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イラン北部, ラスルカン遺跡 「プレ・セラミック」層出土の偽石器

Geofacts from the “Pre-ceramic” layer of the Iron Age site at
Lasulkan, Alborz, Northern Iran

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Yoshihiro NISHIAKI

Abstract

The archaeological site of Lasulkan is situated in the Dailaman basin, Alborz mountains, approximately 200 km northwest of Tehran (Fig. 1). The excavations by the University of Tokyo mission in 1960 demonstrated the importance of this site as an Iron Age cemetery (Fig. 2). At the same time, they revealed a “pre-ceramic” layer (Layer II) underneath (Fig. 3), reportedly containing flint “cores” and “flakes” (Fig. 4; Eagmi *et al.* 1965: 82-85). The excavators interpreted them as evidence indicating that this high mountainous region, over 2,000 m above sea level, was already exploited by a human group prior to the Pottery Neolithic period, although the cultural affiliation of the industry as well as its chronological position was not specified. This paper argues, on the basis of a reanalysis of the recovered flint specimens (Fig. 5), that all these flints are naturally fractured geofacts. The reanalysis yielded such a series of observations to support this argument, as follows: (1) prevalent occurrence of rolling and battering signs on the surface of the flints, (2) high frequency of multi-patinated specimens (38.4%), (3) no meaningful relationship in size and proportion between “cores” and “flakes” (Table 1; Fig. 6), (4) no logical flaking traces on the “core” surfaces (Fig. 7), (5) common occurrence of obtuse flaking angles on the “cores” (Fig. 8; 42.9%), and (6) no human-related debitage patterns on “flakes” (Fig. 9). These observations and the absence of patterned retouching on the “flakes” strongly indicate that the assemblage in question does not consist of artifacts.

In conclusion, the site of Lasulkan should be considered to be an Iron Age cemetery alone, necessitating that the idea that it represents one of the earliest traces of prehistoric human occupations in the high mountains of Alborz be abandoned.

はじめに

イラン北部, カスピ海沿岸のアルボルズ山麓において旧石器時代文化の追求がすすみつつある。当地の旧石器遺跡が興味深い理由は少なくとも二つある。一つは, 当地がザグロス地方とトランスコーカサス地方, 中央アジアをつなぐ結節点に位置している点である (図1)。地中海と内陸砂漠にはさまれた長狭なレヴァント地方がそうであったように, 当地も急峻な諸山系間を結ぶ往来適地にあり, 異なる初期人類あるいは集団が利用した回廊であった可能性がある (Coon 1951)。もう一つは, 初期人類の適応モデル構築に資するであろう点である。当地は, 東西に細長い地域でありながら, 海拔下にあるカスピ海沿岸から標高 5600 m を超えるデマヴァンド山にいたるまで南北, 高低による大きな環境変異を内にもつ。したがって初期人類の高地開発, 季節移動など適応戦略の仔細を調べるに格好のフィールドの一つになりうる。従来, カスピ海沿岸の旧石器時代遺跡と言えば, ホトゥヤベ

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ルト洞窟など限られた洞窟や表採遺跡しか知られていなかったが (Coon 1951 ; Dupree 1952 ; Keraudren and Thibault 1973 ; Smith 1986), 近年のイラン考古学の本格的再開にともない, 有望な旧石器時代遺跡が複数報じられるようになってきた (Biglari and Abdi 2003 ; Biglari *et al.* 2004 a, b; Berillon *et al.* 2007)。

本稿で議論の材料とするのは, アルボルズ山中にあるデーラマン地方, ラスルカン遺跡第2層出土標本である。遺跡は1960年に東京大学イラク・イラン遺跡調査団によって発掘された (図1)。発掘者らは, それらに石核, 剥片石器など人工品が含まれていると述べ, 「プレ・セラミック」段階の石器群であると報告している (江上ほか1965 : 82-85)。近年に実施された中近東文化センターによる踏査報告にもしばしば言及され, デーラマン高地に

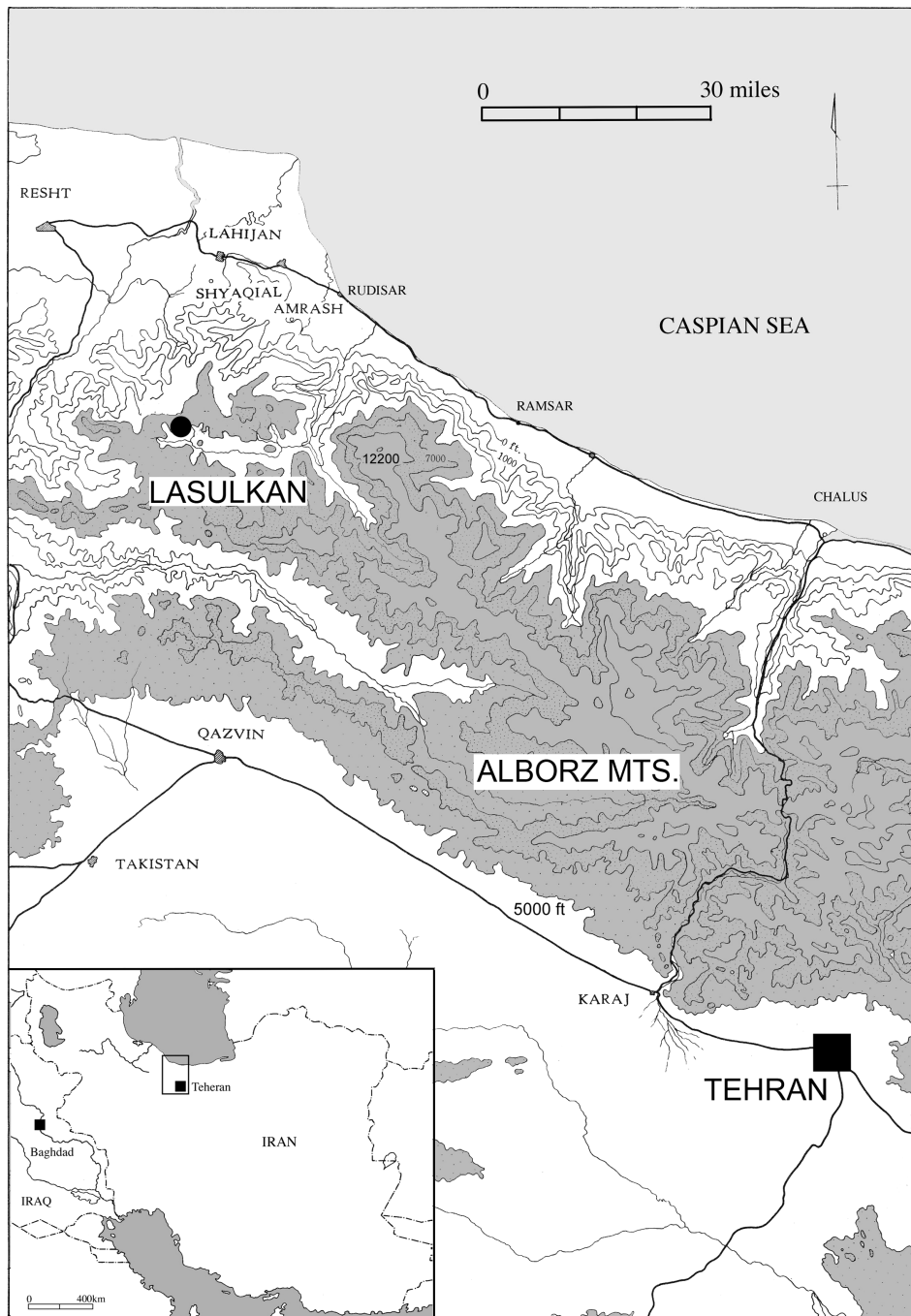


図1 ラスルカン遺跡の位置
Fig. 1 The location of the archaeological site of Lasulkan.

古くから人類居住が始まっていたことを示すとされている（大津2000：53；千代延2000：34, 39）。

当該標本の一部は東京大学総合研究博物館に保管されているが、詳細な文化的位置づけはなされないままであった。本稿は、それを再検討した結果を報告するものである。結論を先に述べると、表題にあるように、それらは全て偽石器、すなわち自然石であった。したがって、ラスルカン遺跡第2層出土標本をもってデーラマン高地に「プレ・セラミック」期的人类居住があったとの証拠にすることはできない。

ラスルカン遺跡と第2層の「遺構」

遺跡はテヘランの北西約 200 km, アルボルズ山中にあるデーラマン盆地に所在する（図1）。デーラマン盆地

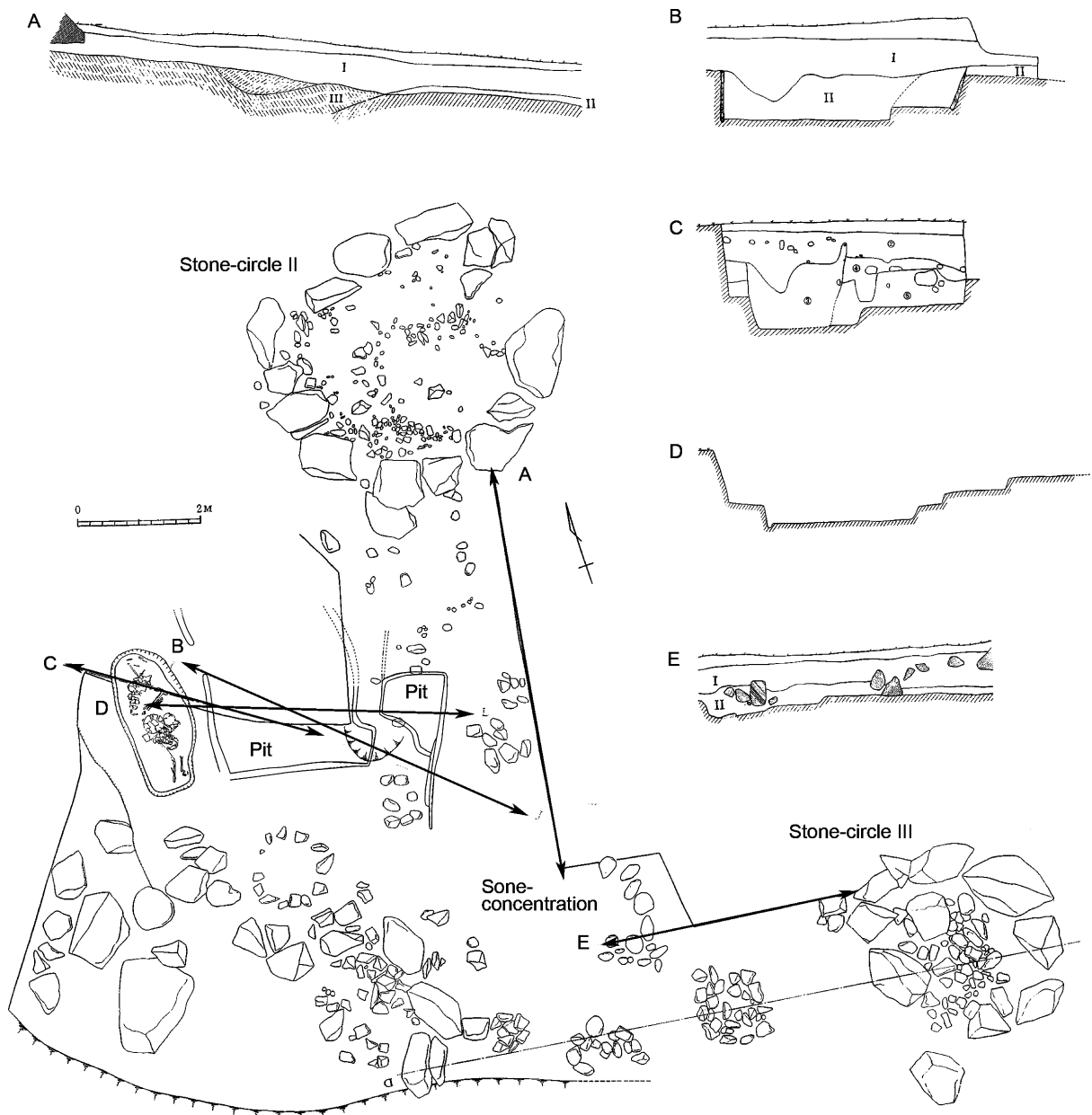


図2 ラスルカン遺跡, Aトレンチと土層断面図（江上ほか1965の図版85を改変）
 Fig. 2 Plan and sections of Trench A of Lasulkan (adapted from Plate 85 in Egami *et al.* 1965)



図3 ラスルカン遺跡，Aトレンチの「堅穴」（江上ほか1965の図版23：2）

Fig. 3 Pits from the "Pre-ceramic" layer of Trench A of Lasulkan (Plate 23: 2 in Egami *et al.* 1965).

はカスピ海に流れるプール・イ・ルード川の水源近くにひろがる小盆地であり，標高は2000 m 近くにも達する。ガレクティ，ノールズ・マハレなど東京大学イラク・イラン遺跡調査団が1960年代に盆地内で発掘した数多くの遺跡の一つで，ラスルカン遺跡は同川の左岸に発達した丘陵斜面に位置している（江上ほか1965）。

発掘は1960年の夏に実施された。その主眼は鉄器時代の墓地群調査にあり，地表に見える遺構，盗掘坑を手がかりとして，斜面および頂丘部に，それぞれA，Bと名付けたトレンチが設けられた。トレンチは50 m ほど離れており，標高差も8-9 m ほどあるが，層序は基本的に同様であったと報告されている。すなわち，第1層が黒色有機土層，第2層は腐食した浮石を含む火山灰，第3層は黄褐色の細かい火山灰の堆積であったという（江上ほか1965：75-76）。ただし，第2層の下，ないし第3層の様相は各所で多少の変異があったとの記載もある（江上ほか1965：82）。

第1層は鉄器時代文化層（西秋ほか2006），第3層は無遺物層であり，問題の標本群が出土したのは第2層である。フリント質の「石核」や「剥片」が出土したとされる。また，径80-120 cm ほどの円形をなすいくつかの石敷き遺構や，壁面が垂直に近い堅穴がすくなくとも2基あったとされている（図2の Pit, Stone-concentration, および図3参照）。石敷遺構，堅穴とも性格は明らかでないものの「人為的構築であることは明白」と述べられて

いるから、第2層の再検討にあたっては「石器」だけでなく、「遺構」の検証も必要である。

しかしながら、報告書に残されている記載は難解である。石敷遺構は「第2層の上面」にあって所属が「明らかでない」と述べられる一方、「第2層中に埋没」したのもあったという。おそらく、後者は、図2の土層断面Eにかかる配石のことであろうが、構築時期がはっきりしないし形状は鉄器時代配石と違わないようにみえる。また、堅穴の掘り込み面についても曖昧である。「この層（第3層のことか、西秋註）を切った堅穴」（江上ほか1965：82）だと記載されているが、土層断面（図2のB）を見ると、第2層を切っていることになっており、その一方で、堅穴の覆土も第2層だと記されている。加えて、別の土層断面（図2のA）では、第2層と第3層の前後関係が読みとれないような表現がなされている。堅穴はトレンチ壁にかかっており全体のプランを明らかにするにはいたらなかったが、壁際に炭化層が分布していたため識別は容易だったらしい。しかし、炉跡や火の使用を示す灰、焼土も見あたらず「ここに居住したという性質のものではない」（江上ほか1965：85）と解釈されている。いずれにしても、これらの「遺構」の仔細、特に層位的帰属については、報告書だけでは判断しきれないというのが実情である。

「プレ・セラミック」層出土標本

報告者は第2層出土品について次のように述べている。「明らかに人工による剥離を示す石核，剥片石器があ

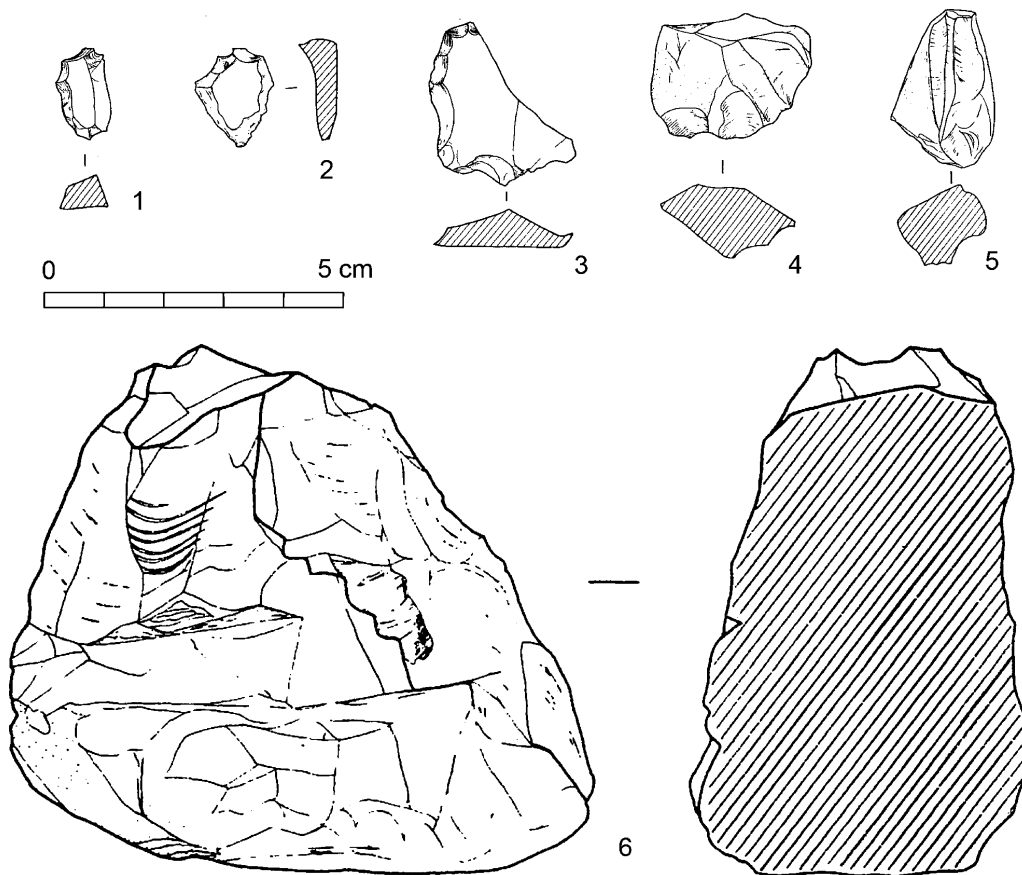


図4 ラスルカン遺跡出土の「石器」（江上ほか1965図版90：bを改変）
1-4：「剥片」，5-6：「石核」

Fig. 4 "Flint artifacts" from the "Pre-ceramic" layer of Lasulkan (adapted from Plate 90:b in Egami *et al.* 1965).
1-4: "Flakes"; 5-6: "Cores"

り、この層は土器を全然伴出しない。これはこの層が少なくとも土器出現以前の文化段階にあることを示している。そうして石核にはシャープな新しい剥離面と、堆土の移動によってある程度摩滅した剥離面をもつ例がある。剥片には定型的な石器と認められるものがなく、プレ・セラミックの段階であることは確かであるが、如何なる石器時代に属するかは判然としない」(江上ほか1965: 82-83)。

図4に、報告書の図90:bを再掲した。1-4は剥片、5-6は石核とされたものである。確かに、小形の細石器的標本が見られる一方(図4: 1, 2), 大形の石核様標本(図4: 6)も含まれておりとりとめがない。一緒に得られた他の標本もあわせて検討を試みる。

(1) 標 本

表1 ラスルカン遺跡出土「石器」の構成
Table 1 Pebbles, "cores" and "flakes" from Lasulkan by excavation contexts

コンテキスト (contexts)		礫 (pebbles)	「石核」 ("cores")	「剥片」 ("flakes")	合 計 (total)
表土 (topsoil)	4号C地区拡張部表土	0	2	0	2
	4号C拡張部表土7/31	10	23	38	71
	小 計 (subtotal)	10(13.7)	25(34.2)	38(52.1)	73(100.0)
堆積層 (lower deposits)	2号C第2層	0	2	0	2
	第2層淡褐色層8/1	0	2	3	5
	Tr. 1	2	0	3	5
	Tr. 5大 pit	0	6	2	8
	Tr. 5埋葬 pit	0	0	1	1
	5 Tr. 小 pit 内	0	2	0	2
	Tr. 5 ~ Tr. 1 竪穴外, 暗黄褐色土, バイラン土	2	2	0	4
	小 計 (subtotal)	4(14.8)	14(51.9)	9(33.3)	27(100.0)
合 計 (total)		14(14.0)	39(39.0)	47(47.0)	100(100.0)

東京大学総合研究博物館に保管されている石標本で「ラスルカン」とされているものは全部で101点あった(図5)。このうち73点は「表土」出土であり、28点がコンテキストをもった発掘品である。ただし、後者に含まれる2点は発掘時の衝撃で破碎したものらしく接合したため、実際は27点となった(表1)。これらは、表1のように複数のラベルをつけて収納されていたが、個々のコンテキストの詳細は現在のところ明らかでない。一部は鉄器時代墓の覆土出土という可能性もある(Tr. 5埋葬pitなど)。しかし、「2号C第2層」

(Cはストーン・サークルの略か)とされたものは報告書で図示された標本(図3の6)を含むため、問題の資料であることは確実である。

(2) 分析方法

これらの石標本は、一見して筆者の目には自然石でしかなかった(図5)。しかし、それを証明する必要がある。石片類が人工品か自然石かを判断するのは、実は簡単なことではない。古くは第三紀のヨーロッパに人類がいたかどうか議論された19世紀以来のエオリス論争、20世紀にはいつから北米大陸への人類移住が更新世に遡るかどうか争われたキャリコ論争など、定型的でない「石器」認定問題には欧米の考古学者を悩ませてきた長い研究史がある(Grayson 1986)。日本国内でも岩宿遺跡D地点や星野、早水台などが前期旧石器時代の遺跡であるかどうかにつき、類似の議論が絶えない(芹沢1971; 松沢1999; 柳田・小野2007; 岡村2008など)。

認定にあたっては、標本そのものの分析と、地質学的なコンテキストの分析の双方が必要である。後者は、例えば自然状態では当該地に産出しない岩石が含まれているかどうかを検討できれば、問題の標本が人工品である



図5 ラスルカン遺跡出土の石標本（東京大学総合研究博物館収蔵品）

1-5:「剥片」, 6-7: 礫, 8-17:「石核」

Fig. 5 Flint specimens from the "Pre-ceramic" layer of Lasulkan (The University of Tokyo collection).

1-5: "Flakes"; 6-7: Pebbles; 8-17: "Cores"

かどうかの手がかりをもたらす。しかしながら、ラスルカン第2層の場合には現場情報がないため、その種の分析は不可能である。したがって、ここでの検討は「石器」に限られる。

人工物としての「石器」認定法を模索してきた歴史、現状については山岡（2005）の詳細な総説があるので繰

り返さない。そこで論じられている要点の一つは、アッセンブリッジの中から人工品のようにみえる標本を選別して個別に「石器」認定をおこなうのではなく標本群全体を対象として分析すべきこと、もう一つは、自然・人工を識別する単一の指標は見いだしがたいから、複数の指標を用いて統計的な処理をおこない当該標本「群」が人工物を含むかどうかを判断することが肝要という点である。筆者も全く同感である。実際、打製石器の製作とは岩石の物理的な破碎現象にほかならず、破碎を起こすのが自然の営力であってもヒトの作業であっても岩石に残る痕跡は変わらない。極言すれば、崖から落ちた石が別の石に衝突して破碎しようが、ヒトが石を別の石にぶつけて割ろうが、単品の場合、識別できないのである。しかし、同時に回収された多数の石片をあわせて分析すれば、人工的な打ち割り品においては文化的に一定した割れのパターンが認められるのがふつうである。旧石器文化の技術編年が可能なのはこの点による。

これらをふまえ、ここでも、ラスルカン出土品を群れとして扱う。そして、技術的な形質をいくつか点検し、そこに一定のパターンが認められるかどうか、そのパターンが人為の結果と判断できるかどうかを吟味する。「二次加工」の様態も分析対象となりうるが、そもそも定型的な石器と認められるものがない現状に鑑み、石器製作の前提となる石の破碎そのものの性向を調べることにする。保存状態、組成、「石核」の割れ、「剥片」の割れ、の順に検討結果を述べる。

(3) 分析結果

【保存状態】

石材はフリントが主体であり、ごくまれに石灰岩、火山岩が混じる。先述のように、報告者はそれらの割れ口がシャープであったり摩滅していたりと一定しないことに言及している。今回の検討の結果、風化が著しい石灰岩片をのぞけば、ほとんど全ての標本が摩滅していることが確認できた。要するに、この標本群は原位置をとどめた状態で埋蔵されていたとは考えられない。

二重パティナをもつものは堆積層出土品に11点、表土出土品に22点認められた。剥離面がはっきりしない礫をのぞいて割合を計算すると、それぞれ47.8%と34.9%に達する。前者が特に高率であるのは、剥離面の多い「石核」をより多く含んでいるためだと思われる。いずれにせよ、相当な頻度で時間を違えた破碎が生じていたことを示している。二重パティナは旧石器時代遺跡においては珍しいことではない。古い石器を後の時代の居住者たちが再利用することが少なくなかったからである。中東のムステリアン遺跡では1割以上におよんでいることもある(Nishiaki 1985)。しかし、表面の摩滅状況を勘案すると、ラスルカンの場合、自然の営力による標本の移動が主因とみるのが妥当であろう。

【組成】

標本は、剥離の痕跡をとどめない礫(図5:6-7)、礫の一部に剥離痕跡をもつ「石核」(図5:8-17)、礫からはがれ落ちた際に生じるいわゆる腹面をもつ「剥片」(図5:1-5)、の三種に分かたれる。あえてカギ括弧をつけているのは、人為的な作品ではないと考えているためである。また、明瞭な打瘤をもつ標本が少ないため「石核」「剥片」の区別は、時として明瞭でなかったことも述べておく(岡村2008:121参照)。この点をさしひいても、表1に示すように、表土、堆積層出土品とも異常な構成を見せていることがわかる。すなわち「剥片」数に対する「石核」数の割合が非常に高い。発掘はかなり精密であつたらしく長さ2cm以下の小片も十分に回収されているから、通常の遺跡では多数出土するチップ類が見逃されたとは考えにくい。

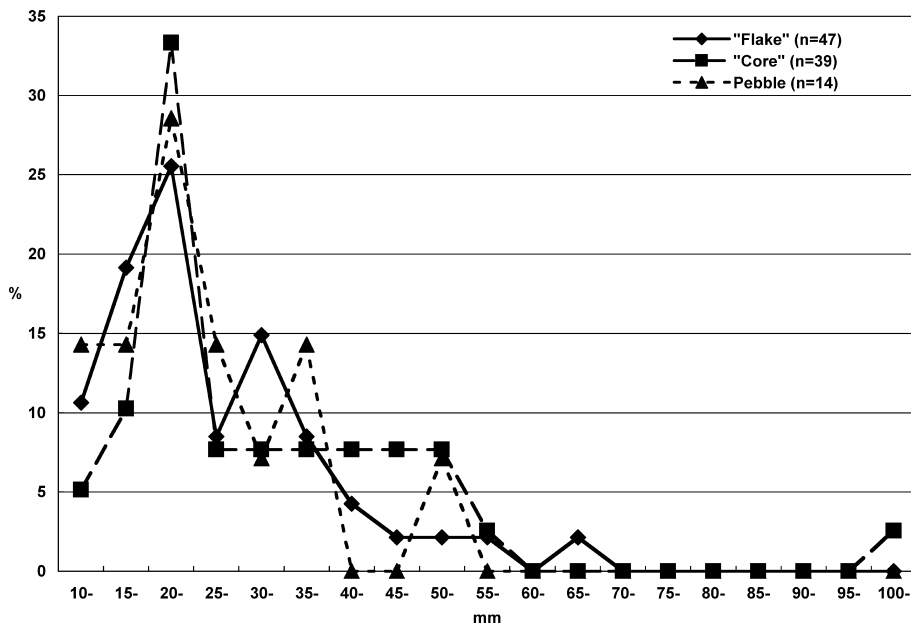


図6 ラスルカン遺跡出土標本のサイズ分布
 Fig. 6 Maximum lengths of pebbles, "cores" and "flakes" from Lasulkan.

また、サイズをみると興味深い点に気付く。第一は、礫、「石核」、「剥片」の大きさが相互にきわめて似通っている点である（図6）。筆者が扱ってきた旧石器時代から青銅器時代にいたる数十にのぼる遺跡では、このような事態は一度もなかった。消耗して廃棄された石核は小さく、剥片類はさらに小さいものも含むが石核が大きかった頃に剥がされた大形品をも多数含むのがふつうである。今回の標本群はそのようなパターンを示さない。第二に、三グループとも小形であることにも注意がいく。図示された標本にもあるように（図4：1，2；図5），最大長は2 cm ならず、いわば細石器サイズのもが主体である。もちろん、後述のように当遺跡に細石刃が剥がされた痕跡はない。また、西アジア旧石器時代の小形剥片石器群としてはタヤシアンなどが知られているが、それは本例のように定型的石器を含まない石器群ではない（Copeland 2003）。一方、日本国内にはしばしば小形の不定形石器が特徴的な旧石器遺跡が報じられているが（柳田2008），それらの多くは偽石器が疑われている遺跡である。

【石核の割れ】

石核は原則として打面と作業面とをもつ。その数や位置、断面・平面形などの違いに応じて大きな変異があるが、文化により定められた型式が存在するのがふつうである。ところが、本標本群に含まれる「石核」類には、そのようなパターンが見いだされない。打面や作業面の同定すら困難なものがほとんどである。J. D. ギールスパイラ（Gillepspie *et al.* 2004）は、北米の氷成堆積物中に含まれていた「石核」群と確実な遺跡出土の石核群を比較し、どのような属性が両者の識別に有効かを探っている。それによれば、打面調整の有無や、剥離痕の並列性、論理的な剥離切り合いなど16の形質を挙げている。いずれにおいても、本標本群の「石核」では系統的に見いだすことのできない形質ばかりである。

実際、発掘者たちが石核として報じた図4：6の標本を例として割れのパターンを点検してみると、まず、この作品には明確な打面が設けられていないことがわかる（図7）。図裏の比較的平坦な節理面から多くの短軀な剥離が生じている。下端にも平たい面があり、そこからも短い剥離痕が見られる。短い割れは裏面にもみられる。要するに、全ての縁辺から短い割れが生じている。こうした剥離痕跡は人為でも生じうるが、自然の営為によると

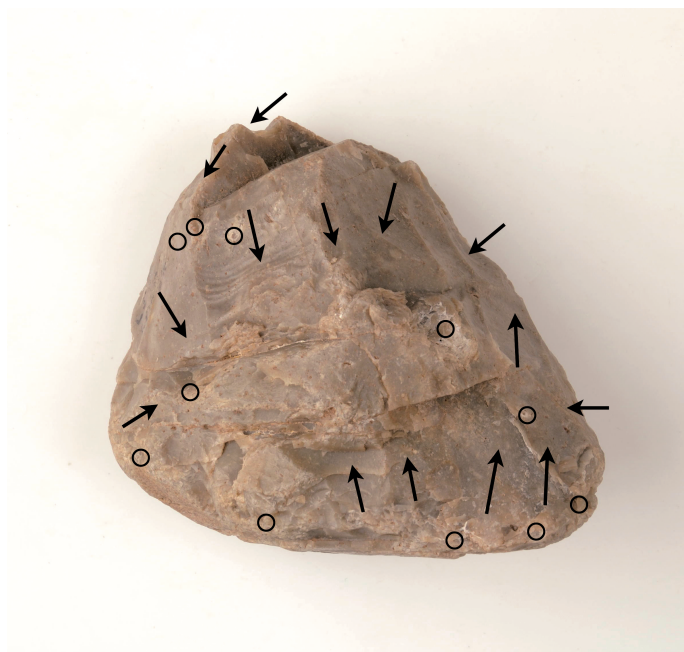


図7 ラスルカン遺跡出土「石核」の剥離痕（矢印）と未発達円錐（丸）
（図4の6の標本）

Fig. 7 Scar patterns of a “core” (Fig. 3: 6) from Lasulkan. Arrow:
flaking direction; Circle: incipient cone.

推察させる特徴が他にある。それは、縁辺がごとごとくつぶれて丸みを帯び、各所に未発達円錐（incipient cone）が見られる点である。未発達円錐は、加撃には全く適さない「作業面」中央や鈍角の稜上にも認められる（図7の○）。上記の短い剥離は、自然の営力でランダムに別の岩石と衝突した結果もたらされたとみるのが妥当であろう。図7下端中央部の剥離は二重パティナである。

剥離が生じている箇所における「打面」「作業面」間の角度も自然石・人工物の判別基準になることが古くから知られている。20世紀初頭に進んだエオリス検証時にいくつかの実験がおこなわれており、人工品の場合、それが鋭角をなすことが多いことが示されている（Warren 1914 ; Barnes 1939）。打面と作業面の角度が鈍角である場合、物理的に岩石は破

断しにくいからである（Whittaker 1994 : 92-93）。初期に系統だった実験をおこなった A. バーンズ（Barnes 1939）によれば、人工品の場合の鈍角剥離はせいぜい20%以下しか出現しない。これをもって25%を人工品の上限とみたらどうかと提案している。この点は後の再検査でも立証されている（Ascher and Ascher 1965）。

ラスルカン堆積層出土品の「石核」14点について剥離角を測定してみると図8のような結果を得た。一つの標

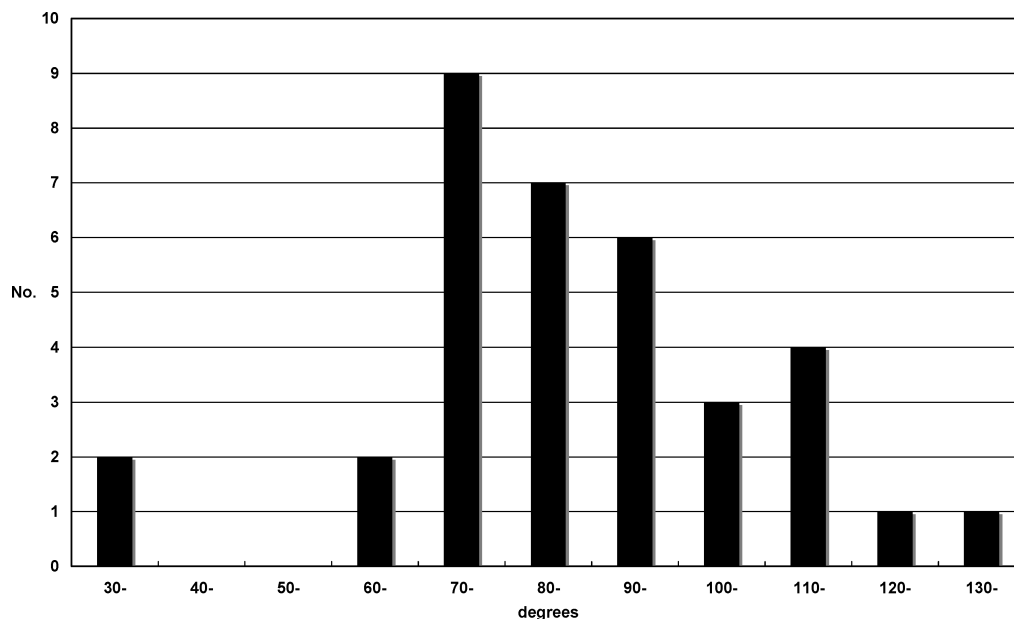


図8 ラスルカン遺跡出土「石核」の打角分布（計測箇所35）

Fig. 8 Flaking angles of “cores” from Lasulkan (n=35).

本につき複数の剥離ユニットがあるため、全部で35カ所測定した。バーズは長さ 1 cm 以上の剥離のみを計測したというが (Barnes 1939 : 112), ラスルカンの場合、標本が小さいためそれ未満の剥離も計測している。これを考慮しても鈍角剥離が40%に達している点は注目に値する。多少とも石割の知識をもった人類の行動では生じがたい加撃ボタンであるといいうる。

【剥片の割れ】

人工的な剥片を同定する際にしばしば依拠されるのは、腹面にみられる打瘤やリング、打瘤裂痕などの痕跡である。しかし、それらは自然の営力による石の衝突でも生じうるから、打面や背面の様態を含めた複数の項目を観察して総合的に判断する必要がある。ここでは E. ピーコック (Peacock 1991) の指標を採用する。詳細は山岡 (2005) が紹介している。打瘤やリング、打瘤裂痕はもちろん、調整打面の有無、背面に三つ以上剥離痕があるかどうかなど11の形質を点検するものである。各形質の有無、顕著さ等に応じて -1, 0, 1 などの得点が決められており、たとえば、二重パティナをもつ標本は -1, 背面に陰瘤をもつものは +1 となる。標本個々につきそれらを集計し得点を計算するものである。得点が高いほど、人工品の可能性が高い。

ピーコックの分析では、エオリス、自然石に加え、英国の前期旧石器時代石器群であるクラクトン・オン・シー (Clacton-on-Sea), ヒル・ホー (Hill Hoe) の真性の石器が対照標本として分析されている。この結果を利用して、ラスルカンの標本群のスコアを比較したのが図9である。明らかにラスルカン標本が示すパターンは自然石 (Eoliths と Natural) のそれに近いことがわかる。一定の形状をもつ剥片を作り出すために、文化的に定められた方式で打ち割られたものとはとうてい認めがたい。ここで「剥片」とよんでいるものの多くは岩石が内包していた節理面を中心に自然破断した石片なのであろう。

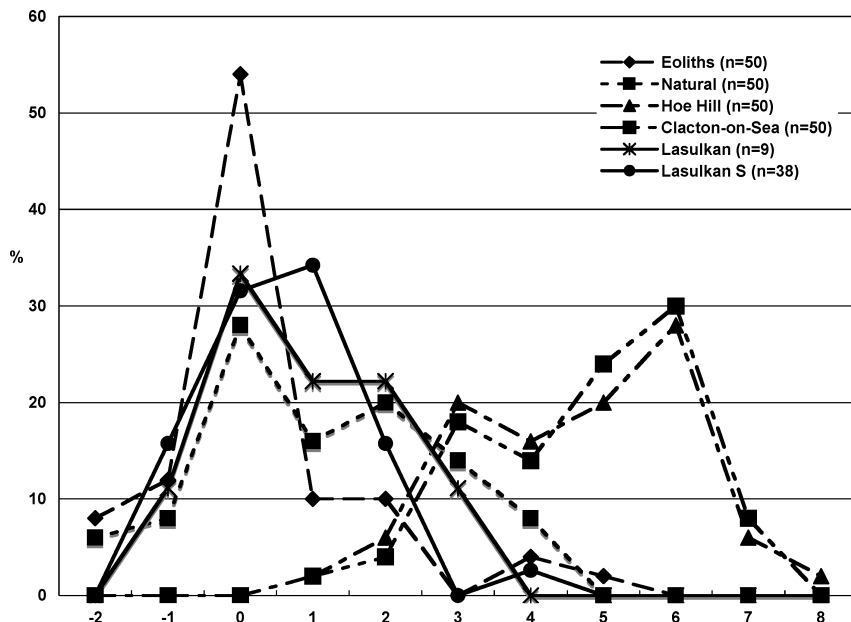


図9 ラスルカン遺跡出土「剥片」の形質スコア
Lasulkan は堆積土層, Lasulkan S は表土層出土品。その他のデータは Peacock 1991による。

Fig. 9 Peacock's scores for "flakes" from Lasulkan and reference samples. Data are taken from Peacock (1991) except for Lasulkan (lower deposits) and Lasulkan S (topsoil) specimens.

おわりに

以上によれば、ラスルカン第2層の標本群は人工の痕跡をとどめない自然石の集合体であると結論できる。なぜ発掘者たちがそれらを「明らかに人工による」と判断したのかは深く詮索しない。そもそも判断の根拠が示されていない。報告書に石器として図示された標本のうち今回、検討できたのは1点のみであるから、ひょっとすると東京大学総合研究博物館に収蔵されていない標本の中に確かな石器が含まれていたのかも知れない。しかし、人工品のようにみえる少数の標本を抜き出して議論することの説得力のなさは、この問題に関する研究史が示しているとおりである。また、図示された標本ですら人工品とは認めがたいことは既に述べた。

フィールドワークによる現場の地質学的検討ができない現状では、これらの偽石器の由来を十分に説明することはできない。水磨がみられることを考えると、プール・イ・ルード川の河床が高かった頃の礫層を掘り当てたのではないかとの推察は可能である。しかし、それは当該層が「火山灰」で構成されていたとする発掘者らの記載とは合致しない。現場が8度前後の傾斜地であることを考慮すると、後背地にあった原石供給源からの斜面堆積という見方も検討されてよいだろう。また、一緒に見つかったという堅穴や石敷き「遺構」は何であったのかという説明も今後の課題として残る。残された記録類のみから、その性格を検討することは難しい。いずれにしても本稿で結論できるのは確実な石器がともなっていないという点のみである。

今回扱ったのは、アルボルズ山中、高山部で最も初期に報じられた「プレ・セラミック」標本群の一つである。それが旧石器時代ないし先土器新石器時代の石器群ではないかと興味をもって再検討に臨んだわけであるが、結果は上述のとおりとなった。近年の調査によれば、デーラマンと同じ標高 2000 m 級の高地であるデマヴァンド地方で中期旧石器時代遺跡が報じられるにいたっている (Berillon *et al.* 2007)。アルボルズ山中の「プレ・セラミック」時代は、今後、そうした新たな遺跡で得られた証拠にもとづいて議論するのがよい。

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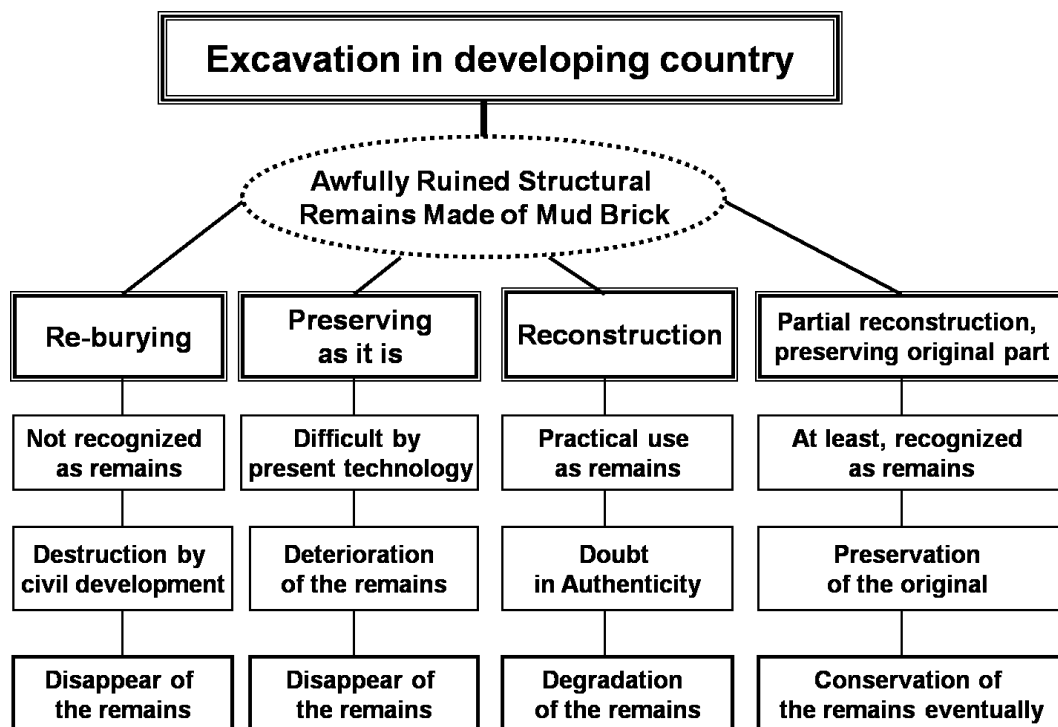
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AN ATTEMPT FOR THE CONSERVATION AND UTILIZATION OF HIGHLY DECAYED EXCAVATED REMAINS MADE OF MUD BRICKS IN EGYPT

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1. Introduction

It is very difficult to conserve and utilize highly decayed excavated remains made of mud bricks. The best way is reburying so far. However, in many countries especially developing countries, reburied remains will not always be preserved, but often be destroyed and disappear. Therefore, in order to conserve such remains, they should be restored visibly to a certain extent and utilized as archaeological site anyway. This may not be a good method, but at least better than being destroyed and disappearing. This is considered an unavoidable option which we should take under the present conditions. A case study in Egypt is explained.



2. Archaeological Site on the Hill of South Ab-Seel, Egypt

Archaeological excavation at Hill of South Ab-Seel, which is located in the 50km south of Cairo, has been carried out by Waseda University team since 1991.[Fig. 1] Two important remaining structures were found. One is a mud brick structural remains which relate to two kings

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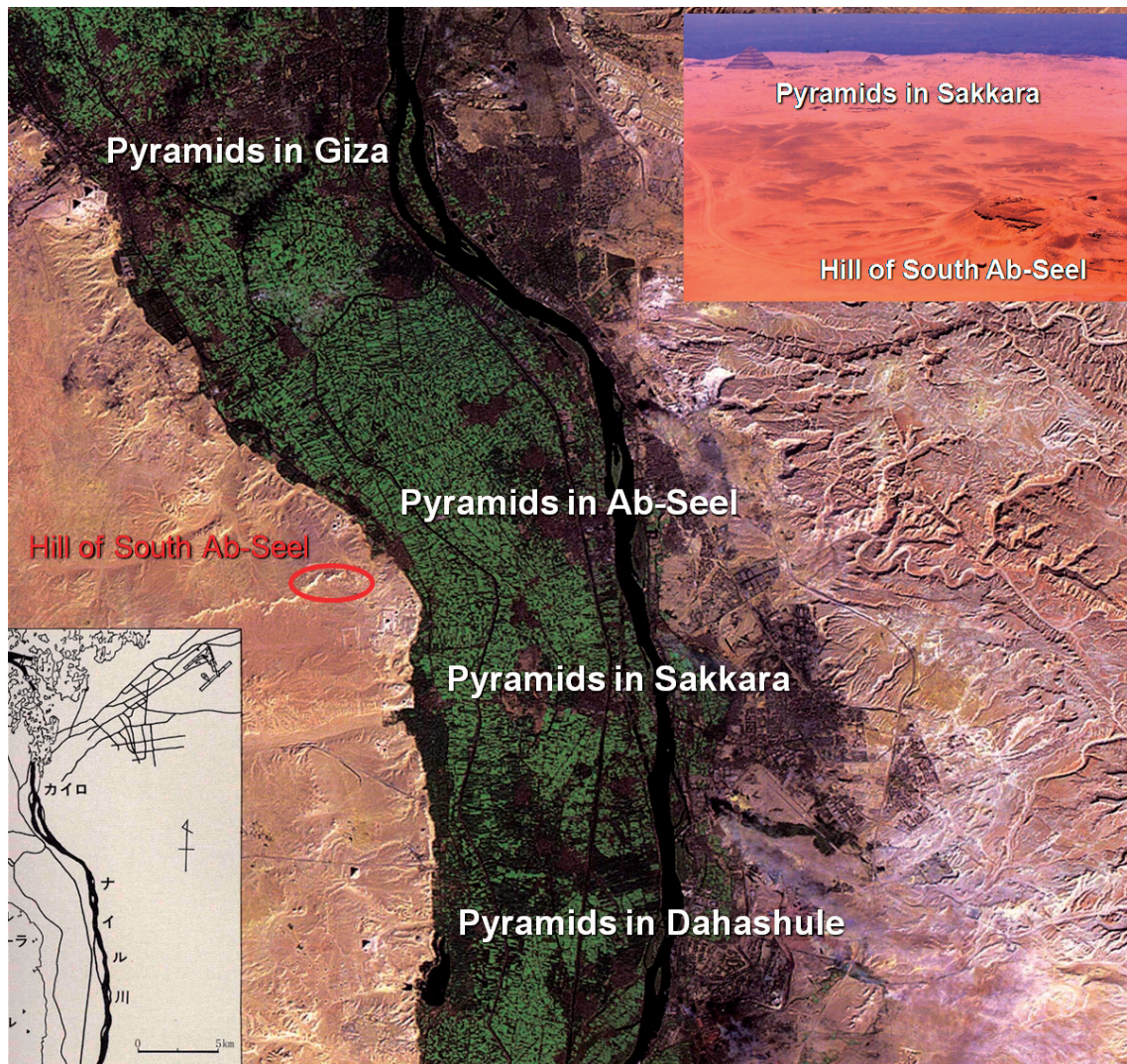


Fig. 1 Location of “Hill of South Ab-Seel” in Egypt

(1431–1395BC), and the other one is a stone structural remains which relate to a king (1279–1213BC) and his prince.[Fig. 2] Two caves and a stone-piling structure were also found.

3. Awfully Decayed Structural Remains Made of Mud Brick

The structure made of mud bricks is located on the top of the hill. It seems that the structure was big and dignified. However, its remaining condition is so bad that now only some of the base part of the wall are present at the original places.[Fig. 3] By the precise investigations and researches, the external plan of the structure (25 m × 22 m) is presumed, and the wall is considered to be 1.5m in thickness, in high credibility. However, higher part and internal plan of the structure cannot be presumed at all.

4. Deterioration and Conservation of Mud Brick Structural Remains

During excavation work, found mud brick structural remains, after precise measurement and recording, were covered with sand, and then covered by a plastic seat in order to protect them against water

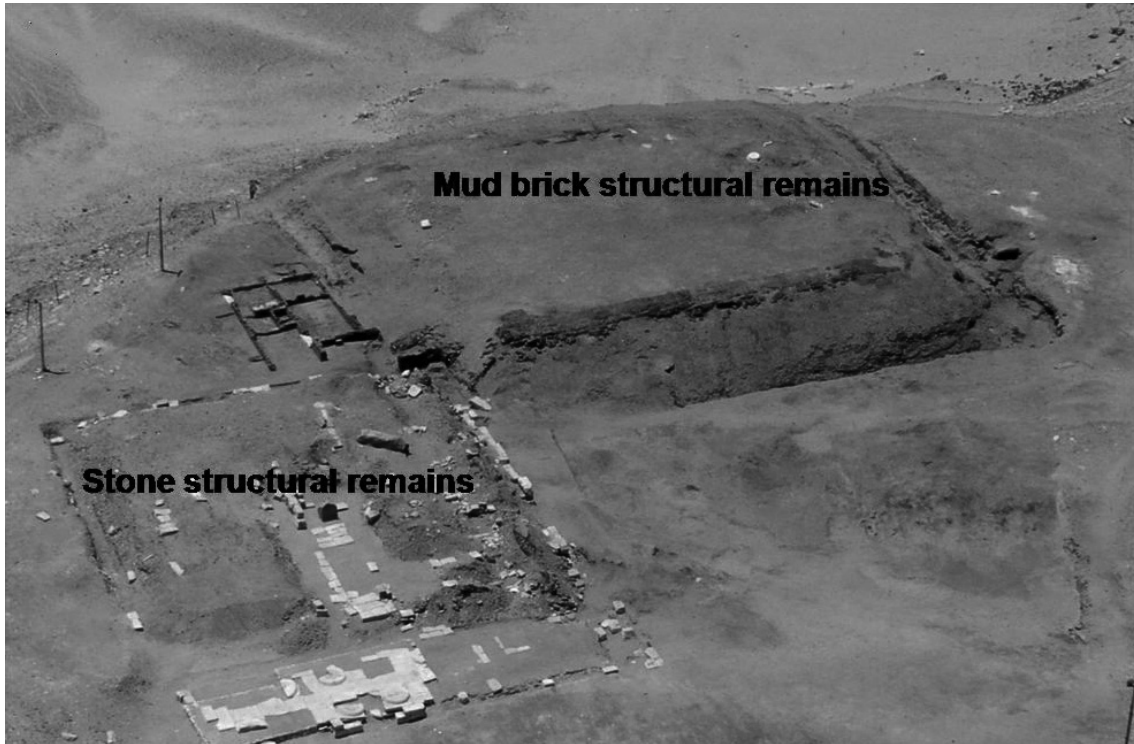


Fig. 2 Mud brick structural remains and stone structural remains

(rain and condensation) and prevent the applied sand scattering away. This temporary measure would be effective for quite long time, if remains were under ground level. However, in this case, since the remains are located on the top of a hill, the seat and sand are easily blown off by wind. Hence, re-exposed remains were had to be covered with sand and by seat every year.[Fig. 4]

Measurement of environmental condition shows that temperature and humidity change largely in inverse proportion within a day, which means that condensation occurs every day through the year.[Fig. 5] Rain water does not affect so much because precipitation there is around 16 mm per year. Water by condensation makes mud lamp to be mud powder continuously. Actually the remains had been deteriorating year by year since they were excavated and re-exposed, and now they were in severe condition to extinction.



Fig. 3 Mud bricks which are the parts of very bottom of wall

5. Basic Ideas for the Conservation and the Utilization of Mud Brick Structural Remains

Basic Ideas for the conservation work of the structural remains, considering their utilization are as follows:



Fig. 4 Temporary re-burying of mud brick remains during excavation work

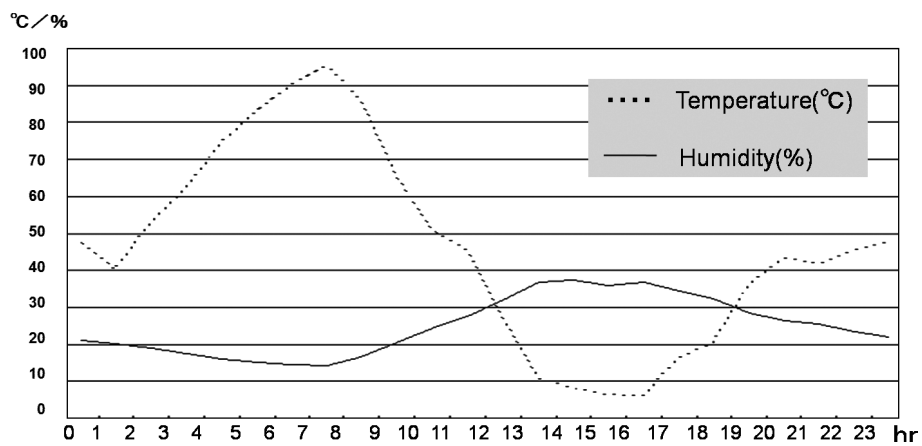


Fig. 5 Change of the temperature and humidity in a day

1) Decreasing deterioration factors.

Since the main deterioration factor to mud bricks is penetration and evaporation of water, they are to be treated with hydrophobic silicone resin, for instance, to consolidate and make them waterproof. Then, they are to be covered with new mud bricks in order to protect them.

2) Treatment in this time should not make it difficult to do a radical conservation work in the future.

Original mud bricks are covered with sand, and then new construction is made.

3) It should be understood that the remains were parts of a mud brick structure.

Materials used for structural conservation are new mud bricks and mud.

4) Shape of the original structure can be imagined anyway.

Reconstructed walls should be followed the original positions.

5) Newly constructed part should not cause misunderstandings of the remains.

Known factors and unknown factors (size, shape, color, etc.) should be clearly divided when new construction is made.

6. Actual Conservation Procedure

1) Remaining mud bricks were impregnated with a mixture of silicone resin solution* and acrylic resin solution** to consolidate them and make them waterproof.[Fig. 6]

* 35% solution of methyl tri-ethoxy silane in toluene and methanol

** 15% solution of Paraloid B-72 in toluene



Fig. 6 Applying a mixture of silicone resin and acrylic resin for consolidation and waterproofing

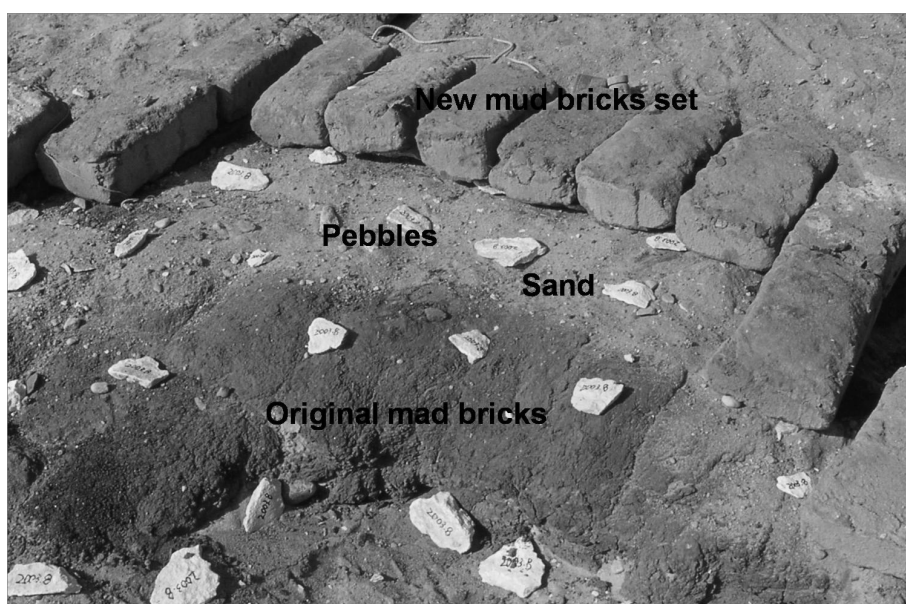


Fig. 7 Sand, pebbles on which date is marked, and new mud bricks applied

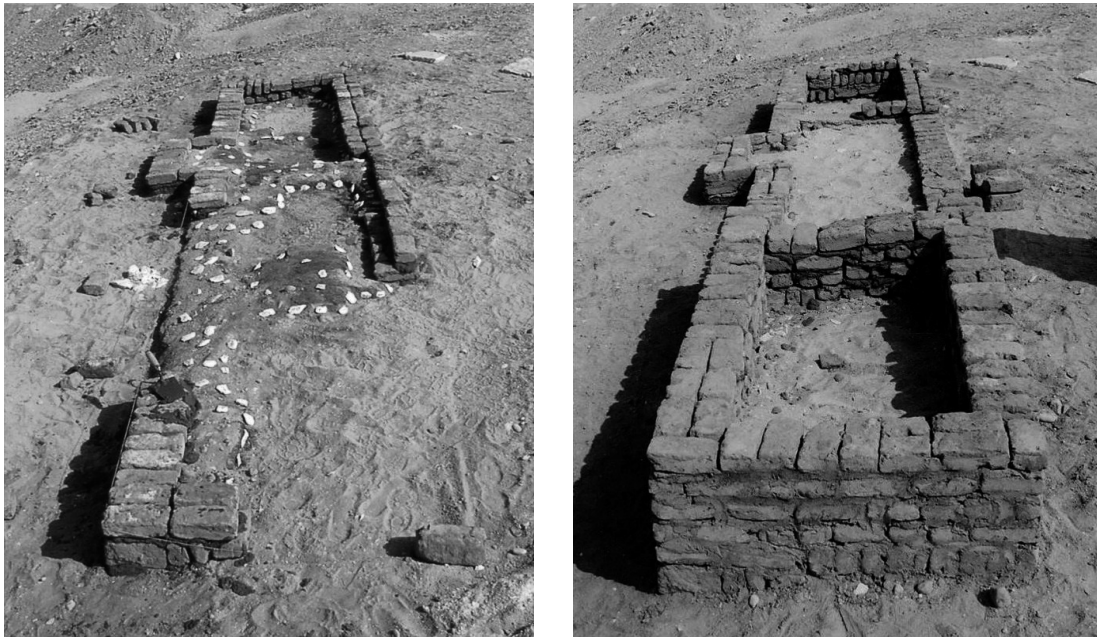


Fig. 8 Only outside of the wall was made using new mud bricks

- 2) They are covered with sand, and then pebbles on which the date is marked were put on the sand, so that the date of this conservation work will be recognized clearly in the future.[Fig. 7]
- 3) New mud bricks were set on the sand according to the analyzed and supposed plan of the original wall (outer part only). The heights of the wall were 6 pieces of brick at west side and 2 to 3 pieces at east side. The new bricks are smaller ($25 \times 12 \times 8$ cm) than original ones ($37\text{--}42 \times 18\text{--}20 \times 10$ cm), which means that newly added bricks will be identified by size in the future. The new bricks were bonded by mud mortar.[Fig. 8]
- 4) Inside of the wall was filled with sand and then covered with mud mortar which is the same one used for bonding of bricks.[Fig. 9] [Fig. 10]
- 5) Finally all the outer surfaces are covered with mud mortar. Fig. 11 and Fig. 12 show the whole view after conservation (semi-reconstruction) work.



Fig. 9 Inside of the wall was filled with sand and then covered with mud

7. Discussion

In order to protect archaeological remains, first of all, they should be recognized as archaeological property and be conserved appropriately. Therefore, partial reconstruction is often necessary to make remains visible as archaeological property. Although preservation and reconstruction are basically inconsistent idea with each other, how can we make them compatible as far as archaeological consideration permits?

Here, an example of conservation of mud brick structural remains is presented. From the standpoint

of conservation and utilization of archaeological remains, wide discussion is so welcome.



Fig. 10 Inside of the wall was filled with sand and then covered with mud



Fig. 11 After completion of the conservation (semi-reconstruction) work



Fig. 12 After completion of the conservation (semi-reconstruction) work

NOTES D'ARCHÉOLOGIE LEVANTINE

XV. LE BRONZE ANCIEN À PALMYRE

Michel AL-MAQDISSI*

À la mémoire de mon maître, le Dr Adnan Bounni¹

Résumé

Présentation synthétique sur le lot de céramique trouvé au cours des fouilles, réalisées par le regretté Adnan BOUNNI, dans l'esplanade du Sanctuaire de Bêl à Palmyre. Le matériel comporte des tessons variés de la deuxième moitié du III^e millénaire av. J.-C. (Bronze ancien III et IV).

Mots clefs : Palmyre, Sanctuaire de Bêl, Bronze ancien, Céramique.

I. INTRODUCTION

Le sondage effectué par Adnan BOUNNI à l'est de la *cella* du sanctuaire de Bêl a permis de tracer une séquence stratigraphique qui éclaire l'histoire pré-palmyrénienne de la ville². En 1957, Ernest WILL réussit³, suite à des recherches conduites par Denis VAN BERCHEM⁴, à localiser la première installation de Palmyre à l'emplacement du sanctuaire de Bêl, où il propose la présence d'une colline artificielle terrassée à l'occasion de l'édification du sanctuaire. Dans les années 60, le Comte DU MESNIL DU BUISSON a réalisé en deux campagnes (1965 et 1967)⁵ un sondage profond (sondage D), et a nettoyé les sondages effectués dans les années 30 par les deux architectes Robert AMY et Georges TCHALENKO, afin d'étudier les fondations de la *cella* du sanctuaire. Il a livré des tessons et des structures datant du I^{er}, du II^e et même du III^e millénaire. L'étude de ce matériel et des actions du Comte a été réalisée par l'auteur de cette notice dans un article publié dans *Syria*⁶.

II. SONDAGE DE L'EST DE LA CELLA

À partir de 1981, Adnan BOUNNI a lancé une nouvelle opération sur l'esplanade du sanctuaire, où il a réalisé un sondage stratigraphique immédiatement à l'est de la *cella* dans le but de confirmer et d'illustrer les résultats du sondage D. Dix niveaux successifs ont été dégagés sur au moins huit mètres de stratification. Un premier compte-rendu de ces travaux fut publié dans *Topoi*⁷, dans le cadre du deuxième colloque organisé à l'université Saint-Joseph à Beyrouth en 1999 sur les sanctuaires du Proche-Orient hellénistique et romain⁸.

* DGAM-Damas USJ-Beyrouth

1 Je dédie cette notice au regretté Adnan BOUNNI, avec qui j'ai eu l'honneur de travailler à Palmyre durant cinq campagnes de fouille dans le sondage de l'esplanade du sanctuaire de Bêl. Grâce à son érudition et son enseignement transmis amicalement dans la maison de fouilles de la mission syrienne, j'ai commencé à m'intéresser à l'histoire de Palmyre et à son rôle, aux époques anciennes, entre les deux mondes levantin et mésopotamien.

2 Cf. pour les informations sur l'histoire ancienne de Palmyre, BOUNNI 1978 : pp. 66–67.

3 WILL 1957 : p. 275 et plus récemment WILL 1992 : pp. 27–29.

4 VAN BERCHEM 1954 : pp. 256–262.

5 DU MESNIL DU BUISSON 1966, 1967 (a) et (b).

6 AL-MAQDISSI 2000 : pp. 143–144 (fig. 3–4).

7 BOUNNI et AL-MAQDISSI 2001.

8 Pour les actes de ce colloque, cf. *Topoi*, 9/2, 1999 et *Topoi*, 11/1, 2001, pp. 9–34.

III. SUCCESSION STRATIGRAPHIQUE

Les travaux qui se sont poursuivis en 2000 ont permis de dresser la succession stratigraphique suivante :

Phases	Datation	Sondage D (du Mesnil du Buisson)
Bêl 0	Surface actuelle de l'esplanade 0.00 m – 0.40 m	–
Bêl I	Période ottomane 0.40 m – 0.80/1.00 m	–
Bêl II	Période mamelouke 0.80/1.00 m – 1.20 m	Arabe - Byzantine
Bêl III	Période palmyrénienne tardive 1.20 m – 2.20 m	Terrassement
Bêl IV	II ^e siècle av. J.-C. 2.20 m – 3.20 m	Terrassement
Bêl V	avant II ^e siècle av. J.-C. 3.20 m – 3.70 m	Terrassement
Bêl VI	Période palmyrénienne ancienne 3.70 m – 4.10 m	–
Bêl VII	Fer II-III (I ^{er} millénaire av. J.-C.) 4.10 m – 5.10 m	–
Bêl VIII	Stratification incertaine (II ^e millénaire av. J.-C.) 5.10 m – 6.50 m	Bronze récent Bronze moyen
Bêl IX	Bronze ancien III-IV (III ^e millénaire av. J.-C.) 6.10 m – 7.50 m	Bronze ancien IV
Bêl X	Tessons du IV ^e millénaire av. J.-C. ? 7.50 m – ?? Sol vierge	Silex taillé

Fouilles syriennes (campagnes 1981, 1995–1997 et 2000)

Nous résumons les résultats obtenus comme suit :

Bêl I : structures du village de la période ottomane qui occupait l'esplanade avant son déplacement durant le mandat français.

Bêl II : structures mineures marquées par la présence d'une architecture très modeste, associée à des tessons et du matériel de la période mamelouke.

Bêl III : vestiges d'un portique et de structures bien conservées de la période palmyrénienne classique. Le matériel comporte des tessères, un texte en écriture palmyrénienne et des éléments en pierre tendre d'un chapiteau de type archaïque.

Bêl IV–V : structures du II^e siècle av. J.-C. avec une occupation réduite parfois à la superposition de minces strates.

Bêl VI : époque palmyrénienne ancienne ; présence de murs en briques crues en relation directe avec les dégagements réalisés dans la partie sud de la ville par la mission syro-allemande, sous la direction conjointe de A. Schmidt-Colinet et Walid el-Ass'ad

Bêl VII : structures mal conservées avec matériel du I^{er} millénaire av. J.-C. (Fer II et III). Les éléments architecturaux sont parfois soulignés d'une mince assise de brique crue sans fondations liée à des sols de terre battue.

Bêl VIII : stratification incertaine de ce niveau en raison de l'absence de structures en place sur plus d'un mètre et demi. Les coupes stratigraphiques dévoilées donnent l'impression d'un terrassement et d'une superposition de couches de terre meuble. Le matériel archéologique trouvé est relativement peu abondant, il comporte quelques rares tessons du II^e millénaire av. J.-C.

Bêl IX : à partir de six mètres de profondeur, la succession stratigraphique change ; les fouilles ont révélé la présence de plusieurs couches de terre superposées de couleur brune foncée, mélangé à de la cendre et à des éléments brûlés, mais sans architecture. Le mobilier découvert sur plus d'un mètre de stratification est riche et comporte des tessons de la deuxième moitié du III^e millénaire av. J.-C.

Nous remarquons notamment :

- Col évasé d'une jarre de grande dimension (tesson n° 1) typiquement du BA IV. Elle est comparable avec celles retrouvées à Tell Masin⁹, à Tell 'Acharneh¹⁰, à Tell Afis¹¹, à Saraqeb¹², à al-Ansari¹³, à 'Ain 'Assan¹⁴, Hama¹⁵, à Tell Mardikh¹⁶, dans les sites de la vallée de l'Oronte¹⁷ et de la plaine d'Antioche (Phase J)¹⁸ et même à Tell Sukas¹⁹ et à Tell Sianu²⁰.
- Col vertical et surface simple d'une jarre de moyenne dimension (tesson n° 3) datée du BA IV. Ce type est caractéristique de la Syrie intérieure dans les sites de Tell Masin²¹ et Hama²².
- Fragments de jarres de moyenne dimension à surface décorée de minces bandes horizontales monochromes, généralement brun ou brun foncé ou brun rougeâtre (tessons nos 6–9, 11–12 et 14), caractéristique de la production céramologique du BA III-BA IV dans la vallée de

9 DU MESNIL DU BUISSON 1935 : pl. XLIX/35, 37.

10 COOPER 2006 : p. 174/fig. 19.1.

11 MAZZONI 1998 : p. 71/fig. 17.

12 SOULEIMAN et GRITSINKO 1983 : p. 97/pl. II. 20.

13 SOULEIMAN 1983 : p. 185/pl. I. 10–17.

14 AL-MAQDISSI 2006 (a) : p. 146/fig. 8.

15 FUGMANN 1958 : p. 59/fig. 65 (3G 120, 3G 771 n°2), p. 65/fig. 75 (3E 219 et 3F 116) et p. 74/fig. 93 (3F 7).

16 MAZZONI 1982 : p. 155/fig. XXV. 3–4 et p. 163/fig. XXVII. 14.

17 MAZZONI 2002 : p. 90/pl. XL.

18 BRAIDWOOD et BRAIDWOOD 1960 : p. 436/fig. 336.42.

19 OLDENBURG 1991 : p. 101/fig. 35.10.

20 Matériel inédit. Pour le niveau du Bronze ancien IV, cf. récemment AL-MAQDISSI 2006 (b).

21 DU MESNIL DU BUISSON 1935 : pl. XLIX/17.

22 FUGMANN 1958 : p. 74/fig. 93 (3A 646).

l'Oronte (Tell Masin²³, Hama²⁴ et Tell 'Acharneh²⁵), à 'Ain 'Assan²⁶ et dans la moyenne vallée de l'Euphrate (région du barrage de Tishreen)²⁷.

- Fragments des jarres de moyenne dimension à surface décorée de minces bandes horizontales bichromes, orange foncé et brun (tesson n° 10), caractéristique de la production céramologique du BA IV.
- Fragments d'un gobelet simple (tesson n° 5) à col vertical du BA IVA largement attesté dans les sites de la moyenne vallée de l'Oronte à Tell Masin²⁸, à Tell Mardikh²⁹, à 'Ain 'Assan³⁰, à Tell al-Rawda³¹ ainsi que dans les sites de la plaine d'Antioche (Phase J)³².
- Fragment d'un gobelet à surface peinte (tesson n° 13) du BA IVB. Un type largement attesté à Tell Masin³³, à Hama³⁴, à Tell 'Acharneh³⁵, à Tell Afis³⁶, dans la nécropole de Zalaquiyate³⁷, à Saraqeb³⁸, à 'Ain 'Assan³⁹, à Tell al-Rawda⁴⁰, à Tell Sh'airat⁴¹ et dans les sites de la vallée de l'Oronte⁴² et de la plaine d'Antioche (Phase J)⁴³,
- Fond annulaire simple (tesson n° 2) d'un gobelet du BA IV aussi attesté à Tell 'Acharneh⁴⁴ et dans les sites de la plaine d'Antioche (Phase J)⁴⁵.

Notons enfin la présence d'un tesson peint en *Reserved Slip* ou *Smeared-Wash* (tesson n° 4), caractéristique du BA IV dans la région de l'Oronte. Il est attesté à Tell Masin⁴⁶, à Tell Afis⁴⁷, à Tell al-Ash'ari⁴⁸ et dans les sites de la plaine d'Antioche (Phase J)⁴⁹.

Bêl X : à partir de 7,5 mètres de profondeur la stratification pose quelques problèmes car la fouille a révélé la présence de strates presque dépourvues de matériel et une structure très dure. Les quelques tessons (tessons nos 15–17) à pâte grossière et à texture archaïque récoltés pourraient nous indiquer qu'il s'agit là d'une production du IV^e, voire du V^e millénaire av. J.-C.⁵⁰.

23 DU MESNIL DU BUISSON 1935 : pl. XLIX/30–31.

24 FUGMANN 1958 : p. 64/fig. 74 (3K 200), p. 65/fig. 75 (3D 775 et 3G 379 n°5), p. 69/fig. 85 (3K 170 R1-H10).

25 COOPER 2006 : p. 174/fig. 19.1–3 ; p. 179/fig. 24.1–4 et p. 184/fig. 29. 4, 6–8.

26 AL-MAQDISSI 2006 (a) : p. 146/fig. 8.

27 PORTER 2007 : p. 17/pl. IV. 7–9.

28 DU MESNIL DU BUISSON 1935 : pl. XLIX/15–16.

29 MAZZONI 1982 : p. 171/fig. XXIX. 1–3.

30 AL-MAQDISSI 2006 (a) : p. 145/fig. 7.

31 BOUDIER 2007 : p. 31/pl. 1. 7.

32 BRAIDWOOD et BRAIDWOOD 1960 : p. 439/fig. 339.32.

33 DU MESNIL DU BUISSON 1935 : pl. XLIX/24 et pl. L/51, 56.

34 FUGMANN 1958 : p. 64/fig. 74 (3H 112, 3G 696 et 3G 703), p. 69/fig. 85 (3H 124 et 3F 865), p. 74/fig. 93 (3H 352, 3H 363 et 3K 171) et p. 77/fig. 98 (3G 98)...

35 COOPER 2006 : p. 173/fig. 18.1–2, 5 ; p. 177/fig. 22.1–6.

36 MAZZONI 1998 : p. 69/fig. 16. 14–15 ; p. 73/fig. 18. 1–2, 4 et p. 75/fig. 19. 10–11.

37 AL-MAQDISSI et YABROUDI 1987 : pp. 292–295/fig. 1–4.

38 SOULEIMAN et GRITSINKO 1983 : p. 97/pl. II. 1–3 et p. 99/pl. II. 1–3.

39 AL-MAQDISSI 2006 (a) : p. 146/fig. 8.

40 BOUDIER 2007 : p. 31/pl. 1. 11–18.

41 AL-MAQDISSI 1995 : pp. 198/fig. 57. 1–2 et plusieurs gobelets inédits issus des travaux de la DGAM (Antoine Souleiman et Georges Mouamar) en 2007 et 2008.

42 MAZZONI 2002 : p. 90/pl. XLV.

43 BRAIDWOOD et BRAIDWOOD 1960 : p. 443/fig. 342.4–6 ; p. 444/fig. 343.75, 90 ; p. 445/fig. 344.140...

44 COOPER 2006 : p. 177/fig. 22.13.

45 BRAIDWOOD et BRAIDWOOD 1960 : p. 441/fig. 340.3–4.

46 DU MESNIL DU BUISSON 1935 : pl. XLIX/13, 19 et pl. L/41.

47 MAZZONI 1998 : p. 73/fig. 18. 13.

48 BRAEMER 2002 : p. 19/pl. IV. 28.

49 BRAIDWOOD et BRAIDWOOD 1960 : p. 449/fig. 347.8–11...

50 Il s'agit d'un type de céramique comparable à du matériel trouvé récemment à Tell Afis, cf. à ce propos MAZZONI 1998 : p. 63/fig. 13 (Simple Ware) ; p. 65/fig. 14 (Simple Ware)...

IV. CONCLUSION

Les résultats obtenus dans ce sondage fournissent donc des données confirmant tout d'abord la fiabilité des travaux du Comte DU MESNIL DU BUISSON⁵¹ et assure ensuite que l'oasis de Palmyre a connu une phase d'occupation pendant la deuxième révolution urbaine en Syrie. Ainsi l'existence d'une étape dans la steppe sur les routes qui relient la moyenne vallée de l'Euphrate à la Syrie intérieure remonte déjà bien avant les écrits livrés par les textes de Tell Hariri - Mari. Palmyre a donc joué dès la fin du BA III un rôle médian entre deux régions importantes dans le développement des civilisations proche-orientales.



Fig. 1 : Palmyre, Localisation du sondage stratigraphique à l'est de la *calla* du sanctuaire de Bêl.

En effet, suite à la proposition d'Ernest WILL, en 1957, de localiser la première occupation du site à l'emplacement du sanctuaire de Bêl⁵² et les travaux entrepris par le Comte du Mesnil du Buisson et ceux de la mission syrienne sous la direction d'Adnan BOUNNI, nous confirmons que la première fondation de Palmyre doit se situer vers le milieu du III^e millénaire av. J.-C.⁵³, époque d'organisation des axes de communication qui liaient plusieurs régions au nord, à l'ouest et à l'est de la Syrie. Palmyre a dû jouer, avec le déclenchement de la deuxième révolution urbaine, un rôle d'étape dans les caravanes qui assuraient le transport des marchandises de la côte syrienne jusqu'à la partie nord de la Mésopotamie et au plateau iranien. Cette première fondation a duré plusieurs siècles et le mobilier archéologique très proche de la tradition occidentale, ou plutôt de la tradition 'caliciforme' selon Stefania MAZZONI⁵⁴, nous conduisent à proposer une alliance avec des sites localisés à la lisière de la steppe syrienne car les gobelets et la céramique peinte trouvent leurs comparaisons les plus directs à Hama, à Tell Mardikh - Ebla, à Mishirfeh - Qatna et à Tell Sh'airat⁵⁵. Au début du II^e millénaire, nous ignorons la nature du développement de l'occupation mais le matériel indique une présence au Bronze Moyen, que l'on peut également attester dans les textes de Tell Hariri - Mari⁵⁶.

