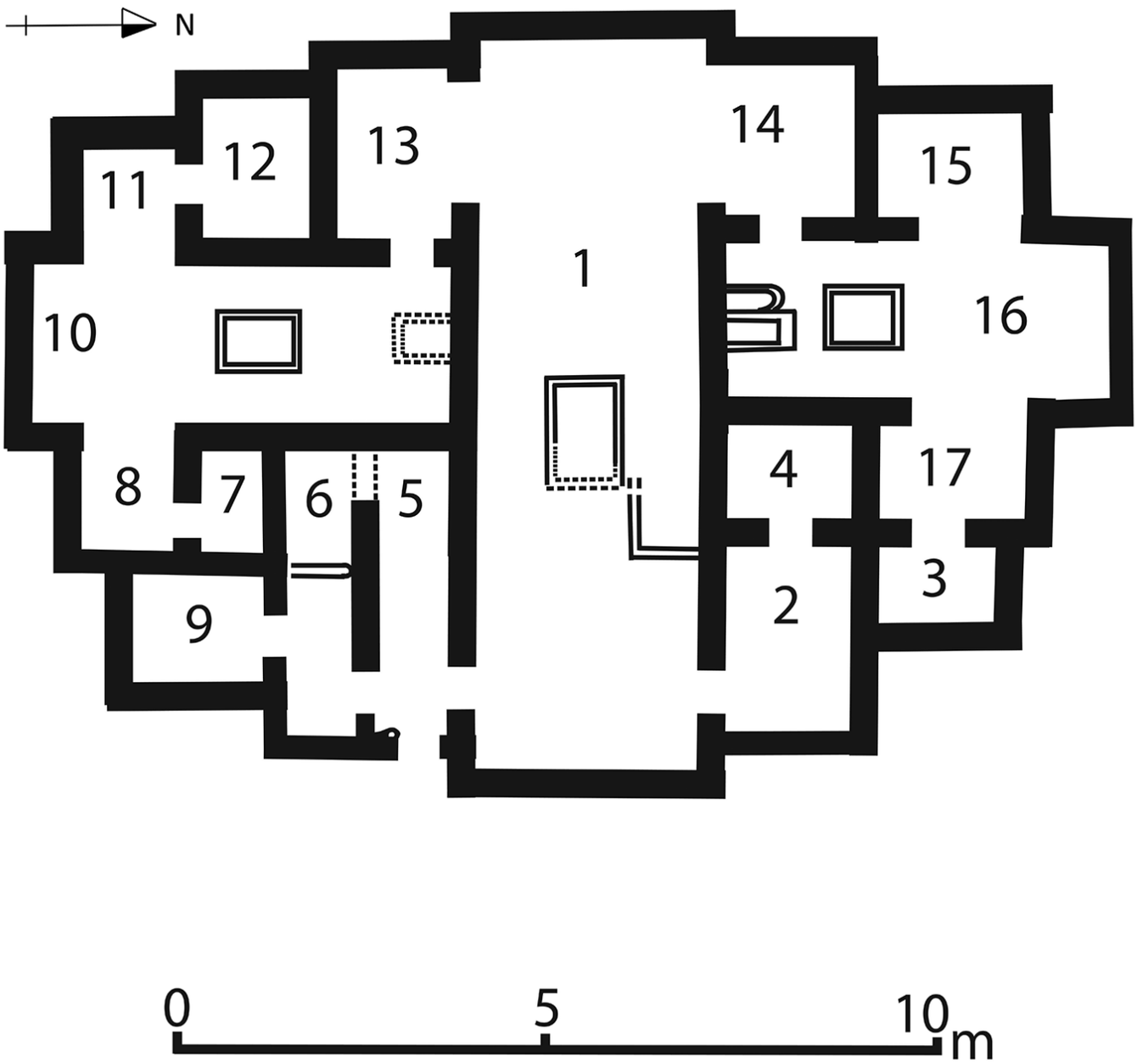


FIGURE 500. Plan of Ubaid building at Kheit Qasim III.

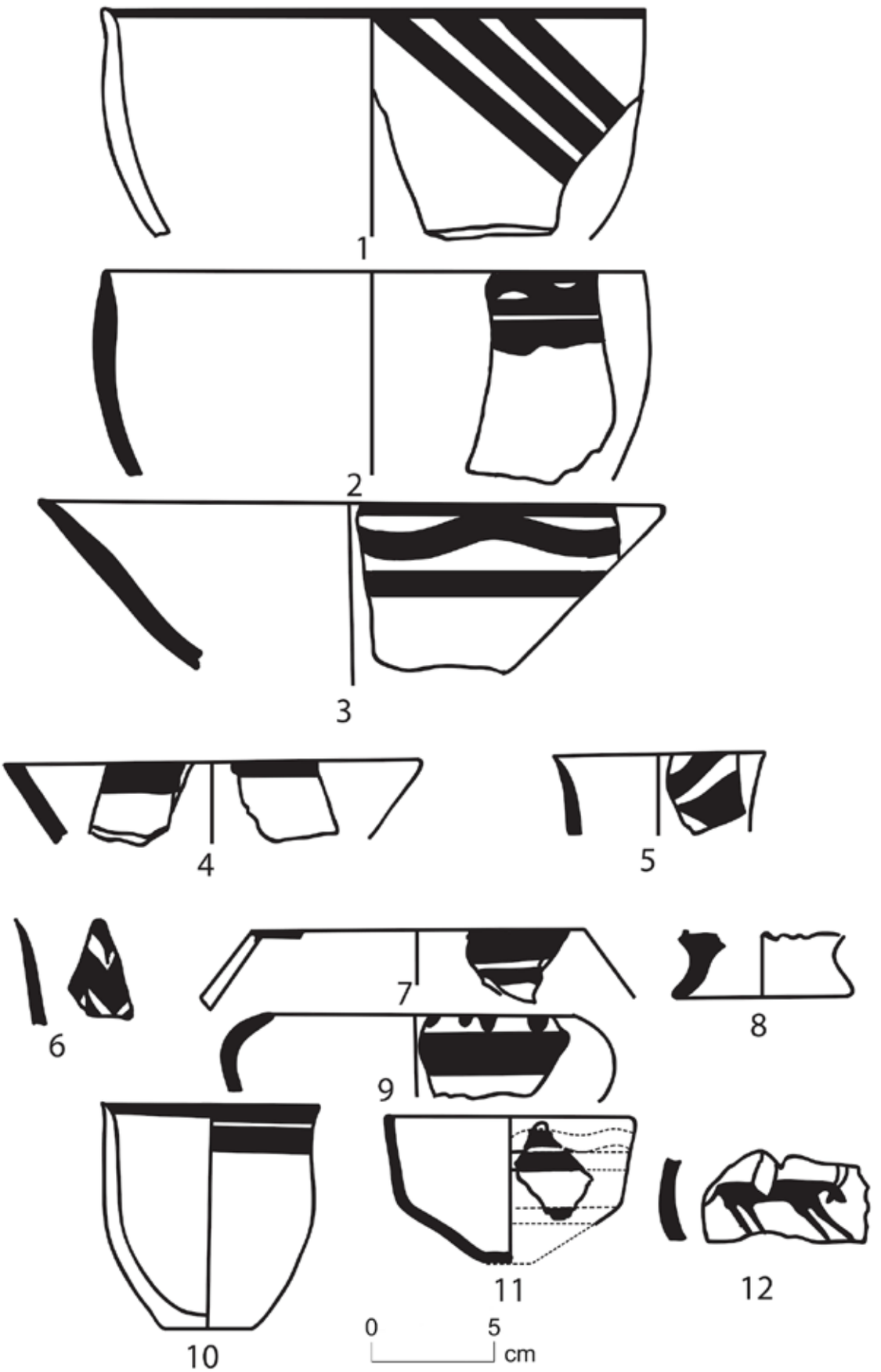


FIGURE 501. Ubaid pottery from Kheit Qasim III.

