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# AL-RĀFIDĀN

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# パ イ ル 絨 毯 の 技 術
## ―イラクアッタールＡ丘及びＣ丘表面採集 パイル織物調査に寄せて―

坂　本　和　子*

# TECHNIQUE OF PILE RUG:
# THE EXAMINATION OF PILE TEXTILES FROM CAVE A AND SURVEY OF CAVE C IN AT-TAR, IRAQ

Kazuko SAKAMOTO*

## Summary and description

This paper is written in order to help understanding the data and the comments about pile textiles excavated in at-Tar Caves.

**1. Pile textiles from ancient times to the Middle Ages**

It's not clear when and where an original rug was made, but Pazyryk carpet from Siberia is a famous example of textiles woven in ancient times. This carpet was woven with perfect technique.

Fragments of pile rugs were excavated in Egypt, West Asia (include at-Tar) and Central Asia in the 1st century B.C. to the 6th century A.D. Their techniques; knotting pile, making selvage and warp edges are almost the same as the techniques used in the modern age.

A pile rug called "Qatifa" was made during the pre-Islamic period up to the time of Muhammad. Al-Tabari (839–923) described a rug as "Qatif" or "Qatef" in his work.

**2. Pile rug Techniques**

Pile textiles from at-Tar Caves are mainly made of wool. Warps are more strongly twisted than wefts. Occasionally warps are plied by white color wool and dark color hair (grandrell yarn in data).

Weft pile yarns are knotted or looped in the ground of pile textiles. The wefts are strongly beaten in order that pile yarns don't drop out from the ground, consequently pile textiles become firm making then suitable for rugs. Their textures are weft faced, that is, wefts are more than warps in number per 1 square centimeter.

Pile yarns are generally knotted around 2 warps each as one unit, but there are variations of the number as a single unit.

**A. Pile knot**

a. **Closed or Symmetrical type**

Type 1. Turkish or Ghiordes knot (fig. 2-1) corresponds to at-Tar A-1 (fig. 6 A-1)
This knot is not suitable for small patterns like flowers, so geometric patterns are often represented on rugs with this knot. This technique is seen in Turkey, parts of Caucasia, part of Iran, the South-East of Turkmen and part of India today.

Type 2. Turkish or Ghiordes knot (fig. 2-2)
Pile yarns are knotted around 3 warps as one unit. This technique is seen in Central Asia.

Type 3. At-Tar A-2 (fig. 6 A-2)
This knotting is of at-Tar own and is used when making double faced rug.

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b. **Opened or asymmetrical type**

Type 1. Persian or Sehna knot (fig. 3-1) corresponds to at-Tar B-1 (fig. 6 B-1)

There are two types of knots, one opens to the right and the other opens to the left.

This B-1 knot is suitable for small and intricate patterns. This technique spreads to Iran, Afghanistan, South-West of Turkmen, India, China and Japan.

Type 2. Jufti (fig. 3-2)

Pile yarns are knotted around 4 warps as pair of 2 warps This is one unit. This type can be found in Khorasan and Kermân.

c. **Closed type**

Spanish knot (fig. 4)

Pile yarns are knotted around one warp.

**B. Pile loop**

a. **opened or asymmetrical loop**

Sehna loop (fig. 5-1)

Pile yarns are pulled out forward from the back around one warp (fig. 5-1).

Some of them are cut in front (fig. 5-2), therefore their shapes coincide at-Tar B-2 type (fig 6. B-2). This technique is found in North India and Tibet.

b. **Simple loop** (fig. 5-3)

At-Tar C (fig. 6 C)

Pile yarns are woven one over and one under in warps then some of those over warps are pulled out forward. These pile yarns are loop shaped or cut as tufts. A few of them are left as long tufts. They are woven in Karapinar in Anatlia and called Çekitütü. Some pile rugs from at-Tar Caves have long tufts too. Some pile yarns are pulled out from the both sides making a double faced rug.

**C. Selvage**

Selvages of the rug must be firm for the sake of the purpose of usage, so that 2 or 3 warps together are woven as a single selvage warp or are twisted to make selvage cord. Otherwise thick threads are used for selvage. Consequently selvages of the rug become thick and solid.

a. **Simple selvage** (fig. 7-A)

The weft merely turns back at the selvage edge with same weave system as that of ground.

b. **Toughened selvage** (fig. 7-B)

The weft repeatedly turns twice at the selvage potion. Not only adoption of turning at the selvage edge, but also at the next selvage warp.

c. **Reinforced selvage** (fig. 7-C)

In addition to the simple return of weft at the selvage, additional threads are woven there to reinforce the selvage. They are useful to prevent from the selvage damage.

d. **Decorative selvage** (fig. 7-D)

Another color weft is woven at the decorative potion but doesn't continue to the ground. This sort of method functions as reinforcement and decoration of the selvage[*1].

**D. Treating the weave start and finish**

a. **Weave start** (fig. 8)

Warp continues to turn at the starting edge. On the other hand two thick threads are crossed between warp on the loom, or warp are passed after thick threads crossed, prior to warp setting on the loom. The other method wraps on warp.

This method is for the purpose of setting warp at the regular interval.

b. **Warp finish**（fig. 9）

1. Inverted

1. The edge is fold back and sewed.　2. The warps are turned back and stuck into the ground.

2. Fringe

1. The warps are cut.　2. The warp edge is hemmed.　3. A few warps are plied each.　4. Several warps are knotted at the warp edge.　5. The warps are braided and knotted the end.

3. knit

1. A few warps are knotted side by side between the selvages.　2. The half of knotted warps are knotted again side by side to make net*2.

4. Warp cord finish（fig. 9）

The warps are cut at about 3–4cm in length.　Selvage cord and a few warps are twisted individually in the same direction, then with the addition of two or three warps one after another, they are further twisted in the reverse direction gradually into a cord shap*3.

These hand-made techniques have been handed down from generation to generation for many centuries.

＊1,2,3　These techniques are not found in the pile textiles from at-Tar caves.

## 1.　古代・中世のパイル織物

パイル絨毯がいつ頃から織り出されるようになったのかそれははっきりしない。人類が地面にじかに横臥し，厳しい寒さや風砂を防ぐために用いた毛皮に代わるものとして生み出されたに違いない。パイル絨毯の良く知られた古い例はシベリヤのアルタイ山地にあるバシャダール出土資料とパズィルク出土資料である［Rudenko 1970: 248–304, pl. 174–176］。それらは紀元前５－６世紀とされていたが，その後ロシアの研究者によれば，絨毯の出土したパズィルク第５号墳は紀元前390－370年とされた［マルサドーロフ 1991: 42］。これらの出土資料は既に技術上，完成の域にある。従ってパイル絨毯の始まりは，はるか昔に遡ることであろう。

古代・中世のパイル絨毯は上記のものの外に，例えば，断片ではあるがヌビア，エジプト，西アジア，中央アジアにある紀元前１－紀元６世紀の遺跡で発見されている［Thurman 1979: 87, 88, 92, 113, 131; Bergman 1975: 21, 22, 55, 63, 66, 68; Kawanishi and Tathuno 1995: 282–284; Pfister 1937: 24, 28; 1940: 24, 25; Pfister & Bellinger 1945: 47–49; Fujii and Sakamoto 1990: 45–65; Stein 1928: 250; Sylwan 1949: 47–49; 賈 1980: 80–82; Wu 1996: 2–4］。デザインはシンプルであるが，そこに見られるパイル結び，耳作り，経糸始末など個々の技術は近代のものと大差ない。

パイル絨毯はプレ・イスラムからマホメットの時代 “Qatifa” と呼ばれ，タバリー（al-Tabarî 839–923）はパイル絨毯を “Qatif” もしくは “Qatef” と述べた。コーランには大きいパイル絨毯を意味する “Zarabi” という言葉があり，それをパラダイスについて述べるときに用いている［Hameed 1990: 230］。これらの中世の記録に見られるようにこの頃にはかなり大きい絨毯が織り出されたらしい。

## 2.　パイル絨毯の技術

### 糸と撚り

パイル絨毯には羊毛糸・綿糸・絹糸が使用される。絹糸は繭から糸を繰り，それから撚をかけ，綿糸と羊毛糸

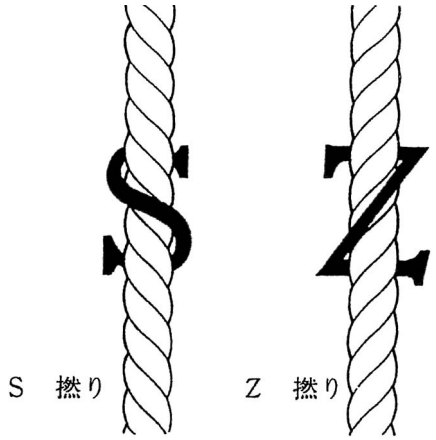



図１　撚の方向
杉村　棟『絨毯　シルクロードの華』朝日新聞社，1994, p. 106.

は紡いで糸にしたのち撚をかける。撚りの方向にはＳとＺ（図１）があり，パイル絨毯では経糸は緯糸に比べて撚りが強い。経糸は双糸が用いられることが多く，wool と hair を組み合わせ杢糸（grandrell yarn）にする場合もある。時には数本の糸が一緒に撚られているものもある。緯糸は単糸が多く，２本引き揃えて用いられることもある。

## パイル結び

パイル絨毯が一般の織物と違っているところは，パイル糸が結ばれたり，ループ状に引き出されたりしている事である。そしてパイル糸が抜けないように，緯糸が強く打ち込まれ，厚く堅固な織物（weft faced）となっている。この特質は敷物として不可欠である。

パイル糸が結ばれる方法は，基本的に閉鎖型・左右均等結びと開放型・左右非均等結びの２種類に分かれ，基本的に経糸２本が結びの１単位である。それぞれにパイル糸の本数・経糸の本数・結びの経糸単位数・開放の向きなどヴァリエーションがある。

パイル糸が結ばれることなく，単に引き出される場合は，その糸はループ状に連続している。後でそのループの先が切り落とされ，結ばれた形と同様になるものがある。そこでそれぞれを分類すると次のようになる。

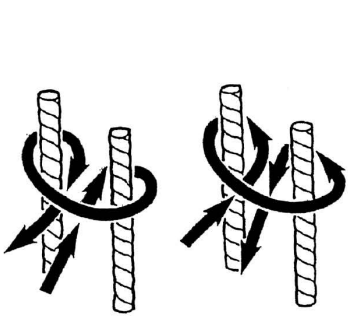
**A.** 結　び

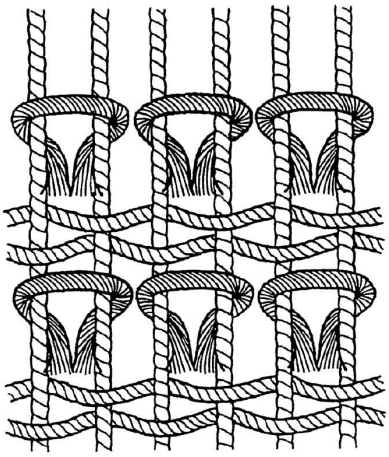
**a.** 閉鎖型・左右均等結び

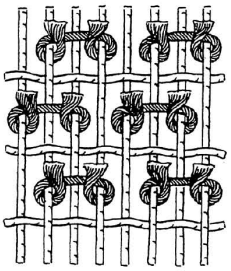
**タイプ 1**（トルコ結び，ギョルデス結び）図２－１：アッタールデータ欄 A-1（図６ A-1）

経糸２本の間を表側から裏側へパイル糸を出して表へ回し，経糸２本の表をまたぎ，もう一方の経糸外側を回り裏側から表側へパイル糸を経２本にわたったパイル糸の下をくぐらせて前に引き出す。結ばれた形は左右対称である。なかには竪機で前後２層となった経糸に結ばれるものもある。

このタイプは１単位のパイルの房が密着し単位間の房の間隔がやや開くので，小さな文様の表現には適さず，直線で構成される幾何文様のものが多い。また，毛足を長くするのに向いている。このタイプの結びはトルコ，コーカサス地域，イランの一部，トルクメンの東南部，インドの一部で見られる［Haway 1970: 48; Левин *et al* 1975: 61］。







1　　2

図２　閉鎖型・左右均等結び（トルコ結び，ギョルデス結び）
－１　杉村　棟『絨毯　シルクロードの華』朝日新聞社，1994, p. 107.
－２　Eiland, Murray L., 1981, p. 42, Fig. d.

**タイプ２**　図２－２：アッタールデータ欄 A-1

経糸３本のうち両端の糸にタイプ１と同様の方法で絡ませ，中央の糸の両脇からまえに引き出す。

このタイプ２は経糸が開口した時，上糸に結ばれるので，手間と時間の節約が出来る。このタイプは中央アジアに見られる［Eiland 1981: 42］。

**タイプ３**　アッタールデータ欄 A-2（図６ A-2）

経糸２本の一方の糸の周りを表側から裏側へパイル糸を一巡し，もう１本の内側から外側に一巡させ，前のパイル糸と反対側にパイル糸を出す。結果的に両面にパイル糸が出て両面パイルとなる。この結びはアッタール独自のものである。

**b.**　開放型・左右非均等結び

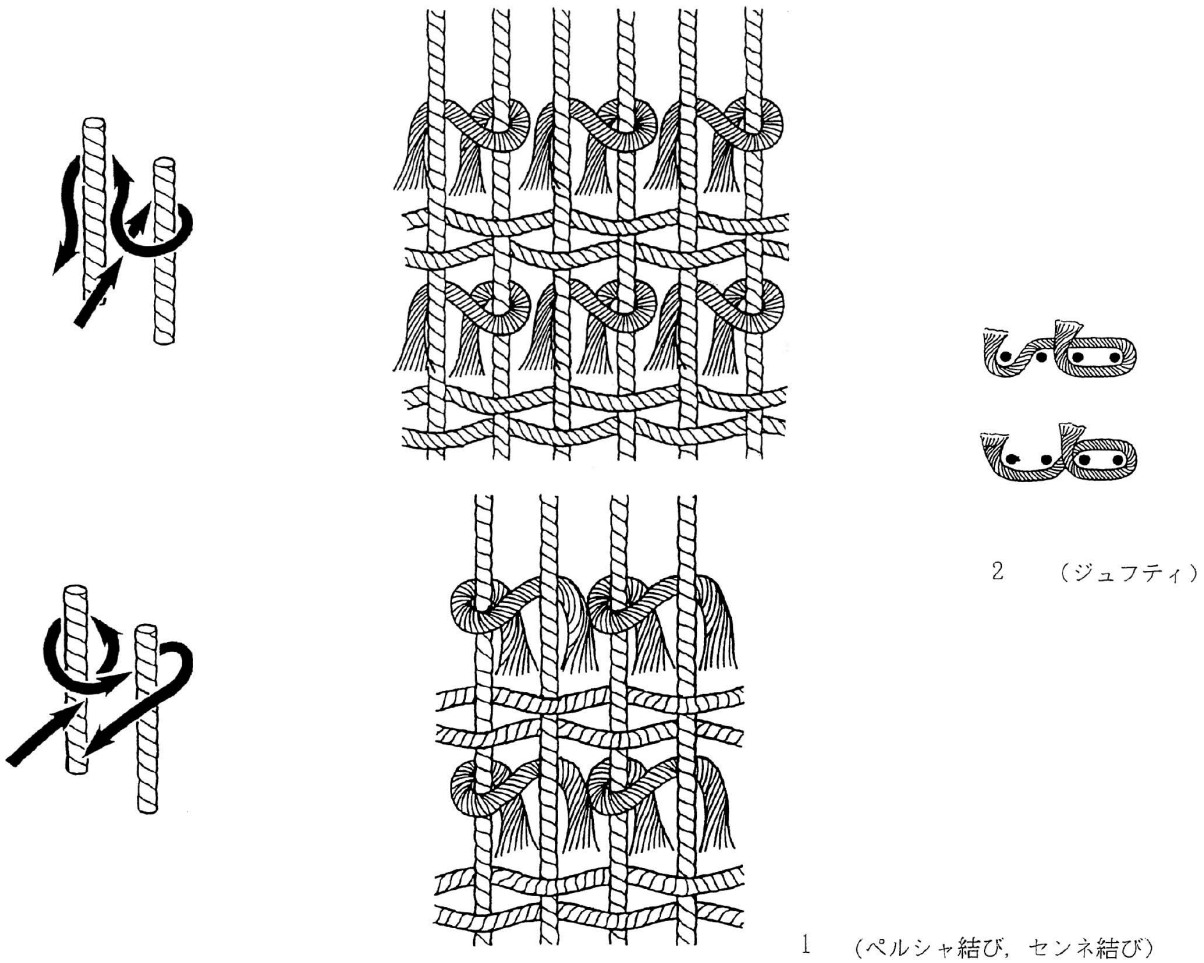
**タイプ１**（ペルシャ結び，センネ結び）図３－１：アッタールデータ欄 B-1（図６ B-1）

経糸２本の間を表側から裏側へ通し一方の経糸の周りにパイル糸を回し，もう一方の糸の内側から外側へ回して経糸に引っかけ糸を前に引き出す。結ばれた形は左右非対称である。パイル糸が引っかけられた経糸が左側の場合は右開き（open to the right），右側の場合は左開き（open to the left）として区分する。なかには竪機で前後２層となり１本置いて隣り合った２本の経糸に両面から結ばれ両面パイルとなるものがある。また，経糸３本単位の結びがひっかけられたパイル糸に重なるように結ばれる場合には（アッタールデータ欄 B-2，図６ B-2），次に記す B ループ a 開放型・左右非均等ループをカットした形と同様になる。

この B-1 のタイプは細かく複雑な文様の表現に適している。このタイプの結びはイラン，アフガニスタン，トルクメンの西南部，インドに多く，中国，日本に普及している［Haway 1970: 48; Левин *et al* 1975: 61］。この結びの開き方によって，右利きや左利きと表示するものがある。しかしトルクメンにこの左開きが多いので，利き手の問題ではなく伝習であろう。

**タイプ２**（ジュフティ）図３－２

結び方はタイプ１と同じであるが，２本を１組として経糸４本にパイル糸を絡ませる。あるいは，経糸２本のまわりを一巡させ４本目にだけひっかける［Eiland 1990: 15］。このタイプはタイプ１の二倍の経糸に１単位が結



2　（ジュフティ）

1　（ペルシャ結び，センネ結び）

図３　開放型・左右非均等結び（１．ペルシャ結び，センネ結び　２．ジュフティ）
－１　杉村　棟『絨毯　シルクロードの華』朝日新聞社，1994, p. 107.
－２　Eiland, Murray L., 1990, illust. 5.

ばれるので，労力を省くことが出来る。しかし，目が粗く耐久性に乏しいという欠点がある。このタイプの前者は以前からホラサン地方に見られたが，現在は周辺に広がっている。後者はケルマンに見られる［Eiland 1981: 41］。

**c.　閉鎖型（スペイン結び）図４**

経糸１本にパイル糸を１～２巡させ，前に引き出す。あるいはパイル糸を後ろで交差させて前に出す。この結びは微少な花や文様の縁取りなどに使用される。

**B.　ループ**

**a.　開放型・左右非均等ループ（センネループ）図５－１**

手前にあるパイル糸を経糸１本の後方を回って前へ引き出す。パイル糸はループの状態のままのものもあれば切り離されるものもある。切り離した場合は開放型・左右非均等結びのタイプ１を経糸３本単位で１本重ねて結んだ場合と同様の形となる（図５－２，図６ B-2)。間隔は経糸１本置きから数本まで多様である。このループを切り離した形，すなわち，図５－２，図６の B-2に示された結びはインド北部，チベットに見られる。

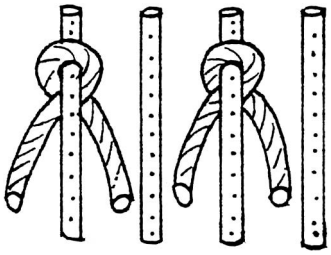
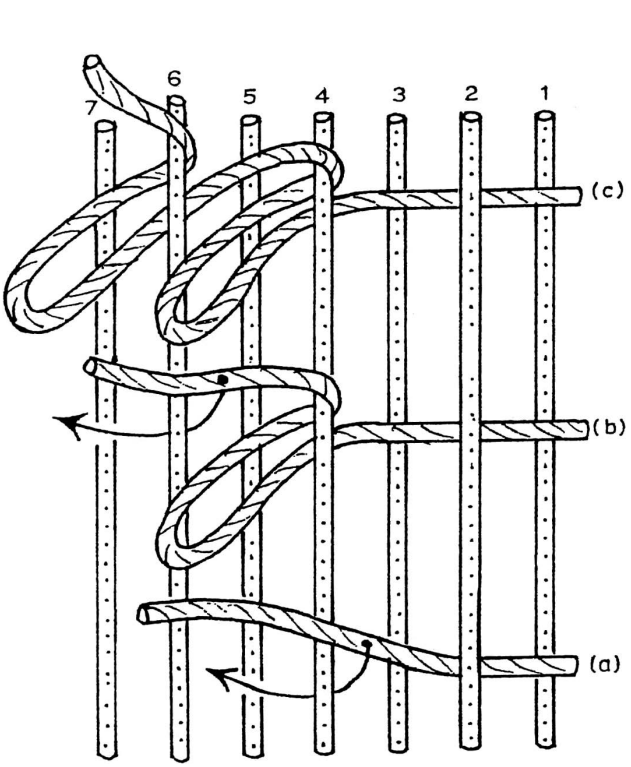
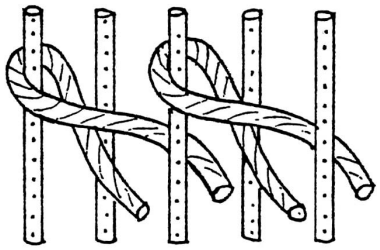


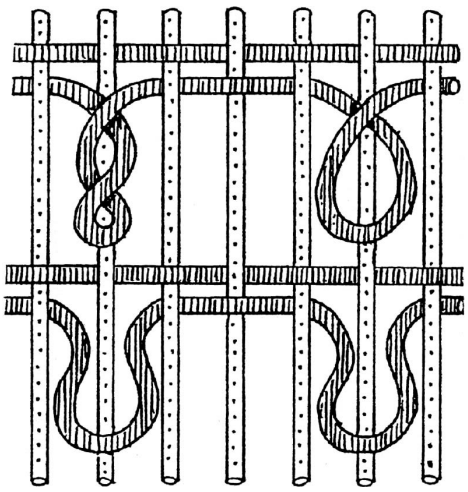
図４　閉鎖型（スペイン結び）
Collingwood, Peter, The Techniques of Rug weaving,
Watson－Guptill Publications, 1968, New York, Fig. 176.




