



Syria
Archéologie, art et histoire

91 | 2014
Varia

Rapport préliminaire et études céramologiques sur les campagnes de fouilles 2009 et 2010 à Tell ‘Acharneh, vallée du Ghab, Syrie

Michel Fortin, Lisa Cooper et Marie-Claude Boileau



Édition électronique

URL : <http://journals.openedition.org/syria/2589>
DOI : 10.4000/syria.2589
ISSN : 2076-8435

Éditeur

IFPO - Institut français du Proche-Orient

Édition imprimée

Date de publication : 1 juin 2014
Pagination : 173-220
ISBN : 9782351597149
ISSN : 0039-7946

Référence électronique

Michel Fortin, Lisa Cooper et Marie-Claude Boileau, « Rapport préliminaire et études céramologiques sur les campagnes de fouilles 2009 et 2010 à Tell ‘Acharneh, vallée du Ghab, Syrie », *Syria* [En ligne], 91 | 2014, mis en ligne le 01 juillet 2016, consulté le 04 mai 2019. URL : <http://journals.openedition.org/syria/2589> ; DOI : 10.4000/syria.2589

RAPPORT PRÉLIMINAIRE ET ÉTUDES CÉRAMOLOGIQUES SUR LES CAMPAGNES DE FOUILLES 2009 ET 2010 À TELL 'ACHARNEH, VALLÉE DU GHAB, SYRIE

Michel FORTIN

*Professeur titulaire d'archéologie orientale à l'Université Laval, Québec, Canada,
et directeur de la mission canadienne à Tell 'Acharneh (anc. Tunip ?)*

Lisa COOPER

*Associate Professor of Near Eastern Archaeology, University of British Columbia, Vancouver, Canada,
and Assistant Director of the Canadian Excavations at Tell 'Acharneh*

Marie-Claude BOILEAU

*Postdoctoral research associate in archaeological ceramics at the University of Pennsylvania Museum
of Archaeology and Anthropology*

Résumé – Présentation sommaire des résultats obtenus lors des deux dernières campagnes de fouilles (2009 et 2010) de la mission canadienne sur le site de Tell 'Acharneh, dans la vallée du Ghab en Syrie. Après une succincte description stratigraphique des vestiges architecturaux mis au jour dans les différents niveaux dégagés au cours de ces deux campagnes, suit une analyse typologique de la céramique recueillie dans les niveaux des âges du Bronze et du Fer, ainsi qu'une analyse pétrographique de tessons datés de l'âge du Bronze récent.

Mots-clés – Tell 'Acharneh, Vallée de l'Oronte, Âge du Bronze récent, Âge du Fer, Rapport de fouilles, études céramologiques

Abstract – Presented here is a summary of the results obtained from the last two seasons of excavations in 2009 and 2010 by the Canadian mission at the site of Tell 'Acharneh in the Ghab Valley, Syria. A succinct, updated stratigraphic description is made of the architectural remains associated with the different levels excavated over the course of the two campaigns, followed by a typological discussion of the pottery collected in the Bronze and Iron Age levels and a petrographic analysis of the Late Bronze Age pottery.

Keywords – Tell 'Acharneh, Orontes valley, Late Bronze Age, Iron Age, Excavations report, Ceramic studies

ملخص – يقدم المقال عرضاً خلاصاً للناتج التي تم الحصول عليها خلال حملتي الحفريات الأخيرتين المنزلتين في سنتي ٢٠٠٩ و ٢٠١٠ والتابعتين للبعثة الكندية العاملة بموقع "تل العشارنة" في منطقة "سهل الغاب" بسوريا. يبدأ المقال بوصف طبقي موجز للآثار المكتشفة خلال مختلف المستويات والمراحل التي تسم الحملتين المذكورتين. يتبع هذا الوصف تحليل تصنيفي لقطع الخزف التي تم جمعها على مستوى العصور البرونزية والحديدية. وكذلك تحليل صخري لكسرات فخارية تعود إلى العصر البرونزي المتأخر.

كلمات محورية – تل العشارنة. سهل الأورنت. العصر البرونزي المتأخر. العصر الحديدي. تقرير الحفريات. دراسات خزفية

Nous remercions le Conseil de recherches en sciences humaines du Canada (410-2008-1121) qui a subventionné notre mission. Nous tenons aussi à remercier la Direction Générale des Antiquités et des Musées de Syrie pour la permission qui nous a été accordée de fouiller ce site si important de la vallée de l'Oronte. Lisa Cooper would like to gratefully acknowledge the assistance of Christopher Cvar and Alexandra Harvey, two students from the University of British Columbia, who prepared the digital drawings of the ceramic vessels from the 2009 and 2010 seasons in this report.

DESCRIPTION STRATIGRAPHIQUE ¹

La mission canadienne à Tell 'Acharneh, dans le bassin du Ghab, en Syrie, a récemment réalisé deux campagnes de fouilles : une première, à l'été 2009, qui n'a duré que trois semaines (27 juin-16 juillet), et une seconde, au printemps 2010, qui s'est prolongée sur une période de six semaines (22 mai-28 juin) ². La reprise des fouilles à Tell 'Acharneh par notre mission, après une interruption de quelques années afin de publier les résultats obtenus et entreprendre une prospection géo-archéologique de la moyenne vallée de l'Oronte en collaboration avec la DGAM ³, avait pour but de reconstituer la chrono-stratigraphie complète du site que nous avons vainement tenté de réaliser lors de plusieurs précédentes campagnes en fouillant en divers endroits du site ⁴.

Nous avons choisi de revenir vers le flanc méridional du tell principal où nous avons déjà ouvert, dès notre première intervention en 1998, une série de sondages qui nous avaient révélé une stratigraphie intéressante mais non continue ⁵. Depuis, le *wadi* qui coule tout le long du versant s'est en effet considérablement enfoncé dans le tell à la suite d'une série d'hivers très pluvieux, révélant ainsi plusieurs couches stratigraphiques bien visibles dans ses parois abruptes.

En 2009, une tranchée (5 [NS] x 2,5 m [EO]) fut pratiquée dans la partie supérieure du ravin (**fig. 1**) : *WO1* (*Wadi Operation*) ; nous avons atteint 5 m de profondeur en moyenne (**fig. 2**) ⁶.



Figure 1. Vue générale du flanc méridional du tell principal de 'Acharneh montrant l'emplacement de la tranchée WO1 ouverte en 2009 et continuée en 2010, dans la partie supérieure du wadi par lequel s'écoulent les eaux de pluie qui tombent à la surface du tell principal © M. Fortin.

1. Par Michel FORTIN.

2. En 2009, l'équipe n'était composée que de son directeur, M. Fortin (Université de Laval, Québec), qui supervisait la dizaine d'ouvriers sur le terrain, et de la céramologue de la mission, L. Cooper (University of British Columbia, Vancouver). En 2010, le directeur de la mission était secondé sur le chantier par deux étudiants de l'Université de Laval, Espartaco Carrera (doctorat) et Sarah Lambert (maîtrise) pour l'aider à superviser une vingtaine d'ouvriers ; la co-directrice de la mission, L. Cooper et M.-Cl. Boileau (University of Pennsylvania, Philadelphie), céramologue, complétaient l'équipe de chercheurs. Une troisième campagne devait être réalisée au printemps 2011 mais fut annulée. Nous souhaitons attendre la fin de cette troisième campagne pour rédiger notre rapport de fouilles, étant donné l'importance stratigraphique des entrepôts découverts à la fin de la campagne de 2010 : nous voulions en savoir plus. Comme cela devra attendre, nous nous sommes résolus à produire ce rapport que nous aurions voulu moins préliminaire.

3. FORTIN *et al.* 2005 ; FORTIN 2007a, b ; FORTIN & COOPER 2014.

4. FORTIN 2006a, b, c.

5. FORTIN 2006a.

6. FORTIN & COOPER 2011.



Figure 2. Tranchée WO1 à la fin de la campagne de 2009, vue vers le nord (en bas) et vers l'ouest (en haut) ; les niveaux stratigraphiques y sont bien visibles en paroi, notamment le niveau 5, sous le sol en cailloutis (niveau 3), caractérisé par la présence de briques rouges effritées suite à un violent incendie, qui recouvre le niveau 6 marqué par un imposant mur de soutènement en galets © M. Fortin.



En 2010, encouragés par les résultats très prometteurs de la campagne de l'année précédente, nous avons ouvert un carré de 10 x 10 m au nord du sondage WO1 de 2009. En cours de fouilles, nous avons évacué l'accumulation de terre qui se trouvait à l'est de la tranchée WO1 de 2009, soit une superficie de 5 x 8 m, ce qui donna, au final, une tranchée 10 x 20 m (**fig. 9**). La profondeur atteinte varie considérablement selon les secteurs de la tranchée ; elle peut aller jusqu'à 6 m par endroits ⁷.

Au terme de nos campagnes de 2009 et 2010, nous estimons avoir identifié, dans ce secteur du tell principal de Tell 'Acharneh, 6 niveaux stratigraphiques bien distincts (**fig. 3**) ⁸.

7. FORTIN & COOPER 2012.

8. La présente séquence stratigraphique comporte de légères nuances par rapport à celle parue en 2012 dans la *Chronique archéologique en Syrie*, FORTIN & COOPER 2012, suite à notre campagne de 2010. Il va sans dire que la stratigraphie présentée ici prévaut sur celle parue en 2012. Il est clair aussi que la stratigraphie décrite dans le rapport publié en 2011 dans la *Chronique archéologique en Syrie*, FORTIN & COOPER 2011, faisant état de nos observations à l'issue de notre campagne de 2009, était très préliminaire et incomplète ; elle doit être revue et corrigée à la lumière de notre étude stratigraphique beaucoup plus à jour publiée ici.