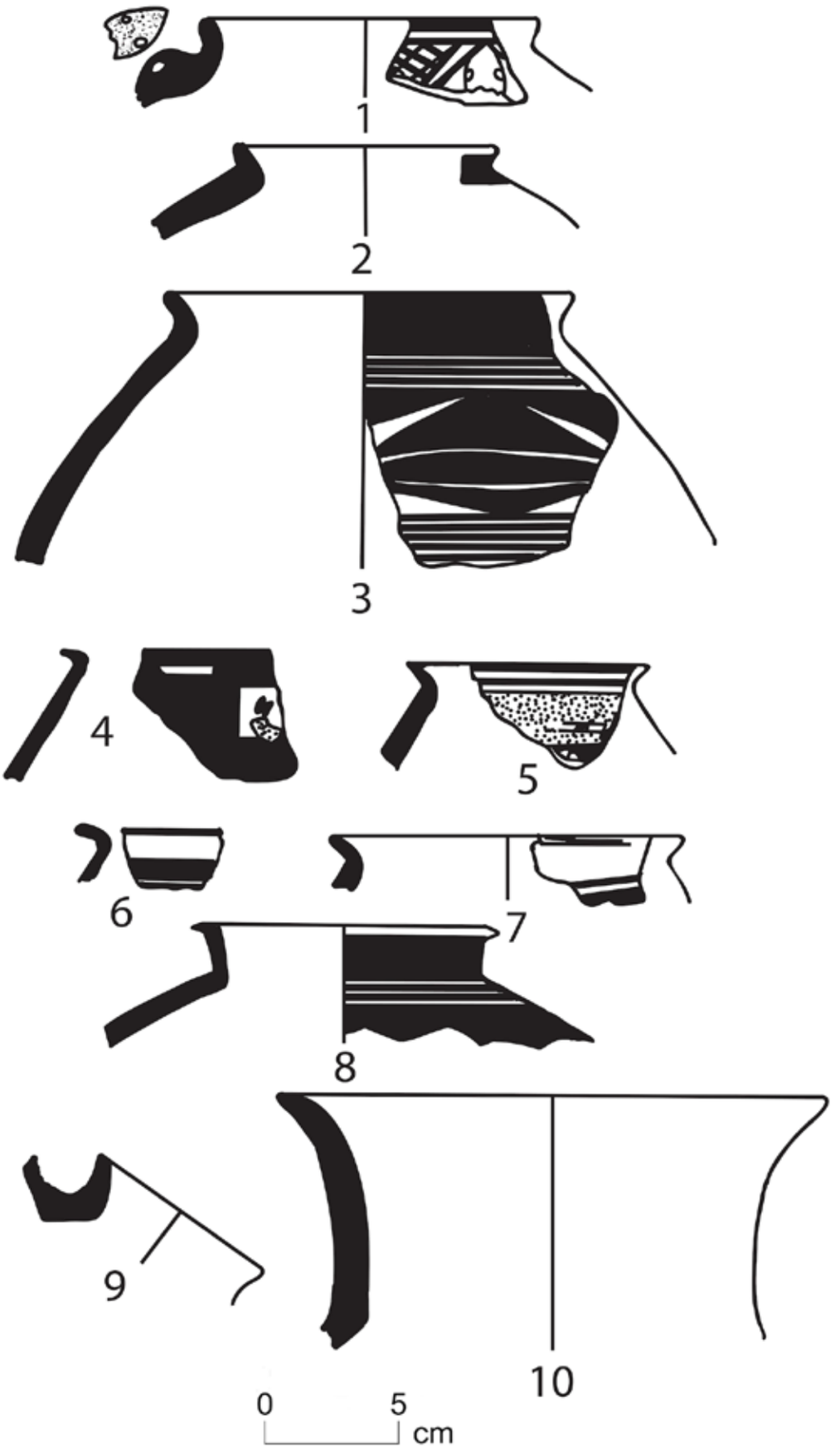


FIGURE 502. Ubaid pottery from Kheit Qasim III.

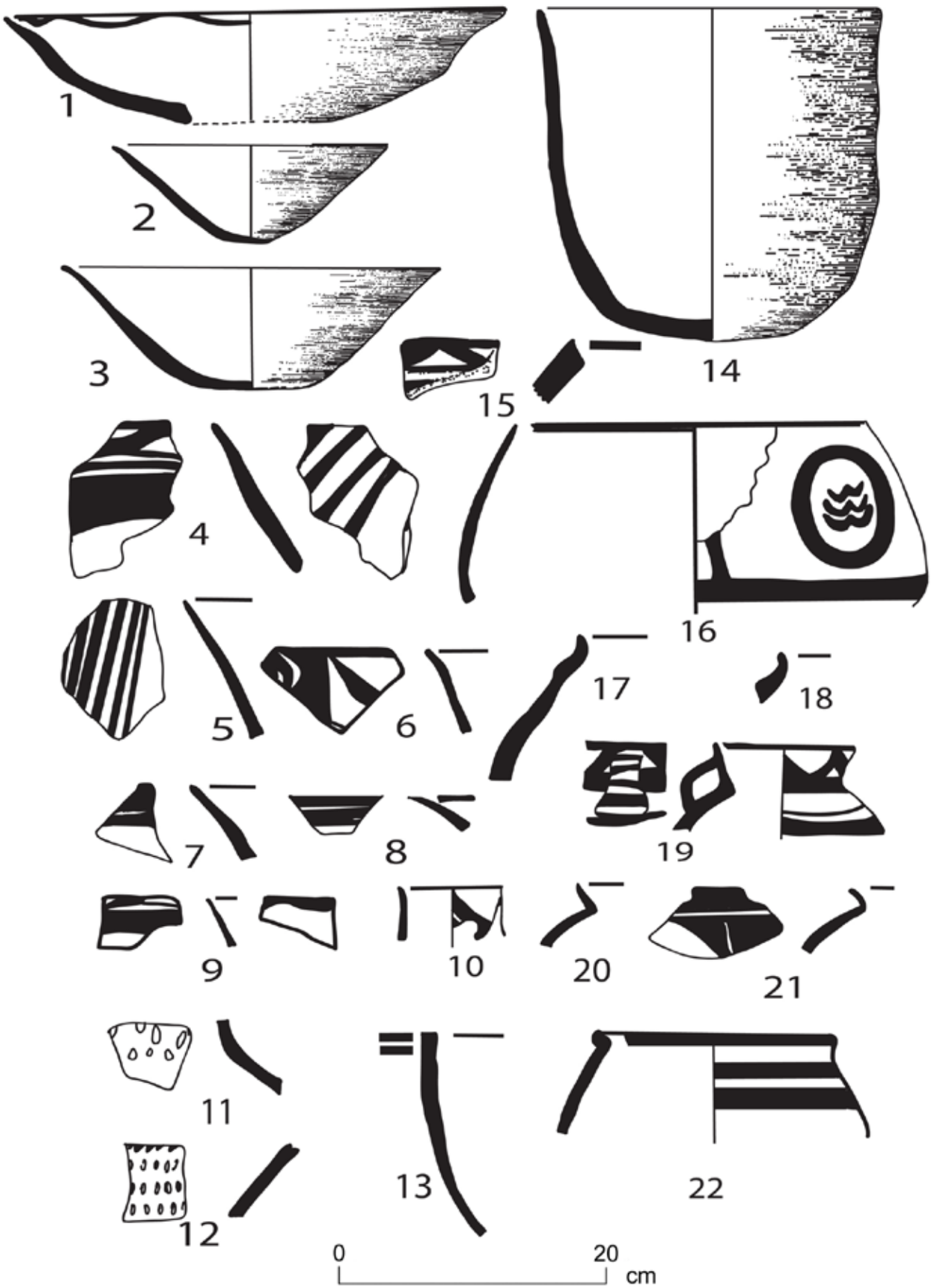


FIGURE 503. Ubaid pottery from Haizalon.

FIGURE 504. Ubaid pottery from Tell Hasan.

FIGURE 505. Ubaid pottery from Tell Hasan.

FIGURE 506. Ubaid pottery from Tell Abu Husaini.

FIGURE 507. Ubaid pottery from Tell Abu Husaini.

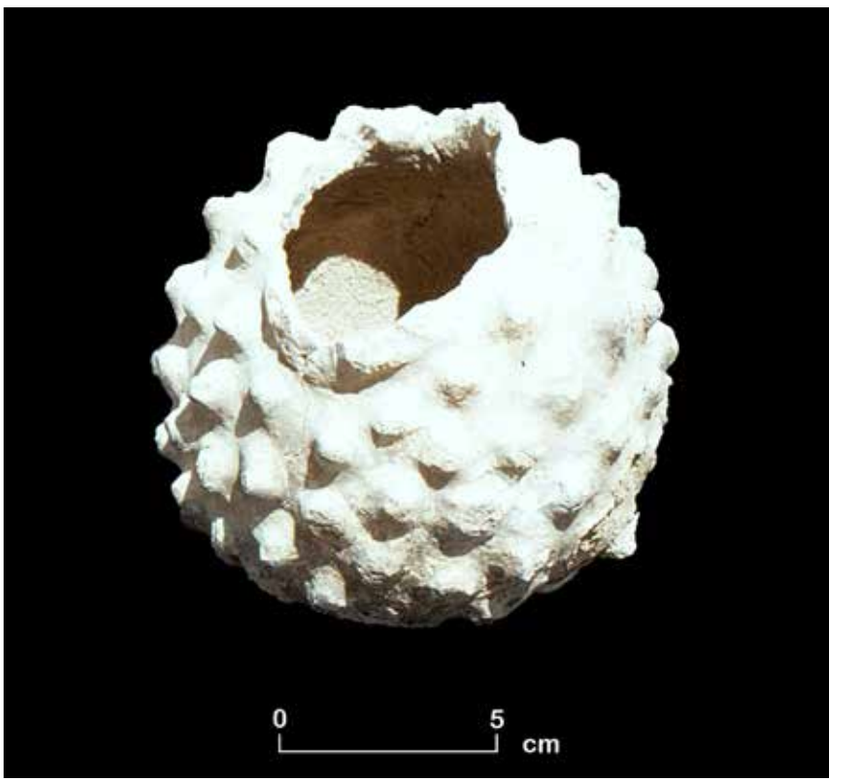


FIGURE 508. Ubaid pottery from Tell Abu Husaini.

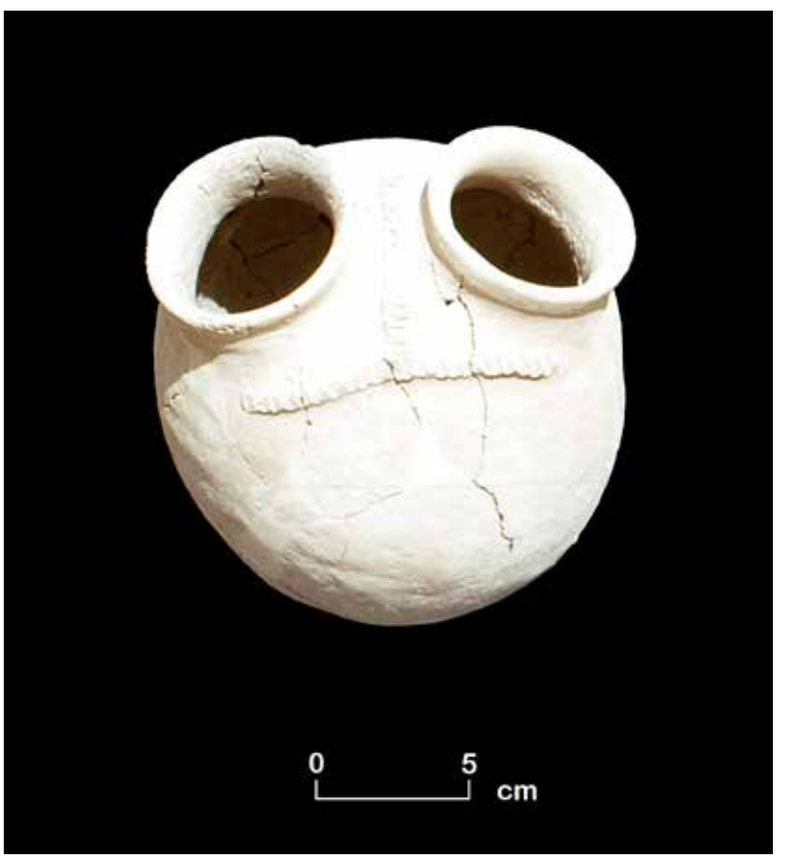


FIGURE 509. Ubaid pottery from Tell Abu Husaini.