1



2



3

図５－１，２　開放型・左右非均等ループ（センネループ）　３　シンプルループ
－１　Collingwood, Peter, 1968, Fig. 164.
－２　Collingwood, Peter, 1968, Fig. 175（c）.

**b.　シンプルループ　図５－３，アッタールデータ欄Ｃ（図６－Ｃ）**

組織に通されたパイル糸を手前に引き出す。ループ状のままのものもあれば，切り離されるものもある。表裏両面にパイル糸が段違いで引き出され，両面パイルとなるものもある。間隔は経糸１本置きから数本まで多様である。

以上のように，地域によって結び方にある程度の傾向が見られるものの一部民族の移動や，技術・デザインの交流によって地域の特徴は失われつつある。

結ばれたパイル糸は房状に切られ，刈り込まれる（中国では文様の縁に沿って更に斜めに刈り込まれる）。極く僅かであるがシャギーカーペットの様に長い房のまま残されるものがある。シンプルループのループのまま長い房として残しているものでアナトリアの Karapinar でのみ織られ Çeki tütü と呼ばれている［Hirsch 1989: 23］。

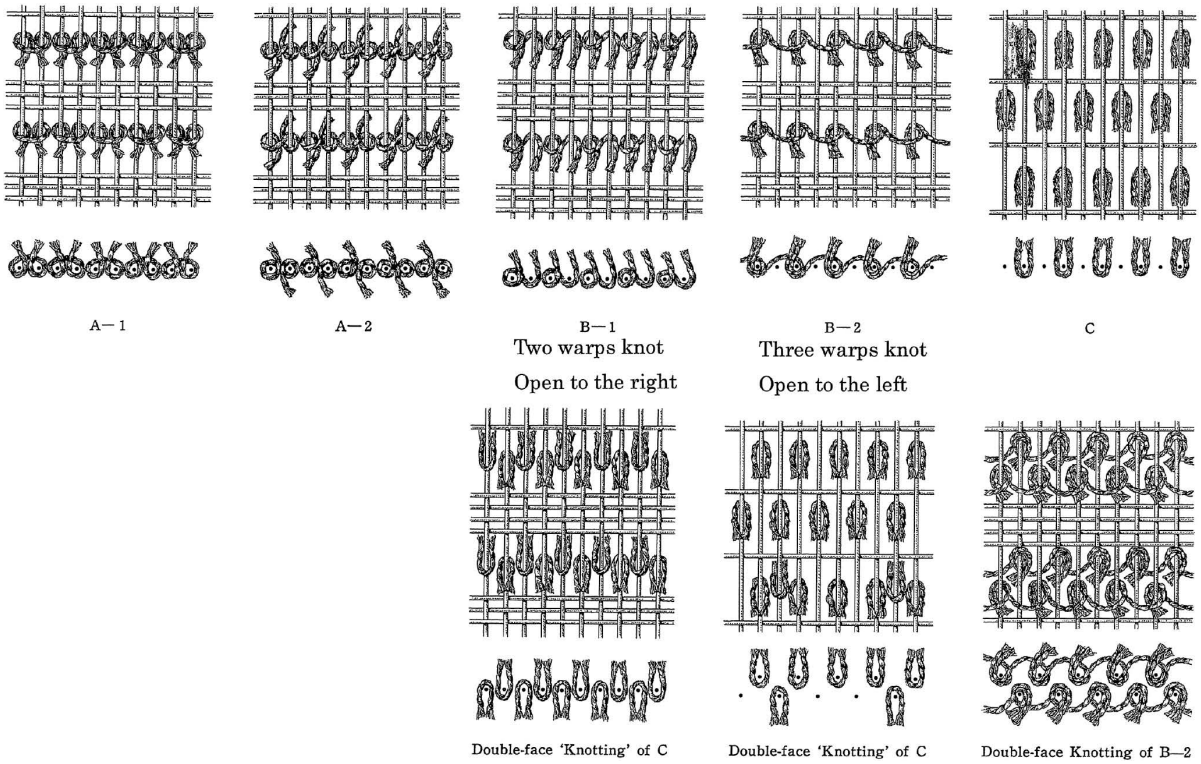



図6　アッタール洞窟出土パイル織物の結び
Fujii, H, and Skamoto, K., 1990, p. 50, Fig. 3.

アッタール出土パイル絨毯にも結びのタイプで長い房をもつものがある。

パイル糸が結ばれる密度には大小があり，古代のバシャダール絨毯は 10 cm 平方に7000ノット，パズィルク絨毯で3600ノットを数える［Rudenko 1970: 302］。

調査した近代の絨毯では絹絨毯のノット数の多いもので 10 cm 平方に6210ノット，毛絨毯で3480ノットである。

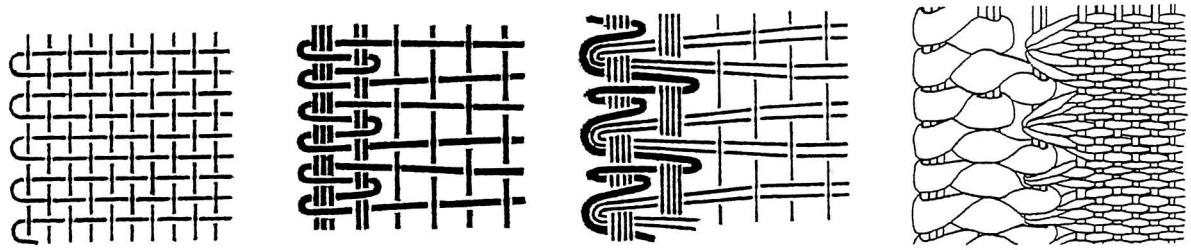
パイルが結ばれる段と段の間に通される緯糸は主に 2 本であるが，絨毯によって 1 本から数本とまちまちで，経糸と平組織を組織する。

## 耳づくり

パイル絨毯の耳は使用目的から考えて堅固でなければならない。従って，一般の織物の耳に比べて太く，厚く作られる。そのために経糸を 2 ～ 3 本を束ね，あるいは，撚ってコードとして絨毯の本体の経糸の両側に配置し耳とする。経糸を束ねたり，コードとする代わりに別の太い糸を耳の経糸としたりする場合もある。耳作りの技法を分類すると次のようになる。

A．単純に引き返す耳（一般の織物に多い）データ欄タイプ 1 （図 7 －A）
　緯糸は端の経糸のところで U ターンする。

B．強化された耳　データ欄タイプ 2 （図 7 －B）
　緯糸は端の耳コードところで U ターンし，経糸と隣り合う耳コードの端まで戻り，また引き返して再び端で U ターンする。アッタールのパイル織物の耳はほとんどこのタイプである。



A　　B　　C　　D

Type 1　　Type 2　　Type 3　　Type 4

Cord 3・2　left side　　Cord 4・4　left side

図７　耳づくり

Fjii, hideo, Sakamoto, Kazuko and Ichihashi, Mikizo, 1989, Fig. 6.

C．別糸を加えた耳　データ欄タイプ３（図７－C）

緯糸とは別に，糸を緯糸の上から巻き付けたり，緯糸の間に織り込んだりしたもので，地の色と違った色を用いると強化の上に装飾的効果もある。

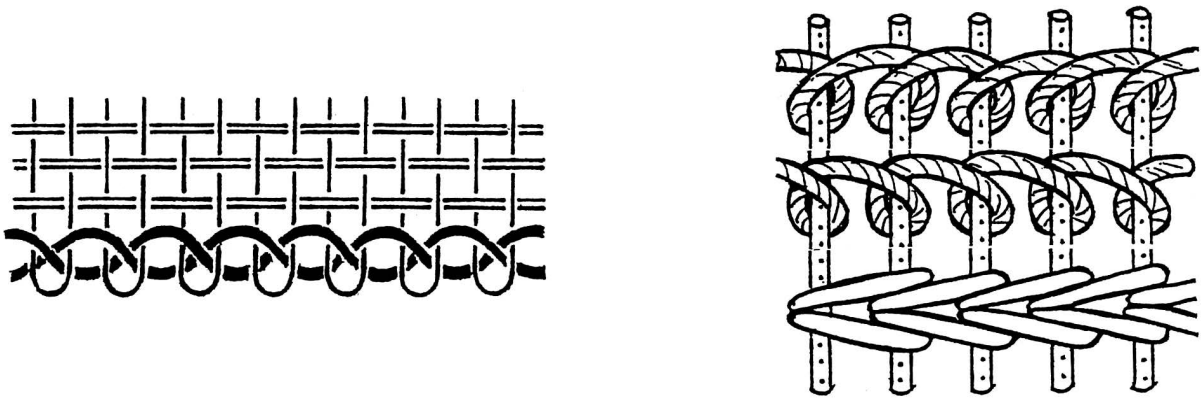
D．付帯耳　データ欄タイプ４（図７－D）

本体の緯糸と違う色の緯糸を用い，綴織技法で更に耳を作り加えたもので，装飾的効果が大きい[注1]。

## 経糸始末

### A.　織り始め

パイル絨毯を構成するのは経糸，緯糸，パイル糸である。まず，経糸が機に掛けられる時，経糸に織り始めの処理がなされる。緯糸より太い糸２本で経糸の間で交差しながら，あるいは，太い緯糸を交差しつつ経糸を通し縄状に編み上げて経糸を等間隔に固定する（図８－１）。あるいは，緯糸より太い糸２本を経糸に縄状に絡めながら経糸を固定する（図８－２）。10～20 cm のエッジ部を織ってからパイル糸を結ぶ。エッジ部は平織り，綴織，浮織り，紋織り，縫い取り，スーマックなどの織技法が用いられる。全体が織り上がって経糸が切り離され機か



1　　2

図８　織始めの準備

－１　Fjii, hideo, Sakamoto, Kazuko and Ichihashi, Mikizo, 1989, Fig. 4.

－２　Collingwood, Peter, 1968, Fig. 126.

ら下ろされた時，織り始め部は経糸の機掛けの仕方によって１．経巻きロープまたは棒が抜かれループ状の房のまま，２．ループ状の経糸に密着した縄状のまま，３．切り離されて織り終わりと同様の処理がなされるものの３種類に分かれる。

**B.　織り終わり**

織り終わり側のエッジ部を上記と同様に織り，経緯とも 10～20 cm 残して絨毯を織り終わる。織り終わった絨毯は機からはずされ両端の経糸の処理がなされる。その処理方法は次の通りである。

ａ．折り返し

1.　エッジを折り返し縫って留める。２．経糸を織り組織に入れ戻す。

ｂ．フリンジ

1.　経糸は切り離されたまま。２．織りが終わった箇所をまつり緯糸がはずれないようにする。３．経糸を数本ずつ纏め撚る。４．経糸を数本ずつ纏め房の根本で結び緯糸が外れないようにする。５．纏めた経糸を三つ編みにし，先で結び留める。

ｃ．編み結び

最も簡単なものは，比較的長く残された経糸を数本ずつ纏め，隣り合った一組の経糸どうしをを結ぶ。簡単な結びから次に，結び目がジグザグになるように隣り合った一組の経糸どうしをを結び房を垂らす[注2]。編み結びの仕方には多様な結びのヴァリエーションがある。

ｄ．縄状始末　図９

縦糸を数本ずつ撚り，次に，耳のコードと先に撚られた隣の糸とを逆方向に撚り，徐々に撚られた糸を加えながら端まで縄状に仕上げる[注3]。

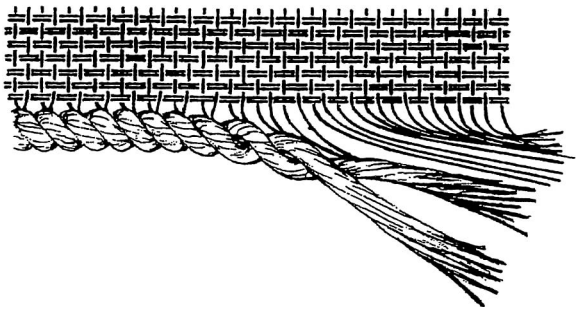


図９　織終わり，縄状始末
Fjii, hideo, Sakamoto, Kazuko and Ichihashi, Mikizo,1989, Fig. 5.

この様な手織り技術は今日まで親から子，子から孫へと何世紀も受け継がれてきた。

注1,2,3　この様な手法はアッタール出土パイル織物には見出されない。

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## 3. A丘およびC丘表面採集パイル織物

A丘における綴組織織物，平組織織物，斜紋（綾）組織織物はほとんど断片となり，洞窟内で分散していた。初期の調査においては断片の1部が測定され“AL-TAR”Iで公表された。その後新たにCAVEごとに同一と見なされる織物の集約がなされ，一つの織物としてすでにナンバー付けがなされている。それらの代表とみなされる織物のデータの測定はなされているものの，その報告は現在のところ公表されていない。

パイル織物は同様に集約され，上記織物に続けてナンバーがつけられ，C丘のほとんどがすでに公表された［Fjii, Sakamoto, Ichihashi 1989: 109–165, Pl. 27–37; Fjii,Sakamoto 1990: 45–65, Pl. 1–3; Fjii, Sakamoto, Ichihashi 1997: 311–344, Pl. 1–5］。今まで公表されていなかったA丘およびC丘表面採集のパイル織物は以下のとおりである。

| Hill | Cave No. | Textile No. and Description | Representative Specimen No. | Plate No. |
|---|---|---|---|---|
| Hill A | Cave B8 | Textile No. 6: Small pile textile | No. C-14-I-2 | Pl. 1-1 |
| | Cave D3 | Textile No. 4: Small pile textile | No. C-06-I | Pl. 1-2 |
| | Cave D7 | Textile No. 3: Thick pile textile | No. C-05-VI-2 | (Pl. 1-3) |
| | | Textile No. 4: Thick pile textile | No. C-05-I-d | |
| | Cave E2－1 | Textile No. 20: Orange pile textile | No. C-14-3 | Pl. 1-4 |
| | | Textile No. 21: Small pile textile | No. C-07 | Pl. 2-1 |
| | Cave F3 | Textile No. 13: Pile textile with staircase pattern | No. C-56-a | |
| | | Textile No. 14: Large pile textile with band pattern | No. C-62-3 | Pl. 2-2 |
| | | Textile No. 15: Small pile textile | No. C-70-3 | Pl. 2-3 |
| | Cave F4 | Textile No. 21: Pile textile with staircase pattern | No. C-25-1 | Pl. 3-1 |
| | | Textile No. 22: Small pile textile | No. C-53-2-a | Pl. 3-2 |
| | Cave F5 | Textile No. 9: Pile textile with staircase pattern | No. C-12 | Pl, 3-3 |
| | | Textile No. 10: Pile textile with staircase pattern | No. C-100 | (Pl. 3-4) |
| | Cave F6 | Textile No. 58: Red pile textile | No. C-07-1 | Pl. 4-1 |
| | | Textile No. 59: Pile textile with sown cloth | No. C-03-1 | |
| | | Textile No. 60: Decorated pile textile | No. C-04-3, C-04-3-a | Pl. 4-2 |
| | | Textile No. 61: Small pile textile | No. C-38-19-b | Pl. 4-3 |
| | | Textile No. 62: Pile textile with band pattern | No. C-38 | Pl. 4-4 |
| | | Textile No. 63: Small pile textile | No. C-29-2 | Pl. 5-1 |
| | | Textile No. 64: Small pile textile | No. C-25-9 | Pl. 5-2 |
| | | Textile No. 65: Small pile textile | No. C-40-(c) | Pl. 5-3 |
| | | Textile No. 66: Orange pile textile | No. C-25-6 | Pl. 5-4 |
| | | Textile No. 67: Small thick pile textile | No. C-25-2 | Pl. 5-5 |
| Hill C | Cave 9 | Textile No. 12: Small pile textile | No. IV-HI-22-② | Pl. 6-1 |
| | | Textile No. 13: Small pile textile | No. IV-OH-1-⑨ | Pl. 6-2 |
| | Cave11 | Textile No. 4: Pile textile with band pattern | No. IV-OH-13 | Pl. 6-3 |

( ) 付 Plate No. は Representative Specimen を含まない。なお，Plates の写真撮影および提供に感謝します。

上記各パイル織物のうち大きいもの，組織の崩れていないもの，文様のあるものを選び代表織物（Representative specimen）とし，それを測定した結果，データをここに報告することとする。報告に際してパイルの結び方，耳の状態，経糸始末などは略号で示されている。それらはすでにAL-LAFIDAN X, 1989において図解しExplanatory Notesで詳しく説明されたものであるが，結びに別の表現があれば取り上げデータに使用された略号を技術の項で併記し解説した。

**B8　Textile No. 6**　Small pile textile

Representative specimen　Registered No. C-14-I-2

Size (cm):　2.50×3.20

Structure:　Ground:　Plain weave: warp 2, weft 1. Weft faced

Pile knot: A2 type, double-faced, 4 pile yarns knotting together

Thickness(mm):　3.35(only ground)

| | Warp | Weft | Pile |
|---|---|---|---|
| | Grandrelle thread | | |
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y8.5/3.0 (Pale reddish yellow) 5.0YR2.4/4.0 (Dark brown) | 5.0YR2.4/4.0 (Dark brown) | 5.0YR2.0/1.5 (Dark grayish brown) |
| Diameter(mm): | 1.3~1.5 | 3.0~3.7 | 1.5~2.0 |
| Twist, Twist No(/cm): | Z/Z—S(2) | Z/Z—S(1) | S/S—Z(2.5~3.3) |
| Density(/cm) | 1.5×2 | 4 | unknown<br>Pile knot/dm |

Selvage:　None

Remarks:　Small fragment. 4 pile yarns are knotted together

Fragmentary specimen: C-14-I-2

**D3　Textile No. 4**　Small pile textile

Representative specimen　Registered No. C-06-I

Size (cm):　11.1×12.9

Structure:　Ground:　Plain weave: warp 1, weft 1. Weft faced

Pile knot: Uncertain

Thickness(mm):　2.4~2.6

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 9.0YR4.0/4.0 (Yellowish brown) | 9.0YR4.0/4.0 (Yellowish brown) |
| Diameter(mm): | 1.0~1.2 | 0.7~0.8 | 1.4 |
| Twist, Twist No(/cm): | Z/Z—S(4~5) | −Z(1.5~2.5) | Z/Z—S(unknown) |

| | | | |
|---|---|---|---|
| Density(/cm) | 3.6 | 25.0~29.0 | 5×8<br>Pile knot/dm |

Selvage: None

Remarks: Interval between pile knotting rows 0.6~1.3cm (15~36 pass)

Fragmentary specimen: C-06-I

**D7 Textile No. 3** Thick pile textile

Representative specimen Registered No. C-05-VI-2

Size (cm): 17.1×35.0 (C-05-VI-2-a + C-05-VI-2-b)

Structure: Ground: Plain weave: warp 2, weft 1. Weft faced

Pile knot: A2 type, double faced, 4~5 pile yarns knotting together

Thickness(mm): 4.2~4.3

| | Warp(1) | Warp(2) | Weft | Pile |
|---|---|---|---|---|
| | | Grandrelle thread | | |
| Raw material: | sheep | sheep | sheep | sheep |
| Color: | 2.5Y8.5/3.0<br>(Pale reddish yellow) | 2.5Y8.5/3.0<br>(Pale reddish yellow)<br>9.0YR4.0/4.0<br>(Yellowish brown) | 5.0YR2.4/4.0<br>(Dark brown) | 5.0YR2.0/1.5<br>(Dark grayish brown) |
| Diameter(mm): | 1.0~1.2 | | 2.0~2.5 | 1.5~2.6 |
| Twist, Twist No(/cm): | Z/Z—S(4.0~5.0) | | Z/Z—S(1.0)<br>—Z(−) | S/S—Z(3.0~4.0) |
| Density(/cm) | (1.8~2.2)×2 | | 4.0~5.0 | 4.0×(9.0~11.0)<br>Pile knot/dm |

Selvage: None

Remarks: Interval between pile knotting rows 2~2.3cm (8~11 pass). Longest pile yarn 6 cm.