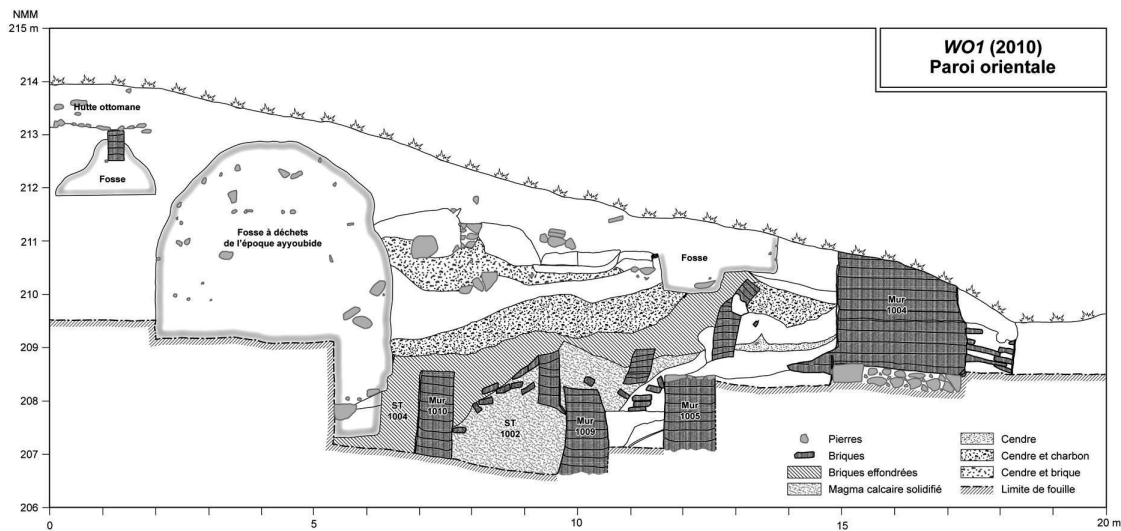


Figure 3. Dessin de la coupe stratigraphique de la paroi orientale de WO1 montrant les différents niveaux d'occupation identifiés au cours de la campagne de 2010 © M. Fortin.

Niveau 1 : hutte de l'époque ottomane (1516-1916)

Juste quelques centimètres sous la surface de l'angle nord-est de la tranchée *WO1* sont apparus les restes d'une portion (2,20 x 2 m) d'une modeste hutte ottomane, au sol en pierres plates et aux fondations de murs en galets (**fig. 4**).

Nous avons daté ce niveau de cette période en raison, essentiellement, de la présence d'une pipe en terre cuite, un *chibouque* dont le type est répandu dans l'ensemble du Proche-Orient de la fin du XVII^e s. jusqu'au début du XX^e s. de n. ère ⁹.



Figure 4. Hutte ottomane (niveau 1) découverte en 2010 à quelques centimètres sous la surface, dans l'angle NE de la tranchée WO1 © M. Fortin.

Niveau 2 : fosse à déchets islamique-ayyoubide (XI^e-XII^e s. de n. ère)

Immédiatement à côté de la hutte, au sud, nous avons commencé à vider une fosse à déchets (**fig. 5**) aux dimensions très impressionnantes puisqu'elle a une profondeur de 5,5 m (nous avons atteint son fond) et une largeur de 4,5 m.

9. BOUZIGARD & SAIDEL 2012.



Figure 5. Fosse à déchets (niveau 2) de la période ayyoubide visible dans la paroi orientale de la tranchée WO1 (vue générale à la fin de la campagne de 2010). La fosse à déchets a été creusée, entre autres, dans les couches du niveau 5 du Bronze récent caractérisé par les vestiges de salles d'entreposage recouvertes d'une épaisse couche de couleur rouge, formée d'effondrements de briques effritées lors d'un incendie © M. Fortin.

Elle est bien visible dans la paroi orientale de la tranchée WO1 (**fig. 3**) de laquelle elle s'éloigne d'un peu plus de 2 m.

Elle a été creusée dans une épaisse accumulation de débris qui résulteraient, selon toute vraisemblance, de la destruction du site causée par les troupes de Sargon II en 720 av. J.-C. (*infra*, niveau 3). Le site ayant été abandonné à la suite de cette destruction, de la terre d'érosion s'est naturellement déposée, au fil des siècles, sur les ruines des bâtiments de l'âge du Fer II (900-720 av. J.-C.), créant ainsi une importante accumulation. Le creusement de la fosse a également atteint des couches du Bronze récent caractérisées par la présence de débris granuleux de brique de couleur rouge vif (*infra*, niveau 5).

La datation de la fosse a été facilement établie à partir de fragments de céramique de la période ayyoubide¹⁰ qui en ont été retirés, de même que certains artefacts significatifs comme des lampes : 23 exemplaires recueillis à ce jour (**fig. 6**).

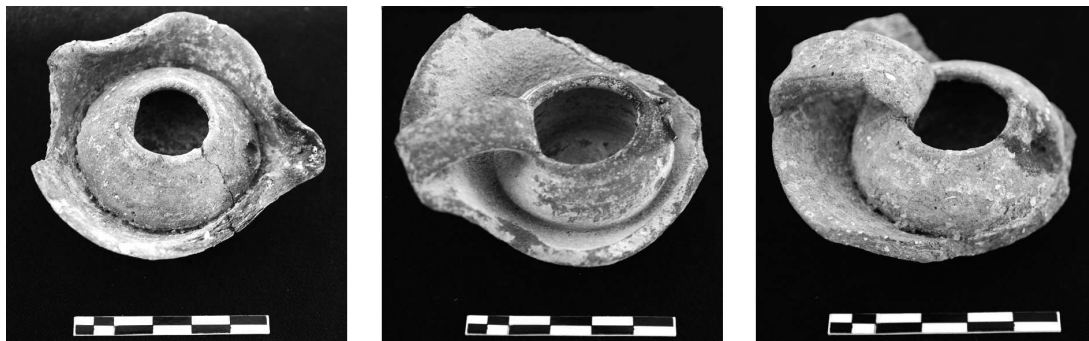


Figure 6. Quelques exemplaires des nombreuses lampes en terre cuite retirées de l'immense fosse à déchets de la période ayyoubide (niveau 2) © M. Fortin.

Cette fosse témoigne, fort vraisemblablement, de la brève occupation du site par les troupes franques de Tancrede vers l'an 1111 de notre ère, que nous avons déjà bien documentée lors d'opérations antérieures¹¹.

10. L'étude en a été confiée à Ibrahim Shaddoud, du musée de Hama.

11. FORTIN 2006a, p. 83-88 et 99-101 ; FORTIN 2006b, p. 109-114 ; FORTIN 2006c, p. 121-125.

Niveau 3 : structure au sol en cailloutis et tessons de l'âge du Fer IIB (900-720 av. J.-C.)

Le premier niveau d'occupation, distinctement identifiable, prend la forme d'une grande surface en cailloutis et tessons de céramique tenus en place par une matière marneuse blanche (**fig. 7**, pour une vue rapprochée de ce cailloutis).



Figure 7. Petite portion dégagée en 2009 du sol en cailloutis et tessons de céramique du Fer II (niveau 3), se prolongeant vers l'est dans une paroi du ravin (ce qui sera dégagé en 2010) et passant juste au-dessus d'une couche de destruction (niveau 5) caractérisée par une accumulation importante de briques rouges désagrégées par un incendie © M. Fortin.

À l'origine, ce cailloutis devait être recouvert d'un tapis tressé dont les empreintes des fibres végétales étaient encore bien visibles sur les mottes de terre qui le recouvraient (**fig. 8**).



Figure 8. Empreintes d'un tapis tressé en paille qui recouvrait à l'origine le sol en cailloux et tessons de céramique du Fer II (niveau 3) ; si les fibres n'ont pas survécu, leurs empreintes elles sont bien visibles sur les mottes de terre qui se trouvaient par-dessus ce sol (en bas). Vue prise en 2009 © M. Fortin.

Ce sol en cailloutis devait appartenir à un très grand édifice car il couvre une superficie d'environ 10 x (NS) x 6 m (EO) qui devait correspondre au sol d'une pièce spacieuse (ST 1001) délimitée, au nord et à l'est, par deux murs en moellons de pierre qui se rencontrent à angle droit (**fig. 9 et 10**) :

- un premier mur (M 1001), orienté NS (9,20 x 0,50 m) ; il est préservé sur deux, voire trois assises, sur une hauteur moyenne de 0,30 m ;
- un second mur (M 1002), orienté EO (6,60 x 0,45 m), est préservé jusqu'à trois assises par endroits, pour une hauteur moyenne de 0,35 m.



Figure 9. Sol en cailloutis et tessons de l'âge du Fer II (niveau 3), délimité par deux murs en moellons perpendiculaires ; vues prises en 2010 vers le NE (en bas) et vers le SO (en haut) © M. Fortin.

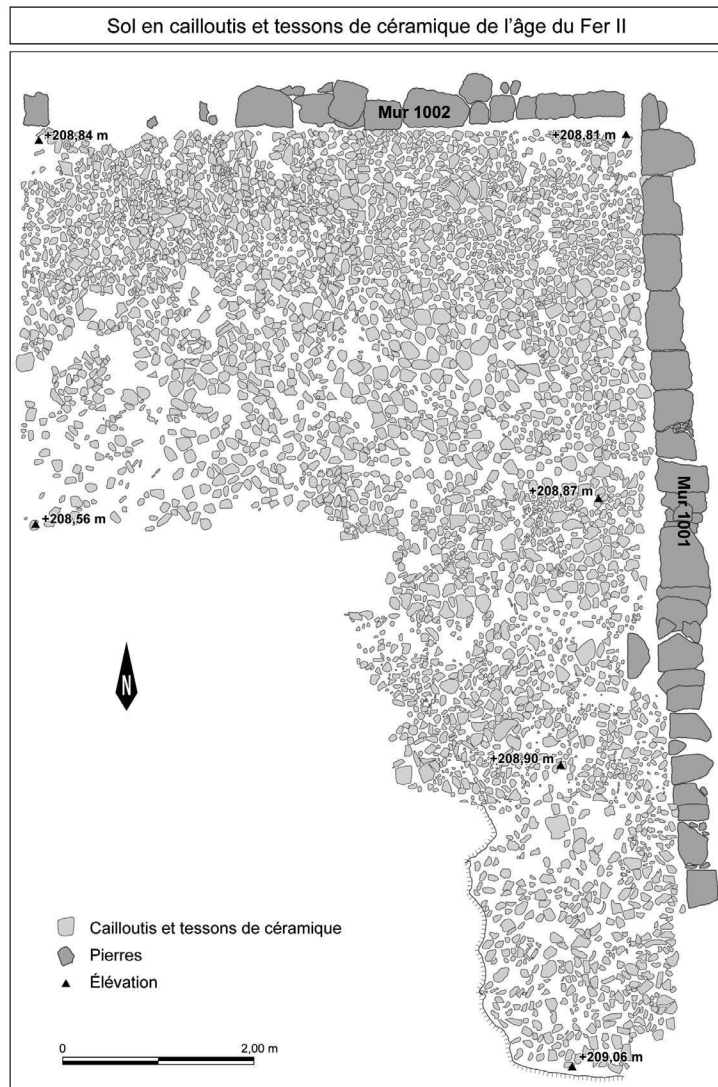


Figure 10. Dessin du sol en cailloutis et tessons de l'âge du Fer II (niveau 3), délimité par deux murs en moellons qui se rencontrent à angle droit pour former une pièce (ST 1001) © M. Fortin.