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51 Pour une étude stratigraphique des données obtenues par le Comte DU MESNIL DU BUISSON, cf. AL-MAQDISSI 2000 : pp. 137–142 et 145–150. Par contre, pour le matériel, cf. BIELINSKA 1997 et AL-MAQDISSI 2000, pp. 142–145 et 151–152.

52 Cf. plus haut la note n° 3.

53 La présence des tessons du IV^e millénaire av. J.-C. et même des fragments de silex, attestent une occupation plus ancienne de nature complètement inconnue.

54 Cf. à ce propos MAZZONI 1985. En effet, l'auteur identifie la présence, au Bronze ancien IV, de plusieurs cultures céramiques en Syrie du nord particulièrement dans la moyenne vallée de l'Oronte, la région d'Alep et la moyenne vallée de l'Euphrate.

55 Pour la diffusion de ce type de production céramologique, cf. AL-MAQDISSI 1990 : p. 49/carte de la figure 12.

56 Pour la documentation historique du II^e millénaire av. J.-C., cf. DURAND 1987, ABDALLAH 1996 et JOANNES 1997 : pp. 143–144.

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V. ABRÉVIATIONS

AAAS	= Annales Archéologiques Arabes Syriennes.
BAH	= Bibliothèque Archéologique et Historique.
BiOr	= Bibliotheca Orientalia.
CAAS	= Chronique des Activités Archéologiques en Syrie.
CRAI	= Compte Rendu de l'Académie des Inscriptions et des Belles Lettres.
MARI	= Mari, Annales de Recherches Interdisciplinaires.
NAL	= Notes d'Archéologie Levantine.
OIP	= Oriental Institute Publications.
PAVO	= Ricerche di Archeologia del Vicino Oriente.
PCEP	= Publications of the Carlsberg Expedition to Phoenicia.
SEb	= Studi Eblaiti.

VI. DESCRIPTION DE LA POTERIE

Planche n° I

Tesson n° 1 :

Nature : Bord d'une jarre.

Traitement de la surface : Homogène.

Description : Tesson réalisé à l'aide du tour rapide, pâte relativement épaisse de couleur qui varie du gris à l'orange.

Diamètre : 24 cm.

Tesson n° 2 :

Nature : Fond d'une petite jarre.

Traitement de la surface : Homogène.

Description : Fond annulaire réalisé à l'aide du tour rapide, pâte fine de couleur beige.

Diamètre : 6 cm.

Tesson n° 3 :

Nature : Bord d'une petite jarre.

Traitement de la surface : Engobe homogène de couleur brunâtre.

Description : Bord presque vertical réalisé au tour rapide, pâte fine de couleur brunâtre.

Diamètre : 17 cm.

Tesson n° 4 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Deux bandes de couleur brun clair avec au milieu de chacune une ligne ondulée de couleur brun foncé.

Description : Tesson réalisé à l'aide du tour rapide à pâte fine et homogène.

Tesson n° 5 :

Nature : Bord d'un gobelet.

Traitement de la surface : Homogène à engobe fine de couleur brun clair.

Description : Bord vertical réalisé à l'aide du tour rapide, pâte fine de couleur jaunâtre.

Diamètre : 12 cm.

Planche n° II

Tesson n° 6 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Quatre bandes horizontales de couleur brun clair.

Description : Tesson réalisé au tour rapide, à pâte fine et homogène de couleur claire.

Tesson n° 7 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Quatre bandes horizontales de couleur brun.

Description : Tesson réalisé au tour rapide, à pâte fine et homogène de couleur orange.

Tesson n° 8 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Plusieurs lignes horizontales d'épaisseur variée et de couleur foncée.

Description : Tesson réalisé à l'aide du tour rapide, à pâte fine et homogène de couleur brun clair.

Tesson n° 9 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Trois bandes horizontales de couleur brun.

Description : Tesson réalisé à l'aide du tour rapide, à pâte fine et homogène de couleur brun clair.

Tesson n° 10 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Trois bandes horizontales bichromes (orange foncé et brun).

Description : Tesson réalisé à l'aide du tour rapide, à pâte fine et homogène de couleur orange clair.

Tesson n° 11 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Trois bandes horizontales de couleur brune.

Description : Tesson réalisé à l'aide du tour rapide, à pâte fine et homogène de couleur beige.

Tesson n° 12 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Huit bandes horizontales de couleur brun clair.

Description : Tesson réalisé à l'aide du tour rapide, à pâte fine de couleur beige.

Tesson n° 13 :

Nature : Panse d'un gobelet.

Traitement de la surface : Large bande horizontale accompagnée de quatre petites bandes de couleur brun orange.

Description : Tesson réalisé à l'aide du tour rapide, à pâte fine et homogène de couleur orange.

Tesson n° 14 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Deux bandes horizontales de couleur brun clair.

Description : Tesson réalisé à l'aide du tour rapide, à pâte fine de couleur orange.

Tesson n° 15 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Perturbée, de couleur gris orange.

Description : Tesson réalisé à l'aide du tour, à pâte grossière de couleur orange avec une surface intérieure de couleur gris.

Tesson n° 16 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Perturbée, de couleur jaune grisâtre.

Description : Tesson réalisé à l'aide du tour, à pâte grossière de couleur jaune clair avec une surface intérieure de couleur gris.

Tesson n° 17 :

Nature : Panse d'une petite jarre.

Traitement de la surface : Perturbée, de couleur orange.

Description : Tesson réalisé à l'aide du tour, à pâte relativement grossière de couleur brun clair avec une surface intérieure de couleur orange.

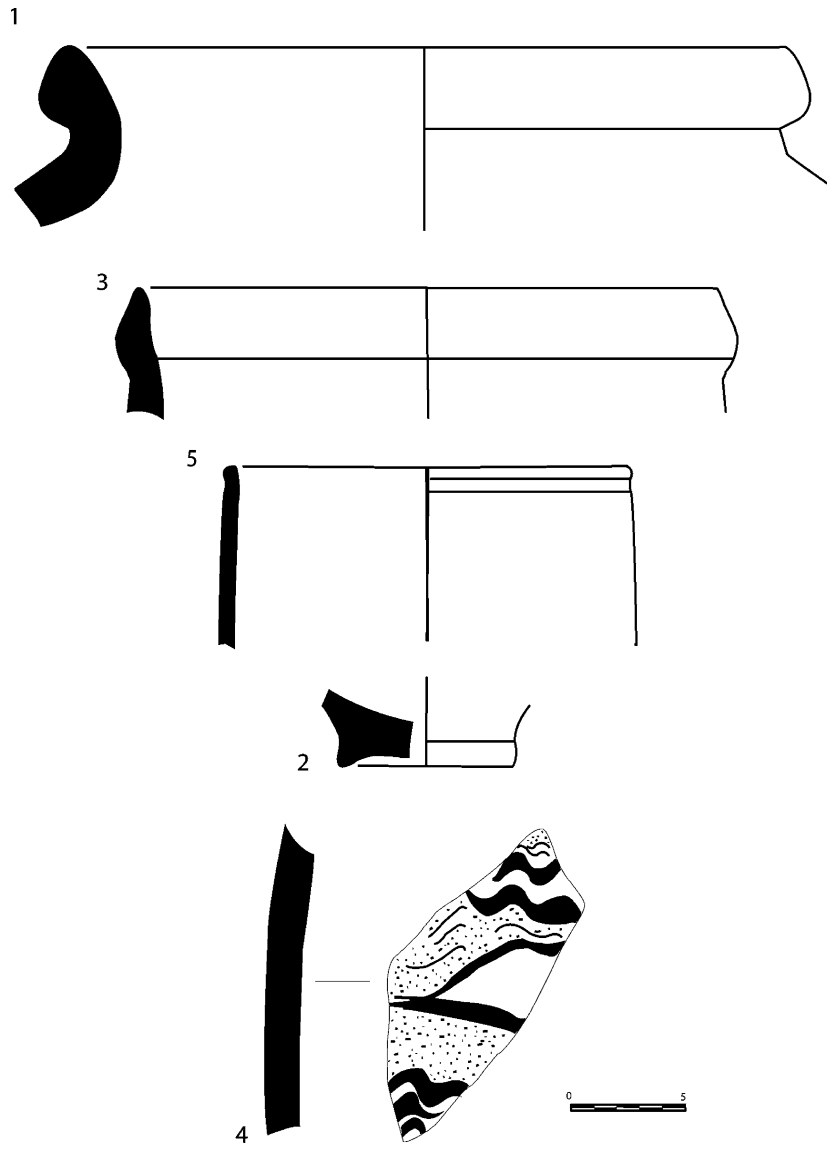


Planche I : Palmyre, tessons nos 1-5 du Bronze ancien IV.

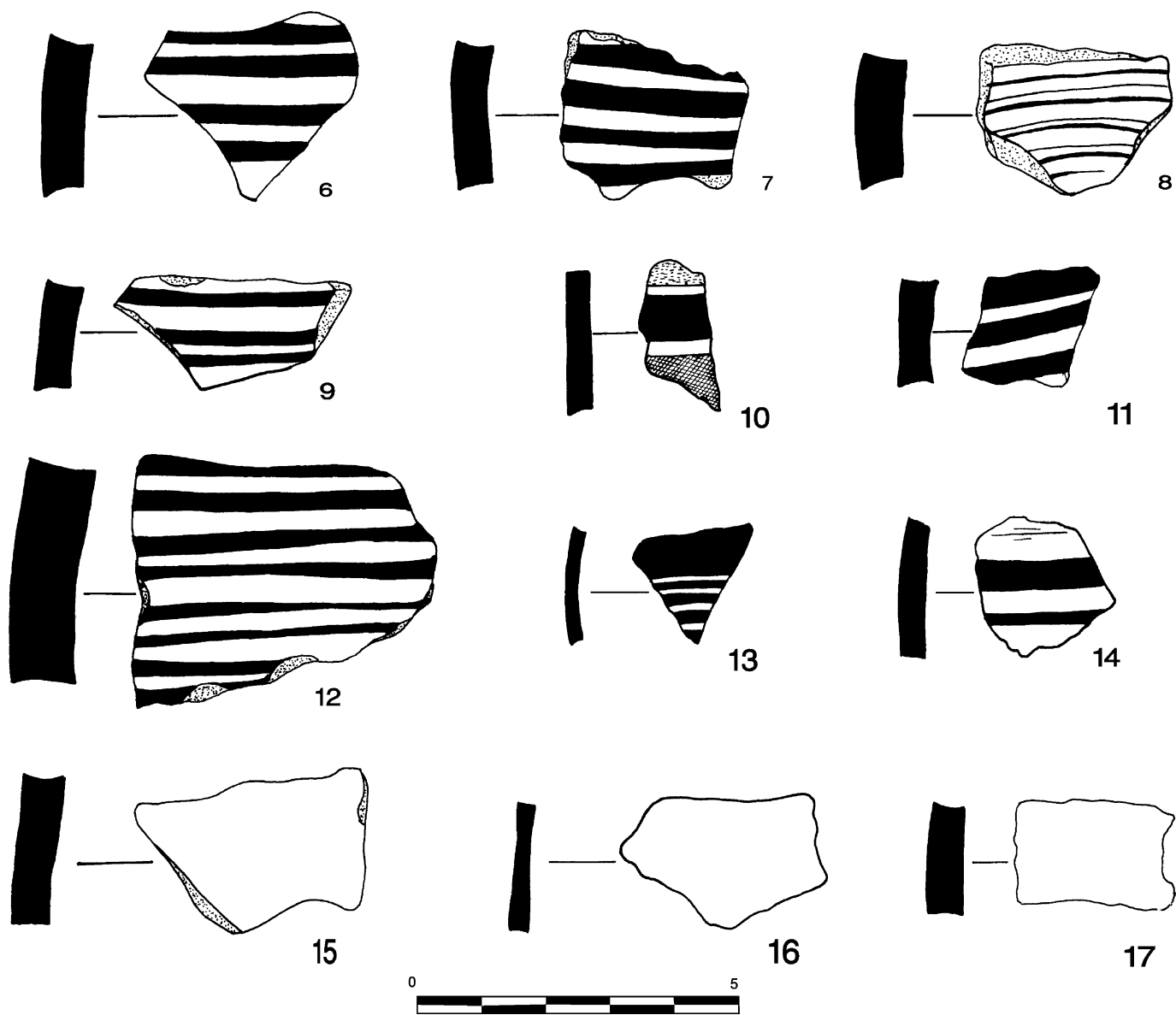


Planche II : Palmyre, tessons nos 6-14 du Bronze ancien IV nos 15-17 du IV^e millénaire av. J.-C.

Ottoman and Mandate Archaeology

WRITTEN SOURCES AND THE STUDY OF POTTERY IN OTTOMAN BILAD AL-SHAM

Marcus MILWRIGHT*

Introduction

In the last ten years significant progress has been made in the study of the pottery of Ottoman Bilad al-Sham (1516–1918). Archaeologists have analyzed ceramic assemblages from a wide variety of sites in this region. For instance, Véronique François' preliminary evaluation of the Ottoman ceramics from the excavations of the Damascus citadel (2002) reveals the diversity of locally manufactured and imported wares that may be found on an urban site. European and Turkish imported wares have also been examined at Acre (Stern 1997), and in the excavated assemblage from the late Ottoman village and early Zionist settlement that occupied the site known today as Horvat 'Eleq (Boas 2000). The excavation of rural sites in Palestine and Jordan has led to the publication of significant assemblages of Ottoman-period ceramics from Belmont castle (contributions in Harper and Pringle 2001), Zir'in (Simpson 2002), and Malka and Hubras (Walker 2005).¹ Scholars are also seeking to construct a conceptual framework for the future study of this period. Attempts have been made to define Ottoman archaeology as a subcategory within the wider discipline known as Historical Archaeology (*e.g.* Baram and Carroll 2000).² Whether or not one accepts the North American vision of Historical Archaeology as the study of human activity and material culture in the era of European colonial expansion and global capitalism (*i.e.* after *c.*1492), there is general consensus that one of the key challenges facing archaeologists is the integration of data derived from texts and artefacts.³ In this article I explore the ways in which written sources of the Ottoman period can provide complementary information for the study of the ceramics recovered on excavations and archaeological field surveys in the regions of Bilad al-Sham.

In an earlier article (Milwright 1999) I discussed the employment of written sources in the study of the local and imported pottery of the Ayyubid and Mamluk periods (1171–1517). I suggested that a wide variety of written sources in Arabic and European languages – chronicles, geographical works, travelers' accounts, charitable bequests (*waqfs*), literary works, and medical texts – could be utilized in conjunction with the physical evidence (from controlled excavation and survey, as well as objects in museum collections) to create a more complete picture of the manufacture and use of ceramics in the Islamic Middle East. In many ways the Ottoman period offers greater potential than earlier phases for the use of written sources in the archaeological study of material culture. Not only is there a greater quantity of published primary written sources (as well as other sources such as paintings, engravings and photographs), but there also exists a greater concentration of secondary studies that can furnish the archaeological researcher with an historical framework for the interpretation of texts, artefact distributions, and individual sites.

Obviously, it is not possible to do justice to such a wealth of material in a single study, but this paper will try to highlight some future avenues of interpretation. In particular, I focus upon

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1 For earlier publications containing information on Ottoman period pottery found on excavations and surveys, see Milwright (2000).

2 General surveys of the architecture and material culture of Ottoman Bilad al-Sham include Schick (1997-98); McQuitty (2001). See also chapters by Ghada Ziadeh-Seely and Uzi Baram in Baram and Carroll (2000).

3 For discussions of the methodological issues involved in the interpretation of texts and archaeological data, see Johnson (1999).

two issues: first, sources discussing the manufacture of pottery within Bilad al-Sham; and second, the evidence for the importation of glazed pottery to the region from the sixteenth to the beginning of the twentieth century. This is followed by a case study based on a text by an inhabitant of Damascus, Muhammad Sa'īd al-Qasimi. Written between 1889/90 and his death in 1900, and published in two volumes in 1960, the *Dictionnaire des métiers damascains* (Arabic title: *Qāmūs al-ṣinā'āt al-shāmiyya*) is a meticulous survey of the crafts being practiced in the Syrian capital at the end of the nineteenth century. The case study presents annotated translations of selected passages relating to different ceramic crafts. The last section of the case study discusses some of the wider economic and cultural implications that may be drawn from his discussion of the ceramic industries of Damascus.

Textual sources

Though pottery can hardly be said to be a central concern of the bureaucrats operating in Ottoman Bilad al-Sham, some references can be found in official documents. The manufacture of ceramics is occasionally mentioned in cadastral records (*daftars*) produced for the Ottoman state during the sixteenth century. The *daftar-i jadīd* of 1005/1596 notes that the pottery workshops (*fākhūra*) of Gaza and Nablus generated annual tax revenues of 600 and 200 *aqja* respectively (Hütteroth and Abdulfattah 1977: 91). Gaza was an important center for manufacturing pottery in the late nineteenth and early twentieth century (see below) and it is interesting to see this early reference to the industry in the town. Jerusalem provides important evidence of pottery manufacture from the sixteenth to the eighteenth century. Much of this information comes in the form of the records (sing. *sijill*) generated by the Shari'ā court. Large ceramic storage vessels appear in court records of the sixteenth century in connection with the trade in olive oil (Cohen 1989: 76–77). Five members of the potters' guild (*fākhūri* or *fawākhūri*) headed by a *shaykh* are mentioned in a *sijill* of 1686 along with several 'sellers' (*bayyā'*) who seem to have acted as agents for the potters. A document of 1687 indicates that there were tensions between the potters and these agents/sellers; the latter group (all belonging to one family) being found in a court decision to have been cheating customers and impeding the efforts of the potters to sell their own wares (Cohen 2001: 151).

Sijills of the early eighteenth century confirm the existence of one pottery workshop in the street of the cotton merchants as well as a pottery market (probably maintaining the distinction between potters and those involved in selling the vessels seen in *sijills* of a few decades earlier). The workshop formed part of a *waqf* and paid a low annual rent of 20 *dirhams*. The *sijills* also give valuable evidence concerning the fixing of prices for pottery vessels by the judge (*qādī*). In Jumada 1 1128/May 1716 he stipulated that five water jugs were to sell for 1 piece (*qiṭ'a*, the equivalent of 2 silver *Uthmani* coins), a large cup for 1 piece, and cups able to hold 1 *raṭl* (approximately 2.5 kg) of yoghurt for 0.5 piece. After three years the price for water jugs had risen to three vessels for 1 piece, while a large jar was priced at 1.5 piece. This later document also specifies that there were five potters and gives the name of their *shaykh* as Salah al-Ramlawi (Salameh 2000, 114, 126–27. For prices of pottery see also Cohen 2001: 152). Another court record dating to 1114/1702, gives further data concerning the internal organization of the potters of the city (Ze'evi 1996: 159). This document discusses a petition sent by the *shaykh* of the potters' guild (*tā'ifa*: also *al-fawākhūriyya* and in Turkish, *bardakcılar*) to the sultan asking him to protect them from the illegal seizure of their merchandise by members of the local Ottoman administration and the army (*ahl al-^curf*).

While many examples of 'Syrian polychrome' wares are known in museum collections, and they also turn up occasionally in excavations (Milwright 2000: 200–202), I have not yet been able to trace this industry in the written sources. The relatively common occurrence of references to jars (*albarelli*) and other vessels attributed to 'Damasco' in Florentine inventories of the fifteenth century suggests that the production of decorated stoneware in the Syrian capital made a healthy

recovery following the conquest of the city by Timur. Other records also refer to the export of ceramic vessels from Beirut and the relatively high prices they fetched (Spallanzani 1978: 54, 76, 111). The last document to make specific reference to a ceramic vessel '*alla domaschina*' dates to 1494, perhaps providing an approximate date for the decline in the export trade of Syrian decorated pottery to Italy (1978 rather than 1974: 169 [Appendix A, document 25]). It should be noted, however, that the apparent references to Damascus may refer to a style of glaze decoration rather than a mark of provenance. For instance, Arthur Lane provides the example of a potter from Manises near Valencia being commissioned in 1420 by a merchant from Milan to make 720 pots '*à la domasquina*', using what was probably a considerably older Syrian, or perhaps Persian lustre vessel as the model (Lane 1971: 17 and n.3).

Later evidence for Syrian ceramic manufacture can be gleaned from the papers of the French consulates at the ports of Sidon, Tripoli and Beirut (collected in over fifty published volumes: Ismail 1975–; Ismail 1982–93). The commercial documents from the consular archives are, naturally enough, more concerned with changing volumes of French imports (see notes in the case study), but they also contain some interesting data on the state of local manufacturing, including ceramics. For instance, a letter sent by M. P. Alphonse Guys, Commissioner for French Commercial Relations at the Consulate in Tripoli, in response to questions from the Minister of External Relations in Paris (dated 1 September, 1806) remarks on the poor quality of the ceramics and glass produced in the vicinity of the Lebanese port. Earlier in the same letter he records the importation of coarse wares (*la faïence commune*) from Europe (Ismail, 1975–, IV: 79, 85). Potters are also noted by consular officials among the industries of Sidon in a document dated 12 December 1812 (Ismail 1975–, III: 105).

More detailed is an annex to a letter from M. Henri Guys, French Consul in Beirut to the Comte de Rigny, Minister of Foreign Affairs, dated 7 March 1835. Presented in tabular form, the annex lists the industries of Beirut, along with the numbers of workshops, materials consumed, wages, costs of production, value of the products, and profits. Not surprisingly, it is the production and sale of silk and other textiles that dominates the list, but Guys also includes data on the production of unglazed pottery. He claims that Beirut and its principal suburbs (*bourgs*) contained 120 ceramic workshops that manufactured pottery vessels with a total value of 200,000 piastres. Deducting labor/wages (100,000) and production costs (50,000), this left an annual profit of 50,000 piastres (Ismail 1982–93, I: 375–76). In his book, *Beyrouth et le Liban* (1850), Guys provides a little more information about the nature of ceramic production. In the section dealing with the industries of Beirut, he notes that the town was well known for its unglazed water jugs made of highly porous ceramic that, it was said, had the property of refreshing the water contained within them. These water jugs were exported to other regions in the Middle East (Guys 1850, I: 169–70).

While these data on the industries of Beirut are certainly of interest for the study of the ceramic industries of Bilad al-Sham, they should not be viewed in an uncritical manner. Scanning the other, more detailed entries in the table it becomes apparent that the monetary figures relating to pottery production are likely to have been estimated. Thus, the numbers provide an order of magnitude rather than an accurate representation of actual financial contribution of this group of craftsmen. Perhaps of greater significance in this context is the second annex which includes the taxes levied on the industries of the cities (Ismail 1982–93, I: 377). Here one finds that the potters paid annually 2,050 piastres, while a separate tax of 250 piastres was levied on the manufacture of clay pipes (from a total revenue for all commercial activities in the city of 1,184,750 piastres). These relatively low figures may be compared to the considerable higher revenues gathered by the Ottoman state on the textile industry of Beirut. While this disparity is hardly surprising given the strong demand in the Middle East and Europe for silk produced in the city, one might also compare the potteries with the taxes levied on other, similarly mundane activities including the abattoirs (19,000), the taverns (16,000), the sale of tobacco (19,000), or the rents paid on the bathhouses (14,600) and the tannery

(36,500). By the end of the century the industry appears to have been somewhat reduced: writing in 1896 Vital Cuinet notes the presence of twelve pottery workshops in Beirut (Cuinet 1896: 56).

Cuinet is also a significant source concerning the overall distribution of commercial potteries in the southern half of Bilad al-Sham. He was evidently impressed by the amphorae made from fine, pale clays that were produced in the workshops of Damascus, Hasbiyya and Rushaya (Cuinet 1896: 364). The pottery industry of Rushaya al-Fukhkhar was highly active in the 1890s, and Cuinet also records that the vessels produced in the workshops of Gaza were distributed all over Syria (1896: 424, 616. See also Hankey 1968). The industries of Gaza are the best documented of this period, with detailed ethnographic notes provided by Gatt (1885: 69–73), as well as other shorter references from authors such as Cuinet and Charles Wilson (1906: 252). Wilson notes that the clay was actually dug by *fellahin*, suggesting that the professional potters of Gaza were in a position to contract out this type of hard labor. Gatt's observations give information concerning the types of vessels made in the town, as well as aspects of the manufacturing process. While Gaza is best known for reduction-fired *ibrīqs*, Gatt notes that other objects – including jugs (*kūz*), storage jars (*zīr*), and small lamps (*sirāj*) – were also manufactured. The fuel for the kilns might take the form of animal dung (Gatt 1885: 71) or the coarse, lower stalks from straw gathered after the harvest (Wilson 1906: 252). The production of handmade pottery in Palestine also attracted the attention of researchers and travelers in the last decades of Ottoman rule and the Mandate period (e.g. Wilson 1906: 251; Einsler 1914; Crowfoot 1932).

The written sources indicate that a wide range of imported wares were finding their way into Bilad al-Sham during the Ottoman period. Though by the beginning of the sixteenth century Syria and Egypt were losing their grip on the transit trade in Chinese porcelain to Europe, the markets of places like Cairo and Damascus still attracted merchants and travelers in search of such costly imported vessels. References to the trade in Chinese wares in the Middle East can be found in sources of the sixteenth century (for instance, Baumgarten 1594: 112; Belon 1554: 298; Barbosa 1866: 185). Probate inventories listing the contents of Damascene houses in the seventeenth century mention the presence of cups (*finjān* or *filjān*) of ‘*ṣīni*’ (Chinese wares⁴) as well as other types of fine pottery. The interpretation of some of these Arabic terms is not conclusive, though it would appear that there are references to Iznik ceramics and local imitations (*qīshāni*) (Pascual 1990: 205). *Qīshāni* may be a corruption of *qāshāni* (‘of Qashan’) which sometimes appears in Arabic texts to describe imported Persian glazed wares. In this context, however, it is probably a reference to the underglaze-painted stonepaste vessels usually called ‘Syrian polychrome’ wares. A collection of Chinese wares is also reported among the possessions of the governor of Damascus, ‘Azam Pasha, in the eighteenth century (Milwright 2000: 197).

Imported pottery also appears in the accounts written by later travelers. Mary Rogers, the author of *Domestic Life in Palestine* (1989 [1862]), was one of the most acute observers of the material culture of late Ottoman Bilad al-Sham. Describing a house of a wealthy family in Nazareth, she notes that the owner had embedded ‘English willow-pattern cheese plates’ into the stucco above the doors and windows (1989: 122). The practice of fixing glazed ceramic bowls into architectural facades is well known in the Medieval architecture of Italy and Greece, though examples are also reported from Ottoman Bilad al-Sham (Carswell 1970: pl.II:c). Beyond their decorative characteristics it is also possible that these glazed plates had an amuletic function warding off the

4 When applied to ceramic artefacts, *ṣīni* usually designates Chinese imports, though the term is sometimes also used to describe high-quality locally made glazed ceramics, particularly underglaze-painted stonepaste wares.

5 The practice of setting glazed bowls above doorways and windows was observed in rural Egypt in the early twentieth century. When interviewed the occupants of the houses claimed that the bowls provided protection for the house. See Lozach and Hug (1930), 93. Blue is still used in jewellery used against the ‘evil-eye’, and this may be one of the reasons for the use of Chinese blue and white porcelain and English ‘willow-pattern’ vessels in architectural decoration. I am grateful to Véronique François and Ghada Hijawi for suggesting these interpretations.

‘evil eye’.⁵ Equally significant in the present context is what this picturesque example might say about the status accorded in Palestinian society to these imported wares. Clearly, their aesthetic qualities were sufficiently admired by the Nazarene family that they should want to employ them as an architectural ornament, but at the same time the willow-pattern plates must have been relatively cheap (otherwise, it is unlikely that they could have been spared from more socially significant uses such as the serving of guests in the main reception rooms). Rogers’ host had evidently traveled to Marseilles, bringing back European furniture for his salon, but a wide range of European products were also available in the markets of late nineteenth-century Palestine. In her account of the *suq* in Nablus, the author notes the presence of ‘Manchester prints, Sheffield cutlery, beads, French bijouterie, very small mirrors, Bohemian glass bottles for narghilés, Swiss head-kerchiefs, in imitation of Constantinople mundîls, crockery-ware, and china coffee-cups’ (1989: 260). This description accords well with the list provided by Edward Lane of European imported products in Cairo in the 1830s (1978 [1836]: 314). Other sources also attest to the availability of imported ceramics in nineteenth-century Palestine: for instance, Gottlieb Schumacher notes the existence of ten traders (*tujjār*) selling iron, glass and porcelain in his survey of the population of Nazareth (Schumacher 1890: 243).

Case Study: al-Qasimi’s *Dictionnaire*

Muhammad Sa‘id al-Qasimi’s *Dictionnaire* is organized alphabetically with each craft activity allocated a single entry. The author sometimes starts with a brief examination of the Arabic spelling, adding comments concerning the semantic range of the word under discussion. He then moves to a succinct description of the activity which may also mention the preparation of the raw materials and the types of tools employed. The last part of each entry often includes a consideration of the areas of Damascus where the activity is commonly practiced as well as comments on the continued economic viability of the craft. It should be noted that the translation of the entries in the *Dictionnaire* is not always a straightforward task. Al-Qasimi makes use of the technical vocabulary of the late nineteenth-century Syrian crafts, and modern Arabic dictionaries are not always reliable guides for the translation of terms and idiomatic phrases found in the text. The translations of excerpts from the *Dictionnaire* should be seen in the light of these constraints (as well as the limited skills in Arabic possessed by the present author). Where I have omitted short sections of al-Qasimi’s text (such as notes on spelling and cross references to other entries in the text), this is indicated as follows, [...]. Clarifications of the translated texts are also enclosed within square brackets.

One of the interesting features of the *Dictionnaire* is the attention the author gives to relatively mundane activities that generally escape the attention of European travelers. For instance, he includes sections on the merchants of clay (*turrāb*. 1960: 67–69. Partial translation in Milwright 2001: 74), the makers of mud-brick/*pisé* walls (*dakkāk*. 1960: 144–45) and brickmakers (*ṭawwāb*. 1960: 294–95). Discussing another ceramic craft activity, the makers of clay ovens (*tannūri*), he notes that it is among ‘the most widespread crafts in the city, and the makers of it [the *tannūr*], in every town will be kept busy with this activity’ (1960: 71). Another related craft was the making of the flower pots that adorned the balconies and gardens of the houses of Damascus. Al-Qasimi writes (Al-Qasimi 1960: 257):

No. 179 – Makers of flower pots (*shaqīfāti*)

[...] And these flower pots (sing. *shaqfa*, pl. *shaqaf*) are sold for the cultivation of aromatic plants, and flowers and roses, and a house would be empty without them. And making of them is like the making of earthen bowls (pl. *shurbāt*) and they are equivalent in that they are both of a special type. And as the result of the drying and baking needed to produce them, it has become a way of life for the inhabitants of al-Salihiyya, and gives them something to sell in the city [Damascus]. And the entirety of the craft

is much in demand, like that of the makers of earthen bowls, and many requests are made for it. God knows best.

Kilns dating to the Mamluk period have been located in Salihyya (Sauvaget 1932; al-ʿUsh 1960–63), though the pottery workshops of this area seem to have concentrated on the production of relief-moulded canteens and wheelthrown unglazed jugs and other functional vessels. It is not apparent whether this industry continued uninterrupted from the fourteenth through to the late nineteenth century. Later in the book, al-Qasimi discusses another craft that remained in high demand in his day: the makers of drainpipes (1960: 351):

No. 274 – Maker of drainpipes (*qasāṭili*)

It is the craft of making pipes (sing. *qastal*). And [for the] pipe, make them from the red earth (*al-turrāb al-aḥmar*), mix it with sufficient water, and from it [*i.e.* the mixture] all kinds of pipe can be made by means of a special hollowed-out mold. When it is done, it is allowed to dry in the sun until it is ready. It is then baked in a special oven (*furn*). And there are many types [of pipe] both large and small. And of them, the one known as *al-zamr* has the smallest dimensions. Then *al-sharkas* is the largest of the first group. Then the biggest is known as *al-īrāni*. And from them are [also] *al-sabīli*, *al-mujīr* and *al-zinjāri*. And [the last of] these is the largest in dimensions. They [the different types of pipe] are designed for drawing sweet water from reservoirs to the houses and other buildings [...]. And indeed it is an important craft in Damascus, and it has its own special neighborhood (*muḥalla*) in the city, and it is known that [the work of] the pipe makers is much in demand and generates good profits.

As with the makers of flower pots, the *qasāṭili* were all located in a single neighborhood (this time in Damascus itself rather than the suburb of Salihyya). While it is frustrating that al-Qasimi does not provide the dimensions for the different grades of pipe, it is nevertheless important that he provides the names of several types and orders them according to size. The word for the smallest type, *al-zamr*, derives from the name for a wind instrument akin to an oboe, while the name *al-sabīli* may mean that these pipes were employed in public water fountains. It is not clear whether the terms *sharkas* (‘Circassian’) and *īrāni* (‘Persian’) indicate something about the geographical origin of either the types of pipe or of the people who made them. This is a traditional craft that is not well known in scholarly literature. The making of drainage pipes is reported in other written sources such as the Cairo Geniza (Goitein 1958: 188–89), and excavations in Raqqa have provided evidence for the manufacture of drainpipes in the Abbasid period (Miglus 1999: pl. 61). Examples of drainpipes also survive *in situ* in numerous Islamic structures in the Middle East, and some evidence for Ottoman-period drainage features have been located at Acre (Stern 1989–90; Tatcher 1998). In spite of the availability of textual and archaeological information, very little work has been done on the creation of a typology for the drainpipes produced in different time periods in the Islamic Middle East. It may be that accounts like al-Qasimi’s could help to establish basic distinctions in the dimensions (in terms of internal diameter and overall length) of drainage pipes encountered in the archaeological record. In an earlier passage al-Qasimi draws attention to the manufacture of a type of utilitarian ceramic serving vessel (1960: 355–56):

No. 269 – Makers of earthenware vessels (*qiṣṣāʿ*)

[...] And it is the making of containers for food from clay. And in previous times this craft was very much in demand. With the restoration of prosperity, the existence of the vessels known as ‘*al-māliqi*, and the desire of the people for them, in these times there are few employed in [this activity]. And these bowls are not made except for butter merchants, the sellers of cooked beans (*fūl*), and the makers of hummus (*al-ḥummuṣāniyya*), as well as some peasants.

It seems likely that al-Qasimi is describing the sorts of simply glazed, and sometimes slip-painted bowls that are still employed in restaurants in the Middle East (often now in the form of plastic imitations). Writing in the fifteenth century, Ahmad ibn ʿAli al-Maqrizi (d.1442) describes a similar situation with the cheap (probably glazed) bowls used for the serving of food in cookshops in Cairo (al-Maqrizi, *al-Khiṭāṭ*, trans. in Milwright 1999: 505). Al-Maqrizi paints a picture of manufacture on a huge scale, and it is evident from al-Qasimi's account that until recent times the Syrian capital had thriving workshops engaged in this activity. He notes, however, that there had been a great reduction in the market for these simple and functional containers as the result of an influx of vessels known as *al-māliqi*. A literal translation of this word would be 'shining things', though in this context it appears that the author is referring to imported glazed pottery, possibly European hard-paste porcelain wares. *Al-māliqi* is also mentioned in the section concerned with the menders of vessels (1960: 322–23):

No. 342 – Menders of vessels (*mukharris*)

[...] It is the making good of that which is broken amongst vessels known as *al-ṣīni*, *al-māliqi* and *al-ballūr*. In previous times this craft was much in demand because of the rarity and high cost of vessels of these types in the country. And when they [the vessels] were broken they took them to the *mukharris* to repair them. And this could always be done when it was broken in two or three pieces, but if it were more than it could not be made better. And the work is thus: it was drilled by the *mukharris* first at the edge of it by means of a thin iron/steel (*ḥadīd*) drill, and then the holes were pierced with a brass rivet, and the holes were mended with a solution of gypsum. *Ṣīni* is mended in the same way also and the price on each rivet is 10 *para*. But at this time, as affluence increases the extent of trade, so the value of vessels of *al-ballūr* and *al-māliqi* decreases. It is clear that the prosecution of this craft is uneconomic and few are employed in it. It is a craft which brings forth little profit. God knows best.

Al-Qasimi outlines the processes involved in mending three types of vessels. The first, *al-ṣīni*, is a reference to Chinese wares, *al-māliqi* has been discussed above, and the last, *al-ballūr*, is probably crystal glass. The techniques discussed in this passage correlate with descriptions found in earlier accounts of the guilds in Istanbul and Cairo (Evliya Celebi 1834–50, I.2: 212, no.420; Jean Covel cited in Krahl 1986, I: 52), as well as ceramic artefacts recovered from excavations (Milwright 2001: 76, fig.2). The fact that the menders of ceramic and glass vessel constituted a distinct craft activity in these cities is a good indication of the high unit cost of such luxury items. Treatises on market law (*ḥisba*) provide evidence for this craft in the cities of the Islamic world as early as the fourteenth century (Milwright 1999: 509). In the following example, al-Qasimi demonstrates how changes in local taste – influenced by Westernized modes of behavior – might also have a serious impact upon a well established craft activity (1960: 330):

No. 252 – makers of tobacco pipes (*ghalāyīni*)

It is the making of the tobacco pipe (*ghalyūn*). The pipe is made from ground and sieved earth/clay (*turrāb*), that has been soaked [literally: fermented] overnight, and kneaded to a stiff consistency. At that time he makes the pipes with it [*i.e.* the clay] by means of a mold specially made for that purpose. Then those that are prepared are roasted in an oven (*furn*) designed for the purpose. After the removal from the oven, they are coated with paint (*dihān*). The most in demand are the ones painted black, red, those with gilding, and other than that.

And it is a craft which, in former times, was much in demand, because the the people of Syria would suck upon the *ghalyūn* when smoking '*tabagh*' and the type known as '*tutun*'.⁶

6 Al-Qasimi is referring here to two grades of tobacco available in late nineteenth-century Syria. *Tabagh* is the higher (imported) grade, while *tutun* (in Palestinian Arabic, *titin*) was coarser, locally grown tobacco. These terms were still in use in Palestine into the second half of the twentieth century. I owe these observations to Mahmoud Hawari.

And the description of the *ghalyūn* is [as follows]: it looks like an upright right-angle (*zāwiya*) with the hollowed-out part no larger than three fingers [*i.e.* 9–10 cm] in width at its greatest extent. And the highest extremity – where the tobacco is placed – must be spacious, and the other end narrow. And they [the buyers] were much concerned that it should have a luxurious ‘[reed] pipe’ (*qaṣāī*) which could measure up to three cubits [*i.e.* c.1.95m] in length, and be ornamented with mother-of-pearl (*ṣadaf*) and fine painting. And it was pierced (*mathqūba*) at the first [*i.e.* lower] end of it for attachment to the *ghalyūn*, with the second [upper] end [of the reed pipe] having a mouthpiece made of a piece of costly ‘amber’ (*kahraba*).⁷ Or it [the mouthpiece] could be crafted of gold or silver, and, thus, become a source of pride [for the owner].

However, now – in general – the people of Damascus do not concern themselves with it [the *ghalyūn*]. Only the bedouin still use them, and this [only] because they do not know how to roll cigarettes, and so continue with the *ghalyūn*. The poets have made marvellous descriptions of it, and there are many passages devoted to the subject. And many are collected in the scholar, al-Nabulsi’s⁸ ‘Treatise on Tobacco’ (*risālat al-dukhān*), including the lines:

They say that in the *ghalyūn* there is excessive desire
Which does not exist in other types of object,
But I say to them that this is only because
It competes [with me] in having fire in its heart!⁹

The author provides an interesting account of the manufacture, physical appearance, and ornamentation of the clay pipe bowls, and continues with a description of the popular types of reed and mouthpiece (*i.e.* a chibouk pipe). His account correlates well with the information available from other sources (on the form and origin of the chibouk pipe, see Robinson 1985: 151–56; Simpson 1995). For instance, there are numerous images of chibouk pipes to be found in Orientalist painting (*e.g.* Ben-Arieh 1997: pls. 37, 77, 126) and engraved book illustrations of the nineteenth century. These images do not tend to provide much detail, however, and al-Qasimi’s report is interesting for its description of features such as the painted decoration of the clay pipe, the ornament found on the pipe stems, and the different media employed for the mouthpieces.

Manufacturing of pipes was probably relatively widespread in Bilad al-Sham during the nineteenth and early twentieth centuries, and numerous workshops are noted in Jerusalem and Nazareth (Schölch 1993: 127, 130, 149). The southern sector of the Damascene suburb of Midan contained an alley called *Zuqāq al-Ghalayniyya* that was must have been a centre for the production of pipes though there is little documentary evidence on these commercial activities (Marino 1997: 132). Though al-Qasimi does not make the point explicitly in his description, the making of pipe stems evidently constituted a separate craft in Damascus. This can be demonstrated elsewhere: for instance, a workshop for the makers of pipe stems (*cubukçu*) was recorded in the *suq* built in Acre in the eighteenth century by the local ruler, Zahir al-^cUmar (al-^cAwra 1936: 370). Stems might also be imported into Bilad al-Sham. French consular documents record that these items formed part of cargoes of French and Austrian boats coming from Alexandria to Beirut in 1825 and 1826 (Ismail 1982–93, I: 130, 163). Another document records 4,000 pipes made from cherry wood (*cerisier*), a particularly favored material for this purpose, with a value of 12,000 piastres among the items exported from Beirut to Malta, Tunis, Damietta and Cyprus in the last quarter of 1813 (Ismail 1975, III: 113).

7 The more usual word for amber would be *kahrāmān*.

8 The full name of this scholar is not given. The most famous scholar to bear this *nisba* is ^cAbd al-Ghani al-Nabulsi (d.1741). This mystic and scholar certainly wrote about the legality of tobacco, though it is not clear whether this is the person referred to by al-Qasimi.

9 The meaning of these lines is difficult to decipher and the translation offered here is only an approximation.

Al-Qasimi's *Dictionnaire* represents a valuable source for the study of the crafts of late nineteenth-century Damascus, and much of his information probably holds good for other urban centers in Bilad al-Sham.¹⁰ Not only does he provide interesting detail concerning the actual materials and manufacturing processes, but he often also seeks to locate the activity within a wider social and economic context. One of the driving forces behind his enterprise appears to have been the awareness that traditional crafts were disappearing from the city on the eve of the new century. While I believe that the *Dictionnaire* may be accepted as a relatively objective account of the craft activities of the time, this last point needs to be highlighted. Al-Qasimi's writing can be located within a tradition of Arabic literature concerned with urban topography – such as Ibn al-^cAsakir's (d.1176) account of Damascus, Ibn Duqmaq (d.1406/7) and al-Maqrizi on Cairo/Fustat, and Khatib al-Baghdadi (d.1071) on the Iraqi capital – as well as an extensive body of Arabic travelers' accounts. Reviewing the many descriptions of Baghdad Michael Cooperson identifies a recurrent *topos*, the idea that the contemporary situation confronting the author is only a pale shadow of the glories of an earlier 'golden age' (Cooperson 1996). Likewise, entries in al-Qasimi's *Dictionnaire* are tinged with some regret that crafts were fading away as the result of the influx of European imported goods and the adoption of foreign customs.

The economic and cultural influence of Europe can be seen in different ways in the descriptions provided by al-Qasimi. Discussing the makers of bowls, he notes direct competition provided by the wares he calls *al-māliqi*. It is worth remarking on the economic implications of his comments: according to al-Qasimi by the 1890s, *al-māliqi* was ubiquitous in Damascene markets and sufficiently inexpensive that it could even threaten the local manufacture of simple earthenware serving bowls. A similar situation evidently prevailed in the craft of mending vessels (*mukharris*). This craft could only prosper if a substantial differential was maintained between the cost of repair and the cost of purchasing a new vessel.¹¹ As al-Qasimi notes, the increase in trade (*i.e.* the importation of foreign manufactured goods) led to a substantial reduction in the unit cost of glass vessels and glazed ceramics. This falling cost was threatening the viability of the crafts of both the *mukharris* and the *qiṣṣā'*.

Of course, what al-Qasimi is describing in these passages is part of a much larger economic process. During the late eighteenth and nineteenth centuries, the volume of European exports to the Middle East had risen sharply (particularly following the first introduction of steam ships into the Mediterranean in the 1830s).¹² Increasingly, the exports from areas like Bilad al-Sham comprised raw materials while the *suqs* of the urban centers came to be filled with European goods. The changing balance of trade during the eighteenth and nineteenth centuries has been the subject of considerable study both from the point of view of individual ports and cities (Fawaz 1983; Gerber 1985; Panzac 1990; Reimer 1991), and the commercial activities of specific nations (Issawi 1977). Much detail is provided concerning the more lucrative raw materials and manufactured items, but relatively little attention has been given to the movement of glazed and unglazed pottery in the eastern Mediterranean. This lack of focus on ceramics by historians probably reflects their minimal contribution to the overall economic picture. It is possible to argue, however, that these imported glazed wares, because of their wide distribution among all but the poorest classes in the urban and rural areas of Bilad al-Sham, had a cultural impact that was disproportionate to their relatively low unit cost.¹³

French consular documents may be used to provide some further context for al-Qasimi's remarks. Commercial records from Sidon, Tripoli and Beirut from the late eighteenth century through

10 Cf. the discussion of the ceramic crafts of Antioch in Bazantay (1936), 8-9, 38-41.

11 Cf. Krahl (1986), I: 52, citing the *Retail Price Code* written in Istanbul in 1640.

12 For an overview of Ottoman manufacturing in the nineteenth century, see Quataert (1994).

13 I will review the archaeological and historical evidence for the import of European pottery into late eighteenth- and nineteenth-century Bilad al-Sham in a future article.

to 1826 exhibit a considerable rise in the imports of pottery – generally described as *fayance* (i.e. glazed earthenware) though there are also reference to *jarres* and *porcelaine* – to the ports (see data collected in Ismail 1975–, II, III, IV; 1982–93, I). Some caveats should be added to this general observation, however. The records only cover a few years – this was a period in which factors such as wars and the often-rapacious activities of local governors affected the abilities of foreign merchants to operate in these ports. The pace of the imports increased greatly in the second half of the nineteenth century. Of great relevance in the present context are the surviving records for the port of Haifa in the 1890s. In 1892 the import of porcelain and glass (counted together in the documents) from Austria and France accounted for 16,600 francs from a total of 2,141,190 francs (Ismail 1982–93, VI: 333–38). The records for 1893 indicate that glazed wares were arriving into Haifa from Britain, Austro-Hungary, France and Turkey (VI: 386), and that the market for such imported items in Damascus alone was estimated at 7,000 francs *per annum* (VI: 253). Similar evidence can be found in Vital Cuinet’s estimates for the ports of Beirut, Tripoli and Jaffa (1896: 67–69, 130–31, 621–22). In other words, commercial records from the period that al-Qasimi was describing confirm his general observations about the widespread availability and cheap unit cost of the European ceramics in Syria.

The influx of industrially manufactured items clearly had a major impact on the indigenous craft traditions of Bilad al-Sham leading some to cease operation altogether. That said, it is important to avoid making sweeping generalizations for it is clear that many industries survived, and even prospered in this new economic environment (Gerber 1985: 55–81). The situation for ceramic crafts was mixed. Al-Qasimi gives no indication that crafts such as the makers of drainpipes and *tannūrs* were suffering economic hardship at the end of the nineteenth century. Looking elsewhere the production of unglazed storage jars in Gaza was evidently a vibrant industry in the same period and other workshops are known in Palestine at this time (see sources collected in Milwright 2000: 196). The volume of this trade in locally produced ceramics is becoming apparent in recent archaeological research: excavations in the villages of Malka and Hubras in the north of Jordan found that ‘Gaza’ wares comprised 58% of the total excavated assemblages in the late Ottoman levels (Walker 2005: 82), and a similar percentage was also encountered among the nineteenth-century ceramics excavated in the Damascus citadel (V. François, personal communication).

Craft activities might also decline as the result of a combination of economic and social factors. This is well demonstrated by Lydia Einsler in her study of the making of handmade pottery vessels by women in Ramallah. Constructed by non-specialized practitioners using a range of simple tools, these handmade jugs were employed for collecting water from nearby springs and for other domestic functions. Einsler notes that the disappearance of the craft could be attributed to diverse factors including the widespread digging of wells in villages and availability of other items such as old petrol cans and cheap glassware that could perform the task of carrying water (Einsler 1914. And see Gerber 1985: 63–64). While handmade vessels were no longer being made in any significant numbers in Palestine after the early decades of the twentieth century, the practice endured into the 1980s in some parts of northern Jordan (Bresenham 1985; Mershen 1985).

Al-Qasimi’s discussion of the making of tobacco pipes provides another example of the impact of foreign culture upon a native industry. In this case, it is both an imported product and a new mode of consumption. The Syrian author seems to be writing just at the point of transition between the traditional mode of pipe smoking and the introduction of the European fashion for cigarettes. That the popularity of the chibouk pipe was waning among the settled communities of the region is confirmed in other sources. Writing a few years later Charles Wilson notes that, while the narghile remained popular both in coffee shops and private dwellings, pipes (*ghalyūn*) were ‘being largely supplanted by cigarettes, the papers for making them being imported in little books or packets and sold everywhere’ (1906: 127). Another European, Baldensperger, did observe, however, the continuing use of the pipe among the bedouin. In his description the bedouin had bought his pipe

in a local town, but he made his own pipe stem and smoked the tobacco he had cultivated himself (Baldensperger 1913: 38–39). This correlates well with al-Qasimi's comments on the subject, though it is also worth noting the sophisticated urbanite's evident disdain for the bedouin in his claim that they persisted with the *ghalyūn* because they were unable to learn the practice of rolling cigarettes.

Conclusion

This should be regarded as a preliminary study and conclusions drawn from the material presented must, of course, be tentative in nature. While some of the written sources discussed above provide relatively detailed information for a given time or a specific locality, they also serve to highlight the very considerable lacunae in the understanding of the local manufacture and import of pottery in Ottoman Bilad al-Sham. While the references to pottery production in places such as Gaza, Beirut, Tripoli and Jerusalem give us interesting insights into the organization of workshops and guilds for phases of years or decades, these sources do not provide much data regarding the continuity of craft activities over the longer term. Some of these problems can be addressed in future study of the available written sources, but different approaches will be required in other cases. For instance, further information on the production and use of 'Syrian polychrome' ware in Damascus may well be found in a thorough examination of Arabic chronicles of the Ottoman period as well as other documents such as *waqfs*, probate inventories and court records. On the other hand, it is improbable that textual evidence will illuminate further the practices of village pottery making, and particularly handmade wares, prior to the late nineteenth century. The overwhelmingly urban perspective of the writers from the sixteenth to the mid nineteenth century means that the material culture of the villages and small towns of Ottoman Bilad al-Sham will remain likely the domain of archaeological. The types of written sources surveyed in this paper have proven to be a useful tool in tracking the importation of European and, to a lesser extent, Chinese and Turkish pottery in Bilad al-Sham. As already noted, the French consular papers present interesting data, but the published records that mention ceramics only cover small clusters of years in the period from the last quarter of the eighteenth century through to the end of the nineteenth. It is clear that most consignments coming into ports of Sidon, Tripoli, Beirut and Haifa did not contain pottery. Even when it is included in cargoes coming from Marseilles and elsewhere, glazed wares and other ceramics were clearly not one of the high-value commodities. Furthermore, these documents are most valuable for their information on maritime trade into ports where the French had commercial interests; they are less likely to be reliable sources for the commercial movement of pottery into Bilad al-Sham from other directions (via ports on the Persian Gulf or Red Sea or by land through Anatolia). Nevertheless, the French consular documents do provide a means to assess the increasing volumes of European imports (glazed earthenware and porcelain) into the region, and these results can be correlated with the anecdotal reports of travelers or Syrian observers like al-Qasimi. Further research on this question could involve the study of official documents generated by other European consulates in the region. Another direction would be to look for evidence that ceramic factories in Europe were manufacturing objects specifically for Middle Eastern markets (cf. Meissen export wares illustrated in Honey 1934: pl. LVI. c–e).

Aside from the issue of changing volumes of imports through time, textual sources can also widen our understanding of the cultural and economic impact that these objects had on the society of Ottoman Bilad al-Sham. For instance, in the probate inventories of wealthy households during the seventeenth and eighteenth centuries, it is significant that it is mentioned at all pottery tends to be Chinese (*ṣīni*) with only occasional references to Iznik wares and locally produced glazed stonepaste wares. The more utilitarian unglazed and lead-glazed earthenwares that would also have been used in such houses were generally too cheap to merit any attention in the probate inventories. That the Chinese wares are mainly cups is also worth noting for it points to their conspicuous role in important social rituals within the domestic environment, as well as in the urban environment. Coffee drinking had

become increasingly popular in Ottoman Syria since its introduction in the sixteenth century (the first record of coffee drinking in Damascus is in 1534. See Rafeq 2001), and it was not only the Chinese who sought to produce vessels to serve this purpose. Both European factories such as Meissen and the potteries of Kütahya in Turkey were producing large numbers of coffee cups, and a few examples have turned up in excavations of Ottoman contexts in Bilad al-Sham (Milwright 2000: 197–98; François 2002: fig. 4. 1–5).

It is interesting that the lower unit cost of imported items from the late eighteenth century onward may have resulted in changes in the ways in which such objects were perceived and used. Al-Qasimi notes that in the 1890s people were less inclined to bring broken items to the *mukharris* to have them mended, while Rogers' example of the 'willow-pattern cheese plates' in the courtyard façade of the house in Nazareth suggests a complex dynamic between their prestige value as objects of display and their relatively low monetary value (of course, it is also possible that their employment as an architectural ornament was facilitated by the fact that they were already chipped or cracked prior to their insertion in the walls of the courtyard). This type of display also reflects the socio-economic status of the occupants of the house. Conspicuous consumption of this sort distinguishes the Nazarene family from those too poor to afford such imported wares, but it seems unlikely that wealthier classes in the towns and cities of Bilad al-Sham would have wanted to advertise their wealth with such readily available manufactured plates. It is clear from the account that Rogers herself regarded the effect as somewhat risible (though she was probably unaware of the talismanic connotations of such glazed vessels). The written accounts of this period provide the means to examine the subtle distinctions made by different socio-economic groups between the 'appropriate' or 'inappropriate' modes of behavior. Archaeology may be used to reconstruct the spatial distribution of pottery wares, and the analysis of distribution may also consider the different characteristics of the places where ceramics are found (ports, cities, rural towns, villages, caravanserais, and so on). It is in the written sources, however, that one may locate additional insights into the complex social world in which ceramic vessels were bought, used, displayed, and appreciated.

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CÉRAMIQUES D'ÉPOQUE OTTOMANE À LA CITADELLE DE DAMAS des découvertes archéologiques nouvelles au Bilād al-Châm

Véronique FRANÇOIS*

Résumé

Rarement prise en compte sur les chantiers archéologiques, la vaisselle de terre fabriquée et commercialisée dans l'Empire ottoman est méconnue. Cependant ce matériel existe, notamment au Bilād al-Châm, et devrait être plus systématiquement l'objet de typologie permettant à terme de distinguer, par périodes chronologiques et par centres de fabrication, les céramiques qui répondent aux nécessités domestiques habituelles, que ce soit la vaisselle culinaire, de service et de table ou les céramiques de stockage et de transport. Les récentes fouilles franco-syriennes ouvertes à la citadelle de Damas offrent aujourd'hui l'opportunité d'étudier ces objets de terre cuite sur toute la période. Cet article se propose d'une part de faire le point sur ces trouvailles et, d'autre part, de comparer l'approvisionnement en vaisselle étrangère datées entre le XVI^e et le XIX^e siècle de quelques villes de Méditerranée orientale.

L'étude de la vaisselle fabriquée et commercialisée dans l'Empire ottoman est un domaine encore peu exploité de la discipline céramologique. Des travaux éparés et de natures diverses écrits tant par des historiens de l'art que par des archéologues ont livré des indications de toutes natures sur ce matériel mais les typologies de référence permettant de distinguer, par périodes chronologiques et par centres de fabrication, les céramiques qui répondent aux nécessités domestiques habituelles, que ce soit la vaisselle culinaire, de service et de table ou les céramiques de stockage et de transport, sont encore très rares (François 2005: 281–308). Les céramiques ottomanes souffrent de leur «modernité». D'une part, les fouilles ouvertes sur les territoires de l'Empire, depuis le milieu du XIX^e siècle, étant essentiellement destinées à documenter des civilisations très anciennes, les niveaux les plus récents sont souvent délaissés au profit des vestiges préislamiques. D'autre part, les couches d'occupation ottomanes, les plus récentes dans la succession des strates, plus sensibles aux perturbations contemporaines, sont moins bien préservées et les fouilles capables de fournir des datations fiables sont rares. Cette insuffisance de données sûres au niveau chronologique rend difficile l'élaboration de typologies de référence. C'est sans doute pourquoi la vaisselle utilisée et commercialisée dans les provinces arabes orientales de l'Empire ottoman est mal connue. Pourtant, comme le montre M. Milwright, des céramiques d'époque ottomane sont régulièrement mises au jour sur de nombreux sites de Syrie, du Liban, de Jordanie et d'Israël (Milwright 2000: 189–208). Mais seules quelques trouvailles, faites dans des contextes calés chronologiquement, fournissent des indications précises sur d'assez courtes périodes comme c'est le cas à Acre par exemple¹. Dans ce contexte de relative pénurie de découvertes en stratigraphie, l'importante quantité de céramiques ottomanes recueillie dans les fouilles récentes ouvertes à la citadelle de Damas, offre une opportunité exceptionnelle de traiter de la vaisselle en usage dans un grand site urbain entre le XVI^e et le début

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¹ A Saint-Jean-d'Acre, la fouille d'un dépôt clos, un puits dans une tour croisée, a livré une collection de vases dont la fonction est étroitement liée au puits lui-même – des godets de noria pour puiser l'eau, des jarres pour la transporter, des cruches pour la conserver et la servir. Une partie de ces objets est réalisée avec la même pâte que celle utilisée pour fabriquer les *Acre Bowls* d'époque croisée. Ce qui implique une fabrication locale pour ces céramiques communes datées, grâce à la stratigraphie et au contexte historique, du XVIII^e siècle. Stern 1997: 35–70.

du XX^e siècle.

1. Contextes de découvertes et inventaire chiffré des types

Tout au long de l'époque ottomane, cette forteresse de quatre hectares, qui abrita une garnison de janissaires impériaux (*kapı kulu*)², fut l'objet de dégradations répétées causées par des révoltes de soldats contre les milices locales, des conflits armés entre ancien et nouveau gouverneur, les attaques des Mamlouks d'Égypte, de potentats régionaux et de Bédouins. Bâtiment à vocation militaire, la citadelle devint peu à peu un quartier de la ville. Au XVIII^e siècle, les janissaires furent en effet rejoints par leur famille qui vivait à leur côté, à l'intérieur de l'enceinte, ainsi qu'en témoignent les registres des tribunaux de Damas dans lesquels sont consignés de nombreux documents relatifs aux maisons situées dans la citadelle³. Divers artisans et des commerçants y tenaient leur échoppe, plusieurs cafés y étaient installés et c'était un centre d'affaires aussi bien pour les militaires que pour les civils (Rafeq 1981: 657; Establet, Pascual 1994: 81, 155, 156, tabl. 52; Marino 1997: 164). En 1812, on y dénombrait encore cent quatre-vingts janissaires mais l'importance militaire de la citadelle déclina rapidement à la suite de divers conflits qui opposèrent les gouverneurs de Damas, l'Agha de la citadelle et la population damascène et provoquèrent d'importantes dégradations dans les bâtiments situés à l'intérieur de l'enceinte (Chevedden, 1986: 133–136). La citadelle perdit alors son caractère militaire et défensif pour se transformer en une sorte d'entrepôt. A la fin du XIX^e siècle, elle abritait une mosquée, un hammam, un moulin et un marché. Tandis que les murailles restaient imposantes, l'intérieur était ruiné et n'était plus occupé que par une poignée d'hommes désœuvrés, entre douze et vingt-quatre militaires, en charge de canons à moitié rouillés et d'importantes réserves de poudre.

C'est dans ce contexte de «ville garnison» qu'il m'a été donné d'étudier les céramiques ottomanes mises au jour lors des fouilles franco-syriennes qui ont débuté à la citadelle en 1999. Dirigée conjointement par S. Berthier, alors chercheur à l'Institut français d'Études Arabes de Damas, et A. Taraqqi puis E. El-Ajji, respectivement archéologue et ingénieur à la Direction générale des Antiquités et des Musées de Syrie, cette mission archéologique avait pour objectif d'intervenir, en amont de l'entreprise de restauration de la citadelle, en vue de l'ouverture prochaine de cet espace au public⁴. Dix-huit mois de fouilles ouvertes principalement dans une vaste salle d'apparat et dans un grand bâtiment de quatre niveaux (Berthier 2001–2002: 29–46 et 2002–2003: 393–413; Gardiol 2001–2002: 47–58) ont livré un important matériel qui couvre les époques omeyyade, seldjoukide, ayyoubide et mamelouke ainsi que la période ottomane⁵. Cependant, les secteurs fouillés et la nature des occupations ne permettent pas d'isoler des céramiques communes ou fines pour le XVI^e siècle à l'exception de la vaisselle importée d'Iznik, de Chine, de Ligurie et de Toscane (Fig. 2). Ce matériel bien daté, qui apparaît dans des niveaux hétérogènes, est résiduel car, dans ces couches, c'est la céramique du XVIII^e siècle qui est majoritaire. Pour le XVII^e siècle, les données livrées par la fouille sont peu exploitables. Divers types de vaisselle importée ont été mis au jour – du lustre safavide d'Iran, des «bleu et blanc» chinois, de la majolique et du sgraffito d'Italie (Fig. 3) – mais ces objets appartiennent à des niveaux peu homogènes dans lesquels les productions syriennes et les importations du XVIII^e siècle dominent très largement en nombre. Pour toutes ces raisons, l'essentiel du matériel

2 Le corps des janissaires impériaux et des janissaires locaux comptait au XVI^e siècle, selon les estimations, entre 300 et 2000 membres. Une partie seulement des *kapı kulu* résidait à la citadelle.

3 Je remercie Brigitte Marino – historienne à l'Institut de Recherches et d'Études sur le Monde Arabe et Musulman (CNRS), Aix-en-Provence – pour m'avoir signalé ces textes.

4 Rien n'aurait pu se faire sans la grande bienveillance accordée à la fouille par la Direction Générale des Antiquités et des Musées de Syrie et ses directeurs successifs – Messieurs Sultan Muhesen, Abderrazaq Moaz, Tamman Facouche et Bassam Jamous.

5 Dans ce cadre, l'étude des céramiques omeyyades, seldjoukides et ayyoubides a été confiée à St. McPhillips (Université de Sydney). Pour ma part, je me suis intéressée aux productions d'époques mamelouke et ottomane.

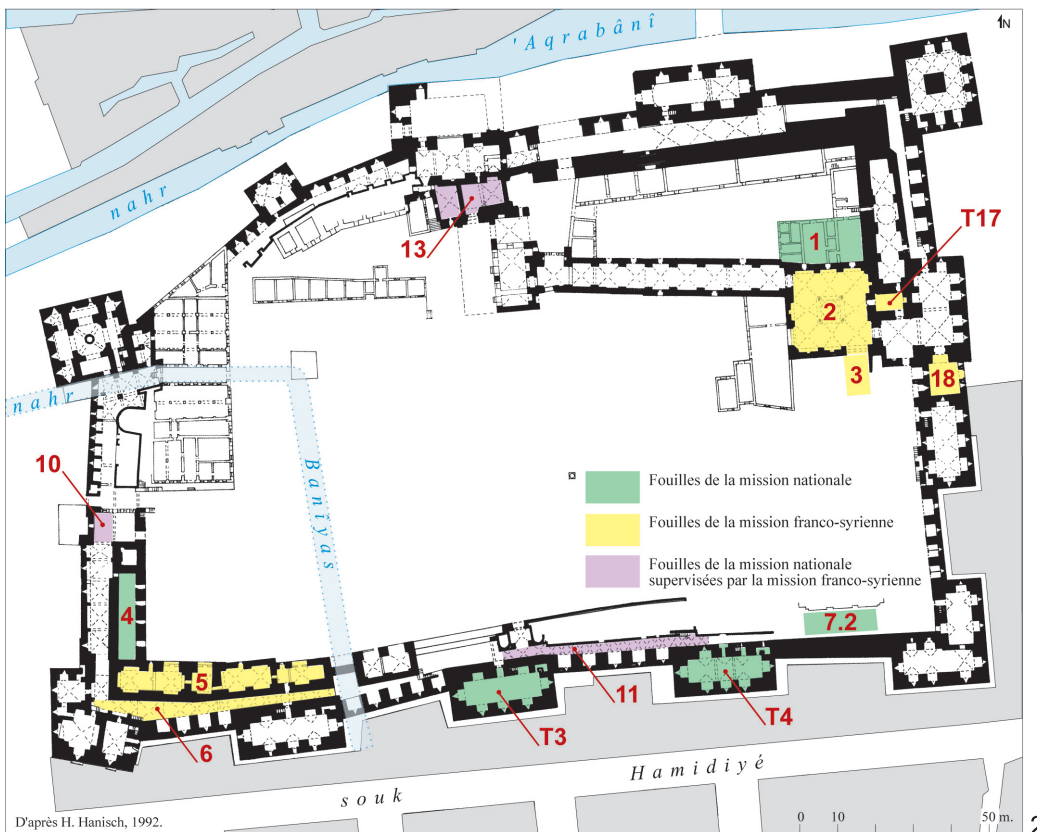


Fig. 1: Vue aérienne de la citadelle (1) ; plan et situation des secteurs fouillés (2).

ottoman mis au jour à la citadelle date des XVIII^e, XIX^e et début du XX^e siècles.

Si 7844 fragments ont été examinés, 1791 individus ont servi à la mise en place d'une typologie présentée, de façon synthétique, dans les tableaux ci-dessous (Tableaux I-III). Pour le détail de cette classification, je renvoie au volume publié (François 2008). C'est la céramique commune qui

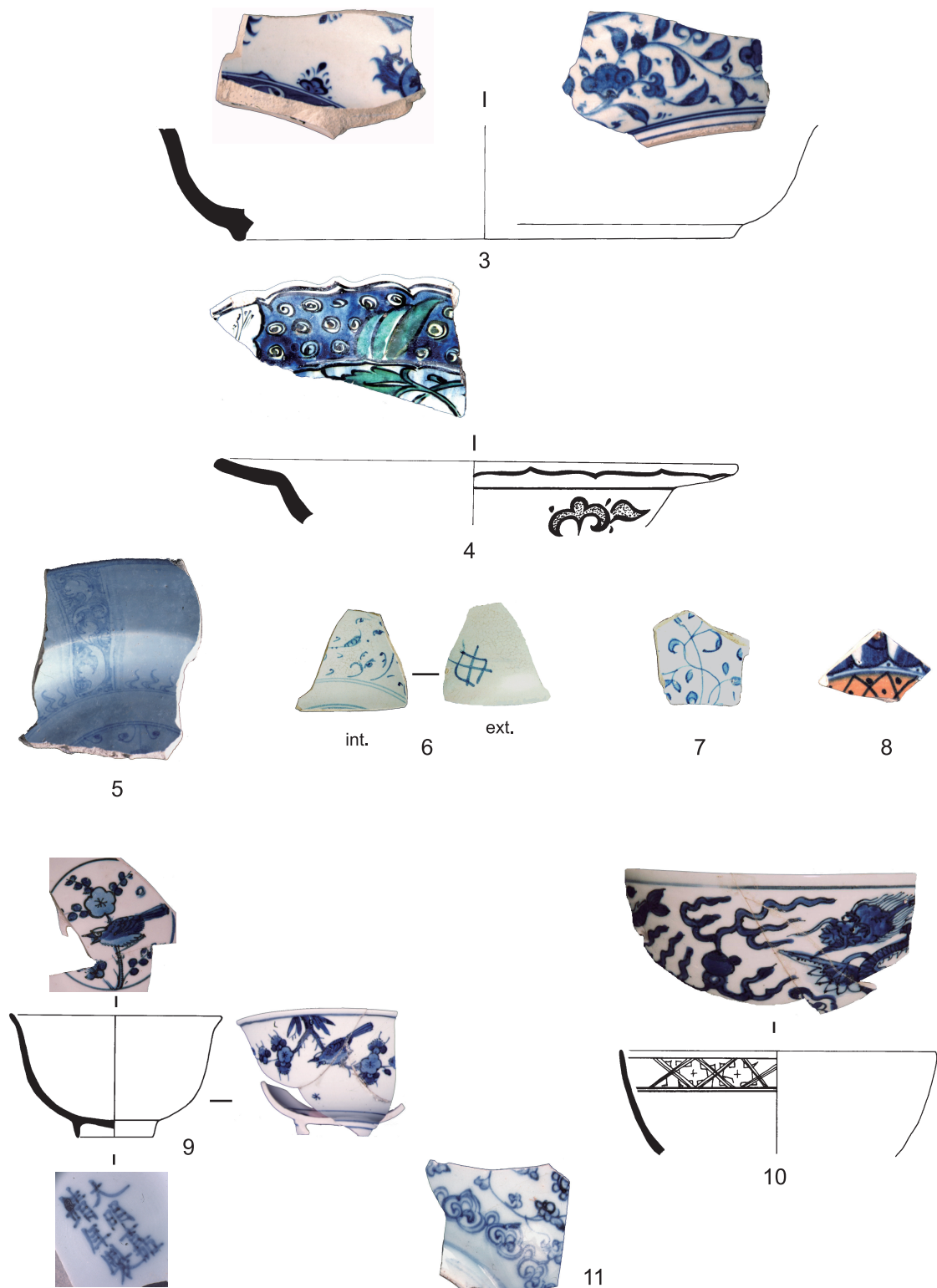


Fig. 2: Importations du XVI^e siècle à Damas – céramiques d’Iznik (3, 4); faïences “bleu sur bleu” de Ligurie (5–7); majolique de Montelupo (8); porcelaines “bleu et blanc” de Chine (9–11). Ech. 1:3



Fig. 3: Importations du XVII^e siècle à Damas – céramique safavide d’Iran peinte au lustre métallique (12); *Marmorizzate* de Pise (13–15); *Graffita tarda* de Pise (16); majolique de Montelupo (17); porcelaines “bleu et blanc” de Chine (18, 19). Ech. 1:3

Tableau I. Céramiques communes ottomanes

CÉRAMIQUES COMMUNES OTTOMANES			
Céramiques communes à pâte argileuse rouge			
Céramiques communes sans revêtement			
<i>Type</i>	<i>Nombre Minimum d'Individus (NMI)</i>		<i>Informes</i>
Céramiques culinaires sans revêtement	105	31%	212
Céramiques de stockage et de transport sans revêtement	76	22%	406
Vases à liquide sans revêtement	121	36%	217
Bassins	36	11%	90
<i>Sous-total</i>	338		925
<i>Total</i>	1263		
Céramiques communes glaçurées			
<i>Type</i>	<i>NMI</i>		<i>Informes</i>
Céramiques culinaires glaçurées	44	43%	66
Céramiques de stockage et de transport glaçurées	27	26%	44
Bassins glaçurés	32	31%	38
<i>Sous-total</i>	103		148
<i>Total</i>	251		
Céramiques communes engobées			
<i>Type</i>	<i>NMI</i>		<i>Informes</i>
Céramiques culinaires engobées rouges	12	9%	12
Coupes engobées rouges	24	18%	153
Céramiques de stockage et de transport engobées rouges	46	35%	451
Vases à liquide engobés rouges	36	27%	156
Bassins engobés rouges	12	9%	100
Vases à liquide engobés blancs	2	2%	1
<i>Sous-total</i>	132		873
<i>Total</i>	1005		
Rapport entre les différentes catégories de céramiques communes à pâte rouge			
<i>Type</i>	<i>NMI</i>		<i>Informes</i>
Céramique commune sans revêtement	338	59%	925
Céramique commune glaçurée	103	18%	148
Céramique commune engobée	132	23%	873
<i>Sous-total</i>	573		1946
<i>Total</i>	2519		
Céramiques communes à pâte argileuse grise			
Céramiques communes sans revêtement			
<i>Type</i>	<i>NMI</i>		<i>Informes</i>
Vases à filtre sans revêtement	483	86%	2403
Céramiques culinaires sans revêtement	15	2%	93
Céramiques de stockage et de transport sans revêtement	55	10%	561
Chandeliers	10	2%	0
<i>Sous-total</i>	563		3057
<i>Total</i>	3620		
Céramiques communes engobées noires			
<i>Type</i>	<i>NMI</i>		<i>Informes</i>
Céramiques de stockage et de transport engobées noires	78	73%	98
Vases à liquide engobés noirs	17	16%	25
Bassins engobés noirs	12	11%	11
<i>Sous-total</i>	107		76
<i>Total</i>	183		
Rapport entre les différentes catégories de céramiques communes à pâte grise			
<i>Type</i>	<i>NMI</i>		<i>Informes</i>
Céramiques communes sans revêtement	563	84%	3057
Céramiques communes engobées noires	107	16%	76
<i>Sous-total</i>	670		3133
<i>Total</i>	3803		
Rapport entre céramiques communes à pâte rouge et à pâte grise			
<i>Type</i>	<i>NMI</i>		<i>Informes</i>
Céramiques communes à pâte argileuse rouge	573	46%	1946
Céramiques communes à pâte argileuse grise	670	54%	3133
<i>Sous-total</i>	1243		5079
<i>Total</i>	6322		

Tableau II. Vaisselle de table ottomane

VAISSELLE DE TABLE OTTOMANE			
Vaisselle de table à pâte argileuse et glaçure plombifère			
Type	NMI		Informes
A glaçure monochrome verte sur engobe	133	75%	353
Incisée sur engobe	2	1%	0
Peinte à l'engobe	1	0,5%	0
Peinte en vert absinthe sous glaçure jaune	41	23,5%	56
<i>Sous-total</i>	177		409
<i>Total</i>	586		
Vaisselle de table à pâte siliceuse et glaçure alcaline			
Type	NMI		Informes
Imitations de céladons chinois	21	14%	50
Peinte polychrome sous glaçure incolore	62	42%	149
Peinte en noir sous glaçure bleu turquoise	7	5%	39
Peinte en bleu sous glaçure incolore	30	20%	38
Peinte en bleu et noir sous glaçure incolore	29	19%	85
<i>Sous-total</i>	149		361
<i>Total</i>	510		
Vaisselle de table d'origines étrangères			
Productions d'Anatolie et de Thrace			
Type	NMI		Informes
Céramiques d'Iznik, XVI ^e s. (Fig. 2 : 3, 4)	14		4
Céramiques de Kütahya, première moitié XVIII ^e s. (Fig. 4 : 20, 21)	52		14
Céramiques de Çanakkale, XVIII ^e s. (Fig. 4 : 22)	6		2
Céramiques de Didymotique, fin XVIII ^e -début XIX ^e s. (Fig. 5 : 33, 34)	31		31
<i>Sous-total</i>	103		53
<i>Total</i>	156		
Production d'Iran safavide			
Type	NMI		Informes
Céramique peinte au lustre métallique, XVII ^e s. (Fig. 3 : 12)	1		0
<i>Total</i>	1		0
Productions de Chine			
Type	NMI		Informes
«Bleu et blanc» (Figs. 2 : 9-11 ; 3 : 18, 19 ; 4 : 23 ; 5 : 30)	47		80
Dead-Leaf Brown (Fig. 4 : 25)	8		4
Porcelaines monochromes	3		0
Porcelaines Imari de Chine (Fig. 4 : 24)	12		15
<i>Sous-total</i>	70		99
<i>Total</i>	169		
Productions d'Europe du Sud			
Type	NMI		Informes
Faïence «Bleu sur Bleu» de Ligurie, XVI ^e (Fig. 2 : 5-7)	9		15
Majolique de Montelupo, XVI ^e s. (Fig. 2 : 8)	1		0
Marmorizzate de Pise, seconde moitié XVI ^e -XVII ^e s. (Fig. 3 : 13-15)	7		3
Graffita tarda de Pise, seconde moitié XVI ^e -XVII ^e s. (Fig. 3 : 16)	1		0
Majolique de Montelupo, XVII ^e s. (Fig. 3 : 17)	1		0
«Bleu sur Bleu» d'Albisola, XVII ^e s.	3		0
«Taches noires» d'Albisola, XVIII ^e s. (Fig. 4 : 26)	3		0
Faïence de Moustiers (France), XVIII ^e s. (Fig. 4 : 28)	1		0
Faïence de Varages (France), XVIII ^e s. (Fig. 4 : 29)	1		0
<i>Sous-total</i>	27		18
<i>Total</i>	45		
Productions d'Europe du Nord			
Type	NMI		Informes
Porcelaines de Saxe (Meissen), deuxième quart du XVIII ^e s. (Fig. 5 : 31, 32)	4		0
Faïence de Delft XVII ^e -début XVIII ^e s. (Fig. 4 : 27)	1		0
Faïences du Staffordshire et grès anglais, XIX ^e s. (Fig. 5 : 35, 36)	5		11
Porcelaine de Nimy (Belgique), deuxième moitié XIX ^e s. (Fig. 5 : 37)	1		0
Porcelaine de Creil-Montereau (France), fin XIX ^e s. (Fig. 5 : 38)	1		0
Porcelaines de Sarreguemines (France), fin XIX ^e s. (Fig. 5 : 39)	10		23
<i>Sous-total</i>	22		34
<i>Total</i>	56		
Rapport entre les différentes catégories de vaisselle de table importée			
Types	NMI		Informes
Productions d'Anatolie et de Thrace	103	46%	53
Production d'Iran safavide	1	1%	0
Productions de Chine	70	31%	99
Productions d'Europe du Sud	27	12%	18
Productions d'Europe du Nord	22	10%	34
<i>Sous-total</i>	223		204
<i>Total</i>	427		
Rapport entre les différentes catégories de vaisselle de table			
Type	NMI		Informes
à pâte argileuse et glaçure plombifère	177	32%	409
à pâte siliceuse et glaçure alcaline	149	27%	361
d'origines étrangères	223	41%	204
<i>Sous-total</i>	549		974
<i>Total</i>	1523		

Tableau III. Rapport entre céramiques communes et vaisselle de table

Rapport entre céramiques communes et vaisselle de table			
<i>Type</i>	<i>NMI</i>		<i>Informes</i>
Céramiques communes	1243	69%	5079
Vaisselle de table	549	31%	974
<i>Sous-total</i>	1792		6053
<i>Total</i>	7845		

domine dans l'échantillonnage, représentant 69% du total. La poterie à pâte argileuse grise est la plus abondante avec 670 fragments contre 573 à pâte rouge. La vaisselle fine se répartit presque équitablement entre vaisselle à pâte argileuse et glaçure plombifère et coupes à pâte siliceuse et glaçure alcaline, avec respectivement 32 et 27% du total de la vaisselle de table.