Fragmentary specimen: C-05-I-c, C-05-IV-2 (C-05-I-a + C-05-I-b)

C-05-VI-2-a (9.5×23.0) and C-05-VI-2-b was one piece at the time of excavation

**D7 Textile No. 4** Thick pile textile

Representative specimen Registered No. C-05−1-d

Size (cm): 2.2×2.5

Structure: Ground: Plain weave: warp 2, weft 1. Weft faced

Pile knot: A2 type, double faced, 5 pile yarns knotting together

| | Warp(1) | Warp(2) | Weft | Pile |
|---|---|---|---|---|
| | | Grandrelle thread(C-05-1-e) | | |
| Raw material: | sheep | sheep | sheep | sheep |
| Color: | 2.5Y8.5/1.0 (Pele reddish yellow) | 2.5Y8.5/1.0 (Pele reddish yellow) 3YR2.4/4.0 (Dark brown) | 5.0YR7.0/4.0 (Dull orange) | 5.0TR2.0/1.5 (Dark grayish brown) |
| Diameter(mm): | 1.2~1.8 | 2.0 | 2.0 | 2.2 |
| Twist, Twist No(/cm) | S(5.0~6.0) | Z/Z—S(2.0) | — Z(1.5~2.0) | S/S—Z(3.0~4.0) |
| Density(/cm) | 3.0×2 | 3.0×2 | 7.0 | unknown×8.0 Pile knot/dm |

Selvage: None

Remarks: Small fragment

Fragmentary specimen: C-05-I-d, C-05-I-e

**E2－1　Textile No. 20**　Orange pile textile

Representative specimen　Registered No. C-14-3

Size (cm): 26.8×7.5

Structure: Ground: Plain weave: warp 2, weft 1. Weft faced

Pile knot: A1 type, 3 pile yarns knotting together

Thickness(mm): 3.70~3.95

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 5.0YR2.4/4.0 (Dark brown) | 5.0YR2.4/4.0 (Dark brown) | 5.0YR5.0/10.0 (Deep orange) |
| Diameter (mm): | 1.2~1.8 | 2.0~2.8 | 1.3~2.0 |
| Twist, Twist No (/cm): | Z/Z—S(2.5~3.0) | Z/Z—S(0.5~1.0) | S/S—Z(2.5) |
| Density(/cm) | 2.2×2 (Selvage side) | 3.3 | (4~5)×(10~11) Pile knot/dm |

Selvage: Type 2, cord (4・2・2, left side) C-13-1, cord (4・2・2, left side) C-14-3

Remarks: Interval between pile knotting rows 1.5~2.3cm (5~8 pass)

Fragmentary specimen: C-13-1, C-13-4, C-14-3, C-15-3, C-15-4, C-18-3, C-19-8, C-20-4, C-22, C-24-a, C-25-3-a, C-25-3-b, C-26-10, C-27-9, C-30-3, C-32-3

**E2－1 Textile No. 21** Small pile textile

Representative specimen Registered No. C-07

Size (cm): 5.0×2.4

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Pile knot: Uncertain

Thickness(mm): 1.4~1.6

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y8.5/3.0 (Pale reddish yellow) | 4.0R6.0/11.0 (Rose) | 4.0R6.0/11.0 (Rose) |
| Diameter(mm): | 1.0~1.3 | 0.7~1.1 | 1.2 |
| Twist, Twist No(/cm): | －Z(5.0) | －Z(2.5~3.0) | S/S—Z(3.0~4.0) |
| Density(/cm) | 4.0 | 18.0 | Unknown Pile knot/dm |

Selvage: None

Remarks: Interval between pile knotting rows 1.2 cm (20 pass)

Fragmentary specimen: C-07

**F3 Textile No. 13** Pile textile with staircase pattern

Representative specimen Registered No. C-56-a

Size (cm): 8.0×11.0

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Design: Plain weave: warp1, weft 1. Weft faced, dovetailed tapestry-weave technique

Pile knot: B2 type, 4 warps per unit, open to the right

Design: Staircase pattern C-72-2-a, band pattern C-56-a, C-56-b

Thickness(mm): 2.0

| | Warp | Weft(1) | Weft(2) | Pile(1) | Pile(2) |
|---|---|---|---|---|---|
| Raw material: | sheep | sheep | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) | 4.0R5.0/6.0 (Dark rose) | 2.5Y7.5/6.0 (Dull reddish yellow) | 4.0R5.0/6.0 (Dark rose) |
| Diameter(mm): | 0.9~1.0 | 0.6~0.7 | 0.6~0.7 | 1.0~1.3 | 1.0~1.3 |
| Twist, Twist No(/cm): | Z/Z—S(5.0) | | －Z(3.3) | －Z(3.0) | Z/Z—S(4.0) |
| Density(/cm) | 4.8 | | | 24.0 | 12.0×16.0 Pile knot/dm |

Selvage:　Type 2, cord ( 4・3, right side) C-85-3

Remarks:　Interval between pile knotting rows 0.6~0.8(17~20 pass)

Fragmentary specimen: C-56-a, C-56-b, C-56-c, C-57, C-59-2-a, C-62-1, C-63-3, C-65-2, C-66-2, C-68, C-69, C-70-5, C-72-1, C-72-2-a, C-72-2-b, C-72-2-c, C-73-1-a, C-74-1, C-75-4-a, C-75-6, C-75-6, C-76-4-a, C-79-1, C-80-3, C-80-6, C-81-2, C-81-3, C-82-3, C-85-3, C-67

**F3　Textile No. 14**　Large pile textile with band pattern

Representative specimen　Registered No. C-62-3

Size (cm):　30.0×29.0

Structure:　Ground:　Plain weave: warp 1, weft 1. Weft faced

Design:　Plain weave: warp 1, weft 1. Weft faced

Pile knot:　A1 type

Design:　Band pattern (C-73-2)

Thickness(mm):　ground 2.4~3.7　with pile 3.8~4.2

| | Warp | Weft(1) | Weft(2) | Pile |
|---|---|---|---|---|
| | Grandrelle thread | | | |
| Raw material: | sheep | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) 5.0YR2.4/4.0 (Dark brown) | 5.0BG2.4/3.0 (Dark blue green) | 10.0R4.5/10.0 (Deep reddish orange) | 5.0BG2.4/3.0 (Dark blue green) |
| Diameter(mm): | 1.5~2.0 | 1.1~1.8 | 1.0~1.8 | 1.8~2.5 |
| Twist, TwistNo(/cm): | Z/Z—S(2.5~3.0) | —Z(1.7~2.5) | —Z(1.7~2.0) | S/S—Z(2.5~3.0) |
| Density(/cm) | 3.0~3.6 | 9.0~11.0 | | 6.5×15.0 Pile knot/dm |

Selvage:　Unclear type, cord (3・・) C-80-4-a

Remarks:　Interval between pile knotting rows 1.3~1.5cm (14~18 pass).

Longest pile yarn 5cm

Fragmentary specimen: C-61, C-62-3, C-66-1, C-73-2, C-75-7, C-76-3, C-77-2, C80-8, C-80-4-a

**F3　Textile No. 15**　Small pile textile

Representative specimen　Registered No. C-70-3

Size (cm):　6.0×6.5

Structure:　Ground:　Plain weave: warp 2, weft 1. Weft faced

Pile knot: A1 type. 3~4 pile yarns knotting together

Thickness(mm): 3.3~3.4

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 9.0YR5.5/8.0 (Brownish gold) | 9.0YR3.0/3.0 (Dark yellowish brown) |
| Diameter(mm): | 1.0~1.2 | 2.0~2.5 | 1.5~1.8 |
| Twist, Twist No(/cm): | Z/Z—S(4.0) | −Z(1.0) | S/S—Z(3.5) |
| Density(/cm) | 1.8×2 | 7.5 | 4.0×8.0 Pile knot/dm |

Selvage: None

Remarks: Interval between pile knotting rows 1.8cm (14 pass).

Fragmentary specimen: C-61-b, C-70-3

**F4 Textile No. 21** Pile textile with staircase pattern

Representative specimen Registered No. C-25-1

Size (cm): 11.4×5.2

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Design: Plain weave: warp 1, weft 1. Weft faced, dovetailed tapestry-weave technique

Pile knot: B2 type, 3 warps per unit, open to the right

Design: Staircase pattern (C-25-2, C-25-a, C-29-b-2)

Thickness(mm): 1.8

| | Warp(1) Grandrelle thread | Warp(2) | Weft(1) | Weft(2) | Weft(3) |
|---|---|---|---|---|---|
| Raw material: | sheep | sheep | sheep | sheep | sheep |
| Color: | 5.5Y8.0/3.0 (Greysh yellow) 5.0YR2.4/4.0 (Dark brown) | 5.5Y8.0/3.0 (Greysh yellow) | 5.5Y4.0/4.0 (Oleave) | 10.0GY3.0/4.0 (Dark yellowish green) | 4.0R2.4/5.0 (Dark red) |
| Diameter(mm): | 0.8~1.1 | 0.8~1.1 | 0.4~0.7 | 0.6~0.8 | 0.4~0.6 |
| Twist, Twist No(/cm): | Z/Z—S(3.0~4.0) | Z/Z—S(4.0~5.0) | −Z(2.0~3.3) | −Z(2.5~3.3) | −Z(3.3) |
| Density(/cm) | 5.0 | | | 32.0~35.0 | |
| | Pile | | | | |
| Raw material: | Sheep | | | | |

Color: 10.0GY3.0/4.0

(Dark yellowish green)

Diameter(mm): 1.0~1.2

Twist, Twist No(/cm): Z/Z—S(2.5)

Density(/cm) 13.0×12.5

Pile knot/dm

Selvage: Type 2, cord (3・2 left side) C-25-1, C-29-b-1

Remarks: Interval between pile knotting rows 0.4~0.5cm (13~14 pass)

Fragmentary specimen: C-25-1, C-25-2, C-25-3, C-25-a, C-26-b, C-27-3-a, C-27-3-b, C-29-b-1, C-29-b-2

**F4　Textile No. 22**　Small pile textile

Representative specimen　Registered No. C-53-2-a

Size (cm): 5.9×7.5

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Pile knot: B2 type, 3 warps per unit, open to the left

Thickness(mm): 2.2

| | Warp(1) | Warp(2) | Weft | Pile |
|---|---|---|---|---|
| | Grandrelle thread | | | |
| Raw material: | sheep | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 5.0YR2.4/4.0 (Dark brown) | 9.0YR4.0/4.0 (Yellowish brown) | 9.0YR4.0/4.0 (Yellowish brown) |
| | 5.0YR2.4/4.0 (Dark brown) | | | |
| Diameter(mm): | 1.2~1.3 | | 0.7~0.9 | 1.5~2.0 |
| Twist, Twist No(/cm): | Z/Z—S(4.5) | Z/Z—S(3.0) | −Z(2.5~3.3) | Z/Z—S(2.5) |
| Density(/cm) | 3.5 | | 18.0~19.0 | 6.0×17.0 Pile knot/dm |

Selvage: None

Remarks: Interval pile knotting rows 1.2cm(21 pass)

Fragmentary specimen: C-49-3, C-53-2-a, C-54-5-c

**F5　Textile No. 9**　Pile textile with staircase pattern

Representative specimen　Registered No. C-12

Size (cm): 21.0×10.4

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Design: Plain weave: warp 1, weft 1. Weft faced, dovetailed tapestry-weave technique

Pile knot: B2 type, 5 warps per unit, open to the right

Design: Staircase pattern(C-12). Band pattern (C-1009-1, C-208-1-2)

Thickness(mm): 2.4

| | Warp | Weft(1) | Weft(2) | Pile(1) | Pile(2) |
|---|---|---|---|---|---|
| Raw material: | sheep | sheep | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) | 7.5RP2.4/5.0 (Dark wine) | 2.5Y7.5/6.0 (Dull reddish yellow) | 7.5RP2.4/5.0 (Dark wine) |
| Diameter(mm): | 1.2~1.5 | 0.8~1.0 | 0.8~1.0 | 2.0 | 2.0 |
| Twist, Twist No(/cm): | Z/Z S(3.5~4.0) | −Z(2.5~3.0) | −Z(2.5~4.0) | Z/Z S(unknown) | |
| Density(/cm) | 4.0 | 14.0 | 20.0 | 9.0×(10.0~12.0) Pile knot/dm | |

Selvage: Type 2, cord (3・2 left side)C-12, C-21-1, C-208-1, C-1004.

Remarks: Interval between pile knotting rows 1.0~1.2cm (14~19pass).

Fragmentary specimen: C-6, C-12, C-21-1, C-36, C-63, C-72, C-75, C-101, C-208-1, C-208-1-2, C-208-2, C-1004, C-1009, C-1009-1, C-1024, C-1025

**F5 Textile No. 10** Pile textile with staircase pattern

Representative specimen Registered No. C-100

Size (cm): 34.8×68.7

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Design: Plain weave: warp 1, weft 1. Weft faced, dovetailed tapestry-weave technique

Pile knot: B2 type, 5 warps per unit, open to the left

Design: Staircase pattern (C-83, C-212-1-d)

Thickness(mm): 2.4~2.6

| | Warp(1) | Warp(2) Grandrelle thread | Weft(1) | Weft(2) | Pile(1) |
|---|---|---|---|---|---|
| Raw material: | sheep | sheep | sheep | sheep | sheep |
| Color: | 5.5Y8.0/3.0 (Graysh yellow) | 5.5Y8.0/3.0 (Graysh yellow) 5.0YR2.0/1.5 (Dark graysh brown) | 2.5Y7.5/6.0 (Dull reddish yellow) | 4.0R5.0/6.0 (Dark rose) | 5.0YR5.0/10.0 (Deep orange) |
| Diameter(mm): | 1.2~2.0 | | 0.5~1.0 | | 1.2~1.5 |

| | | | | |
|---|---|---|---|---|
| Twist, TwistNo.(/cm): | Z/Z S(4.0~5.0) | S/S Z(5.0) | －Z(2.0~3.0) | －Z(2.5~3.0) | Z/Z S(2.5~3.0) |
| Density(/cm) | 3.6~4.8 | | 16.0~20.0 | 10.0~11.0×9.0~12.0 Pile knot/dm |

Pile(2)

Raw material: sheep

Color: 4.0R5.0/6.0 (Dark rose)

Diameter: 1.5

Twist, Twist No(/cm): unknown

Density(/cm): 10.0~11.0×9.0~12.0

Selvage: Type 2, cord (3・2 right side) C-100, C-100-1, C-100-2, cord(3・2 left side) C-102, C-212-1-d

Remarks: Interval between pile knotting rows 0.8~1.1cm (12~20 pass). Longest pile yarn 4cm

Fragmentary specimen: C-02-②, C-14, C-24, C-20, C-33-a, C-34, C-39, C-52, C-54, C-58-c, C-62, C-80, C-83, C-85, C-89, C-95, C-98, C-99, C-100, C-100-1, C-100-2, C-101', C-101", C-102, C-102-3, C-202-1-a, C-207-2, C-207-70-⑧, C-208-3, C-209, C-211, C212, C-212-1-a, C-212-1-d, C-213, C-301-3, C-1002, C-1016

**F6　Textile No. 58**　Red pile textile

Representative specimen　Registered No. C-07-1

Size (cm): 19.04×14.2

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Pile knot: A1 type

Thickness(mm): 2.4~2.7

| | Warp(1) | Warp(2) Grandrelle thread | Weft | Pile |
|---|---|---|---|---|
| Raw material: | sheep | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish Yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) 5.0YR2.4/4.0 (Dark brown) | 10.0R4.5/10.0 (Deep reddish 0range) | 7.0R4.0/10.0 (Deep yellowish red) |
| Diameter(mm): | 1.3~2.4 | | 0.9~1.3 | 2.0 |
| Twist, Twist No(/cm): | Z/Z S(2.0~3.0) | | －Z(1.2) | S/S Z(2.5) |
| Density(/cm) | 3.7~4.0 | | 15.0~19.0 | 6.0×18.0 Pile knot/dm |

Selvage: Type 3, cord(3・2・right side)C-07-1

Remarks: Interval between pile knotting rows 0.7~2.0cm (10~34 pass). Longest pile yarn 6.5cm.
Hem stitched thread: sheep, dark blue green 5BG2.4/3.0, diameter 1.3mm, twist, SSZ, twist no. 2.5/cm, 2 threads together

Fragmentary specimen: C-07-1, C-09-6, C-10-2, C-25-7, C-27, C-32, C-32-2, C-35-5-a, C-35-5-b, C-39-3, C-44-1-2, C-44-2, C-47-1

**F6 Textile No. 59** Pile textile with sown cloth

Representative specimen Registered No. C-03-1

Size (cm): 28.0×18.7

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced
Pile knot: A1 type

Thickness(mm): 2.8~3.1

| | Warp<br>Grandrelle thread | Weft | Pile(1) | Pile(2) |
|---|---|---|---|---|
| Raw material: | sheep | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0<br>(Dull reddish yellow)<br>9.0YR3.0/3.0<br>(Dark yellowish brown) | 2.5Y7.5/6.0<br>(Dull reddish yellow) | 2.5Y7.5/6.0<br>(Dull reddish yellow) | 9.0YR3.0/3.0<br>(Dark yellowish brown) |
| Diameter(mm): | 1.5~2.0 | 1.0~1.2 | 2.0~2.5 | |
| Twist, Twist No(/cm): | Z(4.0) / Z — S(2.0~2.5) | −Z(1.5) | S / S — Z(2.5~3.0) | |
| Density(/cm) | 3.1 | 12.0~14.0 | 4.0×14.0~15.0<br>Pile knot/dm | |

Selvage: None

Remarks: Interval between pile knotting rows 2.0~2.3cm, (25~26 pass).