La fonction de cette pièce au sol en cailloutis et fragments de céramique nous échappe toujours. Il nous rappelle un sol semblable contemporain, trouvé lors de précédentes campagnes (2001 et 2002) dans un autre secteur (TE 1) du tell principal de 'Acharneh, qui se trouve à environ 70 m de là et à une altitude supérieure d'un peu plus de 6 m¹². Aucune relation structurelle entre les deux éléments architecturaux, pourtant contemporains, ne peut être établie. Il est permis de se demander si le tell principal de 'Acharneh n'était pas alors occupé, au moins en partie, en terrasse.

Les fragments de céramique insérés dans le sol en cailloutis — bols *red slipped/burnished*, *pithoi* ovoïdes, cratères au rebord évasé, marmites globulaires au rebord arrondi vers l'intérieur — datent de l'âge du Fer IIB (900-720 av. J.-C.), comme le rapport *infra* sur la céramique qui suit l'illustre bien.

D'après la datation du matériel céramique, ce bâtiment de bonnes dimensions aurait été construit durant la période qui a précédé l'assaut sur Tell 'Acharneh des troupes de Sargon II en 720 av. J.-C., tel qu'il est rapporté sur la fameuse stèle découverte fortuitement en 1924 à proximité du site, que ce roi avait fait dresser à proximité pour commémorer sa victoire sur une coalition de villes araméennes¹³. Cette coalition devait comprendre Tell 'Acharneh puisque le noyau du royaume araméen du Hamath était formé par quelques villes situées le long de l'Oronte, dont Tell 'Acharneh faisait partie¹⁴. Faudrait-il donc voir en cette structure au sol en cailloutis un ouvrage architectural destiné à contribuer à la défense de la ville, d'autant qu'il est situé en limite — d'érosion — du tell principal ? Le cas échéant, le mur d'enceinte — que certains auteurs ont cru voir sur les bandeaux en métal appliqués sur une paire de portes monumentales en cèdre du palais de Salmanazar III (858-824 av. J.-C.) à Balawat¹⁵ — qui devait défendre la partie haute de la ville aurait complètement disparu, emporté par l'érosion, selon toute vraisemblance.

Niveau 4 : remblais et terres d'érosion de l'âge du Fer I-IIA (1200-900 av. J.-C.)

Nos observations sur le terrain nous ont permis de conclure que cette structure (ST 1001) de l'âge du Fer IIB (niveau 3), caractérisée par un sol en cailloutis et tessons, a clairement été creusée dans des couches de remblais et de terres d'érosion¹⁶ — d'après la finesse de la texture des terres et l'épandage en apparence naturel des couches. Ces couches de débris, antérieures donc à la construction du niveau 3, ont cependant été retrouvées, en stratigraphie, à une altitude supérieure, mais non inférieure, dans les secteurs limitrophes de la structure (ST 1001) en question du niveau 3, notamment au nord de celle-ci (**fig. 11**).

12. FORTIN 2006b, p. 114-116 ; FORTIN 2006c, p. 125-133.

13. THUREAU-DANGIN 1933 ; FRAME 2006.

14. DION 1997, p. 160-161 ; DION 2006.

15. SADER 1987, p. 225, n. 98 ; HAWKINS 1982, p. 435 ; MARCUS 1987, pl. XVIa. Bien que cette identification reste hypothétique en l'absence d'inscriptions selon d'autres auteurs (JACOBY 1991). Quoi qu'il en soit, la cité fortifiée qui était érigée à Tell 'Acharneh au moment des incursions militaires assyriennes en Syrie occidentale devait ressembler à celles qui sont illustrées, en bordure d'un cours d'eau, sur le bandeau IX des portes de Balawat, car il relate précisément les importantes campagnes de Salmanazar III dans le Hamath, entre 853 et 838, et en particulier sa victoire sur la coalition araméenne à Qarqar en 853 (MARCUS 1987, p. 79-84, pl. XVIIIb). Les représentations de villes fortifiées que l'on peut observer sur le bandeau P de ces mêmes portes offrent aussi de bons éléments comparatifs car elles auraient également été situées dans la province du Hamath (READE 1979, p. 71 ; MARCUS 1987, p. 79).

16. On peut supposer que le site a été vraisemblablement abandonné pendant un certain temps après la violente destruction qui a marqué la fin de l'occupation du niveau 4 daté de l'âge du Bronze récent (*infra*).



Figure 11. Derrière la structure (ST 1001) au sol en cailloutis et tessons de l'âge du Fer II (niveau 3) se trouve ici une portion de la couche de débris (Fer I ?) dans laquelle la structure (ST 1001) au sol en cailloutis et tessons du Fer II aurait été aménagée © M. Fortin.

L'étude de la céramique est venue confirmer nos observations stratigraphiques car elle a démontré que ces accumulations de terres de remblais et d'érosion contenaient effectivement des fragments de céramique représentatifs des âges du Fer I et IIA (1200-900 av. J.-C.) pour cette région du Levant (voir la contribution de L. Cooper, *infra*). Cependant, aucun vestige architectural ne fut découvert dans ce niveau qui a laissé bien peu de traces, il faut le reconnaître.

Or il est surprenant de ne pas avoir retrouvé plus de vestiges des âges du Fer I et IIA à Tell 'Acharneh, sachant que cette ville a vraisemblablement fait partie du royaume Louvite de Palistin/Walistin qui s'étendait, vers le sud, jusque dans la région, si on se fie aux inscriptions louvites trouvées à proximité de Tell 'Acharneh, à Meharde-Sheizar¹⁷.

Niveau 5 : structures d'entreposage du Bronze récent (1500-1350 av. J.-C.)¹⁸/couche de débris rougeâtre

Dès la campagne de 2009, nous avons observé que le sol en cailloux et fragments de céramique de l'âge du Fer II (niveau 3) avait été posé sur une épaisse (1,20 m) couche formée de débris granuleux de briques rouges et de lentilles de terre grisâtre (**fig. 2, 7 et 19**), manifestement des vestiges de la destruction du bâtiment qui occupait le niveau situé juste sous le sol en cailloutis et tessons¹⁹.

Puis, en 2010, immédiatement sous le sol en cailloutis et tessons (niveau 3) sont apparus, cette fois, des murs en briques d'un rouge éclatant, flamboyant : elles ont été fortement, même excessivement pourrions-nous dire, cuites par un violent incendie, à tel point que plusieurs d'entre elles ont été réduites en poudre, entièrement pulvérisées, et par conséquent impossibles à dégager en entier bien que visibles en coupe, dans la paroi de la tranchée *WOI* (**fig. 3, 5 et 12**).

17. HAWKINS 2009, p. 169-172, et 2011, p. 51-53.

18. D'après l'étude de la céramique (voir la contribution de L. COOPER *infra*) provenant de ce niveau, ce dernier n'aurait été occupé que durant les deux premières phases de l'âge du Bronze récent : I (c. 1500-1400 av. J.-C.) et IIA (1400-1355/1320 av. J.-C.).

19. Niveau que nous avons fautivement daté, à la fin de la campagne de 2009, du Fer I étant donné sa position stratigraphique — juste sous le sol en cailloutis et tessons du Fer II — et les rares tessons diagnostiques disponibles provenant d'une zone fouillée restreinte (FORTIN & COOPER 2013). Or l'examen approfondi de la céramique, à la suite à la campagne de 2010, a démontré que ce niveau est bel et bien à dater de l'âge du Bronze récent et que la céramique de l'âge du Fer I n'est qu'intrusive (*infra*).



Figure 12. Vue de la paroi orientale de la tranchée WO1 montrant clairement la couche de briques effondrées et effritées, d'un rouge très vif, recouvrant les pièces de stockage du niveau 5 datées du début de l'âge du Bronze récent. Dans l'une d'elles, on remarque une épaisse accumulation d'un magma calcaire bien solidifié résultant de la destruction par le feu de pièces de bois © M. Fortin.

À première vue, on serait porté à croire que le matériau d'un rouge très vif des briques résulte d'une excessive cuisson suite à un grand incendie qui a détruit tout le bâtiment comme la stratigraphie en donne l'impression, avec des pans de murs entiers effondrés de la superstructure des murs suivant un fort pendage de l'extérieur vers l'intérieur du bâtiment et recouverts, de surcroît, d'épaisses couches cendreuses provenant vraisemblablement des solives carbonisées de l'étage. Même si cette hypothèse est tentante, cette couleur rouge flamboyant, bien que rappelant d'un point de vue visuel les flammes d'un feu, est probablement davantage attribuable au type d'argile utilisée pour la fabrication des briques ; ce qui serait à vérifier au moyen d'analyses physico-chimiques du matériau. En outre, plusieurs parements de ces murs en briques rubéfiées étaient recouverts de concrétions blanchâtres que nous avons interprétées comme des reliquats d'enduits cuits au moment de l'incendie. Il se pourrait, toutefois, que ces concrétions résultent aussi de la cuisson du calcaire contenu dans l'argile des briques car il aurait suinté à la surface des briques sous l'action de la chaleur produite par l'incendie et se serait solidifié au contact des flammes au point de former par endroits des amas bien cimentés (**fig. 12**)²⁰. Enfin, nous n'avons observé aucune trace de poutres de bois carbonisées, ce qui n'est pas surprenant²¹. Aucun échantillon pour une datation au radiocarbone n'a été prélevé avant 2011, au moment de la fouille minutieuse des couches cendreuses recouvrant la couche de débris architecturaux.