Il est vraisemblable qu'une partie de la vaisselle de terre en usage à la citadelle a été fabriquée localement. Cependant, si l'existence d'ateliers damascènes produisant de la céramique architecturale ne fait aucun doute, les indications concernant la production de pièces de forme sont rares. A la fin du XVI^e siècle, la ville est un centre producteur de carreaux de revêtement fabriqués dans le style d'Iznik comme en témoigne, en 1585, Mehmed ibn Aşik qui estime que les carreaux anatoliens sont plus élégants et possèdent une glaçure de meilleure qualité que ceux fabriqués à Damas avec de l'argile blanche (Necipoğlu 1990: 157). Il est probable qu'Abdallah de Tabriz et son équipe, de retour de Jérusalem où ils avaient été envoyés par Soliman le Magnifique pour restaurer le Dôme du Rocher, ont exécuté les revêtements de carreaux de plusieurs édifices érigés à Damas dans la seconde moitié du XVI^e siècle (Necipoğlu 1990: 137, 139). A la fin du XIX^e, à en croire le Français Lortet, les artisans de Damas fabriquaient encore des carreaux (Lortet 1884: 606). Mais si l'existence d'une fabrication locale de céramique architecturale est confirmée par des analyses physico-chimiques des pâtes (Jenkins 1984: pl. 10a), nous ne savons rien sur l'artisanat de la vaisselle. On trouve bien mention *d'opus de Damasco* taxés par charge dans les tarifs du péage de Meyrargues, sur la Durance, en 1626, mais il est difficile d'affirmer qu'il s'agit effectivement de céramiques damascènes et non pas, plus généralement, de productions orientales. Pour leur part, les fouilles de la citadelle ont livré des ratés de cuisson – deux coupelles d'imitation de céladon et deux coupes peintes en bleu et noir emboîtées les unes dans les autres – qui sont les preuves d'une fabrication locale de vaisselle de table au XVIII^e siècle. Plus tard Vital Cuinet fait état, en 1896, de jarres produites dans les ateliers de Damas, Hasbiyya et Rushaya, précisant que ces gros contenants étaient faits d'argile fine et pâle, une description qui pourrait correspondre à la pâte rose claire des grosses jarres communes engobées rouges trouvées en quantité dans la fouille (Cuinet 1896: 364). Si l'existence d'ateliers de potiers réalisant tout à la fois de la vaisselle fine, des carreaux de revêtement mural et des céramiques communes ne peut être mise en doute pour toute la période ottomane, nous ne savons rien sur la localisation des officines.

2. Confronter les découvertes

Pendant leur long règne sur les Balkans, l'Anatolie et le monde arabe, les Ottomans ont laissé partout des traces matérielles de leur domination. Bien qu'ils n'aient jamais encouragé la diffusion d'une «culture ottomane» à proprement parler, un certain nombre de vestiges, en particulier architecturaux, témoignent d'un contrôle centralisé des créations artistiques. Dans le domaine de la vaisselle, il serait intéressant de savoir si les Ottomans ont réussi à imposer, malgré des particularismes régionaux très forts et très dissemblables des Balkans aux provinces arabes, la fabrication et l'emploi d'ustensiles de cuisine et de service standardisés. La confrontation des différents ensembles de céramiques mis au jour sur les territoires de l'Empire apporterait sans doute des éléments de réponse à cette question.

Mais il est encore trop tôt pour tenter des mises en perspectives de ces lots, les données étant trop disparates pour distinguer des différences régionales ou au contraire pour souligner des permanences dans les formes ou dans les décors entre le matériel de la capitale et celui des provinces balkaniques et arabes. L'essentiel du matériel trouvé dans les fouilles de Saraçhane Camii à Istanbul date du XVI^e-milieu du XVII^e siècle, les niveaux les plus récents ayant été détruits par des décapages antérieurs à l'exploitation archéologique du site (Hayes 1992: 233–398). L'abondant matériel recueilli dans les fouilles de la citadelle de Belgrade est daté entre 1521 et 1688 (Bikić 2003) alors que la céramique de Damas est représentative des XVII^e et surtout des XVIII^e–début XX^e siècles. Il est donc difficile d'établir des comparaisons entre des découvertes qui ne sont pas contemporaines. En revanche, l'étude comparative des productions de vaisselle fine qui circulaient en Méditerranée à l'époque ottomane peut permettre de mieux cerner les courants commerciaux secondaires dont a bénéficié le négoce de la vaisselle. L'examen des attestations de céramiques étrangères – des productions haut de gamme et des vases rustiques – présentes sur les sites ottomans en petites quantités révèle des constantes dans la distribution de certains types. Entre le XVI^e et le XIX^e siècle, l'approvisionnement en céramique fine à Damas, à Kouklia (von Wartburg 2001: 361–96), à Potamia (François, Vallauri 2001: 253–46), à La Canée (Hahn 1997: 79–192), à Istanbul, à Jérusalem (Pringle 1984: 37–44) et à Saint-Jean-d'Acre (Stern 1997: 65–6 ; Edelstein, Avissar 1997: 132–135) est presque identique (Tableau IV).

La vaisselle d'Iznik, production de luxe s'il en est, du début de l'époque ottomane, apparaît

Tableau IV. Céramiques importées dans l'Empire ottoman. Comparaisons des approvisionnements

CÉRAMIQUES IMPORTÉES DANS L'EMPIRE OTTOMAN COMPARAISONS DES APPROVISIONNEMENTS						
Type	Damas	Kouklia et Potamia	La Canée	Istanbul	Acre	Jérusalem
XVI^e siècle (Fig. 2)						
Céramique d'Iznik	×	×	×	×		×
Faïence «Bleu sur bleu» de Ligurie	×	×	×	×		
Majolique toscane de Montelupo	×		×			
«Bleu et blanc» de Chine	×			×		
XVII^e siècle (Fig. 3)						
Céramique peinte au lustre d'Iran	×					
Faïence «Bleu sur bleu» d'Albisola	×	×				
<i>Marmorizzate</i> de Pise	×	×	×	×	×	×
<i>Graffita tarda</i> de Pise	×	×	×	×		×
Majolique de Montelupo	×	×	×			×
«Bleu et blanc» de Chine	×	×		×		
XVIII^e siècle (Fig. 4)						
Céramique de Kütahya	×	×	×	×	×	×
Céramique de Çanakkale	×	×	×	×	×	
«Bleu et Blanc» de Chine	×	×			×	
Porcelaine <i>imari</i> de Chine	×					
Monochrome de Chine	×					
Faïence à décor <i>spirale verdi</i> de Pise		×	×			
Céramique «à taches noires» d'Albisola	×	×		×	×	
Faïence de Delft	×					
Faïence de Moustiers	×			×		
Faïence de Varages	×					
XIX^e siècle (Fig. 5)						
«Bleu et blanc» de Chine	×			×		
Porcelaine de Saxe	×			×	×	×
Céramique de Didymotique	×	×	×	×	×	
Faïence et porcelaine anglaise	×	×		×		
Porcelaine française	×	×	×			

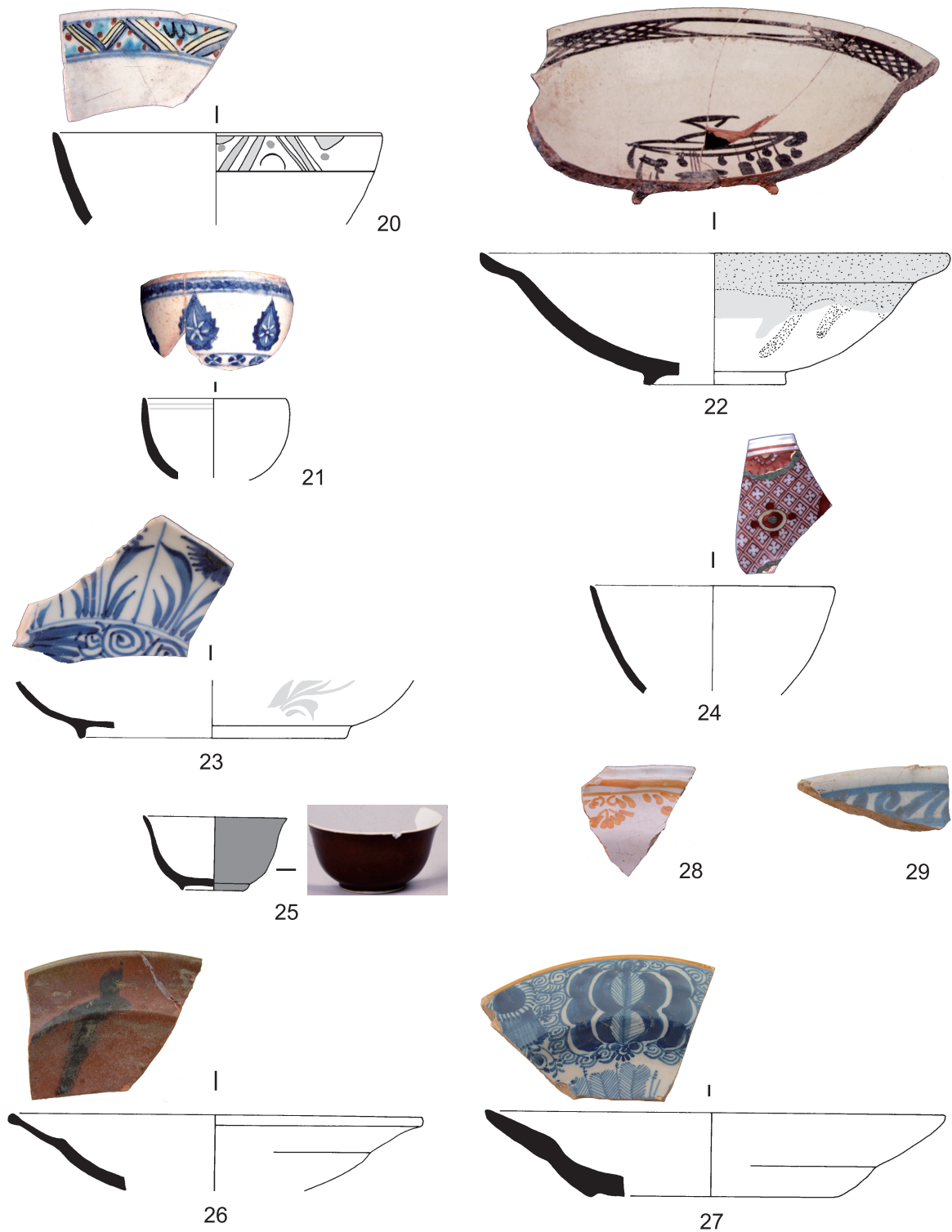


Fig. 4: Importations du XVIII^e siècle à Damas – céramiques de Kütahya (20, 21); céramique de Çanakkale (22); porcelaines de Chine “bleu et blanc” (23), imari (24) et “café au lait” (25); “Taches noires” d’Albisola (26); faïences de Delft (27), de Moustiers (28) et de Varages (29). Ech. 1:3

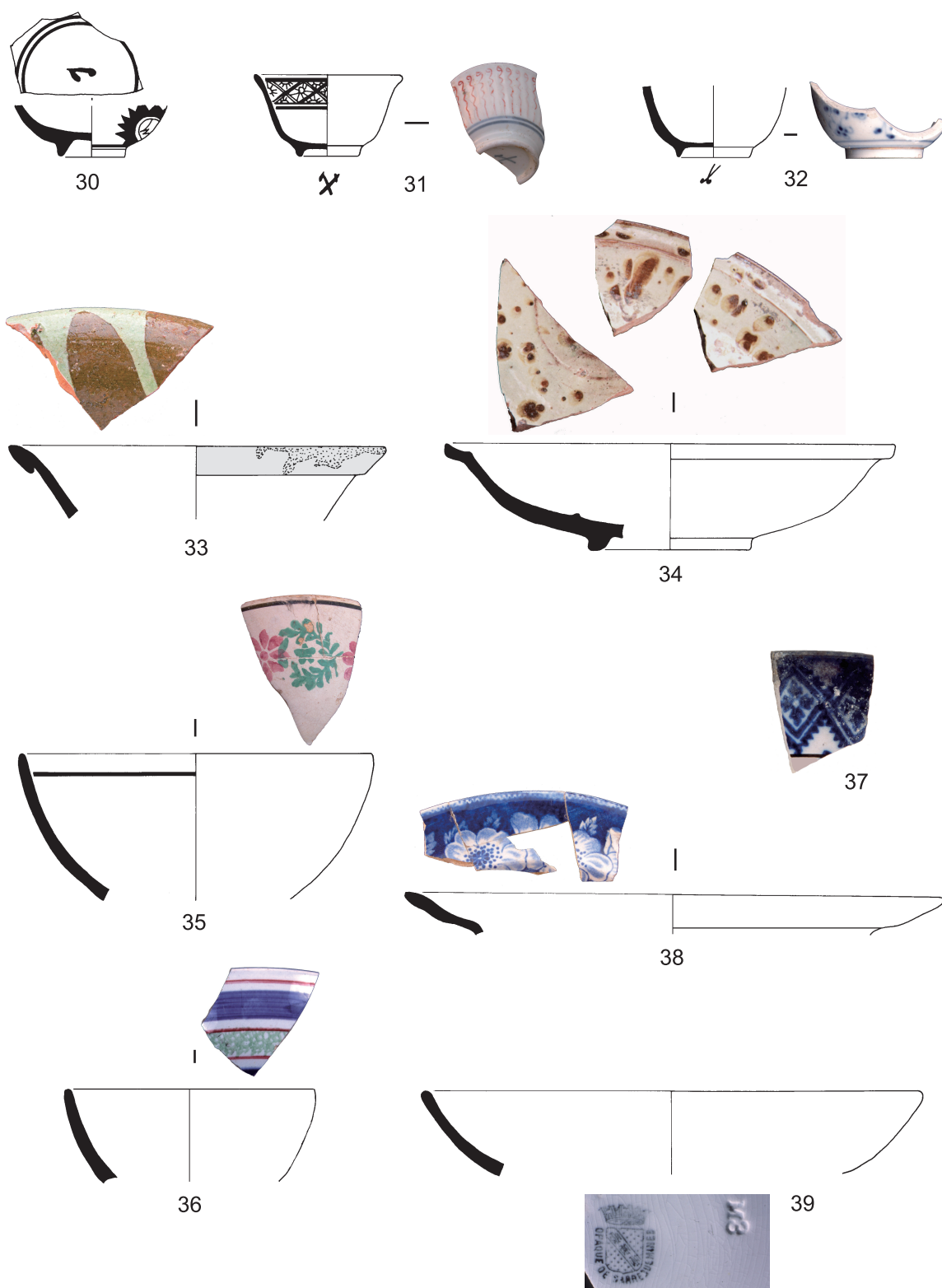


Fig. 5: Importations du XIX^e siècle à Damas – porcelaine de Chine “bleu et blanc” (30); porcelaines de Saxe (31, 32); céramiques de Didymotique (33, 34); faïences du Staffordshire (35, 36); porcelaines de Nimy (37), de Creil-Montereau (38) et de Sarreguemines (39). Ech. 1: 3

en petite quantité sur tous les sites choisis pour la comparaison. Ces vases qui, rappelons le, coûtent fort cher sont une marque incontestable de richesse. Seuls les Ottomans fortunés possèdent de tels objets en petit nombre. Les faïences «bleu sur bleu» de Ligurie au décor de rinceaux finement peints connaissent elles aussi un grand succès. Leur ressemblance avec les céramiques de type *Corne d'Or* d'Iznik est peut-être responsable de cette popularité – sur la base de cette parenté décorative, la faïence ligure était peut-être un substitut meilleur marché aux «bleu et blanc» d'Iznik. Au XVII^e siècle, les productions toscanes sont bien représentées même si on observe une plus grande variété à Damas et à Chypre. Un siècle plus tard, les importations occidentales cèdent le pas aux céramiques réalisées en Anatolie. Alors qu'au XIX^e siècle, la vaisselle rustique, en partie fabriquée en Thrace, côtoie de nouveau, sur la plupart des sites, porcelaines et faïences européennes. Damas semble être particulièrement bien approvisionnée en porcelaine de Chine même si le nombre d'objets recensé reste faible (70 individus). La gamme de productions chinoises mise au jour sur toute la période est très variée en particulier pour le XVIII^e siècle – une époque à laquelle on ne trouve pas de porcelaine sur les autres sites.

A l'échelle du Bilâd al-Châm, Damas est, en l'état des découvertes, la seule ville à jouir d'une telle variété de vaisselle fine même si les importations Jérusalem et d'Acre – ville côtière et port fortifié qui émerge après 1771 et devient le troisième centre du pouvoir régional après Alep et Damas (Inalcik, Quartaert 1994: 672, 733) – sont relativement variées. A l'échelle de l'Empire, l'approvisionnement en vaisselle étrangère à Damas ne semble pas être lié à l'importance de la ville puisque Kouklia, à Chypre, a bénéficié des mêmes produits. Cela reflète peut-être le dynamisme du commerce propre à ces deux zones. Chypre apparaît, de 1571 à 1878, comme une des plus importantes places de commerce internationale de Méditerranée orientale (Aristidou 1995 : 271–277). Il est par ailleurs intéressant de constater, qu'en plus des importations déjà signalées, on trouve aussi sur le site de Kouklia divers exemples de productions damascènes «à la manière» d'Iznik et des vases à filtre à pâte grise (von Wartburg 2001: 366, n°2; fig. 9: 2; 367, n°8; fig. 4: 8; fig. 8: 70 et 71; fig. 10: 32, 33). L'approvisionnement varié de Damas est d'autant plus remarquable que la situation géographique de la ville est peu favorable au négoce puisque un peu à l'écart des grandes routes commerciales de terre et de mer, sans débouché facile sur la Méditerranée et sans *hinterland* étendu. A la fin du XVI^e et au XVII^e siècle, par sa population et son commerce, Damas n'est plus que la deuxième ville de Syrie derrière Alep – premier centre du commerce international du Levant. Au XVIII^e siècle, les activités artisanales et commerçantes ne sont pas négligeables et les voyageurs s'accordent à décrire une ville fort peuplée et fort riche (Degeorge 1994: 102). Mais si la ville, à l'époque ottomane, est supplantée par Alep dans la maîtrise des échanges commerciaux, elle tire profit du Pèlerinage vers les Lieux saints de La Mecque et de Médine qui draine hommes et marchandises en grand nombre – de 20 000 à 60 000 personnes suivant les années, au départ de Damas, où se regroupent les pèlerins d'Europe, d'Anatolie et du Levant (Raymond 1989: 37; Rafeq 1993: 49–57). Les voyageurs en route vers La Mecque traversent chaque année la ville à deux reprises, à l'aller et au retour, transportant avec eux, pour se dédommager des frais considérables du voyage, des marchandises particulièrement rémunératrices sous un volume réduit. Le Pèlerinage entretient dans la ville un mouvement commercial des plus intenses qui demeure jusqu'à l'aube de l'époque contemporaine le facteur primordial de son évolution. Et c'est peut-être à cette occasion que des quantités réduites de vaisselle d'origines étrangères ont été transportées jusqu'à Damas.

Les recherches archéologiques concernant l'époque ottomane semblent bénéficier aujourd'hui d'un intérêt nouveau, dont témoigne d'ailleurs ce volume, mais aussi d'autres publications récentes (Gerelyes, Kovács 2003; Yenişehirlioğlu 2005: 246–265; 2005: 267–279; François 2007(a), 2007(b), 2009). Les études céramologiques devraient donc se multiplier et fournir, à terme, des chronotypologies utiles aux archéologues sur le terrain mais aussi aux historiens. Dans ce contexte, la typologie élaborée à partir des découvertes faites à la citadelle de Damas contribuera à une meilleure

connaissance de ce matériel au Bilâd al-Châm et livrera des données utiles à l'échelle de tout l'Empire (François 2008).

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THE ARCHAEOLOGY OF THE CLAY PIPE IN THE NEAR EAST

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“Large sums are lavished by Turks of all ranks upon pipes; they attach as much importance to the possession of a fine assortment, as Europeans to that of choice pictures or plate” (White 1845: vol. II, 129)

Despite the huge revival of interest in the socio-economic affairs of the Ottoman empire, most analyses have focused on the macro-economy, urban industries and long-distance trade, whereas relatively little attention has been paid to local or specialised crafts and craftsmen (McGowan 1981; Faroqhi 1984; 1995; 2005; Faroqhi, and Deguilhem 2005). Anatolia, the Balkans and parts of Syro-Palestine have also received the brunt of academic attention, but very little research has been published on other parts of the empire such as northern Syria or Iraq. Furthermore, interest has tended to dwell on the 15th–17th centuries with little attention paid to the situation during the later centuries. Although detailed studies have been published on the provisioning of meat and bread in Jerusalem (Cohen 1989), the silk industry of Bursa and Lebanon (cf. Faroqhi 1984), and on certain classes of object detailed in palace or private inheritance inventories (Samanci 2003; Estabiet, and Pascual 2003), analyses of individual classes of object are much scarcer. Comparative analyses of textual and archaeological data-sets are rarer still (Baram, and Carroll, eds 2000). Nevertheless, a number of focused studies have started to appear in recent years within Turkey, for instance on the copper industry of Tokat (Belli, and Kayaoğlu 2002) and the revival of the glass industry in Istanbul (Küçükerman 1999). It is within this context of object-based interpretations of Ottoman material culture that this essay is set, and one which attempts to combine archaeological and written perspectives.

Until the 1970s, clay pipes were either ignored as modern artefacts or were attributed to the Mamluk period and as this pre-dated the introduction of tobacco from the New World, they were viewed as proof that cannabis was smoked in the medieval Near East. In 1971 Rosenthal effectively debunked any notion that cannabis or opium were ingested in any form other than as edible pellets, ingredients in food or through burning on open braziers, and it is now accepted that no pipes are earlier than the late 16th century and most date from the second half of the 17th century and later. Although relatively little research has been published on the Ottoman written sources, the history of the introduction of smoking tobacco, its ensuing popularity, and the responses this drew from political and religious authorities, have been the subject of a number of papers (*e.g.* Birnbaum 1956; Simpson 1995; 2000*a*; van der Lingen 2003). These suggest that smoking was known in the Ottoman Court as early as 1576, Yemen by 1590/91 if not earlier, and Egypt by 1600/03, after which it spread like wildfire despite strong official and religious disapproval. European and Turkish sailors are a common denominator to its early popularity, endemic smoking in the army is recorded from the reign of Murad IV (1623–1640), and urban coffee-houses were popular social smoking venues by the same period. The exact means and route by which smoking came to be introduced into the Ottoman empire is more complex however. Doubtless there were multiple introductions, as the written sources suggest, but the concept of using long-stemmed pipes with a separate bowl and mouthpiece was distinct from the short-stemmed single-piece white clay pipes favoured in England and Holland. It may have been Portuguese rather than English or Dutch traders who were therefore responsible for introducing this type from North America, not only into the Ottoman empire but also into Morocco

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and West Africa (Shaw 1960; Keall 1992*a*; 1992*b*; 1993).

However, it was not until Rebecca Robinson's detailed analyses of pipes from Athens and Corinth, illustrated with the rich comparative sources of paintings, engravings and European travellers' accounts of the 17th, 18th and 19th centuries, that it became clear that the archaeological finds must date from a considerably later period than previously recognised (Robinson 1983; 1985). Together with a preliminary study of pipes from excavations at Saraçhane in Istanbul (Hayes 1980; 1992), these established the first outline typology for Ottoman pipes and the basis for most subsequent archaeological studies. Nevertheless, the longevity of particular "types" of pipe is more difficult to assess and doubtless some continued for longer than others. As with any artefact analysis, the definition of a particular "type" also requires close scrutiny and the potential pitfalls of circular argument over dating should be reiterated. It is no longer adequate to simply compare general colour or shape, and with the publication of more detailed analyses over a wider region it will be necessary to begin constructing more refined typologies. Pipes have now been presented in archaeological reports from almost all regions of the Ottoman empire: in addition to the groups mentioned above from Istanbul and Greece, assemblages have been published from Mytilene (Humphrey 1990), Iraq (Gargies 1987) and Egypt (French 2001), but the largest number come from the southern Levant, particularly salvage excavations in Beirut (Bartl 2003; van der Lingen 2003), and a large number of sites in Israel/Palestine (*e.g.* Avissár 1996; Boas 2000; Simpson 1990*b*; 2000*b*; 2002; *in press*). Independently, researchers in eastern Europe have added important new data on the typological development of local pipe-making industries, particularly in Bulgaria, and the heavy influence these Turkish pipes had on the fashions of neighbouring Hungary and Croatia (Stançeva 1972; *cf.* Tomka 2000; Brusić 1986/87; Haider, Orgona, and Ridovics, eds 2000: 25–32). On the basis of these finds, several trends are evident.

Pipes are very rare prior to the second half of the 17th century. Thereafter, the first datable examples are made of smooth pale grey, white or light brown clay, and tend to have small bowl capacities and shank openings which presumably correspond to the relatively high price of the imported tobacco. They also typically have stepped ring shank-ends, restrained rouletted decoration on the shank and the bowls are usually decorated with small elaborate stamps. The typically uniform pale appearance and the lack of cores implies that they were consistently fired in lightly reducing kiln conditions, although a small number of dark grey or black examples are attested. The occurrence of cypress-tree motifs on a group of the early pipes which have as yet only been recognised from sites in Palestine may be noteworthy as the same motif recurs in Palestinian embroidery (Simpson *in press*).

During the 18th century there appears to be a shift towards larger and more rounded bowls which were usually coated with a lightly burnished red slip. The increase in capacity is linked to a reduction in price and wider availability of tobacco, which began to be very widely cultivated across the Ottoman Empire. This pipe tradition continues throughout the 19th century but by the 1840s lily-shaped bowls with highly burnished red slip appear to be the commonest form. There are some curious similarities between 18th and 19th century Ottoman pipe bowls and those found in Mali and other parts of West Africa (*e.g.* Daget, and Ligers 1962): closer analysis of these and their chronology, and the varieties of pipe found along the trans-Saharan trade routes, might throw some light on the degree and direction of influence. In contrast, the scarcity of recognisable 20th century types of pipe in the Middle East probably reflects the popular switch to cigarettes which began as early as the turn of the 19th and 20th centuries in rural areas of Palestine (Wilson 1906: 127).

At Athens, Corinth, Saraçhane and Mytilene it was noted that many of the excavated pipes carried small impressed maker's marks, although they appear to be less common in the southern Levant. As many as seventy-five pipe-maker's names are now attested in all, some of which are dated to the year. The names are almost all Turkish but a few others are also recorded, including Borgest,

B. Fuchez, Marruis, Nevres, Peretev, which suggest export pipes. Turkish pipes were widely copied in eastern Europe and southern Russia, and even the Turkish word for a pipe (*lüle*) entered the local vocabulary of these areas (Albanian *llulla*, Bulgarian *lulata* and Serbo-Croat *lula*). In several cases the pipe-makers' names hint at their origin: "Belgradi", "Edirneli Süleyman Usta" and "Hasan Istanbul Hasan" suggest connections with Belgrade, Edirne and Istanbul respectively.

Future research into Ottoman census records (*Nüfus* registers), Shari'a court records, price lists and craft guilds (*Tawa'if*) should provide a wealth of further details on these and other pipe-makers. In most cases, however, these individuals are assumed to be based in Istanbul where the greatest number operated from within the Tophane quarter on Galata, where other crafts recorded from the 17th century and later included carpenters, tanners, tube-makers and candle-makers (Mantran 1962: carte 11). The importance of the pipe-making industry is still evident in the street names of this quarter of the city, including Lüleci Hendek Arasta ["Pipe-makers' Hollow"] which is said to have had as many as 60 workshops. Maker's marks stamped directly onto the pipes themselves also name workshops in Beykoz and Yalova; Hamdi Efendi is known to have worked at Alaça Hammam at 56 Marpuççular Yokusu, a narrow street crammed with tobacconists according to an 1874 account, and the last Istanbuli pipe-maker closed his workshop in 1928. The tools of this individual, Master Ömer, are preserved in the Istanbul Municipal Museum and would merit detailed publication (Bakla 1985; 1993). Although the 19th century workshops in the Tophane district of Istanbul have received some attention by Turkish scholars (Kocabaş 1962; Bakla 1993), at least nine other Turkish towns were also involved in pipe-making, namely Avanos, Diyarbakir, Edirne, Iznik, Kayseri, (the appropriately named) Lüleburgaz, Mardin, Siirt and possibly Sivas (*cf.* Cuinet 1892: vol. II, 439, 463, 506, 552; Bakla 1985; 1993: 28, 35–36; Simpson 1990a: 7). In the case of Diyarbakir, "a hundred and fifty makers of ornamented pipe stems only, besides those who make the clay balls [bowls], amber mouth-pieces" were noted by one traveller in 1816 (Buckingham 1827: vol. I, 380), and the location of this industry is indicated by the survival of street names in the north-west part of the city. In addition, pipe-making is recorded from Jerusalem, Jaffa and Nazareth in the 19th century (Simpson *in press*), as well as Sofia and Rusçuk in the European provinces, Baghdad and Mosul in Iraq, and Asyut and Qena in upper Egypt. From this, it may be deduced that pipe-makers catering for the heavy demand were concentrated in many, if not all, the major urban centres across the Ottoman empire by the 19th century. In other cases potters doubtless helped satisfy local consumption through the manufacture of pipes as a sideline. Coarsely made and hand-modelled pipes found at Mudaybi' and Khirbat al-Nakhl in southern Jordan, may fall into this category and have been suggested as possible evidence for local manufacture to compensate for difficulties in gaining fine clay pipes made in Palestine or Syria (Milwright 2000: 200).

In a small number of cases glaze was used as an alternative to coloured slip. Clay pipes decorated with transparent yellow or green glaze formed 1.5% of the pipes recovered from the Kerameikos at Athens (Robinson 1983: 273, pl. 52, no. 3) and 5% of the pipes excavated at Corinth (Robinson 1985: 172–73, pl. 47, nos 6–9): these were suggested to be the sideline of a pottery workshop, although the original whereabouts of this is not known. Green glazed pipes believed to be of local Haysi manufacture are reported from Zabid in Yemen (Keall 1992*a*). In addition, clay pipes splashed with a transparent glaze fired to a yellowish colour on a light brownish clay body have been reported from a number of sites in Israel/Palestine and southern Lebanon, and doubtless again were produced as a potters' sideline. The fact that one example from Suba was also decorated with cypress-tree stamps strengthens the possibility of these being local products as this stamp motif has thus far only been noted on pipes from the southern Levant. A comparative petrographic analysis with utilitarian glazed wares of the same period might be very instructive, for instance of those glazed wares believed to have been produced at Rashaiya al-Fukhar in the southern Beqa'a valley. However, in the case of most late-19th century pipes, the clay fabrics are very fine and appear to represent the selection

and/or levigation of specific clays for the bodies and slips. The stages of production have been documented most closely in the case of Istanbul where the pipe-makers relied on a local pipe-clay source in the Ökmeydani district but also imported fine clay slip over considerably longer distances, including sources near Van, Aydin and Beirut (White 1845: vol. II, 149; Seetzen 1854: vol. II, 22; Bakla 1993: 45). The clay was moistened, mixed and refined in wooden containers or large jars before being wedged and, if necessary, stained with red ochre. Small balls, each sufficient to make a single pipe bowl, were formed and weighed; these were placed inside separate two-piece moulds, any excess clay being shaved off and re-used, and a narrow boxwood borer inserted to make the necessary aperture for the pipe stem. Pipes were frequently slipped and polished with felt at this stage. After partial drying in the sun, the bowls were decorated and finished by hand, the tell-tale mould seams smoothed over and then burnished.

There is very little evidence for post-firing treatments. The decoration instead relied on a varying combination of moulding, stamping, rouletting, incising and occasionally gilding. The use of gilt appears to be a characteristic of the Tophane pipes: although it is regarded today among collectors as a sign of relatively high value, one European contemporary commented that “The price depends upon the purity of the clay, and upon the carving and gilding. The lower orders use the cheapest, of which immense quantities are exported into the provinces. Higher personages use a better kind, but never those which are gilt” (White 1845: II, 150). The use of gilding does not appear to have been recognised on any pipes recovered from archaeological contexts in the southern Levant, implying that it was not used (or used very sparingly) by the pipe-makers in this region, and that Tophane pipes did not circulate widely (or at least outside the cities) in this region. Some pipes were traded, and the manufacture of export pipes for the Persian market is attested (Bakla 1993: 37). The discovery of a late 17th century shipwreck off the Dalmatian coast near the island of Bisaga confirms the Mediterranean export of Ottoman pipes as the cargo is estimated as including several thousand pipe bowls (Brusić 1986/87). However, it appears that greater attention was generally paid to the trade of tobacco, wooden pipe-stems and the costly mouth-pieces rather than the pipe bowls themselves, as these were increasingly manufactured within regional centres. The limited geographical distribution of certain forms of pipe and particular types of decoration supports this hypothesis. For instance, groups published from Istanbul and Greece contain pipes with pronounced disc bases that are scarce in other regions (*cf.* Robinson 1985), so-called “poppy head pipes” appear to be particularly common in northern Iraq and eastern Turkey (Matney 1997), and polychrome glazed pipes are characteristically Iranian (Armero 1989: 71). Within Israel/Palestine itself, as noted above, there are a number of recurrent types that have not yet been recognised from other regions of the Ottoman Empire. It is therefore likely that some, if not all, of these belong to local pipe workshops.

In addition to those pipe bowls made of clay, contemporary sources refer to individuals consuming tobacco through pipes carved from wood or, as in extreme cases in southern Iraq (as in parts of east Africa or Central Asia) as “earth pipes” along channels in the ground, but in neither case can these uses be detected archaeologically. The archaeological disappearance of wooden pipes may be particularly significant in understanding the scarcity of late 16th or early 17th century pipes, as one of the earliest references to Turkish pipes states that they were made of “reeds that have joyned unto them great heads of wood to contayne” the tobacco (Sandys 1615: 66), and Robinson (1985: 160, 175, pls 48–49, nos C17–19) has noted that the highly burnished mahogany-like finish of three 18th century pipes from Corinth is strongly reminiscent of polished wood. In addition, during the 19th century, if not before, several bedouin tribes are recorded as carving pipe bowls from soft local stone and small numbers of such bowls, usually described as chalk, limestone or softstone, have now been recorded from sites in Israel/Palestine, southern Jordan, eastern Syria and Iraq. The distribution of these carved stone pipes along the desert fringes suggests that they may represent north Arabian imports although a similar tradition is also recorded from Sinai and Egypt (Simpson

forthcoming).

Although there are a growing number of reports on pipes from archaeological assemblages, many were not systematically recovered and it would be wrong to draw conclusions over the relative frequency of certain types on the basis of publications alone. In some cases the low level of recovery and/or high degree of sorting is evident from the disproportionately high number of decorated and/or semi-complete pieces. Wightman (1989: 74) hints at this in his publication of the excavations at the Damascus Gate of Jerusalem: the “red-polished chibouks were mass-produced in moulds, so their forms exhibit little variation” but only a single semi-complete plain example was illustrated in the report, whereas small fragments of such pipes dominate other assemblages. The excavations of the village of Suba, nestled inside the ruined shell of the Crusader castle of Belmont, offered an exception as the pottery processing yielded a large number of additional small fragments. Many of these belonged to the rims of red-slipped burnished pipe bowls, which constituted over 80% of the total of the assemblage. This breakage pattern suggested that the most vulnerable part of the pipes were their rims which were easily chipped if the pipe bowl was knocked on a hard surface when clearing the dottle inside. The same reason probably explains the chipping often noted along the rims of the shank ends, although as they were invariably thicker-walled they are usually semi-intact. Another reason for discard was probably a heavy accumulation of dottle inside the pipe bore at the bowl/stem junction, which was a characteristic of a large number of the pipes (Simpson 2000*b*). Future organic residue analysis of these carbonised remains might eventually give some information on the prevalent strains of tobacco consumed at different sites at different periods. In the meantime a preliminary attempt was made to apply forensic sprays to the excavated pipes in an attempt to detect possible use of cannabis. The results should be pursued under laboratory conditions but the initial study only yielded possible positive results in two cases. As might be expected, tobacco was the main stimulant and illustrates the comment by one 19th century visitor to Palestine that the village houses were “dense with tobacco smoke” (Rogers 1863: 209).

Water-pipes are rare in most archaeological assemblages. Only single fragments survive among the finds excavated at Suba, Zir'in, the Damascus Gate refuse tips in Jerusalem or Aqaba Castle, where they numbered between 0.5% and 1.6% of the total number of pipe fragments (Simpson 2000*b*; 2002; in press; forthcoming). Furthermore, no fragments of the distinctive glass, metal, pottery or coconut bases have yet been recognised from archaeological contexts. This scarcity may reflect the relatively higher price of imported Persian *tumbac* over the locally cultivated varieties of tobacco, particularly in the countryside from where most of the site assemblages derive. However, it is instructive to note that water-pipe fragments appear to have been rather commoner in deposits excavated in parts of Beirut as they constituted 11.4% of the total from excavations in the Beirut Souks and as many as half of the fragments published from the Place Debbas excavations (van der Lingen 2003: 135; Bartl 2003). One reasonable conclusion might be that the water-pipes represented by some 19th century European artists were props designed to conjure an Orientalist image rather than being an accurate reflection of the local rural material culture. However, water-pipes - then as now - probably had specific circulation patterns. They offered a long cool smoke for the comfortable seated individual and, like the very long stemmed pipes, they are redolent of comfort and status. As such, both were most appropriate for moments of leisure, receptions and coffee-houses, whereas rigid-stemmed hand-held pipes could be used throughout the day. This distinction may have implications for breakage and discard. Greater concentrations of water-pipe fragments, gilded Tophane pipes and coffee-cups, may be expected in the vicinity of coffee-houses or wealthier residences whereas cheaper clay pipes will have a wider distribution.

At Suba and Beirut Souks it was noted that many of the pipe bowl bases were heavily abraded. This suggests that they had been originally attached to very long stemmed pipes which were rested on the ground while they were smoked (Simpson 2000*b*: 158; van der Lingen 2003: 135). This

inference raises two further implications. Firstly, these pipe stems presumably measured two metres or more in length, and therefore must have resembled the archetypal long-stemmed variety illustrated by European artists. These stems were normally made of cherry (a preferred winter type) or jasmine (a summer type) as these woods were believed to absorb the nicotine as well as flavour the taste, but ebony, maple, myrtle, wild fig, apricot, plum, rose, mastic tree, carob, balsam and cheaper painted and varnished woods joined in sections were also employed. Whereas most stems were manufactured from plants reared in special orchards, cherry stem rough-outs were imported wholesale from Persia and Central Asia, straightened, veneered, polished, and finally bored at the moment of sale. High-quality jasmine stems were produced in Ortaköy on the Bosphorus but cheaper varieties were imported from Bursa and Trabzon. Costlier stems other than cherry-wood were sheathed in silk or muslin, secured at intervals with gold or silver thread and occasionally decorated with pearls or covered in transparent pink gauze; the original intention of this was that the smoker could cool the smoke during the hot part of the day by dampening the cloth-covered stem. Fragmentary reed stems have been reported from Idfa in upper Egypt (White 2004: 17, figs 12–14), and doubtless under the right conditions of preservation more will be recovered in future investigations. The identification of the woods of these archaeological specimens will provide quantifiable evidence for the circulation of different forms of stem.

Secondly, European writers and artists of the 18th and 19th centuries refer to or illustrate long-stemmed pipes being rested on small gold, gilt, brass or enamelled trays (Turkish *tassa*), whereas the wear patterns noted above suggest that these pipes were in regular contact with the ground. The obvious conclusion is that although these trays may have been used to prevent contact of the hot bowl with floor-coverings within the homes of the wealthier-to-do, they were not such a regular sight amongst the villages. As such, these differences offer a small hint at the varying levels of affluence and display across pipe-smoking society.

The present state of research into Ottoman pipes therefore raises many interesting possibilities and future avenues of investigation. Typology is an essential building block of archaeology but it is a means to an end. The basic typological development of Ottoman pipes is established but there is still much to be learnt about regional developments before we can better understand workshop outputs and circulation patterns. The huge potential of written Ottoman sources remains untapped, and future petrographic, neutron activation and chemical residue analyses offer exciting opportunities for fingerprinting clays and testing the uses of pipes. The identification and excavation of workshops would undoubtedly reveal much evidence of the production stages. The excavation of one or more dated military installations or coffee-houses should likewise offer important independent archaeological evidence for the date and scale of pipe smoking amongst the Ottoman army and general populace. The fact that these questions can now be raised shows how far the subject has already come, and how clay pipes have moved on from being regarded either as detritus or as collector's items to sensitive indicators of Ottoman craft, trade and social status (Baram 2000).

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A NOTE ON TWO INSCRIBED CLAY TOBACCO PIPES FROM JERUSALEM AND RAMLA

Anna de VINCENZ*

El-bêt yallî mà fîh dâhni mà fîh râhmi

In a house where one is not offered to smoke, there is no compassion

Until recently tobacco smoking pipes from Israeli and Palestine sites were often published in archaeological reports as single finds. Recently, clay smoking pipes have received more academic interest and they are being analyzed in a more systematic fashion (*e.g.*, Avissar 1996: 198–201). In a breakthrough research, Baram described the social implications for tobacco and coffee consumption in Ottoman Palestine (1996, 2000). This brief note seeks to build upon this growing body of literature by describing two inscribed clay smoking pipes unearthed in Jerusalem and Ramla, respectively. Both smoking pipes were recovered in salvage excavations conducted by the Israel Antiquities Authority.¹

The first inscribed clay tobacco pipe was unearthed in excavations conducted at the Western Wall Plaza in the Old City of Jerusalem (Fig. 1). These excavations were directed by John Seligman and Amit Rem from the IAA in the late 1990. The pipe unearthed contains an inscription around the shank in Arabic. The pipe and other finds from this excavation come from unstratified fills dated from the Mamluk to the late Ottoman periods. The pipe is made of a very fine grayish ware with a slip reddish in color (10YR 3/2–5YR 3/3 dusky red to dark reddish brown). The surface is decorated with molded and carved circles and the inscription is around the shank end. The surface has been highly polished. There are two possible interpretations of this inscription. One translation reads = *The touching of the lover; the lip of the heart* (*luqat al mahbub, shufat al qulub*).² An alternative translation is *The meeting of the beloved is a remedy for the heart* (*liqah al-mahbub, shifah al-qulub*).³ The second motto is well-known in Arabic and it seems that the letters could be adjusted to the meaning, such as the *kulub* actually being *kalb*, which was adjusted for the sake of the rhyme. Based on the typology of this form of tobacco pipe, this pipe is tentatively dated to the 17th–18th centuries (Avissar 1996: Photos XV15–8).

The second inscribed clay smoking pipe was unearthed at Ramla. The town of Ramla has been inhabited without interruption from the Abbasid through the Ottoman periods. The many excavations conducted at this town have unearthed large quantities of material culture and testify to the importance of this location. Unfortunately, many of the clay smoking pipes unearthed at Ramla come from disturbed contexts since the stratigraphy from the Ottoman period was close to the modern surface where building activity had taken place in recent years. As a consequence the archaeological investigations were mainly focused on the Early Islamic layers. Among the corpus of unpublished clay tobacco pipes from Ramla there is one pipe that contains an inscription in Ottoman Turkish (Fig. 2). The pipe has been unearthed in Ramla during an IAA rescue excavation at the central

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1 A detailed treatment of the Ottoman material from these excavations is forthcoming.

2 I thank Hani Nur-el-Din and Robert Schick for this translation.

3 Lev Kapitakin proposed this reading and also the indication of the motto.

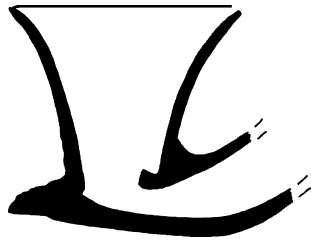


Fig. 1 Pipe from Jerusalem



Fig. 2 Pipe with inscription from Ramla

bus station directed by Hagit Torge in 1997. It was found on a floor. The pipe is made of fine gray ware, the surface is slipped reddish and highly polished. The wreath is undecorated and the rather long stem bears the inscription between two rouletted lines. Due to the difficulty of reading the motto on this pipe still remains unread. Pipes with lily-shaped bowls dated to the 19th century are absent on this excavation and thus a tentative dating to the 18th century is proposed.

These two pipes have been chosen to represent a fashion which was so widespread during the Ottoman period that it can easily be seen as a characteristic of this period. By the middle of the 17th century pipe smoking was fashionable for men and for women regardless of their age or social position. Coffeehouses were built especially for coffee drinking and pipe smoking. The inscription on the pipe suggests that these items were treated as special objects which could have been used as souvenirs or gifts for the beloved man or woman. In any case it shows the fashion of a time where artists were able to express romanticism on objects which were used for a rather earthly thing as smoking...or was the pipe smoking an expression of joy of living?

*Your fortune shall not be lost by ordering a pipe So enjoy yourself by smoking
May you enjoy yourself with this souvenir of mine and give me joy by not losing it*

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A SYNTHETIC APPROACH TO THE STUDY OF DIET, HEALTH AND DISEASE IN AN OTTOMAN PERIOD POPULATION FROM PALESTINE

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Abstract

This paper applies a synthetic approach to the study of an Ottoman population from the coastal plain of Israel utilizing bioanthropological and archaeological data as well as historical records.

Bioanthropological analysis of skeletal remains from the 16th to 19th centuries that were discovered during the excavation of a Byzantine church at Dor revealed a high prevalence of paleopathology and low life expectancy. These results corroborate historical records for Ottoman Palestine, which describe poor living conditions and rampant poverty throughout the country. Although the archaeozoological record and botanical information indicates that a broad diversity of food staples were available in the area, the skeletal remains indicate that either they were not consumed in sufficient quantities to provide an adequate and healthy diet or that the population suffered from a heavy chronic disease load that was associated with metabolic disorders.

Introduction

Students of the Ottoman period in Palestine have at their disposal two valuable sources of information - historical records and archaeological remains. The Ottoman archive of government registers and court records provides historians with a documentary resource spanning four centuries (16th through 19th) with which to examine a wide range of issues (*e.g.* Cohen 1973; Coşgel 2006; Doumani 1995; Grossman 1994; Hütteroth and Abdullfatah 1977; Kark 1990). However, even these records, as well as other written sources such as those of early travelers' are frequently incomplete and/or biased by social, political, economic and cultural factors.

In contrast, the direct examination of remains of material culture may fill in gaps not covered by the historical record especially with respect to the documentation of daily life and activities of those who were excluded from the documentary record – termed by Baram and Carroll (2000) a 'history from below'. However, the archaeology of the Ottoman period in Palestine is still in its nascence, with few assemblages from this period having been studied in depth or published. Moreover, in many instances where Ottoman material remains were saved, mixing with modern surface material is common. In addition, although the Ottoman period covers four centuries, which were associated with far reaching changes in all aspects of the economy, political and social life, in most instances no division into smaller portions of time has been made so that there is little chronological resolution for this period. Finally, as with all archaeological investigations, post-depositional destruction and/or poor preservation are further limiting factors in archaeological reconstruction.

In this paper we advocate a synthetic approach that compares and contrasts historical and archaeological records. Such a methodology should result in a more comprehensive picture of past communities. Most importantly, it enables testing between these different data sets for consistency, and allows one, if not to arrive at more reliable conclusions, then at least to identify areas of discordance.

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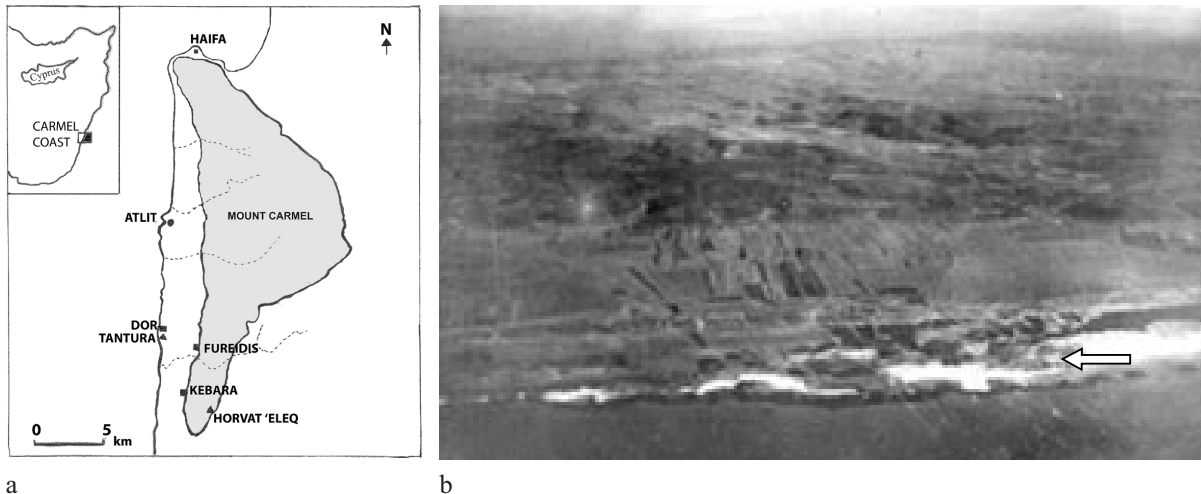


Fig. 1: a. Map showing location of Dor-Tantura on the Carmel coast, Israel.
 b. 1918 aerial photo from the sea of Dor-Tantura (arrow), in hinterland fields and Mount Carmel in distance (www.palestineremembered.com/Haifa/al-Tantura/Picture10318.html).

An excellent case study for the comparison of historical records with an archaeological data set is provided by sites in the Carmel region (Fig. 1), and especially Dor, one of the few Ottoman sites from which human skeletal remains have been recovered in well defined archaeological context. The site is located on the Carmel coastal plain, some 30 km south of the city of Haifa. Between the Middle Bronze Age and Roman periods, Dor was an important port and its rulers at various times included the Sikil (one of the Sea Peoples), Phoenicians, Assyrians, Greeks and Jews (Stern 1993, 1994). The site declined in importance after the construction of the neighbouring port of Caesarea in the Early Roman period and by the mid-3rd century AD was little more than a fishing village. At this point in time, occupation of the site shifted off the tell. From the 4th to 7th centuries it served as an important Christian center with a Church and associated structures (Dauphin and Gibson 1994). The village of Tantura was established to the south of the tell, probably after the Arab conquest in the 7th century AD when the ecclesiastical complex was abandoned (Dauphin and Gibson 1994; Stern 1994). During the 16th through mid-19th centuries the deposits overlying the Church were used for a cemetery (Dauphin 1979, 1981, 1984).

The human skeletal remains and animal bones recovered from this cemetery, enable us to assess the extent to which the anthropological data corroborate the historical records. Integration of these data with information on animal exploitation derived from faunal remains from the coeval site of Horvat 'Eleq in the surrounding Carmel region, as well as literary sources on food resources and diet in the region, provides a comprehensive picture of the economic status, nutrition and disease of populations along this portion of the Carmel coast.

Descriptions of Dor-Tantura in Historical Sources

Ashkenazi (1931) has provided a brief synthesis of the history of Dor-Tantura, based on the reports of early travellers that covers the period during which the cemetery was in use. In the memoirs of the Chevalier d'Arvieux, Tantura (or Tanturah) was described as a small fishing village with a single road leading down to the sea. This road led to the shore which served as a market place where local produce such as animals and fruits, were exchanged for rice and cloth that were brought to Tantura by Egyptian sailors in small boats.¹ The Chevalier d'Arvieux further states that the place was too small or too poor to have a mosque such that the local inhabitants prayed in the open.

Turning to the 18th century, Ashkenazi (1931) quotes Pococke who visited the Carmel coast

in 1737, to the effect that at this time Tantura was a small village. Two early 19th century visitors, Buckingham in 1816 and von Raumer in 1823 both wrote that Tantura comprised 40 or 50 houses with a population of some 500 inhabitants. Twenty years later, in May 1843, John Wilson noted that Tantura comprised only a few dilapidated houses next to a small bay, but in 1854 Guérin reported 1200 inhabitants. This sudden increase in population size at Tantura was part of a country-wide demographic increase associated with the wide-ranging economic and political reforms and increased trade with Europe following the Crimean War (Abdulfattah 2005, Ashkenazi 1931, Grossman 1994, Karl 1990, Scholch 1985). It was briefly interrupted by an outbreak of cholera in 1865–66 which decimated the population of Palestine. At this time, mortality rates attributed to cholera were high throughout the country with between 1500–2000 deaths registered in Jaffa and 1760 deaths in Nablus (Scholch 1985). Thus, at Tantura, Shumacher reported that by 1887 the population numbered only 770 people which may reflect the country-wide cholera outbreak. However, by 1897 the Tantura population had already increased to some 1200 to 1500 inhabitants (Ashkenazi 1931: 31).

Grossman (1994:143) suggested that the absence of the name ‘Dor’ in Ottoman tax records of the 16–18th Centuries may indicate that the site was only used seasonally and that a permanent settlement was only established in the late 19th Century. He attributed the introduction of the name ‘Tantura’ to the 19th century, and reported that according to tradition the name was introduced by settlers claiming origin from a village in India, with a similar name. However, Grosman’s statement is contradicted by the memoirs of d’Arvieux who notes that the name Tantura was already used in the 17th century (Ashkenazi 1931), while as early as the 16th century, the presence of a small and unimportant port at Tantura is noted in the tax registrar (Hütteroth and Abdulfattah 1977:93).

Stern (1994) notes that although the lagoon of Tantura is shallow, it is still one of the few natural harbours for small boats along the Mediterranean coast of Israel. Use of the Tantura harbour by trading vessels is attested to prior to the Ottoman period, as indicated by shipwrecks excavated in the lagoon dating to the early Islamic period - 8th–9th centuries AD. These provide indirect proof that Tantura was occupied at this time (Kahanov and Royal 2001, Barkai and Kahanov 2007). Much later, in 1806, when the explorer Ulrich Seetzen sailed from Jaffa to Acre and Tyre, his boat stopped on the way at Dor-Tantura (Ben-Arieh 1979), while in the late 1800’s sailing ships regularly stopped at Tantura (Fig. 2). Indeed, several early 20th century sources note that many of the inhabitants of Tantura were sailors and that local agricultural produce (fruit and vegetables) was transported by sailing ship to Jaffa (Ashkenazi 1931: 31–32).

The data presented by Hütteroth and Abdulfattah (1977) in their publication dealing with tax registries, indicates that Dor-Tantura and its surroundings comprised one of the most poverty stricken areas of Palestine in the late 16th Century through 19th centuries. Geikie (1887: Chapter Four) describes the village of Tantura as follows:

“The modern village is a little farther south, on the site of Dor (Josh 17:11), afterwards the Dora of the Romans, memorials of which, in the shape of pillars and sculptured capitals, slabs of marble, and hewn stones, strew the shore. A few mud huts, two or three better than the rest, make up the hamlet, which



Fig. 2: Dor-Tantura harbour photographed in 1887 (from www.eretzyisrael.org/~dherzkowitz).

1 Chevalier d’Arvieux was the French consul in Sidon between 1660 to 1664.

looks miserable enough in its environment of sand and marshy flat. One of the principal houses consisted of a single square room, of good size, plastered with mud, and roofed with branches long since varnished black by the smoke. These hung down roughly over one half of the room; the other half was hidden by a canvas ceiling. The door had no hinges, but was lifted to its place, or from it, and the windows were only square holes in the mud walls. A clay bench, joined to the wall, ran along one side of the room, serving for chairs by day and sleeping-places by night. A rough cooking table of clay and stone, from the ruins, was at one corner, with a little charcoal glowing on the top of it—chiefly, as it seemed, to roast coffee-berries and boil water in which to infuse them, when they had been duly pounded in a stone or wooden mortar.”

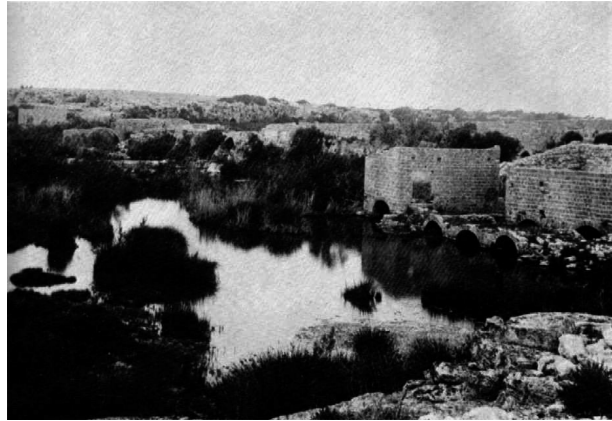


Fig. 3: Swamps in the vicinity of Kebara on the Carmel coastal plain photographed in 1925 (from www.eretzyisroel.org/~dthershkowitz).

According to other sources (Ashkenazi 1938; Dahl 1915; Hütteroth and Abdulfattah 1977), this part of the coastal plain comprised a few small villages whose occupants engaged in limited cultivation, herding and fishing. In addition, Kurdish and Turkmen nomads herded water buffalo in the nearby swamps and sheep and goats in the adjacent Carmel range. Grossman (1994) notes that during the Ottoman period, extensive swamps covered much of the coastal plain due to poor drainage (Fig. 3). Geikie (1887: Chapter Four) observed that:

“A little south of Tanturah is another perennial stream, like the rest in the district in being only a few miles long, and fed by the marshes”

While in the 1890’s George Adam Smith wrote:

“The marshes on the Zerka [today the Crocodile River located some 8 km south of Dor] are intricate, and form the refuge of Arabs who keep themselves free from the requisitions of the Turkish Government.” (Smith 1894:147)

The swamps, sand and the narrowness of the coastal plain undoubtedly limited the extent of arable land between the coast and the Mount Carmel range and determined the subsistence strategies of the inhabitants. These factors probably account for the fact that the Carmel coast was sparsely populated, settlements in this region were small and the socio-economic status of the inhabitants was low especially before the end of the 19th Century.

Subsistence and Diet

The Ottoman taxation lists offer some indication as to which animals were commonly raised and exploited. Hütteroth and Abdulfattah (1977: 82–83) list water buffalo, goats and bees, the latter two species always appearing on the tax lists together indicating that they were important sources of milk and sugar. Only adult buffalo, able to work or be milked, were taxed, while other beasts of burden, oxen, horses and camels do not seem to have been taxed at all. Mention of taxation of pastures is infrequent and it is unclear whether this applied to villagers (*fellahin*) or nomads. Shelters for flocks are also noted as being taxed as was off-shore, river and lake fishing. Writing specifically about the inhabitants of Dor, Dahl (1915) states that some were fishermen, others engaged in agriculture and animal husbandry herding sheep, goats and cattle.

In addition to literary sources, information on diet in the Ottoman period may be gleaned directly from the examination of botanical and faunal remains derived from archaeological excavations. These represent dietary residues of animals or plants either grown/raised or brought to the settlement for consumption or use.

(a) Faunal Remains

The following section describes the faunal assemblages recovered from the archaeological excavations at the Ottoman cemetery at Dor and at Horvat 'Eleq a late Ottoman village on the southern edge of Mount Carmel, (Fig. 1; Table 1a–b).

Dor: A small assemblage of animal remains deriving from Ottoman period fills from the cemetery at Dor was excavated by C. Dauphin and identified by Horwitz (unpublished data). The remains probably represent debris from Ottoman period activities coeval with the cemetery, but some mixing with the underlying Byzantine deposits cannot be totally discounted.

Domestic herd animals constituted the most common species; 31% sheep/goat and 25% cattle. Since the bones were associated with a Muslim cemetery, it was surprising to find that pig comprised a high 14% of the remains. It was not possible to assess whether they are solely associated with the underlying Byzantine deposits. Moreover, as all pig bones derive from young animals with unfused epiphyses, it was not possible to determine whether they represent domestic animals or immature wild boar that were hunted in the vicinity. Historically, wild boars inhabited the Carmel range and were sighted on the coastal plain as far south as Gedera (Mendelssohn and Yom-Tov 1999).

Remains of donkeys but not horses were common at the site (18% total), while chicken remains were also present (11%).

Based on tooth eruption and attrition (Silver 1969, Payne 1973), it was possible to establish that the majority of sheep/goat in this sample represent young animals aged 1–2 years, indicating preferential slaughter and/or consumption of young animals for meat. Likewise, most cattle are young animals aged less than 2 years, although one older animal is aged 3 years old or more. Donkeys were all young adults or adults aged ca. 4 years or older.

Site	Dor		Horvat 'Eleq	
	NISP	%	NISP	%
Sheep	2	3	2	2
Goats	2	3	1	1
Sheep/Goat	19	25	27	25
Pig	11	14		
Oxen + Cattle	19	25	47	44
Camels			8	7.5
Donkey	14	18	9	8
Horse			1	1
Equid			1	1
Dog/Cat	1	1		
Gazelle			1	1
Chicken	8	11	10	9.5
Total	76	100	107	100

Table 1a: Numbers of identified bones (NISP counts) and relative frequencies per species identified at Ottoman Dor and Horvat 'Eleq.

	Ottoman	1943*	Ottoman	1943*	1943*
	Dor	Tantura	Horvat 'Eleq	Fureidis	Kebara
	%	%	%	%	%
Sheep/Goat	55	75	39	79.5	40
Oxen + Cattle	45	25	61	20.5	60
Total NISP	42	1206	77	945	312

Table 1b: Frequencies of sheep/goat to cattle and oxen in the two Ottoman sites compared to three 20th century villages in the same region (Fig. 1).

(Frequencies for the Ottoman sites are based on the number of Identified bones while for the 1943 census they are based on the number of animals)

* taken from the 1943 British Livestock Enumeration Report

Horvat 'Eleq: The village of Horvat 'Eleq is located on the southern edge of Mount Carmel and was established in the 1840's. At the end of the 19th century, the villagers became tenants of the el-Khoury family, who owned a manor 70 km east of the village (Boas 2000). The Horvat 'Eleq Ottoman village and underlying archaeological site, was excavated by I. Hirschfeld (2000) and the fauna identified by Horwitz (2000). The Ottoman period finds are primarily agricultural implements such as axe heads, hoes, hooks, as well as items related to animal husbandry such as horseshoes – small, medium and large sizes, fetters and shears. The use of the latter is corroborated by the presence of a sheepfold. These finds testify to a primary involvement in agriculture and animal husbandry (Boas 2000).

Animal remains from Horvat 'Eleq are dominated by bones of domestic animals - cattle (44%) followed by sheep and goats (28% combined) and chicken (9.5%). Remains of donkeys (8%) and horses (1%) were also found which complement the horseshoes noted above. The width of a horse femur shaft measured 39.5 mm, which is comparable to that of modern Arab horses. Bones of a third beast of burden, the camel (7.5%), were as common as those of donkeys. The only wild taxon represented was gazelle.

An additional bone sample from this site comprising mixed Ottoman and recent bones, yielded a similar range of species to the Ottoman assemblage with the addition of duck and fallow deer. The latter species undoubtedly derives from the Ottoman levels since it became extinct at the end of the 19th century (Mendelsohn and Yom-Tov 1999).

Due to poor preservation, few bones and teeth in this sample could be aged. Despite this limitation, the majority of sheep/goat remains represent animals that were slaughtered young. A few animals aged older than 2 years were also found. Likewise most cattle bones belong to animals slaughtered by 2 years of age, with few remains from older animals. The presence of a fused cattle toe bone (phalanx) with extensive osteo-arthritis does however indicate the presence of an adult animal, since such exostoses take time to form. They are often found in animals used in labour such as draught.

When skeletal elements from the Horvat 'Eleq assemblage were pooled into three body part categories - skull, limb and trunk, it was evident that for both sheep/goat and cattle all body parts are almost equally represented. This would indicate on-site slaughter rather than the introduction of selected skeletal elements as would be expected if joints of meat were bought at a market. The presence of butchery marks on 9% of the remains, all associated with carcass dismemberment activities, would corroborate this claim.

Observations

Although the sample sizes are small, a clear similarity between the two Ottoman assemblages is evident. Firstly, domestic herd animals – sheep, goat and cattle were the most common taxa exploited with little evidence for hunting (gazelle, fallow deer and possibly wild boar). No remains of buffalo were identified despite the fact that Hütteroth and Abdulfattah (1977: 48) note that they were raised by late 16th century Kurdish and Turkmen inhabitants on the Carmel coast.

Secondly, in both assemblages, for sheep/goat as well as cattle, remains of immature animals predominated indicating the slaughter of surplus animals, probably excess males. Due to the presence of all body parts at the sites, their even distribution and presence of cut marks, it seems most likely that these remains originated from on-site slaughter of local animals rather than joints of meat bought at nearby markets. Grossman (1994: 50) points out that Ottoman towns like Acre and Caesarea were supplied by produce from rural areas including cereals, fruit, vegetables and animal foods - such that it is more likely that small sites such as Dor-Tantura or Horvat 'Eleq supplied fresh produce rather than purchased it. Moreover, the presence of bones of adult sheep/goat and cattle found at both sites, albeit few in number, indicate that some adult animals were kept in these villages, undoubtedly for their secondary products (milk, wool, hair) as well as breeding. Adult cattle were

probably used as draught animals in addition to milking.

The high proportion of remains of beasts of burden – donkeys, horses and camels – emphasizes the important role played by these animals in agriculture, trade and communication in these communities. That they may have played a role in the diet is attested to by butchery marks on some of their bones, although these may also have resulted from slaughtering or flaying an animal that died naturally.

Remains of chicken are found in both sites. Since the assemblages were hand collected and not sieved most of their small bones were probably not retrieved. This may also account for the absence of fish bones in the Dor sample despite its proximity to the sea and the historical evidence for fishing.

In the 19th century, in contrast to Dor-Tantura, the inhabitants of the neighbouring village Fureidis are identified as herders and/or woodsmen (Grossman 1994: 143). This probably reflects the proximity of Fureidis to the pastures and forests of the Carmel and its wadis since, as suggested by Hütteroth and Abdulfattah (1977: 48), the coastal plain would have offered limited seasonal grazing for sheep, goat and cattle. Consequently, the higher proportion of cattle found in the Horvat 'Eleq assemblage, a village located on the Carmel, compared to coastal Dor (44% compared to 25%), may be due to their different geographic locations and access to pasture. It is interesting to note that by 1943 (Table 1b) no marked differences are found in cattle to sheep/goat proportions between Tantura and Fureidis, while Kebara, which is located on the foothills of the Carmel, contained cattle frequencies as high as those found at Horvat 'Eleq.

These data indicate that a wide range of animals were raised and/or exploited in the Carmel coastal region. However, it should be borne in mind that the traditional Near Eastern subsistence economy was based on multiple resources with animal husbandry supplemented by cultivation of cereals, legumes, fruit and vegetables. Thus animal protein provided only part of the diet. Based on ethnographic accounts for Ottoman and British Mandate Palestine (*e.g.* Ashkenazi 1938), meat was a luxury and rarely eaten. From the archaeological record it is not possible to determine the relative proportions of animal protein to plants in the diet. However, it is clear from this study that meat of sheep, goat, cattle and several other minor domestic species (pig?, chicken, equids and camel) as well as wild taxa (gazelle, deer, wild boar?), was consumed. Given the presence of chicken, eggs were doubtless included in the diet as well. However, based on the age profiles of sheep/goat and cattle, there seems to be little evidence for intensive exploitation of milk products. Either this was small-scale, or else an item traded from other communities in the region. Similarly, although absent in the faunal assemblage from Dor, it is highly likely that fish were consumed.

(b) Botanical Information

Unfortunately, no archaeobotanical data is available for Ottoman sites in the Carmel. However, general information on crops grown in this region of Palestine and their relative importance may be gleaned from the 16th century registers and other records.

Hütteroth and Abdulfattah (1977: Ch IV) note that in the late 16th century, the main agricultural product in Palestine to be taxed was wheat followed by barley. Other taxable cultivars were: summer crops that included vegetables especially lentils, beans and sorghum. Other taxed cultivars were olives and olive oil, fruit trees (carob, vine, almond), sesame, cotton, rice and indigo. Cohen (1973: 262) notes that from 1697 tobacco was taxed but this was annulled by the second half of the 18th century since cotton became the major crop. In the 16th century, most of the local taxes levied in the rural areas of Palestine were paid in kind *i.e.* local produce but by the 18th century this was rare (Cohen 1973: 267–268).

A short description of the natural environs of Dor by Geikie (1887: Chapter Four) emphasizes the scarcity of cultivated fields in this region - "Old quarries, tombs, ruins, and bog, are, however, more

frequent than cultivated fields or gardens, reaching up to the ruins of Tanturah". He does however offer a description of the crops grown to the north of Dor, near the village of Sarafend: orchards including dates and figs, olives, sesame, corn, millet, tobacco, as well as vegetables were cultivated. He further observes that the Caesarea area, to the south of Dor, is noted for its melons.

Health Status

Archaeological excavations carried out at the Byzantine church at Dor uncovered a number of skeletal remains buried in and around the church. They included individuals from the Byzantine and Ottoman periods, the latter buried in cist tombs, dated to the 16th to 19th Centuries (Dauphin 1981, 1984, Dauphin and Gibson 1994).² Most of the tombs contained a single interment but occasionally two individuals were buried in the same tomb. Some of the tombs contained coins, as well as personal ornaments such as bracelets and beads that were used to date them. Similar burial patterns and grave goods were noted by Eakins (1993) at the larger Bedouin cemetery from Tel el-Hesi, northern Negev, dated to the 14th–18th Centuries. At Dor, the excavators identified seven distinct phases of burials, but because of the small sample size, these were pooled for analysis.

Age Distribution

Individuals were aged using dental development shown by radiographs for infants and children (Morrees *et al.* 1963), and dental attrition in adults as detailed in Miles (2001). Age estimates, using these procedures is accurate to within a few months in the case of children, to within 2–3 years in adolescents, and to within 10 years in adults because of individual differences in physiological aging rates (Krogman 1962).

An initial analysis was carried out dividing the sample into the two phases, in order to examine the extent of differences in the age or sex distribution of individuals over time (Table 2a). One group represented the earlier phase dating to the 16th to 18th centuries, and the other a later phase attributed to the late 18th through 19th centuries. Even in the combined sample, only 157 individuals were sufficiently preserved for age estimations. This obviously represents only a small proportion of the individuals recorded as living at Tantara and infants especially seem to be under-represented (Fig. 4). As can be seen from Table 2a, it seems that individuals of all age groups and both sexes were buried at the site, but that there were relatively more infants in the later phase and fewer children and juveniles. In both phases more females than males died as young adults and less than 20%

	Sex	0-1	2-5	7-10	11-17	18-24	25-39	40+	?	Total
Early Phase	F	–	–	2	4	2	6	7	–	21
	M	–	–	2	5	–	5	12	–	24
	U	11	7	5	1	1	2	–	10	37
		11	7	9	10	3	15	19	10	82
Late Phase	F	–	–	–	3	2	8	6	–	19
	M	–	–	1	2	–	5	9	–	17
	U	19	6	5	1	–	–	–	6	37
		19	6	6	6	2	13	15	6	75
Dor Total										
No.		30	13	15	16	5	28	34	16	157
%		19	8	10	10	3	18	22	10	100

Table 2a: Age and sex distribution in the Dor population by phase
(F = female; M = Male; U = Sex Unknown; ? = Adults, age unknown)

2 Originally the burials from this cemetery were erroneously dated to the 8th-11th centuries C.E. (Dauphin 1979, 1981).

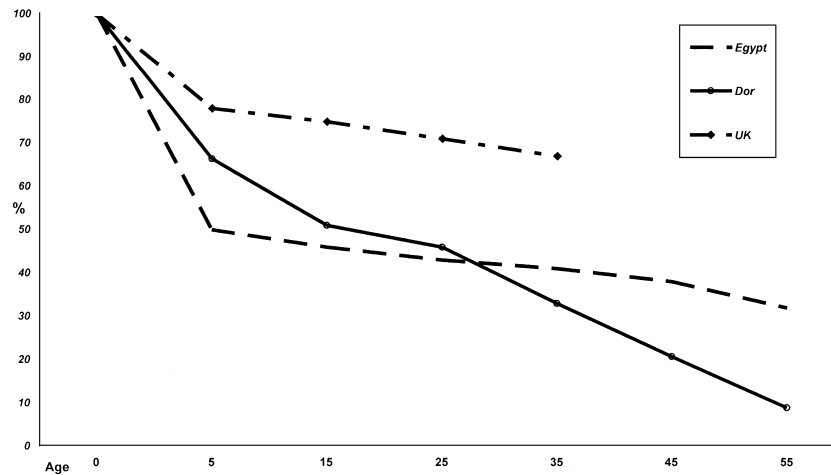


Fig. 4: Survivorship curve of individuals from Dor and those calculated from WHO census of deaths in 1950 for Egypt and the United Kingdom.

Note that Dor has a much lower frequency of older adults than that provided from WHO statistics for England and Egypt. This may be due to a consistent bias for underestimating the age at death from skeletal remains, but should be consistent within the archaeological samples. (EXCEL FILE)

survived beyond 40 years. Life expectancy at Dor was therefore low.

A similar low life expectancy to that found at Dor, was noted by Eakins (1993: 30) at the Bedouin cemetery of Tel el-Hesi dated to the 14th–18th Centuries. Here, more than 500 individuals were recovered with many more infants found than at Dor (Table 2b). These differences may reflect variation in burial practices for infants between the sites, but may also demonstrate the limited reliability of small samples compared to larger ones, which are more representative of a population.

Bocquet-Appel and Masset (1982) have shown that the age distribution in a cemetery, when several generations are represented, is influenced not only by sampling problems but also by expansion or contraction of the population. If the cemetery at Dor was in continuous use for some 300 years, then we are dealing with at least 15 generations so that the number of individuals excavated represents only a limited sample of the entire population, with some generations either not represented at all, or represented very unevenly. The increased number of adults combined with an augmented number of infant deaths in the later phase (Table 2a), may then simply be an artifact of sampling. Alternately, it may reflect a period of population increase, or permanent rather than intermittent settlement at Dor, since, as discussed above, the late 19th Century heralded a period of population growth for the entire region. As pointed out by Bocquet-Appel and Masset (1982), when a population is expanding, there will be relatively more infants born and so, even if the risk of infant mortality remains the same, there will be more infants dying. If the population is contracting there will be fewer infants born while the older individuals continue to die. This may account for the relative paucity of infant deaths

Age in years	0-10		10-17		18+	
	N	%	N	%	N	%
Dor	58	37	16	10	83	53
Tel el-Hesi	285	63	14	3	154	34

Table 2b: Age distribution at Dor and Tel el-Hesi

Note higher frequency of infants and children at Tel el-Hesi aged 0–10 years and marked drop in juveniles aged 10–17 years. This pattern more closely approximates that expected for a stable population with poor life expectancy (see Fig. 4) than that found at Dor as discussed in the text.

found in the earlier phase at Dor, although other factors such as a more casual attitude to infant burial, poor preservation of infant bones, or low fecundity and so fewer births in the earlier phase may also have played a role. Whatever the explanation for the differences observed, the small number of adults aged more than 40 years, demonstrates that throughout the period that the cemetery was in use few adults survived to old age.

Morphometry

Adult body size and shape reflects the balance achieved between genes and environment during infancy and childhood. Adult stature and cortical thickness of bones are especially affected by disease and malnutrition, while craniofacial characteristics are more representative of the underlying genotype.

(a) Stature

Stature estimates for Dor were made based on measurements of femur and tibia length using both the formula of Trotter and Gleser (1958) for Caucasians and that developed by Feldesman and co-workers for different populations (Feldesman 1992). Since many skeletons were poorly preserved, the number of bones measured in any one analysis varies. In adults from Dor, male stature calculated according to the formula of Trotter and Gleser was 169 ± 4 cm and female stature averaged 155.9 ± 3.6 cm. The formula of Feldesman (1992) gave a similar range - 167 ± 9.7 cm in males and 155 ± 8 cm in females. These values are similar to those reported for a Hellenistic population (Hershkovitz 1988), and average some 5 cm taller than early 19th–20th century Bedouin from Lahav (Goldstein *et al.* 1976) or those from Tel el-Hesi where stature was measured *in situ* for a small number of complete skeletons and ranged from 148–166 cm in males to 136–159 cm in females (Eakins 1993:38).