A	Bowl Types																										
SITE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
HAIZALN				*			*																		*			*
MADHUR	*		*						*						*	*												
K-QASIM	*	*					*								*		*								*			
SONGOR A	*				*									*														
SONGOR B	*	*		*					*					*														
SONGOR C		*					*		*				*	*												*	*	
AYASH				*			*																					
RASHID	*	*		*										*		*												
ABADA II-I	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*		

B	Jar Types																
SITE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
HAIZLO		*		*			*									*	*
MADHUR	*			*	*	*											
K-QASIM	*			*				*	*							*	
SONGOR A										*		*					
SONGOR B	*		*		*			*									
SONGOR C	*		*		*				*								
AYASH								*	*	*							
RASHID	*	*	*	*	*	*		*									
HASAN							*										
ABADA	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

FIGURE 510. Chart showing general distribution of vessel types at the Ubaid sites in the Hamrin region.

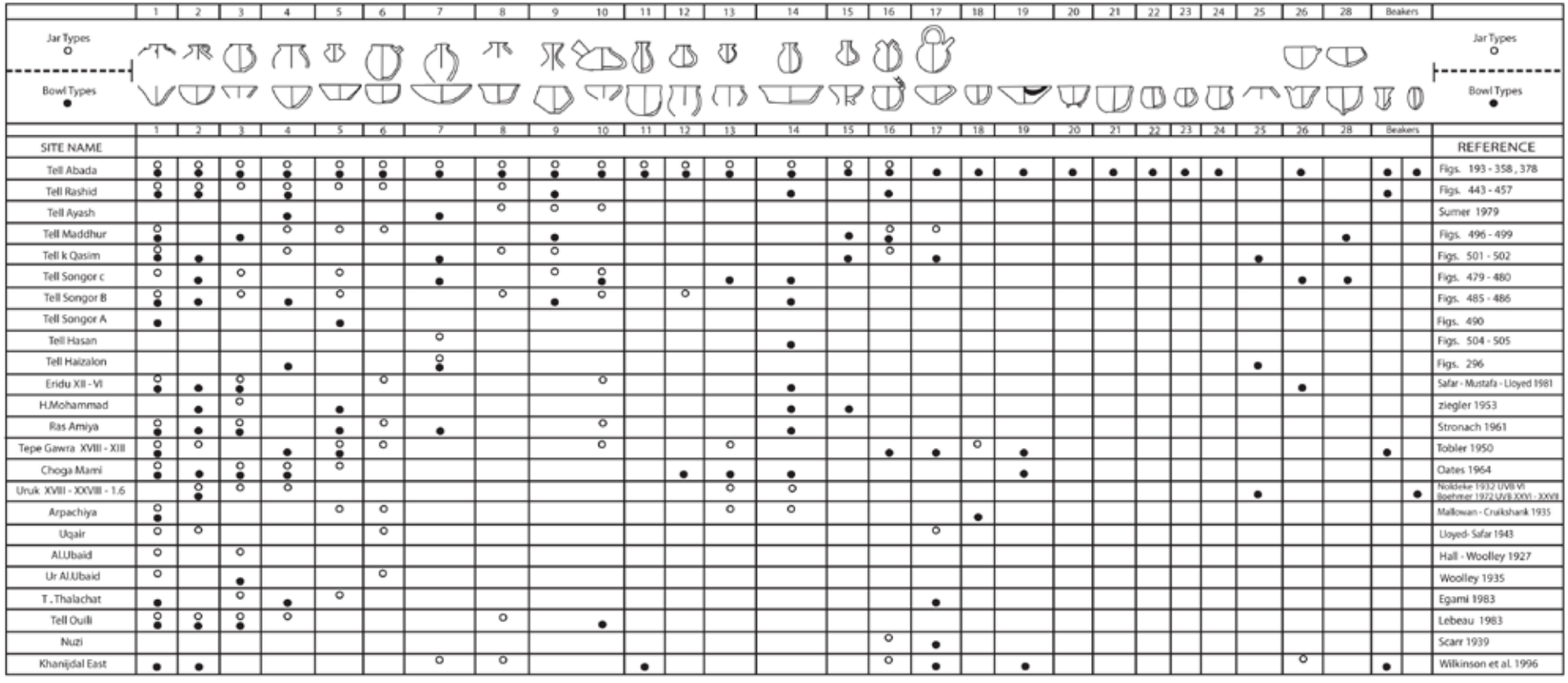


FIGURE 511. Chart showing general distribution of vessel types at the Ubaid sites in Mesopotamia.

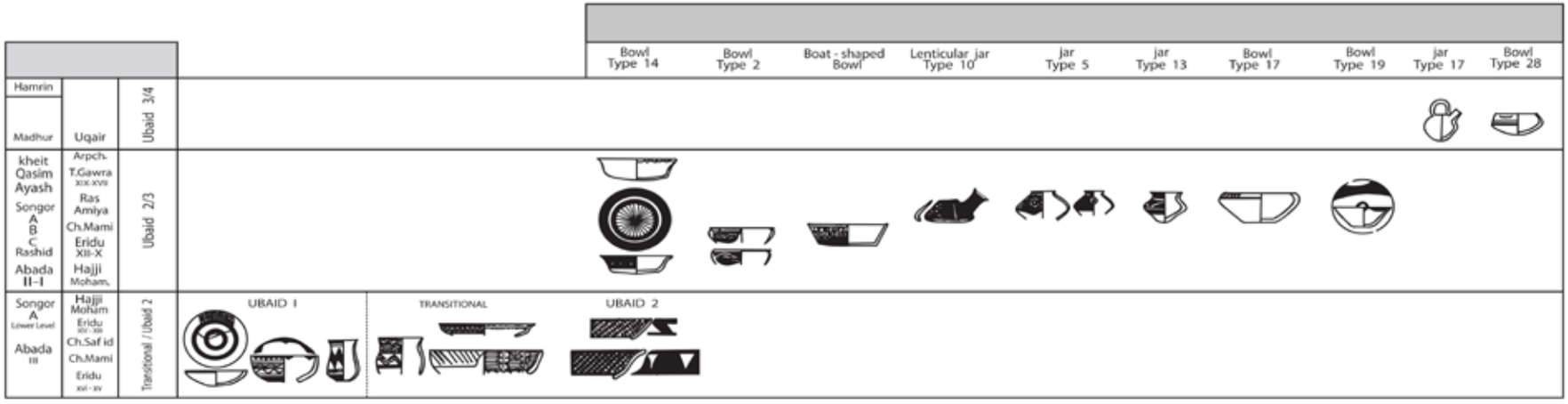


FIGURE 512. Chart showing chronological occurrence of vessel types in major Ubaid sites.

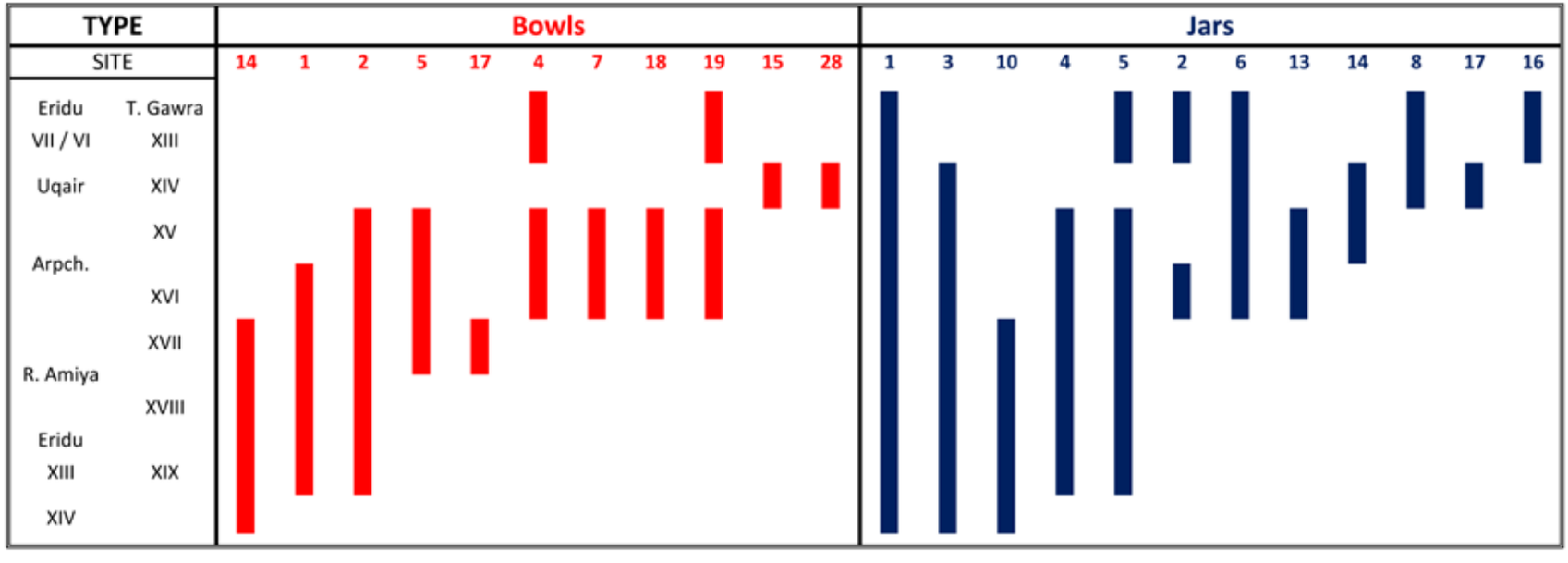


FIGURE 513. Cart showing chronological occurrence of vessel types in major Ubaid sites in Mesopotamia.