Les briques rubéfiées de ces murs pouvaient être appareillées soit en boutisses pour certains murs de moindre épaisseur, soit en panneresses dans le cas de murs plus épais, construits à double cours de briques. Les briques ne semblent pas être posées sur un socle de pierres, quoique nous ne soyons pas certains d'avoir atteint la base des murs. Les différentes épaisseurs des murs sont fort vraisemblablement déterminées par leur rôle dans l'ensemble architectural — un mur porteur ou une simple cloison mitoyenne pour la partition d'un espace.

20. Communication orale de plusieurs collègues (J.-Cl. Margueron, P. de Miroschedji, J.-P. Thalmann) présents à une conférence donnée par M. Fortin le 7 juin 2012 à l'Institut d'art et d'archéologie de Paris. Voir THALMANN 2006, pl. 14, pour le site d'Arqa.

21. THALMANN 2006.

Ces murs de briques rubéfiées, disposés à angle droit les uns par rapport aux autres, délimitent une série de trois pièces manifestement destinées à l'entreposage à en juger par les grosses jarres (environ 1 m de hauteur) qu'elles contenaient encore :

– une première (ST 1002), 2,60 x 2,50 m, a en effet produit 13 grosses jarres, entières bien que fragmentaires, disposées sur trois rangées (**fig. 13 et 14**) ;

– une seconde (ST 1004), au nord de la première, aux dimensions inconnues car sa fouille n'a été qu'entamée, n'a révélé que l'ouverture de deux jarres toujours enfouies dans le sol au moment de quitter en fin de campagne (**fig. 15**) ;

– une troisième (ST 1003), à l'ouest de la première, aux dimensions également inconnues car son dégagement n'est pas fini, a donné, quant à elle, sept grosses jarres entières mais écrasées sur elles-mêmes (**fig. 16**)²².



Figure 13. Première pièce de stockage (ST 1002) du niveau 5, avec 13 jarres *in situ* typiques du début de l'âge du Bronze récent © M. Fortin.



Figure 14. Première pièce de stockage (ST 1002) une fois les 13 jarres retirées : l'ouverture d'autres jarres apparaissent. Cette pièce est délimitée au sud par le mur 1009 et au nord par le mur 1010 ; à l'ouest passe le mur 1011 alors que la limite de la pièce vers l'est n'a pas été atteinte © M. Fortin.

22. Comme elles ont été retrouvées en fin de campagne, en 2010, toutes les jarres entières, mais fragmentaires, qui se trouvaient dans les trois pièces de stockage de ce niveau 5 (Bronze récent), ont été mises en boîtes et entreposées dans une salle du hammam du palais Azem de Hama abritant le nouveau musée folklorique (l'ancien musée archéologique), en attendant d'être remontées l'année suivante...



Figure 15. Seconde pièce de stockage (ST 1004) du niveau 5, au nord de la première et du mur 1010, en partie dégagée seulement : des ouvertures de jarres apparaissent au sol © M. Fortin.



Figure 16. Troisième pièce de stockage (ST 1003) du niveau 5, à l'ouest de la première et du mur 1011, contenant 7 grandes jarres écrasées au sol, les unes sur les autres, au moment de leur découverte en 2010 © M. Fortin.

Les dimensions de ces pièces de stockage sont peu significatives pour l'instant car elles n'ont pas été dégagées en entier. En effet, toutes trois se continuent soit au-delà de la tranchée, soit dans des secteurs de la tranchée que nous n'avons pas eu le temps de fouiller puisque cette découverte s'est faite dans les derniers jours de la campagne ; nous devons en poursuivre le dégagement en 2011... L'absence de communication entre les différentes pièces, c'est-à-dire de portes aménagées dans les cloisons de briques, est aussi attribuable à l'exiguïté de la zone fouillée à ce jour car ces salles d'entreposage devaient être obligatoirement accessibles entre elles ou, à défaut, à partir de pièces adjacentes ou de couloirs qui restent à dégager à proximité.

Les sols de ces pièces de stockage n'ont pas été atteints non plus : ainsi, après l'enlèvement des jarres dans la première pièce mentionnée plus haut, des lèvres de jarres sont apparues, laissant supposer qu'une autre rangée de jarres se trouvaient en dessous. Mais cela reste à vérifier car si on avait entreposé des jarres vides en prévision d'un usage ultérieur, on se serait attendu à y trouver des jarres disposées à l'envers ! Surtout si elles étaient placées par-dessus d'autres jarres.

L'existence de ces trois pièces de stockage, de bonnes dimensions même si elles sont encore indéfinies, accolées les unes aux autres, donnent clairement l'impression d'appartenir à une plus grande structure destinée à l'entreposage. Étant donné les dimensions de l'édifice, on peut raisonnablement supposer qu'il avait un caractère public plutôt que domestique. Au Bronze récent, dans la vallée de l'Oronte, un bâtiment d'entreposage public est d'habitude associé à un édifice de type palatial, comme

il a été donné d'en trouver sur deux sites contemporains et voisins de Tell 'Acharneh : Hama²³ et Qatna²⁴.

Puisque nous faisons un rapprochement avec la *Salle des Jarres* du Palais de Qatna, il est tentant d'associer la destruction du niveau 5 de Tell 'Acharneh au même événement qui a entraîné la destruction du palais, à savoir la campagne militaire du roi hittite Suppiluliuma I^{er} que l'on date d'habitude aux alentours de 1350 av. J.-C.²⁵

Il devient alors significatif de mettre en relation la découverte des salles d'entreposage ayant appartenu à un édifice public avec celle, à la limite méridionale de la tranchée *WOI*, d'un très épais mur (2,35 m) de briques crues posées sur une fondation de gros cailloux en pierre (**fig. 17**) : mur 1004.



Figure 17. Mur de défense (mur 1004) de la ville de l'âge du Bronze récent constitué de plusieurs rangées de briques crues posées sur des fondations en pierres (en avant-plan) ? © M. Fortin.

En outre, une seconde fondation de pierres vient s'ajouter à la face externe de la première et semble former une sorte de bastion en saillie de 1,60 m. Étant donné la position de ce large mur en bordure du tell principal, nous sommes portés à y voir le mur de défense de la ville au début du Bronze récent car du matériel céramique de cette période a été découvert dans une couche d'occupation venant buter contre la base de ce mur (voir plus loin le rapport sur la céramique).

Niveau 6 : occupation de l'âge du Bronze moyen

Après l'enlèvement des jarres dans l'une des pièces d'entreposage (ST 1003), située à l'ouest de l'ensemble, nous avons rencontré l'ouverture d'une autre jarre, debout (**fig. 18**).

23. FUGMANN 1958, p. 119-121 — quoiqu'ici le fouilleur se contente de parler d'un bâtiment important, doté de magasins pour les jarres à provisions.

24. MESNIL DU BUISSON 1935, p. 95-96 — la *Salle des Jarres*, renommée salle G : NOVAK & PFÄLZNER 2000, p. 283-285, et 2001, p. 181-182 ; PFÄLZNER 2007, p. 46-47 ; voir aussi, sur le même site, les pièces de stockage du chantier T, GALLET & MAQDISSI 2010, p. 31-32 et 42, fig. 2b, et du chantier C : MAQDISSI 1996, p. 5-6 et 13, fig. 3 et 4.

25. PFÄLZNER 2007, p. 42.



Figure 18. Pièce de stockage ST 1003 du niveau 5 (Bronze récent) sous le sol de laquelle, dans un angle, une ouverture de jarre est apparue, laissant supposer l'existence d'un niveau inférieur (niveau 6) plus ancien (Bronze moyen) © M. Fortin.

Mais comme elle est entourée d'une couche de terre de couleur et de texture différentes de celles de la couche qui la recouvrait et qui formait, en quelque sorte, le sol de la salle de stockage, nous serions sans doute en présence d'une jarre appartenant à un niveau inférieur, plus ancien (Bronze moyen ?), qui reste à fouiller. Du moins à cet endroit.

En effet, stratigraphiquement, il devrait s'agir du même niveau que nous avons clairement identifié en 2009 (**fig. 2** et 19), situé immédiatement sous la couche de destruction rougeâtre (niveau 5) et séparé de cette dernière par une coupure horizontale très nette en stratigraphie qui laisse croire à un arasement ou un nivellement volontaire du secteur.



Figure 19. Couche de destruction rougeâtre (briques pulvérisées par un incendie — niveau 5) insérée entre un sol en cailloutis (niveau 3), au-dessus et, en dessous, un remblai formé de pans de murs en briques crues effondrés (niveau 6) ; état à la fin de la campagne de 2009 © M. Fortin.

Ce niveau 6, dans la partie de la tranchée *WO1* ouverte en 2009, est constitué de plusieurs éléments disparates (**fig. 2** et **20**) qui semblent en relation stratigraphique les uns avec les autres.