In order to examine the severity and duration of illness leading to death in infancy or childhood, we compared the diaphyseal length of tibias and femurs from our sample with that derived from radiographs of a modern American sample (Maresh 1970) of similar dental age. We assumed that prolonged ill health before death would be associated with progressive growth stunting. We found that children from Dor were consistently shorter than the American group of the same dental age. Stature estimates for twelve-year old children from Dor, calculated after Feldesman (1992), was 120 cm. This supports the hypothesis that those dying as children had suffered growth stunting from chronic illness throughout their lives.

(b) Craniometry

The Dor population was characterized by crania with moderate to large superciliary eminences, well developed mastoid processes, and prominent nuchal and supramastoid crests in males (Table 3, Fig. 6). Mandibles were robust with square chins with everted gonias and obtuse mandibular angles (Table 4, Fig. 7). The smaller female skulls show weaker

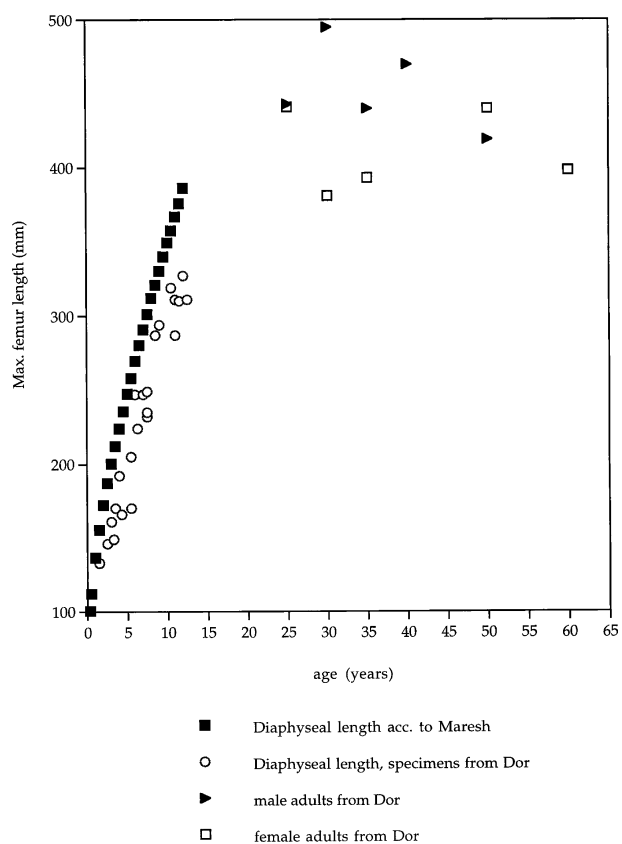


Fig. 5: Femur length in children from Dor aged according to dental development, compared with a North American sample of known chronological age.

development of eminences, crests and mastoid processes and smaller mandibles with pointed or rounded chins. Significant differences ($P>0.5$), were found between the sexes in most of the measurements defining size, but shape ratios were similar (Table 3 and 4). Both sexes had mesocephalic skulls, with a cranial index of 77 in males and 76 in females. They had relatively broad and long faces that resemble the earlier Hellenistic-Byzantine population from Ein Gedi (Arensburg *et al.* 1980) (Table 5), and a combined Byzantine sample from different sites in Israel described by Hershkovitz (1988). All these populations differ from contemporaneous Bedouin samples from Tel el-Hesi (Eakins 1993) and recent Negev Bedouin (Arensburg 1973, 1988) who

Measurement	Males			Females		
	no.	x	S.D.	no.	x.	S.D.
* Max. cranial length (g-op)	20	182.5	7.4	14	175.9	7.4
* Max. cranial breadth (eu-eu)	19	140.2	5.5	12	133.3	4.9
* Basion-bregma height	19	136.6	5.8	12	128.3	4.0
* Basion-nasion length	19	104.2	4.8	12	98.6	4.0
* Porion-bregma height	19	118.2	4.9	14	111.5	2.2
* Biasterion width	19	109.6	4.2	14	104.9	2.7
* Min. frontal width (ft-ft)	19	97.6	4.1	14	92.1	3.3
Foramen magnum length (ba-o)	19	35.7	3.1	12	34.7	2.3
Foramen magnum width	19	29.2	2.4	11	28.1	2.4
* Frontal chord (na-b)	20	112.7	5.5	14	105.7	4.0
Parietal chord (b-1)	21	112.4	7.2	14	111.0	5.8
* Occipital chord (1-o)	19	97.0	6.5	12	90.3	6.9
* Frontal arc (na-b)	19	128.5	6.1	14	120.4	6.5
Parietal arc (b-1)	20	127.6	7.6	14	124.8	6.6
Occipital arc (1-o)	18	117.1	8.3	12	111.1	8.5
* Sagittal arc (na-o)	18	384.4	43.1	12	353.6	11.6
* Horizontal circumference	18	514.9	11.5	13	493.6	15.6
* Transverse arc (po-po)	18	315.8	13.1	14	297.5	7.9
Basion-prosthion length	16	97.5	6.4	8	95.1	6.1
* Biorbital breadth (ec-ec)	18	98.5	4.4	11	94.5	3.6
* Bizygomaxillae (zm-zm)	18	95.3	3.0	13	90.2	3.5
Interorbital breadth (d-d)	19	22.5	2.7	12	21.8	2.5
* Nasion-prosthion height	18	69.1	7.9	9	62.4	5.2
* Nasion-gnathion height	15	119.7	7.1	8	112.5	5.4
* Right Orbital breadth (mf-ec)	19	40.1	3.3	12	37.9	2.5
Left orbital breadth (mf-ec)	20	39.4	2.4	12	37.8	2.4
* Right orbital height	20	34.0	2.3	12	31.6	2.6
* Left orbital height	20	34.2	2.4	12	31.8	3.3
Nasal breadth (al-al)	20	24.0	2.3	13	24.5	2.2
* Nasal height (n-ns)	22	53.1	4.0	13	50.2	3.1
* Palate breadth (enm-enm)	17	36.1	2.1	7	33.7	2.6
* Palate length (ol-sta)	12	47.4	4.2	6	43.2	3.1
Palate depth M ¹ -M ²	15	13.2	2.1	6	12.2	2.7
Right Pm ¹ -M ³ length	9	41.2	1.9	3	39.0	2.0
Left Pm ¹ -M ³ length	14	40.7	2.0	7	39.1	1.8
* Mastoid length	22	28.4	3.6	14	24.4	3.0
* Mastoid width	22	24.1	3.4	14	22.2	2.5
* Bizygion (zy-zy)	15	131.4	5.5	10	119.7	3.4

Table 3: Dimensions of skulls from Dor

* Denotes significant difference between the sexes

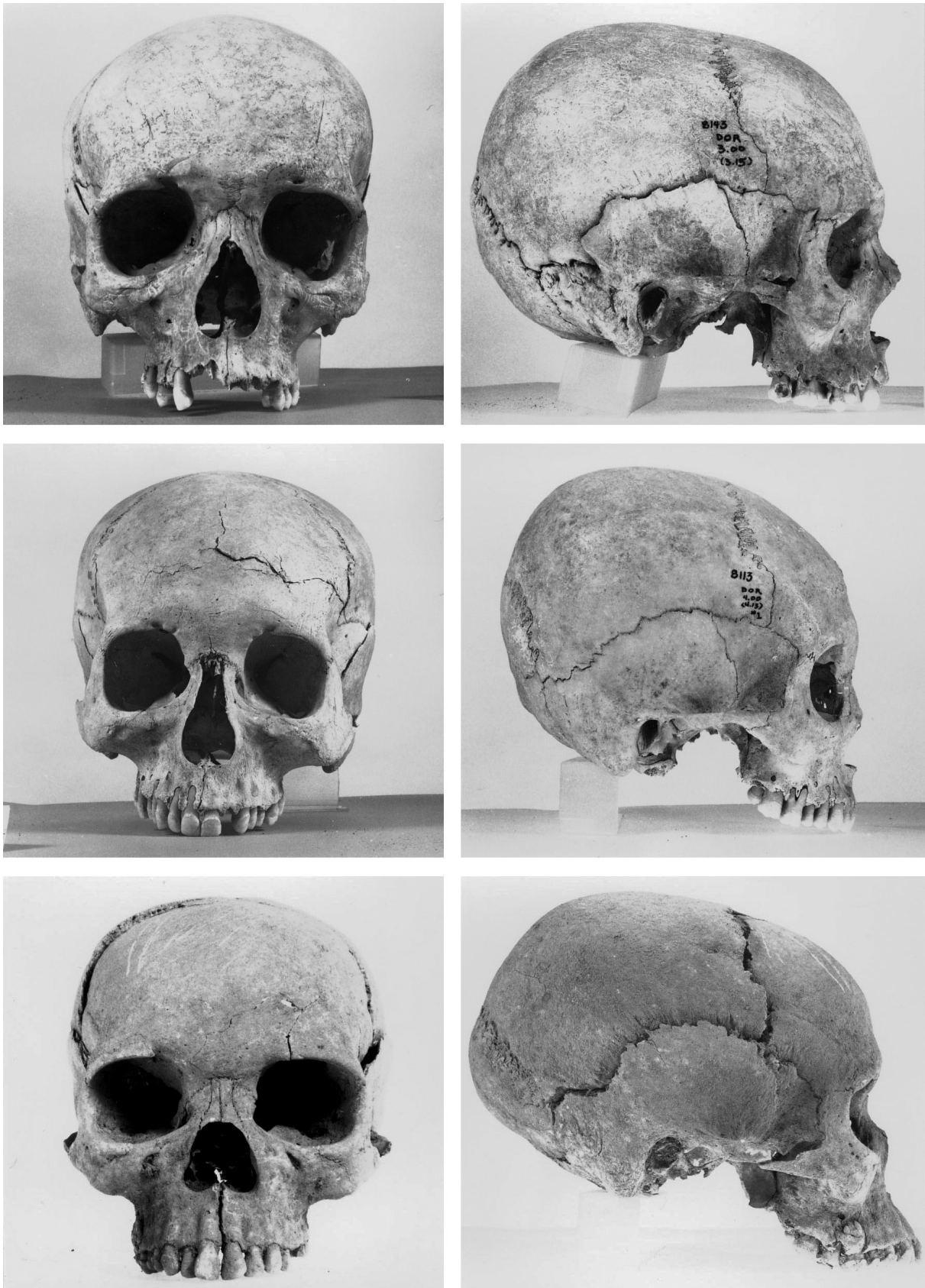


Fig. 6: Frontal and lateral views of adult skulls from Dor. Top two males, bottom female.

have smaller, narrower skulls and shorter faces.

Cephalometry

Brown and Smith (1988) carried out a cephalometric analysis of skulls of children and adults from Dor compared to Bedouin from the site of Tel Halif (Lahav) in the Northern Negev. The results showed that skulls of both these populations were smaller than those of a modern European sample. It was suggested that this might reflect growth stunting because of poor nutrition and/or chronic disease in childhood (Brown and Smith 1988). A later cephalometric study carried out on a sample from the Hellenistic period in Israel, that exhibited less nutritional stress than the Dor population, again emphasized the relatively small size of the skulls from Dor (Brin *et al.* 1992). The Hellenistic sample was closer in size to a modern European sample than Dor, despite their greater antiquity (Table 6). Of course genetic factors affecting shape as well as size may have played a role in determining the ranking shown here. However, Brown and Smith (1988) reported that the percentage difference in cranial measurements between Dor and a baseline European sample used for comparison, was 6.5% in males and 11.8% in females, that is almost the same percentage reduction as found for stature. These findings provide additional evidence of growth stunting in the Dor population and suggest that females were especially affected.

Growth of the cranial, facial and mandibular elements of the head occurs at different ages, so that the infant and adult profiles differ considerably. Growth of the neurocranium is completed at a relatively early age, while that of the mandible continues, at least in males, into the third decade of life. Accordingly, cephalometric analysis of 30 skulls and mandibles from Dor, of individuals aged between 2–14 years, was carried out in order to examine if these children had fallen behind the normal growth pattern for their age. Values were smaller than those of European children of the same dental age but fell within the expected values derived from the Dor adults (Brown and

Measurement	Males			Females		
	no.	x	S.D.	no.	x	S.D.
* Maximum length	18	107.5	5.7	13	100.8	5.0
* Body length	22	77.9	4.8	13	70.2	4.9
* Bicondylar breadth	20	118.3	5.0	10	107.5	3.9
* Bicondylar breadth	20	97.9	4.8	12	90.9	2.4
* Bigonial breadth	21	97.7	8.2	11	85.8	5.5
* Bimental breadth	22	45.2	2.3	13	41.3	2.5
* Ramus width	23	32.3	3.2	14	29.9	2.1
Ramus height	21	61.1	4.8	13	49.2	3.0
Symphyseal height	18	32.3	3.4	11	30.6	2.1
* Ht. at mental foramen	19	29.7	5.0	12	29.3	3.2
* Ht. at Pm2-M1	19	30.4	2.6	11	27.7	2.7
* Ht. at M1-M2	19	27.8	2.5	10	27.8	2.5
* Ht. at M2-M1	20	25.8	2.0	10	22.2	2.4
Width at mental foramen	22	11.3	1.9	14	10.3	1.3
Width at M1-M2	19	13.8	1.5	11	12.9	1.9
* Mandibular angle	22	124.1	5.0	13	132.9	4.0
* Symphyseal width	22	15.2	4.1	13	12.2	1.8
C-C width	9	24.4	3.4	5	27.0	2.9
M ₁ -M ₁ width	12	46.6	3.1	7	44.3	3.2
I-M ₁ length	8	36.0	2.7	6	34.7	3.2
* I-M ₃ length	9	54.4	3.4	7	49.1	5.2

Table 4: Dimensions of mandibles from Dor

* Denotes significant difference between sexes

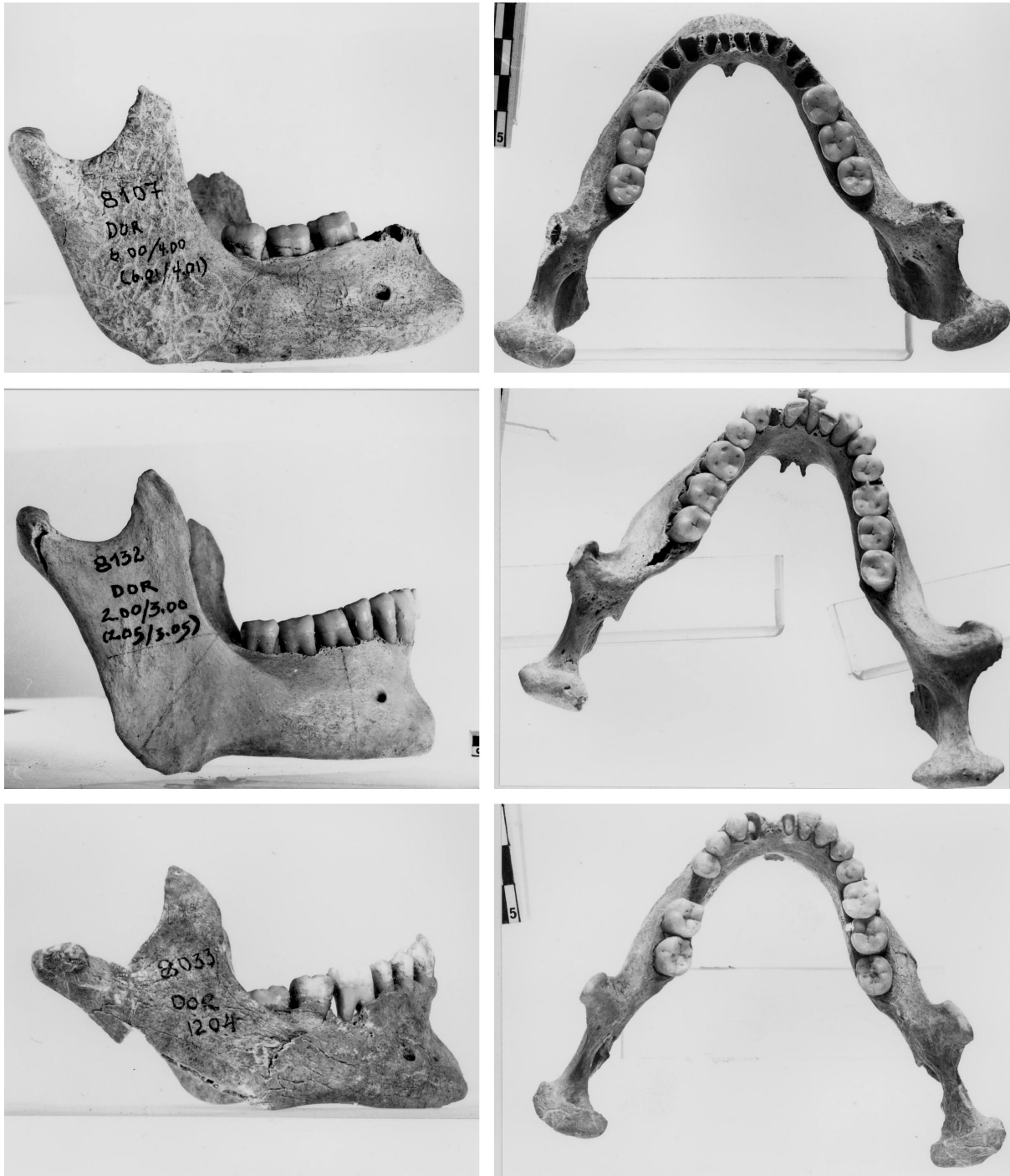


Fig. 7: Lateral and occlusal views of adult mandibles from Dor. Top two males, bottom female.

Smith 1988).

Discrete Traits

The frequency of discrete traits of the skull and mandible is listed in Table 7. Previous reports have emphasized the high frequency of wormian bones in populations from Israel and the West Bank; 60% at Bronze Age Jericho (Hughes 1965), 60% of the Hellenistic-Byzantine population from Ein Gedi (Goldstein *et al.* 1980), and 29% in the lambdoid suture in Bedouin from the Negev (Arensburg *et al.* 1977). They also show a relatively high frequency of patent metopic sutures, between 11%

Variable	Dor		Tel Halif		Hellenistic-Byzantine	
	no.	mean	no.	mean	no.	mean
Maximum length	20	182.0	61	184.2	99	181.4
Maximum breadth	19	142.0	61	134.4	95	142.9
Basion-bregma	19	136.0	44	129.6	50	131.3
Porion-bregma	19	118.0	57	111.6	61	113.2
Biasterion	19	109.0	54	106.5	83	110.2
Minimum frontal	19	77.0	61	94.3	79	96.4
Bizygomatic	15	131.4	37	127.7	22	131.5
Nasion-posthion	18	69.1	51	66.3	32.	67.3
Left orbital breadth	20	39.4	50	39.0	31	39.4
Left orbital height	20	34.4	51	32.4	33	33.7
Nasal breadth	20	24.0	54	25.1	36	24.0
Mandibular ramus breadth	23	32.3	29	33.1	29	33.1
Mandibular symphysis height	18	32.3	30	30.1	30	28.7

Table 5: Cranial measurements and indices of Dor compared to Tel Halif Bedouin and Hellenistic-Byzantine Jews (Ein Gedi and other sites)

Variable	Values	Ein-Gedi			Dor			Danes (N=120)	
		No.	Mean	S.D.	No.	Mean	S.D.	Mean	S.D.
n-s	(mm)	15	69.2	3.8	41	*65.6	3.7	71.2	2.9
s-ba	(mm)	9	44.4	4.3	41	*41.8	3.7	46.5	2.8
n-ba	(mm)	10	104.9	6.5	43	**98.6	5.8	106.7	4.2
n-s-ba	(deg)	9	132.8	4.5	41	134.6	5.5	129.2	5.0
s-n-sp	(deg)	6	90.1	4.2	35	*86.0	4.5	88.2	3.9
s-n-ss	(deg)	11	84.6	3.7	37	82.3	4.4	82.2	3.5
sp-pm	(mm)	6	56.2	4.0	35	**49.8	3.6	–	–
n-sp	(mm)	12	53.2	4.3	36	**50.2	3.5	–	–
NL/NSL	(deg)	9	9.3	5.6	40	10.1	3.6	–	–

Table 6: Cephalometric parameters from Dor (Ottoman) and Ein Gedi (Hellenistic-Byzantine) (males and females), and Modern Danes (only males)

<i>Cranial Base</i>		<i>Profile</i>	
n-s	Anterior cranial base length	s-n-sp	Prognathism at spinal point
s-ba	Posterior medial cranial base length	s-n-ss	Maxillary basal prognathism
n-s-ba	Medial cranial base angle		
n-ba	Total cranial base length		

Upper Face

sp-pm	Maxillary length		
n-sp	Anterior upper face height	mm = millimetres	
NL/NSL	Nasal line inclination	deg = degree	

* Dor significantly different from Ein Gedi $p \geq 0.01$

** Dor significantly different from Ein Gedi $p \geq 0.05$

and 8% at all sites. The Dor sample also has a high frequency of wormian bones in the sutures, especially in the lambdoid suture where large inca bones and/or multiple wormian bones were found in 81% of those examined (Fig. 8). However, in our sample no patent metopic bones were found in adults, although they were present in 11 out of 22 juveniles aged between 5 and 19 years (Fig. 9). The genetic and or functional basis for delayed metopic suture closure is still unclear. Normally it fuses by 3–5 years of age. Since the condition is not known to be associated with any known increased risk of death, its presence in juveniles from Dor may reflect delayed fusion of this suture in this population.

Trait	no. of individuals	% with trait
Bregmatic bone	71	3
Epipteric bone	71	11
Ossicle at asterion	72	26
Ossicle at lambda	72	22
Wormian bone in lamboid suture	73	81
Wormian bones at other sites	72	47
Highest nuchal line	74	3
Palatine torus	72	0
Maxillary torus	72	1
Auditory torus	73	1
Parietal foramen	75	71
Parietal notch bone	73	16
Foramen of Huschke	74	34
Mastoid foramen	72	81
Accessory infraorbital foramen	72	35
Interparietal groove	75	24
Pterion H	70	99
Pterion I	70	1
Posterior condylar canal patent	70	70
Condylar facet double	68	3
Precondylar tubercle	64	3
Anterior condylar canal double	67	21
Foramen ovale incomplete	70	9
Zygomatico-facial foramen	71	80
Supra-orbital foramen	72	19
Supra-orbital notch	72	79
Frontal notch or foramen	70	37
Mandibular torus	77	1
Mental foramen at Pm ₂	42	74
Mental foramen at Pm ₂ -M ₁	42	26
Multiple mental foramina	77	7

Table 7: Frequency distribution of discrete traits in skull and mandibles from Dor

Pathology

The pathological lesions identified at Dor fall into two categories. The first are developmental defects that result from acute infection or malnutrition during growth and development. The second category includes signs of infectious diseases, trauma, tumors, degenerative diseases and nutritional disorders identified in the bones. They provide an indication of the type and severity of environmental stress experienced by the inhabitants of Dor during their lifetime.

(a) Developmental Defects

The primary (deciduous) teeth start mineralizing at the age of three months *in utero*, and complete crown development at the age of two years. They start erupting between 6–12 months and are shed between 6–12 years. Children's primary teeth then provide information on health and nutrition *in utero* and in infancy. Mineralization of the permanent teeth starts at birth and continues until 12–15 years, when the third molar crown is formed. Even in old adults, as long as the teeth are retained, the presence and the location of hypoplastic defects that reflect areas of poorly mineralized enamel can be identified. These defects result from lowered serum calcium values at the time the enamel



Fig. 8: posterior view of skull from Dor showing two large wormian bones in the lamboid suture.



Fig. 9: Frontal, lateral and superior views of adolescent skull from Dor showing patent metopic suture.

was formed and so provide a record of the onset, severity and duration of stress in childhood (Nikiforuk and Fraser 1981). At Dor, enamel hypoplasia was present even in the primary teeth developing *in utero*. Hypoplastic defects were present in 17–26% of primary incisors, and in the later developing canines and second molars the incidence was 12–20% (Table 8). Such findings are uncommon in the offspring of healthy mothers and indicate either chronic ill health and/or acute infection of a high percentage of pregnant women. The high prevalence of enamel hypoplasia in the permanent teeth of older individuals shows that poor health characterized all infants and children independent of age at death. In permanent teeth, enamel hypoplasia was present in 90% of all lower canines and 80% of upper canines. The extremely high prevalence of enamel hypoplasia at Dor is almost double that recorded by Smith and Horwitz (1998) for the population from Hellenistic Ein Gedi, used in the cephalometric study by Brin *et al.* (1992), reinforcing the impression that growth stunting occurred in the Dor children.

The frequency of growth arrest lines in the long bones supports the dental evidence indicating chronic ill health throughout infancy and childhood. The location of these defects reflects the developmental stage at which the growth defect occurred. They appear as white lines representing

hypermineralization on radiographs (x-rays) and may disappear over time through remodeling of bone. Radiographs of the tibias of 44 sub-adults and 23 adults showed one or more growth arrest lines in all sub-adults, with an average of 3 growth arrest lines in the entire sample. Those dying in the 6–11 year age group, had twice as many growth arrest lines as those dying in the 0–5 year group, indicating that individuals who survived earlier episodes of growth arrest, succumbed in later periods after suffering repeated episodes of ill health. Adults had a significantly lower frequency of growth arrest lines - half that recorded in sub-adults - but this may be due to bone remodeling leading to replacement of the areas of growth arrest with new, normal bone. Certainly the findings for dental hypoplasia, where no tissue repair or replacement occurs, do not indicate that those surviving to adulthood enjoyed better health as children, than those dying earlier in life. This presumably contributed to some growth stunting reflected in adults both in stature and head size.

(b) Congenital Defects

One infant was hydrocephalic, with an enlarged cranium and large patent fontanelles, and had probably died from the effects of this condition (Fig. 10a). Another child had craniosynostosis, a condition resulting from premature fusion of the sagittal suture (Fig. 10b), which results in an elongated cranium. It is not in itself associated with other developmental anomalies or increased risk of death. No other congenital defects of the teeth or bones were identified in the sample.

(c) Infectious Diseases

Osteomyelitis

The skeleton of an eight year old child showed massive irregular bone formation around a broken ulna, while radiographs showed that most of the other bones in the skeleton showed patchy areas of bone resorption and irregular new bone (Fig. 11). This picture is typical of that seen following a staphylococcal infection producing osteomyelitis. The distribution of the irregular bone formation and resorption in the skeleton indicates that the infection lasted for some eight months before death. During most of this time, the child must have been bedridden and carefully nursed to survive as long as he did (a fuller description appears in Lax *et al.* 1983).

Malaria, thalassemia and other conditions affecting red blood cell formation

Cribra orbitalia that results from irregular woven bone formation in the roof of the orbit was present in over 40% of adults and 84% of children at Dor while parietal pitting, attributed to the same cause, was observed in similar frequencies. The two were not invariably present together (Fig. 12a, b). Males and females were affected equally and radiographs of the skulls showed thickening of the internal spongy layer (diploe) of the frontal and parietal bones in many children and in eight adults. These changes in the skull are considered to reflect anemia resulting from various causes. These include chronic bleeding from intestinal infections, iron deficient diet, infections such as malaria, or genetic abnormalities such as sickle cell anemia and thalassemia (Nathan and Haas 1966, Stuart-Macadam and Kent 1992). Like growth arrest lines, but unlike enamel hypoplasia, the condition is reversible since, with improved health, new bone may replace the defective bone. Mittler and

Permanent Teeth	Maxilla		Mandible	
	N teeth	%	N teeth	%
I1	55	78	36	61
I2	52	72	50	64
C	49	80	50	90
PM1	56	93	54	57
PM2	52	88	50	68
M1	62	87	67	67
M2	50	94	62	79
M3	29	91	37	81
Deciduous Teeth				
A	18	18	–	–
B	20	26	19	17
C	24	14	21	12
D	32	25	10	24
E	35	20	–	–

Table 8: Frequency of hypoplasia in permanent and deciduous teeth from Dor
- teeth not examined

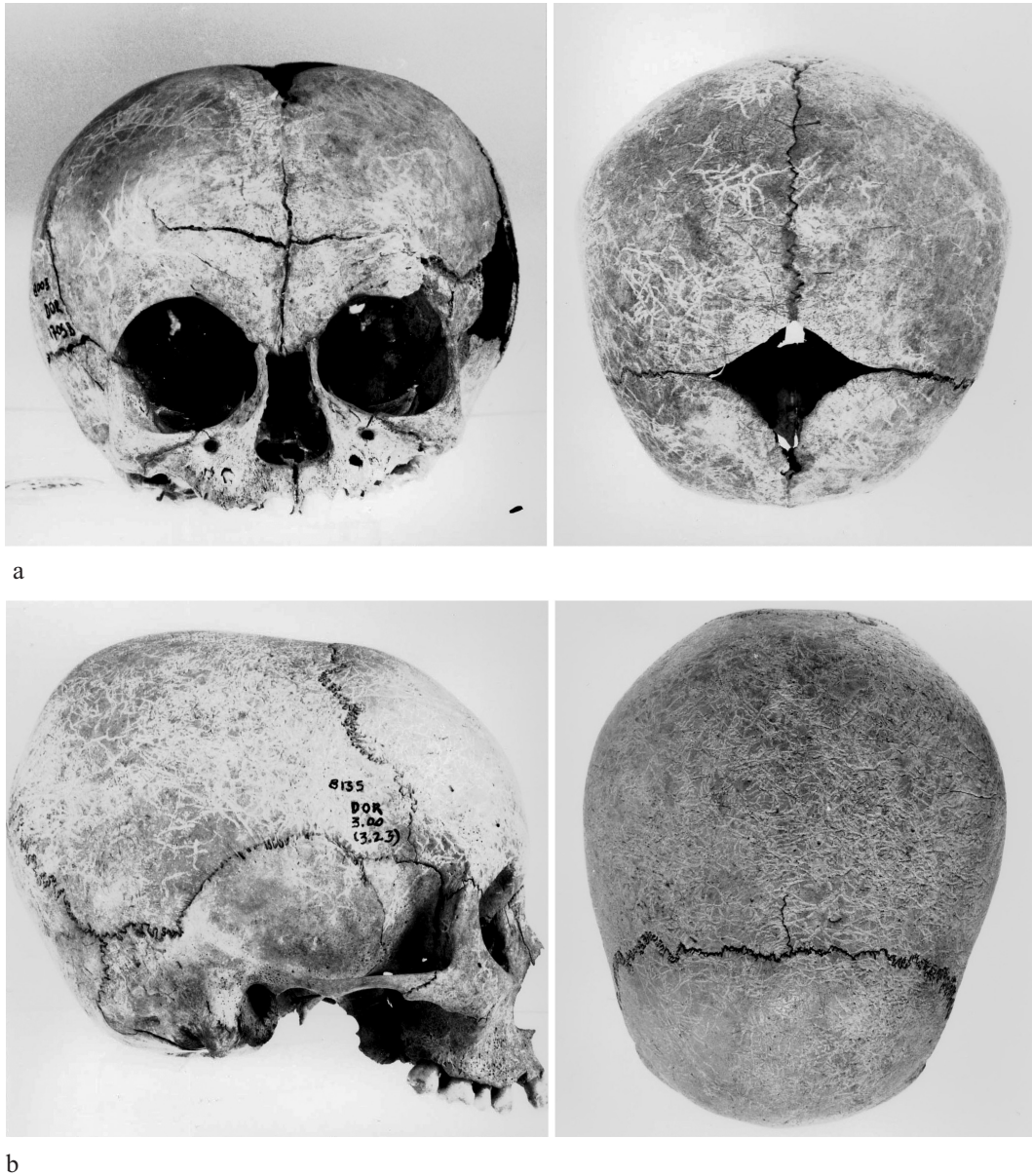


Fig. 10: a. Frontal and superior views of hydrocephalic 18 month old child from Dor showing grossly expanded cranial bones and large patent frontal fontanel.
b. Lateral and superior views of a juvenile skull from Dor with completely fused sagittal suture (craniosynostosis) and patent coronal suture.

Van Gerven (1994) reported that in a series of Medieval Christian skeletal remains from Nubia, where the overall frequency of *cribra orbitalia* was similar to that found at Dor, unhealed lesions were primarily observed in infants and young children. In the Nubians surviving to adolescence or adulthood, most lesions showed signs of healing as new denser bone replaced the cribrotic bone. The Negev Bedouin studied by Goldstein *et al.* (1976), like those from Tel el-Hesi (Eakins 1993) had a much lower frequency of *cribra* than that found at Dor; 20% in children and 1.3 % in adults.

These differences in *cribra orbitalia* may reflect the higher prevalence of malaria in the coastal region of Palestine. Until the 1920s, endemic malaria was common and was especially prevalent in the swampy coastal region and Huleh Valley. Indeed, Hershkovitz *et al.* (1991) have proposed that thalassemia, an inherited condition affecting red blood cell formation, was present in the area



Fig. 11: Osteomyelitis of the arm bones of an 8 year old child from Dor. Note irregular new bone.

some 9000 years ago at the Neolithic site of Atlit Yam. The mutations responsible for this condition are considered to have spread, since they afford some protection against malaria in heterozygotes, even though homozygotes die at an early age. Ancient DNA analysis has shown such mutations to be present in an Arab child from the Ottoman period excavated from the coastal site of Achziv, north of Haifa (Filon *et al.* 1995). Thus malaria, was probably a major contributing factor to the high levels of stress and growth stunting found at Dor.

Chronic ulceration

In six adults from Dor, circular lesions, some two centimeters in diameter, were present on the frontal bone. Radiographs showed sclerotic bone formation around an area of rarefaction, indicating that these were due to chronic infection rather than incomplete fractures from blows, as is often suggested. Similar lesions were also found in 8.5% of Negev Bedouin examined by Goldstein *et al.* (1976), but were attributed to trauma.

Arthrosis of the wrist

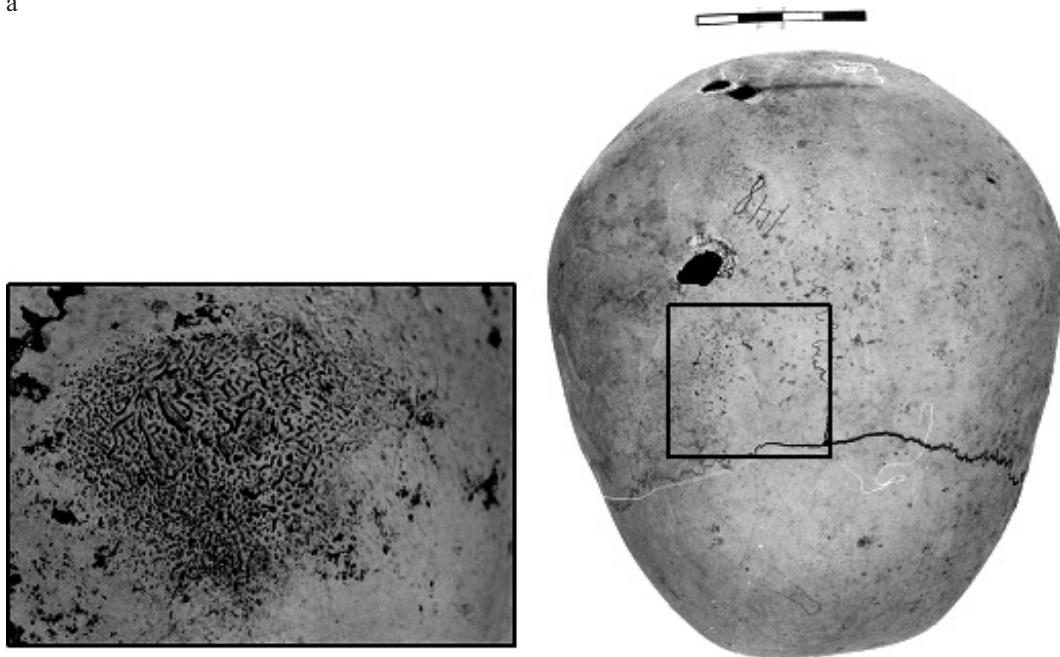
In one individual from Dor, the hand bones were fused, and the distal articulating surface of the radius showed severe osteoarthritic changes, with irregular bone formation around the joint margins (Fig. 13). While trauma cannot be excluded, chronic infection of the wrist appears a more likely explanation and tuberculosis is a possible cause. It has recently been positively identified at Dor by aDNA methods (Faerman 2008).

Bone mass

Estimates of bone mass at Dor were made from measurements of cortical thickness (CCT) on radiographs of left and right humeri of 37 adults. The radiographs were taken with the posterior surface of the bone placed flat on the intensifying cassettes as described in Smith *et al.* (1984) and measured according to the technique described by Bloom and Laws (1970). Mean values for CCT and CCT/Length ratios in the right humerus were extremely low. They were 9.4 mm in males and 7.0 mm in females, with 53% of the females identified as osteoporotic (Fig. 14). Moreover, as shown by Table 2a, most of the females from Dor died during their childbearing years, which is before the expected onset of post-menopausal osteoporosis. Vitamin D and nutrition are the two main factors affecting Calcium absorption in childhood and adult life. Pregnancy and childbirth make extra demands on the mother's supplies of calcium as well as other nutrients. Consumption of whole grain flour has been shown to affect serum calcium levels, since phytates in the husks of grains inhibit calcium absorption (Reinhold *et al.* 1973, 1981). It may lead to osteomalacia in women when the diet is poor in calcium and other nutrients (Berlyne *et al.* 1973). A number of recent studies on



a



b

Fig. 12: a. *Cribra orbitalia* in the right orbit of a child from Dor.
b. Parietal pitting in a child skull from Dor – inset shows close up of pitting. Note the porosity of the bone in both in both instances, attributed to increased vascularity.

Arab women suggest that the deleterious effects of such diets may be exacerbated by traditional dress that limits exposure to sunlight and so vitamin D production (Dawodu *et al.* 1998, 2003; Glerup *et al.* 2000).

Tuberculosis has also been associated with a reduction in bone mass. Bocquet and Bergot (1977) found that CCT values in tubercular women in their twenties were even lower than those present



Fig. 13: Fused hand bones of an adult from Dor with the distal articulating surface of the radius showing severe osteoarthritis.

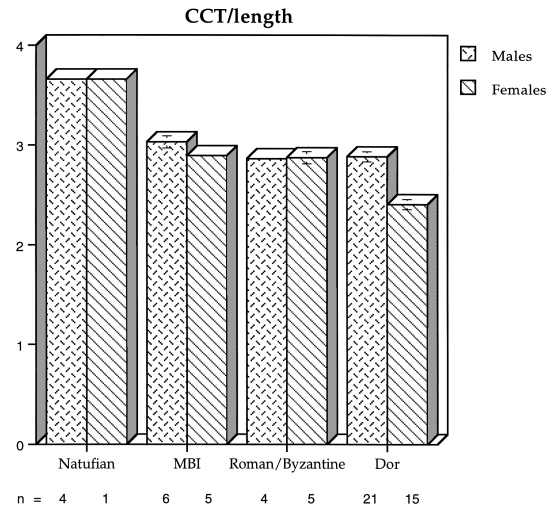


Fig. 14: A diachronic comparison of CCT/Length ratios in the humeri of males and females from different time periods in Israel compared to Dor. (MBI = Middle Bronze Age I)

in tubercular women in their forties. aDNA studies have now identified a number of cases of tuberculosis and leprosy from Dor (Faerman 2008) and in general this population, as discussed above, showed a high frequency of growth insults (enamel hypoplasia and growth arrest lines on long bones) as well as *cribra orbitalia* and parietal pitting, indicating poor health in the period preceding death.

Since CCT also reflects function, CCT values of right and left humeri were compared. The relationship between skeletal mass and physical activity, and the extent to which activity using one arm more than the other produces asymmetry, is well documented (Garn 1970; Plato *et al.* 1980; Ruff and Jones 1981; Stevenson 1952). In males from Dor, all CCT values were greater in the right humerus than in the left, indicating the increased work load of the right arm. In females, CCT values for both humeri were similar, suggesting a more equal use of both arms. Taking this argument further, male/female differences in CCT/length ratios of right and left arms at Dor appear to be associated with sex-related differences in function. Similar male/female differences in degree of humeral asymmetry were recorded by Ruff and Jones (1981) for an archeological North American Woodland series, where gender-related differences in work patterns were pronounced. In contrast, in pre-contact San hunter-gatherers, women rather than men showed right-left differences in CCT values, possibly associated with use of digging sticks (Smith *et al.* 1992).

Spinal Column

The presence, severity and location of degenerative conditions of the spinal column were examined by visual inspection of individual vertebrae of adults from Dor by Langelbin (1989). Specific conditions examined were *Spondylosis deformans* (osteophytosis), Schmorl's Nodes in which localized pits are found on the inter-vertebral surface of the bodies of the vertebrae, as well as wedging and collapse of vertebral bodies. *Spondylosis deformans* was found in 45% of those under 40 years old and 100% of those aged over 40. The areas most severely affected were the lower thoracic

vertebrae (T9 and T10); the lower back (2nd to 4th lumbar vertebrae) and neck (cervical vertebrae C5 and C6). Similar findings have been reported for 20th century North Americans (Nathan 1959) as well as for a Medieval population from England (Kneel *et al.* 1997), despite marked differences in lifestyle of these three groups. The osteophytes occur in the regions of maximum spinal curvature and appear to relate to lordosis rather than particular activities producing strain in specific regions of the vertebral column.

At Dor, Schmorl's Nodes (SN) were found in 50% of young adults and 71% of older adults. The majority were between 2 mm and 5 mm in diameter. In contrast to *Spondylosis deformans*, Schmorl's Nodes were rare in the cervical region of young adults and most common in the lower back. Disagreement exists concerning the etiology of Schmorl's Nodes. They have been attributed either to a degenerative disease of the vertebral column, resulting from herniation of the inter-vertebral disc into the inter-vertebral joint, or to a developmental anomaly related to incomplete ossification of the vertebral body. A more pronounced age-related change was found in wedging of vertebral bodies, a condition resulting from osteoporosis. This was found in 9.8% of the younger age group and 42% of the older age group. *Spondylosis*, a condition in which separation of the body and neural arch of a vertebra occurs, was found in one young individual. The condition, according to Merbs (1989) is due to heavy strain in the lower back. It appears to cause little pain or disability and Merbs (1989) proposed that it may facilitate flexion of the lower back.

Discussion

Although the cemetery was not completely excavated, the data obtained from our sample indicate that only a small number of individuals were buried per generation. Either we are dealing with a small nuclear population or many were buried elsewhere. The chronological distribution of the skeletal remains show that half of the remains date to the last 100 years of use of the cemetery. The increased number of individuals dated to the later period may reflect an increase in the size of the population using the cemetery. Such a change accords well with the historic evidence for population growth in the 19th century.

The overall morphometric homogeneity expressed in craniofacial measurements and discrete traits suggests genetic continuity of the population, throughout the entire period in which the cemetery was used. The limited range of variation in biometric characteristics also indicates that foreigners were not buried in the cemetery. The Dor population was characterized by moderate stature with rounded heads, long faces, broad cheek bones and large jaws, and were slightly more robust than contemporaneous Bedouin from the Negev or Sinai. They also differed from them in disease patterns, notably in the high frequency of pathology attributed to malaria and absence of bejel.

Oliphant (1887) commented that the late 19th century was associated with massive immigration into Palestine. Even in the northern coastal area between Haifa and Caesaria he recorded the presence of Germans, Jews, Druze, Circassian refugees from Bosnia, Turkmen of 'Seljuk stock', Turkmen recently arrived from northern Mesopotamia, local Arab *Fellahin* and Bedouin. Many of these communities had been displaced in the upheavals following the Crimean war, while others were attracted by new economic opportunities in this part of the Ottoman empire. However, the main impact of such immigration post-dates the period of use of the Dor cemetery while the low coefficient of variation of the morphometric data suggests that we are dealing with a small insular community.

Health surveys carried out during the British Mandate, provide a fairly detailed picture of disease patterns in rural areas of Palestine before public health measures were implemented. While it is possible that some infectious conditions were introduced by the new immigrants, malaria, tuberculosis, and many parasitic infections have been documented in the region for several thousand years (Smith and Horwitz 1998) and as such contain information that is also relevant to the Ottoman period. The 1931 annual report of the Palestine Department of Health records a death rate of 18.7 of all infants

in the Muslim sector. Trachoma (eye disease) was present in some 90% of the population. Malaria and tuberculosis were common and a major cause of death, followed by measles and enteric fevers. Some 14.3 % of all deaths from infectious diseases, excluding malaria, were attributed to tuberculosis, but undulating fever was rare, despite the widespread use of non-pasteurized goat milk. In contrast to Egypt, bilharzia was uncommon. Syphilis, probably in its non-venereal form of bejel, was reported as widespread in the region of Hebron, and ankylostomiasis (hookworm) which causes gastrointestinal bleeding and hence anemia, affected over 28% of children from Jaffa. Hygiene was poor especially in rural areas where there was no proper sanitation and animals and people shared the same space.

Examination of traditional Ottoman medical practices indicates that eye diseases, skin lesions, wounds, snake bites and trauma were some of the more common conditions treated, often with animal extracts (Lev 2003). Powders and pastes containing mercury were used from the Mamluk period onwards to cure a variety of skin diseases especially bejel and syphilitic lesions (Hudson 1958). The use of mercury and other heavy metals such as lead for medicinal purposes would have contributed to periodontal disease resulting in tooth loss as well as anemia, while cauterization, a common treatment for wounds and headaches would have caused much scarring of the tissue.

The archaeozoological and botanical data presented in the first part of this study, indicate that a rich and varied range of foods were potentially available to the Dor population. However, it is likely that the food supply varied seasonally and access differed between age classes and sexes. A study carried out on the diet of various sectors of the urban and rural population of Palestine in the 1930's, found the diet of rural Arabs to be relatively good, but showing marked seasonal variation, with winter the lean period-mainly because of the lack of fresh milk and seasonal fruits and vegetables (Kligler *et al.* 1931). The researchers found that cereals-mainly in the form of flat bread, provided over half the calories ingested. Fat was derived mainly from olive oil, but also from milk and milk products providing some 35% of the diet, and proteins only 10%. They found that the difference in subsistence basis between *Fellahin* and Bedouin was reflected in the greater intake of milk and milk products by the Bedouin. Indeed, little evidence was found for intensive dairying in either of the archaeozoological samples reported here. Kligler *et al.* (1931) further noted that despite the relatively high mineral intake, the calcium: phosphorus ratio was 1: 3 and unbalanced-a factor which undoubtedly affected calcium metabolism. A more recent study of the Negev Bedouin (Gorodischer *et al.* 1995) found a correlation between sub-clinical Vitamin A deficiency and infant mortality and it is possible that the same factor contributed to infant mortality in the Ottoman period that was characterized by marked seasonality in food supplies.

The paleopathology found at Dor indicates chronic anemia and poor calcium intake, similar to that reported for the rural inhabitants of Palestine in the 1931 survey. Both the low life expectancy inferred from the age profile at death and the high prevalence of developmental insults inferred from the findings on enamel hypoplasia and growth arrest lines in long bones, indicate that health status at Dor was poor. In addition to possible seasonal shortages of food, both chronic and acute infections may have played an important role in limiting absorption of nutrients, or in causing anemia from bleeding (for example from hookworms, tapeworms and dysentery) or red blood cell destruction from malaria. While cholera appears to have spread to the Levant only in the 19th century (Scholch 1985), malaria, tuberculosis and possibly hepatitis have been endemic in the region for many thousands of years (Smith and Horwitz 1998), while bejel, a non-venereal disease has been reported in high frequencies from skeletal samples dating to the 19th-20th Centuries (Goldstein *et al.* 1976).

The high prevalence of dental hypoplasia, growth arrest lines and osteoporosis in young females from Dor reflects a cereal-based diet containing a high component of phytates and an unbalanced calcium-phosphate ratio as described by Kligler *et al.* (1931). More specifically, it may be related to additional demands on calcium and phosphorus reserves of women who are pregnant or breast

feeding since lactation doubles the daily calcium needs of women (Sowers *et al.* 1993). Indeed, these researchers found that even healthy, well-nourished women lost a significant amount of bone when breast feeding for 6 months. The low bone mass found in women from Dor is then not surprising. They had poor health to begin with, impaired calcium absorption because of the use of whole grain cereals as their dietary staple, and were probably deficient in vitamins. Moreover, their poor health was exacerbated by frequent childbirth, with breast feeding continuing into the second year of the infant's life.

The human assemblage recovered from Dor, is one of the largest and well-preserved skeletal samples recovered from a securely dated context in the Southern Levant and one for which it was possible to evaluate the bio-anthropological findings and faunal data described here against historical records for the period. It is evident that both historical and archaeological data sets concur in their assessment of the 16th through 19th century Ottoman period as one in which the health status of the rural population of Palestine was extremely poor.

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A MICRO-STUDY OF ARAB VILLAGE IN PALESTINE/ISRAEL: THE CASE OF SUBA—NEW METHODOLOGIES AND SOURCES

Dror BARAK* and Ruth KARK**

Introduction

This article is a partial presentation of a micro-study of the former Arab village of Suba, and describes, inter alia, research methodologies that combine traditional with new approaches. It serves as a case study, the intention being to utilize it in future research comparing Suba with other villages that have been the subject of detailed study.

Since the beginning of the 19th century, the Arab village in Palestine has been the subject of descriptions and research by travelers and scholars of various disciplines. They have concentrated on different aspects such as buildings, population, village life, and more, but there has been almost no micro-research of individual villages. The research methodologies applied depended on the period and disciplines of the researchers, and on the availability of different types of sources. Geographers, for instance, including Moshe Brawer and David Grossman, who published extensively on this topic, combined theoretical study with field work (Brawer, 1977; Grossman, 1992). The latter included field surveys and oral documentation that would enable synthesis and arrival at conclusions. However, most of the research material has dealt with central villages, those that were located near urban centers and major highways. Most conspicuous among these were villages of historical and religious interest, such as Ein Karem (Oren-Nordheim 1985), Abu Ghosh (Ben-Dov 2003), and their likes. Peripheral villages (distant from urban centers and major highways) have not been the subject of individual study and detailed descriptions. The present article is an attempt to somewhat fill that lacuna, and to examine how a peripheral village in the modern age differs from its more central counterparts in building style and the time period of its development.

In earlier ages, such as the period of Crusader rule in Palestine, the site of Suba was of great importance as Belmont—a castle and administrative center. In later centuries it was an agricultural village located in the Judean hills, the majority of whose residents were Muslims. Suba ceased to exist as an Arab village when it was abandoned during Israel's War of Independence in 1948, and in October of that year a kibbutz, Zova (first named Palmahḥ-Zova), was established on its land. Over the past few centuries, the site has aroused much interest among travelers, pilgrims, and researchers, who were particularly interested in its identification with the biblical Zobah (2 Sam 23:36) and in the remains of the Crusader castle. The Arab village, however, some of whose ruins are still visible, attracted almost no attention. Since the establishment of the State of Israel, it has been continuously exposed to destruction and dilapidation, much of it having been demolished. Today, the remains of the village are in the process of being declared a national park, part of a nature reserve that is being planned for the area (Barak 2002: 27–30).

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Research Topics and Methodology

One of the objectives of our study was to examine the characteristics and patterns of change in a peripheral village in the modern age (1800–1948). To this end, we chose to concentrate on the village of Suba in its geographical and historical contexts, and to study it by means of the surviving houses. Basing ourselves upon the combined use of field study, oral documentation, archival documents, printed sources, maps and other visual sources, we posed two research questions: What was the nature of the development of the built-up area of the village?; What were the factors that influenced this development? In our study we employed a combination (from the point of view of quality and quantity) of research methodologies based upon a variety of source material, listed below, including newer material unknown to earlier scholars.

- * Original historical documents, in various languages, found in several archives.
- * Other archival material in archives such as those of the Public Works Department, the Israel Antiquities Authority (Shai 2002), Kibbutz Palmaḥ-Zova, Kibbutz Kiriyat Anavim, and more.
- * Reports and descriptions by pilgrims, travelers, and researchers who visited Suba prior to 1948 (Canaan 1927).
- * Historical and contemporary reports in European languages (Khalidi 1992), Arabic (Muslah-Ruman 2000), and Hebrew (Califon 1989).
- * Relevant maps and aerial photographs (Hatzubai 1964).
- * Drawings, etchings, and photographs of the village and its surroundings in various periods.
- * Intelligence reports and village files prepared by the Haganah and Palmaḥ \$ para-military organizations (Salomon 2001).
- * New data published on the Internet, primarily in Palestinian Arab websites (www.Palestineremembered.com 2006).
- * Field survey of buildings and remains—public buildings and private dwellings in and around the core of the village.
- * Survey of the landscape, open spaces, and trees (Barak and Gibson 2002).
- * Interviews with residents of Ain Rafa, an offshoot village of Suba, who lived in Suba until 1948, and with members of Kibbutz Zova (Hassidian 1995).

Historical Background

From the Crusades to the Late Ottoman Period

Pilgrims who came to the Holy Land during the Crusades identified Suba as the site of ancient Modi in, the village of the Maccabees, due to its proximity to Abu Ghosh, in that period identified as Emmaus (Guerin 1982: 177–85; Califon 1989: 15–20). The Crusader era was a formative period in the history of this village. At this time the hill on which Suba is located was called Belmont (Beautiful Mountain), and it lent its name to the castle built by the Order of the Hospital in ca. 1170 as the administrative center of their estate that covered extensive areas including Colonia (present-day Moza and Mevasseret Ziyon), Castel, Aqua Bela, and Abu Ghosh. To this very day one can discern remnants of the wall that surrounded the castle, of its corner towers, of the moat, and other remains of the Crusader period. (including many unhewn stones employed in secondary usage by residents of Suba when they built their houses). About twenty years after the castle's construction, it was partially destroyed during the conquest of the area by Saladin (Harper and Pringle 1999).

Like many other villages in Palestine, Suba arose on the ruins of the castle and the ancient settlement. There is very little information about the village until the 19th century. The Arab geographer Yaqut mentions it in 1225 (Califon 1989: 42). An important source of information for the end of the 16th century are the Ottoman tax lists (1596). Suba is listed there as a village in the Jerusalem *nahiyah* populated by 60 Muslim and 7 Christian families. The staple crops raised were wheat and barley (Hütteroth and Abdulfattah 1977: 115).

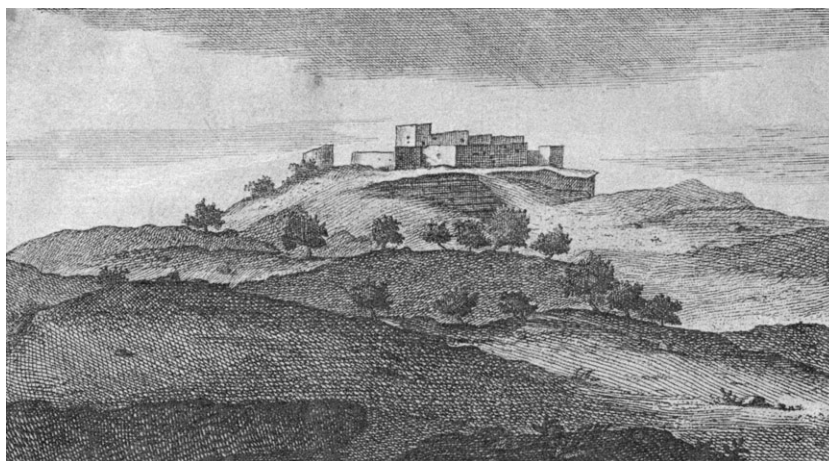


Fig. 1 Drawing of the village of Suba, 1698 (de Bruyn 1698).

In a drawing of the village (Fig. 1) executed by Cornelis de Bruyn ca. 1698 it is called Modi in (de Bruyn 1698). The village is depicted as situated atop a hill, with square dwellings having small windows close one to another. If this drawing is a faithful representation, we have before us a village with a traditional design—an irregular nucleated village whose houses are built next to each other (Brawer 1977). Only in the 19th century did Suba begin to figure in the works of various researchers and travelers, most of them Westerners. Though these descriptions did not focus on the village itself, but rather on its identification with the biblical Modi in, it is nonetheless possible to extract some information from them about the village and its population. Several travelers and pilgrims, on their way from Jaffa to Jerusalem, noted the conical hill atop of which Suba was located, even if they did not enter the village. This generally happened after they had passed Abu Ghosh, but before reaching the spot from which they could view Jerusalem (Gibson *et al.* 1999).

Administratively, in the late Ottoman period Suba was part of the *nahiyah* of Bani Malik, then a subdivision of the *sanjak* (district) of Jerusalem. The most important village in this *nahiyah* was Qaryat-el - Anab which was under the control of the Abu Ghosh family (Ben-Arieh 1985). This family built its own fortified structure within the walls of the ancient castle in Suba. The fortress and the walls were destroyed, like other villages, during the revolt by local fellahin (peasants) in 1834 against the Egyptian military force and its commander Ibrahim Pasha, which had conquered the country a few years earlier.

John Paxton, who was in Palestine from 1836 to 1839, described Suba as a cluster of buildings atop the hill and also expressed his opinion about the strongman of Abu Ghosh:

A cluster of buildings on the top of a hill, called the tomb of the Maccabees. It looked like a fort, or a place of defense, and was, so I am told, not long since, the residence of Aboo Goosh, who used to make free with the property of other people; in other words, was a notorious robber. But Ibrahim Pasha has taught such gentry a good lesson (Paxton 1839: 111).

Paxton mentions the role of Ibrahim Pasha in “reshaping” the village’s appearance. The destruction of the castle is an important event, one that apparently left its mark on Suba’s built-up area.

This episode was also recorded by Victor Guérin, a French scholar of classical literature, geography, and archaeology. His study, summing up eight visits to Palestine, was published in French in 1886. His interest in Suba focused on its biblical past, but he also imparted to his readers information about the village in his own days:

At the top of this hill, isolated and conical-shaped, was formerly located a town, of which today all that



Map 1 Map of the Suba area, 1878 (Conder and Kitchener, 1878)

remains is no more than a village, also called Suba. Before the invasion of Ibrahim Pasha this was a castle surrounded by walls well built out of wonderful unhewn stones. But in 1834, after very fierce opposition, Ibrahim stormed and took it and almost completely destroyed its walls (Guérin 1982: 176–77).

The ruins of the castle, as Guérin saw them, were first dated as Crusader remains in the 19th century by the expedition of the Palestine Exploration Fund, which arrived in Palestine in May 1875. The descriptions and findings of this expedition were published in a series of volumes and maps during the 1880s, in which they documented every permanent settlement in the land (Map 1). The following is the description of their visit to Suba:

Sôba. A stone village of moderate size, in a very conspicuous position on the top of a steep conical hill. It has a high central house. [...] There are rock-cut tombs on the north and on the south. The hill stands up 700 or 800 feet above the valley on the north. There is a good spring in the valley on this side, and another (Ain Sôba) in the valley to the south-west. There are remains of a Crusading fortress, which was destroyed by Ibrahim Pasha. The place was at one time a fortress of the Abu Ghôsh family. [...] The village or the district appears to have been called Belmont in the twelfth century; and Sôba was apparently a fief of the Holy Sepulchre... (Conder and Kitchener 1883: 18–19).

The British Mandate Period (Map 2)

From diverse sources consulted, we concluded that until the end of the British Mandate period in Palestine (1918–1948) Suba was a village with traditional characteristics (Kark and Oren-Nordheim 2001, 262) These included agriculture as the pursuit of the majority of its residents, division of the population into clans, administration of the village by *mukhtars*, Muslim religious education for the children, traditional means of transport, and the absence of modern means of communication. The first vestiges of modernization appeared in the village during the period of British rule, particularly in the 1940s, a process that was accelerated by the paving of a road to the village—to be more exact, to the school in Deir Ammar (the site today of the Eitanim Mental Hospital).



Map 2 Map of the Suba area in the British Mandate Period, 1944 (*Survey of Palestine*, Sheet: Jerusalem and Ramallah, 1:20,000)

Laying down that road made the village accessible by motor transport such as buses that began to serve the village on a daily basis. In addition, some of the villagers began working in non-agricultural occupations, and there were commercial relations between Suba and Jerusalem, as well as with neighboring villages. All these, in addition to frequent visits to Jerusalem, opened up the

village and its residents to modern influences and innovations (Barak 2002: 83–86).

Conquest of Suba in 1948 and the Israeli Period

The Harel Brigade took control of Suba on the night between 12 and 13 July 1948, as part of “Operation Danny.” It seems that the villagers had fled prior to the attack, most of them taking up residence in al-Eizariya and Abu Dis (just to the east of Jerusalem, and then under Jordanian control) and in Amman. A small minority moved to Ain Rafa, an offshoot village of Suba that had not been abandoned. After 1948, additional former residents of Suba settled in Ain Rafa, most of whom we interviewed. With the establishment of Kibbutz Palmah-Zovain October of that year this sentence seems unfinished. At first they lived in the abandoned houses of the Arab Village but soon the settlement was transferred from its historical site atop the hill to the saddle to the west.

Since then the historical site of Suba and the core of the Arab village has remained deserted, and much of it has been destroyed (Barak 2002: 30).

Further damage was caused over the years by the dismantling of stones and other building materials from the abandoned structures in the village. From correspondence in 1951 between the Custodian of Abandoned Property, the Jewish National Fund, and Kibbutz Zovait can be established with all certainty that the Ministry of Labor used building stones (and other construction materials) from Suba when it built the nearby Castel *ma'abara* housing project for Jewish new immigrants. In addition, such materials were also taken by the Even va-Sid (Stone and Lime) quarrying company, the Jerusalem District Engineer, and others—from whom Kibbutz Zovademand financial compensation (Barak 2002:53). The destruction was documented in an archaeological survey of Suba conducted by the Israel Antiquities Authority in 1965 as part of a national survey of abandoned Arab villages (Yeivin, 1966).

The Villagers

Traditions preserved by the Arab residents of Suba maintain that the first to build in the village were the members of one founding family which settled there during the reign of Saladin. According to these traditions, they moved into buildings that had survived within Castle Belmont. Additional families which followed in the footsteps of the original settlers were al-Nasrallah (out of which sprung the Barhum family that resides in Ain Rafa), Ruman, Fiqiya, and Cabariyya. The origin of all these families is in the village of Raba in Jordan (Shifman 1994: 3). As noted above, the tax census of 1596 listed 67 households in Suba, 60 of them Muslim and 7 Christian.

From interviews conducted by the authors during recent years with residents of Ain Rafa we learned that during the British Mandate period there were four Muslim clans in Suba, most of whom are connected with the ancient tradition noted above: the clans of al-Ruman, al-Nasrallah, al-Fiqiya, and al-Jubran (Barhum and Abu Hazan 2001; Rizak and Rizak 2001). Support for this information is provided in an intelligence report prepared in the early 1940s for the Haganah para-military force by Ya'akov Lisser, a member of Kibbutz Kiryat Anavim, who noted the presence of four clans in



Fig. 2 Development of the Population of Suba, 1870–1945 (Source: Kark and Oren-Nordheim 2001).

Suba belonging to the extremist Arab camp (Lisser 1940). The development of the Arab population of Suba from the last decades of the 19th century until the final years of the British Mandate is presented in a graph (Fig. 2). Population growth in these years amounted to almost 300 percent, which was also common for other villages in the Jerusalem area during that period (Kark and Oren-Nordheim 2001: 196). As we shall see immediately, the increase in population had important implications for the development of Suba's built-up area.

Development of the Built-up Area

Until the beginning of the 20th century most Arab villages in Palestine were built as irregular nucleated villages in a haphazard manner, there being no order to the houses which were erected very close to one another. This is a village type of the highest density, known by the geographic term *Haufendorf* (Brawer 1977). This held true for Suba as well. In 1863 Guérin described the walled village in the following manner:

“The wall that encircled this city, despite the fact that until then it had suffered from the passing of time and even more so at the hands of men, was still preserved in a good enough condition to provide the residents of Suba with enough protection” (Guérin 1982: 176–177).

However, Suba underwent substantial changes from the late Ottoman period to the end of the British Mandate in Palestine. The built-up area increased, spread out, and changed the traditional layout of the village. With the help of a variety of sources (British maps, aerial photos and maps included in the Suba village file prepared by the *Palmaḥ*) we were able to gather much information on the development of its built-up area. Fig. 3 presents the increase in the number of buildings outside the old core of the village (Barak 2002: 44, 45).

From the information in this graph it is obvious that the early signs of modernization also left their mark on construction in Suba, but unlike descriptions in the literature, these were no more than early signs, not a sweeping change. Until 1917 Suba followed the pattern of traditional villages—buildings were concentrated towards the center in a haphazard manner and surrounded by the remains of the Crusader walls. From 1917 to 1948 there was a significant growth of the built-up area, many buildings being erected outside the ancient walls, particularly towards the south along the road that led towards the Castel and Jerusalem. This development led to Suba being transformed from an irregular nucleated village into a “street village” in which the houses are built along the roads and at some distance one from the other (see Fig. 4).

Another development was the transformation of the offshoot village of Ain Rafa into an independent village about two km north-west of Suba, near the spring which bears that name.

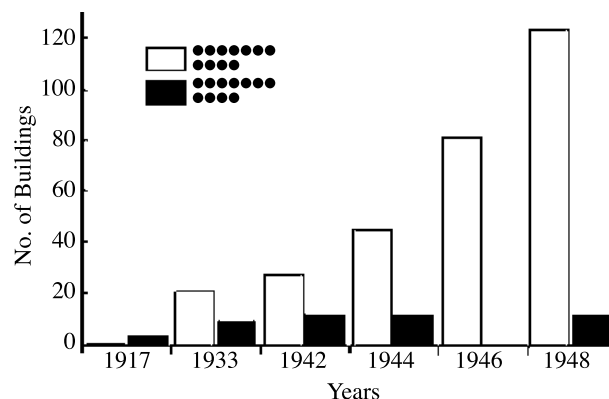


Fig. 3 Development of the built-up area outside the core of Suba, 1917–1948 (Source: Barak 2002, 44).



Fig. 4 Aerial photo of Suba, 1946 (Haganah Archives, file / 14 *kefar* /8).

Residents of the village told us that it was established by a founding family, descendants of the al-Nasrallah clan of Suba. It began as an *azba* (seasonal settlement) in which residents of Suba used to live in the summer, during harvest time, out of which the village of Ain Rafa developed from 1924 onwards. In 1936 it was given the status of an independent village and the right to appoint a *mukhtar* of its own, the first being Mahmud Ali Musa Awal (Lisser 1940; Barhum 2000).

Types of Structures and Building Styles

Ron Fuchs has defined the architectural character of buildings in traditional Arab villages as being founded on two basic attributes: 1) a single-space structure that served all the needs of its dwellers; 2) the internal space of the house was divided into two levels—a raised upper level served as living and sleeping space, while the lower level was set aside for the household animals and everyday use (Fuchs 1998a & b). It is noteworthy that this definition treats both of the house's architectural style and how it was used by its dwellers. Yizhar Hirschfeld summed up the latter aspect: "The attribute that more than anything else makes traditional Arab buildings unique is that the dwellers are prepared to share them with animals" (Hirschfeld 1987: 60).

The first impression we gained from our visits to the remains of Suba was that the village had been built in a traditional and uniform manner. Most of the structures contained components that

have been described and classified in the professional literature as belonging to the traditional village style of construction. However, when the survey of Suba was completed and the surviving structures documented in detail, it turned out that this was not a precise conclusion. In effect, three types of buildings were found among those that survived the events of 1948 in Suba.

Traditional Single-Space Houses

These are houses that were built using traditional techniques—a single space, with thick walls and vaults to support the ceiling. Only three of this type were found among the surviving buildings. The entrances of such houses faced a courtyard, and they were clearly divided into two levels. Furthermore, in these structures we found evidence that humans lived in them side-by-side with animals—there were rings in the wall to which the animals were tied, and feeding stalls. We believe that this combination of a single-spaced structure with a two-leveled interior in these three structures indicates that they are traditional village houses.

Multi-Spaced Buildings

These buildings are of a transitional type, between traditional and modern—they too were built of stone using traditional technologies. Most of the surviving houses in Suba are of this type, comprising several halls or rooms with entrances generally facing a common courtyard. There are two sub-types: with and without a passageway between the rooms. Thus these homes do not comply with the definition of a traditional village house. They lack the single space in which the family carried on its daily life and in many cases they also lack the division into two levels, or at best there was a small and low raised section just within the entrance.

It may well be that there is a connection between the multiple interior spaces and lack of a raised second level and the domestic lifestyle that was common towards the end of the British Mandate period. From our conversations with residents of Ain Rafa we learned that in those years living together with animals was generally only the lot of the poorer villagers. In most houses in the village, rooms for members of the family were separate from the space set aside for the animals (Abu Aji and Barhum 2001). This may account for the variations we found between several rooms in the same house: a different quality of the final touches (plaster, paint, and flooring); the size and type of windows (double windows with a bench, as compared to very small apertures); and various fixtures that we found in the rooms (an alcove for bedclothes and a fireplace, as compared to rings affixed to the wall and feeding stalls). What we have in this case is that each room has its own defined purpose, a state of affairs that differed completely from the concept of the traditional house. Ron Fuchs describes a similar phenomenon. He maintains that part of the development and establishment of the traditional rural household included adding rooms to make life more comfortable for the family. He is of the opinion that such houses can be considered a type unto itself (Fuchs 1998a & b). Both these types—single-spaced and multiple-spaced houses—were built of local building materials and using conventional technologies.

Structures Constructed Using Modern Technologies and Materials

Though no structures of this type have survived, from various sources (photos, physical remains, interviews with former residents of Suba, and documents referring to the sale of building materials from the abandoned village after 1948) we may imply that there were a few buildings that had been built using modern technologies and materials: concrete, and ceilings constructed of steel and concrete girders.

Character of Construction: Analysis and Conclusions

As noted earlier, the literature dealing with buildings in the Arab villages points to a sweeping tendency towards the introduction of changes in the layout of the traditional village and the structure of its houses from the late 19th century onwards. These descriptions mention construction using modern materials and with components of an urban building style. All this, however, does not hold true for Suba, not from the point of view of time period, and even not as to the extent of the changes. True, there

was some development in the house types of Suba, but when compared with what was described in the literature and with developments in other villages in the area, what happened in Suba was not an extreme development. In larger villages such as Ayn Karem and Lifta, located much closer to Jerusalem, there were many buildings which had been constructed with the use of modern technologies and materials. In these villages one could also find structures of a more advanced, urban architectonic style (such as the *iwan* house or the central hall house). In addition, they contained elements of urban construction that were either completely lacking in Suba or found there very sparsely, such as ceramic flooring, balconies, staircases, and entrances of the “triple aperture”—a door flanked by two large windows (Oren-Nordheim 1985; Moshe 2001; Cana’ane and al-Hadi 1991).

One reason for the absence of substantial expansion of construction in Suba until the 1940s may be its semi-isolation due to the lack of transportation facilities, which probably was an obstacle to the transport of modern building materials to the village, and also made them more expensive. In addition, the fact that Suba was cut off from the Jerusalem–Jaffa road was detrimental to economic conditions in the village—a lack of materials and the absence of modern construction methods reflect an economic situation that does not allow for such a development. This assumption can find some support from a comparison of Suba with other villages in the area which were located near the main road or were connected to it at an earlier date—Ayn Karem and Lifta—that have been the subject of detailed research. These studies have shown that construction developments in these two villages took place earlier and on a greater scope (Oren-Nordheim 1985; Moshe 2001). Suba, as a case study, raises a question concerning the development of building styles in other villages in the area. There may have been other such villages in which, just as in Suba, no sweeping change occurred until the last years of the British Mandate period.

Epilogue

The abandoned village of Suba is a picturesque nature preserve, a remnant and reminder of the architectural and technological history of rural Arab building styles in the Judean hill country. Unlike other villages in the Jerusalem area, Suba was not razed to the ground, nor was it repopulated with new settlers after 1948. Part of it has remained standing, i.e., some of its abandoned houses have maintained their original shape and form while others were destroyed. The surviving buildings serve as an “historical document” testifying to the planning, technologies, and lifestyle of traditional villages.

Examination of the remaining houses and of their geographical-historical context has brought to light new information about traditional construction patterns and the changes they underwent. As we have shown, detailed, inter-disciplinary research of this peripheral village, a study that makes use of new and diverse sources to reach a synthesis, can throw new light on a few issues in the study of traditional Arab villages. We intend to devote a future article to the topic of “village and commemoration”. We also believe that our study can have important implications for the future planning and development of the site, physically and also in from the aspects of museology and tourism.

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TRIBAL STATES IN HISTORY: THE EMIRATE OF IBN RASHID AS A CASE STUDY

Eveline J. van der STEEN*

Introduction

The concept of tribal states and tribal kingdoms has rapidly gained momentum in the study of the history of the Levant over the past years. Particularly the kingdoms of the Iron Age, Ammon, Moab, Edom, Aram, Israel and Judah are often referred to as Tribal Kingdoms, although it remains unclear what exactly is meant by ‘tribal kingdom’. However, in the past years several scholars have ventured definitions of what a tribal kingdom is (Knauf 1992; Labianca and Younker 1998, Labianca 1999; Bienkowski and van der Steen 2001; van der Steen and Smelik 2007). These efforts generally focus on the Iron Age states east of the Jordan, Ammon (Younker and Labianca 1998, Labianca 1999), Moab (van der Steen and Smelik 2007) and Edom (Knauf 1992; Bienkowski and van der Steen 2001). The model that is being developed largely constitutes the merging of a tribal social organization with the political framework of a state or kingdom. Most of the research focuses on archaeological and historical sources, framed into a theoretical model. The role of ethnoarchaeology has remained limited, largely because the gap between the Iron Age tribal societies and the modern states of the region seems too wide to bridge. Although it is regularly stated that some of the modern Near Eastern states, such as Jordan and Saudi Arabia, have a large tribal component, they are too much embedded in modern society to be useful as a parallel. Therefore the ethnoarchaeological component of these studies focuses on tribes’ internal politics, and on tribal economy, rather than on tribal state formation.

However, there are developments and societies in the recent history of the Near East, that, when we look at them more closely, can provide insights into tribal state formation on a number of different levels.

The political context of the 19th century Arabian peninsula

During the 19th century AD the Southern Levant, the region of Syria (including Palestine and Transjordan) and the Arabian Peninsula were formally part of the Ottoman Empire. However, in practice most of the region was more or less independent, controlled by the local Arab tribes (al-Rasheed 1991: 14–15; Browne 1806: 416–7; Seetzen 1854–59/II: 340–41; Burckhardt 1822; 1829 *passim*). These tribes had an ambivalent relationship with the Ottomans, that fluctuated with the relative military strength of each party. Sometimes tribes were induced or forced to pay tribute to the empire, but mostly the local tribes controlled the territory south of Hebron in the west, and south of Wadi Mujib in Transjordan. They were paid to keep the Hajj routes from Cairo and Damascus safe, and to refrain from robbing the pilgrims. From time to time battles and minor wars were fought between the Empire and the tribes.

During the latter part of the 18th and the beginning of the 19th century the Ottoman empire was under severe threat from the Wahhabi religio-political movement. This movement, which originated in Saudi Arabia envisioned a purification of the religion of Islam, and their ideals were imposed by force. The Wahhabis swept over the peninsula, converting or killing Muslims and imposing tax on Jews and Christians, and then moved north through Syria. In 1807 the Ottoman empire commissioned Muhammad Ali, Pasha of Egypt, to defeat and rout out the Wahhabis. In

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1818 the Egyptian pasha took and sacked the town of Dir'iyya, the seat of the Ibn Sa'ud and of the Wahhabi power. But he did not stop there. He and his son Ibrahim Pasha moved on to take control of the region themselves. Between 1831 and 1841 they ruled Syria, until the Ottomans, with the help of the western imperial powers defeated the Egyptian pashas and drove them back into Egypt.

As a result of this and other threats to their power the Ottoman government implemented a series of reforms, known as the 'Tanzimat'. The corrupt administration was replaced by a system of civil servants, tax reforms were imposed and settlement and agriculture encouraged in an effort to get more control over the bedouin population. The effects of these reforms were mostly felt in the coastal regions of Lebanon and Palestine, much less in the inlands, where the Kerak area and everything south of it, remained largely unaffected until 1893. On the Arabian peninsula local powers still vied for hegemony, involving and transforming the local mosaic of tribes and tribal confederations. One of these local powers was the emirate of Hayil, led by the Ibn Rashid family. The history of the rise and decline of this emirate is the subject of this paper. It emerged out of the tribal confederation of Shammar, and during its existence the tribal social organization remained a determining factor in the political, economic and social life of its subjects. Therefore it is suggested here that the Emirate of Ibn Rashid can throw light on the emergence and development of tribal states in the Iron Age, such as Moab, Ammon and Edom, and perhaps also Israel and Judah.

Short history of the emirate of the Shammar

The emirate of Ibn Rashid emerged from the tribal confederation of the Shammar. The Shammar, like many tribes that entered the Arabian subcontinent over time, originally migrated from the Yemen, possibly in the 9th century AD (al Rasheed 1991; Wallin 1854–55/1979: 79).

The land in which they settled consisted of two chains of granite mountains, opposite each other: Jebel Aga and Jebel Selma, often referred to as the 'Two mountains'.

It was already inhabited by two other tribes: the Qais and the Tay. Originally the Shammar shared the Two Mountains with the Qais and the Tay, but eventually they took control and the other two tribes gradually disappeared. In the course of the following centuries the tribe expanded, in the 17th century it split up, and one group moved north to Mesopotamia in search of pasture. The other group remained in the Jebel Shammar. At the end of the 18th century, in response to the growing threat of Wahhabism another section of the Shammar joined the earlier northern section. These were the Sufuk and the Zakarit, who earlier used to migrate north on a seasonal basis (Wallin 1854–55/1979: 73; Burckhardt 1830, 167, 176–7). The northern Shammar lived as pastoralists and farmers. They maintained contact with the southern Shammar, and every year a major camel caravan travelled north from Hayil to the Shammar in the north bringing back rice and other goods.