Fragmentary specimen: C-01-1, C-01-2, C-02-2, C-03-1, C-06, C-11-(2), C-15-1, C-15-3, C-17-1-2, C-22-4-a, C-35-4, C-36-3-a, C-37-3-3, C-37-3-4, C-37-3-5, C-37-3-6, C-37-3-7, C-37-3-8, C-37-3-9, C-37-3-11, C-37-3-12, C-37-3-13, C-37-3-15, C-37-3-16, C-37-3-17, C-37-3-18, C-37-4-a, C-37-4-b, C-38, C-38-16, C-38-19, C-40-(D), C-44-2, C-44-2-1, C-45-1, C-48-3, C-49

Sown cloth With C-37-3-17

Size (cm): 9.8×10.0

Structure: Ground: Plain weave: warp 1, weft 2. Weft faced

Thickness(mm): 1.07

| | Warp | Weft | Stitch thread |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) |
| Diameter(mm): | 0.5~0.7 | 0.3~0.4 | 2.8 |
| Twist, Twist No(/cm): | −S(10.0) | −S(7.0~10.0) | Z/Z S(2.2) |
| Density(/cm) | 6.0 | 12.0×2 | |

**F6　Textile No. 60**　Decorated pile textile

Representative specimen　Registered No. C-04-3, C-04-3-a

Size (cm): 37.6×35.0 (C-04-3-a)

Structure: Ground: Plain weave: warp 1, weft 2. Balanced

Design: Plain weave: warp 1, weft 2. Balanced

Design: Square and line pattern,

Pile knot: C type, double faced, 3 warps per unit, 7~8 pile yarns knotting together

Thickness(mm): ground 0.9~1.3, 1.5~1.8 (C-04-3-a), with pile 16.4~16.9, 10.8~13.1 (C-04-3-a)

| | Warp | Weft | Pile(1) |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.0/10.0 (Gold) |
| Diameter(mm): | 0.5~0.6 | 0.6~0.7 | 1.5~2.3 |
| C-04-3-a | 0.5~1.0 | 0.5~1.1 | 1.5~2.3 |
| Twist, Twist No(/cm): | Z/Z S(3.5~5.0) | −S(2.0~3.0) | S/S Z(3.0) |
| Density(/cm) | 7.0~8.0 | 7.0~8.0×2 | 10.0~11.0×12.0~14.0 Pile knot/dm |

| | Pile(2) | Pile(3) | Pile(4) |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 5G 5.0/4.0 (Dull green) | 7.0R4.0/10.0 (Deep yellowish red) | 5.0YR2.0/1.5 (Dark grayish brown) |
| Diameter(mm): | 1.5~2.3 | 1.5~2.3 | 1.5~2.3 |
| Twist, Twist No(/cm): | S/S Z(2.0) | S/S Z(2.0) | S/S Z(3.0~3.2) |

Selvage: C-04-3, C-04-3-a, A1 type of knot from face and back alternately, cord(2・2)

Remarks: pile knot interval 0.3~0.4cm (2~3×2 pass). 0.4~0.5cm (3~5×2 pass) C-04-3-a. Longest pile yarn 1cm

Fragmentary specimen: C-04-1, C-04-2, C-04-3, C-04-3-a, C-04-3-b

**F6 Textile No. 61** Small pile textile

Representative specimen Registered No. C-38-19-b

Size (cm): 6.0×5.5

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Pile knot: B2 type, 3 warps per unit, open to the right

Thickness(mm): 2.1~2.4

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y6.0/8.0 (Gold) | 2.5Y6.0/8.0 (Gold) | 2.5Y6.0/8.0 (Gold) |
| Diameter(mm): | 0.8~1.0 | 0.8~1.0 | 1.2 |
| Twist, Twist No(/cm): | Z/Z S(3.0~4.0) | −Z(2.0~3.0) | S/S Z(3.0) |
| Density(/cm) | 4.7~5.0 | 19.0 | 9.0×22.0 Pile knot/dm |

Selvage: Type 2, cord(4・4 right side)C-38-19-b

Remarks: Interval between pile knotting rows 1.0~1.1cm (19~20 pass)

Fragmentary specimen: C-03-1, C-08-2, C-38-19-b, C-37-3-10-1

**F6 Textile No. 62** Pile textile with band pattern

Representative specimen Registered No. C-38

Size (cm): 19.5×11.0

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Design: Plain weave: warp 1, weft 1. Weft faced

Pile knot: A1 type

Design: Band pattern(C-38, C-23-3-1-b, C-43-2-b)

Thickness(mm): 2.5~2.65

| | Warp | Weft(1) | Weft(2) | Pile(1) | Pile(2) |
|---|---|---|---|---|---|
| | Grandrelle thread | | | | |
| Raw material: | sheep | sheep | sheep | sheep | sheep |

Color: 2.5Y7.5/6.0 (Dull reddish yellow) | 9.0YR4.0/4.0 (Yellowish brown) | 5.0B2.0/4.0 (Dark greysh blue) | 9.0YR4.0/4.0 (Yellowish brown) | 5.0B2.0/4.0 (Dark greysh blue) | 9.0YR4.0/4.0 (Yellowish brown)

Diameter(mm): 1.2 | 0.7 | 0.8~1.0 | 1.0~1.2 | 1.2

Twist, Twist No(/cm): S/S—S(3.3) | −S(2.0) | −S(2.0) | S/S—Z(2.0~2.5) | S/S—Z(2.5)

Density(/cm): 3.5~3.8 | 17.0~19.0 | 7.0~8.0×17.5~19.0 Pile knot/dm

Selvage: None.

Remarks: Interval between pile knotting rows 1.2~1.5cm (23~26 pass)

Fragmentary specimen: C-23-3-1-b, C-38, C-43-2-b

**F6　Textile No. 63**　Small pile textile

Representative specimen　Registered No. C-29-2

Size (cm): 9.3×4.9

Structure: Ground: Plain weave: warp 1, weft 1 or 2. Weft faced

Pile knot: B2 type, 3 warps per unit, open to the right

Thickness(mm): 1.15~1.4

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) |
| Diameter(mm): | 0.4~0.7 | 0.7~0.9 | 1.5~1.7 |
| Twist, Twist No(/cm): | —S(5.0) | —S(3.0) | S/S—Z(3.3) |
| Density(/cm) | 5.0~7.5 | 16.0~20.0 | 5.0×25.0~35.0 Pile knot/dm |

Selvage: None

Remarks: Interval between pile knotting rows 1.2~1.8cm (23~28 pass).

Longest pile yarn 4.5 cm

Fragmentary specimen: C-22-1, C-28-1, C-29-2, C-32-3, C37-3-b, C-40-(b), C-50-1.

**F6　Textile No. 64**　Small pile textile

Representative specimen　Registered No. C-25-9

Size (cm): 3.5×4.6

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Pile knot: B2 type, 3 warps per unit, open to the right

Thickness(mm): 1.2

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y6.0/8.0 (Gold) | 2.5Y6.0/8.0 (Gold) | 2.5Y6.0/8.0 (Gold) |
| Diameter(mm): | 0.4~0.6 | 0.4~0.6 | 1.0~1.2 |
| Twist, Twist No(/cm): | —S(7.0) | —S(5.0) | S, S—Z(2.5) |
| Density(/cm) | 6 .5~7.0 | 30.0~32.0 | unclear×35.0 Pile knot/dm |

Selvage: None

Fragmentary specimen: C-25-9, C-40-(a)

**F6 Textile No. 65** Small pile textile

Representative specimen Registered No. C-40-(c)

Size (cm): 12.2×10.0

Structure: Ground: Plain weave: warp 1, weft 1. Weft faced

Pile knot: B2 type, 5 warps per unit, open to the right

Thickness(mm): 2.4~2.6

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y6.0/8.0 (Gold) | 2.5Y6.0/8.0 (Gold) | 2.5Y6.0/8.0 (Gold) |
| Diameter(mm): | 1.0~1.2 | 0.8~1.0 | 1.7~2.0 |
| Twist, Twist No(/cm): | —Z(7.0)or unclear, unclear—Z(4.0) | —Z(2.5) | S, S—Z(3.0) |
| Density(/cm) | 4.0 | 18.0 | 7.0×10.0 Pile knot/dm |

Selvage: Type 2, cord(4・3 right side) C-37-3-1-a.

Remarks: Interval between pile knotting rows 1.2~1.4 cm (21~24 pass). Longest pile yarn 2.0 cm

Fragmentary specimen: C-22-4-b, C-37-3-1-a, C-37-3-10, C-40-(c)

**F6　Textile No. 66**　Orange pile textile

Representative specimen　Registered No. C-25-6

Size (cm):　15.2×10.2

Structure:　Ground: Plain weave: warp 1, weft 1. Weft faced

Pile knot: B1 type, 2 warps per unit, open to the right

Thickness(mm):　2.4~2.8

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| | Grandrelle thread | | |
| Color: | 2.5Y7.5/6.0 | 10R4.5/10.0 | 10R4.5/10.0 |
| | (Deep reddish yellow) | (Deep reddish orange) | (Deep reddish orange) |
| | 5YR4.0/4.0 | | |
| | (Brown) | | |
| Diameter(mm): | 1.5 | 0.5~0.8 | 1.5~1.8 |
| Twist, Twist No(/cm): | Z/Z—S(3.0) | —Z(2.5) | S/S—Z(2.0) |
| Density(/cm) | 3.8 | 20.0 | 7.0~8.0×19.0 |
| | | | Pile knot/dm |

Selvage:　None

Remarks:　Interval between pile knotting rows 1.0~1.5 cm (22~26 pass).

Longest pile yarn 3.0 cm

Fragmentary specimen: C-25-1, C-25-6, C-43-1

**F6　Textile No. 67**　Small thick pile textile

Representative specimen　Registered No. C-25-2

Size (cm):　6.2×5.8

Structure:　Ground: Plain weave: warp 1, weft 1. Weft faced

Pile knot: B2 type, 3 warps per unit, open to the left, 2 pile yarns together

Thickness(mm):　4.0

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 5YR2.4/4.0 | 2.5Y7.0/10.0 | 5YR2.4/4.0 |
| | (Dark brown) | (Gold) | (Dark brown) |
| Diameter(mm): | 1.8~2.0 | 1.8 | 1.5~1.8 |
| Twist, Twist No(/cm): | Z/Z—S(1.5~2.0) | —Z(2.0) | S/S—Z(3.0) |

| | | | |
|---|---|---|---|
| Density(/cm) | 2.5 | 8.0 | 7.5×10.0 |
| | | | Pile knot/dm |

Selvage: None

Remarks: Interval between pile knotting rows 0.7~1.0 cm (6~8 pass)

Longest pile yarn 2.0 cm

Fragmentary specimen: C-25-2, C-25-11

**C9 Textile No. 12** Small pile textile

Representative specimen Registered No. IV-HI-22-②

Size (cm): 8.0×6.5

Structure: Ground: Plain weave: warp 1, weft 1 Weft faced

Pile knot: B2 type, 5 warps per unit

Thickness(mm): 2.0

| | Warp | Weft | Pile |
|---|---|---|---|
| Raw material: | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) | 2.5Y7.5/6.0 (Dull reddish yellow) |
| Diameter(mm): | 1.0~1.2 | 0.8~1.3 | 1.2 |
| Twist, Twist No(/cm): | Z/Z—S(3.0~4.0) | —Z(2.5~3.0) | Z/Z—S(−) |
| Density(/cm) | 4.5 | 16.0~18.0 | 8.0×10.0 Pile knot/dm |

Selvage: None

Remarks: Interval between pile knotting rows 0.8cm (12 pass)

Fragmentary specimen: IV-OH-1-⑫, IV-HI-22-②, IV-HI-22-④

**C9 Textile No. 13** Small pile textile

Representative specimen Registered No. IV-OH-1-⑨

Size (cm): 2.8×5.5

Structure: Ground: Plain weave: warp 1, weft 1 Weft faced

Pile knot: Unclear

Thickness(mm): 2.0

| | Warp | Weft | Pile |
|---|---|---|---|
| | Grandrelle thread | | |
| Raw material: | sheep | sheep | sheep |

| | | | |
|---|---|---|---|
| Color: | 2.5Y7.5/6.0<br>(Dull reddish yellow)<br>9YR4/4<br>(Yellowish brown) | 5G5.0/4.0<br>(Dull green) | 5G3.5/7.0<br>(Deep green) |
| Diameter(mm): | 1.1~1.3 | 0.6~1.0 | Unclear |
| Twist, Twist No(/cm): | Z/Z—S(2.5~4.0) | —Z(2.0~2.5) | Unclear |
| Density(/cm) | 4.5 | 20.0 | Unclear |

Selvage: None

Remarks:

Fragmentary specimen: IV-OH-1-⑨, IV-HI-22-⑧

**C11　Textile No. 4**　Pile textile with band pattern

Representative specimen　Registered No. IV-OH-13

Size (cm): 16.7×12.3

Structure: Ground: Plain weave: warp 1, weft 1or2. Weft faced

Pile knot: B1 type, 2 warps per unit, open to the right

Thickness(mm): 2.4~2.9

| | Warp<br>Grandrelle thread | Weft (1) | Weft(2)<br>(IV-OH-15-b) | Pile |
|---|---|---|---|---|
| Raw material: | sheep | sheep | sheep | sheep |
| Color: | 2.5Y7.5/6.0<br>(Dull reddish yellow)<br>5YR4.0/4.0<br>(Brown) | 2.5Y7.5/6.0<br>(Dull reddish yellow) | 5BG2.4/3.0<br>(Dark blue green) | 2.5Y7.5/6.0<br>(Dull reddish yellow) |
| Diameter(mm): | 1.1~1.8 | 0.8~1.2 | 0.8~1.0 | 1.5 |
| Twist, Twist No(/cm): | Z/Z—S(2.5~4.0) | —S(1.0~2.5) | — S(1.0~2.5) | S/S—Z(2.5) |
| Density(/cm) | 3.8 | 15.0~20.0 | | 10.0~19.0 |

Selvage: Type 2, cord(3・2・ left side)IV-OH-9

Remarks: Interval between pile knotting rows 0.7~1.3 cm (14~18 pass). Longest pile yarn 5.5 cm

Fragmentary specimen: IV-OH-9, IV-OH-13, IV-OH-15-b

**Pl. 1**

1. Small pile textile

2. Small pile textile

3. Thick pile textile

4. Orange pile textile

Pl. 1: Pile Textiles, at-Tar Caves, Hill A

**Pl. 2**

1. Small pile textile

3. Small pile textile

2. Large pile textile with band pattern

Pl. 2: Pile Textiles, at-Tar Caves, Hill A

**Pl. 3**

1. Pile textile with staircase pattern

2. Small pile textile

3. Pile textile with staircase pattern

4. Pile textile with staircase pattern

Pl. 3: Pile Textiles, at-Tar Caves, Hill A

**Pl. 4**

1. Red pile textile

2. Decorated pile textile

3. Small pile textile

4. Pile textile with band pattern

Pl. 4: Pile Textiles, at-Tar Caves, Hill A

**Pl. 5**

1. Small pile textile

2. Small pile textile

3. Small pile textile

4. Orange pile textile

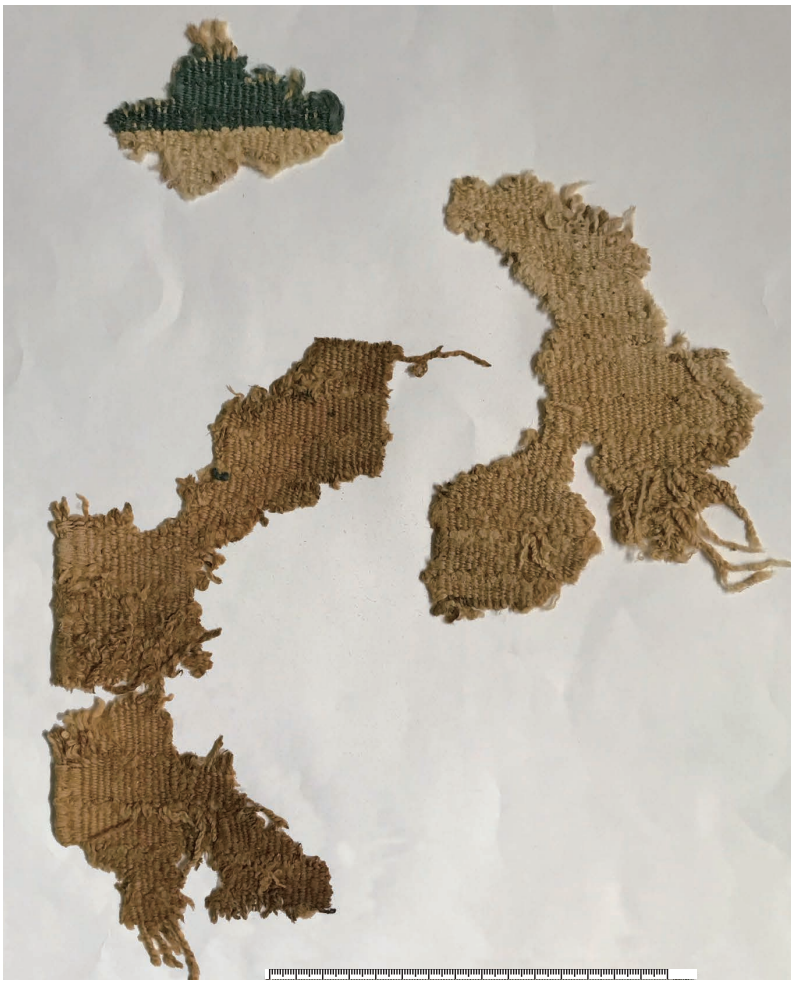
5. Small thick pile textile

Pl. 5: Pile Textiles, at-Tar Caves, Hill A

**Pl. 6**

1. Small pile textile

2. Small pile textile



3. Pile textile with band pattern

Pl. 6: Pile Textiles, at-Tar Caves, Hill C

# EASTERN ROOTS OF THE PROTO-HASSUNA CULTURE BASED ON CERAMIC EVIDENCE

Natalia PETROVA*


## Abstract

There are two hypotheses of the Proto-Hassuna culture roots: western and eastern. The former suggests that the Proto-Hassuna culture emerged from the western part of Upper Mesopotamia of the early 7th millennium BC. The eastern one connects the Proto-Hassuna culture with materials from the Zagros mountains and Iraqi Kurdistan (Charmo (Jarmo)). In order to clarify the last one, ceramic materials from Central Zagros and its southwestern foothills were studied. A comparison of the data leads to the conclusion that, in the first half of the 7th millennium BC, the ceramic traditions of the southern Mesopotamian foothills gradually spread northward along the Zagros foothills to the eastern part of Upper Mesopotamia during the Proto-Hassuna period. In the area of the Central Zagros foothills, they came into contact with the pottery traditions of Central Zagros and partially absorbed them. The western edge of the main area of Proto-Hassuna - the region of Eastern Syria - is the place of contact between the bearers of the Proto-Hassuna cultural tradition and another different western Upper Mesopotamian neolithic culture.


**Key words:** Proto-Hassuna, Neolithic, Upper Mesopotamia, Zagros, ceramics

Dedicated to the memory of N.O. Bader

## Introduction

When studying the culture of the Proto-Hassuna period, several questions invariably arise, the solutions to which vary greatly among researchers. One is its origin of the culture, which is the focus of this paper. A second – concerns the connections of the Proto-Hassuna culture with that of the following chronological period, Archaic Hassuna, and, consequently, with the Hassuna culture as a whole. Yet another question concerns its territorial boundaries, since the further from the main sites of this culture layers containing similar material are found, the more questions arise regarding their interpretation. Currently, the accepted point of view is that the Proto-Hassuna is the initial period of the Hassuna culture [Bernbeck, Nieuwenhuyse 2012; Braidwood 1945: 258; Bader 1993a: 70], although there was another view of this issue [Merpert 1993; Lloyd, Safar 1945: 283; Kirkbride 1972]. The materials we are considering were first identified in the lowest layer of Hassuna Ia at the Tell Hassuna settlement, located approximately 30 km south of Mosul in Northern Iraq in 1943 by expedition of Iraq Government's Department of Antiquities [Lloyd, Safar 1945] (Fig. 1). In the early 1970s, much further south, 20 km west of the Parthian city of Hatra, the settlement of Umm Dabaghiyah was excavated by British School of Archaeology in Iraq, the layers of which also contained material similar to Hassuna Ia, but its material culture turned out to be much more vibrant and diverse [Kirkbride 1972: 8–15]. The development of the Hassuna culture was most fully explored at sites located in the foothills of the Sinjar mountain range in Northern Iraq. First long-term excavations of the settlement, Telul eth-Thalathat II, containing layers similar to Hassuna

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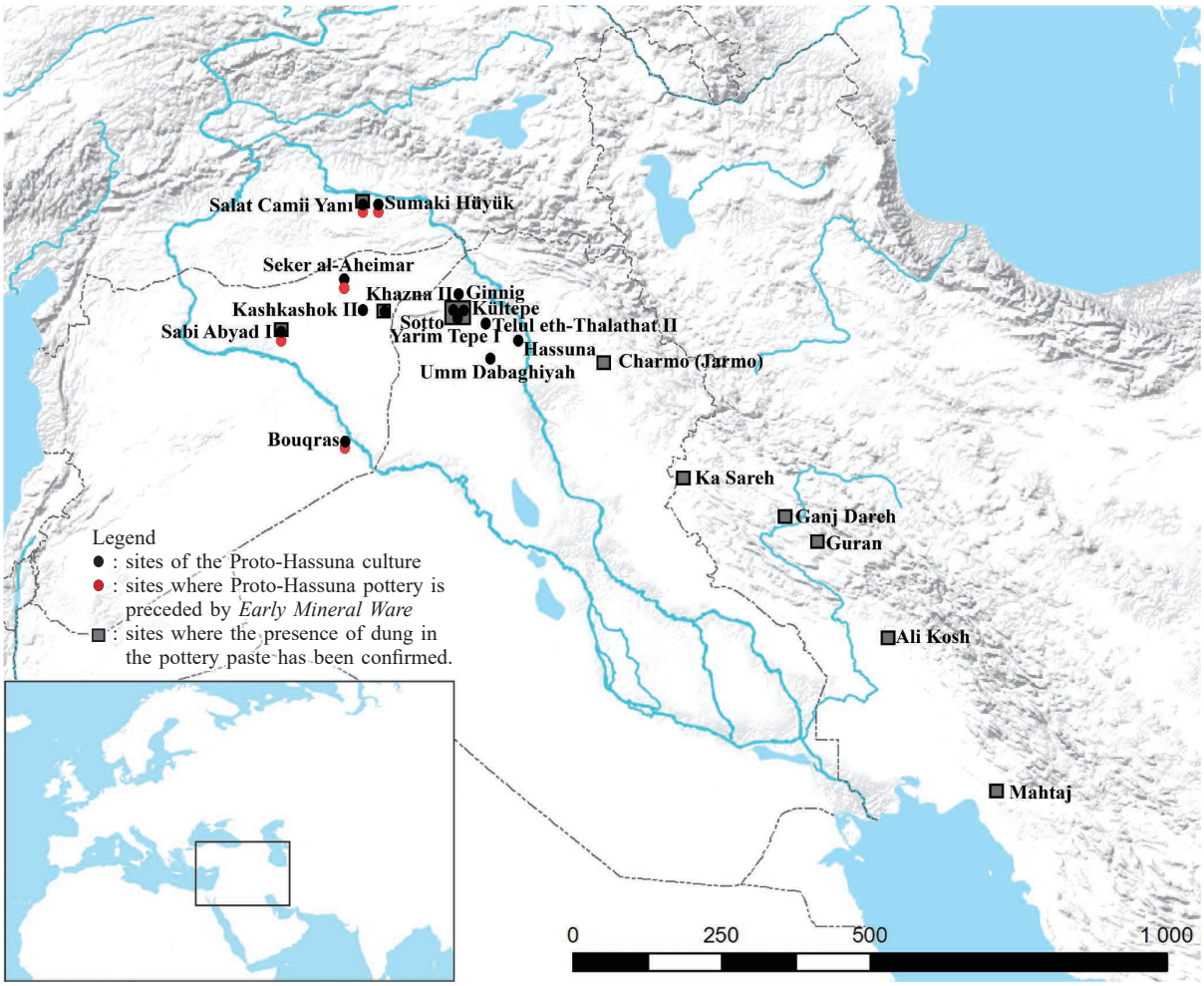



Fig. 1. Map. Neolithic sites in the eastern Upper Mesopotamia, the Zagros mountains, and its western foothills, discussed in this article.