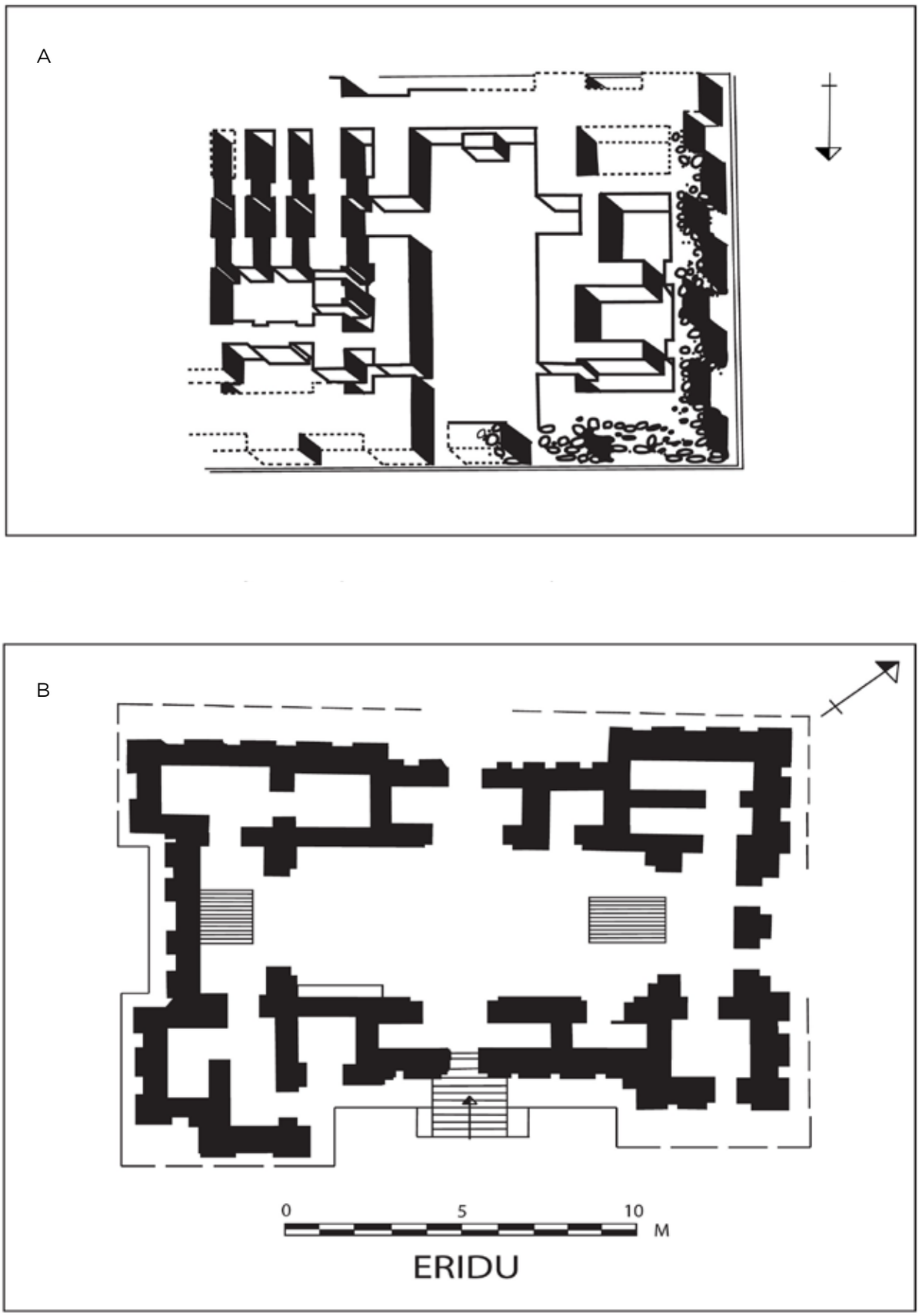


FIGURE 514. Plan of the Eye temple at Tell Brak (after Mallowan 1965) (a), and plan of Temple VII at Eridu (after Safar et al. 1981) (b).

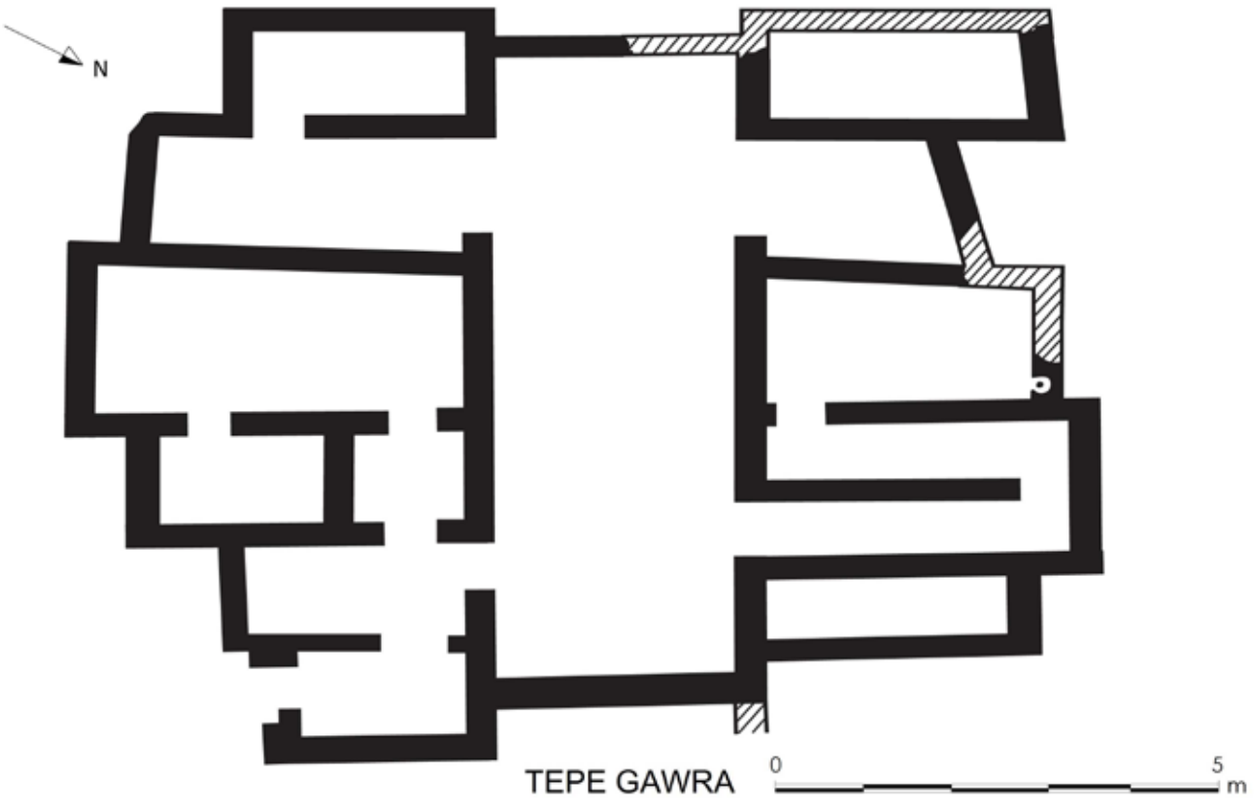


FIGURE 515. Plan of a house in level XV at Tepe Gawra (after Tobler 1950).

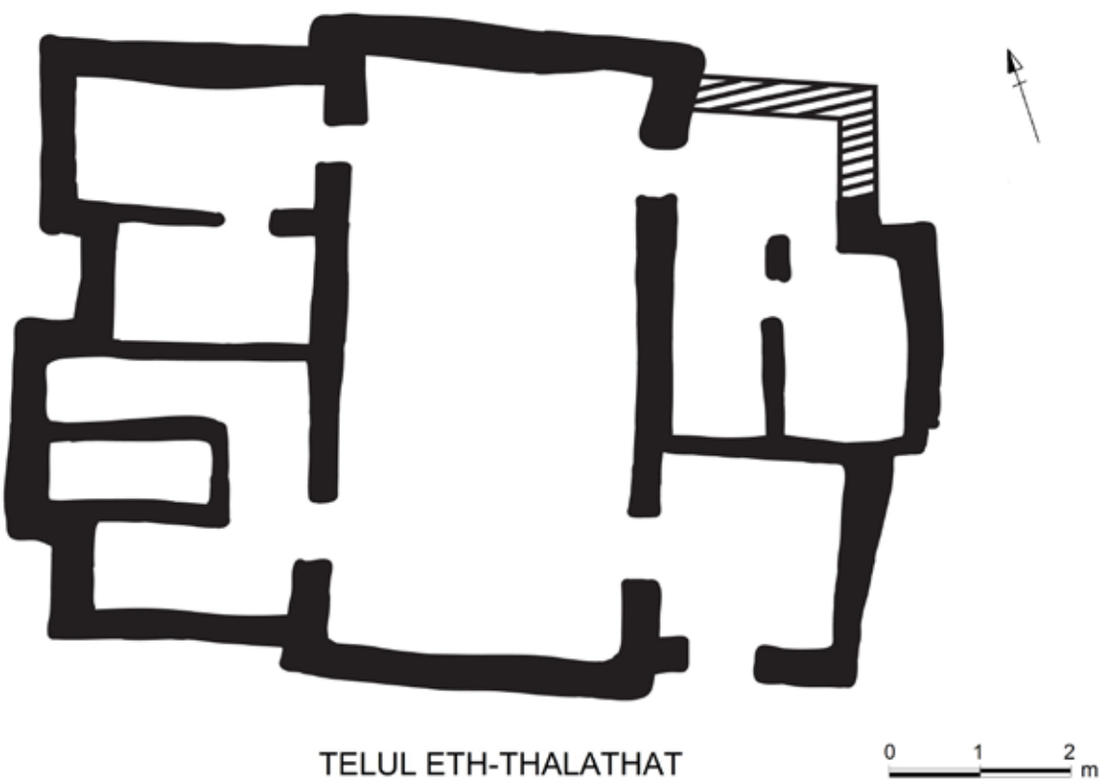


FIGURE 516. Plan of a house at Tell 2, Telul eth-Thalathat (after Egami 1959).