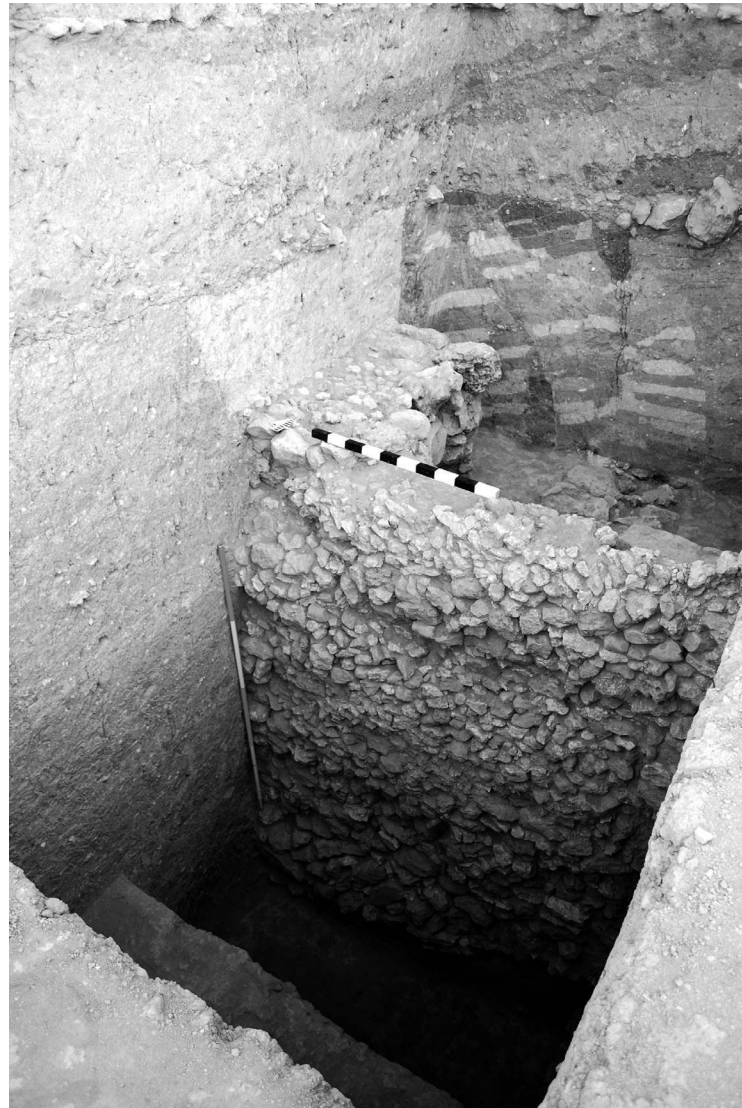


Figure 20. Mur de soutènement, en galets grossièrement taillés et assemblés sans mortier ni appareil, érigé contre une importante accumulation de débris de niveaux antérieurs (niveau 6) ; contre le parement sud de ce mur de soutènement a été minutieusement déposé un remblai formé de couches de terre compactes et homogènes ; état à la fin de la campagne de 2009 © M. Fortin.

Immédiatement sous la ligne d'arasement à laquelle il est fait allusion plus haut, se dressent, bien visibles en coupe, plusieurs pans de murs en briques crues, de couleur brune et blanche, renversés (**fig. 19**), au vu de l'inclinaison de plusieurs de ces briques, surtout celles qui se trouvent vers le sommet des murs originaux. Ces murs ont-ils été abattus dans le cadre d'une reconstruction de ce secteur ?

Il pourrait en être ainsi car on aurait appuyé, tout contre cet amoncellement hétéroclite de briques, une couche épaisse et massive de matière marneuse grise, sorte de revêtement d'1 m de largeur. Cet amas de marne grise, dont on n'a retrouvé qu'une petite portion le long de la paroi ouest de la tranchée de 2009 — car elle semble se poursuivre dans la paroi —, avait été posé sur une solide fondation de galets et, en bordure, de blocs en pierre un peu plus volumineux. En continuant la fouille, nous nous sommes rendu compte que cette fondation était imbriquée, à son extrémité méridionale, au sommet

d'un mur construit entièrement de galets. Nous l'avons dégagé, tout le long de son parement méridional uniquement, sur 3 m de hauteur ; son épaisseur, avoisinant les 50 cm, était formée de galets de différents calibres, très sommairement taillés, assemblés sans aucun appareillage ni mortier. De fait, lorsque l'on observe bien le parement qui a été dégagé, sa surface est inégale et montre des phases de construction évidentes délimitées par des enfoncements ; en outre, les galets vers sa base sont de plus grandes dimensions, quoique la base de ce mur n'ait pas été atteinte (**fig. 20**). Étant donné l'aspect inégal de la surface du parement mis au jour, nous sommes enclins à croire que ce mur était probablement un mur de soutènement, retenant une sorte de terrasse sur laquelle des bâtiments auraient pu être érigés. Cette thèse est renforcée par le fait que contre son parement méridional a été accumulé, juste après ou en même temps que sa construction, un remblai de plus de 4 m de hauteur, formé de terres homogènes compactes, déposées sans couches distinctes mais manifestement rapportées d'ailleurs (**fig. 20**). Il est évident que ce mur en galets n'était pas visible au moment de son existence mais qu'il était dissimulé derrière ce remblai, vraisemblablement accumulé en même temps que le mur de soutènement était monté. Non seulement le remblai recouvrait le mur en galets mais encore il venait buter contre la masse marneuse décrite plus haut qui reposait elle-même sur une partie du sommet du mur de soutènement. Ce phénomène s'observe bien sur la **fig. 20** ; le remblai est lui aussi arasé à la hauteur du sommet de la masse marneuse grise et ces trois éléments (remblai, masse marneuse grise et mur de soutènement) ont été mis en place lors d'une seule et même opération.

Mais dans quel dessein ? Considérant la position de cet ensemble plutôt massif en bordure de tell, il ne serait pas insensé d'y voir une structure destinée à la protection des bâtiments alors érigés au sommet du tell principal de 'Acharneh, une sorte de glacis défensif. Il faut aussi garder en mémoire que la fouille n'a pas atteint la base du mur de soutènement ni du remblai ; l'ensemble pourrait être encore plus imposant.

Les rares fragments de céramique recueillis dans ce niveau, et en particulier dans les terres du remblai, appartiennent en majorité à l'âge du Bronze moyen quoique certains tessons pourraient remonter au Bronze ancien. Cependant, ce dernier matériel, peu nombreux, serait plutôt intrusif, comme il nous a déjà été donné de l'observer dans les couches d'un semblable remblai à caractère défensif — un glacis — fouillées sur un autre chantier (TE1) de Tell 'Acharneh ²⁶, ces terres de remblai ayant probablement été apportées d'ailleurs sur le site. Par conséquent, nous ne pouvons faire autrement, pour l'instant, que de dater ce niveau de l'âge du Bronze moyen.

Conclusion

Suite aux résultats inattendus de notre campagne de fouilles de 2010, nous anticipions, en toute logique, une très fructueuse campagne en 2011 car elle devait nous permettre, entre autres, de mieux documenter le riche niveau du Bronze récent de Tell 'Acharneh : en mettant au jour une série de salles de stockage, nous avons peut-être repéré un secteur limitrophe d'un édifice qui devait comporter plusieurs autres salles. Le caractère public de ce type d'édifice étant pratiquement acquis, il est tentant de lui attribuer le statut « palatial » en raison de la fonction redistributive de la structure architecturale, caractérisée par la présence de ces multiples salles d'entreposage. Une telle interprétation est porteuse de beaucoup d'espoir pour l'avenir, surtout si on accepte l'identification du site de Tell 'Acharneh avec la ville ancienne de Tunip ²⁷. En dépit d'une interruption prématurée de notre mission, alors qu'elle était pleine de promesses, nous sommes quand même parvenus à établir un début de chrono-stratigraphie sûre pour le site de Tell 'Acharneh, conformément aux objectifs que nous nous étions fixés lors de la reprise de nos travaux sur le terrain en 2009-2010.

26. FORTIN 2006b, p. 114-118 ; FORTIN 2006d.

27. KLENGEL 1995 ; GOREN *et al.* 2002, 2003, 2004, p. 121.

TYPOLOGICAL ANALYSIS OF THE CERAMIC ASSEMBLAGE²⁸

Presented here is an overview of the pottery excavated in WO1 during the 2009 and 2010 seasons at Tell 'Acharneh. To understand the chronological sequence of occupation in WO1, this study has focused on typological features within the ceramic assemblage, which assist in the dating of the contexts from which the pottery was derived. It has endeavored especially to find good comparisons with pottery vessels from other contexts at Tell 'Acharneh and elsewhere within the Northern Levant, where dates have been established with reasonable assurance. Investigations of the functional aspects of the pottery and a study of the architectural contexts in which the vessels were found are still forthcoming, as are studies that consider Tell 'Acharneh's changing fortunes and cultural interactions through time as reflected in the pottery sequence. Some consideration has been given here to the pottery's fabric and technology as they often figure in the correct establishment of typological categories and ceramic periodization, while the preceding report M.-C. Boileau presents further fine-grained studies of vessel fabrics, particularly among the LB pottery corpus.

Excavations in WO1 brought to light occupation levels spanning several periods of time. The report here has not touched on all of these periods. The two latest phases, defined by 11th-12th cent. Ayyubid and Ottoman pottery, which were primarily encountered in the 2010 season in levels 1 and 2, require further study by ceramic experts of those late periods and are not presented here. Pottery from the earliest contexts reached in WO1, primarily in level 6 in 2009, is likewise not presented here. These strata comprise a mixture of Early and MB pottery, which essentially duplicates the range of Early and MB pottery recovered elsewhere at the site²⁹. Emphasis here has been placed on pottery from contexts post-dating the Middle Bronze Age and continuing up to the Iron II, from periods that have been little explored and understood up to this point.

Late Bronze Age Pottery (fig. 21-27)

Pottery of this particular horizon was found in Sounding WO1 both in 2009 and 2010, amid layers of earth debris and building remains that had been effectively sealed by the cobbled Iron II surface above. Particularly distinctive is this phase's red-brick character, taking the form of fallen and burned mud-brick, together with intermingled layers of dark brown earth. While the 2009 season yielded no recognizable standing structural remains in this phase, the subsequent season, in which soundings were opened immediately to the east (niveau 5), yielded the spectacular remnants of several burned rooms, arranged side by side, and containing many vessels still *in situ*, destroyed from the intense conflagration that had ravaged the building or from the weight of collapsed and burned mud-brick walls. The pottery described below derives from contexts from within these burned rooms, or within the red-brick rubble and brown earth that was found immediately to the west. It should be noted that in 2009 pottery from this horizon was originally thought to date to the Iron I period. Nevertheless, further excavations in 2010 and the collection of additional diagnostic sherd fragments have led to the revised dating of these strata to the Late Bronze Age. Any later pottery fragments associated with this phase should be considered as intrusive.