Ia, were carried out here as early as 1956 by the Japanese expedition of the University of Tokyo [Fukai *et al*., 1970; Fukai, Matsutani 1981]. Since 1969 seven km southwest of Tell Afar, the study of several sites containing the layers of interest to us began by Russian (Soviet) expedition of Institute of Archaeology Academy of Sciences: Tell Sotto, Kültepe [Bader 1989, 1993b] and Yarim Tepe I [Merpert 1993]. The lower levels of Tell Sotto settlement were named "Proto-Hassuna" by its researcher N.O. Bader, i.e. as an early stage of the Hassuna culture [Bader 1975: 107]. In doing so, he divided this period into earlier (Sotto complex, similar to the materials from the Umm Dabaghiyah settlement) and a later stage [Bader 1993b: 45, 54]. In the earliest layers of Yarim Tepe I, which, according to the excavator N.Ya. Merpert, began with Archaic Hassuna [Merpert 1993], material corresponding to the late stage of Proto-Hassuna was also identified [Bader 1989: 157; Bashilov *et al.* 1980; Petrova 2019]. In addition, the small Proto-Hassuna site was excavated in this region in 1987 as part of the salvage project known as the North Jazira Project by team from Edinburg University [Campbel, Baird 1990]. Also as a result of survey in this area, a large number of settlements from this period were discovered [Bader, 2008].

However, according to N.O. Bader, there is a chronological gap between the Proto-Hassuna materials and the preceding Pre-Pottery Neolithic Sinjar sites: with some continuity between the materials of Tell Sotto and the earlier settlement of Maghzaliyah (the "tauf" construction technique, stone vessels and bracelets), although there is an obvious degradation of flint and bone processing

[Bader 1989: 241; Bader, Le Miere 2013: 519]. The material from Tell Maghzaliyah can be approximately dated to the end of the 8th millennium BC [Bader 2011]. Since the late 1980s, research has shifted to northeastern Syria, where Proto-Hassuna materials were identified in the layers of the settlements of Kashkashok II [Matsutani 1991] and Seker al-Aheimar [Nishiaki, Le Mière 2017] in the Khabur River valley, excavated by Japanese expeditions. Slightly further east, 25 km northeast of the city of Hasakah, Proto-Hassuna deposits were found at the site of Tell Khazna II in the excavations of Russian team, which includes Proto-Hassuna layers [Munchaev *et al.* 1993: 25–26, 30].

On the basis of this evidence, the region described above, stretching from the Southern Jazira to the Khabur headwaters, appears to be the heartland of the Proto-Hassuna culture. However, similar materials have also been noted further west in the layers of Tell Bouqras on the Euphrates River and Sabi Abyad I on the Balikh river [Nieuwenhuyse 2013: 128]. In addition, the presence of pottery similar to Proto-Hassuna are reported from sites closer to the foothills of the Taurus mountains on the Bismil plain in Türkiye namely at of Salat Camii Yanı [Miyake 2011] and Sumaki Hüyük [Erim-Özdoğan 2011; Gündüzalp 2023]. However, the materials from these settlements are rather specific and require separate consideration and interpretation. This study will focus specifically on the main area.

The following general characteristics of the material culture of the Proto-Hassuna period can be identified: clay construction ("tauf" or dried bricks); stone (mainly marble) vessels, spherical and cylindrical stone beads; chipped and ground stone tools include flint blades, wedge-shaped stope celts, and ground stone; among the bone tools, awls predominate; small clay sculptures are present. However, the main identifying feature of the Proto-Hassuna period culture is the pottery [Bader 1989: 235–237; Nieuwenhuyse 2013].

## The first evidence of pottery in the eastern part of Upper Mesopotamia

The first evidence for the emergence of pottery technology in the eastern part of Upper Mesopotamia is already known at the Tell Maghzaliyah: in the first, lowest level, a large unfired barrel-shaped storage vessel was recorded [Bader 1993c: 12–13] (Fig. 2.1). In addition, individual fragments of pottery were found in the upper part of the site (the earliest fragment was found at a depth of 470 cm), descriptions of which, unfortunately, are absent [Bader 1993c: 19, figs. 2.6, 2.12; Bader, Le Mière 2013: 515]. Also, a large quantity lumps of clay, as well as various anthropomorphic and zoomorphic clay surines, were found in different layers of the site [Bader 1989: 61, 105, pl. 41. 13, 14, 20, 21; 1993c: fig. 2.12] (Figs. 2.2–3).

## Ceramics of the Proto-Hassuna Period in Eastern Upper Mesopotamia

The wider spread appearance of ceramics in the eastern part of Upper Mesopotamia can be traced back to the Proto-Hassuna period. These are characterised by the following features: the raw material could have been used from different clay sources [Bader *et al.* 1994: 61–68], but its predominant features were a slight sandiness and the presence of a natural limestone admixture [Petrova 2019, 2021]. A striking technological feature of this pottery is the presence of a large amount of fine plant organic impurities in the pottery paste (Table 1.1). In 1989, A.A. Bobrinsky, as a result of a technological analysis of ceramics from Tell Sotto and Kültepe, established that the main impurity in the pottery paste was dry dung of sheep, goats and cattle in a predominant concentration of 50–60%, as well as straw and hay [Bobrinsky 1989: 334; 2006: 415]. This opinion is supported in a number of works by other researchers of Proto-Hassuna ceramics [Nieuwenhuyse 2013; Petrova 2019, 2024; Petrova *et al.* 2025; Tsetlin 2003].

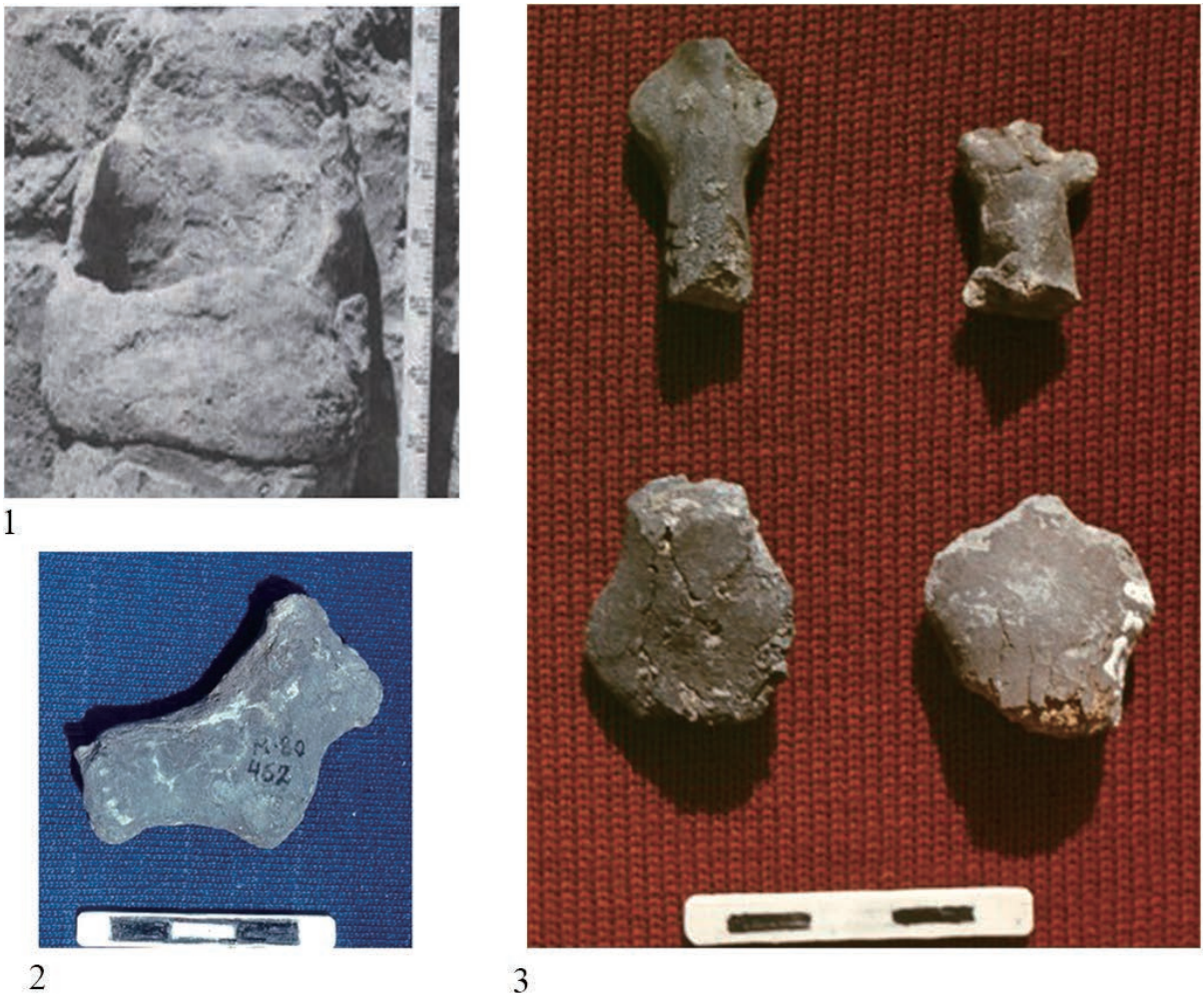


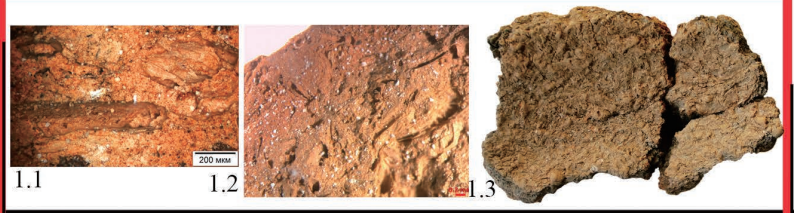

Fig. 2. Clay artifacts from Tell Maghzaliyah [after: Bader, 1989; archive of the IA RAS expedition in Northern Iraq]

The use of two construction methods has been documented in Proto-Hassuna period pottery: two-layer slabs and coils. The former have been observed on ceramics from Tell Sotto, Yarim Tepe I, Umm Dabaghiyah, Kashkashok II, and Khazna I (Table 1.2.1) [Petrova 2019, 2021]. The slabs were applied to a base mould, as skin and fabric imprints are periodically found on the interior of the vessels, which can be associated with both the mould itself and the mould lining. Both materials have been documented on Tell Sotto and Yarim Tepe I ceramics both in thin and coarse ware. Rough weave imprints are also known on ceramic fragments from the Umm Dabaghiyah settlement [Petrova 2019, 2023a], similar to those found on gypsum vessels at this site [Kirkbride 1972]. Basketry impressions have also been noted on ceramics from this period at the Sabi Abyad settlement [Nieuwenhuyse 2006: 115]. The vessel was then beaten onto a base mould. The use of coils in the construction of vessels has been recorded only in coarse ware at Tell Sotto, Yarim Tepe I [Petrova 2019, 2021], Umm Dabaghiyah [Kirkbride 1972: 8] and Ginnig [Campbell, Baird 1990: 70] (Table 1.2.2).

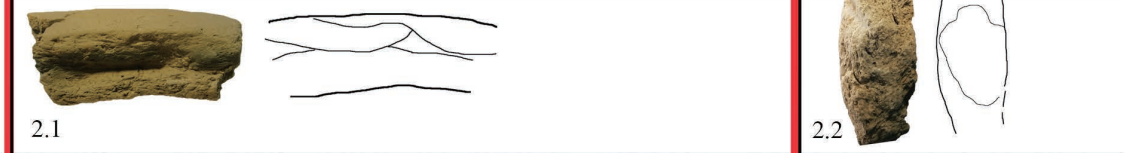
Surface treatment included coating with an additional layer of the same clay from which the vessel was made (Table 1.3.1), gypsum plaster (1.3.3), smoothing, and sometimes burnishing (1.3.2) [Petrova 2019, 2021; Petrova *et al.*, 2024]. A number of authors suggest the presence of a red slip followed by burnishing [Le Mière, Thirion-Merle 2019: 296–300; Nieuwenhuyse 2013: 120]. But often this is a coating of the same clay with red painting on top of it, and burnishing was invariably

Table 1. Main characteristics of Proto-Hassuna period ceramics (based on materials from Tell Sotto and Yarim Tepe I

**1. Pottery paste:**
Organic plant (dung) - tempered slightly sanded raw material with a natural admixture of limestone

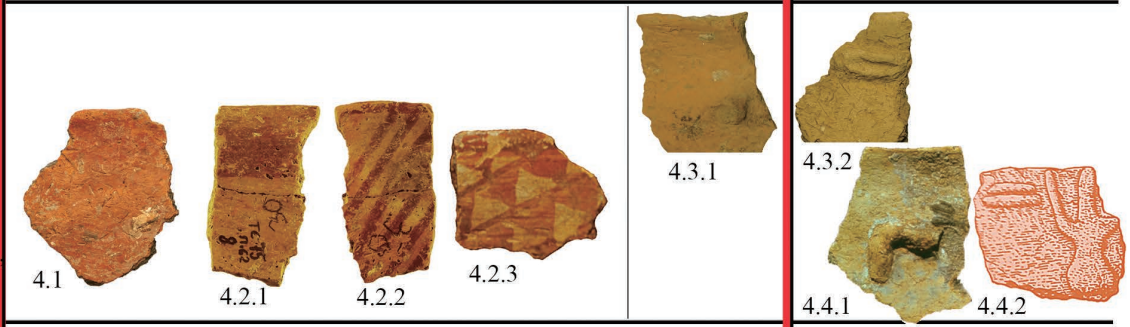



**2. Construction methods:**
2.1 Two layer slabs on a base form with a leather or textile lining
2.2 Coils




**3. Surface treatment:**
3.1 Clay coating with the same clay as raw material
3.2 Birnishing over red-painted coating
3.3 Gypsum plaster


**4. Decoration:**
Red painting (mostly table ware):
4.1 All-over red-painted covering
4.2 Geometric painting: wide strip on the rim (1), parallel diagonal lines (2), triangles (3) and their combinations
Clay applique:
4.3 Symbolic-geometric (knobs, stripes, etc.)
4.4 Figurative (zoomorphic, anthropomorphic)




**5. Morphology:**
5.1 Pots and storage vessels with a rib in the lower third of the vessel - «double ogee» carinated body
5.2 Open rounded bowls,
5.3 Husking trays


[partly published in: Bader, 1993b; Bader, Le Mière 2013; Petrova, 2019, 2021, 2024].

performed on red-painted surfaces (Table 1.3.2).

The decoration is represented by two types: red painting using hematite and clay appliqués. On finer tableware (bowls, jugs), both all-over red-painting (Table 1.4.1) or painting with simple geometric patterns are known: mainly wide stripes under the rim (Table 1.4.2.1), parallel diagonal lines (Table 1.4.2.2), painted triangles (Table 1.4.2.3), or combinations of the above options [Bader 1993b: pl. 3.9; Maeda 1991: pl. 14]. More varied designs are found on the pottery at Umm Dabaghiyah with vertical lines and dots [Kirkbride 1973: pl. III. 23]. Appliqués more often decorate coarse vessels such as pots and storage vessels, but are also found on relatively thin-walled ware [Nieuwenhuyse 2013: 120; Maeda 1991: 14, 24–25; Bader 1993b: pl. 3.6–7; Petrova, 2023c] (Table 1.4.3). It is very rare to find incised decoration that repeat a pattern found in paintings (Maeda 1991: Pl. 11.5,6).

Among the forms, very characteristic are pots and storage vessels with a rib in the lower third of the vessel, a so-called 'double ogee' carinated contour (Table 1.5.1), open bowls (Table 1.5.2) and 'husking trays' (Table 1.5.3) [Bader 1989: 235; Kirkbride 1973: pl. X.c; Nieuwenhuyse 2013: 120].

## Hypotheses of the Proto-Hassuna culture roots

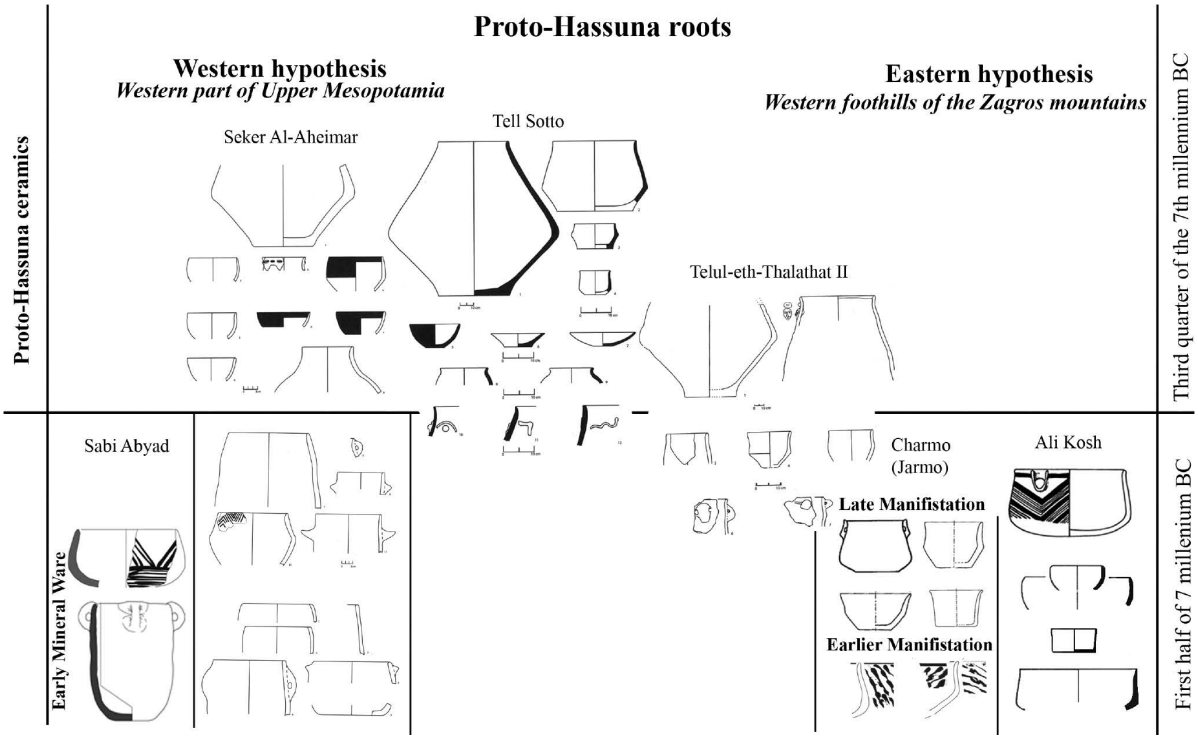
### Western hypothesis

The notion that the roots of the Proto-Hassuna culture derived from an earlier cultural tradition of the Syrian Neolithic – the Pre-Proto-Hassuna period – was put forward by Y. Nishiaki and M. Le Mière [Nishiaki, Le Mière 2005]. N.O. Bader and M. Le Mière, based on a comparison of the stone industry and ceramic forms, concluded that at the settlements of Telul eth-Thalathat II, Seker al-Aheimar and Tell Kashkashok II there existed an earlier stage of Proto-Hassuna than that recorded at Tell Sotto and Umm Dabaghiyah and that this fills a gap between the materials from Tell Sotto and Maghzaliyah on the Sinjar plain, and that, in turn, this had roots in the previous period of Pre-Proto-Hassuna, which was distinguished at the settlement of Seker al-Aheimar [Bader, Le Mière 2013: 519–520; Le Mière, Thirion-Merle 2019: 300].