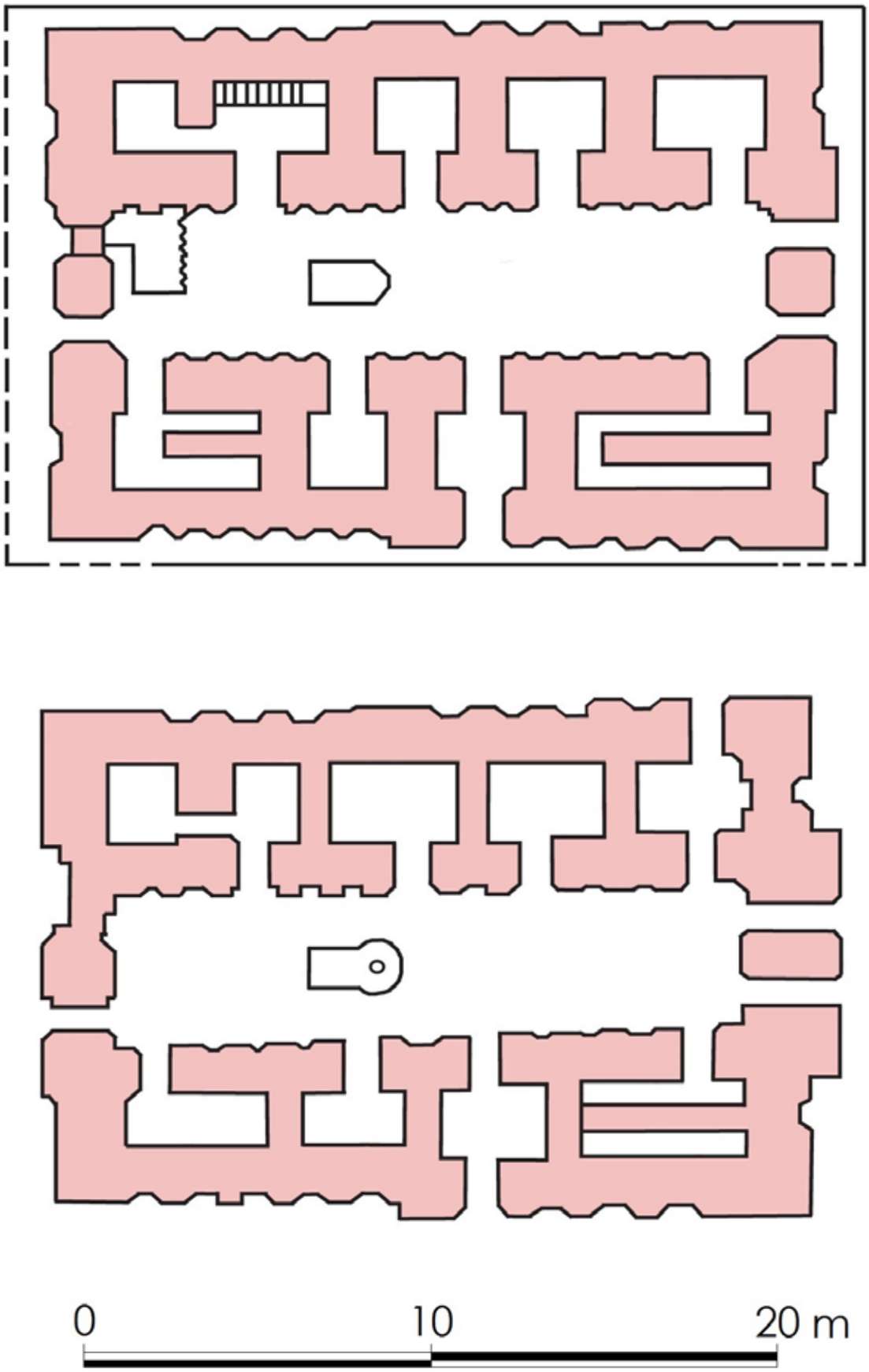


FIGURE 517. Plan of the White Temple, Anna Ziggurat at Uruk-Warka (after Eichmann 2007).

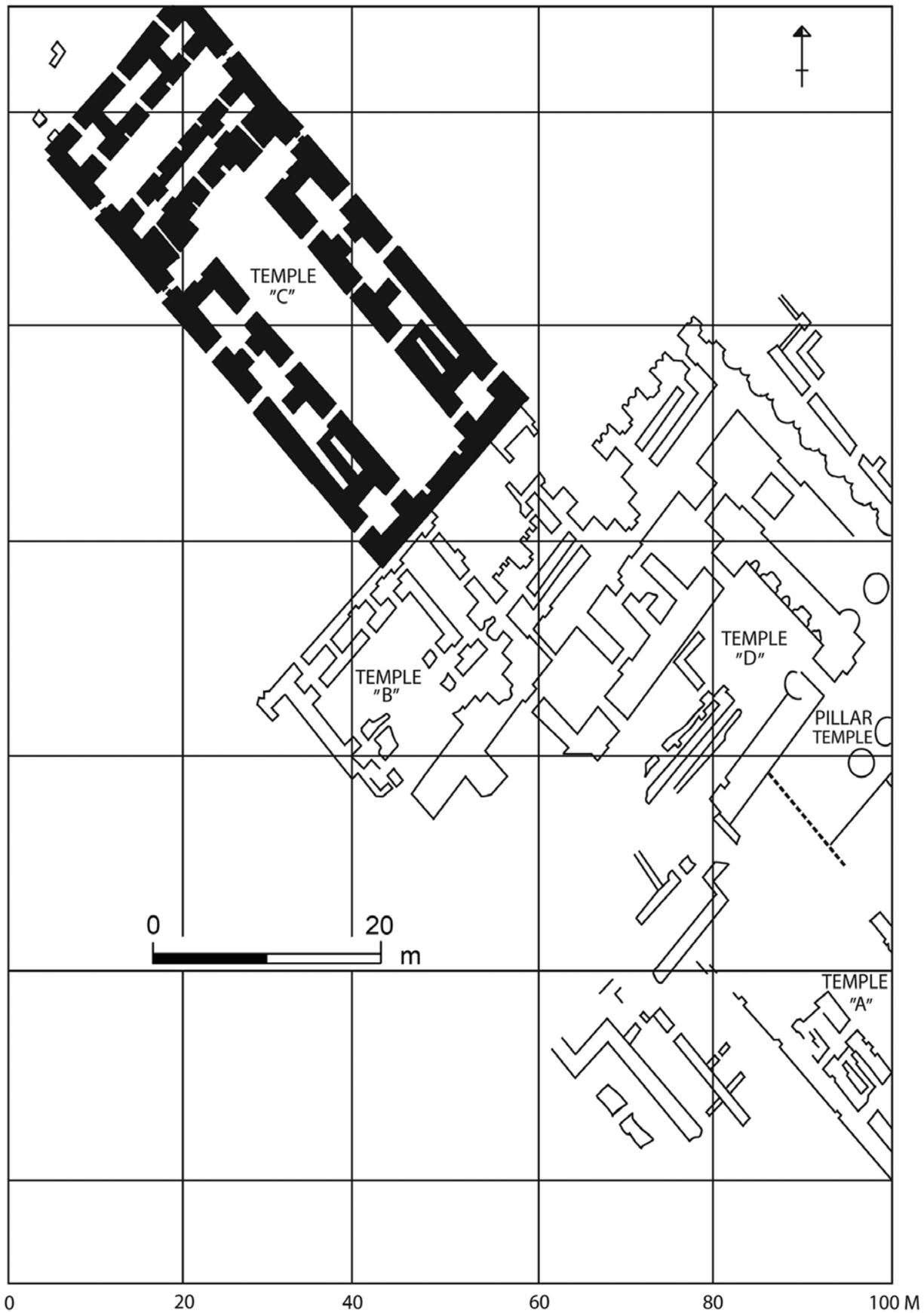


FIGURE 518. Plan of the Limestone Temple at Uruk-Warka, level V (after Crawford 1991).

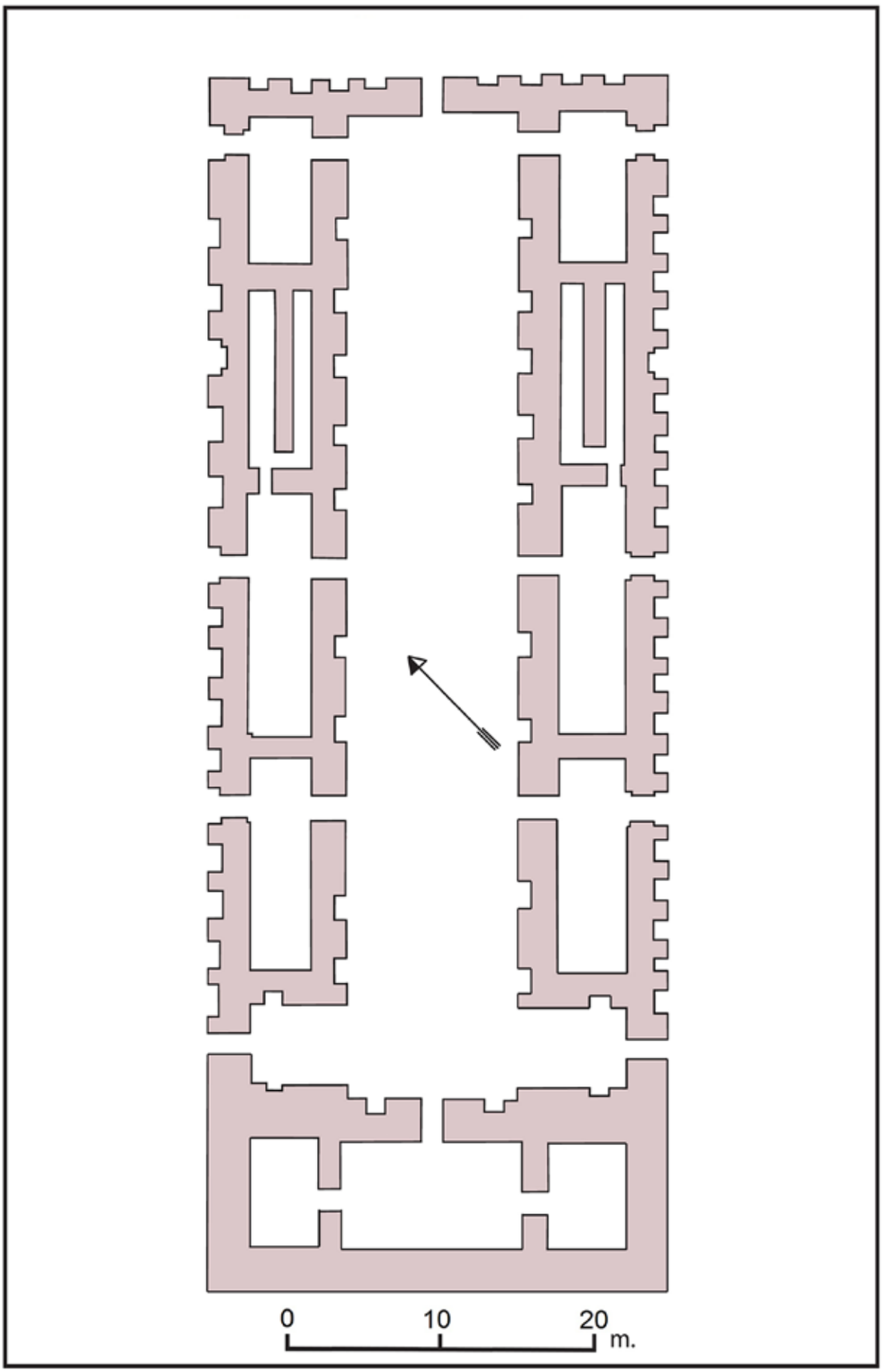


FIGURE 519. Plan of EANNA Precinct at Warka, level IV (after Crawford 1991).