Pottery from this horizon is quite distinctive, having been first recognized in earlier seasons in secondary contexts elsewhere on the tell³⁰. Much of the pottery is pale to dark brown, or yellow-brown in color. Many of the fragments have a hard, dense fabric, possibly from high-firing temperatures, and fine, nearly invisible mineral inclusions. Some of the vessels, principally the cooking pots, were also

28. By Lisa COOPER.

29. COOPER 2006, fig. 18-26.

30. COOPER 2006, p. 153; BOILEAU 2006, p. 195 n. 3.

shell-tempered³¹. Many of the large storage jars contain organic matter³². In terms of surface treatment, some of the vessels were finished with some form of scraping tool that left uneven concentric circles on their exterior surfaces, especially towards the lower halves of the vessels. This form of finishing was likely carried out when the vessels had dried to the leather-hard stage, but before they had been fired. The scraped lines appear almost as burnished strokes bearing a slight sheen. Otherwise, the pottery is largely undecorated save for an occasional painted piece or fragments that bear traces of comb incising, raised ridges or parallel grooves.

Of greatest significance within the pottery corpus of this stratum are several large storage jars that were still found *in situ*, standing side by side in rows within three excavated rooms of what appears to have been a large, multi-roomed building (fig. 5). As already described³³, one room contained three rows with 13 jars (fig. 13) while two additional jars were excavated from a second room to the north (fig. 15). A third room to the west yielded seven heavily smashed jars (fig. 16). The walls of this building were destroyed in a violent conflagration that not only fired the walls' bricks to a fiery red color but also damaged the pots left in the rooms. These were found cracked or crumbled or covered with hard white concretions, possibly the burned remnants of the mud or lime plaster that had thickly covered the interior walls of the rooms. Many of the burned jars were excavated at the end of the 2010 season and there was little time to reconstruct them; most of the jars were represented by scores of small, burned and heavily concreted fragments that will require slow, careful conservation work. The decision to leave the restoration of the jars to the 2011 season proved unfortunate as circumstances prevented this season from taking place. We had to content ourselves, therefore, with the drawings of the jar rims and some of the bases that had been made at the end of the 2010 season.

Restricted necks above wide, ovoid bodies, and flat or slightly footed bases invariably characterize the vessels. In some instances, the shoulders of the jars are additionally decorated with raised bands at the neck, parallel bands of grooving, or bands of fine comb incising. In one unique case, a jar is decorated with a row of small oval incised scores, this decoration also being repeated on the raised foot of the jar's base (fig. 21:7).

Out-turned rims of variable forms characterize the jars: some are flanged (fig. 21:5-6), while several others feature a squared rim profile that is sharply emphasized on the underside (fig. 21:1-4).

The large jars are important for the dating of the burned building and, by extension, the general occupation phase in which they are located. Their closest parallels are jars from Qatna, particularly those recovered from the so-called "Salle des Jarres", excavated by Le Comte du Mesnil du Buisson in the Royal Palace in the 1930s, and then recently re-investigated by the German archaeological team at that site³⁴. It is generally agreed that the destruction of this palace can be attributed to the Hittite king Suppiluliuma I somewhere between 1355 and 1320 BCE, and thus the palace and its contexts should pre-date this time³⁵. Also at Qatna to the east of the Royal Palace is a room with storage jars found in a similar arrangement to that observed at 'Acharneh, dating to the LBI (1550-1350 BCE)³⁶. Last, from the site of neighboring Hama, in its LB level G, a similar jar form was recovered³⁷. Given these dated *comparanda*, a similar early LB date for the 'Acharneh jars seems reasonable.

31. See BOILEAU below.

32. See BOILEAU below.

33. See FORTIN above.

34. MESNIL DU BUISSON 1935, p. 95-96; Room G: NOVAK & PFÄLZNER 2000, p. 283-285; 2001, p. 181-182; PFÄLZNER 2007, p. 46-47, fig. 20.

35. PFÄLZNER 2007, p. 42.

36. GALLET & AL-MAQDISSI 2010, p. 42, fig. 2b.

37. FUGMANN 1958, fig. 143:S. No. R.1.

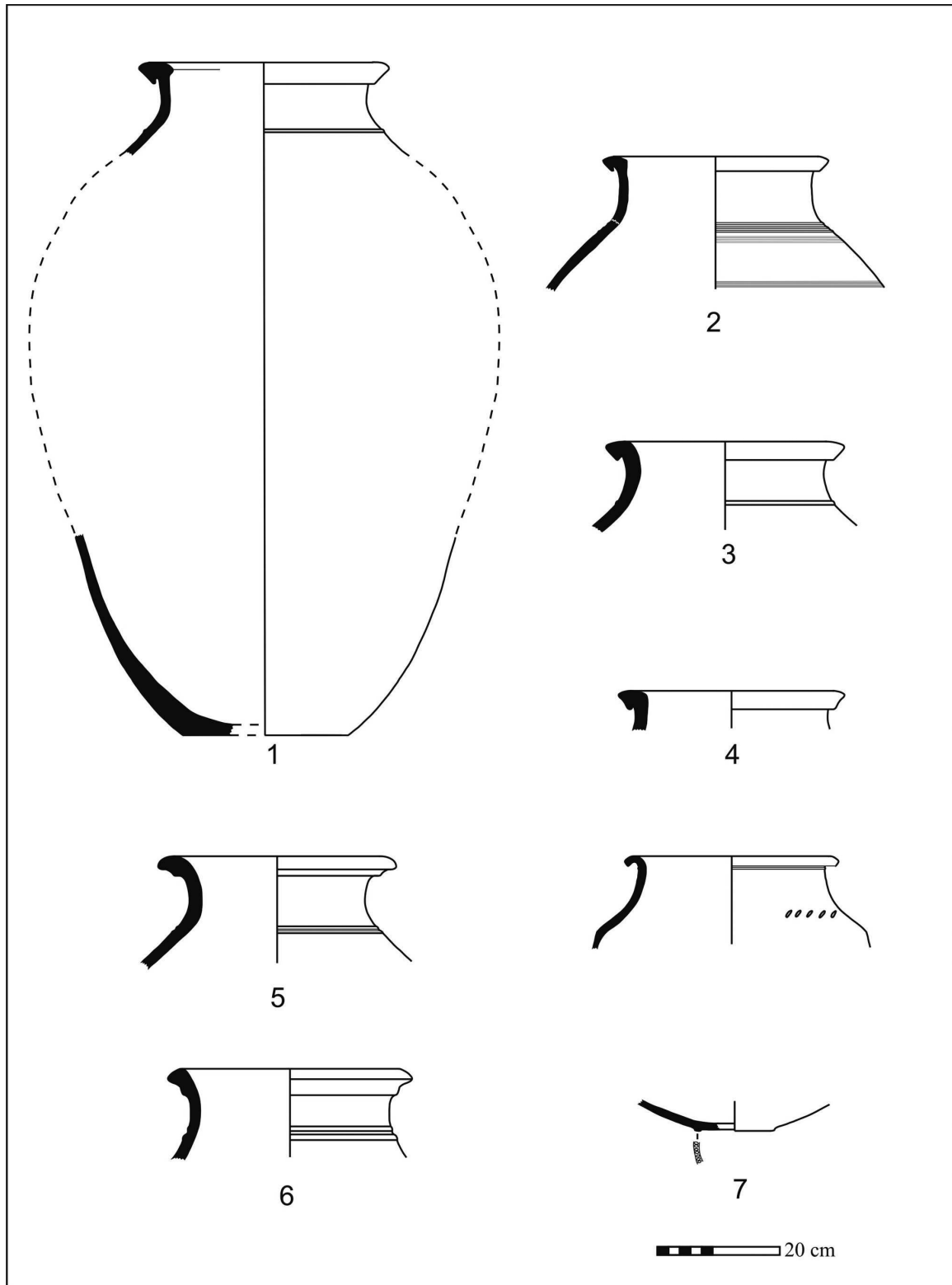


Figure 21. LB storage jars from the burned building (niveau 5) © L. Cooper.

Beside the presence of the large storage jars, the red-brick phase of *WOI* has yielded several other vessel types. Carinated cups with out-flaring, simple tapered rims (**fig. 22:1-3**) are a well-known diagnostic feature of the Middle Bronze Age, with a geographical territory that extends over the entire Levant and into inland Syria as far as the Euphrates River. Such cups are well attested in the MB assemblages at Tell 'Acharneh³⁸. In western Syria, such cups continue to be manufactured and consumed right up to the last stages of the Middle Bronze Age³⁹, but they experience a significant diminishment in the earliest part of the Late Bronze Age. One cup (**fig. 22:2**), has a pronounced shoulder under its out-flaring rim. It is paralleled quite well at nearby Qatna where it is tentatively dated to the beginning of the Late Bronze Age⁴⁰. It might simply be a residual type from the earlier Middle Bronze Age, although its frequency and the fact that it appears in the LB horizon in other parts of the Levant and the Euphrates such as Munbaqa, may indeed indicate its persistence into this later period⁴¹.