However, the pottery of the Pre-Proto-Hassuna period differs significantly from that of Proto-Hassuna: this is coarse ware, which it contains large quantities of large, deliberately added mineral admixtures and defined *Early Mineral Ware*. It also known from other settlements of the first half of the 7th millennium BC in western Upper Mesopotamia and the foothills of the Taurus Mountains. At Sabi Abyad, the main clay construction element was identified as a coil [Nieuwenhuyse 2006: 116]. Characteristic features of *Early Mineral Ware* are functional clay appliqués which served as handles. It is unpainted, with the exception of a small number of sherds were painted with parallel linear designs from Sabi Abyad, but their "carelessness" as well as, probably their method of painting - differs from that of Proto-Hassuna ceramics [Nieuwenhuyse 2006; 2017: figs. 3.5–3.6]. The main form of *Early Mineral Ware* - simple straight. By the materials of Seker al-Aheimar it was assumed that at there was a phase when plant admixture appears in Early Mineral Ware ceramics and ribbing added to the forms [Nishiaki, Le Mière 2017; Nieuwehuyse 2017].

But, judging by the shapes of the vessels, the material of the Proto-Hassuna period at the Tell Seker al-Aheimar settlement [Bader, Le Mière 2013: fig. 46.4.10] is quite comparable with the ceramics of Tell Sotto (Table 2). The same can be said about the materials from Tell Kashkashok II, although it should be noted that the shapes of the large course vessels have specifics: with straight walls they have a rib in the lower part of the vessel (Maeda 1991: Pl. 10,12). Excavators of Telul eth Thalathat II, S. Fukai, T. Matsutani considered the materials of the site comparable to those at Tell Sotto and Umm Dabaghiyah [Fukai, Matsutani, 1981: 65], but if the shapes of the vessels are compared, they actually appear more archaic (N.P. Table 2).

Table 2. Comparison of vessel shapes of the Proto-Hassuna culture and earlier pottery from western Upper Mesopotamia and the western Zagros foothills




[after: Bader, Le Mière 2013. Fig. 46.1–5; Braidwood, Howe, 1960: Pl. 15; Fukai *et al*., 1970: Pl. LXXX; Fukai, Matsutani 1981: Pl. 35; Hole *et al*., 1969: figs. 44, 45; Nieuwenhuyse, 2017: fig. 3.5–3.6; Nieuwenhuyse *et al*. 2010. Fig. 2).

O. Nieuwenhuyse and R. Bernbeck more cautiously observed that the earliest stage of Proto-Hassuna exists precisely in Northern Iraq, and in the Seker al-Aheimar materials it is preceded by an early stage of Pre-Proto-Hassuna. They also noted that the cultural-historical unit of Proto-Hassuna is heterogeneous [Bernbeck 1994; Bernbeck, Nieuwenhuyse 2012; Nieuwenhuyse 2013: 121–123].

## Eastern hypothesis

During his research in Northern Iraq, N.O. Bader had the opportunity to examine materials from Braidwood's excavations at Charmo (Jarmo) stored in the Baghdad Museum collections. This led him to another conclusion, namely that the materials from the Proto-Hassuna settlements and the contemporary sites in Iraqi Kurdistan were related yet distinct variants of a single culture, with cultural connection albeit and separated by the Tigris river (Bader 1989: 240). In his study of this pottery, he cited the closest analogies with Proto-Hassuna material. Other groups of materials (stone beads, bracelets, small wedge-shaped celts) are also comparable [Bader 1975: 108–111; 1993b: 52]. The connection of the territory of the eastern part of Upper Mesopotamia with the foothills of Kurdistan during the Proto-Hassuna period was also recognised through analysis of the stone tools [Mortensen 1983: 215–216].

The Charmo settlement layers, attributed to the Pottery Neolithic, have been divided by researchers based on the presence of different types of ceramics into the *Earlier Manifestation* and *Later Manifestation* periods. The former is characterised by thin-walled *Jarmo style* pottery with tadpole-shaped painting (so-called *Tadpole ware*). The later period is characterised by coarser pottery with a completely red surface and decorated with simple red geometric designs (a wide band along the rim and slanted parallel lines, sometimes diamonds, hatched in a grid), and various

types of clay appliqués. A characteristic feature of both periods is the frequent presence on a rib in the lower parts of the vessels [Bader 1989: 206; Adams 1983: 209–232; figs. 105–107; Matson 1960: 65]. It can note the comparability of the forms of Charmo and Telul eth-Thalathat II (N.P. Table 2: [by Braidwood, Howe, 1960; Fukai *et al*., 1970. Pl. LXXX; Fukai, Matsutani 1981. Pl. 35]). In addition, F. Matson suggested the presence of dung in the pottery paste [Matson 1960: 68]. However, it is noted that the ceramics of the lower layers are generally better made than the upper ones, where there were fewer painted wares [Braidwood, Howe 1960: 44; Matson 1960: 63]. Therefore, the question of continuity arises, which different authors have in different ways. P. Mortensen pointed out that, unlike the earlier material of the *Earlier Manifestation*, the *Later Manifestation* has no similarities with the materials of the Zagros group of settlements (like Guran, Sarab), and that the ceramics and some types of stone industry most likely have a northern or northeastern origin [Mortensen 1983: 215]. However, Adams noting with the differences, also saw signs of continuity in the technology and morphology of early and late ceramics [Adams 1983: 221].

These descriptions have led me to believe that my search for the roots of Proto-Hassuna ceramics should be conducted not in the west of Upper Mesopotamia, but east of the Tigris River.

## Technological Study of Central Zagros Ceramics

The Central Zagros materials I studied include clay vessels from the Ganj Dareh settlement, located in Kermanshah province near the Behestun Inscription, which marks the Royal Road of the Achaemenid era, dating from the late 9th to mid-8th millennia BC, recently re-excavated by H. Darabi and T. Richter [Darabi, Richter, Mortensen 2024]; and ceramics from Tepe Guran, dating from the early to mid-7th millennia BC, collected by H. Darabi in the Hulailan valley in Ilam province.

The Ganj Dareh clay vessels were made from clay with large natural mineral impurities, to which dung (Fig. 3.5) and coarse plant remains were added. The vessels were formed using slabs applied in one or two layers (Figs. 3.2, 3) and covered with an additional layer of clay (Fig. 3.4) [Petrova *et al.* 2025a].

The Tepe Guran ceramics, dating the early and mid-7th millennia BC, with of light amount of sand in clay, dung admixtures, two-layer slab construction, clay coating of the vessel surface (Fig. 3.6), and decoration *Standard Painted styles* with repeating patterns using red paint: the earliest *Archaic Painted style,* the succeeding *Jarmo style* (Fig. 3.7), and then the *Guran style* ("note ornament") (Fig. 3.8). Coil construction and different shades of red slip are present on ceramics of the second half of the 7th millennium BC [Petrova, Darabi, 2022. Fig. 12]. On ceramics of Tepe Guran from the beginning of the 7th millennium BC, the rib shape is very common, both on unpainted vessels and on painted *Jarmo style* and *Guran style* [Mortensen 2014: figs. 59, 60, 65, 66].

## Technological Study of Ceramics from the Southwestern Zagros Foothills

The study examined materials from the southwestern Zagros foothills dating back to the first half of the 7th millennium BC – the Ali Kosh (the Deh Luran plain, Ilam province) [Darabi, Bahramiyan *et al.* 2017] and Tepe Mahtaj (the Behbahan Plain, Khuzestan Province) [Darabi, Aghajari *et al.* 2017] settlements excavated by H. Darabi, and materials from the Ka Sareh in the central part of the foothills of the Sar Pol-e Zahāb valley in Kermanshah province surved by S. Alibaigi [Alibaigi, Salimiyan 2020].

The pottery from the Ka Sareh is similar to those from the Central Zagros. The studied fragments, belonging to the *Jarmo style* (Fig. 4.10) and *Guran style* (Fig. 3.11), contain dung in the

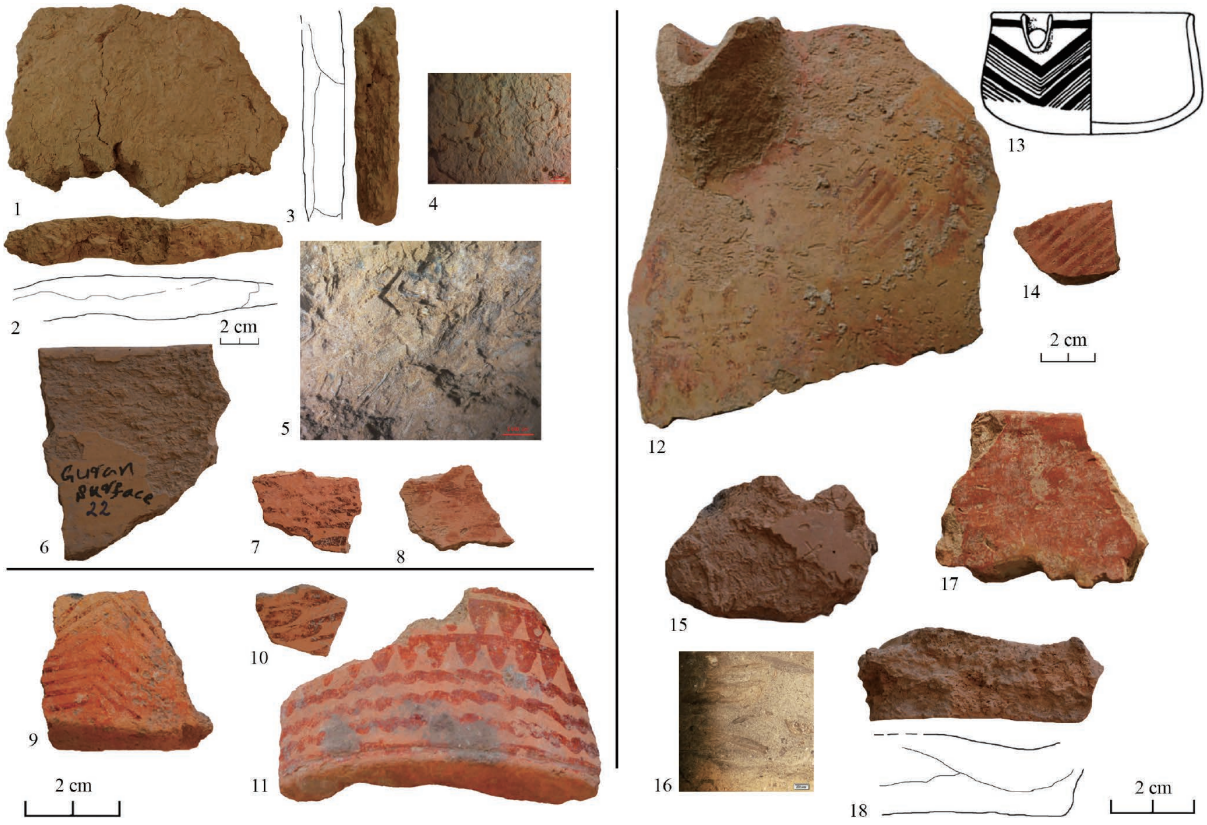



Fig. 3. Neolithic pottery from the Central Zagros mountains and its southwestern foothills.
1–8 – Central Zagros: 1–5 – Ganj Dareh [after: Petrova *et al*., 2025a], 7–8 – Guran [after: Petrova, Darabi, 2022].
9–11 – western foothills of Central Zagros – Ka Sareh [after: Alibaigi, Salimiyan, 2020; photo: Petrova N.]
12–18 – southwestern foothills of Zagros: 12–17 – Ali Kosh [12, 14–17 – after: Petrova, Darabi, 2022; 13 – after: Hole *et al*., 1969]; 18 –Mahtaj [after Petrova, Darabi, 2022]
7, 10 – Jarmo style (Tadpole ware, Early Manifestation)
8, 11 – variants of the Guran style ("note ornament")

pottery paste [Petrova *et al.* 2025b].

The earliest ceramics from Ali Kosh settlement are characterised by the following technological features: the use of slightly sandy clay with an admixture of dung (Fig. 3.16), as well as a larger admixture of plant matter, the construction of vessels using a two-layer slabs, subsequent coating of the vessel with clay (Fig. 3.15) and painted decoration. Two types of painted decoration are known: full red painting (*Khazineh Red*), often burnished to produce a more intense colour (Fig. 3.17). Red-painted vessels are most often represented by bowls (Fig. 4.1). The second type of decoration consisted of red painting with straight parallel lines, applied either horizontally or at an angle (*Ja'far Painted*) (Figs. 3.12–14). Red slip on ceramics from the southern Mesopotamian plain appears about the middle of the 7th millennium BC [Petrova, Darabi 2022: fig. 10]. *Ja'far Painted* ceramics are also represented by forms with a rib in the lower third of the vessel [Hole *et al*. 1969: figs. 44, 45] (Table 2). Ceramics of this type (decorated with oblique diagonal lines with a rib in the lower third) are also known much further north - in the central foothills of the Zagros (Fig. 3.9). The pottery of the more southern settlement of Tepe Mahtaj, located on the Behbahan plain, near the Persian Gulf, has the same features, except for the presence of ornamentation (Fig. 3.18) [Petrova, Darabi 2022].

## Distribution and Interconnections of Ceramic Traditions of the First Half of the 7th Millennium BC in the western Zagros Foothills

From the early complex of ceramic traditions in the southwestern Zagros Foothills of the first half of the 7th millennium BC, we can trace the spread of dung admixture in the pottery in the north, the central (Ka Sareh) and northern (Charmo) Zagros Foothills. Then, from the mid-7th millennium BC, the same admixture appears in Proto-Hassouna ceramics [Petrova *et al.* 2025b] (Fig. 1). An early set of decoration on pottery from the southern Mesopotamian foothills ("simple geometric

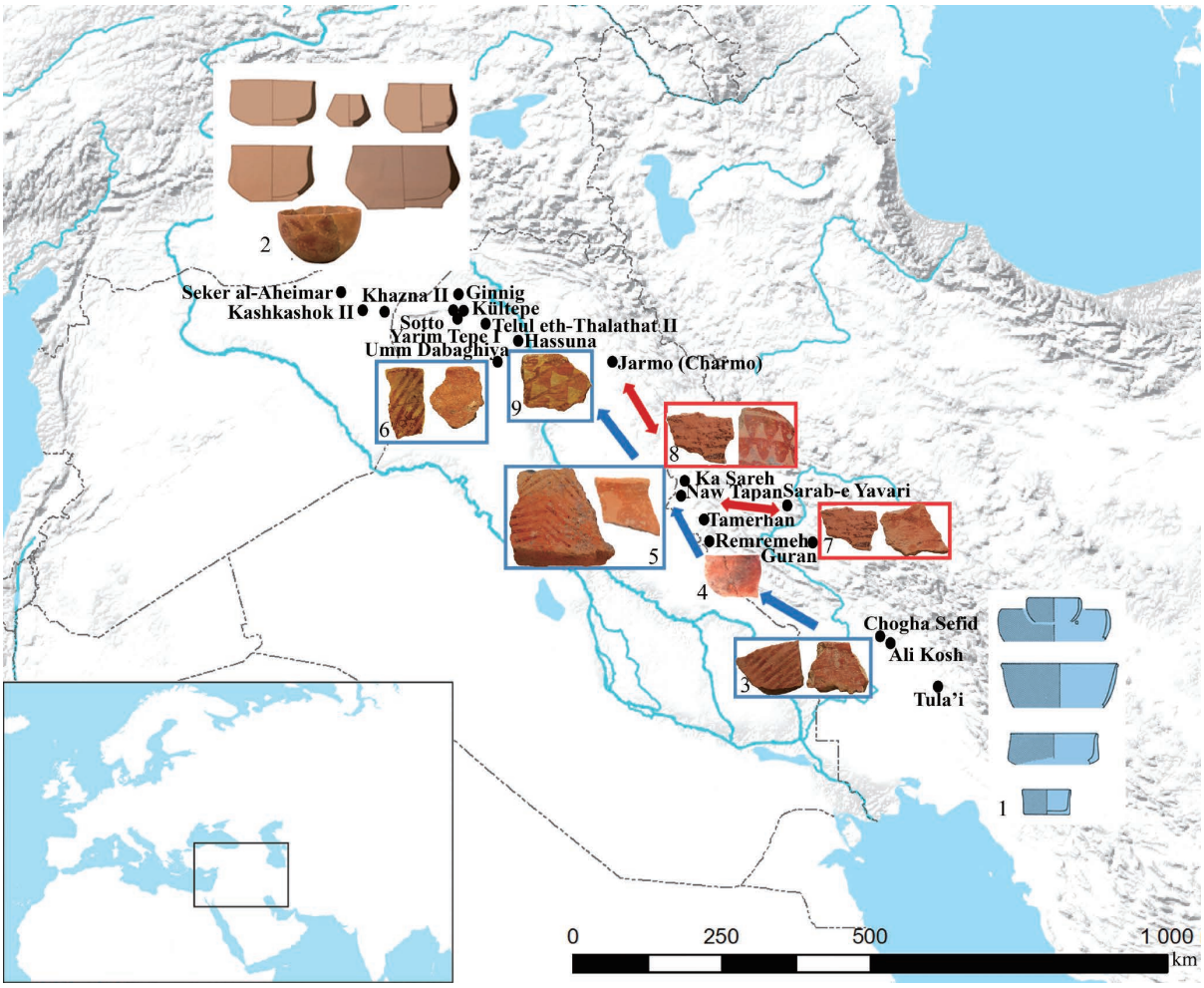



Fig. 4. Map. Distribution of ornamental ceramic styles in the Zagros and eastern Upper Mesopotamia in the first half to middle of the 7th millennium BC: blue arrow – *Simple geometric style* of southwestern foothills; red arrow – *Standard Painted styles* with repeating patterns (*options Jarmo style, Guran style*)

1,2 – similar forms of pottery at Ali Kosh and Tell Sotto of the Proto-Hassuna period [after: Hole *et al*., 1969. fig. 44, 45 and Bader, 1989 with modifications by Petrova N.]

3-6 – *Simple geometric style* in ceramics from settlements in the western Zagros foothills and in the eastern part of Upper Mesopotamia of the Proto-Hassuna period: 3 – Ali Kosh [after: Petrova, Darabi, 2022]; 4 – Remremeh [after: Darabi *et al*., 2020]; 5 – Ka Sareh and Nāw Tapān [after: Alibaigi, Salimiyan, 2020; photo: Petrova N.]; 6 – Tell Sotto, Yarim Tepe I [photo: Petrova N.]

7-9 – Variants of the *Standard Painted styles* with repeating patterns (*Jarmo style, Guran style*) in Central Zagros and its central foothills: 7 – Tepe Guran [after: Petrova, Darabi, 2022]; 8 – Ka Sareh [after: Alibaigi, Salimiyan, 2020; photo: Petrova N.]

3 – Tell Sotto [archive of the IA RAS expedition in Northern Iraq]

style": full red painting, parallel line painting) (Fig. 4) is noted on pottery from the Remremeh settlement on the Mehran plain, located between the cities of Mandali and Badra [Darabi *et al.* 2020], then on pottery from the Nāw Tapān in the Sar Pol-e Zahāb valley in the central foothills [Alibaigi, Salimiyan 2020: 7] (Fig. 3.5), and then on the ware from the Charmo in the Kurdistan foothills in the *Later Manifestation* pottery [Adams, 1983, p. 217. Fig. 105–107]. Along the arc of the Fertile Crescent, it spreads to the eastern part of Upper Mesopotamia and appears on the ceramics of Proto-Hassuna (for example, Tell Sotto, Kültepe [Bader 1989: 153, 206], Yarim Tepe I [Petrova 2012: fig. 1, 1–4], Umm Dabaghiyah [Kirkbride 1973: pl. III], Kashkashok II [Maeda 1991: pl. 14]).