The history of the rise and fall of the emirate has been told by several travellers (Wallin 1854–55/1979: 66–68, Doughty 1921/II, 13–18, Palgrave 1873, 84–94, Blunt 1880/2002: 99, 194–206; see also Oppenheim 1952: 37–45 and al-Rasheed 1991 with references).

The Shammar confederacy consisted of four independent tribes: the Sinjara, the Abda, the Aslam and the Tumam. These were subdivided into clans or subtribes and there were also several allied tribes such as the Mutair and Subei'. Another allied tribe, the Beni Tamim, were descendants of once powerful tribe that predated the Shammar tribe in the Jebel. They were agriculturalists, and had their own villages in the Shammar territories.

In 1836 a change of leadership took place among one of the tribes of the confederation: the Abda. The leadership of Muhammed Ibn Ali, paramount sheikh of the Abda, was challenged by his cousin Abdallah Ibn Rashid. Abdallah was exiled from Abda territory as a consequence. He left and found refuge in Riadh, with the Ibn Saud family, the leaders of the Wahhabi movement. The Wahhabi movement had been severely weakened by the take-over of Muhammad Ali and Ibrahim of Egypt, but they had regained a certain amount of power on the peninsula, and the Shammar were tributary

to them. One day, when Abdallah was out hunting with Faisal, the son of the Ibn Saud leader, a coup took place in Riyadh, and the sheikh was murdered. Thanks to the help of Abdallah, Faisal managed to depose the usurper, and regain the leadership of the Ibn Saud. Out of gratitude, Faisal Ibn Saud declared Abdallah Ibn Rashid the Shaykh Mushayyekh (paramount sheikh) of the Abda tribe, instead of Ibn Ali. This, of course, did not mean that Ibn Ali would submit his leadership to Abdallah, merely that Ibn Saud would support Abdallah if/when he made a bid for leadership.

Abdallah Ibn Rashid now returned to his home country and started to collect supporters with whom he eventually managed to depose Ibn Ali and gain leadership of the Abda.

He was an ambitious man, and he immediately started to expand the power of the Abda. In a relatively short period he managed to rally not only the Abda behind him, but also the other Shammar tribes, the Sinjara, the Aslam and the Tuman. Thus he changed the structure of the confederation, which now had a leading tribe, and a paramount sheikh, something they had not had before.

Abdallah died in 1847. He was succeeded by his son Talal without any opposition, and with the support of the population of Hayil. Talal's rule effectively changed the structure of the tribal alliance that his father had forged, into a state-like structure. He also changed the title of his office to amir. He was still sheikh of the Abda, but the title amir referred to his leadership over the whole confederation. Abdallah had already been recognized as the leader of the confederation, but now this leadership was formalized, and the Rashidis recognized as the leading family.

Talal finished the building of the Barzan palace started by the Ibn Ali and continued by his father, and he encouraged international trade, and concentrated it in Hayil. This was greatly stimulated by his liberal attitude. He encouraged not only Shiite muslims but also Jews and Christians to settle and trade in Hayil (al-Rasheed 1991: 57–58; Palgrave 1873: 93; Musil 1928: 239). He rebuilt settlements outside Hayil, and expanded his dominions, not only by conquest, but also through his liberal politics and the prosperity and peace of his government, which encouraged other tribes and towns to ally themselves to them (Palgrave 1873: 56–7, 129) – a process that was greatly facilitated by the tyrannical politics of the Wahhabi. Tribes and towns would ‘vote with their feet’, choose under whose protection they wanted to be, by simply paying or withholding tribute, and many preferred the Rashidi leaders.

Succession was firmly established within the Rashid family, but apart from that, there were no rules. Al-Rasheed has tried to establish patterns preferring horizontal or vertical succession lines (al-Rasheed 1991: 71–72). However, the succession history of the Rashidis shows that the only clear rules that applied were that succession was within the Abdallah line of the Rashid family, and that any successor needed the support from the Shammar tribes. Because of this, succession could become a bloody affair, which was especially clear when Talal died in 1868.

He was succeeded by his brother Mitab, who was murdered within a year by Talal's eldest son, Bandar. Many members of the family fled Hayil, and went to Riyadh, the Wahhabi / Saudi capital, which offered them refuge.

Another brother of Talal's, Mohammad, was a caravan leader between Hayil and Iraq. In this capacity he managed to gain the support of both the townsmen (who were interested in the revenues of the international trade) and the nomadic population, who had an interest in the provisioning of the trade, by providing camels, and receiving tribute. Through his considerable military skills, Mohammad could guarantee the safety of the trading caravans. Thus he acquired wealth, as well as wide support among the population, and when he came back from one of his journeys, he murdered Bandar, and pronounced himself amir. He proceeded by killing practically all the male members of the family, possible contenders for the throne.

Mohammad's rule was the longest in the history of the Shammar emirate, lasting from 1869–1897, when he died of natural causes. It was also the period of the greatest expansion of the emirate. Mohammad incorporated most of Nejd, including the Saudi territory with the capital Riyadh, and

to the north expanded towards Jauf, while even Palmyra paid tribute to the Rashidis (Musil 1928: 243). Under Talal and Muhammad the oasis of Hayil grew into one of the largest trade centres of the region.

Mohammad had appointed a successor, his nephew Abdel-Aziz, the son of Mitab who was murdered by Bandar. He had adopted Abdel-Aziz and prepared him for the throne. Perhaps as a result of this, the succession went smoothly.

It was however hard for Abdel-Aziz to maintain the expansion of the emirate that his uncle had effected. The Saudis had fled to Kuwait, where their claims were supported by the ruling Sabah family. In 1902 they managed to recapture Riyadh, and in 1906 Abdel-Aziz was killed in a battle against them.

He was succeeded by his son Mitab. However, Mitab's succession was not supported by the Ubayd branch of the Rashidi family, who commanded the support of a majority of the Shammar. He was murdered by Sultan ibn Hamud ibn Ubayd, and the emirate reverted for a short while to the Ubayd branch. By this time the decline had set in. Sultan tried to further expand his territory (Devey 1907, quoted by al-Rasheed 1991: 63), but in fact he lost several districts. He was murdered by his brothers, and a bloody struggle for the succession followed. The continuing war with the Saudis, the political bickering among the contenders for the throne, and the fact that revenues of both the trade and the Hajj were declining because of the construction of the Hijaz and Baghdad railways, eventually brought about the end of the emirate. The first World War was the death blow to the power of the Ibn Rashid. In 1921 they were expelled out of Hayil, and that was the end of their emirate.

The concept of tribal state or kingdom

Traits of tribal states

In order to 'streamline' the discussion about tribal state formation, Labianca (1999) has tentatively formulated a number of features which he believes are salient for tribal kingdoms in the Iron Age. His frame of reference was the Iron Age kingdom of Ammon, but these traits have been equally applied to other polities in the region such as Moab (Routledge, van der Steen and Smelik 2007) and Edom (Bienkowski and van der Steen 2001).

In order to understand how and why these tribal kingdoms came about and functioned in ancient society, it is essential to analyse the process that created them. Political entities (or 'polities') must be seen as a process in time, in which political, economic and social elements of organization change in reaction to internal and external developments, and any name given to these political entities, such as tribe, chiefdom, (early, tribal, segmentary) state, is only a coarse reflection of the political reality or realities it represents. If 'State' refers to the level of political organization, 'tribal' refers to the social organization that forms the building blocks for the political structure. No two tribal states will look the same, or have the same combination of traits. The 'trait list' therefore is a starting point, not a definition. The gradual process that leads from a basically tribal society, to a tribal state or kingdom, follows many different roads. If there is a continuum, or perhaps a 'stepped' continuum from a typical 'tribal' (egalitarian, group oriented, with limited power for the leader) society towards more complexity and integration (typical features of kingdoms or states), the thing to remember is that during this process the tribal society did not shed its basic social structure, which remained intact during the transformation, and in fact became incorporated in it, an essential part of the 'new' state. Because of this, because the essential elements of the tribal society were still present, it was always possible for the state to disintegrate back into its original components, the tribes.

- a tribal kingdom would coalesce out of a tribal alliance usually under influence of outside

pressure or threat.

- The rise of a strong man at the right moment, who is acceptable to all the tribes.
- the pre-monarchical tribal social structure would not be extinguished by the rise of kings. A 'class-based' society, with an urban class controlling a 'rural class' would not evolve.
- Basic features of tribal society would continue to exist, such as the association of tribes with their traditional territories; an economy that continues to take place on the scale of the individual tribes; and overlapping of territories among tribes for different economic purposes.
- The intra- and intertribal social organization would be used and adapted in order to accommodate the bureaucracy that was the result of the kingdom structure.
- Tribal hinterlands would be administered from fortified centres, but most people would still be living in the hinterlands, in their own traditional tribal territory.
- Power structures within the kingdom were heterarchical rather than hierarchical: there could be several power bases on the same level, basing their power on different resources, such as economic, religious or political resources.
- The maintenance of a central militia, to protect the interests of the kingdom as a whole.
- A strong economy, to guarantee the independence of the state, and to provide the means to execute the prestige projects, and to buy the cooperation of the tribes.

The Rashidi emirate as a tribal state

The short history of the Rashidi emirate above, illustrates the process of the tribal state in a number of features.

External political pressure leads to a higher level of integration and political organization

The Arabian peninsula was in a state of turmoil as a result of the power struggle between the Wahhabis, Muhammad Ali, pasha of Egypt, and the Ottoman empire. From the beginning of the Wahhabite expansion, the Shammar were traditionally opposed to them (Oppenheim 1939: 134), and their subjection to the Wahhabis was the result of a number of defeats in battle. In 1818 Muhammad Ali had defeated the Wahhabis and sacked their home town of Dir'iyah. However, some 15 years later the Saudi leaders had regained much of their former power, and governed the peninsula from their new capital, Riyadh. Many of the tribes on the peninsula, either out of fear or opportunism, swore allegiance to the Saudis. Those who didn't were raided and forced into submission. This growing power of the Saudi polity caused resistance among various of the tribes, among which were groups of the Shammar. At the same time both the Ottoman empire and the Egyptians were pressing into the peninsula to reinstate their power (see Baily Winder 1965 for a general overview of power relations on the Peninsula in the 19th century). Rasheed (1991: 46–7) suggests that it was this threat which drew the various Shammar tribes together and made them consent to one overall leadership.

Abdallah: the Strong Man

The man who acquired that overall leadership was Abdallah Ibn Rashid, a cousin of the sheikh of the Abda. He had gained the support of Faisal Ibn Sa'ud, the leader of the Wahhabi in Riyadh, but it was his personal qualities that gained him the leadership of the Abda¹. "His intrepidity and manliness, his strict justice, often inclining to severity, his unflinching adherence to his word and promise, of a breach of which he was never known to have rendered himself guilty; and, above all, to his unsurpassed hospitality and benevolence towards the poor, of whom, it was a well-known thing,

¹ Winder (1965: 101–105), largely basing himself on the historian Dari Ibn Rashid, gives an extensive description of the take-over of Hayil by Ibn Rashid.

none ever went unhelped from his door". (Wallin 1854–55/1979: 68)². There were also his reputation for prowess in battle, and probably the fact that he was supported by his brother Ubayd, who was as brave a soldier, but more cunning, more of a politician, and with less charisma (Winder 1965: 105; 240), and who was content to support and probably influence his brother backstage³.

After taking over the leadership, Ibn Rashid remained loyal to his Saudi allies, but at the same time he began to forge the Shammar confederation into a more integrated structure. He stressed the capital role of Hayil by further building the palace in the Barzan, that was started, by his Ibn Ali predecessor, and other major building projects. He also laid the base for a standing army, and used it to ensure safety on the roads. He demonstrated his own military prowess in raids on the Anaze, in which the other tribes were invited to take part – in return for a part in the booty. The long-lasting feud with the Anaze had its origins in regular raids by this tribe into Shammar territory, but it was enhanced by the 1838 Shammar conquest of Jauf, which lay in Anaze territory. This, and another long lasting feud with the tribes of Qasim (south of Shammar), was the incentive for a series of raids and battles, in which all the Shammar tribes participated, and were invariably victorious (Winder 1965: 134, 154). These battles did much to cement the confederation.

Leadership in Near Eastern tribes was a combination of ascribed and achieved qualities. A sheikh was chosen from one leading family, and the sheikhdom usually remained within that family. A change in the leading family was a major, and usually bloody event⁴. While the leader had to come from the leading family, within the leading family the succession was less clear: a sheikh could be succeeded by his son (not necessarily the eldest) or his brother, or another family member altogether (although a succession further removed than a son or a brother could be seen as a take-over, and sometimes caused tension). So the hierarchy of leadership was crystallized as far as the family level, but not to the level of the actual successor. This remained an issue in the Ibn Rashid dynasty until the last days of the empire, and contributed to its downfall.

The choice of the actual leader depended on achieved qualities: courage and prowess in war, intelligence (mostly trouble-shooting qualities, and the capability to keep the peace within the tribe), generosity, charisma. Material wealth was important insofar as it enabled the leader in question to practice his generosity, an aspect that was vital in acquiring the support of the leaders of the coalition tribes.

The sheikhly family of the Abda were the Jaafar. Abdallah Ibn Rashid was *ibn amm* (paternal cousin) of Ibn Ali, sheikh of the Abda, so the change in leadership from the Ibn Ali to the Ibn Rashid did not, in fact, involve a complete turnover in the leading family, something that made the transition easier. The Jaafar family supported the change of power. Abdallah had taken care of his succession, by appointing his son Talal as his successor, an appointment that was supported by the family (al-Rasheed 1991: 57). After Talal's death in 1868, however, a struggle broke out over the succession. Talal was succeeded by his brother Mitab, who had the support of the family, but after a year Mitab was killed by Talal's son Bandar. Bandar was killed within a year by another brother of Talal, Muhammad. Muhammad had made a career as a caravan leader, and built up a network with both the nomadic and the settled sections of the Shammar. His coup was supported by both the Jaafar family and the Shammar tribes. Nevertheless he took the precaution to murder the complete

2 Palgrave's description of Abdallah's rise to power already has aspects of a heroic epic, featuring miraculous rescues from death and heroic prowess, demonstrating how oral traditions create heroes.

3 Several very different reports have been given of Ubayd, among others by Palgrave (1873: 189), who dismissed him as a fanatic and a traitor, and by Blunt (1880/2002: 194), according to whom Ubayd was the 'principal hero of the Shammar tradition'.

4 When leadership within the tribal confederation of the Tiaha changed from the Ibn Atiyeh to the Hukuk, this was accompanied by the murder of most of the members of the previous leading family (Oppenheim 1943: 111). The takeover of leadership among the Huwaytat at the end of the 19th century by the Abu Tayyi caused major tension among the Huwaytat in Lawrence's army during the first World War.

Talal branch of the family. (Doughty presents this as an inevitable blood revenge, which was followed by the necessary extinction of other possible contenders). The aspect of personal ambition, and the murders that eventually became almost a regular feature of the succession (Blunt 1880/2002: 271; al-Rasheed 1991: 66–74) seem to have been part of the transition to a more state-like organization, the result of the increasing prestige of the position of amir as compared to that of a tribal sheikh. In 1906 Abd el-Aziz was succeeded by his son Mitab, but Mitab was powerless because he did not have the support of the tribe, and he was deposed by another branch of the family altogether: the Ubayd branch, descendants of the first amir's brother Ubayd, who had never before made a bid for the throne.

The tribal organization as political building blocks of the emirate

The Shammar were a confederation of four tribes: the Abda, Sinjara, Aslam and Tuman. They referred to themselves as a *qabila*, a term that in this case can be translated as 'tribal confederation'⁵ (al-Rasheed 1991, 18).

Definitions of both the word 'tribe' and the concept of tribalism abound in anthropological literature (Parkinson 2002 has definitions in most articles). There is, however, a huge discrepancy in definitions deriving from New World research and those used in Near Eastern studies. These discrepancies mainly deal with issues such as economy/subsistence, mobility, size, and complexity of organization. The economic, political and social organization of Near Eastern tribes has been described extensively by Eickelman (1981: 85–104); Lancaster (1981); Salzman (2004) among others. This is not the place to add another definition. There are several traits that seem universal among societies that are considered 'tribal' worldwide, and that all researchers seem to agree on. These are:

- a segmentary society structure, in which the 'segments' are generally formed by kinship or lineage groups or clans. These segments are integrated into a larger whole by means of sodalities, networks of solidarity groups that cross-cut the clan structure and keep the clans together. The kinship structure does not necessarily reflect actual family relations, but can be manipulated and changed for social or political reasons, with the consent of the members.
- Leadership of the tribe is a combination of ascribed qualities (it usually resides within a leading family, for example) and achieved qualities.
- The rules of social interaction, both within the tribe and between tribes, are strongly determined by the concept of honour.

While the confederation was known to the members as a *qabila*, the separate tribes, the Abda, Sinjara, Aslam and Tuman, were known as *asha'ir* (sing. *ashira*) (al-Rasheed 1991, 19–22). The *ashira* consisted of a number of lineages or clans, the *hama'il* (sing. *hamula*) who were associated into larger groups, 'maximal lineage units', the *fukhud* (sing. *fakhd*). The *fukhud*, unlike either the *asha'ir* or the *hama'il* seem to have been the basic economic unit. They claimed ownership of wells and pasture grounds, and shared a *wasm*, a tribal mark.

Every *ashira* had its sheikh, who was the tribal leader and who came from the leading lineage in the *ashira*. The leaders of the Sinjara were Ibn Thunayan; of the Aslam Ibn Twala; and of the Tuman Ibn Timyat. Until the coup by Ibn Rashid, the sheikhs of the Abda were Ibn Ali. This coup had far-reaching consequences for the *qabila*, as it completely changed its political (but not its social) structure. Until then, the *qabila* had no leader. Abdallah Ibn Rashid was the first leader of the whole *qabila*.

5 *Qabila* is sometimes interpreted as a confederation, sometimes as a (large) tribe. In line with segmentary lineage theory the tribes have a 'nested' structure, with 'tribes' consisting of 'subtribes', consisting of 'clans' consisting of families. Tribes could become part of confederations. This organization is fluid, and tends to change over time – tribes merge into confederations that eventually come to be seen as tribes, and vice versa, tribes grow, and split up, subtribes growing into tribes and tribes into confederations.

The *asha'ir* had a bond of allegiance, that was dormant most of the time and consisted as an ideal rather than as a practical policy, but that could be activated when circumstances required (Jaussen 1908: 114). This would generally be in times of political or economic stress. Political stress could be caused by outside threats, when a tribe was attacked and raided, or its territory threatened. In such cases the other tribes would be requested to aid the threatened tribe. Or it could be the result of intertribal conflict, which would then be settled peacefully within the terms of the bond of allegiance.

Economic stress could be caused by droughts, crop failure, sickness among animals and the like, in which case a tribe could claim economic support, or the use of another tribe's wells and pastures⁶.

Common ways to maintain the bond of allegiance in 'dormant' periods were by means of reference to a shared apical ancestor (al-Rasheed 1991: 20), and intermarriage.

The tribal sheikhs, particularly those of the Shammar tribes, also remained autonomous leaders in their territories, and the amir had to consult with them, if he wanted their support or that of their tribe.

In some of the subjected territories (*i.e.* territories belonging to conquered tribes), the amir would occasionally change a leader of a village, and replace him with someone of his own choice, but this also was an exception. Taima, conquered by Talal ibn Rashid, had a 'resident' representative of Ibn Rashid, but the government of the town was left to the local sheikhs (Doughty 1921/I: 333–5). In Jauf, conquered in 1838, there was still no Rashidi representative in 1845 (Wallin 1854–55/1979: 31). When Palgrave visited Jauf in 1862 (Palgrave 1873:31), there was a governor from Hayil, appointed by Ibn Rashid, Hamud. But he had only been sent to Jauf in 1853, after and because the town had rebelled and been recovered. Palgrave also mentions a Rashidi-appointed mayor in the village of Feyd (Palgrave 1873:138) but notes at the same time that the general system of government of the subjected domains was to appoint a local chief "for it is only in rare instances and for very particular reasons that he appoints one of the capital or the central district to be prefect in a distant locality". The strong Rashidi control of Jauf, when Anne and Wilfred Blunt visited the place in 1878, was recent, and due to the fact that it had been briefly conquered by the Ottoman forces of Damascus, and again recovered by the Rashidis (Blunt 1880/2002: 117–119).

Winder observed that, contrary to the political organization of Riyadh, which was a purely religious state, 'the Rashidi government was an extended tribalism' (1965: 241). His main argument is that in spite of the fact that the Shammar were Wahhabi's, their tribal consciousness overruled their religious consciousness.

The integration of the social organization of the traditional Shammar tribal society into the political organization of a state rested on several pillars.

The Rashidi amirs made sure to maintain and strengthen the bonds with the sheikhs of the other Shammar sections. The sheikhs participated in the raids that the Rashidi organized, and were given gifts to buy and maintain their loyalty, and thus the loyalty of their tribes. Apart from that, marriages were arranged that strengthened the network. Other tribes were subjected in the course of the expansion of the emirate, but they were ruled through their own sheikhs (Doughty 1921/II: 46–47).

The addition of a new title, that of *amir*, which was effected by Talal, the second Rashidi leader, can be seen as a benchmark for the change of confederacy to tribal state, mainly because it was accepted by the leaders of the other tribes. Talal did not stop being sheikh of his own tribe, the

6 Honour violation could be a cause for activating the bond of allegiance, as in the case of the *qabila* of the Ibn Amr on the Kerak Plateau, described by Dissard (1905: 417) and Musil (1908: 78). In this case the wife of Dhiab, sheikh of the Ibn Qaisum, an Ibn Amr *ashira*, was sexually assaulted by a sheikh from a friendly tribe, the Hameide. This induced Ibn Qaisum to call in the aid of another Ibn Amr *ashira*, the Ibn Tebet. In spite of the fact that the Ibn Qaisum and the Ibn Tebet had a feud at that moment, the Ibn Tebet felt obliged to answer the call, and as a result the Hameide were expelled from the Kerak Plateau.

Abda, but he added a layer to the hierarchy of leadership, and he now had two separate but interlinked roles: that of leader of his tribe, the Abda, and that of representative of the whole confederation (al-Rasheed 1991: 78–9). The sheikhs of the other tribes could still withhold their support (and did so, towards the end of the emirate) and had to be consulted, and coaxed into supporting the amir with presents. This increased the importance of material wealth, and gave the Ottoman government a chance to increase its influence with the Rashidis, by subsidizing them.

The continuation of basic features of tribal society: tribal territories

The tribal territory of the Shammar consisted of the Two Mountains, the Jebel Aja and the Jebel Selma, together the Jebel Shammar, and some of the surrounding lands. The four Shammar tribes each had their own territory: that of the Abda contained the Jebel Aja, extending east and north of it, and including several villages and oases, the most important of which was the oasis of Hayil; the Sinjara lived to the north and west of the Jebel Aja, their territory partly overlapping with that of the Abda. Sections of the Sinjara would move north in spring, past Jauf and spend the summer and fall in Iraq. The territory of the Aslam included Jebel Selma with its oases and villages. The Tuman camped further north, separate from the other Shammar tribes, their territory extending from north of the Darb Zobeida into Iraq, although they would on occasion wander south, into the Abda and Sinjara territory, where they enjoyed protection (Oppenheim 1952: 37). Over time there had been changes in the tribal territories, such as when the first branch of the Shammar moved to Mesopotamia, and later, in the 19th century, when the second branch moved to join the first (Oppenheim 1952: 37).

At the heyday of its power the domains of the emirate greatly exceeded the traditional territory of the Shammar. Abdallah Ibn Rashid subjected the oasis of Jauf, in the northwest and forced them to pay *zaka* (the religious tax, imposed by the Wahhabis); his son Talal added the oases of Taima, Khaibar, Hayyet and Huwayyet in the Harrath Khaibar, all to the west of the core area of Jebel Shammar. Muhammad Ibn Rashid beat the Sa'udis and extended the domains to the east and north. In his days the emirate reached the height of its power, ruling from Hauran and Palmyra in the north to the borders of south Arabia. They maintained good relationships with the Ottoman empire, their formal overlords, although hardly one of submission. The emirate recognized the Ottoman supremacy mainly in the Friday prayers in the mosque (Palgrave 1873: 55).

There was, therefore, a clear distinction between the domain of the state, and the territory of the tribes, which was strictly maintained. The domains outside the Shammar territories were the territories of other tribes, who were subjected to the emirate, paid tribute, and had to accept the presence of Shammar police forces and sometimes a governor but who were, apart from that, left to their own devices and tribal squabbles (Doughty 1921/II: 32), as long as they remained loyal to the emirate. They were turned into subjected, vassal tribes. Both the growing power of the Rashidis and the harsh Wahhabism of the Sa'udis induced tribes to voluntarily offer their submission to Ibn Rashid. One case is described by Doughty (1921/II: 52): a section of the Kahtan (from Qasim) had split off from the main tribe, and offered repeatedly to become 'Rashid's Arabs'. Ibn Rashid, who considered the Qasim tribes as enemies, refused, and only offered them the use of his pastures without any obligation: "we are not of you; we will neither help you nor hurt you."

The dominions remained loyal partly because the rule of the amirs had brought peace and security, and partly out of fear. The amirs 'ruled by the sword', and the subjected tribes never became real loyal subjects, or submitted their inherent independence and autonomy. "The Beduw and oasis dwellers are not liegemen (as they see it) to any but their natural sheykhs" (Doughty 1921/II: 31).

Tribal economy

The Two Mountains abound in springs, fed by an aquifer with good water, and in addition to the springs wells were dug to exploit it. Thanks to the water and the quality of the soil, the inhabitants

of the mountain chains were largely self-sufficient.

The Shammar confederation had a multi-source economy, supported by three pillars: pastoralism (both sheep / goats and camels), agriculture (mostly dates), and trade.

- Pastoralism was an important aspect of the economy. Camels were used both by the farmers in farming, and for the trade. As a large segment of the Shammar had moved to Mesopotamia, there were extensive trade relations with the north, for which many camels were needed. Wallin describes how settled members of the Armal (a Sinjara subtribe, Oppenheim 1952: 49) owned large camel herds, which they herded out with “their nomadic brothers”, or with hired herdsmen. They also bred horses, which were considered the best in the region, but these were largely used as prestige objects, and given as presents to other rulers. There was some horse trade with Egypt, as the Egyptians has acquired a taste for Shammar horses during the reign of Muhammad Ali. But in general horses did not figure largely in the economy in a direct sense, although they could play an important role in the establishing and maintenance of networks (Wallin 1854–55/1979: 74). Sheep and goats were also part of the pastoral economy.
- Agriculture was practiced in the oases. This mostly consisted of date-growing, for which the region was famous. Other products from the oases were a variety of fruits and vegetables, wheat and barley (Al-Rasheed 1991: 95). Partly this was produced by sedentary branches of the Shammar tribes, or by their slaves and dependents, and partly by an old tribe that had allied itself to the Shammar: the Beni Tamim (Wallin 1854–55/1979: 64). The products of both pastoralism and agriculture were exchanged in markets in the towns and villages. According to Wallin (1854–55/1979: 65) “Thus continual intercourse and the most intimate relations, grounded upon mutual interests and reciprocal assistance, are kept alive betwixt the two classes of Shammar, which has greatly contributed to the increasing power of that tribe”.

The third pillar on which the economy rested was long-distance trade. Since the Shammar produced the camels that were needed for the trade, they were necessarily involved in it, as producers of the means of transport, guides and escorts. There were, every year, four main trade caravans to the northern Shammar in Mesopotamia, and many smaller ones, and much of the wheat was imported from there, as well as luxury goods such as rice (Wallin 1854–55/1979: 49) and manufactured goods of leather and textiles. Anne and Wilfred Blunt were proudly shown a telephone by Muhammad ibn Rashid (Blunt 1880/2002: 255).

When the Rashidis came to power, they did not interfere with the first two pillars of the economy, pastoralism and agriculture. These continued uninterrupted, in the hands of the individual tribes, as did the local trade or exchange of these products on the local markets. It was the third mainstay, the international trade, that became the economic base for the power of the Rashidis.

The economy of the emirate

Talal, the second Rashidi ruler, supported and enhanced trade by creating a major international trade market in Hayil, his capital (al-Rasheed 1991: 57–9. 100) and encouraging merchants from elsewhere to settle in Hayil (Palgrave 1873: 93,112; al-Rasheed 1991: 100–101). He had an active interest in the trade caravans, for which he provided escort (al-Rasheed 1991: 103). His brother Muhammad, who later became the next amir, made his career as a caravan leader, an enterprise through which he gained both wealth and the network that would maintain him in power later (Doughty 1921/I: 604). Thus, by taking control of the international trade, through both active involvement in it, and taxing, the Rashidis managed to build up a considerable capital which they used to execute their prestigious building projects, to buy the loyalty of the sheikhs of the other Shammar tribes, and build up and maintain their own standing army (Oppenheim 1952: 44).

Apart from the international trade, an important source of income were the revenues of the Hajj. One of the major Hajj routes, the Darb Zobeida, ran past Hayil. The fanaticism of the Wahhabis, in Riyadh, also played in the hands of the Rashidi capital: Shiites, who were considered heretics by the Wahhabis, would avoid Wahhabi territory, and travel to the holy cities via Hayil (Doughty 1921/II: 49–50).

So the oasis of Hayil developed into a major market town and a central place, the absolute centre of gravity for both the economy and the power of the emirate.

Tribal social organization was used and manipulated to organize the bureaucracy of the emirate

By creating the emirate, a hierarchical level above that of the sheikh, the Ibn Rashid also created an artificial distance between themselves and their tribesmen, a distance that did not exist between the sheikh and his tribesmen. As a result, the Ibn Rashid interacted with the other sheikhs and with the tribes on two different levels: that of a first among equals, a tribal sheikh, and that of the ruler. This discrepancy was best expressed in the architecture of the palace in Hayil, and the role it played in everyday life. The palace has been described by numerous travellers (Wallin 1854–55/1979: 200–01, Euting 1896: 200–01; Doughty 1921/II: 5; Palgrave 1873: 72–73). It had a large courtyard, surrounded by a heavy wall with high towers and bastions, meant both to impress, and to set the leadership apart from its subjects, unlike a tribal sheikh, who traditionally camped among them.

One of the responsibilities of a sheikh or tribal leader, was the settling of disputes. The judiciary system was simple, and derived from the tribal system of justice. In the tribal system the sheikh would be the first court of justice; difficult cases were put before professional *qadis* (Burckhardt 1830: 66–75; Jaussen 1908: 132–33, 181–185). Ibn Rashid continued this practice, in that he would hold court every morning, and sometimes in the afternoon as well, on the courtyard of his palace (*the mejlis*; Palgrave 1873: 97; Doughty 1921/I: 607–8). These sittings were accessible to everybody with a complaint, and the amir would judge every case that was brought before him, assisted by *qadis* from the town. Justice was practiced in the same way in other towns (Palgrave 1873: 53) on behalf of the emir. Thus the amir was informed of anything that happened in his realm, and at the same time he maintained his direct contact with the tribe members. What differed from the tribal system was that the amir had, through his professional police force, a means to enforce his sentences, something a tribal sheikh would generally not have (Doughty 1921/I: 607). Punishments were executed on the spot, thus underlining the judicial power of the amir.

Another feature that set the Rashidi ruler apart from his subjects was his wealth, which was much larger than that of any tribal sheikh, and which he amassed mainly through taxes on the trade. The use he made of this wealth, however, remained for a large part the same as that of a tribal sheikh. He used it both to impress, and to increase his power and influence by means of his generosity – by ‘buying’ the sheikhs of the confederation. The sheikhs were the channel through which the support of the other tribe members was bought.

Apart from that he used it to maintain his bodyguard. It is clear that the danger of murder made a bodyguard a necessary accoutrement of a Rashidi ruler, but it also set the ruler apart from the other sheikhs of the confederation, who never had a professional army, however small.

Nevertheless, the authority of the amir never became fully institutionalized. Every amir had to gain it from the first day of his emirate, and to work on it for the rest of his career. The tribes, and their sheikhs, always had the possibility to withhold their support, as happened in the case of Mitab, the son of Abd-el Aziz, in 1906. He did not have the support of the ruling family, or of the other tribes, and as a consequence he was powerless. During and after World War I the Ibn Rashid lost the support of many tribes who joined the Ibn Saud or the Hashemites, and in 1921 their emirate was ended, through internal dissention among the Rashidis themselves (Oppenheim 1952: 40–41; Musil 1928; al-Rasheed 1991).

Hayil as a central place

Over time Hayil grew from a minor oasis village to the central place of the Shammar emirate. When Wallin visited Hayil in 1845 it was still a relatively small oasis, with some 210 houses. The Rashidi residence was already the largest, and Wallin refers to it as the ‘palace’. Palgrave visited the place in 1862 and he describes fortifications ‘of about twenty feet in height, with bastion-towers, some round, some square, and large folding gates at intervals.....its area might readily hold three hundred thousand inhabitants or more, were its streets and houses close packed like those of Brussels or Paris’ (Palgrave 1873: 71). Palgrave estimates the number of inhabitants as 20,000, which is a huge exaggeration, but shows how impressed he was with the town.

When Doughty visited the town in 1877 he estimated that it had 3000 inhabitants (Doughty 1921/I: 617), and it was still growing. Doughty describes the town wall, with towers and gates, numerous markets, and the different quarters into which the town was divided, each surrounded by a wall (Doughty 1921/I: 584–88; II: 5). Euting, who visited the town in 1885, was lodged in the Persian quarter, where the Persian traders lived, and he mentions the existence of a Slave quarter, which housed the 1000 slaves that belonged to the amir (Euting 1896/I: 178–180). Surrounding the town were the tents of semi-settled bedouin (Doughty 1921/I: 619) who lived under the protection of the amir. Thus the town consisted of public buildings and areas, such as the palace, the main mosque, the commercial area with markets and shops, and a large proportion of its inhabitants were foreign traders. There was also a special slave quarter, the Suq el-Abd, where the household of the amir was housed (some 200 persons in the days of Muhammad, according to Euting (1896: 216)). The percentage of actual Shammar inhabitants remained low, most of them living in their tents outside the town, or in the other oases.

The main reasons why Hayil would have become the central place, was, firstly because the Rashidis made it so, and secondly, because it lay on a major trade- and hajj route. Originally it was a small oasis. Some three hours walk from Hayil was a much larger village, Kafar, which belonged to the Beni Tamim. Kafar was the main local market for basic supplies, such as dates and cereals, which were exchanged for cattle, but it was rarely visited by travelling tradesmen, who generally went to Hayil.

In the time of Mohammad Ibn Rashid the town had gained a metropolitan outlook, with goods traded from all over the world, and most of the money that changed hands being in foreign (European) currency (Doughty 1921/ II: 9).

Creation of a standing army

The Ibn Rashid managed to bring peace and security to the region. It was said in Wallin’s day, that ‘one may go from one end of the land to another, bearing his gold on his head, without being troubled with any questions’ (Wallin 1854–55/1979: 68). This was in the early stages of the emirate, during the reign of Abdallah. The same was said during the reign of Mohammad.

This peace and security was one of the main assets of the Rashidi amirs, and one that every traveller in the region commented upon. Abdallah Ibn Rashid began to build a professional army (Wallin 1854–55/1979: 66; al-Rasheed 1991: 57), consisting of slaves and conscripts from outside the tribal community (Doughty 1921/II, 32, 35–6; deserters from the Turkish and Egyptian armies formed a substantial part of it, as well as individual bedouin tribesmen). His brother, Ubayd, was permanent commander, the equivalent of the tribal *Agyd* (Burckhardt 1830: 168–69; Musil 1928: 506; Doughty 1921/II: 27).

Bedouin tribes had no professional soldiers. Every able man took part in the wars and raids, and then went back to his camels or date gardens. The creation of a standing army and a police force was rare, and intimately linked to the leadership position of the amir (al-Rasheed 1991: 133–158). Euting (1896: 201) describes how several deserters came to the court of the amir, where

they were fed and clothed, prior to being incorporated in the army. There was also a police force, consisting of volunteers from the Shammar and the Beni Tamim tribes. These forces were used not only to guard the palace (Palgrave 1873: 73) and execute the sentences of the amir during his daily court sittings, but were also sent as permanent 'peace-keeping forces' in the subjected domains (Euting 1896: 127) and sent on expeditions in the countryside to control the bedouin and prevent their raiding (Palgrave 1873: 66). Apart from this professional army, the traditional 'ad hoc military service' of tribesmen continued to exist, particularly for raids on other tribes, although according to Doughty they were also involved in the daily court proceedings (Doughty 1921/I: 607–8). These tribesmen came not only from the Shammar tribes, but also from the other subjected tribes, who were generally eager to take part in these raids for the booty (Doughty 1921/II: 20–22; Wallin 1854–55/1979: 34).

Discussion and conclusions

The Emirate of the Ibn Rashid has been described as a tribal state in the above discussion. However, the concept of a tribal state is flexible. The only definition that seems universally valid is that it integrates aspects of a 'traditional' tribal society, into the organization of a state-like political entity. Which aspects these are, and how they are used to organize the state, may differ with every instance, and is dependent on external factors such as economy, external relationships, religion, etc.

The provisional 'trait-list' composed by LaBianca and others, therefore, is no more than a guideline, suggesting on the one hand reasons why the two forms of social and political organization (the 'tribal' and the 'state' organization) can become integrated, and on the other hand ways in which this integration can manifest itself.

In the case of the Rashidi Emirate the reason for integration of the tribal polity into a state-like organization was political unrest in the Arabian peninsula, first caused by the pressure of the Egyptian forces of Muhammad Ali, and later by the expansion of the recovering Wahhabi polity of the Ibn Sa'ud in Riyadh. The rise of Abdallah Ibn Rashid was the direct result of the failing rule of his predecessor, Salih Ibn Ali of the Abda, but his recognition by the other Shammar tribes, and the transition from a loose confederacy of independent tribes, into a much more integrated state-like polity, was both due to his personality, and the need for a strong leader to counter the threats from the surrounding tribes. It was, however, his son, Talal, who 'formalized' the state, by pronouncing himself amir.

The tribal organization of the Shammar was integrated and used in the emirate in various ways. Conquered tribes were generally ruled through their own headmen, and only occasionally was there a Rashidi – appointed presence in the conquered town or village. Tribal territories were maintained, and the local economy was organized and controlled by the tribes. It was through influencing the tribal leaders, that the support of the tribes for the government was maintained.

At the same time, the power and status of the amir vastly exceeded that of the traditional tribal sheikh. The absolute centre of gravity of the emirate was the oasis of Hayil, which the amirs had turned into a major central place, the centre of the trade, of military power, and of justice. It housed the institutions of power, rather than the population, the vast majority of which lived in the hinterlands.

The creation of a permanent military power and police force, also enhanced his power and lifted him above the level of the sheikh, as traditionally a tribal leader had no power of coercion, and could not command his tribe.

Transformations comparable to those of the Ibn Rashid emirate can be observed in other societies in the region, making clear that there is no specific trajectory from 'tribal confederation' towards 'tribal statehood'. Nuri Ibn Sha'alan, leader of the Rwala, a tribe of the large Anaze confederation, had the same power of coercion that the Ibn Rashid had built up (Glubb 1960: 40–41). This power rested on the presence of 'a veritable police force to coerce dissident tribesmen' and a large number of slaves (Lancaster 1981: 84), forming a militia comparable to that of Ibn Rashid. He was said

to have absolute power in his territory (Jaussen 1908: 143).

Another tribal confederation, that of the Kerak Plateau, headed by the family of the Majali, also had aspects of the integration into a more state-like structure. The leading family, the Majali, had more power than a 'normal' tribal sheikh, although their power and influence among the tribes was to a large extent dependent on their personal qualities. They had no standing army (something Ibn Shaalan did have) and therefore they had no power of coercion, and for every raid or battle, or in fact, any major decision they needed to gain the support of the tribe members (Burckhardt 1822: 382). On the other hand, they had turned Kerak into a central place, with a stronghold in the form of the old Crusader castle, and with a market, that was the economic centre of the region. According to Burckhardt they had become "complete masters of the district of Kerek, and have great influence over the affairs of the Belka." (1822: 382).

Most of the Kerakis themselves lived outside the town, at least part of the year, to tend their flocks and their fields which could be found over most of the Kerak plateau (Burckhardt 1822: 387; Durley 1910: 176; Lynch 1849: 357; Tristram 1874: 82–83).

There were other towns in the region that functioned as market centres such as Salt in the Belqa, and Jauf. These however do not seem to have concentrated the sort of power in them that both Kerak and Hayil embodied.

Written sources and archaeological remains from past societies, particularly in the Iron Age, have given rise to speculations about the formation of tribal states. The case study of Ibn Rashid shows that these tribal states, if and where they existed, were as much the result of the innate structure of the tribal societies in which they originated, as of the agents of local and international politics, the rise of powerful personalities, and climate. The particular features of these states are therefore hard to establish, and may have differed in every case.

There are limitations on our ability to reconstruct past political configurations using modern 'parallels' and we have to be careful when we attempt it. However, political configurations cannot be separated from the society in which they emerge, and it is to the structure of that society that we need to look first when we attempt to analyze its politics. Shammar society in the Nejd in the 19th century, in spite of its being taken up in international politics, remained tribal in its social, economic and territorial structure. In its response to the events of the time it became a tribal state. Many of its features can only have occurred in the 19th century, in the political and religious context of the time; however, many aspects also seem to have been timeless, and may give us an insight into what tribal states in the more distant past may have looked like.

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PRELIMINARY REPORTS OF THE SYRIA-JAPAN ARCHAEOLOGICAL JOINT RESEARCH IN THE REGION OF AR-RAQQA, SYRIA, 2008

INTRODUCTION

Michel AL-MAQDISSI*
Katsuhiko OHNUMA**

In February of 2007, the Syria-Japan Archaeological Joint Research in the Bishri Region started the field works in the region of Ar-Raqqa. Since then, seven times of the joint works in the field were carried out until December of 2008 as follows:

- The 1st season of field works: February 15 to March 3, 2007
- The 2nd season of field works: May 6 to 30, 2007
- The 3rd season of field works: August 1 to 29, 2007
- The 4th season of field works: November 8 to December 12, 2007
- The 5th season of field works: March 3 to April 5, 2008
- The 6th season of field works: April 25 to June 6, 2008
- The 7th season of field works: October 10 to December 2, 2008

Composed of 18 research teams listed below, specialized in natural and cultural sciences, this multidisciplinary joint research aims to clarify, through harmonized cooperative field works in the Bishri region south of Ar-Raqqa, changes of natural environment, patterns of settlement, subsistence patterns, architectural styles, artistic styles and social relationship, thereby clarifying how ancient pastoral nomadic tribes contributed to the formation of agriculture-based urban societies along the Middle Euphrates, North-East Syria.

- 1) Supervising Team “Archaeological Research in West Asia based on Integrated Research Methods” (Director: Katsuhiko Ohnuma)
- 2) Research Team “Relationship between the Behavioral Evolution and the Process of Sedentalisation during the Palaeolithic Period in West Asia” (Director: Hiroyuki Sato)
- 3) Research Team “Expansion Process of Food Production Economy and Formation of Community in the Arid Area of West Asia” (Director: Yoshihiro Nishiaki)
- 4) Research Team “A Comparative Study on the Burial Patterns of the Pastoral Nomadic Tribes” (Director: Sumio Fujii)
- 5) Research Team “A Study of the Process of Urbanization in West Asia” (Director: Akira Tsuneki)
- 6) Research Team “Integrated Research on the Assyrian Civilization in Northern Mesopotamia” (Director: Hirotoshi Numoto)
- 7) Research Team “Establishment and Development of the Civilization of Sumerian Writing System” (Director: Kazuya Maekawa)
- 8) Research Team “Development of City-States and the Tribes in West Asia” (Director: Akio Tsukimoto)

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- 9) Research Team “Environmental History of the Middle Euphrates based on Environmental Geology, Environmental Chemistry and C14 Dating” (Director: Mitsuo Hoshino)
- 10) Research Team “Biological Features of the Ancient Inhabitants of the Middle Euphrates and its Peripheral Region” (Director: Hidemi Ishida)
- 11) Research Team “Zoological and Botanical Archaeology in the Prehistoric to the City-State Societies of West Asia” (Director: Hitomi Hongo)
- 12) Research Team “A Study on the Styles and the Genealogy of Masonry Techniques in Ancient West Asian Architecture” (Director: Yasuyoshi Okada)
- 13) Research Team “Basic Structure and Re-arrangement of the Bishri Mountains Tribal Culture in the Ancient Oasis City, Palmyra” (Director: Saeko Miyashita)
- 14) Research Team “Developing Data-base of Archaeological Sites of West Asia: An Investigation through the Analysis of Satellite Images” (Director: Ken Matsumoto)
- 15) Research Team “An Archaeological Study on the Nomadic Tribal Communities in Northern Eurasia: A Comparative Study” (Director: Shu Takahama)
- 16) Research Team “A Study of the Process of Urbanization in the Steppical Border of Syria in the Third and Second Millennia B.C.” (Director: Michel Al-Maqdissi)
- 17) Research Team “A Study of the Bronze Age Pottery Obtained by the Syria-Japan Archaeological Joint Research in the Region of Ar-Raqqa” (Director: Michel Al-Maqdissi)
- 18) Research Team “New Perspectives of Anthropology and History towards Arab Tribal Systems” (Director: Masayuki Akahori)

The members who participated in the seven times of the joint works are as below:

Syrian Party: Michel Al-Maqdissi (Supervisor), Anas Al-Khabour (director), Shaker Al-Shbib (director), Ahmed Sultan (Director), Ayham Al-Fahry, Mahmmod Al-Hassan, Ibrahim Musa, Mohamad Ali Jajan, Mohamad Ibrahim and Aed Issa.

Japanese Party: Katsuhiko Ohnuma (Supervisor and Director), Hiroyuki Sato, Masanobu Tachibana, Yoshihiro Nishiaki, Tomoyasu Kiuchi, Sumio Fujii, Takuro Adachi, Kae Suzuki, Akira Tsuneki, Atsunori Hasegawa, Hirotoshi Numoto, Shogo Kume, Izumi Yoda, Harumi Horioka, Haider Urebi, Mitsuo Hoshino, Tsuyoshi Tanaka, Toshio Nakamura, Hidekazu Yoshida, Takeshi Saito, Kazuhiro Tsukada, Yusuke Katsurada, Ken-ichi Tanno, Lubna Omar, Chie Akashi, Yasuyoshi Okada, Naoko Fukami, Ryuichi Yoshitake, Yo Negishi, Panagiotis Tokmakidis, Shouko Ueda, Natsuko Fujikawa, Saeko Miyashita, Hitoshi Hasegawa, Tomoya Goto, Shu Takahama, Toshio Hayashi, Ryuji Matsubara, Toshiki Yagyu, Kenichiro Takao and Yoshihiko Nakano.

In the 1st season of field works, we undertook surveys of archaeological sites and *birs* in the research region, and confirmed that there is a bias in the dates of the sites distributed on the Euphrates plateau between the towns of Mansura and Ghanem al-Ali. We also confirmed that most of the sites in the western part of the research region are dated to the Roman, Byzantine and Islamic periods, while in the eastern part only a few sites are distributed, several of which are dated to the Early Bronze Age.

On the basis of these archaeological surveys, we chose Tell Ghanem al-Ali and Tell Hammadin in the 2nd season as candidates for future excavations.

And in the 3rd season, trench excavations were started at the site of Tell Ghanem al-Ali, and they were continued in the 4th and 7th seasons. Survey of cairns along the northern edge of the Mount Bishri was also started in the 3rd season.

In the 5th season, we carried out intensive surveys of archaeological sites in the research region to clarify the EBA land-use patterns around Tell Ghanem al-Ali, in order to gain further records of population history in this region since earlier times. We also carried out sondage at Rujum Hedaja

near Bir Rahub in the 5th to 7th seasons, with a view to exploring the pastoral background of the EBA society in the middle Euphrates river basin.

In the 5th to 7th seasons, we also carried out surveys at the Early Bronze Age hilltop tombs around the village of Ghanem al-Ali, in order to shed light on the funerary aspect of the EBA settlement of Tell Ghanem al-Ali.

During the surveys above, our geolo-geographical team confirmed that the site of Tell Ghanem al-Ali is situated on the 1st river terrace of the Euphrates among the 1st to 4th terraces in the research region.

Features of the objects, obtained during the series of field works and related surveys, demonstrate that the site of Tell Ghanem al-Ali, the tombs near Tell Ghanem al-Ali, and the cairn graves at Rujum Hedaja are altogether dated within the Early Bronze Age (EB III to EB Iva) periods, leading us to expect that the research to continue will clarify how ancient pastoral nomadic tribes contributed to the formation of agriculture-based urban societies along the Middle Euphrates, North-East Syria.

The papers presented here are the three working reports of the 5th to 7th field works in the forms of their submission to the Syrian Directorate General of Antiquities and Musems (see Al-Maqdissi, Ohnuma, Al-Khabour, *et al.* (2008) for the working reports of the 1st to 4th field works).

Dr. Bassam Jamous, Director General of the Syrian Directorate General of Antiquities and Musems kindly understood this joint research and have been constantly cooperating towards its success, and we express our sincerest gratitude to him for his heart-warming cooperation.

31/December/2008

ARCHAEOLOGICAL RESEARCH IN THE BISHRI REGION
— REPORT OF THE FIFTH WORKING SEASON —

Katsuhiko OHNUMA*
Anas Al-KHABOUR**
(April 5, 2008)

INTRODUCTION

The fifth working season of the Syria-Japan Archaeological Joint Mission to the Bishri Region started on March 3 and ended successfully on April 5, 2008. The members of the joint mission from the Syrian and Japanese parties were as follows:

Syrian party: Anas Al-Khabour (Director), Ayham Al-Fahry, Mohamad Ali Jajan, Ahmad Sultan.

Japanese party: Katsuhiko Ohnuma (Director), Sumio Fujii, Takuro Adachi, Kae Suzuki, Lubna Omar, Takeshi Saito, Kazuhiro Tsukada, Hirotochi Numoto, Yoshihiro Nishiaki, Shogo Kume, Seiji Kadowaki.

First of all, we would like to express our sincerest gratitude to Dr. Bassam Jamous, Director General of the Syrian Directorate General of Antiquities and Museums, and Dr. Michel Al-Maqqdissi, Syrian Supervising Adviser for this joint mission and Director of Archaeological Excavations and Research at the Syrian Directorate General of Antiquities and Museums, whose warm-hearted cooperation was essential to the success of this field season.

The objective of this field season was manifold. To begin with, we conducted a limited sounding at Rujum Hedaja 1, a large cairn field on the northern flank of Jabal Bishri, with a view to exploring the pastoral background of the EBA society in the middle Euphrates river basin. The second objective was to analyze faunal remains from Tell Ghanem al-'Ali. Third, we carried out a reconnaissance survey of shaft tombs around the village of Ghanem al-'Ali, in order to shed light on the funerary aspect of the EBA settlement of Tell Ghanem al-'Ali. Fourth, we made a geological investigation around Tell Ghanem al-'Ali, which addressed the stratigraphy of the basal part of the tell. Fifth, we undertook intensive surveys of archaeological sites in an effort to clarify the EBA land-use patterns around Tell Ghanem al-'Ali and Tell Hammadin and also to gain further records of population history in this region since earlier times. It is needless to say that these operations were intended to contribute to a better understanding of the archaeological implications of Tell Ghanem al-'Ali, the main target of our mother project. The following are brief summaries of the five operations.

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** Director of the Syrian Archaeological Mission to Bishri (Department of Antiquities and Museums, Raqqa, SYRIA)



The Research Area

1. A BRIEF SOUNDING AT RUJUM HEDAJA 1

Sumio FUJII (Professor, Kanazawa University)

A brief sounding at Rujum Hedaja 1, a large cairn field on the northern flank of Jabal Bishri, was conducted for about three weeks from March 3 through May 20 of 2008. The objective of this short-term investigation was to shed new light on the pastoral background of the EBA society in the middle Euphrates river basin. The investigation revealed a large cist-type burial cairn with a double enclosure, which may be tentatively dated, on the basis of a line of evidence referred to below, to the Bronze Age, its final phase in particular.

The Site and Site-setting

The site of Rujum Hedaja 1, or RHD-1 in our site registration code, is one of the four cairn fields (i.e. clusters of cairns) that were first found in our general survey conducted in May of 2007 (see our previous report). It was located on a flat-topped limestone hill ca. 5 km east of Bir Rahum, a small village that was newly founded along a local main road in the latter half of 1970s (Fig. 1.1). This table-like hill is ca. 30–50 m higher than the surrounding terrain and protruded westward for ca. 1 km, thereby commanding a fine panorama of the Bir Rahum area (Fig. 1.2).

Our previous survey had confirmed that the site contained a total of fourteen burial cairns, and that most of these were lined along the southern edge of the flat hilltop. This suggested a possibility that a long techno-typological sequence within the same site would be established. In addition, they included some large-scale, relatively well-preserved examples that were often accompanied with small features. It is for these reasons why we embarked on the sounding of the site. The accessibility from the local main road was also among the reasons for the site choice.

The Sounding of BC-10

Due to time constraints and an unexpectedly bad weather, the sounding of Rujum Hedaja 2, another site scheduled for investigation, was postponed until the next field season. Instead, our sounding focused on Burial Cairn No. 10 at Rujum Hedaja 1 (or RHD-1/BC-10). It was one of the largest and best-preserved burial cairns, being located at the western edge of the site.

The sounding was conducted based on a 5 m by 5 m grid and locus system that covered BC-10 and some of its surrounding features. In order to combine the efficiency of investigation and the preservation of the site, we adopted a half-cut excavation method along the north-south axis passing through the center of the mound. Since no triangle point was available nearby, a bench-mark was set up arbitrarily at the center of the grid system. Its elevation is estimated ca. 550 m according to a geographical map published in Syria.

We employed up to ten local workers at Bir Rahum, whose diligent workmanship was among contributing factors for the success of this field season. The operation took place under the supervision of some qualified persons including Ayham Al-Fahry and Mohamad Ali Jajan, both representatives from the Raqqa branch office of the Department of Antiquities and Museums. Their sincere cooperation was also highly appreciated.

The Mound and Internal Structures

BC-10 consisted of a large mound and a few internal structures. The mound was pear-shaped in general plan, measuring ca. 15 m in the N-S major axis, ca. 13 m in the E-W minor axis, and ca. 1.2 m in relative height. It contained a large volume of undressed limestone cobbles up to ca. 30 cm long as well as rubble and silty soil. Similar cobbles covered the mound surface, probably a device to protect it from erosion. It appears that these construction materials were procured from the surrounding edges of the flat hilltop where similar stones are still abundantly available.

The half-cut excavation revealed the following three internal structures underlying the mound: a cist, an inner enclosure, and an outer enclosure (Fig. 1.3). All of these were constructed by means of a dry walling technique without using any mortar. Even small rubble as adjustment material was rarely used. This is not to say, however, that they were inferior in construction quality. As described below, the cist realized a height of ca. 1.2 m and the outer enclosure was elaborately finished using dressed chalky limestone cobbles.

The cist, a core feature of BC-10, occupied the center of the mound and had a pear-shaped plan with its round tip being oriented to the south. It was relatively large in size, measuring ca. 6.5 m in the NNW-SSE major axis, ca. 5 m in the ENE-WSW minor axis, and ca. 1 m in height. The floor size was a little smaller, being ca. 5.5 m in the major axis and ca. 4.5 m in the minor axis. Technologically, it was based on a rubble foundation layer ca. 0.2 m thick, on which the pear-shaped masonry wall, a single stone-row wide and up to five to six courses high, was constructed. The foundation course of the wall contained larger boulders up to ca. 70 cm long, which were usually arranged in stretcher bond. The upper courses, on the other hand, consisted of smaller stones arranged largely in header bond. The wall was slightly inclined inward partly due to the use of a header bond technique for the upper courses.

Interestingly, the cist incorporated four stone-lined rectangular chambers that were arranged crosswise (Fig. 1.4). In contrast to the cist wall, the chamber complex had an orientation slightly rotated clockwise from the four cardinal points. Unfortunately, they were subject to later disturbance, but a total of five concentrations of human skeletal remains were confirmed (Fig. 1.5). Due to the disturbance, the finds were limited to a few snail and marble objects and several pottery sherds, although the surface and upper fill layers produced a bronze fibula and a Roman coin.

The inner enclosure had a similar profile to the cist, being ca. 13 m in the NNW-SSE major axis, ca. 10 m in the ENE-WSW minor axis. Technologically, it was constructed with a masonry wall a

single stone-row wide and preserved up to a height of five to six courses or ca. 1 m. In comparison with the cist and the outer enclosure, it was much inferior in construction quality, suggesting its *ad hoc* nature. The use of both smaller and less standardized construction materials may also support this assumption. No entrance was found at least within the excavated squares.

Two small graves were found within a wide corridor sandwiched between the cist and the inner enclosure. Grave A was constructed leaning against the northern wall of the inner enclosure (Fig. 1.6), whereas Grave B against the eastern wall of the cist. Both of these interments took place on a semi-circle stone pavement fringed with larger stones, being covered with a small cobble mound. Grave A produced human skeletal remains only, but Grave B yielded a small bronze bracelet as well as a number of fragmented human bones (Fig. 1.7). Their casual appearance and peripheral location suggest that they were incidental burials associated with the main interment within the cist.

The outer enclosure was another highlight of this burial cairn. As with the other two components described above, it was also pear-shaped, being ca. 16 m in the NNW-SSE major axis, ca. 13.5 m in the ENE-WSW minor axis, and preserved up to a height of two to three courses or ca. 0.5 m. Two kinds of construction materials were used: partly dressed limestone boulders up to ca. 60–70 cm long for the foundation course, and finely dressed standardized chalky limestone cobbles for upper courses (Fig. 1.8). While the former was arranged in header bond, the latter were piled up on them in stretcher bond. What attracted our attention was the fact that the latter construction materials often retained traces of chiseling on their upper or lower surface, and that some dozens of examples were decorated with herringbone patterns (Fig. 1.9) or animal designs (Fig. 1.10). There is no doubt that these designs were engraved by means of metal implement. (Local workers provided the information that similar stones are available at a hill some kilometers south of the site, but we have not yet confirmed it.) In view of the volume of fallen examples, it appears that these elaborate construction materials were piled up at least to a height of a few courses. There is little doubt that such an attractive wall formed the outer edge of the original mound. Here again, no entrance was confirmed within the excavated squares, but it seems more likely that the two enclosures were not equipped with it from the beginning.

Surrounding Features

A total of fourteen small stone-built features were confirmed around BC-10. Some of these were substantially buried in the ground, suggesting the possibility that they were as early as BC-10. For this reason, the following three examples were excavated either entirely or partly.

What most interested us was Feature 01, an elongate wall ca. 75 m in total length that was located ca. 20 m to the east of BC-10 (Fig. 1.11). This wall, ca. 1 m wide and a single stone-course (or ca. 20–30 cm) high, was extended roughly in the north-south direction, crossing the western edge of the flat hilltop. Since fallen stones were scarce, it appears to retain the original height. Technologically, it was constructed with two rows of limestone cobbles with smaller rubble being compacted in between. Nevertheless, such a careful construction was limited to the southern half nearer to BC-10; the northern half was reduced into irregular stone alignments without any core fillings. Our limited excavation showed that it was roughly coeval with BC-10 in terms of site stratigraphy. Given this, it follows that BC-10 formed a complex accompanied by several small features including Feature 01. Aside from a few undiagnostic flint flakes, no finds were recovered. Nothing specific can be said about the function of this unique feature, but it may have served as a psychological boundary to delineate the sacred lot with BC-10 as the core.

Feature 05, being located ca. 10 m NE of BC-10, was a small oblong structure with a floor size ca. 1.8 m in the NNE-SSW main axis and ca. 1 m in the ENE-WSW minor axis (Fig. 1.12). It was constructed with a single row and course of upright stones that were arranged leaning against the side surface of a shallow pit ca. 0.2 m deep. It opened toward the NW, the lee side of the

predominant southerly wind in this area. This feature also turned out to be coeval with BC-10 in terms of site stratigraphy. Several flint cores and blades were found *in situ* on the floor, suggesting that flint production took place within the feature. In addition, a well-fired, fine textured, orange buff-coloured pottery sherd with pale buff wash occurred on the floor. It is our present view that this small feature provided a temporary shed or windbreak during the construction of BC-10.

Feature 06 was located ca. 3 m NE of BC-10 or ca. 5 m south of Feature 05 described above. It had much in common with Feature 05 including the stratigraphy, general plan, construction method, and orientation, although no *in situ* finds were recovered from this feature.

The Finds

Sine the cist was heavily disturbed, the *in situ* finds from BC-10 were scarce. Aside from a large number of decorated construction materials and human skeletal remains, they were limited to a dozen pottery sherds, several flint artifacts, five adornments made of bronze, snail or marble.

The pottery sherds fall into three groups (Fig. 1.13). The first group consisted of well-fired, finely-textured ware sherds with orange-buff core and pale-buff wash. They included an example decorated with a horizontal band of black paint. The second group was represented by poorly-fired, grit-tempered coarse ware sherds usually with light brown core and thick reddish-brown slip. The third group contained miscellaneous examples that do not belong to either of the two. It is noticeable that the first group included a small carinated bowl fragment with an everted rim, a trait that first appears in the EB-MB transitional period. In addition, the occurrence of a goblet probably with a collared rim also deserves special emphasis in that it may fall into the pottery repertoire of the final phase of the EB.

The flint artifacts contained retouched blades, a tabular scraper, an angle burin as well as a few blade blanks and undiagnostic flakes. They were difficult to date, but the existence of the tabular scraper suggests a date of the Chalcolithic or the EBA for this assemblage.

Of interest was a bronze bracelet from Grave B, which was ca. 6 cm in diameter and decorated with several incisions at both flattened ends (Fig. 1.7). Grave B also produced a small fragment of a bronze object, which was also probably a part of an adornment. The dating of these bronze artifacts must await further study, but it appears that the bracelet belongs to a relatively early stage of the Bronze Age. In addition to these bronze objects, a marble artifact and two snail products occurred at the cist (Fig. 1.14). All of these were perforated at their center, suggesting the use of beads. Many parallel examples have been reported from EB or MB sites along the middle Euphrates river basin.

Although it is difficult to date BC-10 on the basis of such a limited number of *in situ* finds, it seems that the *in situ* finds suggest, overall, a date from the final phase of the EB or the EB-MB transitional period. It is needless to say, however, that this remains a working hypothesis until further evidence is obtained.

In addition to BC-10, Feature 05 produced several pottery sherds and flint artifacts. They had much in common with the finds from BC-10, suggesting the synchronism between the two.

Concluding Remarks

The sounding at BC-10 of Rujum Hedaja 1 has shed new light on the archaeological implications of burial cairns that are concentrated on the northern flank of Jabal Bishri. Available evidence suggests that the area formed an extensive pastoral background of the final EBA society in the middle Euphrates river basin. This finding may open the way to approaching the specific picture of *Mar-tu* or *amurru*, the early pastoral population that Sumerian and Akkadian texts referred to as being based on the Jabal Bishri (or Basa'al) area. Nevertheless, the sounding of this season was too limited to address such a far-reaching issue. The next investigation, scheduled for June of 2008, is to try to grasp an overall picture of the site.

2. PRELIMINARY ANALYSIS OF FAUNAL REMAINS FROM TELL GHANEM AL-'ALI

Lubna OMAR (Doctoral student, The Institute of Cultural Heritage, Nara)

The main purpose behind the sorting of the faunal assemblage which has been retrieved during the excavation in November 2007, is to reconstruct the exploited animal resources at the site. During the excavation season at the site in August 2007 the first faunal remains appeared all over the excavated area. The assemblage was relatively small in size it consisted approximately of 300 specimens. This study focused on combining the results of the latest excavation with the previous analysis of the faunal resources at the site, in order to clarify the role of animals at the settlement.

Materials

The faunal remains belong to the main squares at the site, Square 1 and 2 where several architectural features have been revealed. These constructions date back to the early bronze period according to the pottery styles which were present at the site.

The bones have been retrieved by hand picking. The soil was not sieved which would affect the representation of the small mammals at the assemblage. The latest excavation produced around 450 animal bones, the preliminary analysis of these materials concentrated on identifying a sample of this collection. The sample consisted of 150 fragments.

Methods

The analysis of the faunal remains concentrated on determining the number of the identified bones in the assemblage and recording all sort of modification related with the economical activities which took place at the site, such as food processing activities, disposal, and trading and herd-keeping. It was not possible to record the weight of the different species present at the site.

It is an essential part of the analysis to observe the contributions of each species to the assemblage through the number of the bones and fragments and the weight of the bones, and it would be concluded in the next study.

Results

The studied sample of faunal assemblage showed that more than 96% of the bones belong to domestic animals category which was represented by sheep, goat, cattle, and domestic donkey. The wild animals which have been identified included the gazelle (gazelle subguttrosa), roe deer, hare, and possibly wild-ass.

The identification of the equid specimens requires better representation of the bones. Most of the post-cranial remains consisted of heavily fragmented elements, except for a complete tibia, which according to its small measurements falls in the domestic ass category.

Previous studies in Euphrates valley described the exploitation of the wild onager during the Bronze Age period in Tell Um-Al Marra, and the Tell Es sweyhat. The identification of equids is very substantial aspect of any zooarchaeological research in Near East area.

Some of the remains at tell Ghanem al-'Ali might belong to the wild species of Equids, but until we obtain better persevered elements we won't be able to get a complete picture of the exploitation of equids at Jabal bishri region during the Bronze Age.

Sheep and goats contributed more than half of the assemblage around 54% sheep was more present than goats.

Cattle followed the sheep and goat, and its remains formed more than 10% of the sample.

Sorting the materials of the winter season gave us the chance to observe new species which didn't appear in the previous seasons.

Shell was present in small numbers, and shaft of turtle long bone were retrieved from square 2.

The majority of the faunal remains belong to adult and sub-adult individuals. Unfused fragments were scarce, as for the teeth aging no deciduous or milk teeth were found.

Determining the age classes at the site requires a bigger collection of bones which could provide a non-biased view of the composition of the herds living at the site, or in the pastoral areas around it.

The same applies for indicating the sex of the animals at the site, several horn cores and one antler were retrieved, but these remains don't indicate a preference of a specific sex either in hunting or herding.

The distribution of elements at the site showed that hind and fore limbs were the most abundant at the site, but we should note that skull and mandible fragments were retrieved in considerable amount about 34% of the studied sample, while ribs vertebrates came at last.

Conclusion

This preliminary exam of the faunal materials at Tell Ghanem al-'Ali site indicated that the subsistence strategies which were practiced in this area focused on herding sheep, goat, and cattle. Hunting was a part of the diet and it depended on the steppe animals.

We are still waiting for the final interpretation related with the function of the structures at the site, in order to achieve a better understanding of the activities which took place in the discovered structures.

The distribution of elements proved that all type of bones were present at the site, but it's worth mentioning that the considerable number of cranial elements at the excavated area might indicates that this area was a disposal area, but still we can't confirm the function of the place without examining the complete assemblage.

3. A BRIEF SURVEY OF THE EARLY BRONZE AGE TOMBS IN THE WADI SHABBOUT AND THE WADI DABA AREAS

Hirotohi NUMOTO (Professor, Kokushikan University, Japan)

An one-day scanning survey for the Early Bornze Age (EBA) tombs was conducted in 25 March 2008. Goals of this brief survey were to illustrate an overview of the EBA tombs in the surroundings of Tell Ghanem al-'Ali, and to document conditions of looting activities in the areas.

Selected survey areas were two clusters of tombs situated in the Wadi Shabbout and the Wadi Daba, since these areas were already identified as EBA cemeteries by Professor A. Tsuneki (Tsuneki Pers. comm) in the 2007 field season of the Syro-Japanese mission to the Bishri mountainous area.

More than 50 tombs were identified in the Wadi Shabbout area. Almost all tombs were looted, but at least three burial types were defined, including shaft graves, stone chamber graves and cist graves. On the other hand, the area of outfall of Wadi Daba produced 30–40 intensively looted tombs, which contain chambers dug into a slope of the Wadi indicating a sort of shaft graves. No other types of burials were identified in the area.

Unfortunately, this brief survey revealed most tombs of both areas were seriously damaged by lootings. The contrast of burial types in these two areas, however, possibly implies an internal differentiation represented by mortuary practices (i.e. class, gender or ethnicity, for instance) in the EBA community. Further detailed investigations consist of cleanings/excavations of the tombs, and documentation of the distribution of particular burial types in these areas are scheduled from the end of April to May 2008, in order to understand regional variability of burial patterns in the Middle

Euphrates Valley and the nature of burial practices in the EBA community in context.

4. GEOLOGICAL AND GEOGRAPHICAL FIELD SURVEY

Takeshi SAITO (Associate Professor, Meijo University)
Kazuhiro TSUKADA (Assistant Professor, Nagoya University)

In the fifth working season, our geological and environmental research team carried out a short field survey (24th–27th March, 2008) focusing on the basal sediments of Tell Ghanem al-'Ali. Two sites were selected for the survey: Site 1 is the western foot of the tell and Site 2 is the section in the factory under construction southeast of the tell (Fig. 4.1). We would like to report the outline of the stratigraphy of the basal sediments of the tell.

We re-dug down the 1 × 1 m pit into 2.1 m deep (Figs. 4.1, 4.2) at western foot of Tell Ghanem al-'Ali, which was turned over in the fourth working season. The sediments of the pit are composed of muddy sand and include many artifacts such as earthenware and stone instruments. Detailed description of the pit wall is shown in Fig. 4.3.

Upper part of the pit walls are well stratified caused by bricks and sand layers. On the other hand, lower part is massive and includes many charcoal spots exhibiting indistinctive layers. Many of the sediments of the pit walls are likely to be anthropogenic especially in the upper part. We took seven samples for environmental study and ¹⁴C dating from the lower part of the profile.

Site 2

We found a good section showing the basal sediments of Tell Ghanem al-'Ali in the factory under construction southeast of the tell (Figs. 4.1, 4.4). The sediments consist mainly of ill-sorted muddy sand with charcoal fragments. Detailed description of the profile is shown in Fig. 4.5.

Upper part of the section contains several charcoal layers, suggesting intensive human activity in and around Tell Ghanem al-'Ali. On the other hand, fluvial gravel layer (Figs. 4.6, 4.7; “conglomerate” in Fig. 4.5) is intercalated in the lowermost part of the section. This gravel layer indicates the basement horizon of the tell.

We took 20 sediment samples from the section. Most of them include charcoal fragments available for ¹⁴C dating. We will do the dating for selected samples. The oldest age of the samples suggests the dawning period of the Tell Ghanem al-'Ali.

Relationship between Sites 1 and 2

Topographic map of Fig. 4.1 and our field observation suggest that the altitude of the bottom of the pit at Site 1 would be ca. 229 m, and that the altitude of the fluvial gravel layer at the Site 2 is ca. 228 m. In addition, we were not able to find fluvial sediments at Site 1. These facts indicate that the section at Site 2 is stratigraphically lower than that at Site 1.

5. ARCHAEOLOGICAL SURVEY AROUND TELL GAHNEM AL-'ALI

Yoshihiro NISHIAKI (Professor, The University Museum, The University of Tokyo)
Seiji KADOWAKI (PD fellow, The University Museum, The University of Tokyo)
Shogo KUME (Doctoral student, Waseda University)

The fifth working season involved archaeological surveys (March 26 to April 3) in the areas around

Tell Ghanem al-'Ali. Building on the results of earlier surveys, we aimed at an intensive reconnaissance of archaeological sites and traces of land use in the targeted areas. For this purpose, we searched the survey areas on foot, navigated with topographic maps and high-resolution satellite images, which allowed us to make detailed records of the survey paths and discovered sites (Fig. 5.1). The intensive field-walking resulted in 1) the collection of artifacts of a wide chronological range—from the Palaeolithic to the Islamic period, 2) the discovery of occupational sites of the Palaeolithic and probably, the Early Bronze Age (EBA), and 3) a record of the distribution of mound tombs in broad areas at the northern fringes of the Bishri Plateau. These results could contribute to a better understanding of the settlement patterns and land use of the EBA inhabitants at Tell Ghanem al-'Ali and Tell Hammadin, as well as the local settlement history of the Middle Euphrates.

Objectives of the survey

Earlier investigations in our project reveal that the lowlands along the Euphrates River were the central loci of major EBA settlements, such as Tell Ghanem al-'Ali and Tell Hammadin. On the other hand, German excavations at Abu Hamad and the Syria-Japan joint surveys at Tell Shabbout and Jezra indicate that the EBA communities based at these tell sites appear to have used the uplands or the northern edges of the Bishri Plateau mainly as cemeteries. Using these earlier insights into the link between the Euphrates lowlands and uplands during the EBA, our survey was designed to obtain further archaeological evidence regarding prehistoric land use in this region; our target region was the areas around Tell Ghanem al-'Ali and Tell Hammadin. Through this survey, we also aimed to provide basic information about the population history of the target region by recording the locations of sites of a wide chronological range starting from the Palaeolithic period.

Survey areas

The survey areas covered the northern edges of the Bishri Plateau and the upper terraces of the Euphrates River, measuring 15 km E-W by 8 km N-S, along the southern bank of the river (Fig. 5.1). The western limit of our survey was a protruding terrace, used as a cemetery in the village of Jibli, while the eastern border was near Jezra. The satellite image showed a clear contrast between the Euphrates uplands and lowlands (Fig. 5.1). The latter are green and widely used for agricultural fields. On the other hand, the river-terraces (uplands) are populated by modern villages, and to their south lies the Bishri Plateau with very sparse vegetation. These terraces and the northern fringes of the plateau are incised by a series of north-south tributary valleys of the Euphrates River. While these wadis usually stretch over a few kilometers in length, Wadi Kharar, situated between Ghanem al-'Ali and Tell Hammadin, stands out for its length (ca. 20 km) and well-developed terraces. We surveyed the Euphrates terraces and the plateau primarily by walking along the wadis. However, the survey of the Euphrates terraces was difficult as these areas are heavily populated with modern villages, which left only a few open spaces for survey. Even these areas were found to be used as cemeteries or orchards, which considerably modified the ground surfaces. Thus, our survey focused more on the higher areas, i.e., the northern ends of the plateau.

Survey techniques

In order to achieve an intensive reconnaissance of archaeological sites, our survey was primarily conducted on foot, using high-resolution satellite images and a compass to navigate. This allowed us to record the survey paths and discovered sites (Fig. 5.1.). The surveyed wadis and areas were assigned numbers (no. 1 to 24). For survey paths and discovered sites within each area, an alphabet was attached to the number. Thus, survey paths and sites are identified by the combination of the area number and alphabet, such as 20A or 16K (Fig. 5.1, Table 5.1). A survey path fundamentally corresponds to a single topographic unit, such as a terrace of a wadi. However, a survey path was

divided when we encountered an archaeological site during the survey. The identification of archaeological sites was primarily based on the density of artifacts; the reason being, apart for tomb mounds and cairns, we rarely encountered features on the ground surface. We collected artifacts from the survey paths and archaeological sites. At the archaeological sites, we measured the extent of artifact distribution and general topography around the sites. When we encountered mound tombs, the extent of their distribution was sketched on hard-copies of high-resolution satellite images.

Sites and finds

Following eight days of pedestrian surveys, we had investigated 82 paths and discovered 32 sites, as listed in Table 5.1. Dating of the sites is still in the preliminary stage as the collections of artifacts are currently under analysis. Our survey discovered several locations that are densely distributed with archaeological sites. We present the results of the survey by describing the focal sites of study and their findings rather than grouping the sites by their chronological order.

Wadi Shabbout East (Areas 20A, 20B, and 20D)

This wadi is situated ca. 500 m east of Tell Shabbout, stretching 600–700 m in the N-S direction with its mouth at the cliff of the plateau. Despite its small size, the wadi has a fairly flat terrace on the right bank. Along this terrace (Fig. 5.2), we discovered three spots that were distributed with chipped stones and only a few pottery sherds (Areas 20A, 20B, 20D). From the three spots, Area 20A is the most extensive (100 m × 15 m), with the densest scatter of artifacts. Area 20A is located at a bend of the wadi, which may have provided a cozy, enclosed basin for a camp.

At Area 20A, we collected more than 100 chipped stone artifacts, most of which were cortical flakes. Retouched tools were limited to a few pieces with marginal retouch. Preliminary observations of these pieces and cores indicate that water-rolled cobbles were used as raw material for the production of flakes (Fig. 5.3). According to the geological investigation of this project, such flint cobbles are available from the gravel layers in the Euphrates river-terraces. In fact, we often came across fist-sized flint cobbles during the survey on the terraces of the Euphrates. Technologically, many flakes retain cortex on their platforms, suggesting that core reduction rarely involved the preparation of striking platforms. Similar technological characteristics and the use of raw materials are observable in the collections from Areas 20B and 20D. More importantly, these technological features also apply to the chipped stones from Tell Ghanem al-'Ali and Tell Hammadin, as found by the preliminary comparisons of the assemblages, suggesting EBA dates of the survey collections.

Jezra (Areas 23H and 23J)

Jezra, located ca. 3 km southeast of Tell Ghanem al-'Ali, has been reported as an extensive cemetery area with a large number of mound tombs, which probably date to the EBA. This area also has a large stone-walled building (ca. 150 × 100 m) earlier reported as an Islamic fortification. We surveyed a small wadi, located to the immediate west of this large stone structure. This wadi at Jezra is steeply incised near its lower end, forming a V-shaped cross section. However, a little upstream is associated with terraces, providing inhabitable areas. On one such terrace is a small tell-like mound (Area 23H), where abundant chipped- and ground-stone artifacts and pottery sherds were collected (Fig. 5.4).