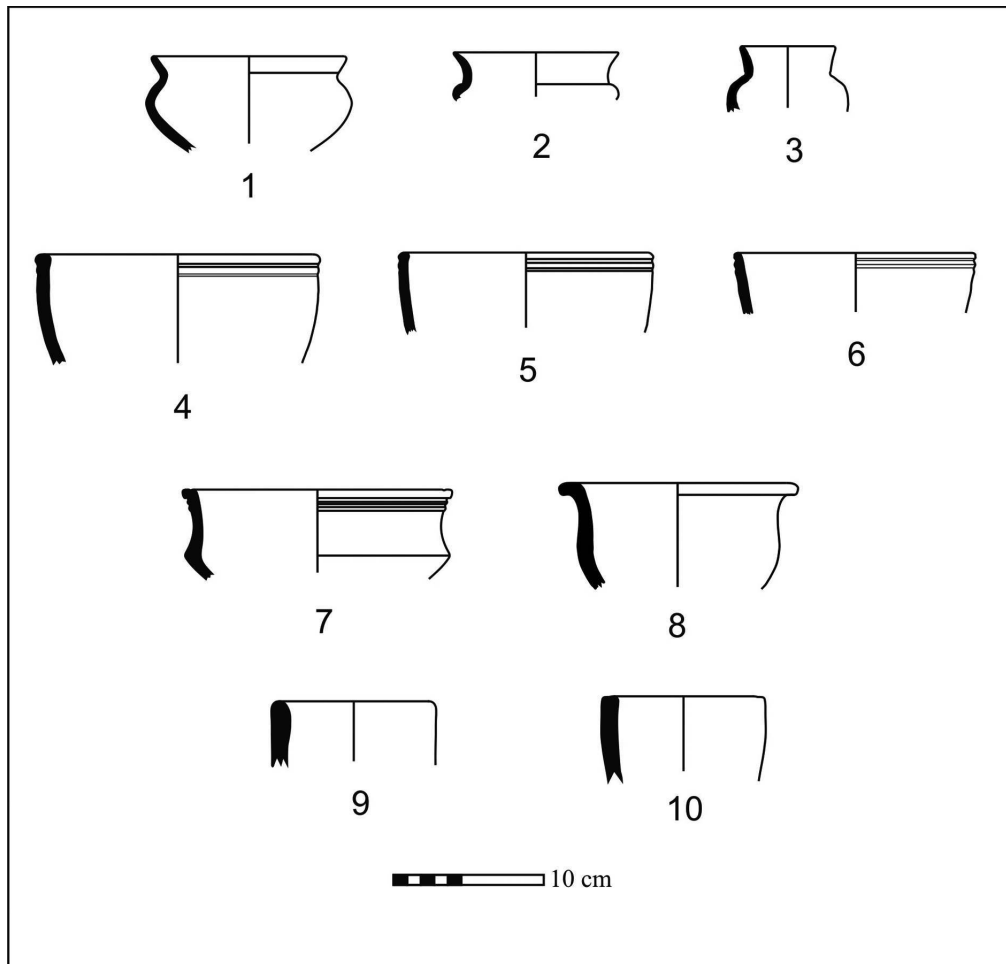


Figure 22. LBI-IIA cups and beakers © L. Cooper.

Perhaps more significant for dating are the deep cups that are corrugated or grooved below the rim (**fig. 22:4-6**). These cups are regarded elsewhere as dating to the end of the Middle Bronze Age, but they

38. COOPER 2006, fig. 20:1-3; 23:1-5.

39. E.g. PINNOCK 2005, Tav. XIX.

40. IAMONI 2012, Pl. 38:7.

41. IAMONI 2012, p. 128 and n. 226.

continue into the LB levels at Qatna⁴². The cups are also well attested in the LB Level G at Hama⁴³. Lastly, the cups are similar to those found in the Tablet Building at Tell Hadidi on the Euphrates River, dated to the LBI⁴⁴.

A distinctive cup type with a low carination above the base and a slightly out-flaring rim, with grooves underneath (**fig. 22:7**), has good parallels at Qatna, where it has been dated to the LBI-II periods⁴⁵. Another cup with curving sides and flaring rim (**fig. 22:8**) also finds its best parallels to cups from early LB contexts elsewhere⁴⁶.

Beakers or mugs (**fig. 22:9-10**), characterized by long, straight sides which widen into globular or carinated bodies above the base, seem to have their origins in the Middle Bronze Age, but they do persist into the early Late Bronze Age, where they have been identified at Qatna⁴⁷. These vessels have good parallels to those found at Tell Hadidi and el-Qitar on the Euphrates River in LB phases⁴⁸.

A variety of carinated bowls, which are a hallmark of the Levantine Middle Bronze Age and prevalent in the MB assemblages at Tell 'Acharneh⁴⁹, also seem abundant in this corpus of ceramic material from *WOI* (**fig. 23:1-5**). Also frequent are bowls featuring various forms of in-turned or in-turned swollen rims (**fig. 23:6-11**). Although they first appear in the Middle Bronze Age, these distinctive bowls continue into LB contexts at other inland western Syrian sites such as Qatna, Hama level G, Tell Nebi Mend and Ebla⁵⁰. They are also present in both early and late LB contexts at el-Qitar and Tell Hadidi on the Euphrates⁵¹.

Out-turned bowls with simple rims are not frequent at Tell 'Acharneh in the *WOI* assemblage (**fig. 23:12**), unlike their popularity in LB contexts from nearby Qatna and Tell Arqa⁵². A bowl with a slightly thickened, squared rim (**fig. 23:15**) corresponds nicely to a similar bowl found in LB contexts at Qatna⁵³. Another bowl with an out-turned rim (**fig. 23:16**) is similar in form to examples coming from LB strata at Tell Afis and which continue at that site into the Iron I period⁵⁴. Bowls with grooves directly below the rim (**fig. 23:17-18**), a wider version of the same class of grooved cups described above (**fig. 22:4-7**), are found with considerable frequency in the LB assemblages of Hama level G⁵⁵.

Deep bowls with strongly out-turned rims, some also internally swollen (**fig. 24:1-4**), find good parallels in level G at Hama⁵⁶. At Qatna, the vessel type is prevalent in MB strata, but continues in healthy numbers well into the Late Bronze Age, with the same range of rim forms as those appearing among the Tell 'Acharneh examples⁵⁷.

42. MORANDI BONACOSSÌ *et al.* 2009, fig. 15:10; IAMONI 2012, p. 113; pl. 11:1-3; 38:1-3; 64:9-11.

43. FUGMANN 1958, fig. 143:O491, O12, and O487; 153:5A541, 5A544.

44. DORNEMANN 1981, fig. 9:5.

45. MORANDI BONACOSSÌ *et al.* 2009, fig. 32:8; IAMONI 2012, pl. 69:8, 10-12.

46. IAMONI 2012, p. 128, pl. 38:4; THALMANN 2006, pl. 118:2 and 4.

47. IAMONI 2012, pl. 41:2-4.

48. DORNEMANN 1981, fig. 4:3-6; MCCLELLAN 1986, fig. 10:5.

49. COOPER 2006, fig. 20:4-7; 23:7-11.

50. IAMONI 2012, pl. 35:11; 36:2, 4; 37:4-6; 68:1, 11-12; FUGMANN 1958, fig. 143:N989; BOURKE 1993, p. 186, fig. 13:5; PEYRONEL 2007, fig. 24:6.

51. IAMONI 2012, p. 127; MCCLELLAN 1984-85, fig. 5; DORNEMANN 1979, fig. 19:13; 20:13-22.

52. IAMONI 2012, pl. 33-34; THALMANN 2006, pl. 106.

53. MORANDI BONACOSSÌ *et al.* 2009, fig. 32:5; IAMONI 2012, pl. 32:12.

54. VENTURI 1998, fig. 5:5; MAZZONI 1998, fig. 17:3.

55. FUGMANN 1958, fig. 153:5A557, 5A543, 5A512, and 5A540.

56. FUGMANN 1958, fig. 143:N996.

57. IAMONI 2012, pl. 27:4-5, 55:3-4.

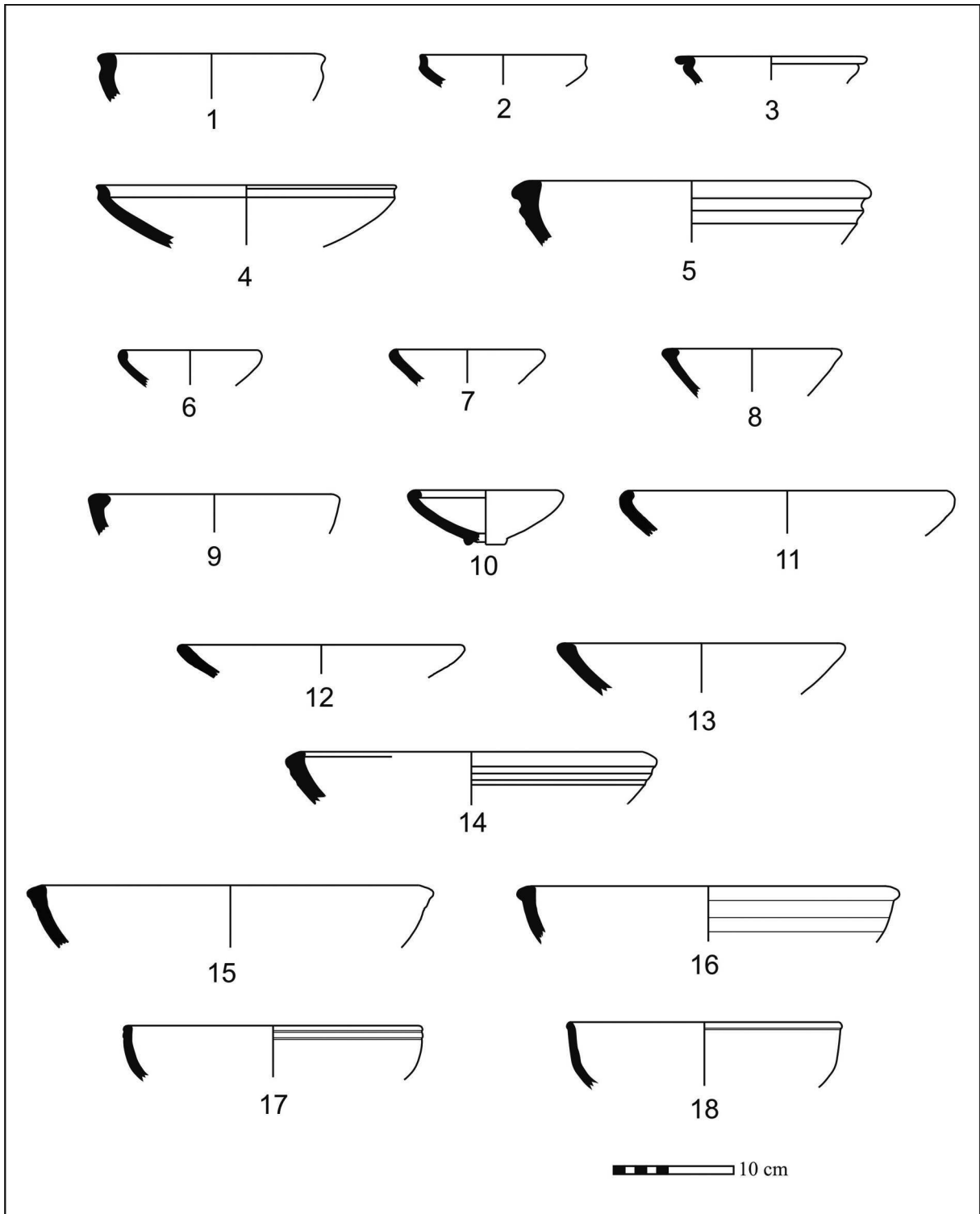


Figure 23. LBI-IIA bowls © L. Cooper.