In the Central Zagros, ceramics of the *Standard Painted style* complex with repeating patterns (options *Jarmo style, Guran style*) were recorded in the first half of the 7th millennium BC. *Jarmo style* ceramics with characteristic "tadpole" painting in addition to Tepe Guran ceramics are known from collections at sites on the Mahidasht plain [Braidwood 1960; Levine, McDonald 1977; Levine, Young 1987], as well as from materials at Tepe Sarab e-Yavari [Alibaigi 2013: fig. 4.5]. At this point, through the valleys of Kermanshah and beyond, between more freely located mountain ranges, runs a road of great importance in historical times leading to the foothills, the "Great Khorasan Road" [Khosravi *et al.* 2023] or Royal Road of the Achaemenid era [Behzad 2016: fig. 1]). The use of this route during the neolithic period is also indicated by survey finds of *Jarmo style* ceramics in the central foothills on the Sar Pol-e Zahāb plain at the sites of Nāw Tapān and Ka Sareh [Alibaigi, Salimiyan 2020: 2, 21–22], similar to those found in the valleys of the Central Zagros, and in the foothills: in Iraqi Kurdistan (Charmo) [Adams 1983: 209–232; figs. 105–107; Matson 1960: 65] in the north and in the area of Mandali and Badra (Tamerkhan) in the south [Oates 1968: 3]. However, it is difficult to say where this type of ceramics appeared first. Judging by the pattern, it is not related to the previous ceramic style of Central Zagros - *Archaic painted ware*.

The *Guran style* ornament ("note ornament") deserves special attention and it is probably a development of the *Jarmo style*. It is known in the Central Zagros [Mortensen 2014: figs. 66–67; Petrova, Darabi 2022: fig. 11.2] and in the central foothills [Alibaigi, Salimiyan 2020: fig. 6.2]. The pattern of triangles between stripes, known from various Proto-Hassuna settlements (Tables 1.2.3; Fig. 4.9), resembles one of the types of *Guran style* ornament. For example, triangles between parallel lines, only smaller compared to Proto-Hassuna, are known from the settlement of Ka Sareh on the Sar Pol-e Zahāb plain [Alibaigi, Salimiyan 2020: fig. 6.2] (Fig. 3.11; Fig. 4.8). Larger triangles also appear on the pottery from the Central Zagros and its foothills in the subsequent *Sarab style* [Mortensen 2014: fig. 68; Alibaigi, Salimiyan 2020: fig. 6.18]. The pattern on the Umm Dabaghiyah pottery, in the form of stripes and dots between them [Kirkbride 1973: pl. III. 23], also reflects the idea of the Guran style "note ornament". And in general, the different types of ornamentation on the pottery of the Umm Dabaghiyah settlement find significant parallels in that from Ka Sareh [Alibaigi, Salimiyan 2020: fig. 6].

## Similarities and Differences between the Ceramic Traditions of the Zagros Foothills and Proto-Hassuna Ceramics

We observe a convergence of a whole set of early technological features between the southern Mesopotamian Zagros Foothills and Proto-Hassuna settlements at a number of studied settlements in eastern Upper Mesopotamia (Table 1: highlighted in red): lightly sandy clay, dung admixture in the pottery paste, two-layer slabs construction both in thin and coarse ware, clay coating, all-over red painting and red painting with similar geometric elements (parallel, straight diagonal lines) (Fig. 4), burnishing of the painted surface, and the majority of vessel shapes (rounded bowls, ribbed pots) (Table 2). The absence of mold-related impressions on Zagros ceramics can be attributed to the

careful surface treatment. However, it should be noted that even on Proto-Hassuna material, such impressions are rare.

However, other technological features are also present in eastern Upper Mesopotamia during the Proto-Hassuna period: in construction – the use of coils, in decoration – the presence of clay appliqués, in surface treatment - gypsum plastering. Appliqués are also present on pottery from Charmo. The coil construction noted at Proto-Hassuna sites occurs on coarse pottery from the first half of the 7th millennium BC in western Upper Mesopotamia, as are functional appliqué-handles. However, on Proto-Hassuna pottery, the latter are significantly more varied, including Zagros knobs-like appliqués (Table 1.4.3.1), which are known from sites in the foothills all the way to the central foothills [Darabi *et al.* 2020]. In addition, zoo- and anthropomorphic images are not uncommon here (Table 1.4.4.1–2), which are probably a local Upper Mesopotamian tradition of combining pottery with the very widespread small clay sculpture starting from the Pre-Pottery Neolithic (Figs. 2.2–3) and known in Proto-Hassuna [Bader 1993b: fig. 3.11] ("figurines applied to pottery" [Kirkbride 1973: 5]). The origin of gypsum plaster on the vessels may have western roots [Nilhamn, Koek, 2013]. The question of the origin and purpose of "husking trays" - in my opinion, despite of special studies [Balossi Restelli, Mori: 2016; Taranto *et al.* 2021], requires further analysis.

**Discussion and Conclusion**

It can be argued that in the first half of the 7th millennium BC, the ceramic traditions of the southern Mesopotamian foothills gradually spread northward along the Zagros foothills (probably also southward, but this relationship requires separate study) to the eastern part of Upper Mesopotamia during the Proto-Hassuna period. The reason for this movement can be linked to the successful domestication of sheep and goats [De Groene *et al.* 2023; Hole *et al.* 1969, p. 262], which enabled a more mobile agricultural regime, and, consequently, the spread of innovations along the foothills. In this regard, R. Bernbeck's comprehensive study of materials from the southern Mesopotamian foothills is of interest: the settlements of Tepe Tula'i (Susiana) and Chogha Sefid (Dehloran plain), where a high degree of ceramic similarity was found. He concluded that pastoralism was 'horizontal' - along the Zagros range - and was dependent on the agricultural cycle as animals were driven away during the rainy season so as not to interfere with crops [Bernbeck 1992].

The mechanism for transmitting traditions likely involved both the movement of some of their makers, as there were too many similarities across all the technological stages of ceramic production to be possible without personal involvement. It also involved the adoption of new ideas by the existing population, as, firstly, other artifacts of the earlier material culture were preserved in Proto-Hassuna. Secondly, despite their general similarities, the ceramics of the Proto-Hassuna culture are coarser than those of the southern foothills of the Zagros, which likely reflects a situation where less experienced craftsmen imitated more experienced ones. A similar situation would later arise in this region with the ceramics of *Northern Samarra* [Gut 1995: 191].

The outskirts of Proto-Hassuna's main area—the region of eastern Syria—is a point of contact between the bearers of the Proto-Hassuna cultural tradition and those of a completely different Neolithic tradition (*Early Mineral Ware*). Traces of these contacts are also seen in the presence of two different construction methods in Proto-Hassuna pottery from the main Northern Iraqi centre: the Zagros two-layer slabs and, likely, Western Mesopotamian coils, already noted in the earliest material from Tell Sotto and Umm Dabaghiyah. However, other pottery traditions indicate a dominant eastern component. It appears that the appearance of "plant" and ribs on *Early Mineral Ware* vessels from the late Pre-Proto-Hassuna phase is more accurately interpreted as the beginning of a fusion of eastern and western pottery traditions. However, the mechanisms and pathways of these contacts still require further study. Perhaps more clarity could be provided by a more thorough

technological study of the ceramics of the settlement of Telul eth-Thalathat, where the earliest phase of Proto-Hassuna is assumed to exist in the main area of distribution of its sites.

In this respect, the question of the relative dating of the Proto-Hassuna period is of interest. R. Bernbeck and O. Nieuwenhuyse dated it to between 6700 and 6300 BC [Bernbeck, Nieuwenhuyse, 2012. Table 1.1]. The latest 14C date obtained for the end of the Proto-Hassuna period at the Yarim Tepe I (level 11) is 6220–6071 cal. (7280 ± 30 BC) (Yutsis-Akimova *et al.* 2018), but the Proto-Hassuna materials from Tell Sotto and Telul eth-Thalathat date to an earlier period. It thus seems, based on the nature of the relationships with neighbouring ceramic complexes and the thickness of the layers, that the lower boundary of the main complex of the Proto-Hassuna (Sotto complex) period should be somewhere closer to 6500 BC, and in general can be approximately dated to the middle - third quarter of the 7th millennium BC although contacts began much earlier - no later than the second quarter of the 7th millennium BC - as reflected in the emergence of mixed technologies. In new excavations of Charmo, the upper layers with *Later Manifestation* ceramics (*Earlier Manifestation* is currently represented by single fragments), "older" than the Proto-Hassuna period, are dated to the beginning of the 7th millennium BC [Tsuneki *et al.*, 2019. P. 42, fig. 14; 2023. P. 29].

The hypothesis of a connection between the southern Mesopotamian foothills and Upper Mesopotamia, in addition to pottery, is supported by the existence of the well-known "obsidian route" here in the Neolithic [Oates 1973: 171]. It is worth noting that the route along the foothills is part of the eastern wing of the Fertile Crescent, along which population infiltration continued in subsequent periods, and the south-to-north direction was for a long time the predominant one.

Overall, the Proto-Hassuna culture reflects the influence of the southeastern part of the Fertile Crescent on the northwest. It is possible that this was the starting point of a cultural expansion that would manifest itself in the Standard Hassuna and Samarra periods in the following sixth millennium BC, but would be most clearly associated with the Ubaid culture.

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# A RECONSIDERATION OF THE ADMINISTRATIVE INTERPRETATION OF WEIGHTS FROM KISH

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## 1. Introduction

Weights are artefacts that have frequently been interpreted in ancient Mesopotamian studies as being closely associated with administrative and economic activities. However, many arguments that characterise weights as "administrative" rely heavily on textual sources and institutional-historical frameworks, and the relationship between individual weights and the stratigraphic layers or architectural contexts in which they were excavated has not always been examined in sufficient detail. In particular, relatively little explicit attention has been paid to the question of which assemblages weights were associated with and how they were situated within urban spaces. This issue is especially significant at sites such as Kish, which include a large body of material derived from excavations conducted in the 1920s and 1930s. Because recording precision and artefact classification strategies differed between excavation areas, and because stratigraphic information is often limited, the validity of uniformly categorising weights as "administrative" requires renewed scrutiny.

In this regard, Zaina, in the course of re-examining the urban structure of Kish, interprets a weight recovered from Trench Z, Phase 13a, as part of the administrative materials [Zaina 2020 pp. 121–122]. Zaina's study is important in that it attempts to evaluate weights not by abstractly linking them to administrative institutions, but by situating them within specific stratigraphic contexts and assemblages. In Trench Z, Phase 13a in particular, weights were found together with administrative-related artefacts such as seals and clay tablets, and an effort has been made to organise their correspondence with architectural phases [Zaina 2020 p. 122].

Nevertheless, Zaina's classification of administrative weights is strongly dependent on a specific excavation area and stratigraphic phase, and careful consideration is required as to how far this evaluation can be applied to Kish as a whole. Indeed, in YW Sounding, Phase 8—also regarded as belonging to an urban context—weights were recovered alongside administrative-related artefacts, yet they were not clearly classified as administrative materials [Zaina 2020 p. 132]. This discrepancy suggests that the issue may lie less in the intrinsic character of the weights themselves than in differences in the precision of stratigraphic recording and the frameworks used for artefact classification.

On the other hand, a close examination of the primary excavation reports, *Excavations at Kish*, reveals that although administrative activities and administrative buildings are discussed, instances in which weights are explicitly classified as administrative artefacts are extremely limited. Langdon refers to administrative activities and the discovery of written documents at Tell Ingharra and Mound W, but treats weights as general small finds [Langdon 1924 p. 53]. In subsequent volumes by Watelin and Langdon (1930; 1934), weights are likewise not given any special status as artefacts performing administrative functions. Thus, a clear divergence can be observed between the primary excavation records and later reinterpretations regarding the evaluation of weights. This divergence is more likely attributable to differences in excavation recording strategies, the precision

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of stratigraphic information, and understandings of urban structure than to differences in the actual nature of the weights themselves. As Gibson has demonstrated, Kish was an urban complex composed of multiple mounds and areas, and there are clear limitations to interpreting artefacts collectively without taking into account differences in the character of individual excavation areas [Gibson 1972 pp. 67–92].

The present study does not aim to reconstruct directly the practices of weight use or the institutional history of measurement systems. Rather, its purpose is to examine the stratigraphic and urban conditions under which the evaluation of "administrative weights" has been established. Taking the case of Trench Z, Phase 13a presented by Zaina (2020) as a point of departure, and through comparison with YW Sounding, Phase 8, as well as reference to the volumes of *Excavations at Kish* and Gibson's (1972) study of urban structure, this paper seeks to clarify both the conditions under which the concept of administrative weights emerges and the limitations inherent in its application.

## 2. Research History and Problem Definition

### 2.1 The Concept of "Administration" in the Study of Weights

Weights in ancient Mesopotamia have long been discussed within the contexts of measurement systems and economic activities. In particular, the reconstruction and standardisation of weight units has been one of the central themes in the study of weights, and weights have often been understood as tools that supported institutionalised measurement practices. In such studies, weights are frequently assumed, implicitly, to be "official" or "administrative" instruments, while the agents who used them and the spaces in which they were employed have not always been examined explicitly. This tendency is also related to the fact that weights are often mentioned in textual sources in connection with measurement and allocation. Because weight units are frequently employed in administrative and economic documents, weights themselves tend to be understood as forming part of administrative systems.

However, this understanding directly links the units of measurement attested in documentary sources with archaeologically recovered weights, and does not sufficiently explain the contexts in which weights were actually used, such as the spaces or assemblages to which they belonged. Archaeologically, weights are recovered from a wide range of contexts and are not necessarily confined to administrative buildings or areas with a concentration of written documents. Nevertheless, when weights are described as "administrative", the grounds for this designation are often based not on stratigraphic or architectural contexts, but on assumptions derived from institutional history. In this respect, a methodological problem can be identified in the study of weights.

### 2.2 The Positioning of Administrative Activities in Research on the Site of Kish

Such an understanding of administration, derived from institutional history, has also been shared as an implicit premise in archaeological research. The following section therefore reviews how administrative activities have been positioned in studies focusing on the site of Kish.

Through large-scale excavations conducted from the early twentieth century onwards, a wide variety of architectural remains and artefacts—including palatial architecture, temples, and written documents—have been identified at the site of Kish. As a result, Kish has often been regarded as an important centre of administrative activity and urban governance. In the various volumes of *Excavations at Kish*, references can be found to administrative activities and to buildings and artefacts that suggest managerial or administrative functions [Langdon 1924 p. 87]. In the primary excavation reports by Watelin and Langdon (1930; 1934), architectural remains, written documents, and small finds from areas such as Tell Ingharra and the vicinity of Trench Z are recorded; however,

these are not explicitly positioned as evidence of "administrative activities". Interpretations that assume administrative functions largely depend on later re-examinations based on these descriptions. Many phenomena identified as administrative activities have been inferred through a synthesis of factors such as the presence of written documents, the scale of buildings, and the types of artefacts recovered, while in many cases little careful discussion has been devoted to the extent to which individual artefacts can be directly linked to administrative functions.

The same applies to weights. Langdon refers to administrative or managerial activities and to the discovery of documents at Tell Ingharra and Mound W, but does not attribute any special function to weights themselves, instead describing them as part of the general category of small finds [Langdon 1924 pp. 87–88]. Moreover, in the subsequent volumes by Watelin and Langdon (1930; 1934), although weights were recovered from stratigraphic contexts that might be considered to possess an administrative character, they were not explicitly classified as administrative artefacts. Thus, while a framework of administrative activity is present in the primary excavation reports from Kish, no clear organisation or definition is provided as to how weights were positioned within that framework.

### 2.3 The Relationship between Urban-Structure Studies and Artefact Interpretation

A major turning point in research on the site of Kish was Gibson's re-examination of its urban structure. Gibson conceptualised Kish not as a single urban entity, but as an urban complex composed of multiple mounds, centred on Uhaimir (the western sector) and Ingharra (the eastern sector, namely Hursagkalama), and clarified the spatial relationships between these components as well as differences in their historical roles [Gibson 1972 esp. Chapter I]. From this perspective, individual excavation areas should not be regarded as homogeneous urban spaces, but rather as zones that may have fulfilled different urban functions at different periods. This understanding of urban structure has a direct impact on the interpretation of artefacts. In other words, even artefacts of the same type may carry significantly different meanings depending on the urban area or architectural context from which they were recovered. The same applies to weights: there are clear limitations to interpreting their functions uniformly without considering the urban positioning of their findspots. Nevertheless, urban structure has rarely been explicitly taken into account in the study of weights. Weights have often been abstracted as elements of measurement systems, while their relationship to specific urban spaces has tended to be treated as a secondary issue.

### 2.4 The Positioning and Issues of Zaina (2020)

Within this research history, the study by Zaina (2020) is innovative in that it attempts to evaluate weights within specific stratigraphic and urban contexts. Zaina organises the assemblage from Trench Z, Phase 13a, according to functional categories and defines administrative materials as one such category. This category includes weights alongside clay tablets [Zaina 2020 pp. 121–122]. This classification presents a perspective that understands weights not merely as measuring instruments, but as part of the material culture associated with administrative activities. At the same time, however, Zaina's argument is also limited in that it relies heavily on a specific excavation area and stratigraphic phase. Indeed, in YW Sounding, Phase 8, which is likewise regarded as belonging to an urban context, small weights are mentioned together with seals and clay-tablet documents as part of administrative documents [Zaina 2020 p. 131]. This discrepancy is more likely to reflect differences in the precision of stratigraphic recording and in the frameworks of artefact classification than differences in the character of the weights themselves.

As this review of the research history has shown, when weights are understood as "administrative", such evaluations are established not so much on the basis of the intrinsic attributes of the weights themselves as on a combination of conditions, including the quality of stratigraphic

documentation, the composition of assemblages, and broader understandings of urban structure. To examine this issue, it is necessary not to treat weights as individual measuring tools in isolation, but to adopt stratigraphic units and assemblages as the units of analysis, and to consider how weights are positioned within urban space.

In this paper, the analysis is limited to published materials relating to the site of Kish, and a method is adopted that compares Zaina's (2020) stratigraphic organisation with the descriptions recorded in the primary excavation reports. In particular, Trench Z, Phase 13a—where Zaina explicitly positions weights as administrative materials—is taken as a reference case, and a comparison is made with YW Sounding, Phase 8, which is also considered to belong to an urban context. In order to situate these excavation areas within the site of Kish as a whole, Gibson's (1972) study of urban structure is also consulted, with due consideration given to spatial and functional differences between excavation areas. It should be noted that this paper does not aim to reconstruct directly the practices of weight use or the institutional history of measurement systems. Rather, its purpose is to clarify the level of the archaeological record at which the evaluation of "administrative weights" is established. Accordingly, the paper avoids definitive functional interpretations and instead adopts a position that examines how stratigraphic recording, artefact classification, and understandings of urban structure overlap to make administrative interpretations possible.

## 3. The Urban Structure of the Site of Kish and the Positioning of Excavation Areas Based on Gibson (1972)

In understanding the spatial structure of the site of Kish, Gibson's study of urban structure provides an essential foundation. Gibson conceptualised Kish not as a single urban entity, but as an urban complex composed of multiple mounds and areas, and organised their spatial relationships and differences in character [Gibson 1972 pp. 4–5]. This perspective is important in that it clearly demonstrates the necessity of taking differences between excavation areas into account when interpreting artefacts. According to Gibson, the site of Kish was a city composed of multiple groups of mounds centred on Uhaimir in the west and Ingharra (Hursagkalama) in the east. In particular, Ingharra is characterised by the confirmed presence of religious architecture, including temples, and is positioned as an area in which urban activities became concentrated in later periods. By contrast, surrounding mounds such as Mound W are understood as spaces in which architectural activities of differing functions and periods developed in a superimposed manner [Gibson 1972 pp. 4–5, 39–44].

This organisation of urban structure is also important for re-evaluating the results of the excavations conducted in the 1920s and 1930s. The early excavations did not necessarily investigate the city as a whole in a comprehensive manner, but instead focused on specific mounds and excavation areas. As a result, even among artefacts recovered from the site of Kish, the precision of recording and the assumptions underlying their interpretation vary considerably depending on the findspot. Trench Z and the YW Sounding are excavation areas positioned within the Ingharra (Hursagkalama) zone of the urban structure of Kish. Gibson notes that these excavation areas are included within spaces adjacent to Ingharra, where urban activities are thought to have been concentrated in later periods, and characterises them as areas in which planned architecture was developed [Gibson 1972 pp. 44–49]. Accordingly, when interpreting assemblages recovered from these excavation areas in relation to administrative or managerial activities, it is necessary to take such assumptions about urban structure into account. At the same time, however, Gibson also points out that even areas considered to have been centres of concentrated urban activity in later periods were not necessarily homogeneous spaces, and that activities of differing uses and functions may have coexisted within them [Gibson 1972 pp. 50–56].

This point is particularly important for the interpretation of small finds, including weights. In

other words, the mere fact that weights were recovered from an excavation area located within an area thought to have concentrated urban activity does not in itself allow them to be immediately identified as administrative. YW Sounding, Phase 8, and Trench Z, Phase 13a, both belong to stratigraphic contexts considered to be urban in character, yet differences can be observed in their assemblage composition and recording conditions. These differences are closely related not only to their positions within the urban structure, but also to excavation methods and the precision of stratigraphic recording. Gibson's study of urban structure provides a framework for understanding such differences between excavation areas within the spatial configuration of the city as a whole.