Although at this point it is difficult to determine how much of this mound contains anthropogenic deposits, a large amount of pottery sherds, food processing tools (i.e., grinding slabs and pestles), and chipped stones indicate that occupations at the site were clearly more permanent than in transitory camps (Fig. 5.5). A dozen robber pits had been opened at the site, suggesting that this site yields a great deal of cultural objects that attract the attention of robbers. The collected chipped stones include a segment of what is probably a Canaanite blade, as well as flakes and cores with water-rolled cortex (Fig. 5.6). The flaking technology of the latter group is similar to that of the collections from

Area 20A and Tell Ghanem al-'Ali. These collectively suggest the date of the site as EBA, which appears consistent with the general characteristics of the pottery sherds (Fig. 5.7).

We also visited the large building structure (Area 23J), situated on the hilltop immediately to the east of Area 23H. The building partially exposes the external surfaces of the walls, while the inside is filled with sediments up to or above the height of the other walls (Fig. 5.8). Unexpectedly, we found that the surface of the deposits inside the building was associated with mound tombs and densely strewn with chipped stones, once again including what is probably a Canaanite blade (Fig. 5.9). The pottery sherds collected from this location are currently being analyzed to determine their date (Fig. 5.10).

Wadi Kharar (Areas 16C, 16D, 16E, 16F, 16I, 16J, 16K, 16M, 16N, 16O, 16P, 16Q, 16R, 16V, 16W, 16AI, 16AK, 16AM, 16AO)

Wadi Kharar is situated between Tell Ghanem al-'Ali and Tell Hammadin, and is the largest tributary valley of the Euphrates in the survey area, stretching ca. 20 km in the N-S direction (Fig. 5.1). Our survey covered the lower 7 km of this wadi, resulting in the discovery of a series of Palaeolithic sites on the wadi terraces. Most sites are located on the terraces at or near the confluence of Wadi Kharar and its tributary wadis. Of these locations, particularly noteworthy is an area with broad terraces (ca. 80 m × 50 m and ca. 200 m × 60 m) associated with a spring (Fig. 5.12), which is ca. 4 km upstream from where Wadi Kharar drains into the Euphrates lowlands. On the terraces in the spring, we recorded dense distributions of chipped stone artifacts at four areas (Areas 16M, 16N, 16O/P, 16Q) and collected about 400 pieces, including more than ten end scrapers, several burins, ca. 40 blades/bladelets, and some bladelet cores, some of which are characterized by carinated forms (Fig. 5.13).

These techno-morphological characteristics indicate the Early Epipalaeolithic or Late Upper Palaeolithic period. Epipalaeolithic occupations were also discovered on the terraces ca. 1 km downstream of the spring. This location, at the confluence of Wadi Kharar and a tributary wadi, consists of two terraces of different elevations. Area 16I sits on a lower terrace, where we collected ca. 50 pieces of chipped stones, including two lunates, one end scraper, and several blade/lets, which indicate the Natufian period (Fig. 5.14). On the other hand, the upper terraces (16J and 16K) yielded no lunates. Instead, several rectangular microliths were collected along with blade/lets and a unipolar bladelet core, suggesting their chronological precedence in the Epipalaeolithic. Concentrations of Epipalaeolithic artifacts were also recorded further downstream at Areas 16C, 16D, and 16R.

The survey in Wadi Kharar also encountered concentrations of lithics that can be techno-morphologically dated to the Middle Palaeolithic (Fig. 5.15: 16F, 16AI, 16AM, and 16AO). These artifacts are on the upper terraces of Wadi Kharar, which are located 4– 6 m above the lower terraces, where Epipalaeolithic artifacts were often recovered.

Isolated finds

Although no archaeological sites were found in many survey paths, we came across a rain of artifacts during the field-walking and collected them by survey paths. These collections sometimes include tool types of chronological markers and hence, are also worth an analysis. They can provide subsidiary evidence for land use in prehistory. For example, lunates were collected in isolation in Areas 16AE and 10M, suggesting the use of these areas during the Natufian period. Isolated finds were also recorded in the collections from other sites, as indicated by distinct tool types, production technology, raw material types, and different degrees of patination. Closer examinations are necessary to accurately assess the chronological representations of the collected artifacts.

Mound tombs and cairns

The intensive field-walking also enabled us to record the distributions of mound tombs (probably EBA) in previously unknown areas. Investigations of the mound tombs have been carried out mainly in the areas near Tell Ghanem al-'Ali, such as Tell Shabbout and Jezra. However, the present survey encountered the comparable density of tomb distribution in the plateau areas that overlook Tell Hammadin (Fig. 5.16). These areas are located along several wadis, including Wadi 'Ain and Wadi Qutena, which flow towards the direction of Tell Hammadin. The tombs at these locations show a similar range of structural types as those near Tell Shabbout. Pottery sherds were strewn on the ground surface indicating that many of the tombs were looted. The collected sherds are under analysis for comparison with those from the graves near Tell Shabbout.

In one of the cemetery areas above Tell Hammadin, we came across a cairn at about 1 km south of the northern edge of the plateau (Area 9D; Fig. 5.17). It measures ca. 6 m in length, ca. 3.5 m in maximum width, and ca. 1 m in height, forming a key-hole shape in plan. It is surrounded by stone alignments, which could be structures associated with the cairn. Very few artifacts were collected, preventing us from determining its date. However, given that cairns are usually distributed further south near the Bishri Mountains, the discovery of a cairn near the northern edges of the plateau (and among mound tombs) could raise an interesting question about its social context, particularly if the cairn is contemporary to the mound tombs.

Summary and discussions

Intensive pedestrian surveys allowed us to discover new sites of a wide chronological range and record their distributions. This also suggests that perhaps many more sites still remain to be discovered in this region. Analyses of collected artifacts are currently in progress, and thus, the dating of sites is still tentative. However, the results of our surveys indicate the possibility of diachronic changes in land use patterns. For example, we encountered Palaeolithic occupations more frequently on the terraces of Wadi Kharar than in smaller N-S wadis to the east and west of Wadi Kharar. In the latter areas, we encountered temporary camp sites (Areas 20A, 20B, and 20D) rather than permanent occupations (Area 23H), and dense distributions of mound tombs, likely to date to the EBA. On the other hand, there are few traces of Bronze Age activities in and in the vicinity of Wadi Kharar.

Advantages in the use of Wadi Kharar are evident in the availability of water and the travel routes. On the other hand, the apparent decline in the use of Wadi Kharar during the EBA may merit some discussion. This may be explained by geomorphological reasons. The relatively active Wadi Kharar may have either eroded away the traces of Bronze Age activities on lower terraces or covered them with sediment. However, this may not explain the sparse distribution of tombs in this area. The second possibility is the absence of N-S wadis in the areas to the immediate east and west of Wadi Kharar. This is because Wadi Kharar has its tributaries running in the E-W direction. Since the E-W wadis are obstacles to the N-S travels, these areas may not have attracted Bronze Age inhabitants.

Another possible reason is that the EBA land use patterns were spatially linked to the tell sites in the lowland, i.e., Tell Ghanem al-'Ali and Tell Hammadin. The dense distribution of mound tombs appear to make two clusters, each spatially associated with the locations of the tells. In particular, the mound tombs tend to be located along the wadis that overlook the tells. This applies not only to Tell Shabbout areas but also to Jezra and the grave areas above Tell Hammadin. If we date more securely the occupational sites in small wadis, such as at Areas 20A and 23H, in order to examine their contemporaneity with Tell Ghanem al-'Ali, we can address questions regarding the settlement patterns and land use during the EBA, as well as the relationship between the communities at Tell Ghanem al-'Ali and Tell Hammadin. An investigation of these issues requires further analysis of collected artifacts and surveyed sites.

Table 5.1 List of paths and sites surveyed in the 2008 spring season.

Area	Bag	Bag type	Site/Wadi/Village Name	Notes	Pottery sherds	Chipped stones
1	A	Path	Village (Tell) Sharida		0	1
3	A	Path	Village Jibli		0	0
4	A	Path	Village Jibli		0	0
5	A	Path	Village Jibli		0	0
6	A	Path	Village Jibli		0	2
7	A	Path	Village Jibli		0	0
8	A	Path	Village Jibli		0	1
9	A	Path	Village Jibli		0	1
9	B	Site	Village Jibli	Small scatter of chipped stones on the Euphrates terrace	0	17
9	C	Path	Unnamed wadi		0	0
9	D	Site	Unnamed wadi	Burial cairn associated with structures	2	4
9	E	Path	Unnamed wadi		3	24
9	F	Path	Unnamed wadi		22	0
9	G	Path	Wadi Qutena		0	9
9	H	Path	Wadi Qutena		0	0
9	I	Path	Wadi Qutena		0	1
10	A	Path	Wadi 'Ain East		0	1
10	B	Path	Wadi 'Ain East		0	0
10	C	Site	Wadi 'Ain East	Mound tombs, probably Bronze Age	6	2
10	D	Site	Wadi 'Ain East	Mound tombs, probably Bronze Age	0	0
10	E	Path	Wadi 'Ain East		0	11
10	F	Path	Wadi 'Ain East		0	11
10	G	Path	Wadi 'Ain East	Including a corner-thinned blade (obsidian)	2	13
10	H	Path	Wadi 'Ain East		1	4
10	I	Path	Wadi 'Ain East		0	0
10	J	Path	Wadi 'Ain East		0	8
10	K	Path	Wadi 'Ain East		0	3
10	L	Path	Wadi 'Ain East		0	24
10	M	Path	Wadi 'Ain East	Including a lunate	0	1
10	N	Path	Wadi 'Ain East		1	1
11	A	Path	Unnamed wadi (Several Wadis situated in north of village Zor Shanmar Foqani)		0	9
11	B	Path	Unnamed wadi (North of village Zor Shanmar Foqani)		0	0
11	C	Path	Unnamed wadi (North of village Zor Shanmar Foqani/ Tributary of the Wadi Kharar)		2	208
11	D	Path	Unnamed wadi (North of village Zor Shanmar Foqani/ Tributary of the Wadi Kharar)		0	21

12	A	Path	Village Zor Shanmar Foqani	Modern graves	0	0
13	A	Path	Village Zor Shanmar Foqani		0	0
14	A	Path	Wadi Kharar		0	7
14	B	Path	Wadi Kharar		0	11
14	C	Site	Wadi Kharar	Scatter of chipped stones (15 × 3 m) on upper terrace	0	24
14	D	Path	Wadi Kharar		0	13
16	A	Path	Unnamed wadi (Tributary of the Wadi Kharar)		0	5
16	B	Path	Wadi Kharar	Including a blade and a burin (prob. PPNB)	0	4
16	C	Site	Wadi Kharar	Scatter of chipped stones (30 m × 3 m) on lower terrace (6 m above river level); Epipalaeolithic	0	48
16	D	Site	Wadi Kharar	Small scatter of chipped stones on lower terrace (6 m above river level); Epipalaeolithic. Probably part of Area 16C	0	5
16	E	Site	Wadi Kharar	Small scatter of chipped stones on lower terrace (4 m above river level); Epipalaeolithic	0	13
16	F	Site	Wadi Kharar	Scatter of chipped stones (10 m) on upper terrace (12 m above river level); Middle Palaeolithic	0	184
16	G	Path	Wadi Kharar		0	15
16	H	Path	Wadi Kharar		0	10
16	I	Site	Wadi Kharar	Scatter of chipped stones (45 m × 15 m) on lower terrace (6 m above river level); Late Epipalaeolithic (Natufian)	0	49
16	J	Site	Wadi Kharar	Scatter of chipped stones (26 m) on middle terrace (9 m above river level); Early Epipalaeolithic	0	26
16	K	Site	Wadi Kharar	Scatter of chipped stones (30 m × 8 m) on middle terrace (9 m above river level); Early Epipalaeolithic	0	53
16	L	Path	Wadi Kharar		0	63
16	M	Site	Wadi Kharar (near spring)	Scatter of chipped stones (200 m × 55 m) on lower terrace (4.5 m above river level); Early Epipalaeolithic	0	106
16	N	Site	Wadi Kharar (near spring)	Scatter of chipped stones (70 m × 50 m) on lower terrace (4.5 m above river level); Early Epipalaeolithic	0	79
16	O	Site	Wadi Kharar (near spring)	Scatter of chipped stones on upper terrace (14.5 m above river level); Early Epipalaeolithic. Same locus as Area 16P	0	50
16	P	Site	Wadi Kharar (near spring)	Scatter of chipped stones on upper terrace (14.5 m above river level); Early Epipalaeolithic. Same locus as Area 16O	0	77

16	Q	Site	Wadi Kharar (near spring)	Scatter of chipped stones on upper terrace (14.5 m above river level); Early Epipalaeolithic	0	83
16	R	Site	Wadi Kharar	Scatter of chipped stones on lower terrace (3.5 m above river level); Epipalaeolithic	0	69
16	S	Site	Wadi Kharar (near spring)	Scatter of chipped stones on lower terrace; Epipalaeolithic. Continuation of Area 16N	0	9
16	T	Path	Wadi Kharar		1	9
16	U	Path	Wadi Kharar		0	7
16	V	Site	Wadi Kharar	Scatter of chipped stones (15 × 3 m) on upper terrace; Palaeolithic	0	23
16	W	Site	Wadi Kharar	Scatter of chipped stones (10 × 8 m) on upper terrace; Palaeolithic	0	7
16	X	Path	Wadi Kharar		0	4
16	Y	Path	Wadi Kharar		0	27
16	Z	Path	Wadi Kharar		0	66
16	AA	Path	Wadi Kharar		0	30
16	AB	Path	Wadi Kharar	Blade with bidirectional flaking scars	0	15
16	AC	Path	Wadi Kharar		0	1
16	AD	Path	Unnamed wadi (Tributary of the Wadi Kharar)		0	0
16	AE	Path	Unnamed wadi (Tributary of the Wadi Kharar)	Including a lunate	0	2
16	AF	Path	Unnamed wadi (Tributary of the Wadi Kharar)	Retouched Levallois point	0	1
16	AG	Path	Wadi Kharar		0	4
16	AH	Path	Wadi Kharar		0	0
16	AI	Site	Wadi Kharar	Scatter of chipped stones (15 × 10 m) on upper terrace (11.5 m above river level); Middle Palaeolithic	0	45
16	AJ	Path	Wadi Kharar		0	5
16	AK	Site	Wadi Kharar	Scatter of chipped stones (8 × 6 m) on middle terrace (6 m above river terrace); Palaeolithic	0	
16	AL	Path	Wadi Kharar		0	14
16	AM	Site	Wadi Kharar	Scatter of chipped stones (20 m) at the foot of terrace slope; Middle Palaeolithic. Possibly redeposition	0	17
16	AN	Path	Wadi Kharar		0	7
16	AO	Site	Wadi Kharar	Scatter of chipped stones (20 × 5 m) on upper terrace (13 m above river level); Middle Palaeolithic	0	41
16	AP	Path	Wadi Kharar		0	4
16	AQ	Path	Wadi Kharar		0	0
17	A	Path	Wadi Qais		0	6

17	B	Path	-		0	2
17	C	Path	Unnamed wadi		0	3
20	A	Site	Wadi Shabbout East	Scatter of chipped stones (100 m × 15 m) on low terrace (2 m above river level); probably Bronze Age	1	111
20	B	Site	Wadi Shabbout East	Sparse scatter of chipped stones on the same terrace as Area 20A; probably Bronze Age	1	8
20	C	Path	Wadi Shabbout East		2	8
20	D	Site	Wadi Shabbout East	Small scatter of chipped stones; probably Bronze Age	1	43
20	E	Path	Unnamed wadi		2	65
20	F	Path	Unnamed wadi		0	12
20	G	Path	Unnamed wadi		0	3
20	H	Path	Unnamed wadi		0	6
21	A	Path	Wadi Shabbout West		0	18
21	B	Path	Wadi Shabbout East		0	12
21	C	Path	Wadi Daba		1	2
22	A	Path	-		0	0
22	B	Path	Unnamed wadi		0	0
22	C	Path	Unnamed wadi		0	17
22	D	Path	Unnamed wadi		3	0
23	A	Path	Wadi Ghara		0	0
23	B	Path	Wadi Ghara		0	0
23	C	Path	Wadi Ghara		0	4
23	D	Path	Wadi Jezra West	Scraper on a flake of dark brown flint with bipolar flaking scars. Neolithic?	4	11
23	E	Path	Wadi Jezra West		0	9
23	F	Path	Wadi Jezra West		12	6
23	G	Site	Wadi Jezra West	Small cluster of sherds, probably refittable. Small scatter of chipped stones on upper terrace	1	7
23	H	Site	Wadi Jezra West	Small mound (4–5 m in height) on low terrace; probably Bronze Age. Food-processing tools (pestles and grinding slabs)	15	24
23	I	Site	Wadi Jezra West	Mound tombs; probably Bronze Age	7	9
23	J	Site	Jezra/ Wadi Jezra West	Large stone-walled building (150 × 100 m); Islamic and/or Bronze Age	34	35
24	A	Path	Wadi Jezra East		8	27
24	B	Path	Wadi Jezra East		0	0
24	C	Path	Wadi Jezra East		3	0

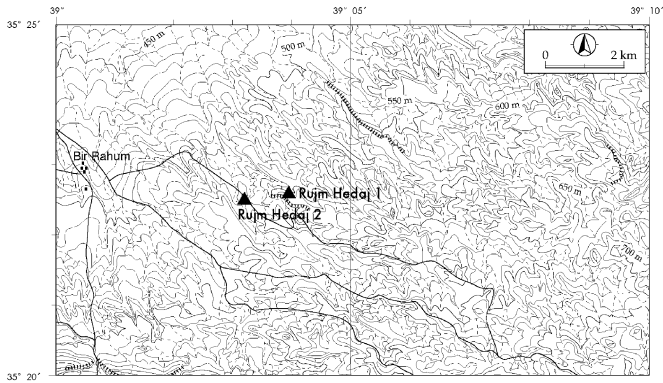


Fig. 1.1 The Bir Rahum Area and the Location of Rujm Hedaja 1 and 2.



Fig. 1.2 BC-10: a distant view (from W).



Fig. 1.3 BC-10: a general view (from SE).



Fig. 1.4 BC-10: a general view of the cist (from NW).



Fig. 1.5 BC-10: Human skeletal remains from the central chamber.

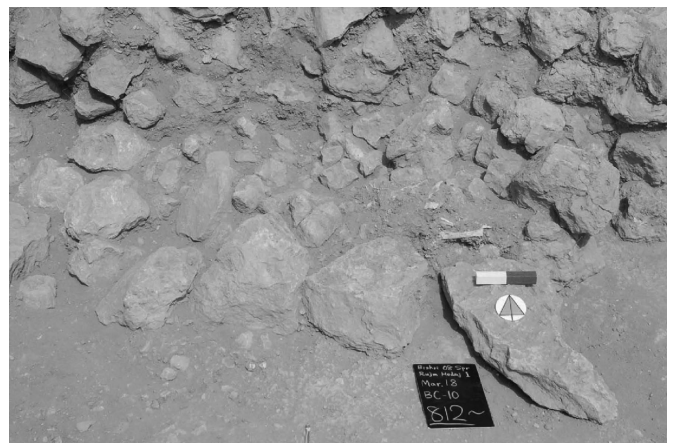


Fig. 1.6 BC-10: a general view of Grave A (from S).

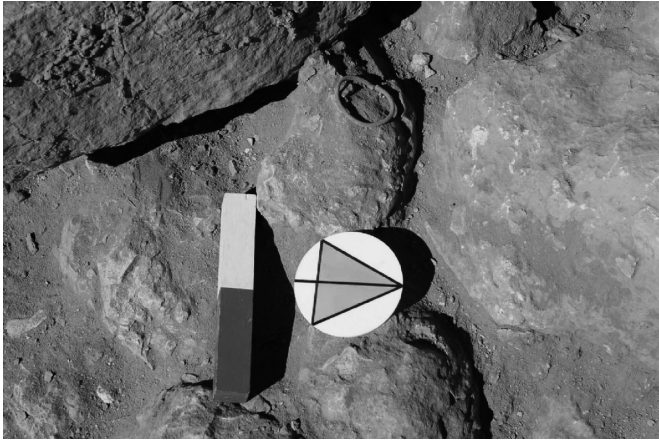


Fig. 1.7 BC-10: a bronze bracelet from Grave B (from E).



Fig. 1.8 BC-10: a close-up view of the Inner and Outer Enclosures.

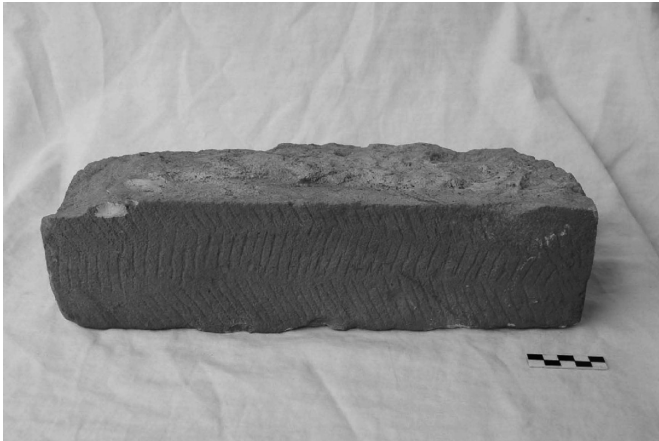


Fig. 1.9 BC-10: Construction material decorated with herringbone patterns.



Fig. 1.10 BC-10: Construction material engraved with an animal design.

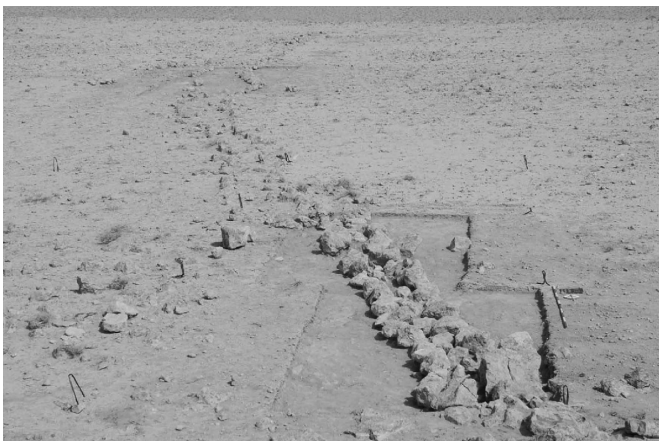


Fig. 1.11 Feature 01: a general view (from S).

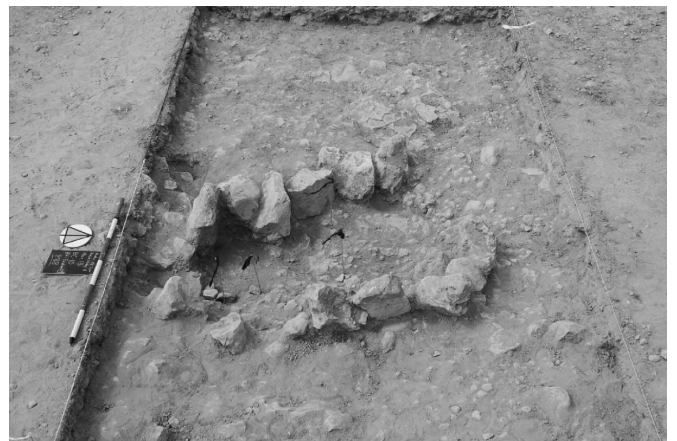


Fig. 1.12 Feature 05: a general view (from E).



Fig. 1.13 BC-10: Pottery sherds (Group A and B).

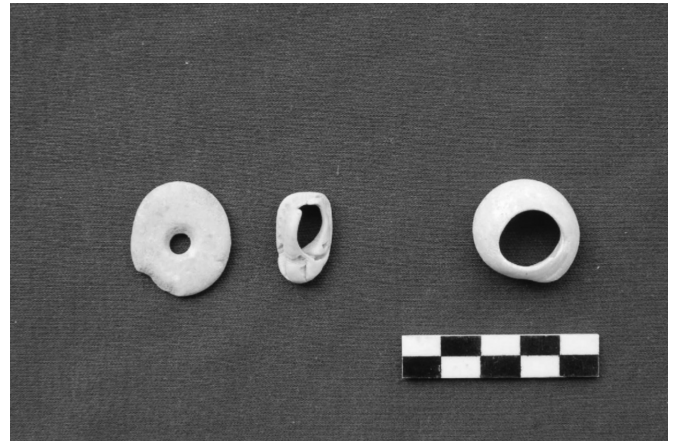


Fig. 1.14 BC-10: Adornments made of marble (left) and snail (right two).

Elements Distribution

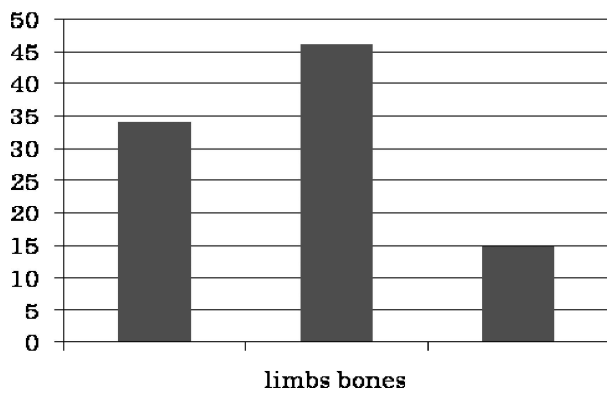


Fig. 2.1 Distribution of bone elements from Tell Ghanem al-'Ali.



Fig. 2.2 Complete deer antler.



Fig. 2.3 Complete Tibia of a domestic ass.



Fig. 2.4 Male Gazelle horn, the shape of which is close to Subguttrosa species.



Fig. 3.1 Looted tombs in the Wadi Shabbout area, looking east.



Fig. 3.2 Looted tombs in the Wadi Daba area, looking northwest

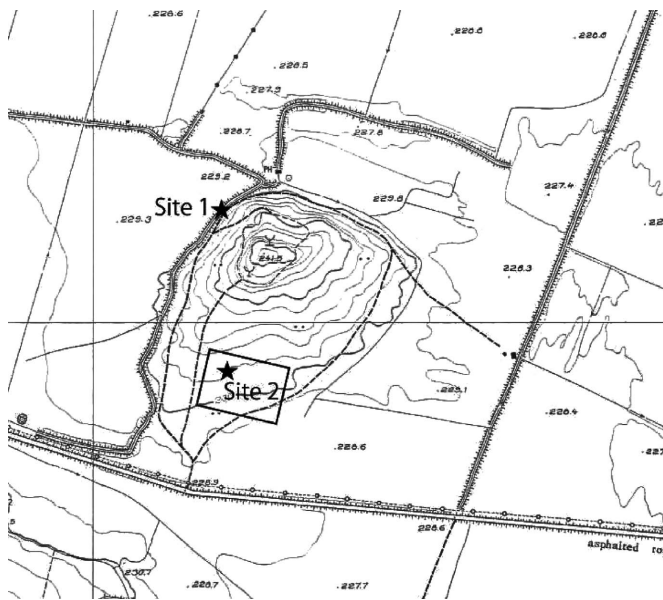


Fig. 4.1 Map showing the two sites studied. Rectangle indicates walls of the factory under construction.

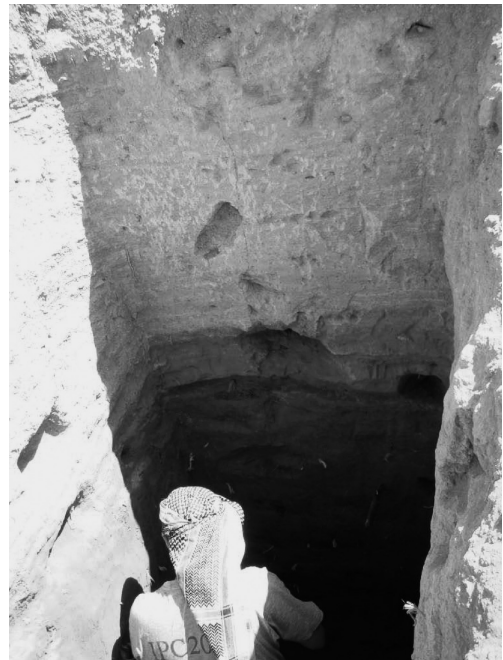


Fig. 4.2 Pit at the Site 1.



Fig. 4.4 Studied section in the factory under construction (Site 2).

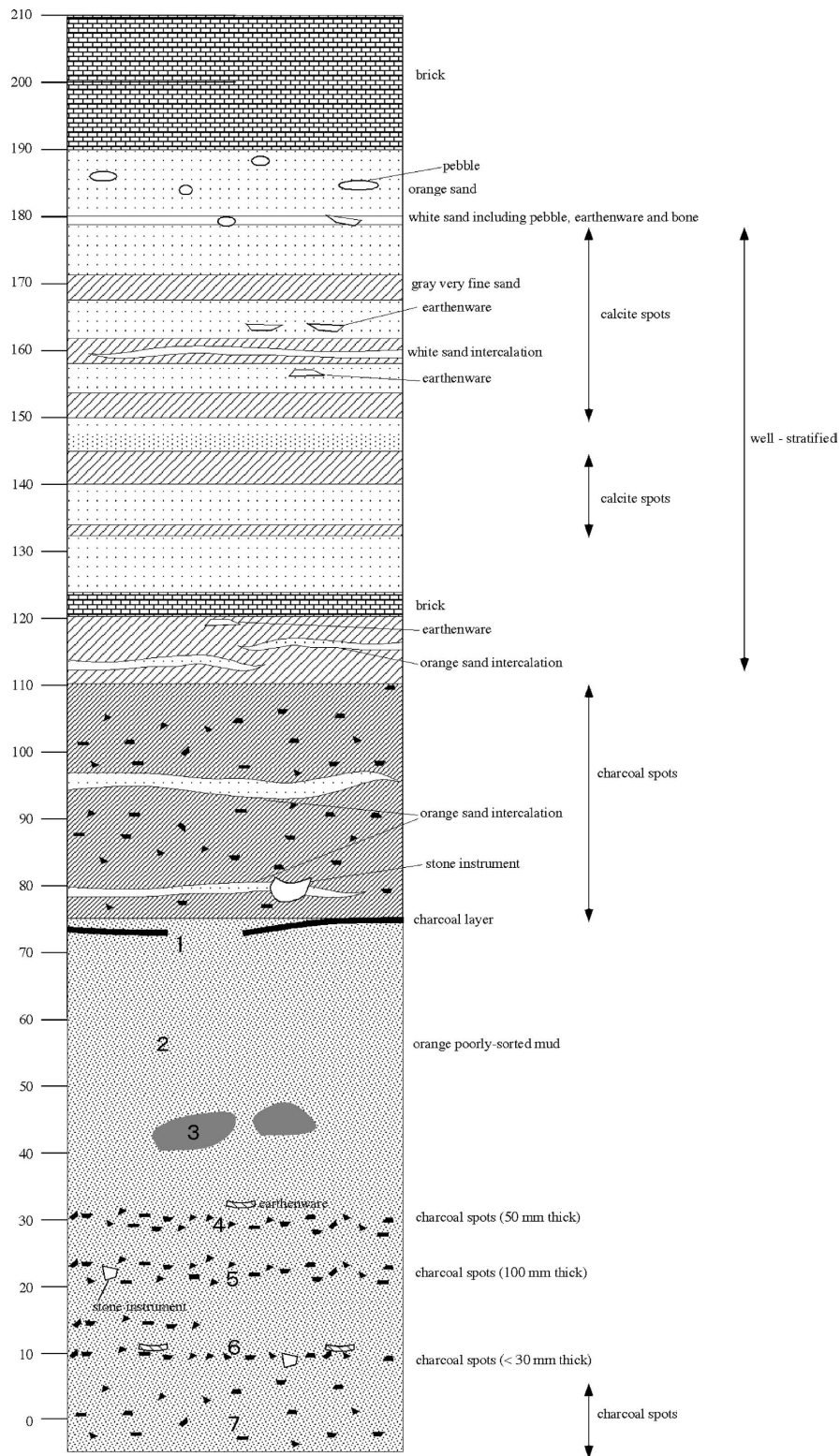


Fig. 4.3 Detailed columnar section of the Site 1 pit (scale in centimeter). Bold number indicates sediment samples.

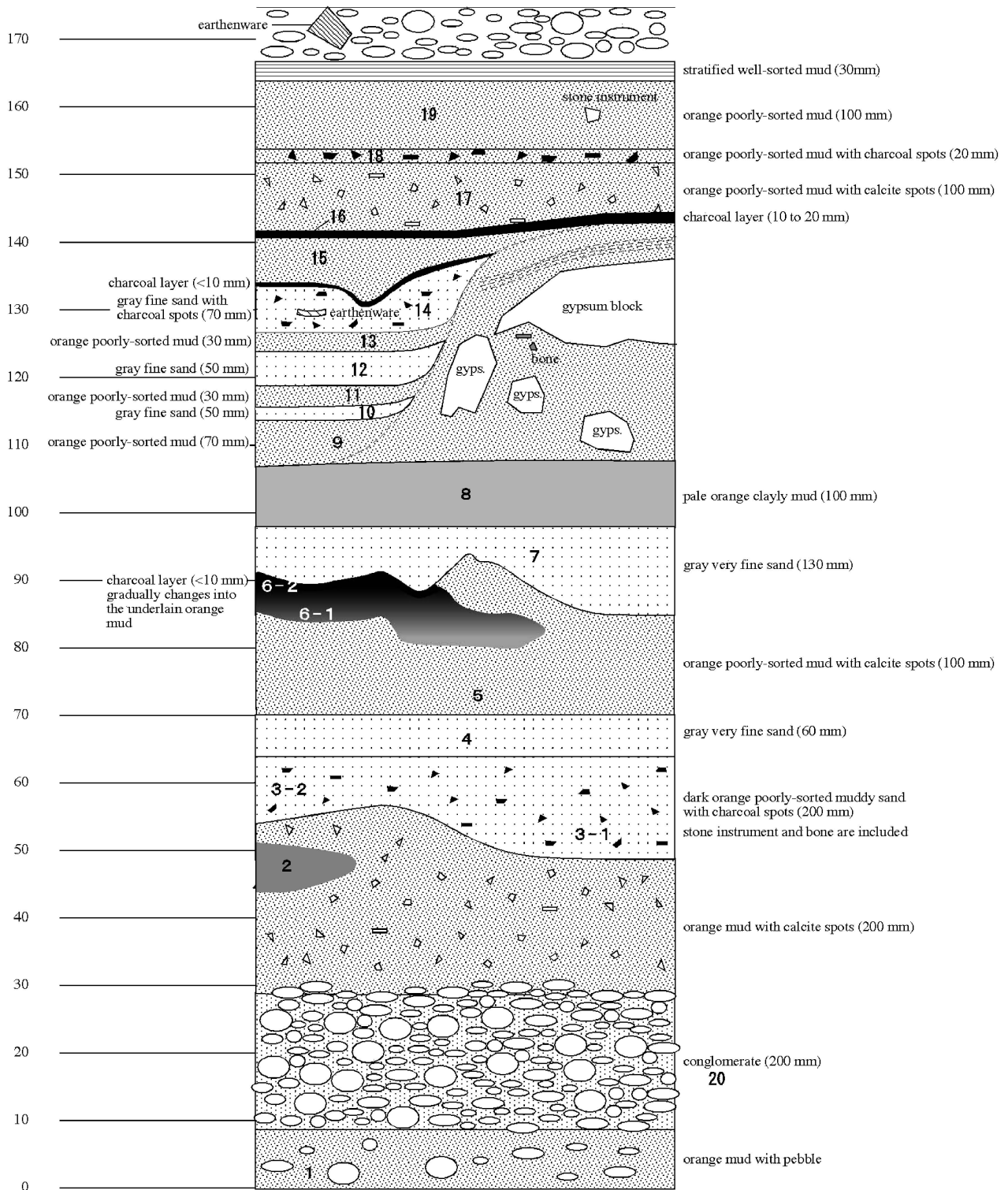


Fig. 4.5 Detailed columnar section of the Site 2 (scale in centimeter). Bold number indicate sediment samples.

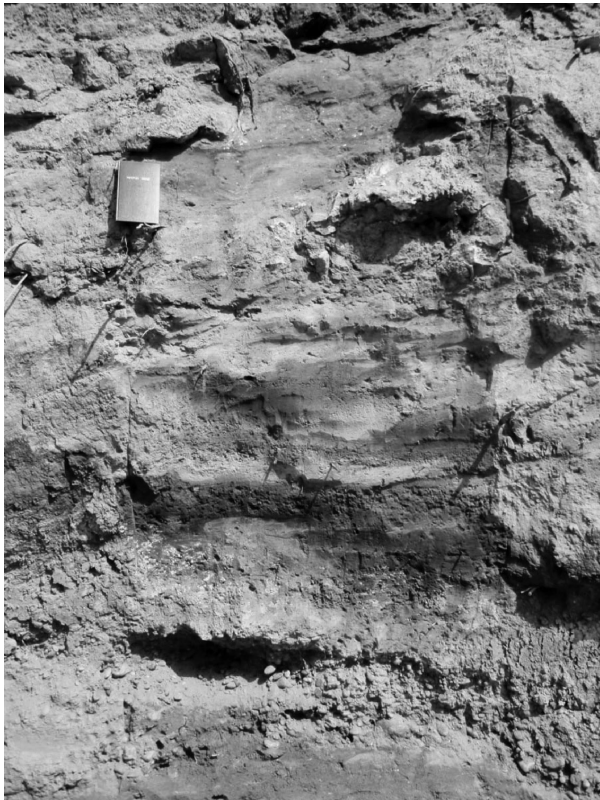


Fig. 4.6 Profile of the section studied at Site 2. Notebook is 16.5 cm long.

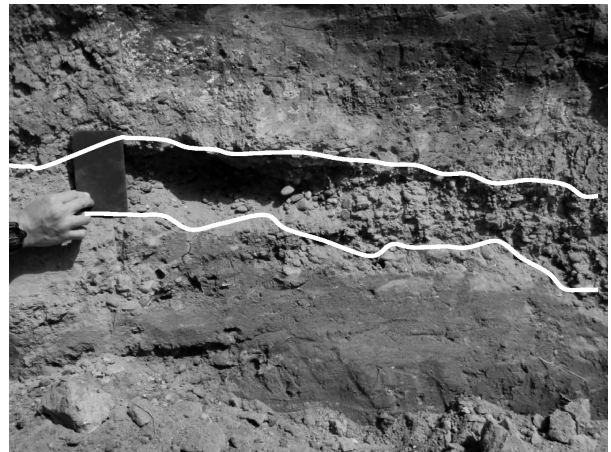


Fig. 4.7 Fluvial gravel layer at the lowermost part of the section.

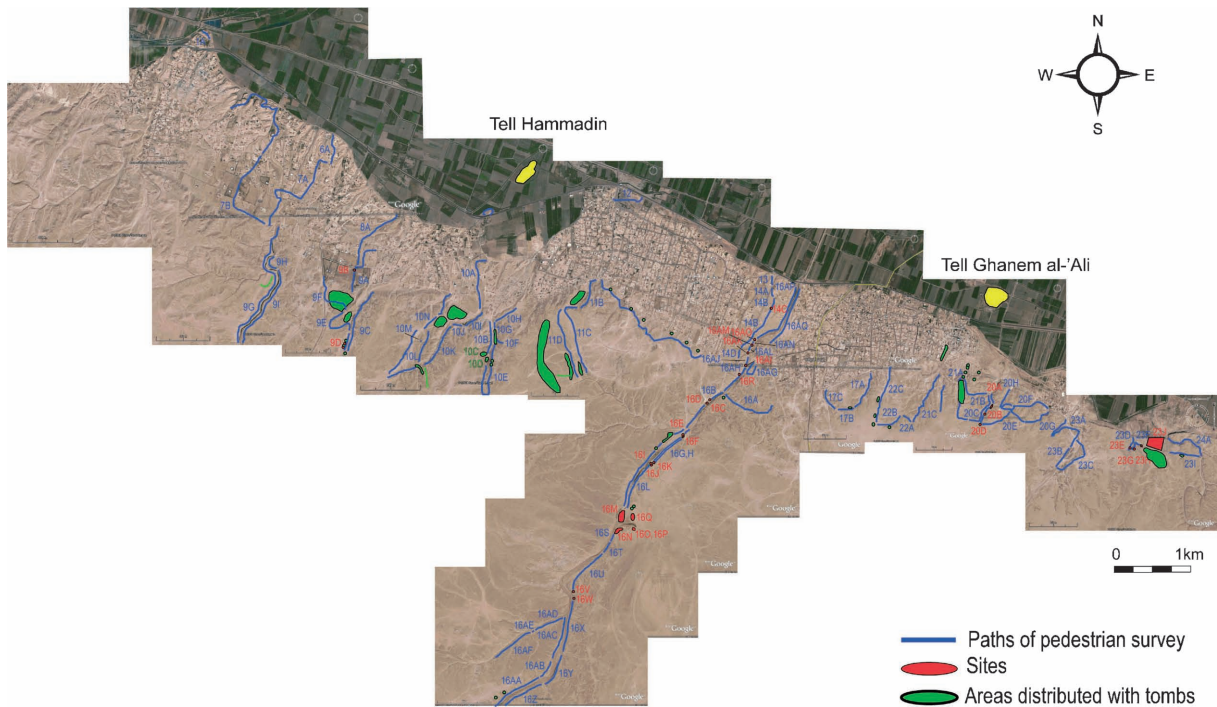


Fig. 5.1 Satellite image of the surveyed areas, showing paths, sites, and distributions of mound tombs that were recorded in pedestrian surveys.



Fig. 5.2 Wadi Shabout East (Area 20A), looking south. More than 100 chipped stone artifacts with a few pottery sherds were collected on the right bank of the wadi.

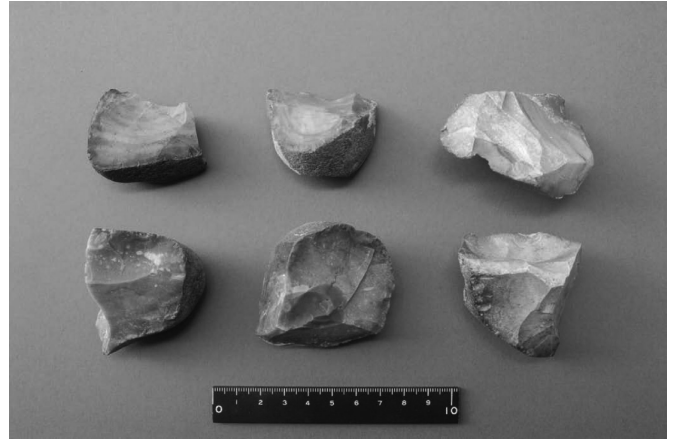


Fig. 5.3 Cores from Area 20A (Wadi Shabout East). Note that rolled cobbles are reduced with minimal preparation of cores for the production of flakes.



Fig. 5.4 Small mound (Area 23H) located on the left bank of Wadi Jezra West, looking southwest. Robber pits failed to find tombs on the mound.

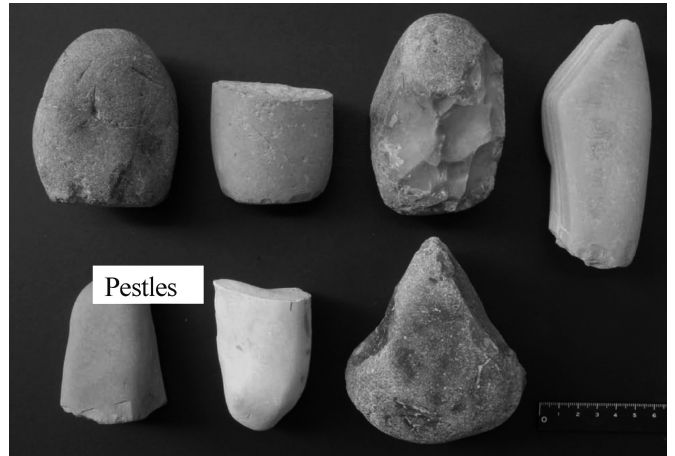


Fig. 5.5 Ground stones from the small mound (Area 23H) in Wadi Jezra West. Pestles in this photo and basalt grinding slabs indicate food processing activities at the site.



Fig. 5.6 Chipped stones from the small mound (Area 23H) in Wadi Jezra West. Top left is probably a Canaanean blade (burnt).



Fig. 5.7 Pottery from Area 23H (Wadi Jezra West).



Fig. 5.8 Large, stone-walled building (150 m × 100 m) located on the hill top of Jezra (Area 23J).

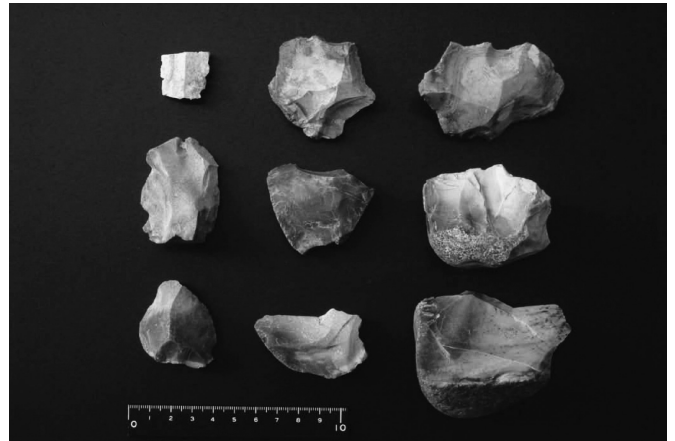


Fig. 5.9 Chipped stones collected on the ground surface inside the large building (Area 23J) at Jezra. Top left is probably a Canaanite blade (burnt).

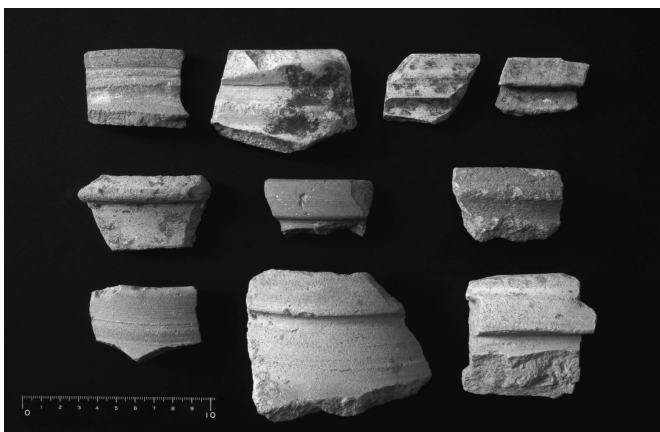


Fig. 5.10 Pottery sherds collected on the ground surface inside the large building (Area 23J) at Jezra.



Fig. 5.11 General view of Wadi Kharar, looking south.



Fig. 5.12 Spring at a tributary of Wadi Kharar, looking west. Areas 16O and 16 P are located on the left bank. Top right is the southern end of Area 16M on the lower terrace of Wadi Kharar.

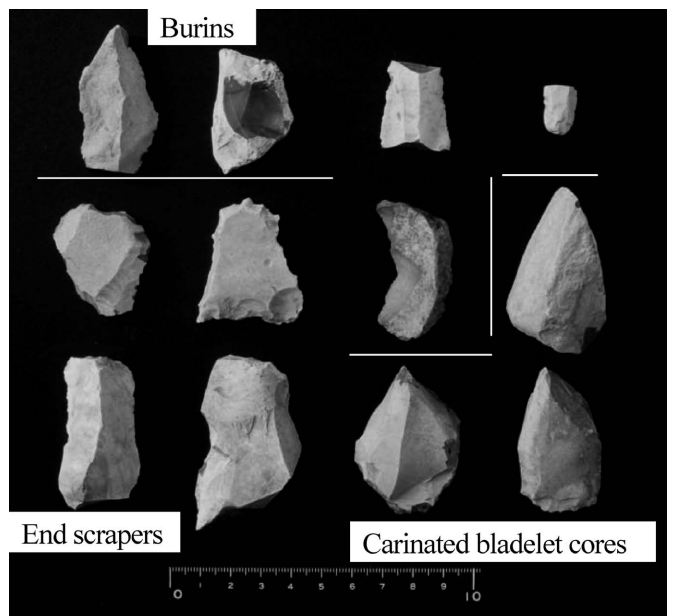


Fig. 5.13 Chipped stones from Area 16N on a lower terrace near the spring in Wadi Kharar.

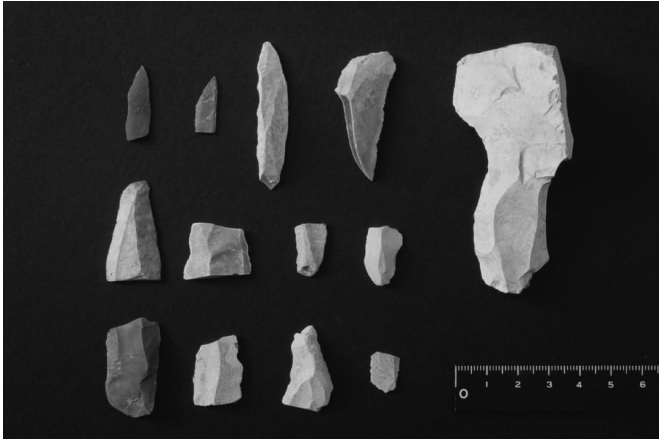


Fig. 5.14 Chipped stones from Area 16I on a lower terrace of Wadi Kharar. Two lunates are seen on the top left corner.



Fig. 5.15 Middle Palaeolithic chipped stones from Area 16AO on upper terrace of Wadi Kharar.



Fig. 5.16 Mound tombs located near Area 10N on the plateau along Wadi 'Ain West, looking east.



Fig. 5.17 A burial cairn located at Area 9D near the upstream of Wadi Qutena, looking southeast.

تقرير موسم العمل الخامس للبحث الأثري للبعثة الأثرية السورية اليابانية العاملة في منطقة جبل البشري

بدأ موسم العمل الخامس من البحث الأثري للبعثة الأثرية السورية اليابانية المشتركة في جبل البشري بتاريخ الثالث من آذار لعام 2007 وانتهى في الخامس من نيسان لعام 2007 وفي البداية نود أن نشكر الدكتور بسام جاموس المدير العام للآثار والمتاحف في سورية والدكتور ميشيل مقدسي مدير التنقيب والبحث الأثري في المديرية العامة للآثار والمتاحف والمشرف المستشار لهذا البحث لما قدموه من دعم لإنجاح هذا الموسم من العمل. وقد تألفت كوادر هذه البعثة من الجانبين السوري والياباني من الأعضاء التالية أسمائهم : الجانب السوري : انس الخابور (مديرا) , احمد سلطان , أيهم آل فخري , محمد جاجان . الجانب الياباني : كاتسوهيكو اونوما (مديرا) , تاكارو اداتشي , كاي سوزوكي , لبنى عمر , تاكاش سايتو , كازوهيرو تسوكادا , هيروتوشي نوموتو , يوشوهيرو نيشياكي , شوغو كومي , سايجي كادراكي .

فقد تعددت الأبحاث في هذا الموسم الخامس من العمل حيث تم التركيز على :

أولاً : استكمال السبر الاختباري لموقع رجوم حداجة : فقد تم التركيز على إجراء السبر لرجم كبير وضخم يقع على الطرف الشمالي من جبل البشري . وذلك بهدف التعرف على الخلفية الرعوية لمجتمعات عصر البرونز القديم في منطقة حوض الفرات الأوسط , حيث أن أعمال السبر في المنطقة BC10 من رجم حداجة 1 قد ألفت الضوء على نماذج الدفن في الجهة الشمالية من جبل البشري في فترة عصر البرونز المبكر. حيث لدينا أفكار واضحة بان هذه المنطقة قد شكلت حلقة رعوية واسعة لمجتمعات عصر البرونز المبكر في منطقة حوض الفرات الأوسط , هذا الاكتشاف ربما يفتح الطريق لتكوين صورة بأنها لمجتمعات رعوية مبكرة (امورية) والتي أشارت النصوص السومرية والأكادية لوجودها في جبل البشري. ومع ذلك فان أعمال السبر لهذا الموسم كانت واسعة جدا وذلك من اجل التأكد من هذه الفكرة . حيث ستكون أعمال المسح في الموسم المقبل واسعة ومكثفة في هذه المنطقة

ثانياً : دراسة البقايا الحيوانية في تل غانم العلي , وذلك من خلال تحليل العينات الحيوانية التي استخرجت من تل غانم العلي . وقد بينت الدراسة التمهيدية لهذه العينات أن هذه المنطقة كانت تعتمد على رعي الأغنام والماعز والماشية , وقد كان الصيد يشكل جزء من نظام الغذاء يعتمد على حيوانات البادية في البشري .

ثالثاً : مسح مقابر البرونز المبكر في المنطقة المجاورة لتل غانم العلي حيث تم مسح واستقصاء المقابر المتوضعة على الحافة الشمالية لجبل البشري , وذلك بهدف إلقاء الضوء على مظاهر الدفن لمستوطنات عصر البرونز المبكر في تل غانم العلي . فقد ظهر تباين في أسلوب الدفن في منطقتين متجاورتين , منطقة وادي شبوط ومنطقة وادي الضبع , والذي من المتوقع أنهما تتضمنان اختلاف باطني متمثل في أسلوب ممارسة الدفن من حيث الجنس ووضعيه الدفن

لمجتمعات عصر البرونز المبكر , حيث أن أعمال هذا الموسم اعتمدت على دراسة مفصلة لهذه المنطقة تتألف من مسح هذه المقابر وتوثيقها من اجل فهم إقليمي للتغيرات والتبدلات في أساليب الدفن في وادي الفرات الأوسط , وطبيعة ممارسة الدفن لمجتمعات عصر البرونز المبكر .
 رابعا : القيام بأعمال المسح الجيولوجي للمناطق المحيطة بتل غانم العلي والتي تظهر التوضع الطبقي لتل غانم العلي .

خامسا : القيام بأعمال مسح مكثف للمناطق المجاورة لتل غانم العلي وذلك بهدف إيضاح وشرح تفصيلي للمواقع الأثرية العائدة لفترة البرونز المبكر والمجاورة لتل غانم العلي , وذلك بهدف الحصول على تاريخ ابعث للوجود السكاني في هذه المنطقة منذ عصور أقدم . إذا يمكن القول بان أعمال البعثة السورية اليابانية المشتركة لهذا الموسم قد استهدفت محاولة فهم المدلول الأثري لموقع تل غانم العلي وهو الهدف الجوهرى لمشروعنا الأساسى في هذه المنطقة

مدير الجانب السوري
 انس الخابور

مدير الجانب الياباني
 كاتسوهيكو اونوما

ARCHAEOLOGICAL RESEARCH IN THE BISHRI REGION — REPORT OF THE SIXTH WORKING SEASON —

Katsuhiko OHNUMA*
Anas Al-KHABOUR**
(5/June/2008)

The 6th working season of the Syria-Japan Archaeological Joint Mission to the Bishri Region was undertaken from April 25th to June 5th, 2008.

The members of the joint mission from the Syrian and Japanese parties are as follows.

Syrian party: Anas Al-Khabour (Director), Ayham Al-Fahry, Ahmed Sultan and Mohamad Ibrahim.

Japanese party: Katsuhiko Ohnuma (Director), Hirotoshi Numoto, Shogo Kume, Mitsuo Hoshino, Tsuyoshi Tanaka, Toshio Nakamura, Yusuke Katsurada, Yoshiyuki Aoki, Suguru Oho, Sumio Fujii, Takuro Adachi, Kae Suzuki, Chie Akashi, and Ken-ichi Tanno.

Dr. Bassam Jamous, the Director General of the Syrian Directorate General of Antiquities and Museums, and Dr. Michel Al-Maqdissi, the Syrian Supervising Adviser for this joint mission and the Director of Archaeological Excavations and Research at the Syrian Directorate General of Antiquities and Museums, kindly helped us towards the success of this sixth working season of joint research, and we express our sincerest gratitudes to both of them for their heart-warming cooperation.

In this working season, we undertook four kinds of research in the research area (Map 1):



Map 1 Area including the sites researched by the 6th Syria-Japan Archaeological Joint Mission to the Bishri Region in April to June, 2008.

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1) geological and geographical field survey, 2) cleaning survey of the Early Bronze Age hilltop tombs near Tell Ghanem Al-Ali, 3) sondage at Rujm Hedaj 1 near Bir Rahub, and 4) botano-archaeological research.

The following sections are the preliminary results of the research works carried out in this field season.

1. Geological and Geographical Field Survey in the Sixth Working Season

Mitsuo HOSHINO (Professor, Nagoya University)
 Tsuyoshi TANAKA (Professor, Nagoya University)
 Toshio NAKAMURA (Professor, Nagoya University)
 Yusuke KATSURADA (Research Fellow, Nagoya University)
 Yoshiyuki AOKI (Research Fellow, Nagoya University)
 Suguru OHO (Ph.D. Student, Nagoya University)

Introduction

The geological and geographical field survey in this working season is concentrated on, (1) measurement of natural radioactivity, (2) levelling of the river-terrace and (3) sampling for ^{14}C dating.

Drs. Bassam Jamous and Michel Al-Maqdissi of the Syrian Directorate General of Antiquities and Museums kindly allowed us to use the Spectrometer in the Bishri mountain region, Raqqa Prefecture. Dr. Anas Al-Khabour, Messrs. Ayham Al-Fahry, Mohamad Ali Jajan, and Ahmad Sultan of Raqqa Museum kindly assisted us to carry out the survey in the field. To whom we would like to express our gratitude.

Measurement of natural radioactivity of Tell Ghanem al-Ali sediments

The InSpector gamma-ray 1000 spectrometer of CANBERRA Co equipped with IPRON-3 3×3 inch NaI detector was used for this survey. The spectrometer was setup to measure the gamma-rays up to 3125 keV with 1024 channels. The 1461 keV gamma-ray of ^{40}K , 1764 keV gamma-ray of ^{214}Bi and 2614 keV gamma-ray of ^{208}Tl were detected. The daughter nuclides, ^{214}Bi and ^{208}Tl appear in decay-series of ^{238}U to ^{206}Pb and ^{232}Th to ^{208}Pb , respectively. It takes 600 seconds to complete the measurement for each measuring point at 1 m high from the ground or attaching the probe on the subject.

Thirty points were selected to cover the Square 1 and 2 excavation sites at Tell Gahnem al-Ali. Natural radioactivities were also measured at three points in the surrounding wheat field for comparison. The feature of the measurement at Tell Ghanem al-Ali is shown in Fig. 1a. The detector was held at 1 m high. It can measure the radioactivity around 3 m radii from the detector.

A good cutting section showing the basal sediments of the tell was found by Saito and Tsukada (March, 2008) in the factory compound under construction, southeast of the tell. Radioactivities were measured according to their stratigraphic observation. At this factory site, measurements were performed by attaching the probe on the cutting section. The feature of the measurement at the factory site is shown in Fig. 1b. The detector, in this case, is sensitive for the activities at attaching points.

An example of the obtained measurements for ground surface of the tell are shown in Fig. 2. ^{40}K activities vary from 1950 counts in the wheat field to 4173 counts at the site #5. These are the common activities in natural geological environment (Fig. 3a). Radioactivities of the three points in the wheat field show the three smallest activities. This indicates that the potassium content in the wheat field is apparently smaller than those of the positions of the tell. Activities of ^{208}Tl vary from 160 counts at the point #23 to 314 counts at #12 (Fig. 3b). All of the data contains counting uncertainties 5

to 15 % (1 sigma). These activities are also common in natural geology as well as for ^{40}K . Activities of ^{214}Bi are fairly small compared with those of ^{40}K and ^{208}Tl . Among these three nuclides, ^{40}K activities are stronger at lower part of the tell, where surface soil is accumulated by wind. On the contrary, ^{214}Bi (daughter of Uranium) and ^{208}Tl (daughter of Th) are stronger at bare surface without soil (compare the Figs. 3a, 3b and 3c).

We measured the natural radioactivity in Square 2 excavation site. The activities for all nuclides are 1.5 times high against the ground surface. The points inside the excavation site, however, are surrounded by the walls of sediments—this is the reason of the high activity. No topographic correction has been done for the data shown above, because all of the 33 measuring sites are located on the ground surface. The topographic correction is, however, necessary for the accurate comparison. The variation on environment can be distinguished more accurately from the ratio of activities. When comparing the ratios of activities, e.g., ^{208}Tl countings/ ^{40}K countings, ground surface and inside of the excavation site give the same activity ratio (Fig. 4). We would like to conclude that the materials forming Tell Ghanem al-Ali is homogeneous from its surface to 3 m depth of the ground. The materials forming the tell is different from the sediments of surrounding wheat fields.

The fresh cutting in the factory under construction (Fig. 5) give slightly higher activities comparing to the surface of Tell Ghanem al-Ali; this is the topographic effect as mentioned above. At the cutting sections, the detector bears the radiation from both of the walls and the grounds.

The activity ratios of $^{208}\text{Tl}/^{40}\text{K}$ are higher than 0.1 at 18 among 20 measuring points at the cutting sections in the factory. This feature is quite different from Tell Ghanem al-Ali, where only 3 of 38 points including excavation site are higher than 0.1. The wheat field, on the contrary, high as 0.1. Then, the sediments in cutting sections of the factory correspond to the soil of the wheat field and not to that of the tell.

During the study of levelling the river-terraces, the natural radioactivities at higher terraces and at Tertiary beds were measured. Activities of all nuclide ^{40}K , ^{214}Bi and ^{208}Tl are smaller than those on and around the Tell Ghanem al-Ali. Evaporite like gypsum may cause the smaller activities, because such materials deposited from aquatic environments may exclude the radioactive nuclide.

The natural radioactivities were also measured at Monkhar Gharbi volcanoes. The volcano is formed by alkali basalt. It is natural that potassium content in alkali basalt cause high ^{40}K activity. Interestingly, ^{214}Bi and ^{208}Tl activities are remarkably high. This indicates that the basaltic rocks are the residue of magmatic differentiation at deep mantle or the products of very small partial melting of deep mantle. Though we have no data for other volcanos, it is expected that the activity ratio will come to be a good index to identify the source of historic stone tools.

Levelling of the river-terrace surface

In the forth working season, we recognized five river-terraces in the study area: I (c. 250 m, a.s.l.), II (242–245 m), III (237–240 m), IV (233–234 m) and V (c. 230 m). The former three terraces characteristically develop along Wadi al-Kharar as shown in Fig. 6. In this working season, we measured relative heights between the surfaces using the TRUE PULSE 360B, Laser Technology Inc. The results are indicated by arrows with the elevation differences from the reference points to the target points (Fig. 6).

Sampling for ^{14}C dating

During the short filed survey (March 24th–27th, 2008), Drs. Saito and Tsukada surveyed a section in the factory under-construction south of the Tell Ghanem al-Ali site. The section, showing the basal sediments of the tell, consist mainly of ill-sorted muddy sand with charcoal fragments in the upper part and fluvial gravel layer in the lower part (Cut Section 1 of Fig. 5). Drs. Saito and Tsukada have collected charcoal samples at the section for ^{14}C dating.

In the present survey (April 30th–May 6th, 2008), we collected soil material (SH-9) for ¹⁴C dating from the fluvial gravel layer in the lower part there, since no charcoal materials were observed. In addition, we detected another good section containing several charcoal layers that are corresponding to the upper part of the section surveyed by Drs. Saito and Tsukada in March. We have collected several charcoal samples from the new section (Cut Section 2 of Fig. 5), which is facing east in the north-west corner of the factory, as shown in Fig. 1. Several dark brown layers consisting of charcoal fragments and/or soil with charcoal powder were detected there, and we have collected two charcoal samples (SH-1 and SH-3) from the C₅ charcoal layer, two (SH-5 and SH-6) from the C₈ layer, and three (SH-2, SH-4 and SH-7) from the intermediate (C_m) between the 1st and 2nd layers. No sample was collected in the lower C_m layer, since no clear charcoal fragment was detected. ¹⁴C ages of these samples will be compared with those of the charcoal samples collected so far at Ghanem al Ali site. All these ¹⁴C ages should suggest the intensive active period of human after the fluvial gravel layer formation, because the charcoal layers include a lot of pottery and bone fragments.

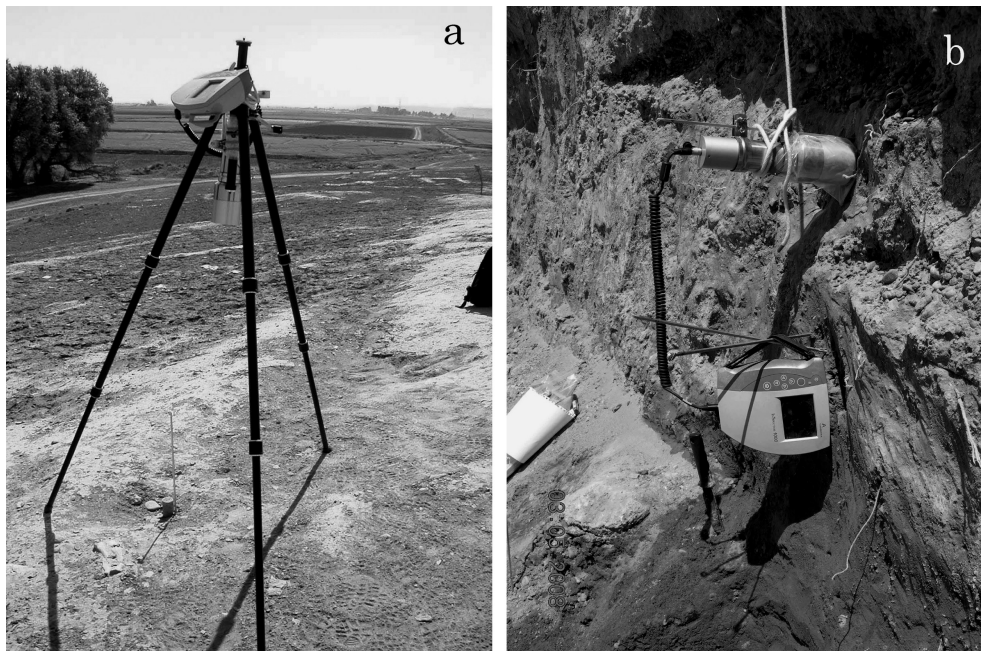


Fig. 1 The feature of natural gamma-ray measurement at the Tell Ghanem al-Ali. A tripod was used to hold the detector at 1 m high. It can detect gamma-rays from the ground within ca 3-meter radius (Fig. 1a). The detector was horizontally held to detect natural gamma-rays of the vertical outcrop. The detector is sensitive for the attached surface (Fig. 1b).

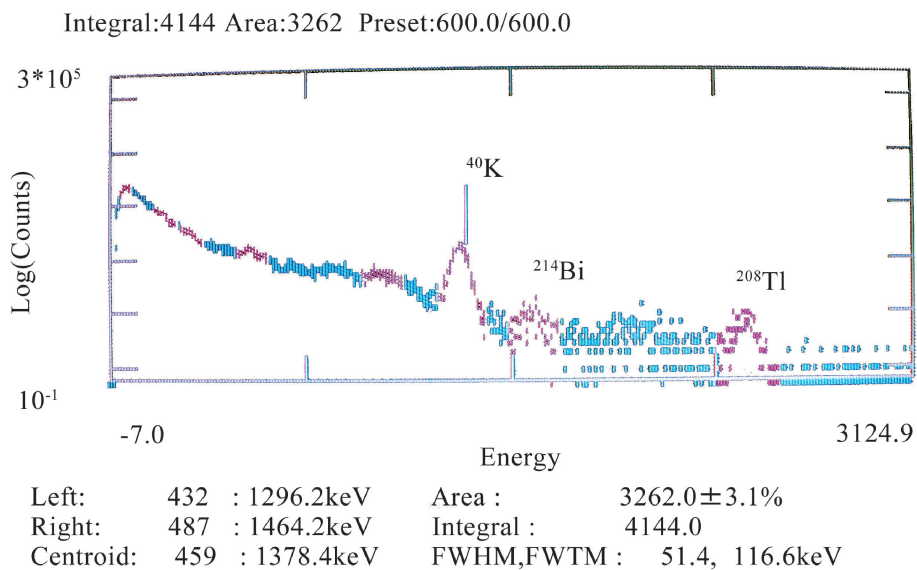


Fig. 2 An example of gamma-ray spectrum. ^{40}K , ^{214}Bi (daughter nuclide of uranium) and ^{208}Tl (daughter nuclide of thorium) are detected. The red-colored area is the region of interest. The area are automatically integrated and used for the following discussions.

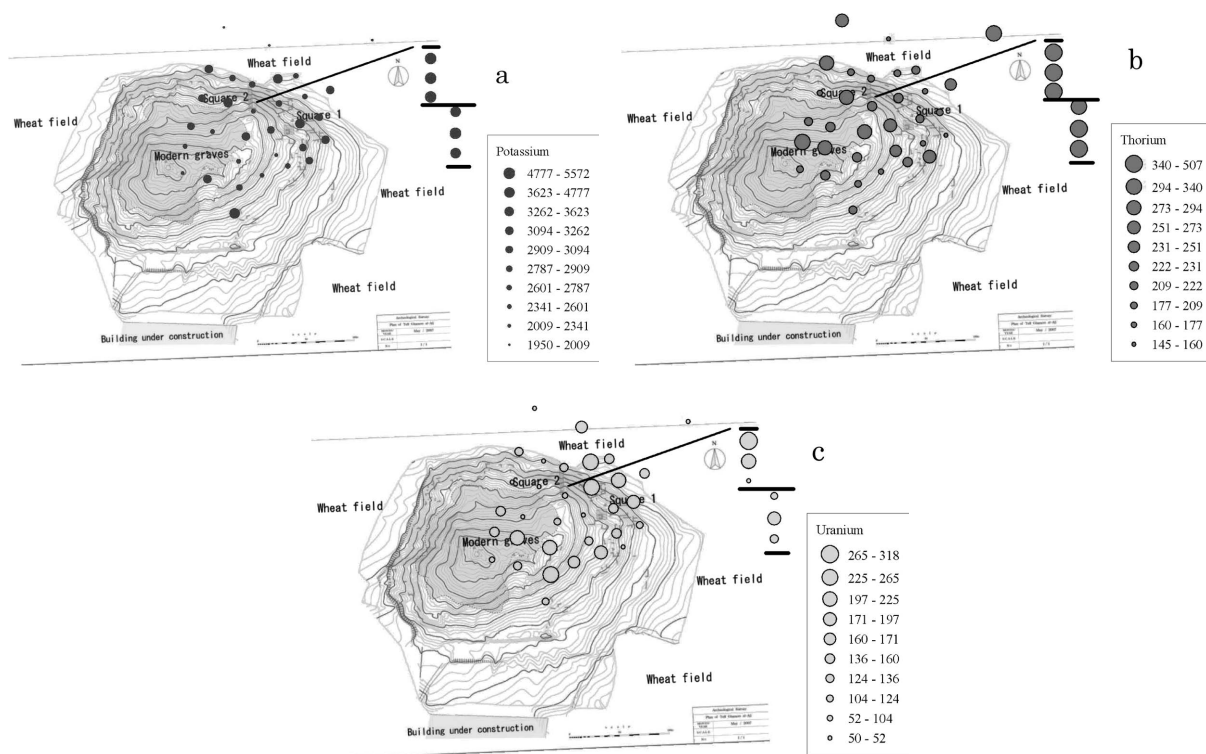


Fig. 3 The distribution map of natural radioactivities of the Tell Ghanem al-Ali. Figs. 3a, 3b and 3c show activities for ^{40}K , ^{208}Tl and ^{214}Bi , respectively. Activities in the square excavation site 2 are also shown in right upper side of each figure.

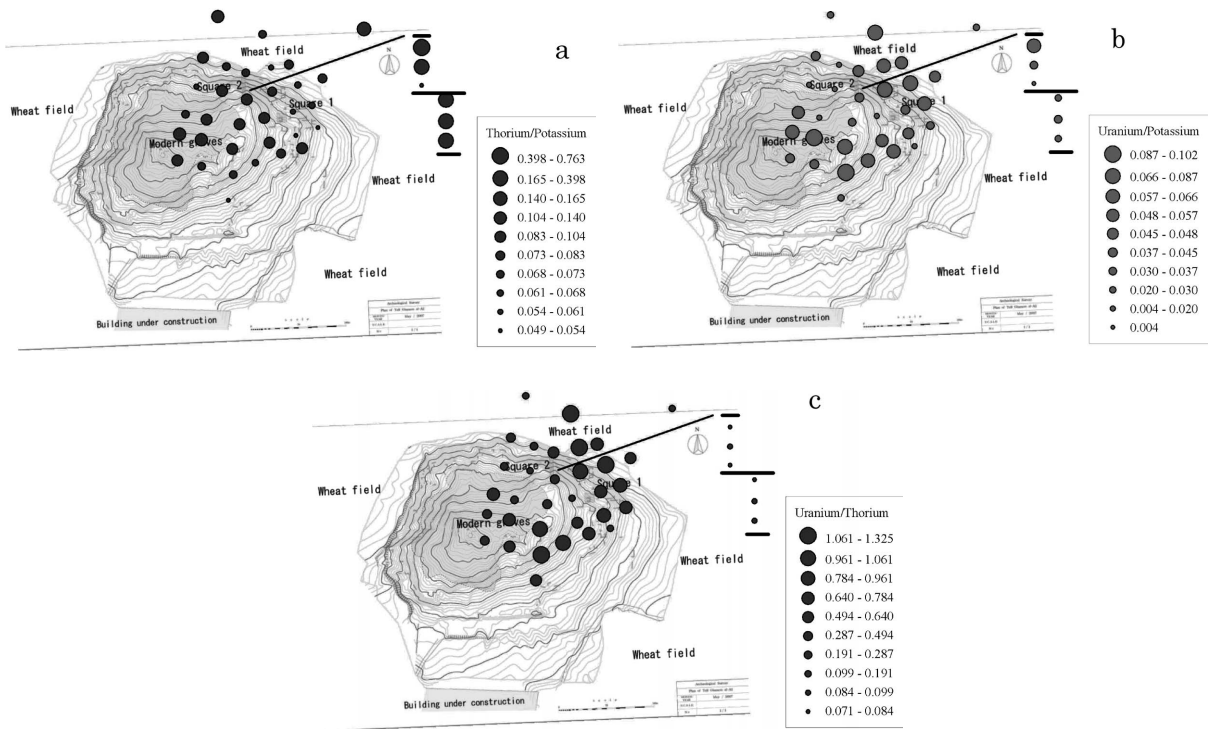


Fig. 4 The distribution map of ratio of radioactivity. Figs. 4a, 4b and 4c show the ratios for $^{208}\text{Tl}/^{40}\text{K}$, $^{214}\text{Bi}/^{40}\text{K}$ and $^{214}\text{Bi}/^{208}\text{Tl}$. Activities in the square excavation site was high as shown in Fig. 3. However, the activity ratios shown in this Fig. 4 indicate that the both sedimentary materials at the surface and excavation site are not distinguishable. (Compare these ratios with those of cutting sections in the factory shown in Fig. 5.)

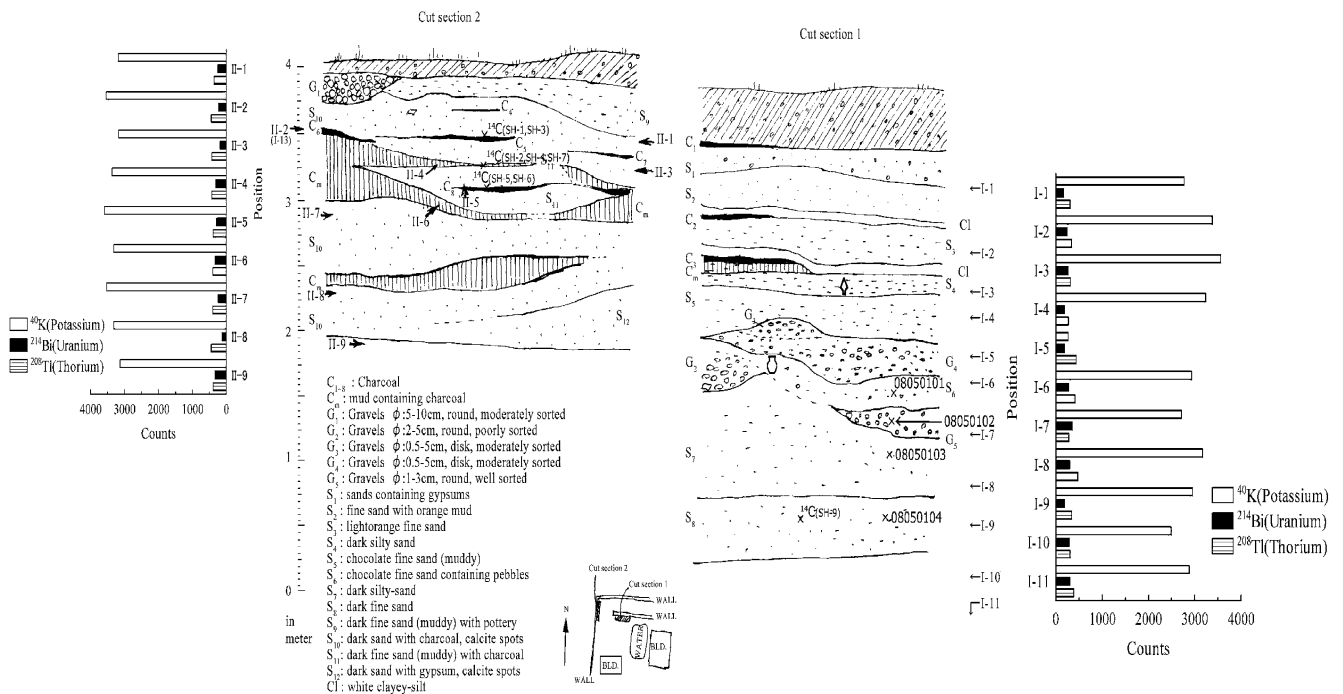


Fig. 5 A sketch map showing the cut sections 1 and 2. The cut section 1 was found by Saito and Tsukada in March, 2008. The natural gamma-ray activity was measured at 20 points from I-1 to I-11 and from II-1 to II-9 at the cut section 1 and 2, respectively. The activity ratios are distinctive from the ratios of the tell (Compare the values in Fig. 5 and Fig 4).