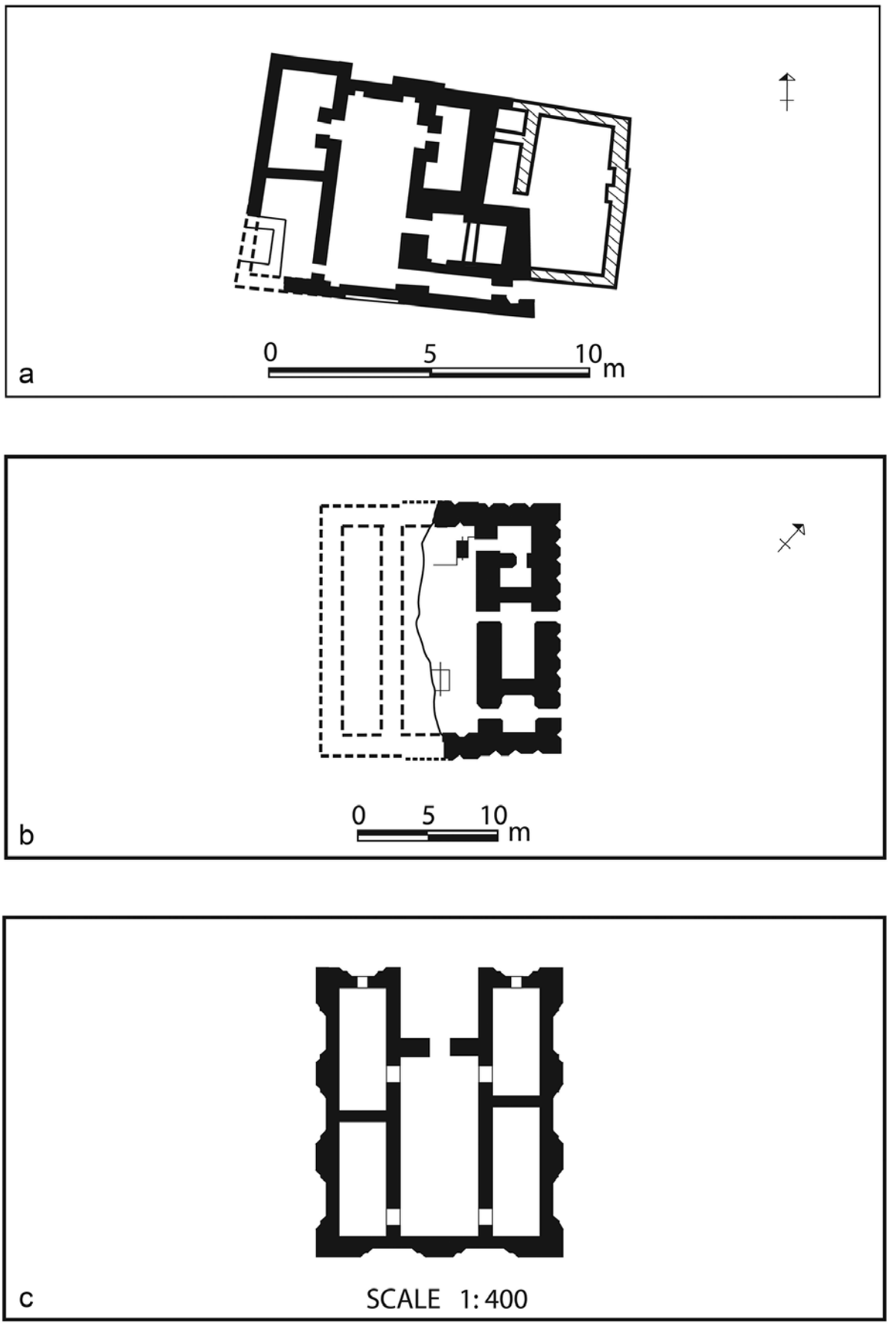


FIGURE 520. Buildings plans from Grai Resh (a), Uqair (b), and Tepe Gawra VIII (c) (after Lloyd 1940, 1943; Speiser 1953).

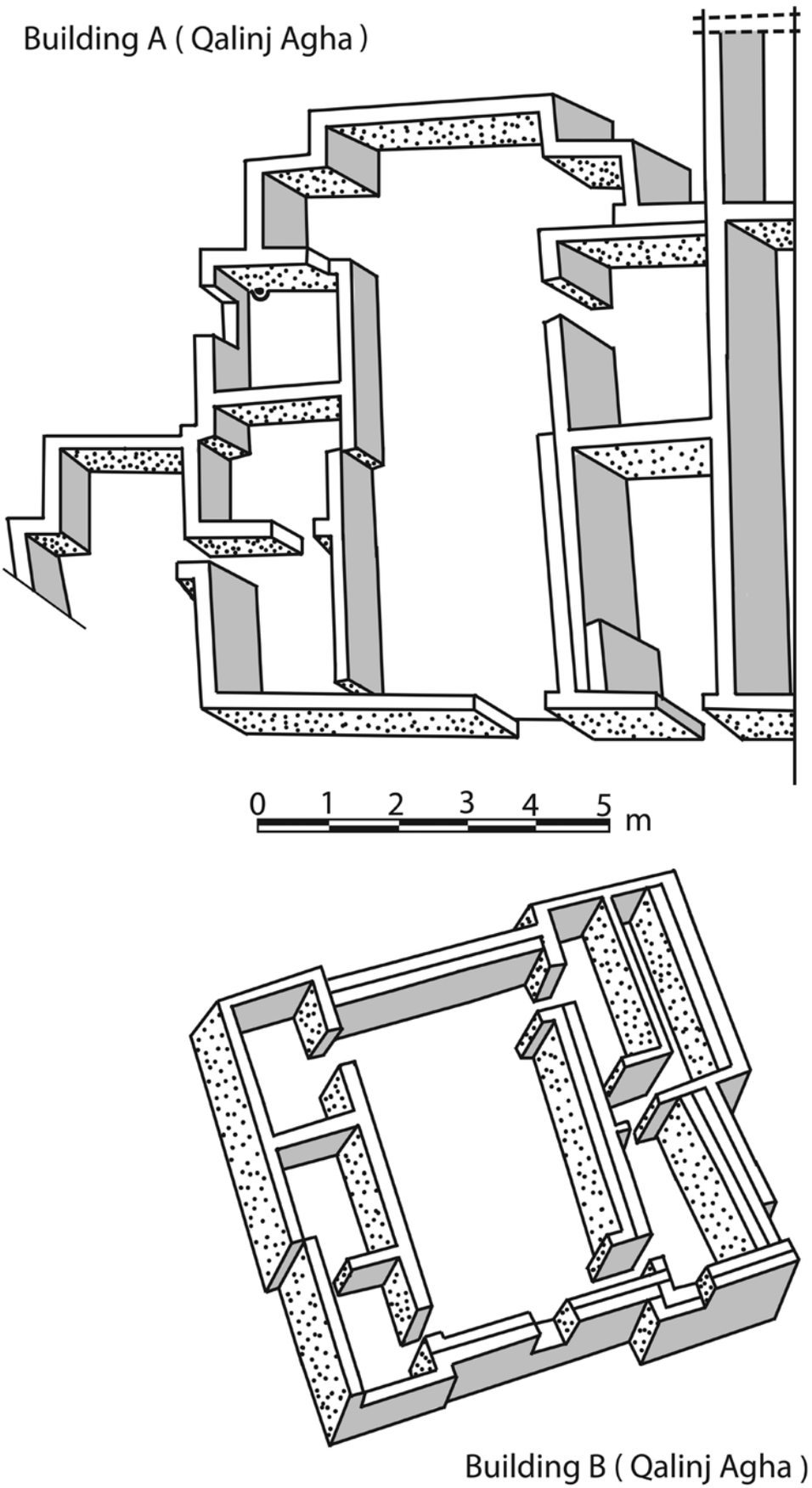


FIGURE 521. Plans of Buildings A and B from Qalinj Agha (after Hijara 1973).