As outlined above, the organisation of urban structure based on Gibson (1972) constitutes an indispensable premise for the interpretation of assemblages that include weights. The evaluation of weights as administrative in Trench Z, Phase 13a, rests not only on stratigraphy and assemblage composition, but also on the understanding that this excavation area was located within a zone thought to have concentrated urban activity. By contrast, the fact that a similar evaluation has not been applied to YW Sounding, Phase 8, despite the sharing of this urban premise, suggests that the concept of administrative weights cannot be applied uniformly.

In light of this issue, the following chapter examines in detail the stratigraphy and assemblage composition of Trench Z, Phase 13a, and assesses both the grounds for and the limitations of interpreting weights as administrative materials.

## 4. The Stratigraphy of Trench Z, Phase 13a, and the Interpretation of Artefacts

### 4.1 The Stratigraphic Positioning of Trench Z, Phase 13a

Trench Z is one of the excavation areas established in the vicinity of Tell Ingharra at the site of Kish, and its location close to an area thought to have concentrated urban activity has been emphasised in previous studies. This trench is also one of the few areas for which a relatively detailed stratigraphic division has been presented, and Zaina re-organises its stratigraphic relationships [Zaina 2020 pp. 114–130]. Phase 13a is positioned as a stratigraphic phase associated with later architectural activity in Trench Z, and it is therefore possible that urban activities were carried out there intensively.

According to Zaina, Phase 13a is a layer in which architectural remains, including surviving floor surfaces and wall structures, have been identified, and the associated finds derive from a relatively coherent context rather than from a merely disturbed layer [Zaina 2020 pp. 120–122]. Such stratigraphic characteristics constitute an important premise for artefact interpretation. In particular, the likelihood that the finds accumulated in circumstances close to a phase of architectural use, rather than within a context that had been secondarily disturbed, is of considerable significance for assessing the overall character of the assemblage. At the same time, the excavation of Trench Z itself was conducted in the 1920s and 1930s, and constraints derived from the field methods of that period affect both the precision of stratigraphic recording and the manner of description. Because Zaina's stratigraphic organisation represents a reconstruction based on the primary excavation reports, its validity must be assessed cautiously through comparison with the primary sources.

### 4.2 The Assemblage from Phase 13a

Zaina organises the assemblage recovered from Trench Z, Phase 13a, as a group of administrative materials [Zaina 2020 p. 122]. This assemblage includes seals, clay-tablet fragments, and small finds related to measurement, within which weights are positioned as one element. What is important here is that weights are not judged to be administrative in isolation, but are evaluated on the basis of the overall composition of the assemblage. Seals and clay tablets are artefacts that are often understood as being associated with administrative activities and managerial practices, and the

fact that these items and weights were recovered from the same stratigraphic context lends a certain degree of plausibility to interpreting weights within an administrative context.

Nevertheless, in the primary excavation reports, these artefacts are not necessarily classified collectively as administrative artefacts. The descriptions of the finds are individualised, and functional evaluations of the assemblage as a whole are not always made explicit in the primary reports. This tendency is a common feature throughout the reports by Watelin and Langdon (1930; 1934). In this respect, Zaina's organisation can be evaluated as an attempt to provide the primary data with a new interpretative framework. At the same time, however, this interpretation also contains the problem of to what extent the composition of an assemblage can be regarded as "administrative".

### 4.3 The Positioning of Weights and Administrative Interpretation

The evaluation of weights as administrative in Trench Z, Phase 13a, rests on the overlap of several conditions. First, the weights belong to an area thought to have concentrated urban activity in the relevant stratigraphic phase. As discussed in the previous chapter, Gibson organises the area around Tell Ingharra as a zone in which urban activities became concentrated in later periods, while at the same time refraining from asserting that its interior constituted a functionally homogeneous space [Gibson 1972 pp. 39–44]. Accordingly, the presence of administrative or managerial functions within this area requires careful examination based on the recovered artefacts and spatial configuration.

Second, the clarity of the stratigraphic record is an important factor. In Trench Z, Phase 13a, architectural elements potentially corresponding to floor surfaces and wall structures have been identified, and on this basis Zaina discusses this phase in association with architectural remains [Zaina 2020 pp. 121–122]. Based on such organisation, it may be considered possible, within certain limits, to interpret the assemblage as being related to a single architectural structure.

Third, weights occur not in isolation but together with seals and clay tablets. This co-occurrence provides scope for understanding weights not merely as measuring implements, but as part of the material culture involved in managerial practices. However, it should be noted that such co-occurrence does not in itself directly demonstrate an administrative function. Even where artefacts coexist, the possibility cannot be excluded that different activities were carried out within the same space.

### 4.4 Comparison with the Primary Excavation Reports and the Limits of Interpretation

In order to evaluate Zaina's interpretation of Trench Z, Phase 13a, comparison with the primary excavation reports is indispensable. References to Trench Z in *Excavations at Kish* are fragmentary, and descriptions that classify assemblages collectively in functional terms are rarely found [Watelin and Langdon 1930; 1934]. With regard to weights, there is likewise no explicit reference suggesting an administrative function. This point does not invalidate Zaina's interpretation, but constitutes an important factor in delimiting its scope. In other words, the evaluation of weights as administrative is established not so much as a fact directly recorded in the primary sources, but rather as a reinterpretation based on later stratigraphic organisation and understandings of urban structure.

From this perspective, Trench Z, Phase 13a, represents an extremely limited case—within the range that can currently be confirmed from published materials—in which weights are explicitly positioned as administrative at the site of Kish. At the same time, this evaluation is established as the result of the overlap of multiple conditions, including urban context, the relative clarity of stratigraphic records, and the composition of the assemblage. Accordingly, it is not possible to generalise from the case of Trench Z, Phase 13a, and characterise all weights recovered from Kish as administrative. With this point clarified, the following chapter examines YW Sounding, Phase 8, which belongs to a similar urban context but has been evaluated differently, in order to further relativise the conditions under which the concept of administrative weights is established.

## 5. The Stratigraphy of YW Sounding, Phase 8, and the Interpretation of Artefacts

### 5.1 The Stratigraphic Positioning of YW Sounding, Phase 8

YW Sounding is an excavation area established in the vicinity of Tell Ingharra, like Trench Z, and shares with it the characteristic of being located close to an area thought to have concentrated urban activity. Zaina re-organises the stratigraphic relationships of this excavation area and discusses Phase 8 as one of the stratigraphic phases that have been examined in relation to urban activity, in that it includes materials associated with administration [Zaina 2020 pp. 130–131]. For this reason, the present study treats YW Sounding, Phase 8, as a stratigraphic context with an urban character that is comparable to Trench Z, Phase 13a.

However, as Zaina himself notes, the stratigraphic record in YW Sounding is more limited than that of Trench Z, and the preservation of architectural elements and floor surfaces is not necessarily good [Zaina 2020 pp. 131–132]. Although stratigraphic divisions are presented, careful evaluation is required as to the extent to which the artefacts correspond to phases of architectural use. This difference in the precision of stratigraphic recording has a direct impact on the interpretation of artefacts, as discussed below.

### 5.2 The Assemblage from Phase 8

A variety of artefacts were recovered from YW Sounding, Phase 8, including seals, small finds related to measurement, and vessels assumed to have been used in everyday activities [Zaina 2020 pp. 131–132]. Weights were also recovered from this stratigraphic context, and it is noteworthy that they are included within the same layer as artefacts that can be associated with administrative activities. Nevertheless, Zaina does not group the assemblage from this layer collectively as administrative materials, but instead organises it as the coexistence of multiple categories, including administrative documents [ibid.]. This treatment differs from that applied to Trench Z, Phase 13a. Although both belong to urban contexts, differences can be observed in the methods and scope of functional evaluation of their assemblages.

### 5.3 The Evaluation of Weights and Comparison with Trench Z

The fact that weights are not explicitly positioned as administrative in YW Sounding, Phase 8, is of particular importance for the argument of this paper. Although weights occur together with artefacts associated with administration, such as seals, they are not treated as part of administrative materials. This fact indicates that whether or not weights are evaluated as administrative is not determined solely by artefact type or patterns of co-occurrence.

A comparison between Trench Z, Phase 13a, and YW Sounding, Phase 8, shows that the differences between the two are primarily concentrated in the precision of stratigraphic recording. In Trench Z, Phase 13a, architectural remains thought to correspond to floor surfaces and structural elements are relatively clearly identified, and the artefacts are organised as being associated with a single phase [Zaina 2020 pp. 120–122]. By contrast, in YW Sounding, Phase 8, the stratigraphic record is limited, and the possibility cannot be excluded that the processes of artefact deposition were more complex. A further difference lies in the interpretation of assemblage composition. In Trench Z, Phase 13a, the assemblage as a whole is understood in connection with administrative activities, whereas in YW Sounding, Phase 8, traces of diverse activities are suggested. This difference in interpretation is directly reflected in the evaluation of weights.

### 5.4 Relationship with the Primary Excavation Reports

In the primary excavation reports relating to YW Sounding, Phase 8, functional classification of artefacts is limited, and no particular evaluation is assigned to weights. In the descriptions by

Watelin and Langdon, the artefacts from YW Sounding are merely listed individually, and no functional organisation of the assemblage as a whole is provided [Watelin and Langdon 1934 pp. 47–49]. This point does not contradict Zaina's reorganisation, but it does indicate the background against which the evaluation of weights as administrative is difficult to establish for YW Sounding, Phase 8. In other words, even in the primary sources, the artefacts from YW Sounding are not strongly linked to specific administrative activities.

### 5.5 The Positioning of the Concept of Administrative Weights

As the examination of YW Sounding, Phase 8, makes clear, the excavation areas around Tell Ingharra constitute spaces thought to have concentrated urban activity. However, even in such urban contexts, where administrative-related artefacts and weights are recovered together, weights are not necessarily explicitly evaluated as administrative. This point suggests that the concept of "administrative weights" does not denote a universal attribute inherent in weights themselves, but rather represents an interpretation that is established only when specific archaeological conditions are met. YW Sounding, Phase 8, shares the same urban premises as Trench Z, Phase 13a, yet exhibits different characteristics in terms of the precision of stratigraphic recording and the composition of the assemblage. As a result, the evaluation of weights also differs. This contrast clearly demonstrates the difficulty of generalising the concept of administrative weights.

In light of the above discussion, the evaluation of weights as administrative can be understood as being established only when urban structure, stratigraphic documentation, and assemblage interpretation overlap in a particular manner. YW Sounding, Phase 8, is therefore positioned as a case in which it is difficult to confirm fully the conditions necessary for the establishment of such an evaluation. The following chapter re-examines the primary excavation reports from the site of Kish as a whole and further investigates potential interpretative biases by comparing descriptions of administrative activities with the treatment of weights.

## 6. Administrative Activities and Weights in the Primary Excavation Reports

This chapter limits its examination not to research history, but to the level of description found in the primary sources themselves. The fact that weights are not treated as administrative artefacts in the primary excavation reports is likely related to the excavation methods and recording practices employed at the time. In the excavations conducted in the 1920s and 1930s, architectural remains and written documents constituted the central focus of investigation and reporting, while small finds were often treated as supplementary information. Weights were likewise recorded as part of this category of small finds and were rarely emphasised as artefacts performing specific functions. Moorey has pointed out, with regard to early excavation materials in general, including those from the site of Kish, the heterogeneity of artefact classification and the limitations in recording precision [Moorey 1978 pp. 14–16]. This observation is important for understanding why weights are not explicitly identified as administrative in the primary sources. In other words, the absence of an evaluation of administrative weights in the primary documentation does not necessarily mean that weights did not fulfil such functions; rather, it suggests the possibility that the recording frameworks of the time did not envisage classifying weights as indicators of administrative function.

As is clear from the foregoing discussion, descriptions of administrative activities in the primary excavation reports are constructed primarily on the basis of architectural remains and written documents, and weights do not occupy a special position within this framework. Even in the descriptions relating to Trench Z and YW Sounding, weights are treated in parallel with other small finds, and no explicit evaluation can be identified that directly links them to administrative activities. This does not immediately demonstrate that weights were unrelated to administrative practices. At

the very least, however, it can be confirmed that, at the level of description in the primary excavation reports, weights were not recognised as primary indicators of administrative function. Accordingly, the primary excavation reports provide an important comparative baseline for examining the level of documentation on which interpretations that evaluate weights as administrative are established.

## 7. The Concept of Administrative Weights

This paper has examined, among the various interpretations of weights recovered from the site of Kish, the specific conditions under which the evaluation of "administrative weights" has been established. As a result, it has been shown that this evaluation does not derive directly from the intrinsic nature of weights as artefacts, but should instead be understood as an interpretative framework that emerges only under particular conditions of the archaeological record. The positioning of weights as administrative in Trench Z, Phase 13a, cannot be attributed simply to the fact that this excavation area was located within a zone thought to have concentrated urban activity. Rather, in this case a relatively clear stratigraphic organisation was achieved, the recovered artefacts were understood within a coherent contextual framework, and materials regarded as administrative-related were identified together from the same stratigraphic layer. It is through the overlap of these conditions that scope emerged for interpreting weights in connection with administrative activities. What is important here is that the evaluation of administrative weights is not established on the basis of a single factor. Only through the mutual reinforcement of multiple elements—clarity of stratigraphic documentation, assemblage composition, and understandings of urban structure—does it become possible to position weights within an administrative context. The case of Trench Z, Phase 13a, can thus be regarded as an example in which such conditions were relatively well aligned.

By contrast, in YW Sounding, Phase 8, an evaluation of administrative weights is not established, despite the sharing of similar urban premises. This difference is not attributable simply to the character of the findspot, but is instead considered to derive from differences in the nature of stratigraphic documentation and in the methods used to organise assemblages. In YW Sounding, Phase 8, the artefacts are not systematically organised in a manner that links them to administrative activities, and the preconditions necessary for interpreting weights as indicators of administrative function are not sufficiently in place.

Furthermore, the treatment of weights in the primary excavation reports examined in Chapter 6 provides an important contrasting case for considering the conditions under which the concept of administrative weights is established. In the primary sources, weights are not accorded special status as artefacts indicating administrative activities, and architectural remains and written documents are primarily employed as indicators of administrative function. This suggests that the evaluation of administrative weights is not directly grounded in the descriptions found in the primary sources, but rather was formed through later reinterpretations based on stratigraphic reorganisation and evolving understandings of urban structure.

In light of the above, the term "administrative weights" as used in this paper should not be understood as a fixed label for categorising weights in an absolute sense, but rather as an analytical concept that is applicable only when specific stratigraphic and documentary conditions are met. This concept does not directly indicate the function of weights themselves, but is instead positioned as a framework for examining the relationship between archaeological records and their interpretation.

## 8. Discussion

This chapter summarises, on the basis of the analyses presented in the preceding chapters, the points that this paper has been able to clarify, as well as those that it has deliberately refrained from

addressing.

The first point clarified in this study is that, at the site of Kish, interpretations that associate weights with administrative activities do not derive directly from the descriptions found in the primary excavation reports. In the primary sources, administrative activities are discussed mainly with reference to architectural remains and written documents, and weights are not assigned any special role within this framework. This point becomes evident only through an examination of the level of documentation in the primary sources.

Second, this paper has demonstrated that the conditions under which the evaluation of administrative weights is established are not uniform. In Trench Z, Phase 13a, the overlap of several factors—the clarity of stratigraphic organisation, the composition of the assemblage, and the location of the excavation area within a zone thought to have concentrated urban activity—makes it possible to interpret weights within an administrative context. By contrast, in YW Sounding, Phase 8, and in the primary excavation reports, the conditions necessary to support a similar evaluation are not sufficiently in place, and the interpretation of weights as administrative is not established. This difference can be understood as deriving not from differences in the functions of the weights themselves, but rather from differences in the premises of recording and interpretation.

Third, this paper has not adopted the position that treats weights as direct evidence of administrative activities. Inferring administrative function solely from the presence of weights is not supported by the analyses presented here. Nor has this study adopted the position that weights recovered from areas thought to have concentrated urban activity should uniformly be regarded as administrative. While the decision not to adopt these positions necessarily renders the conclusions of this paper more limited in scope, it was at the same time indispensable for avoiding excessive generalisation in interpretation.

Taken together, the significance of this paper lies not in rejecting the concept of administrative weights, but in clarifying the conditions and limits of its application. The evaluation of administrative weights does not represent an attribute inherent in weights as artefacts, but rather an interpretation that is established through the convergence of multiple factors, including the character of the archaeological record, the precision of stratigraphic organisation, and the methods used to define assemblages. This paper has demonstrated this point through a detailed examination of specific cases from the site of Kish.

## 9. Conclusion

This paper has examined the evaluation of “administrative weights” as applied to weights recovered from the site of Kish, focusing on the conditions under which this evaluation has been established and the scope of its interpretation, from multiple perspectives including stratigraphic documentation, urban structure, and the level of description in the primary excavation reports. Although frameworks that associate weights with administrative activities have often been taken for granted in previous studies, insufficient attention has been paid to the documentary conditions under which such evaluations are formed.

This study first clarified the urban structure of the site of Kish and the positioning of individual excavation areas, and then conducted a comparative examination of the cases of Trench Z, Phase 13a, and YW Sounding, Phase 8. The positioning of weights as administrative in Trench Z, Phase 13a, is attributable not only to the location of this excavation area within a zone thought to have concentrated urban activity, but also to the relatively clear stratigraphic organisation and the fact that materials regarded as administrative-related could be identified together within a single contextual framework. By contrast, in YW Sounding, Phase 8, despite the sharing of similar urban premises, differences in stratigraphic documentation and in the methods used to define assemblages have

prevented the establishment of an interpretation that situates weights within an administrative context.

Furthermore, an examination of the treatment of weights in the primary excavation reports has confirmed that administrative activities are discussed primarily with reference to architectural remains and written documents, and that weights are not accorded special status as artefacts indicating administrative function. This suggests that the evaluation of administrative weights does not derive directly from the primary sources, but was instead formed through later reinterpretations based on stratigraphic reorganisation and evolving understandings of urban structure.

On the basis of these analyses, this paper has repositioned the term "administrative weights" not as a classificatory concept that reflects the intrinsic nature of weights as artefacts, but as an analytical concept that is applicable only under specific conditions of documentation and interpretation. Caution is therefore required with regard to positions that seek to infer administrative function directly from the presence of weights, or that uniformly regard weights recovered from areas thought to have concentrated urban activity as administrative. The significance of this paper lies not in rejecting the concept of administrative weights, but in explicitly delimiting the conditions under which it is established and the range of its application. Through concrete case studies from the site of Kish, this paper has demonstrated that understanding weights within an administrative context requires careful consideration of multiple factors, including the precision of stratigraphic documentation, the methods used to define assemblages, and interpretations of urban structure. In doing so, it has made explicit the premises underlying interpretation in the study of weights and has provided a perspective for avoiding excessive generalisation.

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**[Editorial postscript**（編集後記）**]**

In this issue of *al-Rāfidān*, a report on the textiles from the at-Tar Caves by Dr. Kazuko Sakamoto appears after a considerable interval. The excavations at the at-Tar Caves laid the foundation for the establishment of the Institute for Cultural Studies of Ancient Iraq. Owing to the absence of specialists in textile studies, however, this contribution may, for the time being, bring to a close the series of reports on the textiles from the site.

In April 2025, as part of a university-wide campus redevelopment programme, the building of the Institute for Cultural Studies of Ancient Iraq on the Setagaya Campus was demolished. The building had long served the local community as the Centre for Regional Cultural Exchange; nevertheless, the limited space of the campus made its removal unavoidable in order to accommodate new facilities. Although the exhibition space has unfortunately been lost, the institute's other functions—apart from storage—have now been consolidated at the Machida Campus.

Work is also steadily progressing on the public release of materials from Iraqi fieldwork through the Digital Archive Centre of Kokushikan Universiy. Photographs and other records from past research in Iraq will be made available gradually, and it is hoped that within a few years a substantial body of materials will become accessible to a wider public.

In April, Dr. Mai Tsuneki joined the School of Asia 21 at Kokushikan University and became a member of the institute. The arrival of a younger scholar who will help carry this line of research forward may well be the most significant development for the institute in recent years.

Dr. Tsuneki and I were also able to visit Iraq for a short period from late July, accompanying the Tell Sinker expedition led by Dr. Naohiko Kawakami of Nagasaki International University and Dr. Hitoshi Hasegawa of Kokushikan University. In addition to Kish, where we conduct our own research, we were able to visit Babylon and Tell Sinker. Iraq had regained such a degree of stability that we could not help wondering why we had been unable to visit for so long. Since the end of February, however, warfare has once again broken out in neighbouring countries, placing the Middle East as a whole in a precarious situation. I sincerely hope for an early resolution.

（K. Oguchi）

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