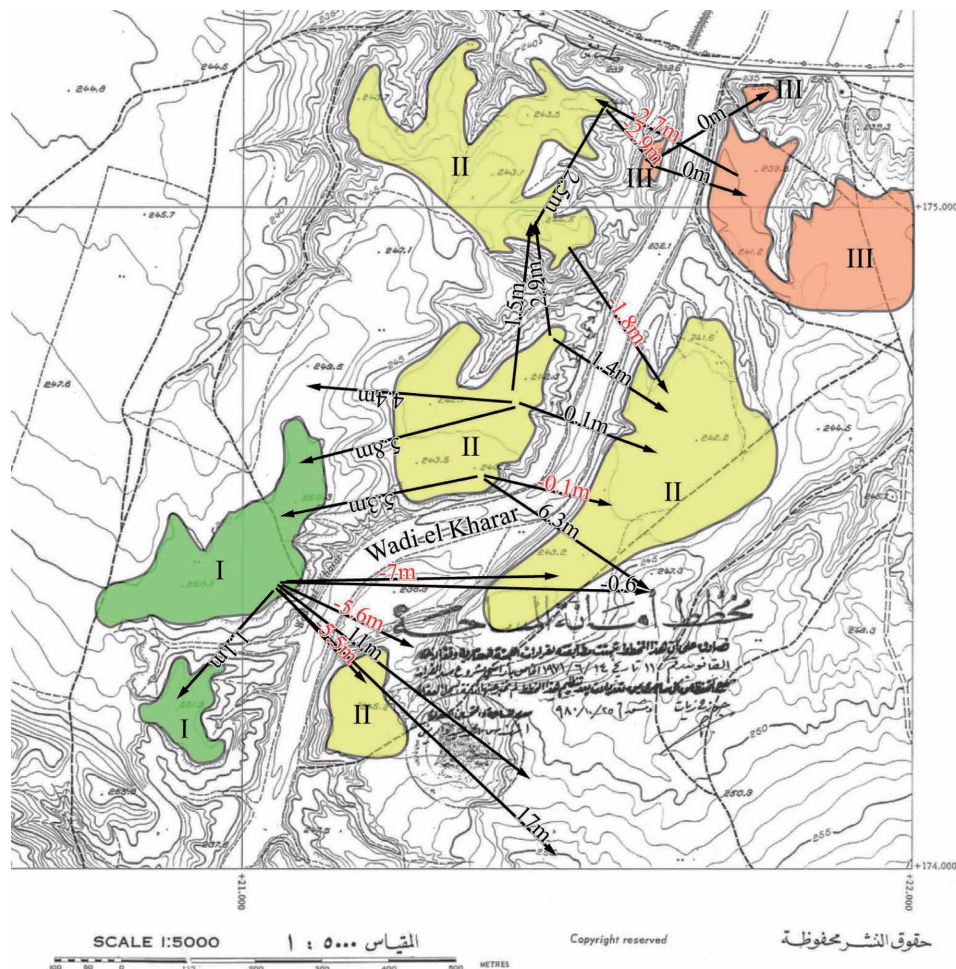


Fig. 6 Relative elevations of the river-terrace surfaces along Wadi el-Kharar.

2. Cleaning and Survey of the Early Bronze Age Hilltop Tombs in the Wadi Shabbout Area near Tell Ghanem Al-Ali

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Shogo KUME (Doctoral Student, Waseda University)

Introduction and objectives

An archaeological investigation of Early Bronze Age (EBA) tombs near Tell Ghanem al-'Ali consisted of cleaning (27th April to 8th May, 2008) and survey (11th and 20th May, 2008) of seriously plundered grave-clusters situated in the Wadi Shabbout area on the northern edge of the Bishri Plateau.

Past surveys conducted by the Syria-Japan Joint Mission to Jebel Bishri demonstrated two off-site cemeteries probably contemporary with Tell Ghanem al-'Ali, i.e. the Wadi Shabbout cemetery area on hilltops or the northern edge of the Bishri Plateau, and the Wadi Daba cemetery area on the outfall of tributary wadi of the Euphrates (Fig. 1). As well as the contrast location of hilltops and the valley, the earlier surveys suggested distinct burial types between these areas. The Wadi Daba area generally consisted of shaft and shaft-like graves, while the vast Wadi Shabbout area contained various types of burials, such as stone chamber, cist and shaft graves as well as high mound tombs.

To obtain more concrete and detailed archaeological information that allows us to discuss the

relationship between the settlement and the cemeteries and the nature of mortuary practices of the EBA community, goals included salvage of preserved artefacts from the plundered tombs for dating, and documentation of variability and distribution of particular burial types in the Wadi Shabbout area.

Research area

Overlooking Tell Ghanem al-'Ali and the Euphrates Valley, the Wadi Shabbout area is situated on hilltops or high cliffs between Wadi Shabbout and a small unnamed wadi, approximately 1 km south from Tell Ghanem al-'Ali (Figs. 1 and 2). The area of the northern edge of the Bishri Plateau contains very scattered vegetation, and sharply eroded by small tributary wadis of the Euphrates.

For the convenience of the research, the area was divided into three sub-areas along wadi courses. Wadi Shabbout Area 1 (WS 1) consists of the eastern part of the area, where Tell Shabbout 1 and 2, high mound tombs or tumuli, is located. Wadi Shabbout Area 2 (WS 2), an intensively investigated sub-area in the present research, is situated in the western part. Lastly, Wadi Shabbout Area 3 (WS 3) is the rest area of the southern part. Three areas approximately cover 250,000 sq. m. Although any benchmarks were not recognized in the areas, a topographic map published by the Syrian government indicates heights in the area to be more or less 270 to 290 m above sea level.

Cleaning of plundered tombs at Grave-cluster A, WS 2

Following a quick survey for tombs in the areas, a massive grave-cluster (called Grave-cluster A) in WS 2 was selected (Fig. 3), for the scanning survey revealed a variety of burial types in the cluster, and modest scale of the site was appropriate for our limited period of the investigation.

Grave-cluster A is a low natural mound situated in WS 2. The mound measures ca. 30 × 16 m in major and minor axes and ca. 0.75 m in height from the basement of the mound. Seven depressions plundered by modern grave robbers were identified at the site. Except one depression located at the northern edge of the mound, all depressions produced traces of burial practices.

Field methods

To achieve the objectives described above, cleaning of all seven depressions were conducted. All soils from fill of the tombs were sieved, using 2 × 2 mm mesh sieves, in order to salvage tiny materials, such as beads or fragmented bones and teeth. In addition, two trenches for surface cleaning of 2 × 16 m (north-south) and 2 × 10 m (east-west) were opened, crossed on the top of the mound, since undisturbed tombs might occur below the surface. Encountering characteristic features, like stone alignments or concentrations, these trenches were expanded toward appropriate locations. Accordingly, a total area of 92 sq. m was exposed at Grave-cluster A. To document stratigraphy of the site, a 2 × 2 m deep pit was also sounded.

Stratigraphy

Stratigraphy of the site is principally composed of three sediments. The first layer consists of very thin reddish-brown soils, which might be generated from dirt-heaps at the time of plundering. In fact, several artefacts have been recovered from the layer. The second layer comprises whitish powder-like gypsiferous soils. Individual tombs appear to have been excavated from the top of this layer. The third is a marlaceous gravel layer. Bottoms of the tombs were constructed, digging into this gravel layer.

Tombs and finds

1) Tomb A1 (Figs. 4 and 5)

Although the western part of the burial was seriously disturbed by the grave robbers, the tomb

was the most well preserved sample at Grave-cluster A, and is easily identified as a typical stone chamber grave. The walls of the tomb are constructed of quarried gypsum stone slabs, which are horizontally arranged in nine to ten layers, inflecting toward the top. The entry of the tomb is capped by monolithic gypsum stone slabs. The slab set on the eastern part of the entry has further been covered by smaller slabs. The chamber measures ca. 1.8 m in length, 1.1 m in width and 1.0 m in depth. The axis of the tomb is roughly situated on the east-west line, but, more precisely, it deviates from the line at an angle of ca. 30 degrees in an anticlockwise direction. Salvaged materials from the tomb were sparse, including a body sherd, a shell ring ornament, a shell bead, a bronze object, and fragmented elements of (probably human) bones and teeth.

2) Tomb A2 (Figs. 6 and 7)

The tomb consisted of a square pit, ca. 1.0 × 1.0 m in length and width and 0.6 m in deep, and its walls were lined with flat gypsum stone slabs on edge, suggesting a type of cist grave. The southern wall and roofed stone slab(s) have not been preserved well due to plundering. The axis of the tomb precisely indicates the east-west direction. No pottery sherds were recovered, but a considerable amount of several types of shell and stone beads were salvaged. Chips of bones were also collected.

3) Tomb A3 (Fig. 8)

Due to the intensive activity of the grave robbers, only the southern wall of the construction was partly preserved. The edge lined with two large flat gypsum stone slabs indicates a type of cist graves. The chamber measures ca. 1.8 m in length, 0.9 m in width and 1.0 m in deep. The axis of the tomb is on the same line as Tomb A2, i.e. the east-west direction. A mere body sherd was salvaged.

4) Tomb A4 (Figs. 9, 10)

The tomb generally illustrates a type of stone chamber graves with horizontally arranged gypsum stone slab walls. However, the western wall was lined with two stone slabs on edge, like cist graves. The coexistence of two forms within one tomb may suggest a phase of chronological/typological transition of two burial types. The chamber measures ca. 1.8 m in length, 0.9 m in width and 0.9 m in deep. The direction of the tomb deviates from the east-west line at ca. 18 degrees in an anticlockwise direction. A few unique finds were recovered. They include a tip of bronze pin, a shell ring ornament with spiral groove, and several sherds, such as a base, a rim and a spout fragments.

5) Tomb A5 (Fig. 11)

Southern and a part of western walls alone arranged with gypsum stones were preserved at the tomb. The wall construction techniques suggest a typical stone chamber grave. The chamber measures ca. 1.4 m in length, 1.1 m in width and 0.6 m in depth. The axis of the tomb is precisely situated on the east-west line. A jar rim and an *in-situ* large jar base were salvaged.

6) Tomb A6 (Figs. 12–14)

Though no roofed stone slabs were identified, the tomb was well preserved like Tomb A1, since the modern grave robbers merely excavated the western half of the tomb. Construction techniques of gypsum stone walls correspond with those of Tomb A1, indicating a type of stone chamber graves. However, two differences were observed. First, thicker stone slabs have been used as wall materials in the case of Tomb 6. Second, northern wall has convex shape, while southern wall is inflecting toward the top like Tomb A1. The chamber measures ca. 2.0 m in length, 1.0 m in width and 1.0 m in deep. The direction of the tomb deviates from the east-west line at ca. 18 degrees in an anticlockwise direction. Due to the well-preserved condition, observations of the east-west section in the chamber were also conducted. Apparently, Tomb A6 was once disturbed by ancient robbers, and

again, the modern grave robbers plundered the tomb, because constant fill of gypsiferous soils deposited in the chamber implies long term aeolian sedimentations since the first plundering in antiquity. The condition produced two in-situ nearly complete vessels as well, such as a hemispherical bowl and a low-neck jar.

Isolated materials

The surface and trench sampling produced a few diagnostic archaeological materials. They include shell ring ornaments, a flake of flint, and a pedestal of a small ceramic.

Dating

Dating of the tombs and their relationship to Tell Ghanem al-'Ali or other grave-clusters in the area remains difficult because of the scattered collection from the individual burials and the surface/trench sampling. Apparent absence of diagnostic wares, like Euphrates Fine Ware, Metallic Ware, or Smear Wash Ware, also makes the dating difficult.

Evidence, however, supports that construction period of Grave-cluster A in WS 2 is more or less contemporaneous with occupation deposits at Tell Ghanem al-'Ali, i.e. the EBIII to EBIVA Periods. This is because, first, shell ring ornaments recovered from the site are quite homogeneous with specimens from Abu Hamed, a site of late EBIII to early EBIVA grave-clusters, located approximately 1 km south of the Wadi Shabbout area. Second, burial types represented by stone chamber and cist graves in Grave-cluster A are typologically belong to the mid to late third millennium, as previous research works of mortuary practices in the Syrian and Turkish Euphrates regions have suggested. Third, several vessel forms identified at the site, including a spout, a small pedestal and a complete hemispherical bowl, may also support this view. For instance, spouted jars are a representative of the mid to late third millennium Syrian Euphrates assemblages. The small pedestal has a good parallel with a specimen from a contemporary tomb at Tell es-Sweyhat, located approximately 80 km northwest of Al-Raqqa. Hemispherical bowls with convex wall are common in the late third millennium of the region.

Grave-cluster survey in the Wadi Shabbout area

Grave-cluster survey in two sub-areas of the Wadi Shabbout, i.e. WS 1 and 2, was conducted. To demonstrate variability and distribution of individual tombs in the areas, data of burial type, orientation of axis, and size of chamber were collected. Intensively plundered tombs in the areas, in turn, often enabled us to identify these data. The survey was conducted in pedestrian manner, navigated with high-resolution satellite image, allowing us to document more or less precise locations of the targets (Fig. 15).

WS 1

A total of seven grave-clusters and isolated graves were documented. Burials types contained the most impressive high mound tombs or tumuli called Tell Shabbout (Fig. 16) and cist or stone chamber graves.

WS 2

WS 2 also produced seven grave-clusters and isolated graves, including intensively investigated Grave-cluster A (see above). Stone chamber or cist graves were identified in the area.

In both areas, the axes of the tombs are roughly situated on the east-west line. Though internal structures of several tombs like tumuli were not observed, modest size of chambers that ranges 0.9–2.1 m in major axes, and 0.8–1.4 m in minor axes suggests that these tombs were not collective but personal burials in general.

Discussion and summary

Cleaning of plundered tombs and salvage of artefacts at Grave-cluster A enables us to obtain more concrete evidence for dating of grave-clusters in the Wadi Shabbout Area, suggesting that the tombs were more or less equivalent to occupation periods of Tell Ghanem al-'Ali, i.e. mid to late third millennium BC. The result allows us to discuss their relationship in concrete and reliable context.

Observation of burial types at Grave-cluster A indicates the cluster containing two types of burials of stone chamber and cist graves. The coexistence of these two different burial types within single cemetery is not uncommon at contemporary sites in the Middle Euphrates. For example, in Square 2W at Tawi, stone chamber and cist graves coexisted as well. Rather, it might be considered that, in spite of sounding for surface cleaning, no traces of shaft graves were identified at Grave-cluster A. On the other hand, earlier surveys by our mission and a German team found clusters of EBA shaft or shaft-like graves on the slope of Wadi Daba and at Abu Hamed in the area surrounding Tell Ghanem al-'Ali. This virtually spatial separation of shaft graves and cist/stone chamber graves within single area is also identified at several EBA sites in the region, such as Shamseddin, Tell al-'Abd, or Tawi.

Possible reasons for this phenomenon, like time, gender, status or ethnicity, has thus far been intensively discussed elsewhere. Nevertheless, information about on/off-site burial practices of Tell Ghanem al-'Ali at hand are very sparse so far. Accordingly, further investigations on and around the site are required to discuss the possible backgrounds of the spatial separation of the particular burial types. However, we may suggest distinct landscapes in the area play a significant role of the separation. Our grave-cluster survey suggests that funerary land use around Tell Ghanem al-'Ali in the EBA is divided into two patterns, i.e. hilltop tumuli (Tell Shabbout) and cist/stone chamber graves (WS 2 Grave-cluster A and other surveyed graves in WS 1 and 2), and inland (e.g. Abu Hamed) or lowland shaft graves (Wadi Daba). Overlooking Tell Ghanem al-'Ali, energy-consumed high mound or stone-build hilltop tombs may imply particular funerary practices in the EBA community.

In addition, as a part of the Syria-Japan Mission to Jebel Bishri, investigations of Rijum Hedaji, burial cairns that might be tombs for EBA mobile pastoralists in the Bishri mountains, are being conducted by Professor Sumio Fujii.

In order to understand EBA burial practices, sedentary/mobile ways of life, their socio-political structures in the Middle Euphrates Valley/Jebel Bishri, and further field and laboratory works on both of the cemeteries and integration of those results are required.



Fig. 1 Situations of Grave-cluster A in Wadi Shabbout (WS) Area 2, research areas and other related sites (Satellite image after *Google Earth*).



Fig. 2 Wadi Shabbout, looking south.

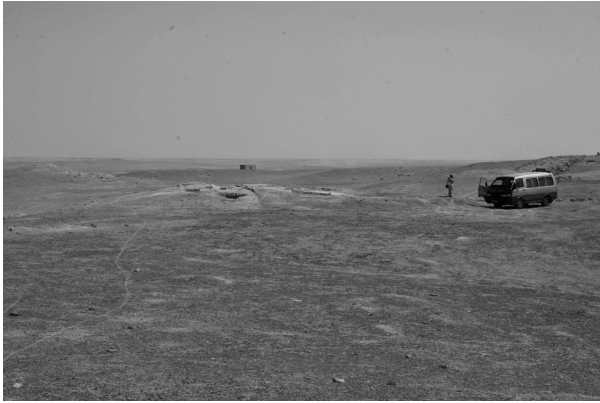


Fig. 3 Grave-cluster A, WS2, looking south.



Fig. 4 Tomb A1 (from northwest).

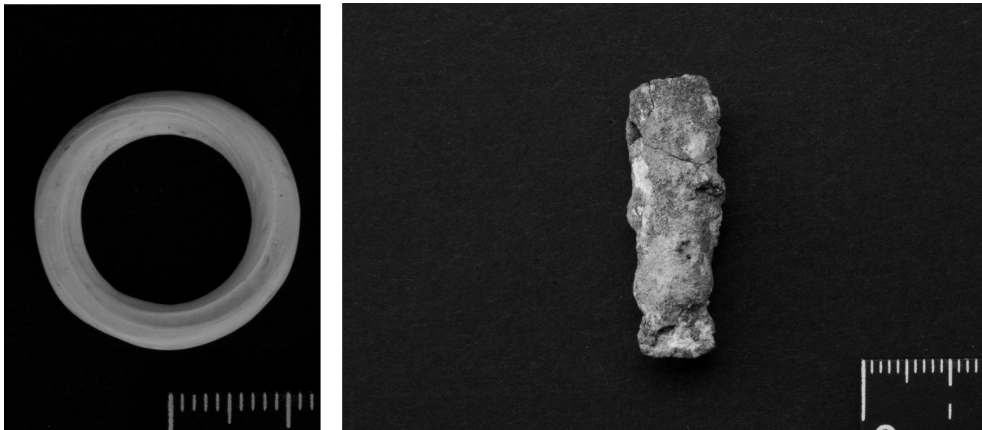


Fig. 5 Shell ring ornament (left) and bronze object (right) from Tomb A1.



Fig. 6 Tomb A2 (from south).

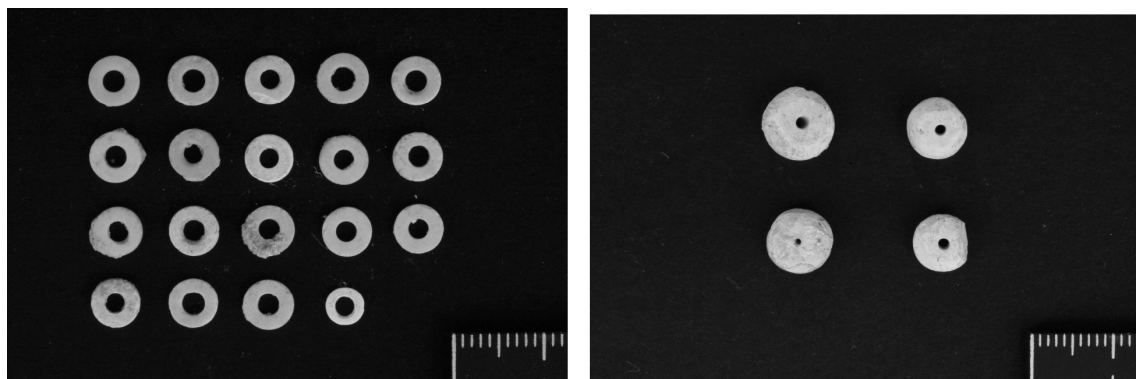


Fig. 7 Shell beads from Tomb A2.



Fig. 8 Tomb A3 (from northwest).



Fig. 9 Tomb A4 (from south).

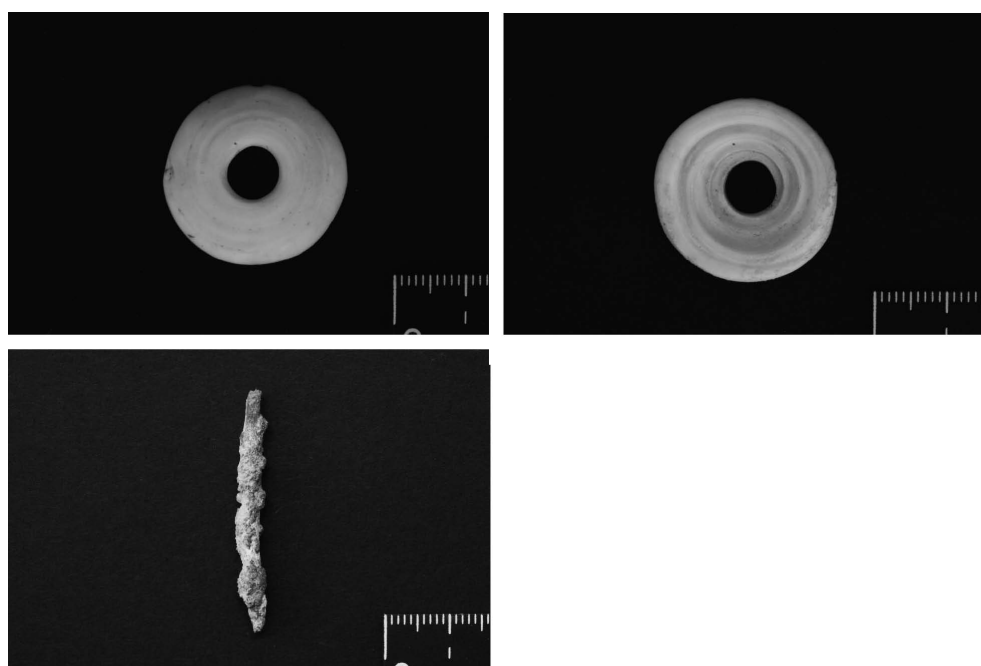


Fig. 10 Both sides of shell ring ornament with spiral groove (Top left and right) and bronze pin (bottom) from Tomb A4.



Fig. 11 Tomb A5 (from north).



Fig. 12 Tomb A6 (from west).



Fig. 13 Pottery in *in-situ* context at Tomb A6.

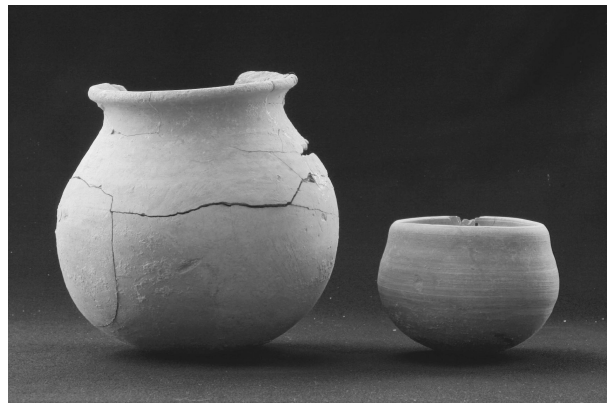


Fig. 14 Salvaged nearly complete pottery from Tomb A6.

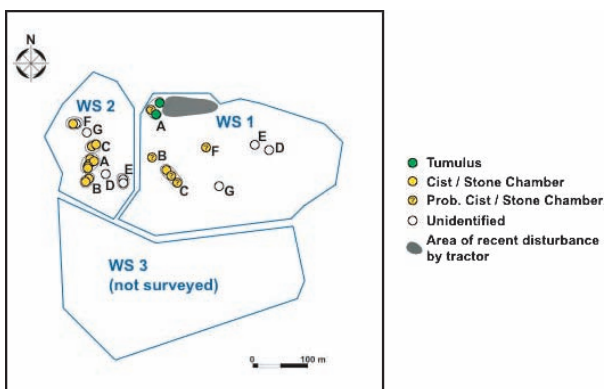


Fig. 15 Distribution of grave clusters/isolated graves and their burial types in WS 1 and 2.



Fig. 16 High mound tombs or tumuli called Tell Shabbout by locals in WS 1 (from south), overlooking Tell Ghanem al-'Ali (right back).



Fig. 17 Cist/stone chamber grave (Tomb B2) at Grave-cluster B, WS 2 (from east).

3. The Second Field Season at Rujum Hedaja 1

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Introduction

The second field season at Rujum Hedaja 1, a large cairn field on the northwestern flank of Jabal Bishri, was conducted for about three weeks from May 18 through June 5 of 2008, with the sincere cooperation of the Department of Antiquities and Museums of Syria. The objective of this season was twofold: first, to obtain further evidence for the dating of the site and, second, to trace an intra-site techno-typological sequence of burial cairns. For these two purposes, we tested a total of ten burial cairns from BC-01 to BC-10. The following is a brief summary of the series of operations.

The Site

The site of Rujum Hedaja 1, or RHD-1 in our site registration code, is one of the four cairn fields that were first found in our general survey conducted in May of 2007 (Fujii 2007). It is located on a flat-topped limestone hill ca. 5 km east of Bir Rahum, a small village along a local main road (Fig. 1). This table-like hill is not only ca. 30-50 m higher than the surrounding terrain but also protruded westward for ca. 1 km, thereby commanding a fine panorama of the northwestern flank of Jabal Bishri (Fig. 2).

The site contains a total of fourteen burial cairns, most of which are lined along the southern edge of the flat hilltop where a limestone bedrock layer is exposed (Fig. 3). There is no doubt that the exposed bedrock layer supplied them with construction material. In addition, an escarpment below the edge must have served as a material source of limestone cobbles that were peeled off from the bedrock layer. It is a natural consequence that the burial cairns were concentrated on the southern edge. In contrast to this is the northern edge, where only a few burial cairns are dotted along a relatively gentle slope.

Such a linear arrangement of burial cairns along the southern edge awakened our expectation that an intra-site techno-typological sequence could be established. In addition, the site included a few relatively well-preserved, large-scale burial cairns that deserve intensive investigation. The accessibility from the local main road was also among the reasons for the site choice.

The first field season, conducted in March of 2008, tested BC-10, the largest burial cairn in the site. The half-cut excavation showed that it was a cist-type burial cairn with a double peripheral

wall, and that the cist incorporated a cruciform burial chamber fringed with large limestone boulders (Fujii 2008). The finds, though very limited due to illicit diggings in the past, suggested a date from the end of the 3rd millennium BC to the beginning of the 2nd millennium BC. This finding enhanced the possibility that the cairn fields in this area represent cemeteries of Mar-tu or Amurru, a large pastoral population that several Sumerian and Akkadian cuneiform texts referred to as being based on the Bishri Mountain.

The second field season, our main concern, was designed on the basis of such a far-reaching perspective. The first objective of the season was to obtain further clue to the dating of the site, an essential starting point for further discussion. Another goal was to trace the techno-typological sequence of a dozen burial cairns that constituted the site, another key to a comprehensive understanding of the Bishri cairn entity. A series of archaeological operations described below was devoted to these two issues.

Research Method

Since the fourteen burial cairns were dotted at a large interval, we did not adopt a comprehensive grid system to cover the whole range of the site. Instead, we first drew their distribution map and, then, arbitrarily set up a minor grid system to cover an individual cairn only. We used two grid systems for each purpose: a 5 m by 5 m grid system for larger cairns such as BC-10 and BC-09, and a 2 m by 2 m grid system for smaller examples. Since no triangular point was available around the site, we arbitrarily set up a benchmark for leveling, in most cases, at the northwestern corner of every minor grid system. (It is needless to say, however, that the elevation gap among the benchmarks was measured and recorded.) A few major cairns such as BC-09 and BC-03 were examined by means of a trench or half-cut excavation method, whereas minor examples such as BC-06 and BC-04 were entirely excavated.

A dozen local workers from the village of Bir Rahum took charge of digging under the supervision of qualified staff members. Excavated soil from a mound and its periphery was not sieved due to time constraints, but the deposits in a grave, especially those that produced human skeletal remains, were put through a 3 mm-mesh dry sieving. Since no floral remains were recovered in the course of the sieving, water floatation was not conducted.

Soundings

BC-10

This large burial cairn was sounded in the last field season (Fujii 2008). In order to reassess our previous investigation results, a 2 m wide trench was opened at the center of the unexcavated western half of the mound. As a result, it turned out that as was the case of the eastern half of the mound, a double peripheral wall encompassed a large cist (Fig. 4). Also of interest was the fact that the lowest course of dressed limestone blocks still kept their original position on foundation stones of the outer peripheral wall. In light of the volume of fallen blocks, it seems that the wall was originally three to four courses (or ca. 0.5–0.7 m) high. A few buff-colored ware sherds similar to those from the eastern half of the mound were found beside the wall.

BC-09

BC-09, the main target of this field season, was located ca. 180 m west of BC-10, immediately beside the fringe of the escarpment. It was the second largest burial cairn among those investigated in this season, measuring ca. 10 m in diameter and ca. 1.3 m in relative height.

A half-cut excavation showed that it lacked a double peripheral wall, consisting only of a large cist ca. 6–6.5 m in diameter and up to ca. 1.3 m in height (Fig. 5). The cist incorporated an oblong pit-type grave roughly in its center, which was lined with a single row and a few courses of undressed limestone cobbles (Fig. 6). A large number of limestone rubble was compacted between the grave

and cist walls, probably a device for piling up irregular stones in a single row. In addition, a dozen limestone boulders up to ca. 0.7 m were used as outer supports for the cist wall.

Three stone-built features were found on the west of BC-09. Feature 01 was a small round structure with a diameter of ca. 2 m, being fringed with large limestone cobbles. A number of small rubble was compacted inside the wall. The same is roughly true of Feature 03. Feature 02, on the other hand, was a slightly incurved wall alignment ca. 8.5 m in total length and ca. 0.3 m in preserved height, opening to the north. A flint core was found roughly in the center of its floor. Nothing can be said about the function of these features, but the stratigraphical correlation suggests that they served as incidental facilities of the neighboring BC-09.

Unfortunately, the main body of the cairn was seriously plundered, but a few dozen small finds occurred together with numerous human skeletal remains. They included a flat-topped bronze pin (Fig. 7a), a faience pendant representing a waterfowl (Fig. 7b), an oblong stamp seal again made of faience (Fig. 7b), a dozen beads made largely of agate and faience (Fig. 7c), several pierced snail probably used for pendants (Fig. 7d), and a few buff-colored fine ware sherds. It seems that the first three is suggestive of a date from the end of the 3rd millennium BC to the beginning of the 2nd millennium BC, although the final conclusion must await further study.

BC-08

BC-08 was located ca. 230 m SSE of BC-09 described above, again at the southern edge of the flat hilltop. It was much smaller than BC-09, measuring ca. 3 m in diameter and ca. 0.3 m in height. Nevertheless, it resembled BC-09 in that it consisted only of a round, rubble-compacted cist incorporating an oblong, stone-lined pit grave in its center (Fig. 8). In this sense, it may be defined as a smaller version of BC-09, but neither human skeletal remains nor finds occurred from the grave.

BC-07

This burial cairn was situated ca. 75 m ESE of BC-08. It was ca. 3-4 m in diameter, but the original height was unknown due to its poor state of preservation. A brief examination by means of a 2 m by 4 m test trench passing through the center of the feature suggested that it was similar to BC-08 in terms of typology (Fig. 9). No finds were recovered, but a straight wall alignment ca. 3 m in total length was found beside it.

BC-06

This burial cairn occupied a point only ca. 10 m SW of BC-07, an exceptional case for Hedaja burial cairns that usually kept a certain (more than 100 m) interval from a neighboring cairn. A brief sounding showed that it belonged to the same type as BC-08 and BC-07 (Fig. 10). Again, nothing was included in the grave pit. It appears that the BC-08 type of burial cairns shared something in common in terms of the absence of human skeletal remains and burial gifts.

BC-05

BC-05 was located ca. 40 m SE of BC-04. As was the case of the preceding three examples, it consisted only of a round cist that incorporated an oblong stone-lined grave pit in its center (Fig. 11). It is noteworthy, however, that the cist wall became closer to the grave wall. For this reason, the rubble-compacted, corridor-like space sandwiched between the two was reduced to a narrow gap. In this light, BC-05 may be defined as a transitional form bridging the BC-08 type and the BC-04 type described below.

BC-04

This small burial cairn, ca. 3-4 m in diameter and ca. 0.2 m in height, was located ca. 150 m west of BC-03. It witnessed the final disappearance of a cist wall that had continued to encompass a grave. Consequently, it consisted only of a small stone-lined pit grave ca. 1.5 m in diameter and ca. 0.3 m in floor depth (Fig. 12). Again, nothing was recovered from the grave.

BC-03

This burial cairn was located ca. 160 m west of BC-04, near a bottleneck of the elongated hill.

It was relatively large in dimensions, having a diameter of ca. 8 m and a height of ca. 0.6 m. A trench-excavation passing through the center of the mound revealed that it was equipped with an oblong peripheral wall as well as a large cist incorporating an oblong, stone-lined pit grave (Fig. 13). The grave was relatively large in size, measuring ca. 2.5 m by ca. 1.5 m in floor area. Again, the grave was seriously plundered, but some pottery sherds similar to those from BC-10 and BC-09 were found in addition to a large number of fragmented human bones. Two small round features accompanied the cairn.

BC-02

BC-02 was situated on a flat hill ca. 280 m SE of BC-03, thereby being isolated from the main body of the Hedaja cairn entity. It was relatively well preserved, measuring ca. 4 m in diameter and ca. 0.4 m in height. Again, it consisted only of an oblong stone-lined pit grave (Fig. 14). In this light, it can be defined as an example of the BC-04 type. No finds were recovered, but a small U-shaped stone-built feature and a large L-shaped wall alignment were confirmed on the southeast and west of the cairn, respectively.

BC-01

BC-01 was located ca. 270 m SSW of BC-02, on another narrow ridge to the south. The excavation showed that this small burial cairn, ca. 3.5–4.5 m in mound size, also fall within the BC-04 type (Fig. 15). Nothing was included in the grave.

Summary and Discussions

The investigation has contributed to a better understanding of the site. To begin with, the date of the site has become clearer owing to the finds from BC-09. The occurrence of the unique finds including the flat-topped bronze pin, the faience adornment representing a waterfowl, and the stamp seal again made of faience seems to support our view that the site probably falls within the time range from the end of 3rd millennium BC to the beginning of the 2nd millennium BC. Nevertheless, the evidence is far from sufficient and the final conclusion must await further research.

The other issue (i.e. the techno-typological sequence of Hedaja burial cairns) is difficult to approach, since the absence of finds impedes the precise dating of most burial cairns. The only clue is the linear arrangement of ten burial cairns along the same escarpment, which has the potential to mirror a sequence. Given that the Hedaja cairn complex gradually developed southeastward from BC-10 at the western edge, their techno-typological sequence may be divided into the following three phases.

The first phase represented by BC-10 is characterized by the complicated inner structure containing a large cist and a double peripheral wall. It is also characteristic of this phase that the cist incorporated a cruciform burial chamber.

The second phase, which contains five examples from BC-09 to BC-05, is marked by the disappearance of peripheral walls around a cist and the typological change from a cruciform chamber to an oblong pit grave. Of interest is the fact that while the cist of BC-09 still retained a large size comparable with that of BC-10, the succeeding examples became much smaller. It is also important to note that a corridor-like, rubble-compacted space between the grave wall and the cist wall was reduced to a simple gap at BC-05. Considered in this light, the second phase may be divided into the following three sub-phases: BC-09 with a large cist, BC-08 to BC-06 with a smaller cist, and BC-05 as a transitional form shifting to the BC-04 type.

The third phase witnessed even the disappearance of a cist wall. As a result, the burial cairns of this phase was reduced to a simple combination of a stone-lined pit grave and a small mound covering it. The only exception to this is BC-03, which contained, though much inferior in construction quality than BC-10, a peripheral wall as well as a cist wall. The reason for the revival of such a complicated composition is still unknown, but it is suggestive that it yielded human skeletal remains. The occurrence of human bones is exceptional for the post-BC-09 burial cairns, suggesting that the interment had

something to do with the typological revival. Conversely, the rise of BC-08 and BC-4 types may be understood as a manifestation of the transition from a real interment to a symbolic burial.

Concluding Remarks

The series of archaeological operations have provided further insights into Rujum Hedaja 1. To begin with, it has become clearer that the site falls within the time range from the end of the EB to the beginning of the MB. This has enhanced the possibility that a large number of cairn fields on the northwestern flank of Jabal Bishri represent the cemeteries of *Mar-tu* or *Amurru*, although further evidence, especially that from undisturbed graves, is needed for a more reliable conclusion. The investigation also shed light on the techno-typological sequence of burial cairns at the site. As a result, it turned out that the Hedaja burial cairns falls broadly into the three phases. Both results would serve as a reliable base for further investigation. The next field season, scheduled in autumn of this year, intends to test the present perspectives at a different site around Bir Rahum.

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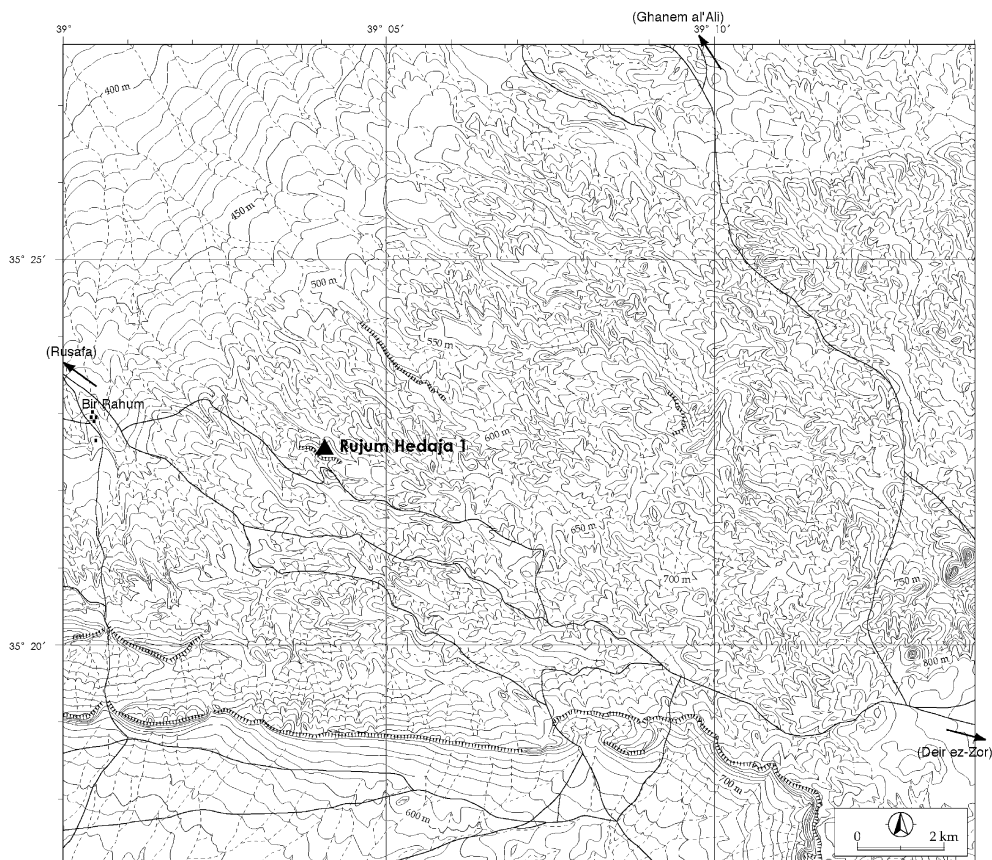


Fig. 1 The site location of Rujum Hedaja 1.



Fig. 2 A general view of the site (looking west from BC-08).

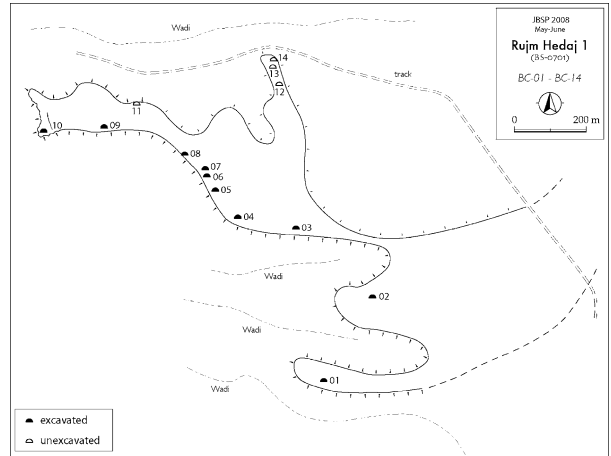


Fig. 3 A schematic distribution map of the fourteen burial cairns at Rujm Hedaja 1.



Fig. 4 A close-up view of the west trench of BC-10 (from NW).



Fig. 5 A general view of BC-09 (from SE).



Fig. 6 A close-up view of the cist of BC-09 (from SE).



Fig. 7a Bronze products from BC-09.



Fig. 7b Faience products from BC-09.



Fig. 7c Agate and faience beads from BC-09.



Fig. 7d Snail beads from BC-09.



Fig. 8 A general view of BC-08 (from S).



Fig. 9 A close-up view of the west trench of BC-07 (from S).

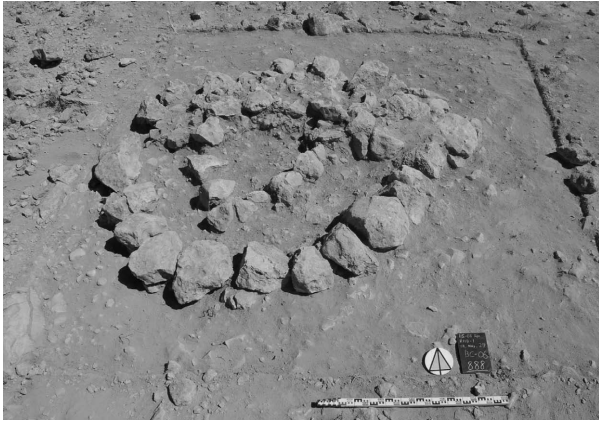


Fig. 10 A general view of BC-06 (from S).

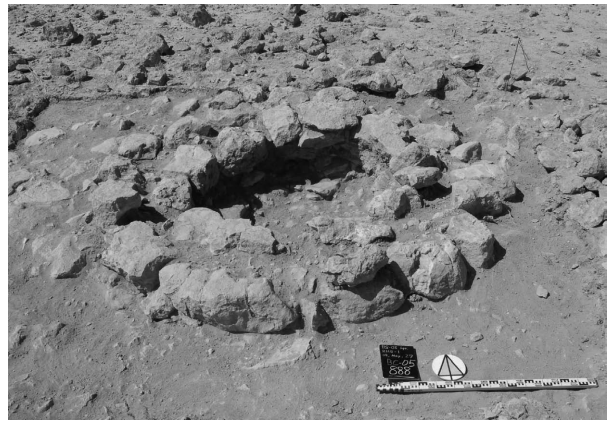


Fig. 11 A general view of BC-05 (from S).



Fig. 12 A general view of BC-04 (from SW).



Fig. 13 A general view of BC-03 (from S).

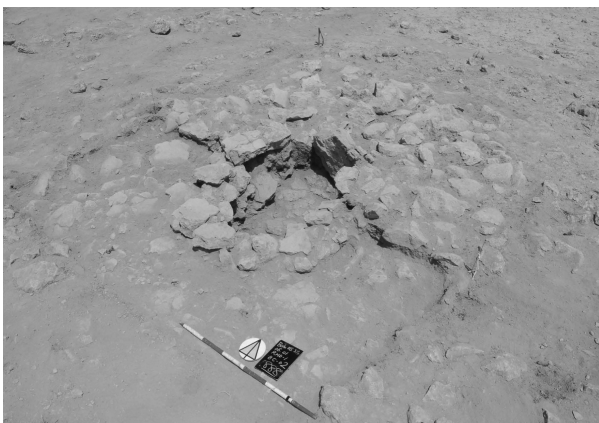


Fig. 14 A general view of BC-02 (from SE).

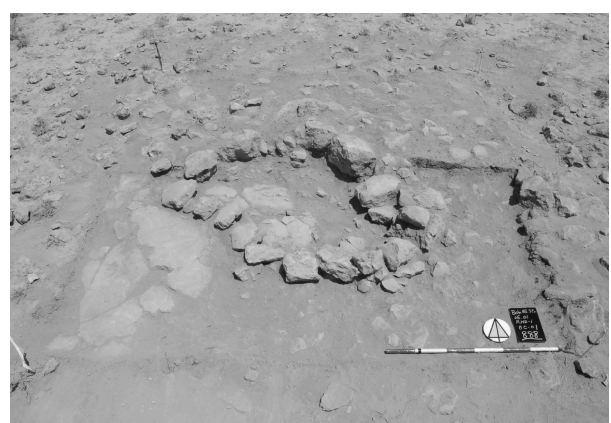


Fig. 15 A general view of BC-01 (from S).

4. Botanical survey of Bishuri hills; related with the excavation of the Rujum Hedaja 1

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Introduction

The botanical research of the 6th working season focuses on the flora nearby the cairns of Rujum Hedaja 1. Here we can see one of the typical vegetation on the upper bank of the Euphrates toward the hills of the Jabal Bishuri. The site locates about 60 km south of Al'Raqqa, annual precipitation today is less than 200 mm.

The excavation of the site itself was directed by Prof. Dr. Fujii (Kanazawa Univ.) from the 5th working season. C.A. joined to the mission from 17 May to 2 June, the plant remains, however, was not obtained from the excavation due to extremely lack of the sediment (see later). To understand the flora of this region, we carried out brief vegetation surveys in 8 test grids nearby the Rujum Hedaja 1 (by C.A.) and on the roadside from Palmyra to Raqqa through the western foothills of Jabal Bishuri (by K.T.).

Vegetation survey around Rujum Hedaja 1

To investigate the flora of this area, 8 grids squared by 10 m × 10 m each were set nearby the hill of Rujum Hedaja 1. Table 1 shows location of the grids, two were on the bank of wadi, two were on the top of the hill, and four were aligned on the slope. All the plants observed within the grids were noted for their number and species name.

Dry, sandy undulating land around Rujum Hedaja 1 (Fig. 1) has been used by local Bedouins for livestock and medicinal use. Low shrubs of Chenopodiaceae were the most dominant, Leguminosae, Labiatae and Compositae were also seen often. More than 25 species were observed in total around the field near the cairn. No plant taller than 1 m was seen.

The hilltops at the grids 3 and 4 were covered by less than 10% of vegetation, including some scatters of shrubs. Among the shrubs, a spiny plant called '*surr*' by the local people and a succulent shrub '*neituul*' were exclusively dominant. Similar flora was seen on the slope and the edge of the hill except that the *surr* was more dense than on the hills.

Various species grow at the bank and the bottom of the wadi south of the cairns (Fig. 2). This small wadi was only 5 m width but *Astragalus spinosus*, *Peganum harmala*, *Achillea fragrantissima*, *Echinops* sp. etc. were found in addition to the *surr* shrub. More flowers might be blooming in larger wadi outside of the cairn area.

The results show that Chenopodiaceae was predominant of the area followed by Legminosae and

Table 1 Grid investigation in Rujum Hedaja area

Grid no.	location	size (m)	plant covering	dominant
1	Wadi	10 × 10	15%	<i>surr</i>
2	Southern Slope	10 × 10	15%	<i>surr</i>
3	Top of the Hill	10 × 10	10%	<i>neituul</i>
4	Top of the Hill	10 × 10	10%	<i>neituul</i>
5	Egde of the Hill	10 × 10	15%	<i>surr</i>
6	Wadi	5 × 20	20%	<i>surr</i>
7	Egde of the Hill	10 × 10	15%	<i>surr</i>
8	Egde of the Hill	10 × 10	15%	<i>surr</i>

Compositae, indicating that the flora at Rujum Hedaja 1 is belong to typical step-desert vegetation. Bedouin knows the plants very well and utilizes as fodder, fuel, medicine, flavour, ferment of cheese or insect repellent etc., therefore these plant resources were probably beneficial to ancient man in this region, too.

Dry Sieving at Rujum Hedaja site

Dry sieving was tested for the soil from the central part of BC-09. The main purpose was to obtain small objects and bones, so 3 mm-mesh sieve was selected. A part of the soil (about 50 liters) was sieved also with 1 mm-mesh to find smaller charred seeds and charcoals. However, no charred remains were observed with naked eyes during the dry sieving, so we didn't make further effort like water flotation.

Vegetation survey along the Palmyra-Al'Raqqa road

Jabal Bishuri is a massive hill region on the south bank of the Euphrates along Al'Raqqa to Deir ez Zor. Nevertheless its monotonous scenery of step-desert wasteland, plants growing there are relatively rich in species and differ place by place. In 2007 botanical survey was done on the north of the Bishuri hills, so this season K.T. observed rough vegetation west of the Bishuri hills from the junction of Palmyra-Deir ez Zor road toward Mansurah (junction of Aleppo-Al'Raqqa road).

Junction to El Kowm from the Palmyra-Deir ez-Zor road

At the roadside about 200 m west of the Junction to El Kowm on the Palmyra-Deir ez Zor road, *Peganum harmala*, two *Anabasis* sp. and *Dianthus* sp. were seen. This area was very dry, according to a taxi driver east Palmyra had only a single little rain last winter. The area is desert/step vegetation and is sparsely composed of communities dominated by *Anabasis* sp. and *Peganum harmala*.

8 km West of Citadel Palasmayer

Achillea fragrantissima and *Capparis* sp. were most frequent, *Malva* sp., *Convolvulus arvensis*, *Peganum harmala*, *Eruca sativa*, *Centaurea* sp. occasional. Except for the two dominant species, they were all short (less than 10 cm) and *Peganum harmala* would be dominant if it had a little more rain. This place is not a roadside but is inside of desert/step plain. Very shallow trace of water pass was seen and the above plants were there.

15 km North from El Kowm

Peganum harmala and *Hordeum murinum* were exclusive, *Anabasis* sp., *Malva* sp. *Erodium cicutarium*, *Atriplex* sp. *Astragalus* sp., *Heliotropium* sp., *Polygonum* sp., Polygonaceae, Cruciferae, Compositae and *Stipa* sp. rarely. Most of them are roadside plant.

The Bishri hills are very dry land but still have more diverse flora than generally expected. It offers many kinds of useful herbs to local people and they know which wadi offers the objective. The Bishri hills must have been good grazing land for nomads for thousands of years. And there is potentiality that traditional plant use by Bedouins traces well back to that of prehistoric period.



Fig. 1 Dry, sandy undulating land around Rujum Hedaja 1.



Fig. 2 Various species grown at the bank and the bottom of the wadi south of the cairns.

تقرير موسم العمل السادس للبحث الأثري للبعثة الأثرية السورية اليابانية المشتركة العاملة في منطقة جبل البشري

بدأت البعثة الأثرية السورية اليابانية المشتركة أعمالها في منطقة جبل البشري لهذا الموسم بتاريخ الخامس والعشرون من شهر نيسان لعام 2008 واستمرت لغاية الخامس من أيار لعام 2008

نشكر الدكتور بسام جاموس المدير العام للآثار والمتاحف في سورية والدكتور ميشيل مقدسي مدير التنقيب والبحث الأثري في المديرية العامة للآثار والمتاحف , والمستشار المشرف لهذا البحث الأثري المشترك , على دعمهم اللامحدود في سبيل إنجاز هذا الموسم.

وقد تشكلت البعثة السورية اليابانية المشتركة لهذا الموسم من الأعضاء التالية أسمائهم :
من الجانب السوري : انس الخابور (مديرا) , احمد سلطان (عضوا) , أيهم آل فخري (عضوا) , محمد الابراهيم (عضوا) .

من الجانب الياباني : كاتسو هيكو اونوما (مديرا) , هيروتوشي نوموتو (عضوا) , شوغو كومب (عضوا) , ميتسو هوشينو (عضوا) , تسويوشي تاناكا (عضوا) , توشيو ناكامورا (عضوا) , يوسوكي كاتسورادا (عضوا) , يوشي يوكي (عضوا) , سوميو فوجي (عضوا) , تاكورا ادانشي (عضوا) , كاي سوزوكي (عضوا) , شي اكاشي (عضوا) , كين ايشي (عضوا)

وفي هذا الموسم من البحث تم التركيز على دراسة أربعة أهداف رئيسية ضمن منطقة البحث :

- 1- مسح جيولوجي وجغرافي للمنطقة .
- 2- استمرار أعمال المسح لمقابر عصر البرونز المبكر المجاورة لتل غانم العلي .
- 3- الاستمرار بأعمال السبر الاختباري لموقع رجوم حداجة .
- 4- بحث ودراسة النباتات الأثرية .

أولاً : مسح جيولوجي وجغرافي للمنطقة : حيث تم تركيز المسح الجيولوجي والجغرافي لهذا الموسم على : 1- دراسة المواد المشعة الطبيعية في المنطقة , 2- التعرف على الشرفات النهرية وارتفاعاتها 3- إجراء التحاليل والاختبارات لعينات التربة بواسطة استخدام الكربون المشع C14

ثانياً : مسح مقابر عصر البرونز المبكر المجاور لتل غانم العلي : حيث تم مسح جزء من المقابر التي تعرضت لأعمال النهب والسرقة وإنقاذ بعض الأواني الموجودة ضمنها والتي مكنتنا من إعطاء تاريخ واضح لهذه المقابر في منطقة وادي شبوط والتي أظهرت بأن هذه المقابر متزامنة مع فترات الاستيطان لتل غانم العلي والتي امتدت خلال فترة الألف الثالث قبل

الميلاد . ثالثاً : أعمال السبر الاختباري في رجوم حداجة : لقد قدمت الأعمال والأبحاث الأثرية التي أجريت في موقع رجوم حداجة معلومات أكثر وضوحاً عن هذه المنطقة ذلك أن موقع رجوم حداجة قد امتد لفترة زمنية طويلة امتدت من نهاية عصر البرونز المبكر وحتى بداية عصر البرونز الوسيط , وهذا ما يعزز توقعنا واحتمالنا بأن عدد كبير من هذه الرجوم المتوضعة على الجناح الشمالي الغربي من جبل البشري تمثل مدافن أو مقابر لمجتمعات رعوية قديمة (قبائل امورية) .

مدير الجانب السوري
انس الخابور

مدير الجانب الياباني
كاتسو هيكو اونوما

ARCHAEOLOGICAL RESEARCH IN THE BISHRI REGION REPORT OF THE SEVENTH WORKING SEASON

Katsuhiko OHNUMA*
Ahmed SULTAN**
(1/December/2008)

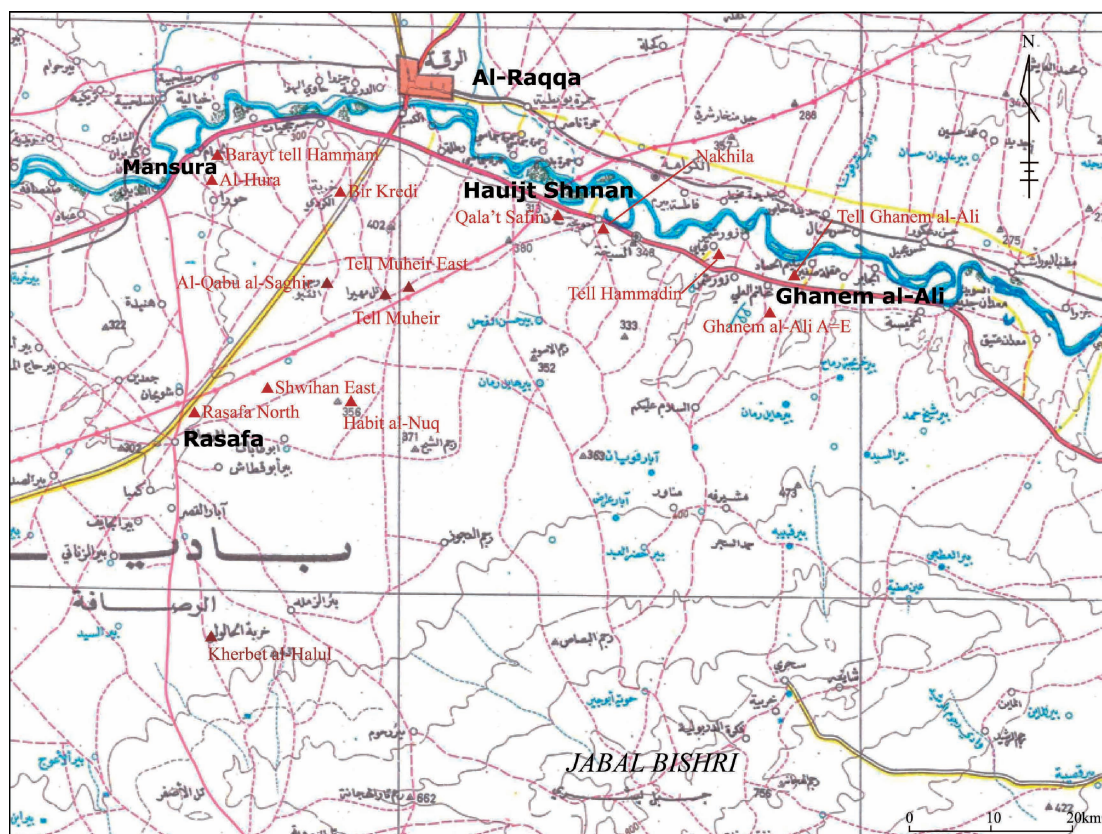
The 7th working season of the Syria-Japan Archaeological Joint Mission to the Bishri Region was carried out from October 10th to December 2nd, 2008.

The members of the joint mission from the Syrian and Japanese parties are as follows.

Syrian party: Ahmed Sultan (Director), Aed Issa and Mohamad Jajan.

Japanese party: Katsuhiko Ohnuma (Director), Atsunori Hasegawa, Chie Akashi, Hirotoishi Numoto, Shogo Kume, Kenichiro Takao, Yasuyoshi Okada, Ryuichi Yoshitake, Panagiotis Tokmakidis, Sumio Fujii, Takuro Adachi, Kae Suzuki, Yoshihiko Nakano and Lubna Omar.

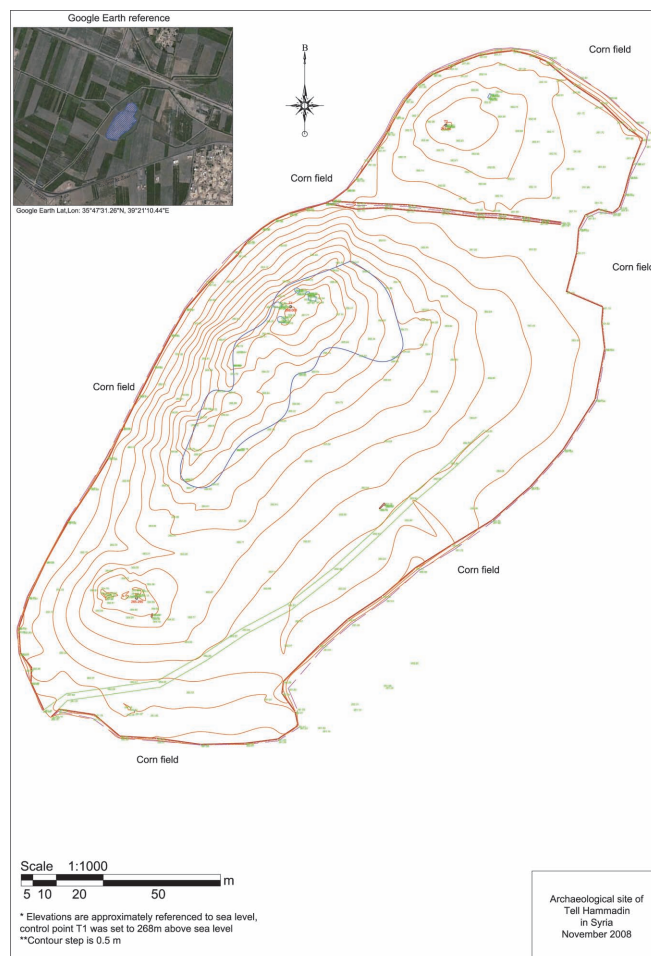
Dr. Bassam Jamous, the Director General of the Syrian Directorate General of Antiquities and Musems, and Dr. Michel Al-Maqdissi, the Director of Archaeological Excavations and Research at the Syrian Directorate General of Antiquities and Musems (the Syrian Supervising Adviser for this joint



Map 1 Area including the sites researched by the 7th Syria-Japan Archaeological Joint Mission to the Bishri Region in October to December, 2008

* Director of the Japanese Archaeological Mission to Bishri (Kokushikan University, Tokyo, JAPAN)

** Director of the Syrian Archaeological Mission to Bishri (Directorate General of Antiquities and Museums, Damascus, SYRIA)



Map 2 An overall map of the site of Tell Hammadin (completed by Yasuyoshi Okada, Ryuichi Yoshitake and Panagiotis Tokmakidis during this field season on November 9, 2008)

mission), kindly helped us towards the success of this seventh working season. We express our sincerest gratitudes to them for their heart-warming cooperation.

In this working season, we undertook eight kinds of research within the research area (Map 1): 1) survey of the Early Bronze Age graves near the town of Ghanem Al-Ali, 2) making of an overall map of the site of Tell Hammadin (Map 2), 3) research on the cultural and historical aspects of the villages around the site of Tell Ghanem al-Ali, 4) morphological study of the human bones from Rujum Hedaja, 5) sondage at the site of Tell Ghanem Al-Ali, 6) sondage at Rujum Hedaja, 7) research on the plant and crop remains from the site of Tell Ghanem Al-Ali, and 8) zooarchaeological research.

The following sections are the preliminary results of the research works carried out in this field season.

1. Archaeological survey of the Early Bronze Age off-site tombs in the Wadi Shabbout area near Tell Ghanem al-'Ali

Hirotooshi NUMOTO (Professor, Kokushikan University, Japan)
 Shogo KUME (Doctoral Student, Waseda University, Japan)

Introduction and objectives

As part of the Syro-Japanese joint expedition to Jebel Bishri, an archaeological survey of the

Early Bronze Age (EBA) tombs, situated on the northern edge of the Bishri plateau near Tell Ghanem al-'Ali, was conducted from 13th to 18th October 2008. Following the initial season in April and May 2008, the Wadi Shabbout Area, located between Wadi Shabbout and an unnamed wadi, was selected as research area in this second season (Fig. 1)

The earlier research composed of cleaning and survey of seriously plundered grave-clusters in the area demonstrated spatial separation of particular burial types between the cemeteries around Tell Ghanem al-'Ali. For example, Wadi Daba grave-clusters principally contained shaft graves, while intensively investigated Wadi Shabbout 2 Grave-cluster A consisted of stone-build tombs of stone chamber and cist types. In addition, co-occurrences of distinct burial types within a single grave-cluster appear to have frequently been observed.

According to the results of the first season, our present goals included documentation of inter-/intra-site burial variability at individual grave-clusters and collection of diagnostic artefacts for dating in the Wadi Shabbout area towards better understanding of the possible backgrounds of the spatial separation and the nature of mortuary practices in the EBA community.

Survey areas

The Wadi Shabbout (WS) Area on the Bishri plateau has thus far been divided into three sub-areas along trellised wadi courses for the convenience of the research. According to the division system, a new sub-area, WS 4, was established to the south of WS 3 (Fig. 1) in order to obtain further traces of burial practices. The latter has not entirely been surveyed because of our short period of the investigations in the last season. For this reason, two sub-areas of WS 3 and 4 were targeted in the present research. These two areas approximately cover 173,000 sq. m. A topographic map shows heights in the area more or less 280 to 290 m above sea level apart from wadi bottoms.

Survey procedures

As well as the last season, the survey was conducted in pedestrian manner, navigated with high-resolution satellite images. The sharp imagery of the tool provides us virtually precise positional information of the targets. Because the targets are principally recognized as robber's pits, such depressions potentially contain their failure actions. However, we counted all depressions as archaeological remains aside from obvious failed pits. This is still logical, because 86% (6/7) of similar depressions have produced the traces of the EBA burial practices at WS 2 Grave-cluster A, which is an intensively investigated burial site in the last season. Discovered individual grave-clusters or isolated burials were documented as an alphabetized 'Unit'. Since individual tombs have also been numbered, a single tomb was described as an alphanumeric code, like WS3-A1 or WS4-A1.

To assess inter-/intra-site variability of the Units, several attributes including burial type, present status, size of chamber, and orientation/declination of axis were collected from each tomb. Again, to obtain evidence for dating, artefacts primarily consist of pottery sherds were also sampled by the Unit or by the individual tomb if available.

Survey results

As a result of the research, a total of nineteen Units containing 124 depressions were documented in WS 3 and 4. Analysis of collected data and pottery samples is still preliminary stage. Accordingly, the following is an outline of the four massive Units or grave-clusters.

WS3-Unit C

A grave-cluster named WS3-Unit C is situated on the terrace of an unnamed tributary wadi of Wadi Shabbout, covering an area of ca. 18.5 × 13.0 m (Figs. 2 and 3). Western edge of the cluster has been cut by tractor road for gypsum rock collection by locals.

Although a total of thirteen depressions were documented at the site, only five pits were identified their burial types, including a stone chamber grave and four shaft graves. Discovered two types of graves have occupied distinct locations; the stone chamber grave and shaft graves, dug into the slope of the wadi terrace, are located the highest and lower part of the site respectively.

Relatively rich samples collected at the site contain both of fine and plain wares, like Euphrates Banded Ware (Fig. 4) and a so-called 'champagne' vessel (Fig. 5). Especially, possible presence of the black version of Euphrates Banded Ware (Black Euphrates Banded Ware, See Fig. 6) suggests the tombs may be dated to Phase 4 (ca. 2450-2300 BC) of six-phase EBA sequence defined by A. Porter, or the end of the EB III to the beginning of the EB IVA Periods according to traditional terminology.

WS3-Unit E

WS3-Unit E is located at the confluence of the two wadis of Shabbout and unnamed tributary described above. A series of ten shaft graves were discovered on the steep-sided left bank of the unnamed wadi, stretching ca. 36.0 m in the E-W direction (Figs. 7 and 8).

Only a few sherds were collected, such as a fine ware and a plain ware. Although a damaged sample of fine ware has disturbed observations of characteristics of the sherd, the straight-sided hemispherical bowl of plain ware may be dated to Porter's Phase 3 (ca. 2600-2450 BC).

WS3-Unit N

WS3-Unit N is situated on a natural low mound (ca. 33.0 × 30.0 m) on the terrace of an unnamed wadi in the western part of WS 3. Among documented 21 depressions, three stone chamber graves and seven shaft graves were identified (Figs. 9 and 10).

Apart from a possible stone chamber grave on the southern edge of the site, two stone chamber tombs on the top of the mound were surrounded by shaft graves and other unidentified depressions. The arrangement of stone chamber and shaft graves were more or less comparable with that of WS3-Unit C described above.

Several sherds containing both of fine and plain wares were collected. They are including a few specimens of Red Euphrates Banded Ware (Fig. 4), a 'champagne' vessel and a miniature vessel. The miniature vase with globular body and everted rim has a good parallel in Period IV at Tell Banat, Upper Syrian Euphrates Valley, which is equivalent to Porter's Phase 3 or ca. 2600-2450 BC.

WS4-Unit A

This Unit is located at the confluence of two unnamed wadis, where we encountered the most massive grave-cluster in the present research. A total of 61 depressions were recognized on the terrace of the wadis, covering an area of ca. 100.0 × 80.0 m, then eighteen shaft graves, three stone chamber graves, and two cist/stone chamber graves were identified (Figs. 11 and 12). The arrangement of particular burial types more or less corresponds with those of WS3-Units C and N; a few stone chamber or cist graves have been located at the upper part of the site, while most shaft graves have excavated into the slope of the wadis.

Collected samples included both of fine and plain wares. Fine wares principally comprised of Red Euphrates Banded Ware (Fig. 4) and apparent absence of the black version may imply the site is dated to Porter's Phase 3.

Discussion and summary

The intensive pedestrian survey of the EBA grave-clusters in WS 3 and 4 in this second season demonstrated a new formation of intra-site variability of burial types in the area surrounding Tell Ghanem al-'Ali. This new class of grave-clusters represented by a few stone-build tombs surrounded

by abundant shaft tombs was attested at WS3-Units C and N and WS4-Unit A. Grave-cluster sites of Abu Hamed, investigated by a German team located to the south of Wadi Shabbout, may also be included in this class. On the other hand, grave-clusters predominantly composed of shaft graves like WS3-Unit E has occurred on the slope of the outfall of Wadi Daba.

Combined with the present results with earlier insights in the initial season, at least four classes of burial patterns are now evident in the area.

- Hilltop tumuli: WS1-Unit A (or Tell Shabbout 1 and 2).
- Hilltop stone-build tombs: WS2-Unit A (or Grave-cluster A).
- Lowland shaft tombs: WS3-Unit E and the Wadi Daba grave-clusters.
- Inland stone-build tombs with shaft tombs: WS3-Units C and N, WS4-Unit A and Abu Hamed.

One of the possible backgrounds of these variations of grave-clusters is time concern, although observations of the collected samples are tentative and further analysis of the sherds is still needed. Various other possible explanations for the variations can also be included, such as gender, status, or ethnicity. Unfortunately, evidence at hand has thus far been sparse to assess those issues. To enhance our understanding on archaeological implications of inter-/intra-site variability of the off-site cemeteries and socio-political structures in the EBA community, further investigations in the area has been required.

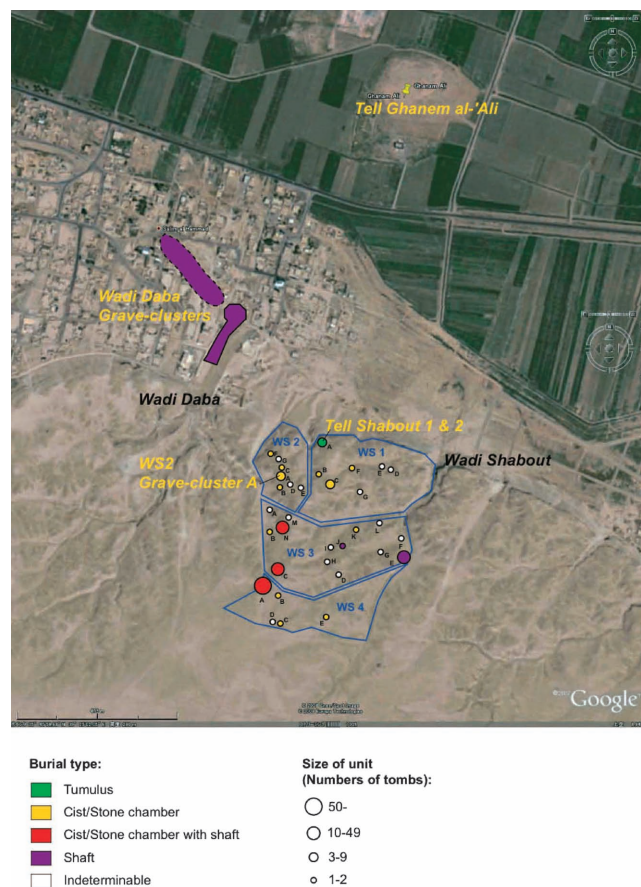


Fig. 1 Research areas, distribution of surveyed units and other related sites (Satellite image after Google Earth)



Fig. 2 WS3-Unit C, looking east

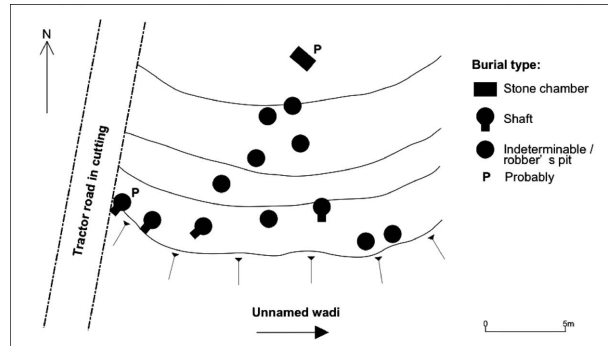


Fig. 3 Sketch map of WS3-Unit C

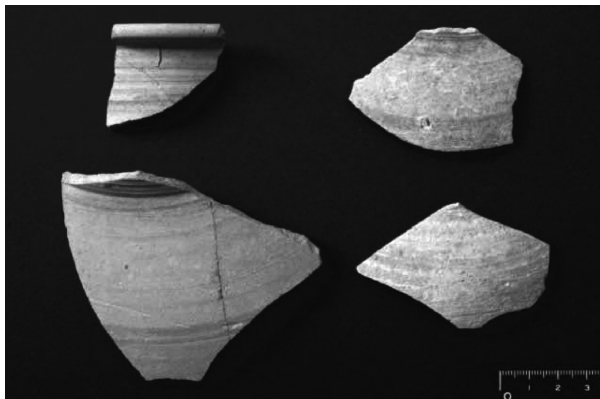


Fig. 4 Euphrates Banded Ware (Top right: WS3-Unit C; Bottom right: WS3-Unit N; Top left and bottom left: WS4-Unit A)



Fig. 5 Pedestal of so-called 'champagne' vessel from WS3-Unit C



Fig. 6 Possible sherds of Black Euphrates Banded Ware from WS3-Unit C



Fig. 7 WS3-Unit E, looking east

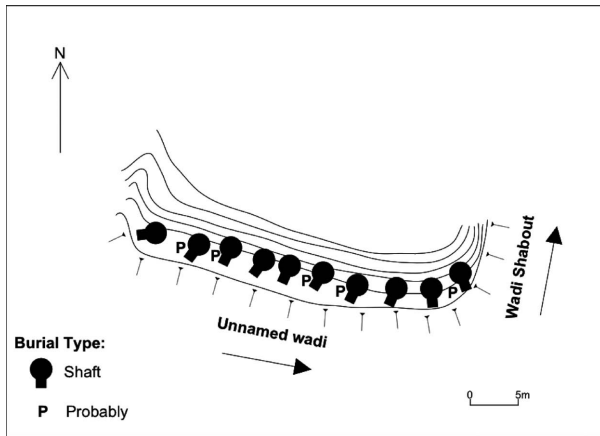


Fig. 8 Sketch map of WS3-Unit E



Fig. 9 WS3-Unit N, looking south

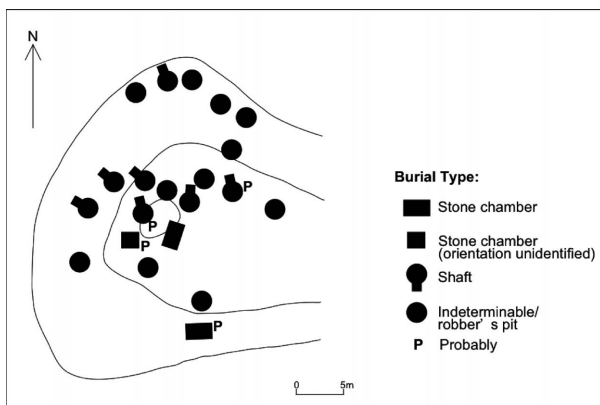


Fig. 10 Sketch map of WS3-Unit N



Fig. 11 WS4-Unit A, looking south

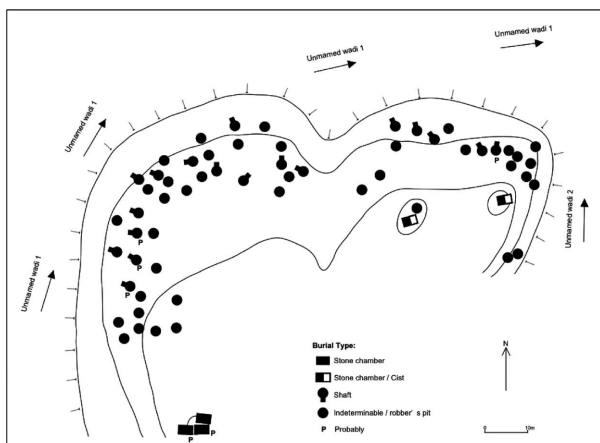


Fig. 12 Sketch map of WS4-Unit A

2. Brief history of the villages around the site of Tell Ghanem al-Ali

Kenichiro TAKAO (Doctoral student, Doshisha University, Japan)

Brief research from a cultural anthropological viewpoint was carried out in the villages around the site of Tell Ghanem al-Ali from 13 to 19 of October, 2008. The villages researched were Ghanem al-Ali, Zur Shammar, Jibli, Sharida, Sabkha, Rahabi, Shanan, Bu Hamad, Mughla, Namisa and Maadan.