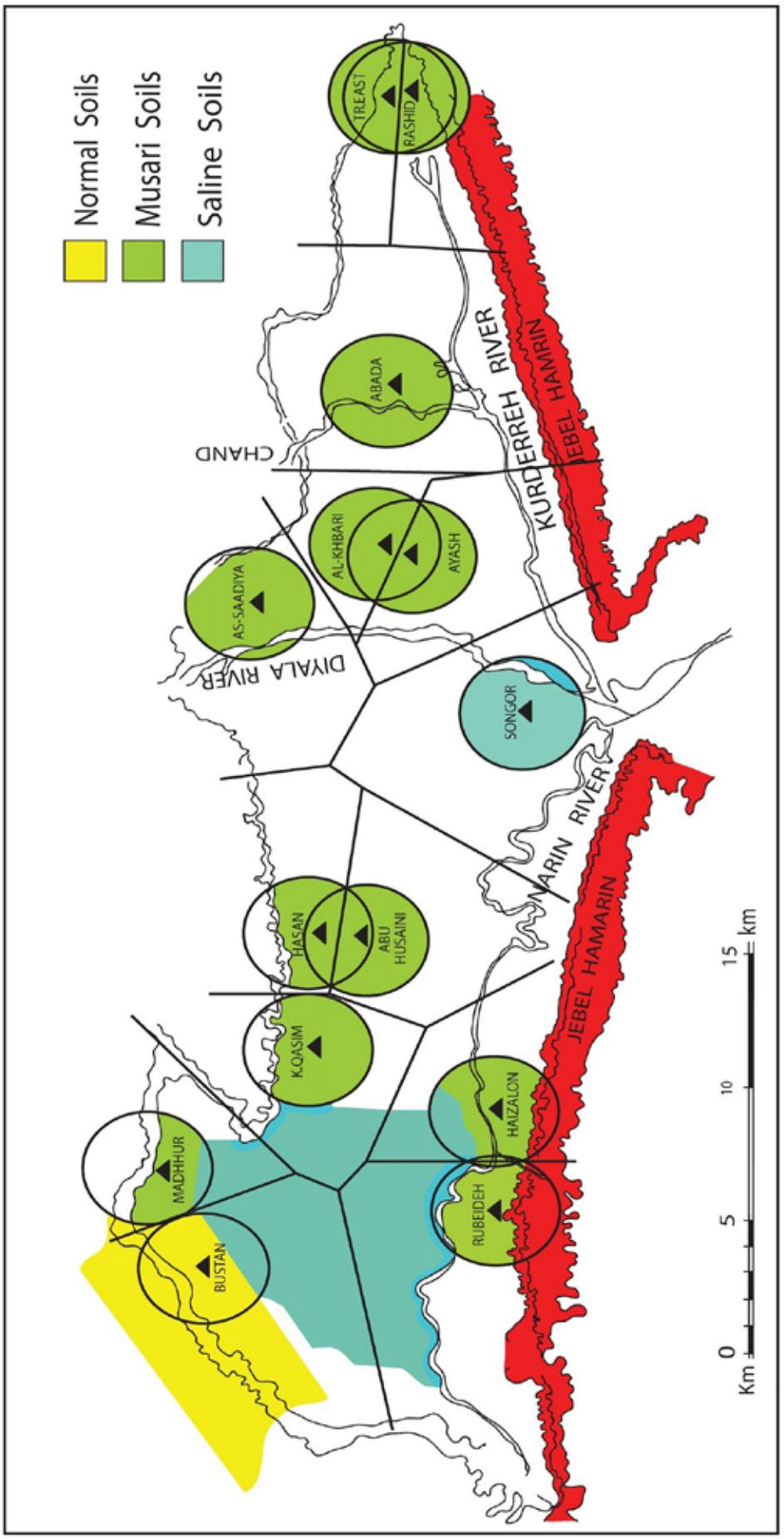


FIGURE 522. Map showing Ubaid sites, catchment areas, and soil types in the Hamrin region.

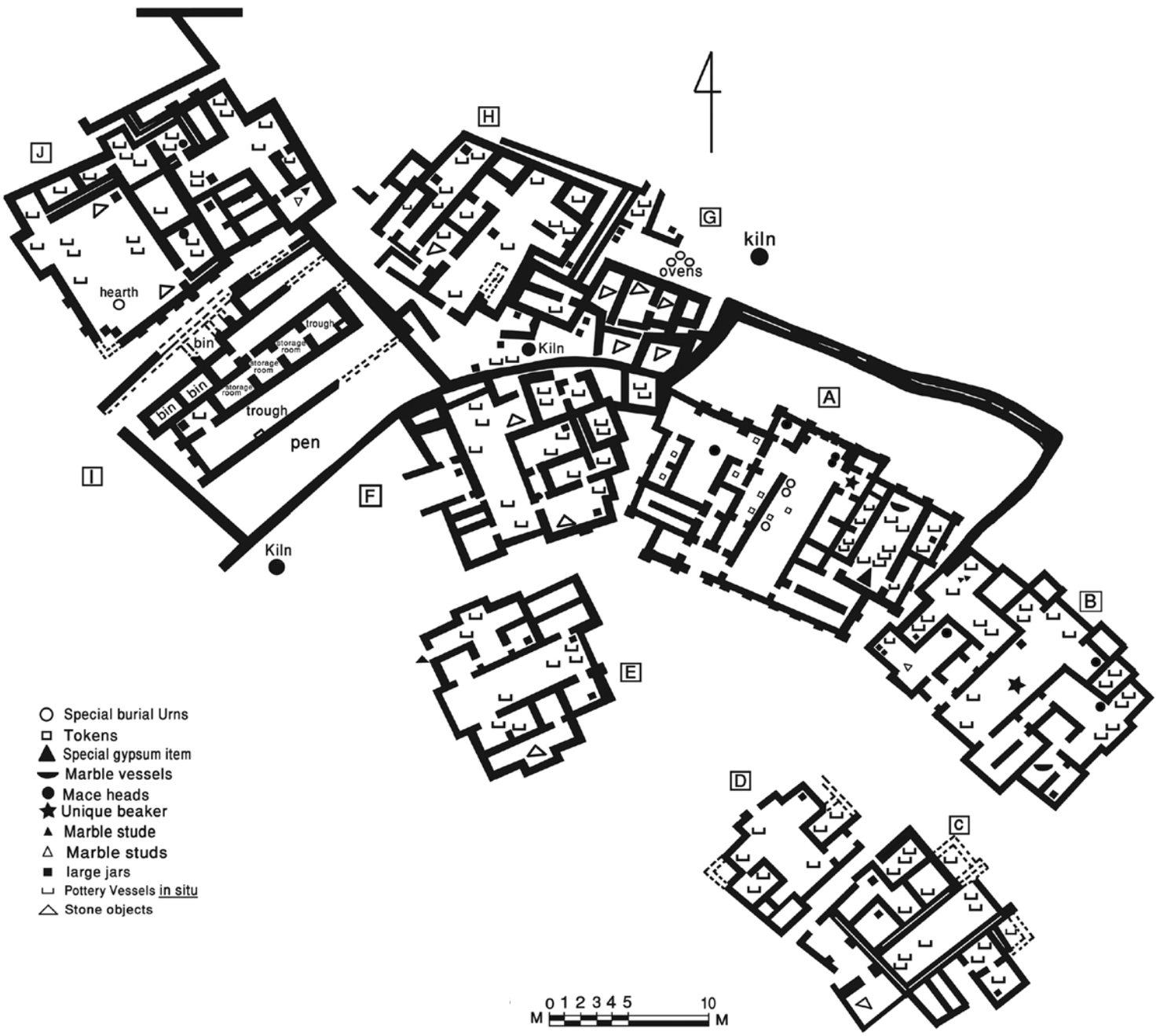


FIGURE 523. Map showing general distribution of archaeological assemblages at level II, Tell Abada.

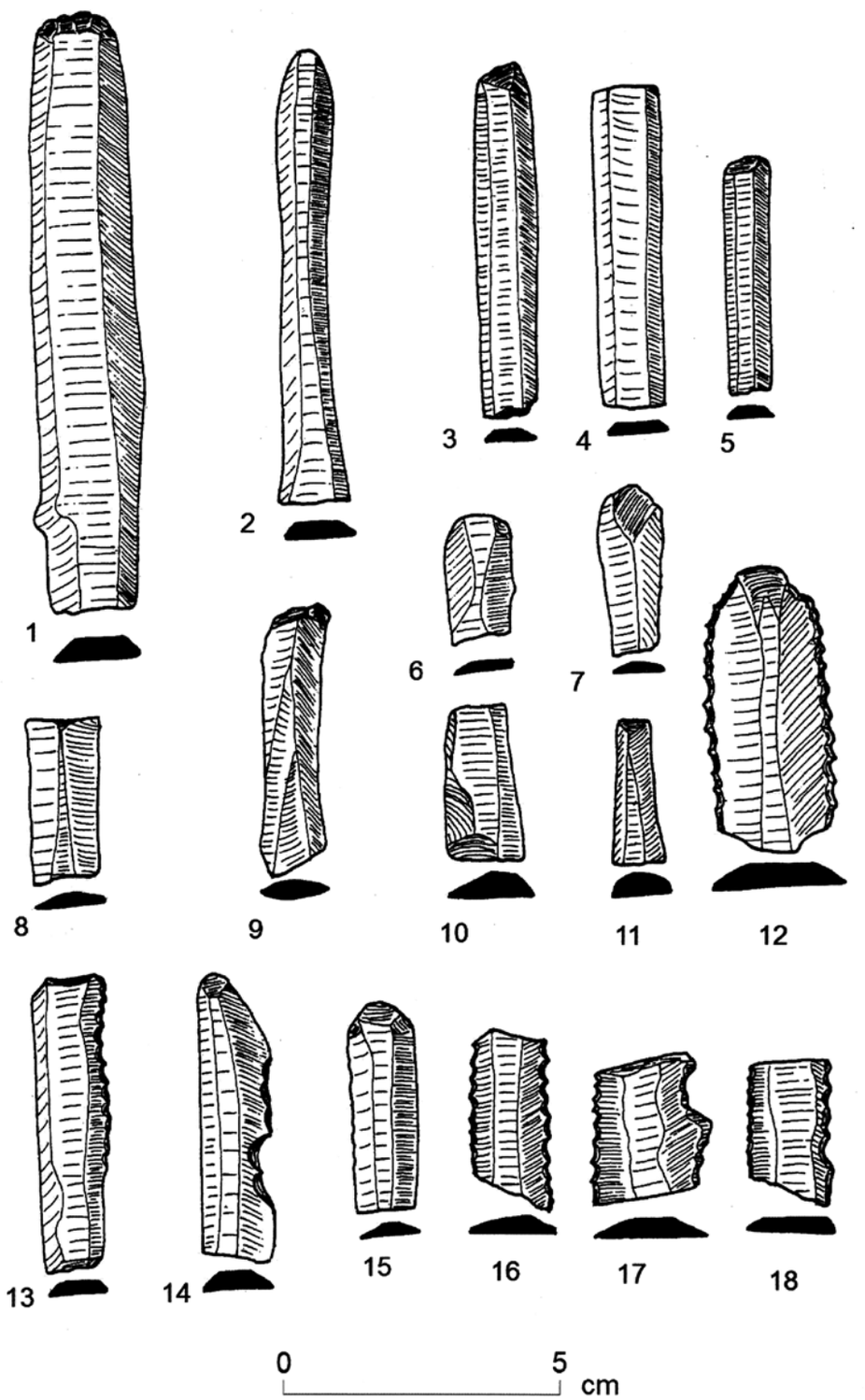


FIGURE 524. Obsidian implements from Tell Abada.