The purpose of this research is to outline identities of tribes in the villages settled between the Mount Bishri and the Euphrates river, through obtaining information on their histories and life styles.

In these villages, the researcher interviewed the elder persons of each village, asking about their own tribes.

There were found some similarities in tribal origins and the histories of the villages. Most of the origins were in the southern parts of the Arabian Peninsula, especially in Yemen (Hadramawt). The reasons why they left Yemen vary, but their emigration largely resulted from need for richer meadows and river sources. Each tribe who left Yemen passed through Saudi Arabia (Mekka) and Iraq (Ubaid, Shinjar, and, kufa), moving afterward along the Euphrates, and finally having settled in the current place.

There were some movements that originated in Saudi Arabia, Iraq, and Dair al-Zur, but all of these areas are located on the same path. We may say, therefore, that all of the tribes passed the same path: from the Arabian Peninsula to north, with westing along the Euphrates, and to the current place.

The village of Jibli is exceptional. Their origin was in Yemen, but they moved from Saudi Arabia directly to the area near Aleppo, not through Iraq. So, Jibli could have arrived at the current place by easting along the Euphrates.

Like processes of emigration, the tribal families resemble each other very closely, too. The representative persons (families) appearing on the family tree are Zubaid of the Yemeni times, Shaaban and Ubaid of the Iraqi times, and Ubaid. Each name of the tribes called today is almost from these persons.

For this reason, no village has strong consciousness as stranger toward other villages. However, the village of Zur Shammar is exceptional. Zur Shammar has a strong identity as the family of Shammar of the Iraqi times, and the people say, "all of the neighboring villages are the tribe of Bu Subi, and only Zur Shammar is the tribe of Shammar."

As for the names of the villages, we see three types, each reflecting origin: 1) names of the tribes (Bu Hamad, Zur Shammar, etc.), 2) first persons having arrived at the current place (Ghanem al-Ali, etc.), and 3) landscapes of the places (Mughla, meaning "full of trees", etc.)

As mentioned above, each village has many points in common in their histories, but there is a considerable variation about the emigration period: before Islam (Bu Hamad), 800 years ago (Maadan), 400 years ago (Namisa), 200-300 years ago (Rahabi, Zur Shammar), 150-200 years ago (Ghanem al-Ali, Mughla), etc.

Of course, there are various testimonies about the period and when the person such as Zubaid, Shaaban, and Ubaid was alive. The researcher hopes to arrange the information to be able to make these points clarified.

Then, how was the life style of the tribes after leaving their original places.

In Syrian and Arabic context, we can classify the people into 3 groups on the basis of life styles: "rifi" as farmer, "badawi" (Bedouin) as nomad, and "hadari" as the people living in cities. In and around the villages researched, there is no hadari, and the researcher focuses on the difference between rifi and badawi as their identities.

Although the history of each village was expressed as “emigration”, most of them are in fact the people who depend not only on nomadic life style but also on agriculture. If looking into details, there is variety. For example, Bu Hamad has been engaged in agriculture ever since they were in Yemen and Saudi Arabia. Jibli began to own their farms along the way during their immigration into Iraq. But, most of the tribes had their farms while they continued to move up along the Euphrates after leaving Iraq. So, in these few centuries at least, they started life style depending on agriculture. This process gave the people the identity as farmer.

In Rahabi, those who started to engage in agriculture 100 years ago at the latest, call themselves “new farmer”. And now, they introduce themselves as nomad from the viewpoints of origin and tradition. Shannan, too, say today, “we WERE nomad”, because they began to be engaged in agriculture only 150 years ago.

It is also possible to regard Rahabi as an exceptional case because of their life style. In Rahabi whose population is the smallest in the area (1,300 people), no one has their own farm in fact. They have houses, however, and are engaged from spring to summer in agriculture as crofter by borrowing farm from neighbors. Then, from autumn to winter they “go back” to Bishri, their latest homeland, and put their livestock in the meadow. They have their own houses in Bishri, and these become vacant in spring to summer. All of the people in Rahabi take this life style as contra-transhumance, moving to mountains in winter. Three fourths of them in Bu Hamad are leading this life style.

They recognize 2 categories as “Farmer” and “Nomad”. However, these 2 categories are not contradictory for them because they are engaged in both agriculture and nomadic subsistences. Except for Zur Shammar, identified by their origin and tradition, all of the villages are affirmative if being asked “you are farmer?”, and disturbed if asked “you are not nomad?” Moreover, the people do not have such superiority complex toward nomadic people as people living in cities do. Their most suitable identity is “farmer engaged in nomadic”.

Then, why is it not “Nomad engaged in agriculture”?

First, they are not engaged in “Nomadic” anymore. In addition, after having continued emigration into the current place for centuries, they now have their own houses, being engaged in agriculture. So, we might have better to say their emigration just “moving”.

Secondly, all of the villages are depending on agriculture for their livelihood. Though the latest case is of a century ago, most of the tribes established their life style depending on agriculture for the last 3 to 6 centuries, after Iraqi times or afterward. All of the villages have more or less livestock. Their livestock is not raised for commerce however, and raised for their subsistence. As for commercial farming, they depend on agriculture such as cultivating corn, cotton, etc.

Nowadays, there are nomadic people living in the Bishri who depend on pasturage only. However, they do not have relationship with the people of villages, for the people of villages also have livestock and do not need to buy milk products from the nomadic people. Because of this, the nomadic people in the Bishri go to the city of Raqqa to sell their milk products. They have relationship, however, with the village people by visiting Ghanem al-Ali or Jibli, etc. to buy food for their livestock.

The above outlines the result of the research carried out in this field season.

In sum, it has been demonstrated that the ideas of the tribe’s identity such as “Farmer” and “Nomad” are flexible, since most of the tribes have been engaged in agriculture throughout their history of emigration. One clear example is that the people identify themselves as farmer but never have superiority complex toward nomadic people.

Future research will clarify more about the correlation between the tribe’s identity and tribe’s history of emigration.

3. A morphological study of the human bones from Rujum Hedaja

Yoshihiko NAKANO (Associate Professor, Osaka University, Japan)

The archeological survey of the burial cairns at Rujum Hedaja 1 yielded some human skeletal samples. The morphological studies of the bones should lead the clue of the life or social style of the ancient people. Most of the specimens were composed of animal bones including small rodents, hares, bards and some cattle. Human remains were isolated teeth, phalanges and fragmental jaws and limb bones mainly. Therefore, it was difficult to assert their traits of the life style, and the descriptions and discussions were specified to their individual characters.

Descriptions

The skeletal specimens were collected by the excavated points in each cairns. The useful human bones for the morphological studies were found in Burial Cairn No. 3, 9 and 10 at Rujum Hedaja 1.

1. Burial Cairn No. 3 (RHD-1/BC-3)

A few teeth were found from site No, 116. They were isolated and only left I_1 had complete crown without root (Fig. 1) and others were fragments. The wearing of the crown was not advanced. It showed the adult of middle years. The description of the sex was difficult from the isolated tooth. The sectorial biting by the incisor might be not frequent.

2. Burial Cairn No. 9 (RHD-1/BC-9)

Limb bone fragments, a patella, hand bones, foot bones and isolate teeth were found from CS and B2 site in BC-9.

a) The teeth specimens were as follows: right P_3 from CS-505, right M^2 from CS-510, left I_2 from CS-511, left I_1 from CS-512. P_3 from CS-505 (Fig. 2) showed the intense wearing. The cusp was worn away and the dentinum was sticking out. The pattern showed the advanced age in modern life. However, it was related to the diet and life style and the hardness of the food and the pattern of the mastication should be considered to decide the age. M^2 from CS-510 (Fig. 3) was broken in distal part. The surface was worn out without. The wearing was further advanced. The wear of the I_2 from CS-511 was not advanced but it has the small lack of the crown. I_1 from CS-512 showed the lack of the crown clearly (Fig. 4). It showed the possibility that the teeth were used for the purpose in addition to the mastication. The mesiodistal length was larger than I_1 from CS-3. Small jaw fragment without teeth from CS-509 remained the sockets of P_3 - M_3 although some were incomplete (Figs. 5 and 6). The socket of M_3 located in the mandibular ramus. The socket of the M_3 meant the adult but the size of the mandible was quite small. Therefore, the holder of the mandible should be adult female.

b) A fragment of distal end of femur from CS-509 (Fig. 7), a distal end of femur (lacked dorsal part) from CS-514 (Fig. 8), and a proximal end of light ulna from CS-511 (Fig. 9) were the limb bones in RHD-1/BC-9. All bones are fragments and the information from morphological characters was limited. Femurs were large relatively. The condition of the compact substance was normal and it showed that the body was not advanced age. The ulna had the radial articular surface and trochlear surface. The tuberosity in the both side was not developed well. It showed the flexor muscle of the elbow joint did not develop extremely.

c) An almost complete right patella was found from CS-508 (Fig. 10). The shape was oval to cranio-caudal direction slightly. The tuberosity of the surface developed well. These characters showed the well-developed muscles of the lower limbs.

d) Hand and foot bones including tarsal, metacarpals, metatarsals and phalanx were found from many sites in RHD-1/BC-9 (Table 1). The four tarsal bones (talus, calcaneus, cuboid, and navicular) of the same individual were found from CS-510 (Figs. 11 to 14). There was not remarkable reformation in these bones. They might belong to young person. The flare at the head of talus was conspicuous comparative to other parts. In the cuboid, the development of skeletal flare was seen at the articular surface to metatarsals. These features might be related to their specific locomotor behavior. For the phalanx of foot, there were well-developed planter tubercles. This feature was remarkable in first phalanx (Fig. 15) but also in the other digits although the deference of the development (Fig. 16).

3. Burial Cairn No. 10 (RHD-1/BC-10)

The skeletal specimens in BC-10 were collected by several sites as follows: Grave-A, Grave-B, Cist group 1, 2, 3, 4, 5 and Cist upper layer. There were no informative specimens from Cist group 2.

3-1. Grave A

The parts of the human bone from Grave A were the fragments of a humerus, a clavicle, a femur and a jaw with teeth.

a) The right mandible remained the sockets from P₃ to M₃ (Fig. 17). The teeth were not mounted on the bone but some teeth fit to the socket. The specimens were composed with right C, P₃, P₄, M₂, M₃ and left M₁, M₂ (Fig. 18). The size of the mandible was somewhat small but larger than the specimen from BC-9. It showed the female or small-sized male adults from the standard of modern people. The crown of C was broken and disappeared and the size was not large. P₃ lost the enamel of medial side. It had the strong wear to dentinum. P₄ also showed the strong wear of enamel. There was the trace of the connection to M₃ in the upper part of the distal side of right M₂. It showed right M₃ erupted slantly. The wear of right M₁ and right M₂ were intense. The occlusal surface became flat. The wear of left molars showed the same pattern. The enamel of left M₁ eroded more than other molars and the dentinum appeared the most of the occlusal surface. The diet pattern was deduced from the intensity of the dental wear. It showed the crunching and grinding motion for the hard and fibrous food.

b) Several fragments of limb bones were collected, however, almost of the specimens were not useful for morphological study. The shaft of right humerus retained the tuberosity (Fig. 19). The development of the tuberosity was similar to modern ordinary person. That is, it meant that the muscles in the upper limbs were not strong in these ancient people, and it related to their life style. The femur fragment was also found from Grave A (Fig. 20). It was the part near to proximal end but lacking the head, major trochanter. The basement of minor trochanter was retained. In the dorsal surface of the shaft, there was the well-developed asperate line for the muscles. This feature also showed the adaptation to the high percentage of the walking in the life.

3-2. Grave B

Three specimens were collected from Grave B, namely, right talus (Fig. 21), right metatarsal (II) (Fig. 22) and right M₃. The talus was almost complete. There was no reformation in the articular surface and other parts. The metatarsal lacked distal end. The holder of these bones might be young adult, and might be male from the size. The wear of M₃ was very weak and enamel was remaining. It also showed the young individual.

3-3. Cist group 1

The fragment of hip bone (Fig. 23) and tibia (Fig. 24) were collected from Cist group 1. The remaining of the hipbone was the part of acetabulum. The sulcus under the acetabulum was not

developed. Tibia specimen retained proximal end. The reformation of the bone was not seen and compact substance was normal condition. It was difficult to decide that the specimens were from same individual, but both features of bones showed the body was not advanced age.

3-4. Cist group 3

The femur head (Fig. 25) and thoracic vertebra (Fig. 26) were collected from Cist group 3. The part of the section might retain the evidence that epiphysis was not fused in the femur head. Thoracic vertebra was somewhat small size and lacked almost of the vertebrate arch except for the right side that processed the articular surface to rib and upper vertebrae.

3-5. Cist group 4

Cist group 4 yielded right talus (Fig. 27) and right P⁴ (Fig. 28). The talus lacked the part of right side. The reformation was not confirmed and it might not belong to advanced person. The wear of the cusp was quite little in P⁴. The difference between the specimen from Grave A and this one was so huge, and the holder might be the person of young age.

3-6. Cist group 5

Hand and foot bones were product from Cist group 5. Both Metatarsal (II) and (III) were broken and lacked the distal end. These had less information and the size was larger. The mid phalanx (Fig. 29) and terminal phalanx (Fig. 30) were collected. The tubercles in the planter side were well-developed and it meant that the power of grip might be conspicuous.

3-7. Cist upper layer

One human bone, left metacarpal (V) was collected. It might be young male individual because the development of lateral tubercle was weak.

Discussions and conclusions

There were no skeletal samples from the person of old age. Of course the bones of old person were easy to break and the reason the tendency might be found from other factors. From the results of the dental remains, their diet was consist of fibrous and not so soft food and. The meal of the meat might not be frequent. The development of muscles was quite different between the upper limbs and lowers. The muscles in the lower limbs were well-developed but the one in the upper limbs showed normal with out grip. This features showed that the walking occupied the high percentage of the life. The decision of the age and sex was difficult from the limited specimens but they might be including both sex and the people of different ages.

It was a pity that the amount of the specimens and time for the study were not enough. Therefore, the results were preliminary. I expect for the results of the excavation in future.

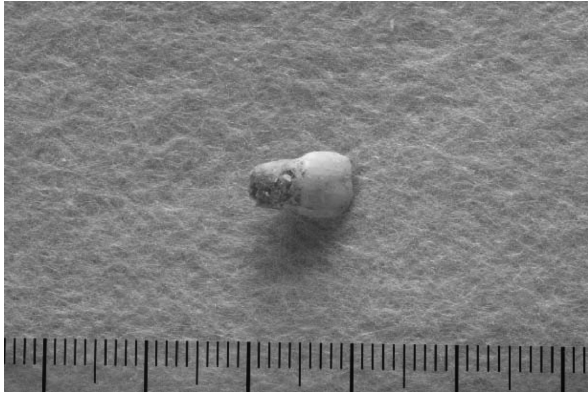


Fig. 1 Left I1 from RHD-1/BC-3

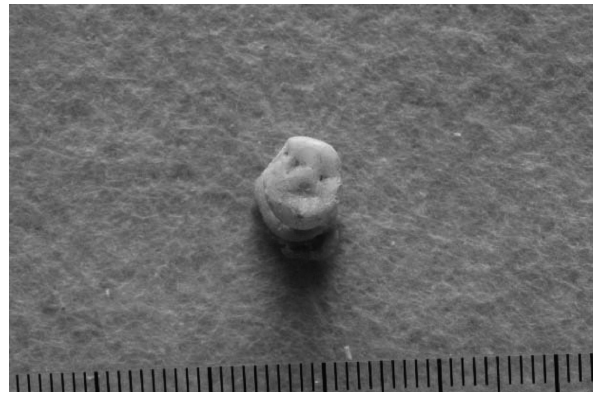


Fig. 2 Right P₃ from CS-505 (RHD-1/BC-9)

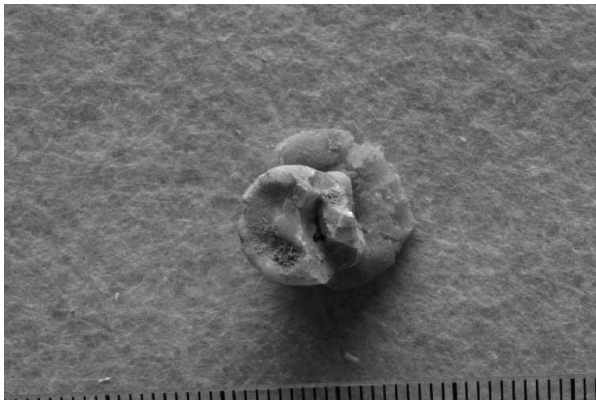


Fig. 3 M² from CS-510 (RHD-1/BC-9)

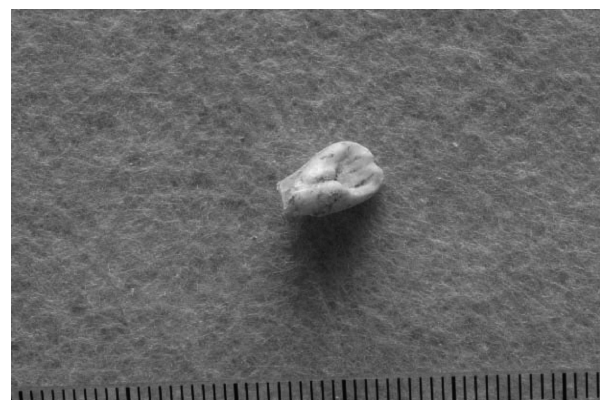


Fig. 4 I₁ from CS-512 (RHD-1/BC-9)

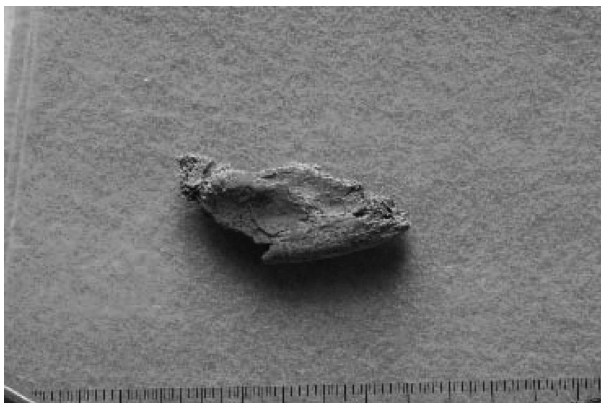


Fig. 5 Mandible from CS-509 (RHD-1/BC-9) (lingual view)



Fig. 6 Mandible from CS-509 (RHD-1/BC-9) (upper view)

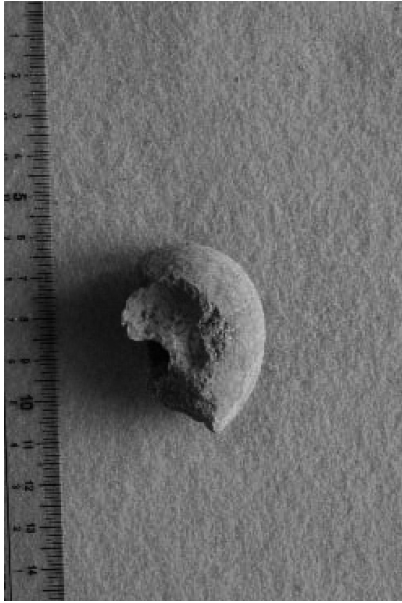


Fig. 7 Femur from CS-509



Fig. 8 Femur from CS-51



Fig. 9 Ulna from CS-511

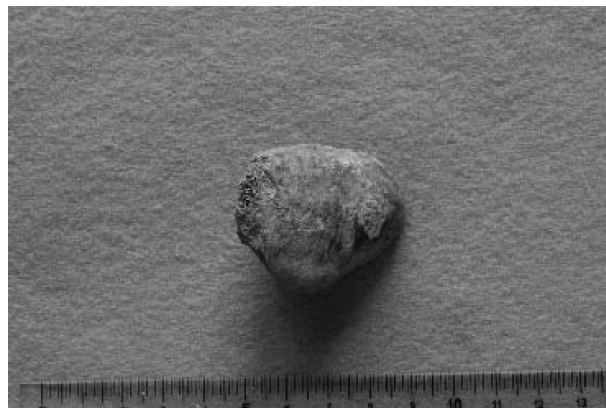


Fig. 10 Right patella from CS-508

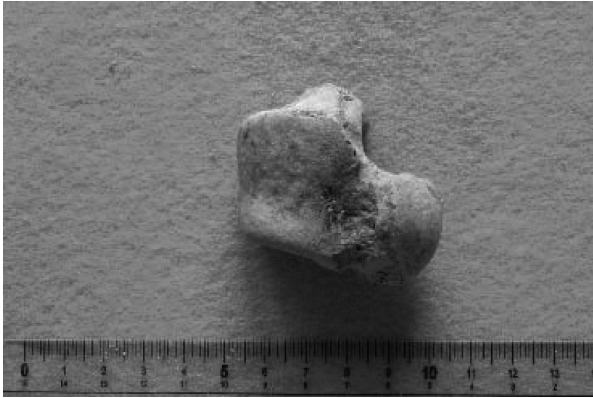


Fig. 11 Talus from CS-51

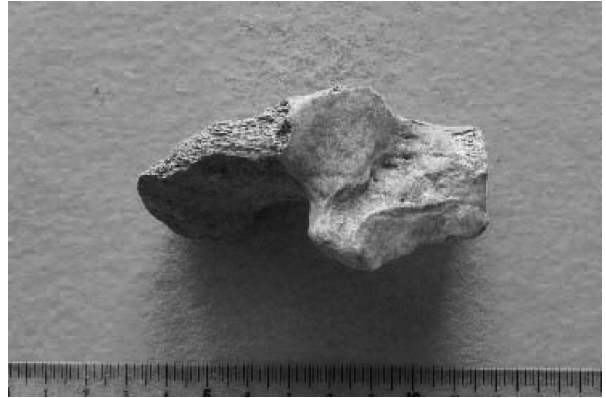


Fig. 12 Calcaneus from CS-51

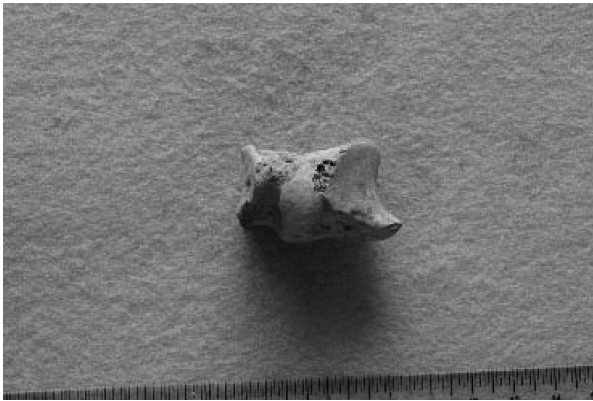


Fig. 13 Cuboid from CS-51

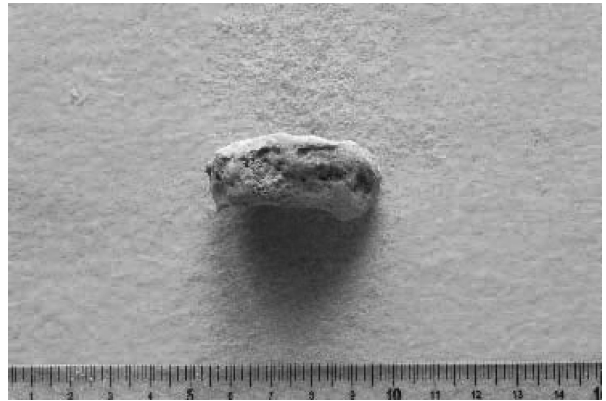


Fig. 14 Navicular from CS-51

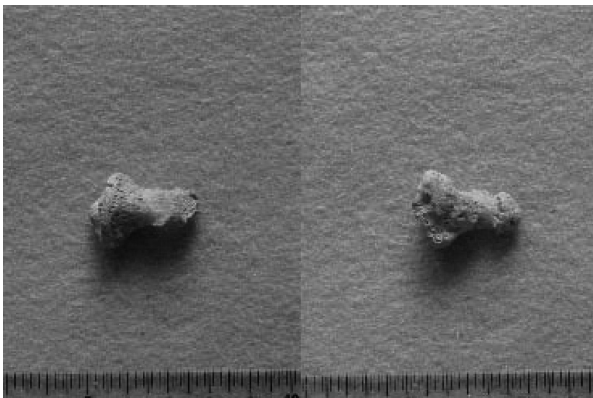


Fig. 15 Terminal phalanx (I) of foot (both side)

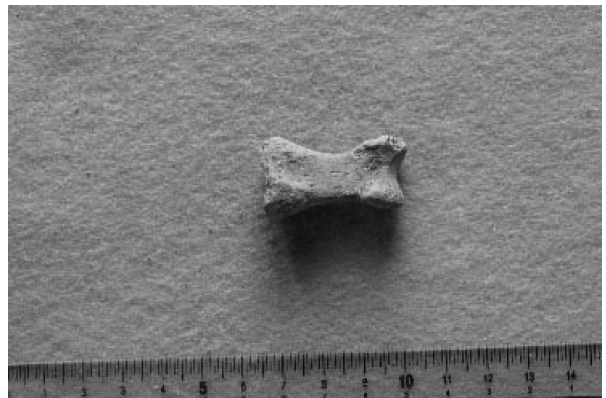


Fig. 16 Proximal phalanx of foot

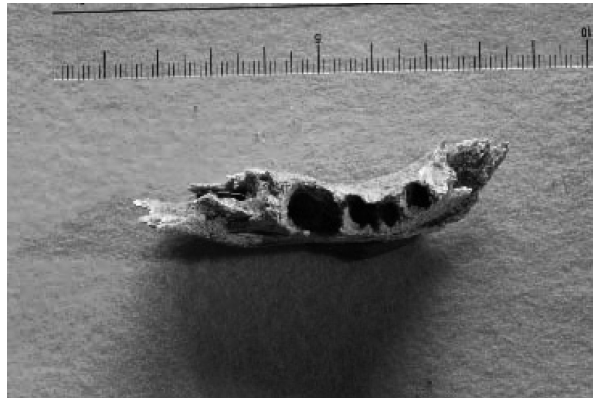


Fig. 17 Mandible from Grave A (RHD-1/BC-10)

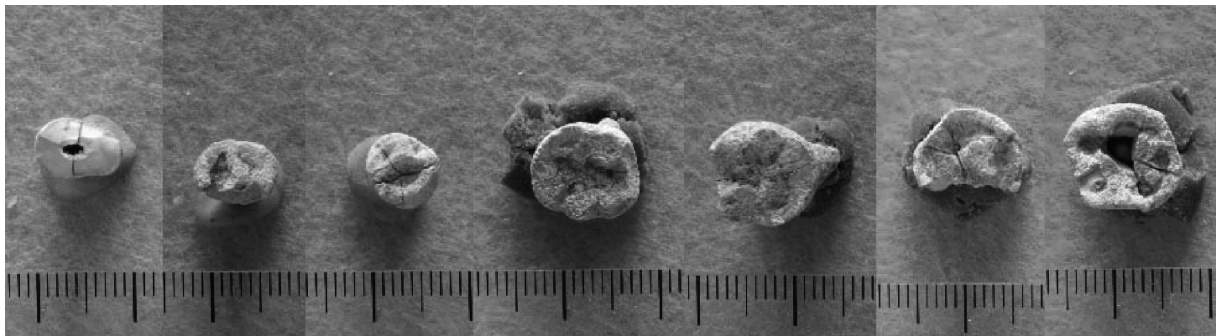


Fig. 18 Teeth from GraveA (RHD-1/BC-10)



Fig. 19 Humerus shaft from GraveA



Fig. 20 Femur from GraveA

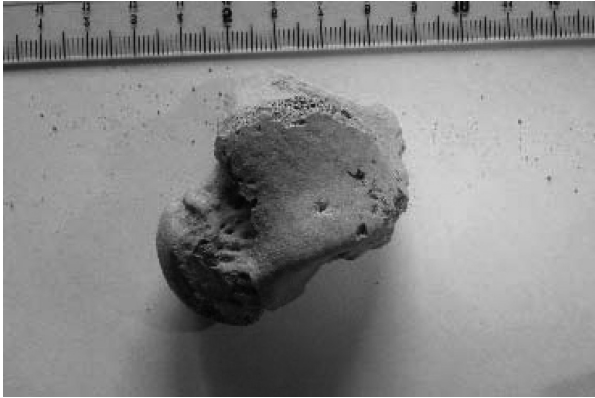


Fig. 21 Talus from Grave B



Fig. 22 Metatarsal from Grave B

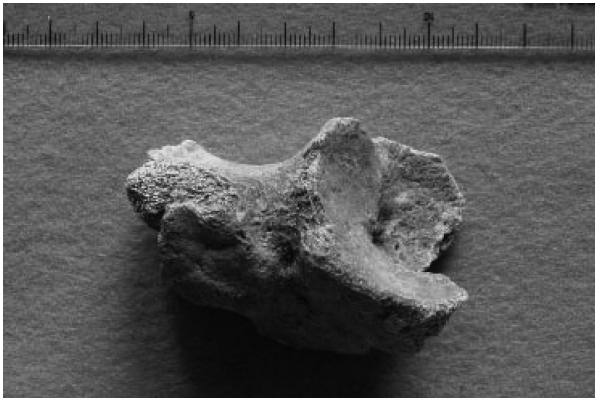


Fig. 23 Hip bone from Cist group 1

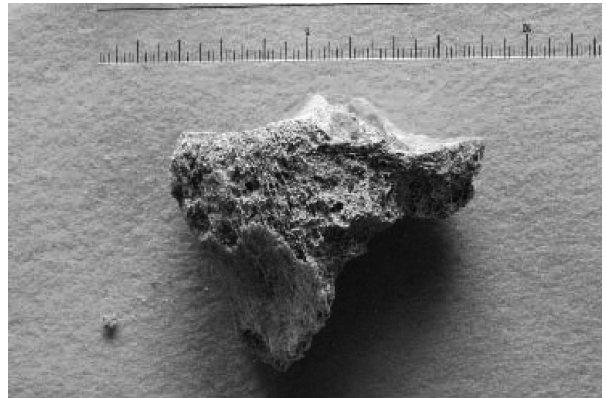


Fig. 24 Tibia from Cist group 1

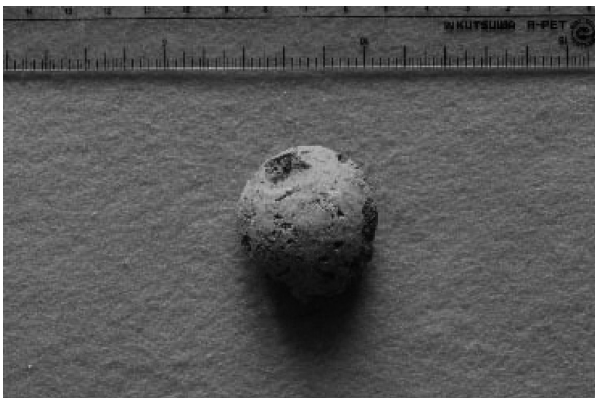


Fig. 25 Femur head from Cist group 3

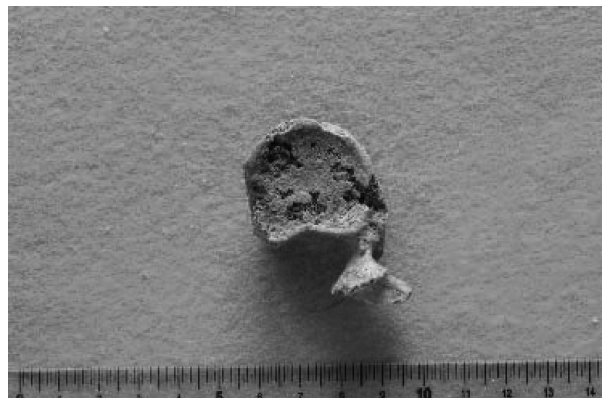


Fig. 26 Thoracic vertebra from Cist group 3

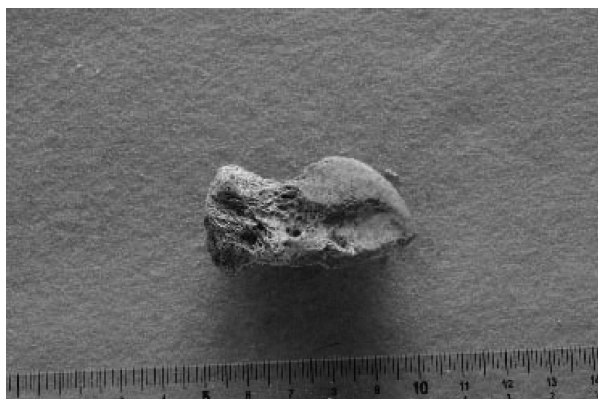


Fig. 27 Talus from Cist group 4

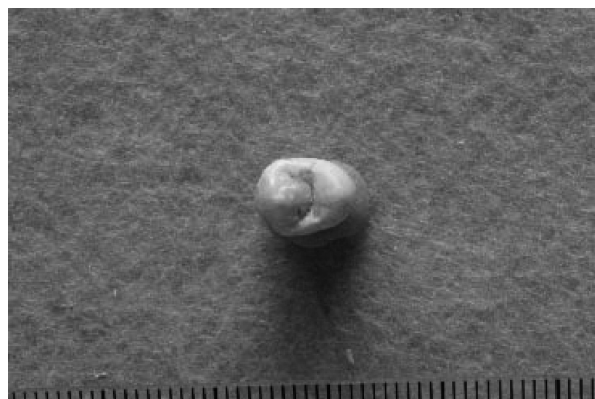


Fig. 28 Right P⁴ from Cist group 4

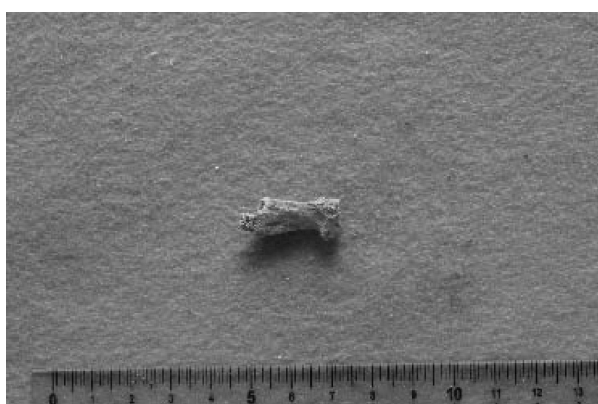


Fig. 29 Mid phalanx of hand from Cist group 5

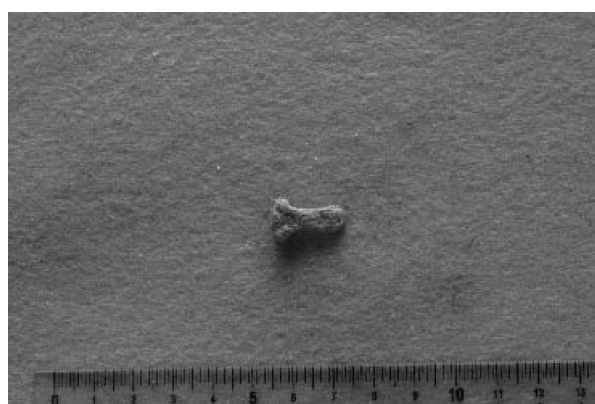


Fig. 30 Terminal phalanx from Cist group 5

Table 1 List of the hand and foot bones from BC-9

Specimen	Location
rt. proximal phalanx (I), hand	B2-102
lt. mid phalanx (V), hand	B2-102
lt. proximal phalanx (I), foot	B2-102
lt. proximal phalanx (II or III), foot	CS-502
lt. terminal phalanx (II or III), hand	CS-504
lt. proximal phalanx (V), hand	CS-504
rt. metacarpal (IV)	CS-505
rt. proximal phalanx (II), hand	CS-508
rt. proximal phalanx (I), foot	CS-509
rt. proximal phalanx (III or IV), foot	CS-509
lt. talus	CS-510
lt. calcaneus	CS-510
lt. cuboid	CS-510
lt. navicular	CS-510
lt. metatarsal (II)	CS-510
lt. terminal phalanx (I), foot	CS-511
rt. terminal phalanx (II or III), hand	CS-512
lt. metatarsal (II)	CS-514
lt. metatarsal (IV)	CS-514

4. Trench Excavation in Square 2 of Tell Ghanem al-Ali

Atsunori HASEGAWA (Doctoral student, Tsukuba University, Japan)

Square 2 was set on the northern slope of the tell in the first season, 2007. The main objective of square 2 is to confirm the chronological sequence of the tell. Square 2 which we already dug in the fourth season measured 4 (east-west) \times 16 (north-south) m. According to the result obtained from our work in 2007, at least, square 2 revealed four building levels. In this season, we continued to dig down with an extension of 4 (east-west) \times 10 (north-south) m. with the extension connected to the square 2 in the south. We made this trench 6 stepped (Fig. 1). As a consequence of digging in this season, square 2 has revealed 3 more building levels so far.

Level 4

At first, we dug in south part of the second step to make third step. Two stone walls which we reported last season were fully excavated in the third step (Fig. 2). They extend from north-west to south-east and lie parallel. North wall was thin but very high. It remained ca. 1.8 m in height. On the other hand, south wall was very thick. It was ca. 2 m in width and 70 cm in height. And, it was constructed by large stones of ca. 40 \times 50 cm. I would like to emphasize that they had different directions from all the walls in the upper level extending from north to south and east to west. Walls of this level are larger than those of the upper level. It is possible that they were a part of town wall.



Fig. 1 Square 2 seen from the north



Fig. 2 Massive stone walls, level 4, seen from the west

Level. 5

We dug in the north part of the extension area as the fourth step. The remains in level 5 were in poor state of preservation. At the center of the fourth step, stone wall was identified extending east to west. It was found in fragmental condition, however. And, a cooking pot almost completely remaining was found in the south of stone wall (Fig. 3). In the level 2 and square 1, we found some pot like this already.



Fig. 3 Stone wall and cooking pot, level 5, seen from the west.

Level 6

In contrast to the upper step, especially down to the third step, the topsoil of the south part of extension, fifth step, was very thick. Approximately up to 1.3 m below the ground, we identified layer of eroded soil at the higher locations on the hill top. No structures were identified in these layers, except for the collapsed mud bricks. Under these layers, thick wall constructed by mud-bricks was identified. It was ca. 1 m in width and extended from north-west to south-east. It had one corner and the south part of it was collapsed (Fig. 4). This thick wall had stone foundations using large stones of 80×100 cm. Additionally, at least three rows, constructed by mud-bricks, were identified around it. The orientation of the rows was mainly along the northwest-southeast axis. That is to say, they were in parallel with stone foundations. It is possible that these rows of mud-bricks were a part of floor. We found that a bottom of pottery was lying on top of the other (Fig. 5).



Fig. 4 Mud-brick wall, level 6, seen from the south



Fig. 5 Stone foundation under the mud-brick wall, level 6, seen from the south

Level 7

Sixth step was located in the northern end of square 2. About 40 cm below the level 6, three rooms were identified. The walls of the rooms were constructed with mud-bricks and extended along the north-west to south-east axis. At least three types of mud-bricks were confirmed in the walls. The first type is coloured orange and hard. The second type is grayish yellow and soft. The third type has orange-coloured frame and is grayish yellow inside the frame (Fig. 6).



Fig. 6 Three rooms, level 7, seen from the south

It is difficult to state the exact date of each level. The classification of pottery is now under study. At least, however, there are not recognized any typical pottery belonging to the period older than the Early Bronze Age III. The excavated area of square 2 almost reaches the northern end of Tell Ghanem al-Ali, which is being used as a road by nearby villagers and could not be extended in this field season.

It seems, however, that the structures used to extend to further north, and that the original residential area of Tell Ghanem al-Ali in the Early Bronze Age expanded to further north from the present northern edge of the mound.

5. Reconfirmation of the wall structures at the site of Tell Ghanem Al-Ali

Katsuhiko OHNUMA (Professor, Kokushikan University, Japan)

Reconfirmation of the remaining walls along the northern and north-western edges of the site of Tell Ghanem Al-Ali was carried out in this field season. This work was done with reference to the overall plan of the site completed in the third working season in August, 2007 (Fig. 1).

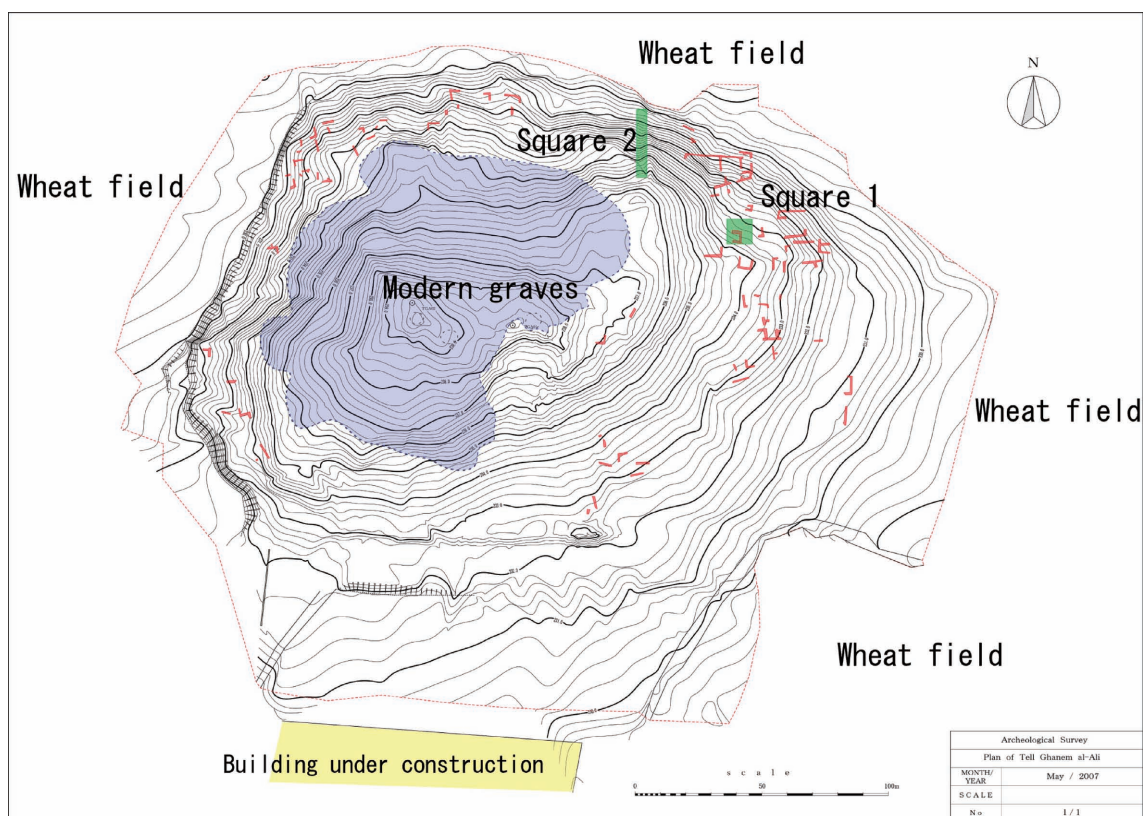


Fig. 1 Overall plan of Tell Ghanem Al-Ali with remaining walls (red lines) and Squares 1 and 2 for sondage (shaded green) (completed in August, 2007)

Although the final allocation of the remaining walls along the northern and north-western edges is not completed now, it interestingly seems that at least two room complexes of different wall directions existed in the edges of the site researched, strongly suggesting at least two different occupational periods at this site.

It is hoped for the future that excavations on larger scale will clarify in more details about rich occupational sequences at this site, as well as its intra-site functional or occupants' differentiation.

6. Botanical Research

Chie AKASHI (Doctoral student, Waseda University, Tokyo)

The botanical research in Tell Ghanem al-Ali had started in the summer of 2007 and some soil samples were collected last year from the ashy fill or inside potteries to obtain plant remains effectively. In this season, new method was conducted which is to collect samples from various contexts and at various levels regardless of presence or absence of charcoal concentration. Charred woods are very fragile and could be damaged in the water flotation so some large pieces of wood were secured in the site.

In total 35 soil samples were secured for botanical study from Square 2 during the excavation. Amount of each sample is 5 to 12 liters. 34 of them (327 liters in total) were processed by same water flotation system as last year and many charred plant remains were recovered. Most of them were charred wood but some barley grains were also observed with naked eyes. Large leguminous seed, probably *Prosopis* sp., was also included. Barley is the most common plant in Bronze Age in

Syria and *Prosopis* sp. is also reported from many contemporaneous sites.

In addition, 18 samples were obtained from Square 1 as well. The excavation there had been finished last year, so sampling was carried out at the bottom of the trench after careful cleaning. 17 samples of them, 111 liters, were processed.

Such a way of sampling will enable to discuss the difference of plant use between areas or the change through time. The charcoal materials need to be sent to Japan and identified under microscope for further analysis.

List of botanical samples

Square 2

sample no.	locus	date	soil amount	charcoal amount
TGA2-7	95	081016	15	1 plastic bag
TGA2-8	95	081016	11	1 plastic bag
TGA2-9	94	081016	12	1 plastic bag
TGA2-10	94	081016	9	1 plastic bag
TGA2-11	96	081016	5	1 plastic bag
TGA2-12	98	081019	12	1 plastic bag
TGA2-13	98	081019	9	1 plastic bag
TGA2-14	98	081019	12	1 plastic bag
TGA2-15	98	081019	9	1 plastic bag
TGA2-16	94	081021	9	1 plastic bag
TGA2-17	94	081021	12	1 plastic bag
TGA2-18	102	081021	8	1 plastic bag
TGA2-19	102	081021	8	1 plastic bag
TGA2-20	113	081023	11	1 plastic bag
TGA2-21	113	081023	12	1 plastic bag
TGA2-22	115	081023	10	1 plastic bag
TGA2-23	115	081023	7	1 plastic bag
TGA2-25	117	081113	10	1 plastic bag
TGA2-26	117	081113	10+	1 plastic bag
TGA2-27	115	081115	6+	1 plastic bag
TGA2-28	122	081116	9	1 plastic bag
TGA2-29	120	081116	10+	1 plastic bag
TGA2-30	123	081116	9	1 plastic bag
TGA2-31	119	081116	10	1 plastic bag
TGA2-32	116	081117	6+	1 plastic bag
TGA2-33	116	081117	6+	1 plastic bag
TGA2-34	125	081118	10+	1 plastic bag
TGA2-35	126	081118	9	1 plastic bag
TGA2-36	126	081118	9	1 plastic bag
TGA2-37	129	081118	10+	1 plastic bag
TGA2-38	128	081119	11+	1 plastic bag
TGA2-39	136	081124	10+	1 plastic bag
TGA2-40	136	081125	10	1 plastic bag
TGA2-41	138	081125	11	1 plastic bag

Square 1

sample no.	date	soil amount	charcoal amount
TGA1-12	081030	12	1 plastic bag
TGA1-13	081030	9	1 plastic bag
TGA1-14	081030	7	1 plastic bag
TGA1-15	081030	8	1 plastic bag
TGA1-16	081030	8	1 plastic bag
TGA1-17	081101	9	1 plastic bag
TGA1-18	081101	3	1 plastic bag

TGA1-19	081101	4	1 plastic bag
TGA1-20	081101	4	1 plastic bag
TGA1-21	081101	8	1 plastic bag
TGA1-22	081101	8	1 plastic bag
TGA1-23	081101	3	1 plastic bag
TGA1-24	081101	3	1 plastic bag
TGA1-25	081101	6	1 plastic bag
TGA1-26	081101	8	1 plastic bag
TGA1-28	081101	6	1 plastic bag
TGA1-29	081101	5	1 plastic bag

Charcoals

square	bask. no	date
2	91	081014
2	97	081016
2	97	081016
2	93	081018
2	100	081018
2	99	081018
2	99	081018
2	98	081018
2	98	081019
2	99	081020
2	105	081022
2	108	081023
2	107	081118
2	128	081118
2	128	081119
2	130	081120
2	132	081122
2	132	081122
2	134	081124
2	136	081124
2	136	081125

7. The Soundings of the Hedaja Cairn Fields, the Northwestern Flank of Jabal Bishri

Sumio FUJII (Professor, Kanazawa University)

Takuro ADACHI (Research Fellow, the Middle Eastern Cultural Center in Japan)

Kae SUZUKI (MA Student, Kanazawa University)

Introduction

The third field season at the Hedaja cairn fields was conducted from November 11 through 29 of 2008 with the sincere cooperation of the Department of Antiquities and Museums of Syria. The objective of this season was to shed light on an overall picture of the site that consists of four adjacent cairn fields. For this purpose, we sounded a total of seven cairns: four at Rujum Hedaja 1, two at Rujum Hedaja 3, and one at Rujum Hedaja 4. The series of soundings have provided insights into the internal structure of the composite site. What follows is a brief summary of the investigation results.

The Site and Research History

The site of Rujum Hedaja is located in a limestone hilly terrain to the east of Bir Rahum, a small

village along a local main road traversing the northwestern flank of Jabal Bishri (Fig. 1). It is a general term for four adjacent cairn fields overlooking Wadi Hedaja and contains a total of thirty burial cairns (Fig. 2).

The natural environment around the site is very harsh, being characterized by an arid climate and consequent poor vegetation. Since no natural permanent water source is available, no traditional settlements exist. The only exception is Bir Rahum, which was founded beside deep wells only a few dozen years ago. Thus the land use of this area is limited to seasonal pasturing and no cultivation is conducted. Nevertheless, the concentration of numerous cairns on this area suggests that it witnessed a climatic amelioration in the remote past, especially in the Bronze Age.

Our investigation started with a reconnaissance survey in March of 2007, when the site was confirmed for the first time together with the other three (Fujii 2007). The first field season at the site took place in May of 2008, when we focused on the sounding of Burial Cairn No. 10 of Rujum Hedaja 1 or RHD-1/BC-10 in our cairn registration code (Fujii 2008). The sounding showed that it incorporated a ground-type cruciform cist fringed with large limestone boulders and a double peripheral wall encompassing the cist. The finds, though very scarce due to illicit diggings in the recent past, suggested a date from the end of the 3rd millennium B.C. to the beginning of the 2nd millennium B.C. This finding enhanced our expectation that the cairn entity in this area may represent cemeteries of *Mar-tu* or *Amurru*, a large pastoral population that Sumerian and Akkadian cuneiform texts refer to as having been based on the Bishri Mountains.

The second field season, conducted in June of the same year, dealt with nine cairns dotted to the east or southeast of BC-10 (Fujii et al. 2008). The series of soundings brought about further evidence for the tentative dating suggested above. They also provided insights into the techno-typological sequence of the chain of cairns.

The third field season, our main concern, was devoted to a series of complementary operations to elucidate the whole picture of the composite site. To begin with, we briefly examined two cairns of Rujum Hedaja 3 (or previous Hedaja 2) and, then, moved to the adjacent Rujum Hedaja 1 to test four cairns yet to be investigated. Our investigation ended with a limited sounding of a small cairn at Rujum Hedaja 4 (or previous Hedaja 1c). Unfortunately, the planned sondage at Rujum Hedaja 2 (or previous Hedaja 1b) was postponed until the next season due to time constraints and bad weather. The following description will be made in order of site register number.

Rujum Hedaja 1

Rujum Hedaja 1 is a large cairn field that extends on an elongated flat-topped limestone hill ca. 30-50 m in relative height. It contains a total of fourteen cairns: ten along the southern edge and the other four along the northern fringe (Fig. 3). As referred to above, our first and second field seasons addressed the comprehensive investigation of the former group of cairns. This season focused on the sounding of the latter.

BC-11

Being ca. 400 m distant from the other three, this small cairn was isolated in the middle of the northern edge of the table-like hill. A round cist or peripheral wall, ca. 2.5 m in outer diameter and ca. 0.5 m in relative height, was found under a heavily disturbed cobble mound (Fig. 4). It was constructed with a single row and course of undressed limestone cobbles, which were arranged around a natural depression of a limestone outcrop. Thus the cist, though essentially of a ground-type, formed slightly concave burial space. This device is common to other ground-type cists at the site. Neither artifacts nor human skeletal remains were recovered.

BC-12

This cairn, together with BC-13 and -14 described below, was located on a flat-topped ridge protruding northward from the main body of the hill. Its cobble mound, ca. 6 m in diameter and

ca. 0.5 m in relative height, was fringed with large limestone cobbles put upright (Fig. 5). An oval cist, ca. 1.4 by 1.2 m in floor area, was found under it. Again, it was constructed around a natural depression of a limestone outcrop. This cairn was also heavily disturbed by plundering activities and produced no finds.

BC-13

BC-13 was located ca. 20 m north of BC-12. It was relatively large in scale, measuring ca. 10 m in diameter and ca. 0.9 m in relative height (Fig. 6). A T-shaped cist fringed with partly dressed limestone boulders was found roughly in the center of the heavily disturbed cobble mound (Fig. 7). The finds were limited to several fine buff ware sherds and a certain amount of human bone fragments.

Incidentally, the cairn was accompanied with the following five stone-built features: a large L-shaped wall alignment ca. 25 m in total length (Feature 01), a U-shaped wall alignment ca. 3 m in width (Features 02), a curvilinear wall alignment ca. 5 m long (Feature 03), a small stone concentration ca. 4 m in diameter (Feature 04), and an oval structure ca. 3.5 m in major axis (Feature 05). As previously suggested, the combination of a cairn and such small features seems to be the norm of Hedaja cairns, especially of large examples. No artifacts were found from these five features.

BC-14

This large cairn, ca. 12.5 m in diameter and ca. 0.9 m in preserved relative height, was located at the northern edge of the flat-topped ridge. A semi-rectangular subterranean-type cist was found roughly in the center of the cobble mound (Fig. 8). It was constructed within an oval pit ca. 1.3 m deep that dug through a limestone bedrock layer, and originally covered with a semi-corbelling roof. A double enclosure wall encompassed the cist. Though heavily disturbed, the lower fill layer produced a small buff-colored pot with a short upright neck (Fig. 9). In addition, a handful of fine reddish ware sherds, some flint artifacts, a dozen stone beads, a few adornments made of snail and amber, and a bronze ring were found from the disturbed cist and mound (Fig. 10).

Here again, the cairn was accompanied with small stone-built features, which contained two U-shaped wall alignments (Features 01 and 03) and a two-rowed upright cobble wall with smaller rubble being filled in between (Feature 02). None of these produced artifacts.

Rujum Hedaja 3

Rujum Hedaja 3 is a small-scale cairn field ca. 1 km west of Rujum Hedaja, being located at the northern edge of a gently sloping hill. It consists only of two small cairns, both of which were briefly examined together with their surrounding small features (Fig. 11).

BC-01

This small cairn occupied the northern edge of the cairn field. Its cobble mound was almost erased by illicit diggings, but the existence of a peripheral wall suggested that it was at least ca. 3 m in diameter. A rectangular cist fringed with upright limestone boulders was exposed roughly in the center of the disturbed mound. It was a semi-subterranean feature, measuring ca. 1 m long, ca. 0.3 m wide, and ca. 0.15 m in floor depth. No artifacts were recovered.

BC-02

This burial cairn, located ca. 3 m south of BC-01, consisted of a cobble mound ca. 4 m in diameter and an underlying oval cist ca. 1.5 m in major axis. The semi-subterranean cist ca. 0.7 m in floor depth was constructed by means of digging through a limestone bedrock layer. A tabular scraper was found nearly at the base of the cist, but the occurrence of a few glazed pottery sherds and a bronze coin inscribed with Arabic letters from upper fill layers suggests that the cist was partly reused in later times.

Small Features

Four stone-built features were confirmed around the two cairns. Feature 01, located ca. 10 m east of BC-02, was a boat-shaped structure with a length of ca. 9.5 m, a maximum width of ca. 3.3 m,

and a preserved height of up to ca. 0.5 m (Fig. 12). Limestone rubble was filled up inside the walls, but nothing was found with the exception of a handful of bone fragments. The function of this unique feature is still unknown. All we can say is that it is probably a ritual feature belonging to its neighboring burial cairn. The combination of a burial cairn and such an enigmatic wall is the norm of Hedaja cairns and has been attested to at BC-06, -10, and -14 of Rujum Hedaja 1, for example.

Feature 02 was located ca. 10 m further to the east of Feature 01. It was a smaller version of Feature 01, measuring ca. 4.5 m long, ca. 0.7-1 m wide, and ca. 0.2 m in relative height. Here again, undressed limestone cobbles were arranged in stretcher bonds to form a pair of outer walls, and smaller rubble was compacted between the two. No artifacts were recovered.

Feature 03 and 04, located ca. 12 m and 20 m SSE of BC-02 respectively, were small stone concentrations ca. 1.5 m in diameter. Numerous small rubbles were filled up inside a cobble circle, but no artifacts were included. Similar features have been confirmed at BC-09 of Rujum Hedaja 1, for example.

Rujum Hedaja 4

This cairn field lies on a flat top of an isolated limestone hill ca. 1 km north of Rujum Hedaja 1 and consists only of two cairns and five features. Of these, BC-02 and Feature 05 were briefly examined by means of a 2 m wide trench.

BC-02

This small cairn, ca. 10 m in diameter and ca. 1 m in relative height, occupied the eastern edge of the cairn field. A semi-rectangular cist was found under the cobble mound fringed with large boulders (Fig. 13). It was constructed by means of digging through a limestone bedrock layer, measuring ca. 1.5 m by ca. 1 m in floor size and ca. 0.8 m in floor depth. Here again, like BC-14 of Rujum Hedaja 1, a pair of corbelling walls covered the cist. The disturbed mound and cist yielded a handful of fine buff ware sherds, several flint artifacts, a dozen faience and snail beads, and a few bronze fragments (Fig. 14). In addition, a certain number of human skeletal remains including skull fragments were recovered at the cist base.

Feature 05

Feature 05 was located ca. 10 m south of BC-01. It was an elongated feature, measuring ca. 24 m long, ca. 1.5 m wide, and up to ca. 0.5 m in preserved height. This unique feature can be regarded as a typical example of a two-rowed cobble wall with small rubble being compacted in between (Fig. 15). A pair of large upright boulders capped both ends, thereby forming a sharply defined profile rarely found at other examples. Incidentally, all of the other four features were stone concentrations fringed with limestone cobbles. As repeatedly noted, the combination of a cairn and such small features is a common trait to Bishri cairns.

Summary

The series of soundings brought about a few significant results. To begin with, it has provided another key to the dating of the Hedaja cairn field. The occurrence of a distinctive pot from BC-14 of Rujum Hedaja 1 seems to support our previous view that the site falls within the time range from the end of EB to the beginning of MB. Nevertheless, evidence is far from sufficient and the final conclusion must await further research.

The internal structure of the Hedaja cairn field has also come into sight. It is now evident that Rujum Hedaja 1 consists of two lines of cairns: the southern group starting with BC-10 to the west and ending with BC-01 to the east, and the northern group developed south- or westward from BC-14 to BC-11. In light of the incorporation of the T-shaped cist, BC-13 of the northern group can be regarded as an equivalent of BC-10 (or Phase I) of the southern group of the same cairn field. BC-14 (and BC-02 of Rujum Hedaja 4), both characterized by a subterranean corbelling cist, may represent an

earlier phase (Phase 0). BC-12 and BC-11, on the other hand, probably belong to Phase 2 and 3 respectively in view of their simple internal structure. Likewise, the two cairns of Rujum Hedaja 3 can be assigned to Phase 2 of the techno-typological sequence of Rujum Hedaja 1.

Seeing that these lines of cairns developed separately yet partly in parallel with each other, it is conceivable that they represent an individual lineage or clan of nomadic tribe(s) who migrated across the Bishri Mountains in the Bronze Age. This challenging perspective, if further evidenced, would enable us to make an in-depth discussion on the social structure of the Bronze Age pastoral nomads. The next field season, scheduled in March of 2009, is intended to test it in a broader context.

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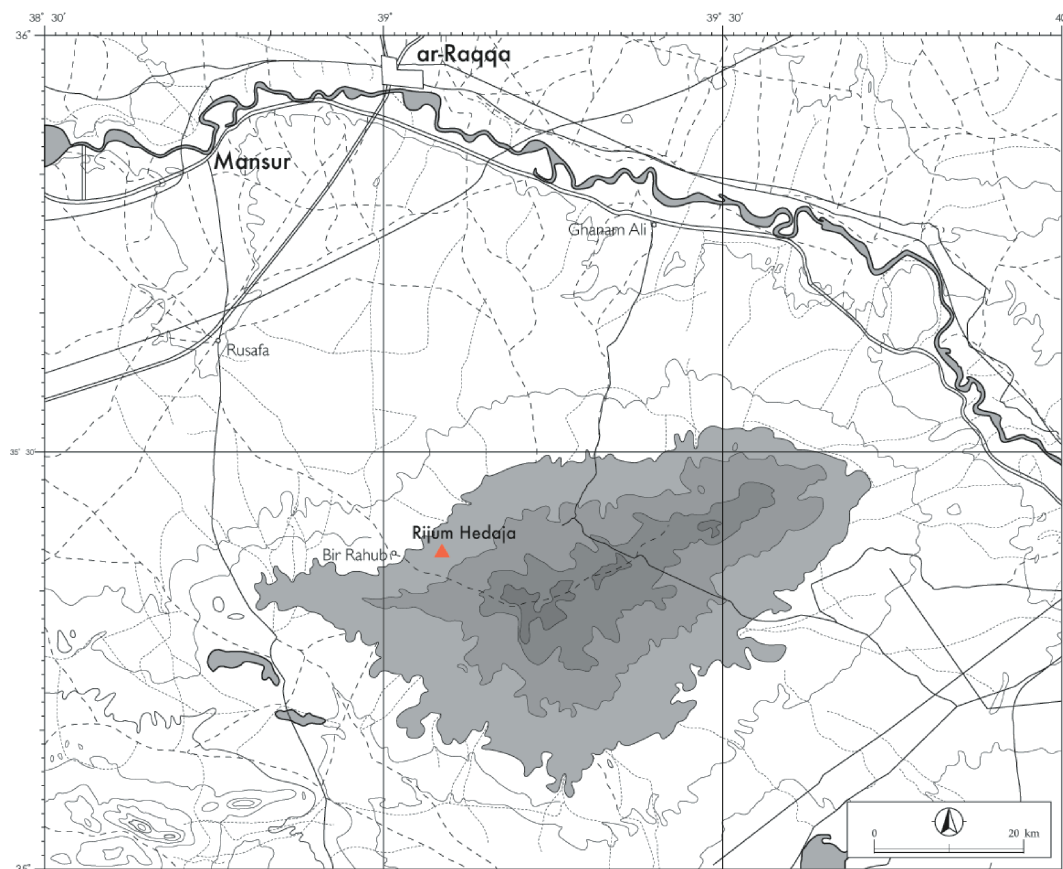


Fig. 1 The area map

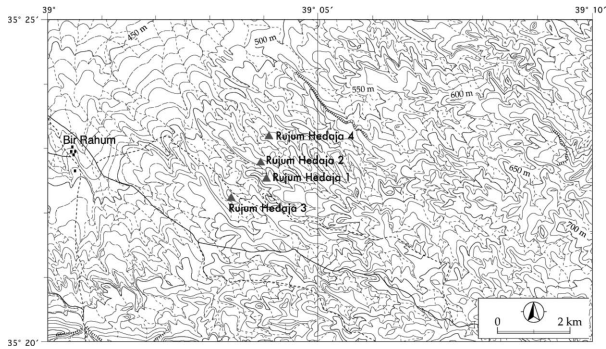


Fig. 2 The location of the Hedaja Cairn Fields

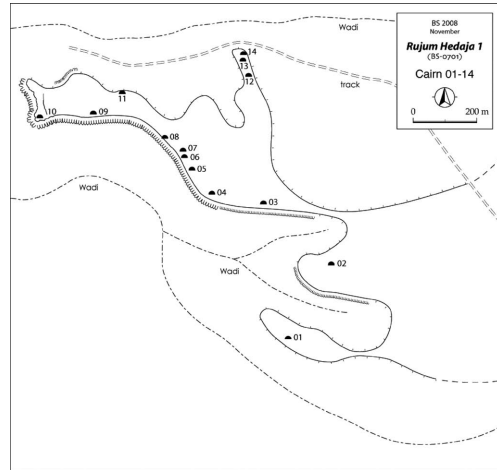


Fig. 3 The site map of Rujum Hedaja 1

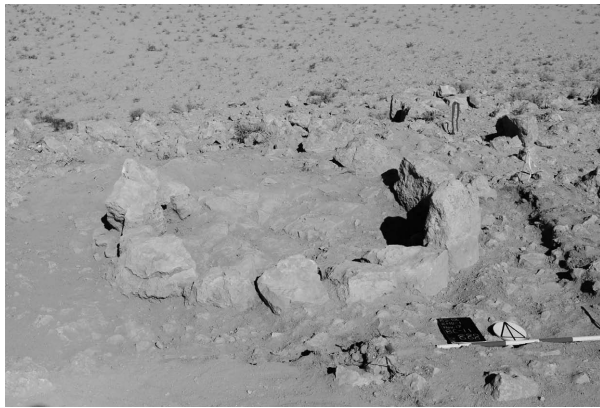


Fig. 4 BC-11 of Rujum Hedaja 1 (from S)

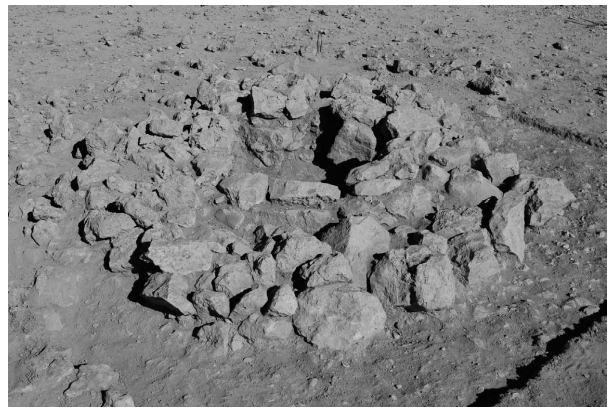


Fig. 5 BC-12 of Rujum Hedaja 1 (from SW)



Fig. 6 BC-13 of Rujum Hedaja 1 (from SE)



Fig. 7 A close-up view of the T-shaped cist of BC-13 (from SW)



Fig. 8 BC-14 of Rujum Hedaja 1 (from S)



Fig. 9 A short-necked jar from BC-14



Fig. 10 Various adornments from BC-14

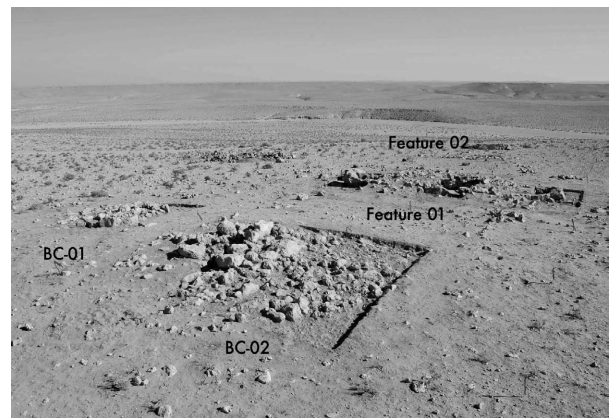


Fig. 11 A general view of Rujum Hedaja 3 (from SW)



Fig. 12 Feature 01 at Rujum Hedaja 3 (from SW)

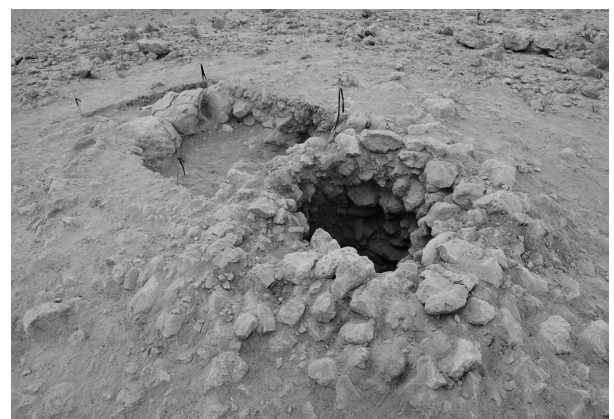


Fig. 13 BC-02 of Rujum Hedaja 4 (from NE)



Fig. 14 Small finds from BC-02

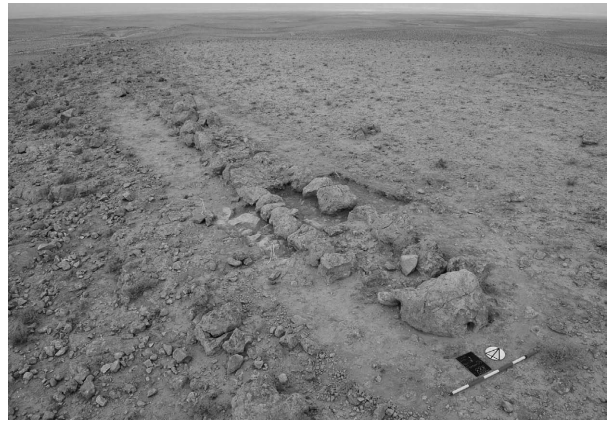


Fig. 15 Feature 05 of Rujum Hedaja 4 (from SE)

تقرير موسم العمل السابع للبحث الأثري للبعثة السورية اليابانية المشتركة العاملة في منطقة البشري

بدأ موسم العمل السابع للبعثة الأثرية السورية اليابانية المشتركة العاملة في منطقة البشري بتاريخ العاشر من تشرين الأول لعام 2008 وانتهى في الثلاثون من تشرين الثاني لعام 2008 وفي البداية نود أن نتقدم بخالص امتناننا وشكرنا للدكتور بسام جاموس المدير العام للآثار والمتاحف في سورية , والدكتور ميشيل مقدسي مدير التنقيب والبحث الأثري في المديرية العامة للآثار والمتاحف في سورية لما قدماه من دعم في سبيل إنجاح هذا الموسم السابع من البحث . وقد تشكلت البعثة في هذا الموسم السابع للبحث لكلا الجانبين من الأعضاء التالية أسماؤهم :

الجانب السوري : احمد سلطان (مديرا) محمد جاجان , عايد العيسى .
الجانب الياباني : كاتسوهيكو اونوما (مديرا) تسونوري هاسيكاوا , شي اكاشي , هيروتوشي نوموتو , شوغو كومي , كينيشيرو تاكاو , ياسويوشي اوkada , يوشي تاكي , باناجيوتس توكماكيدس , سوميو فوجي , تاكارو اداتشي , كاي سوزوكي , يوشيهيكو ناكانو , لبنى عمر .
في موسم العمل هذا تم التركيز على ثمان من نقاط البحث الأساسية ضمن منطقة البشري وهي:

- 1- مسح مقابر عصر البرونز القديم المجاورة لتل غانم العلي .
- 2- تحديد خريطة شاملة لموقع تل حمادين .
- 3- بحث السمات التاريخية والثقافية للقرى المجاورة لتل غانم العلي .
- 4- دراسة موفولوجية للعظام الإنسانية من موقع رجوم حداجة .
- 5- استكمال أعمال السبر الاختباري لموقع تل غانم العلي
- 6- استكمال أعمال السبر الاختباري لموقع رجوم حداجة
- 7- دراسة العينات النباتية وبقايا المحاصيل من موقع تل غانم العلي .
- 8- دراسة العظام الحيوانية لتل غانم العلي .

اولا : مسح مقابر عصر البرونز القديم المجاورة لتل غانم العلي

(هيروتوشي نوموتو أستاذ في جامعة كوكوشيكان , طوكيو وشوغو كومي طالب دكتوراه جامعة وسيدة)

حيث تم مسح المقابر في منطقة وادي شبوط 3 ووادي شبوط 4 . وقد اظهر المسح المكثف لمقابر عصر البرونز القديم في هذه النقاط المذكورة تشكيل جديد عن نماذج وأشكال الدفن في هذه المنطقة المحيطة بتل غانم العلي وهو نمط المقابر الجماعية .

ثانيا : تحديد خريطة شاملة لموقع تل حمادين

(ياسوسوشي اوkada أستاذ في جامعة كوكوشيكان , طوكيو ويوشي تاكي طالب دكتوراه باناجيوتس توكماكيدس)

حيث يقع تل حمادين على طريق الرقة دير الزور وبجانب قرية الجبلي حيث يتمركز على الجهة اليمنى لنهر الفرات ويبعد حوالي 7 كم إلى الغرب من تل غانم العلي , حيث تبين من خلال الكسر الفخارية التي جمعت من سطح التل انه يعود تاريخ التل إلى فترة عصر البرونز المبكر أي نفس التاريخ لتل غانم العلي , حيث تم تحديد خريطة أثرية للتل وذلك بتحديد أكثر من ألف نقطة مساحية وذلك تمهيدا للأعمال الأثرية التي تهدف إلى توضيح أن مجتمعات دول المدن زراعية الأساس في منطقة حوض الفرات الأوسط .

ثالثا : دراسة السمات التاريخية والثقافية للقرى المجاورة لتل غانم العلي :

(كينيشيرو تاكاو طالب دكتوراه)

وقد اظهر هذا البحث أن هناك ارتباط عشائري كبير وواضح في هذه المنطقة التي تحيط بتل

غانم العلي إذ أن كل المجتمعات الحالية المحيطة بتل غانم العلي تعمل بالزراعة ورعي المواشي وتبين ذلك من خلال البحث في أكثر من تسع قرى مجاورة لتل غانم العلي .

رابعاً : دراسة مورفولوجية للعظام الإنسانية من تل غانم العلي

خامساً : استكمال اعمال السبر في تل غانم العلي

(تسونوري هاسيكواوا طالب دكتوراه)

فقد أظهرت نتائج الاسبار التي تمت في المربع 2 المتوضعة على الحافة الشمالية من تل غانم العلي أربع سويات أثرية امتدت من الأعلى للأسفل , حيث انه حتى نهاية هذا الموسم لم يتم التوصل إلى قاعدة التل. ولذلك فإنه من الصعب جدا إعطاء تاريخ دقيق لكل سوية من هذه السويات حيث انه ما زالت اعمال تصنيف ودراسة الفخار المستخرج من هذه السويات قيد الدراسة. وقد ظهرت الأساسات الحجرية التي امتدت باتجاه الشمال والتي تبدو أنها منطقة السكن الأصلي لسكان تل غانم العلي القدماء في عصر البرونز القديم حيث استخدمت كمساكن امتدت لجهة الشمال من التل , وقد أظهرت أيضا اعمال السبر أن هذه المنطقة من تل غانم العلي تمتد إلى الشمال من منطقة السبر 2 حيث لم يتم العمل بها لهذا الموسم كون هذه المنطقة مستخدمة كطريق لأهالي القرى المجاورة للتل .

سادساً : استكمال اعمال السبر لموقع رجوم حداجة :

(سوميو فوجي , أستاذ في جامعة كانازاوا , طوكيو وكاي سوزوكي طالبة ماجستير)

لقد قدمت مجموعة الاسبار الاختيارية التي أجريت في موقع رجوم حداجة مفتاح جديد لتأريخ الرجوم الموجودة في منطقة رجوم حداجة في جبل البشري . ففي هذه الموسم تم اكتشاف كوب فخاري مميز من المنطقة BC14 المتمركزة في رجوم حداجة 1 . وهذا الاكتشاف يدعم فكرتنا السابقة بأن هذا الموقع يؤرخ لفترة زمنية طويلة امتدت من نهاية عصر البرونز القديم وحتى بداية عصر البرونز الوسيط .

سابعاً : دراسة العينات النباتية وبقايا المحاصيل من موقع غانم العلي :

(شي اكاشي , طالبة دكتوراه جامعة واسيدة في طوكيو)

حيث جمعت عينات ترابية من سويات مختلفة في المربع 2 من تل غانم العلي أثناء اعمال السبر الاختباري لهذا الموسم حيث ظهرت النباتات المتفحم بشكل كثيف ضمن هذه العينات , إذ تم جمع 35 عينة ترابية من هذه المنطقة لإجراء دراسة تحليلية لهذه العينات بهدف معرفة نوع النبات المستخدم لسكان موقع تل غانم العلي القدماء , وقد كان معظم هذه العينات تحتوي على مواد متفحمة , حيث لوحظ بعض الشعير بشكل واضح , بالإضافة إلى احتوائها على نبات غير واضح حتى الآن .

مدير الجانب السوري
احمد سلطان

مدير الجانب الياباني
كاتسوهيكو اونوما

『ラーフィダーン』編集方針

本誌は学術の進展に寄与するため、所外の投稿希望者にも広く誌面を開放しています。投稿資格は問いません。年1回の発行を原則とし、原稿の採否と掲載方法については編集委員会が決定します。

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1. The manuscript should be typed on one side only of A-4 size paper. To be accompanied with the computer disk is strongly preferable.
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9. As a rule, the first proofreading shall be done by the original author.

編集後記 (editorial postscript)

This year *Al-Rāfidān* has attained its 30th volume. On this commemorative occasion, seven articles, compiled by Dr. Eveline J. van der Steen of the University of Liverpool, have been contributed to this journal. We are thus pleased with these welcome contributions dealing with ‘Ottoman and Mandate Archaeology’.

The Institute itself is three years older than the journal, and may be said to have come of age. In this year, Professor Ken Matsumoto is to be replaced as Director of the Institute by Professor Dr. Yasuyoshi Okada. We are very grateful to Professor Matsumoto, who contributed his efforts to the prosperity of the Institute despite the Iraq’s awkward situation hindering the resumption of field work. We now expect that the new Director, Professor Dr. Okada, will lead us to the Institute’s further prosperity.

Profoundly we wish for lasting peace in Iraq, and further wish every happiness to the people of Iraq.

(Kazumi OGUCHI)

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