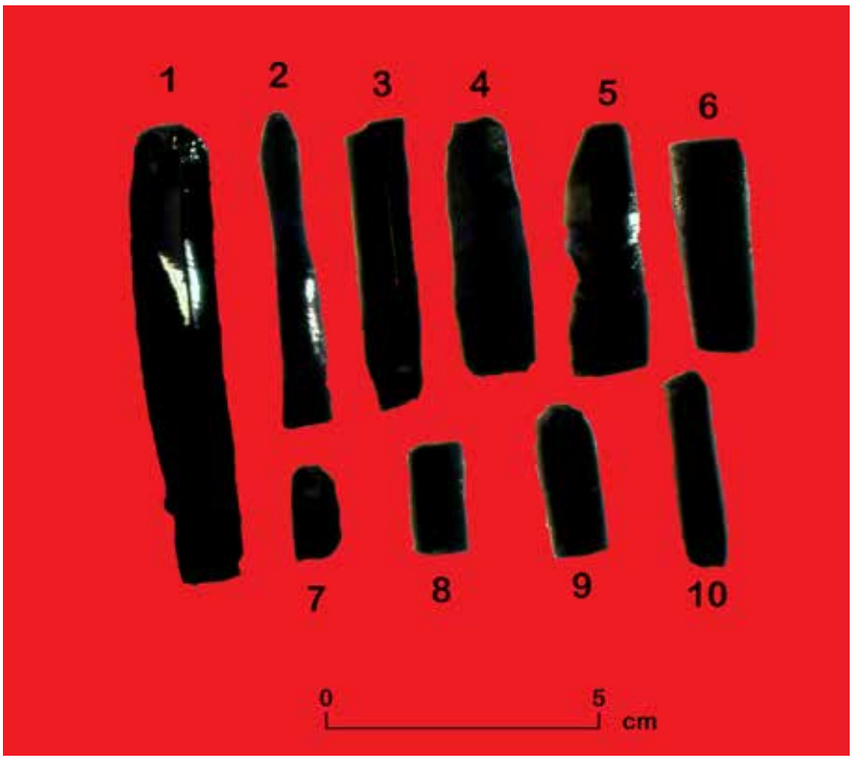


FIGURE 525. Obsidian implements from Tell Abada.

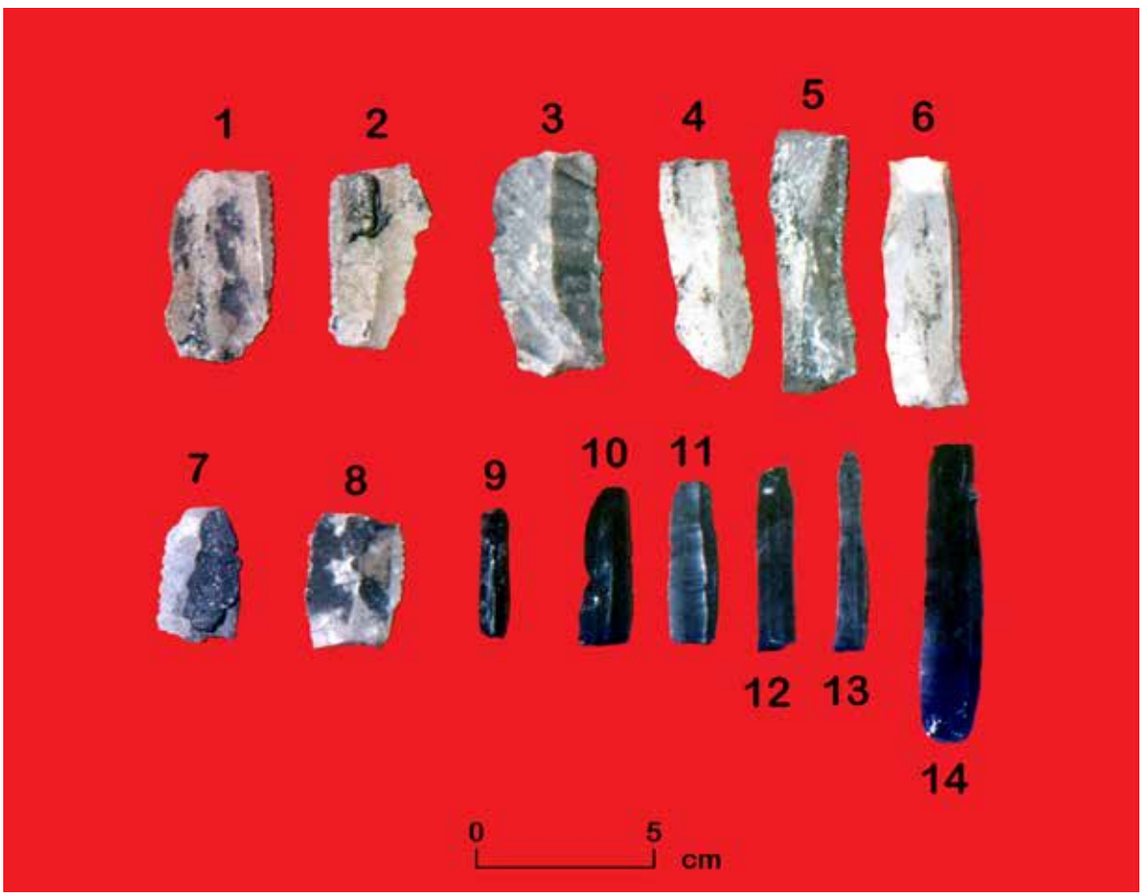


FIGURE 526. Obsidian and flint implements from Tell Abada.

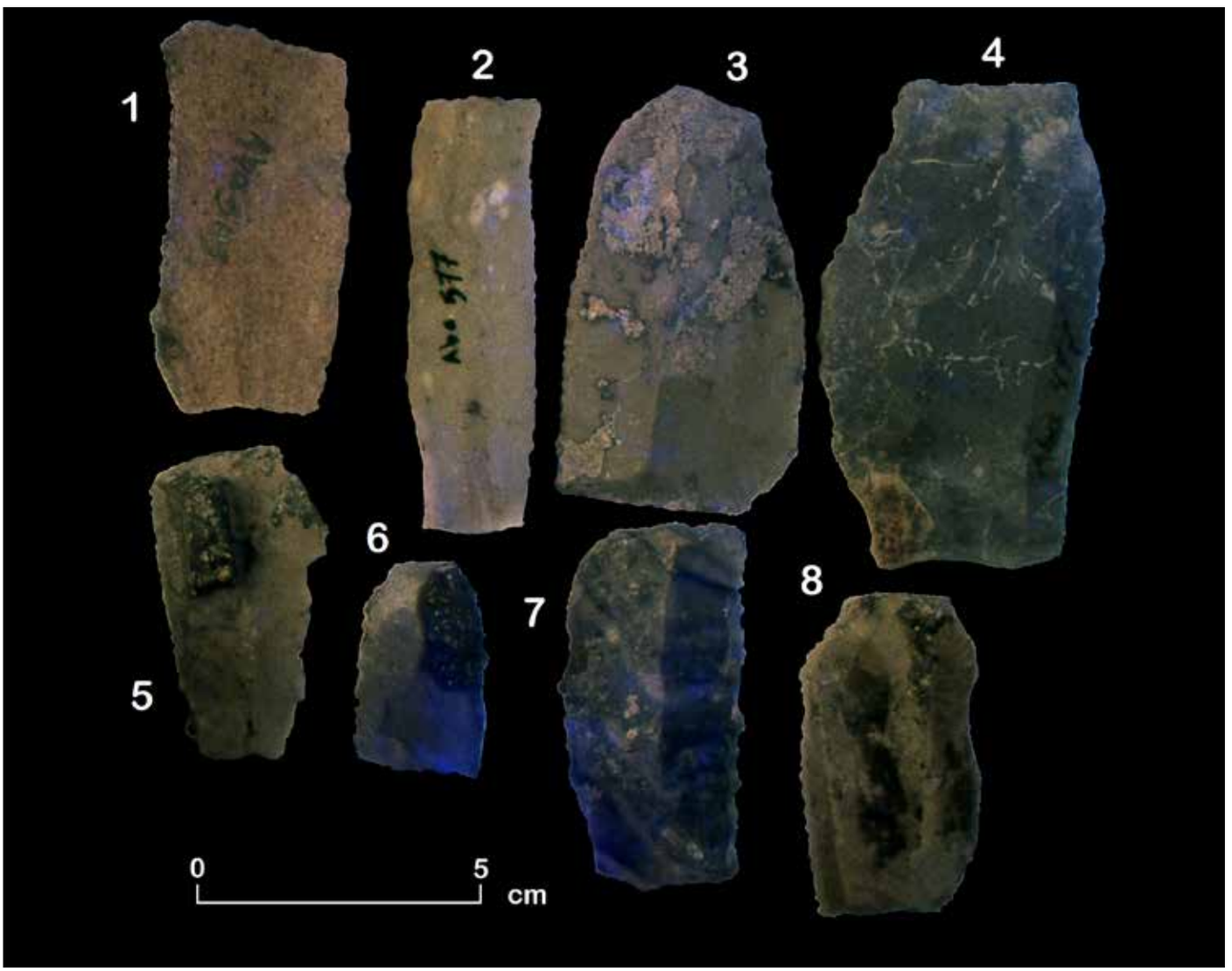


FIGURE 527. Flint implements showing bitumen traces at Tell Abada.