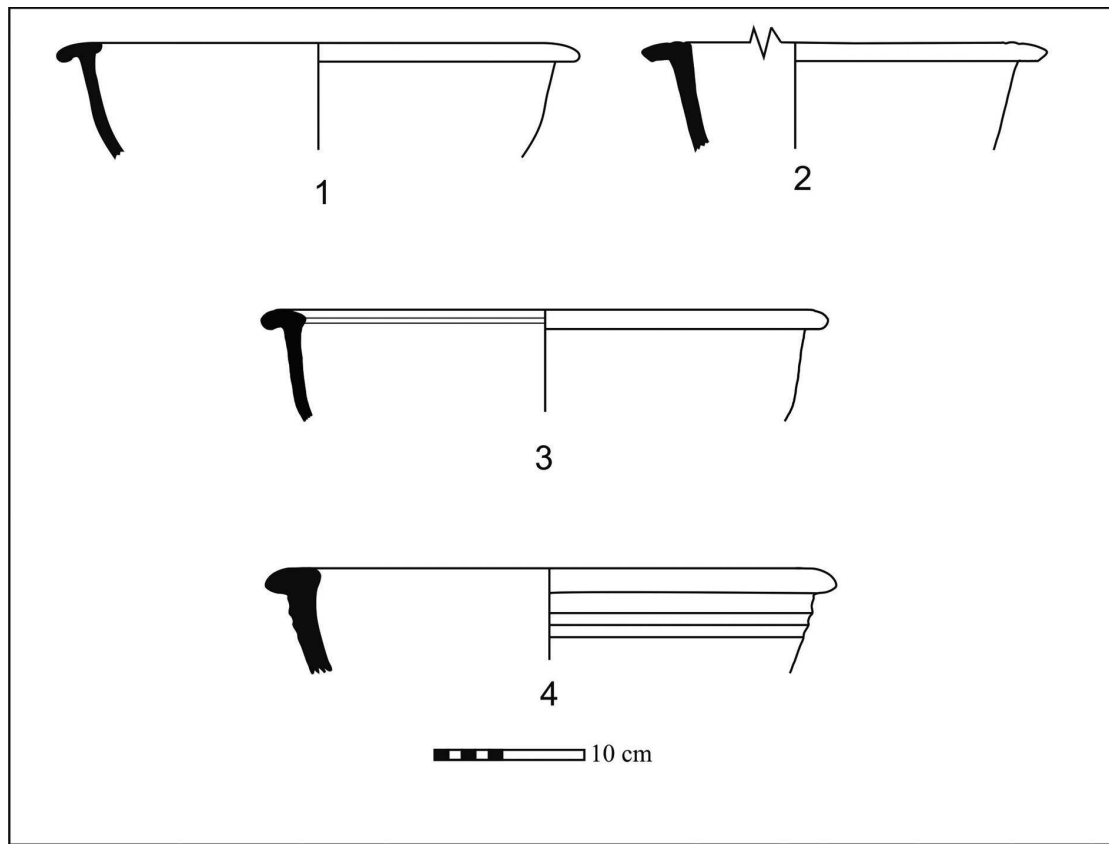


Figure 24. LBI-IIA deep bowls © L. Cooper.

Kraters with a variety of out-turned rims and sizes are frequent within the *WOI* assemblage at Tell 'Acharneh (**fig. 25**). These vessel forms are generally akin to those found in Phase M at Arqa, although the latter are invariably handled. Handled krater-types continue on at Arqa into the LB phases of L and K, although by this time, many are also painted⁵⁸. The 'Acharneh kraters are usually found without handles and unpainted; thus far only one handled krater fragment with red painted vertical lines has been recovered (**fig. 25:11**). These differences are probably the product of coastal versus inland stylistic preferences and the higher frequency of painted Aegean wares on the coast that were locally emulated. Nonetheless, we consider the 'Acharneh vessels as belonging to the same essential category as the Arqa kraters, and believe that they shared similar functions within their local ceramic repertoires. Closer to Tell 'Acharneh, krater-types have a long history at Hama, where their appearance extends back to the early Middle Bronze Age of level H. Many feature ribbed rims and bands of comb incising during this period⁵⁹. These types of vessels are well documented throughout western Syria and the Euphrates region during the Middle Bronze Age, and they persist into the Late Bronze Age, although ribbed rims and comb incised patterns diminish. A similar trend is observable at Tell 'Acharneh: kraters from the MB contexts are frequently comb incised⁶⁰, while those from the *WOI* red-brick layer (niveau 5) only rarely have this type of decoration and are probably later in date. Parallels to Tell 'Acharneh's *WOI* kraters are best sought in Level G at Hama and in late MB and LB contexts at Qatna⁶¹.

58. THALMANN 2006, pl. 108:8-9; pl. 118:11-12; 120:1-2, 5.

59. FUGMANN 1958, fig. 109:3K162; 110:3F 171, 117:3A858, 120:2D884.

60. COOPER 2006, fig. 21:3-7.

61. FUGMANN 1958, fig. 143:2C960, O489; 153: 5A516; IAMONI 2012, pl. 18:9; 43:1; 55:10-12.

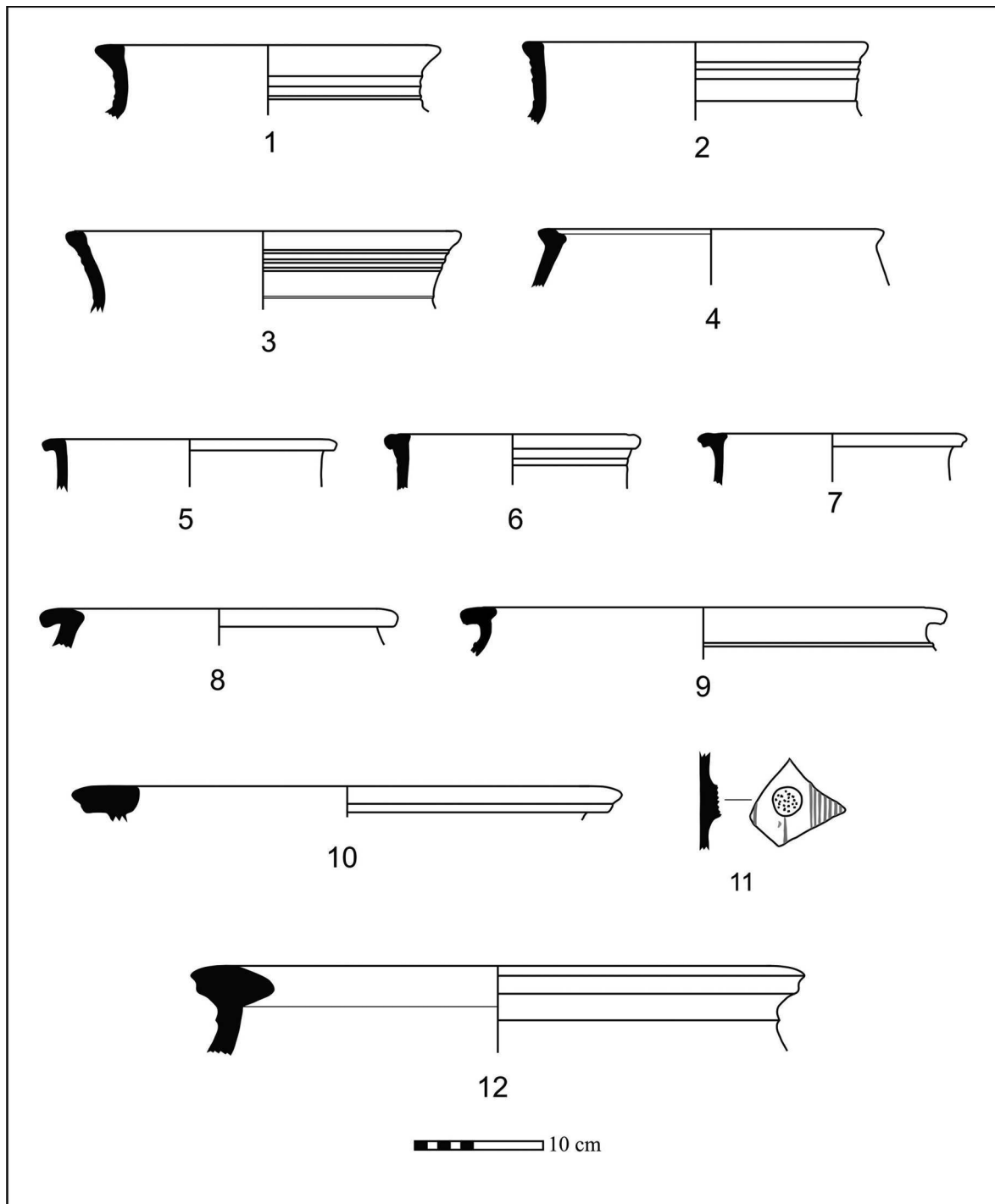


Figure 25. LBI-IIA kraters © L. Cooper.

The *WOI* red-brick strata (niveau 5) have yielded several cooking pot fragments (**fig. 26**). The majority are characterized by shell-temper, this helping to reduce the vessels' thermal stress and cracking during the repeated heating and cooling experience over fire⁶². Wide bodies that taper at the neck, and then feature an out-turned rim which is either rounded, or slightly squared, characterize most

62. See BOILEAU, below.

of the cooking vessels. A number of shell-tempered flat bases have also been encountered and it is likely that these are the bases of cooking vessels. The vessels are more or less similar to the range and form of cooking pots documented from nearby Qatna, these having a range from the late Middle Bronze Age to the early Late Bronze Age⁶³. They are also quite comparable to cooking pots from Ebla, which are dated to the Middle Bronze Age⁶⁴. Similarities may also be sought with cooking vessels from Tell Arqa, especially those from the LB Phase L, which frequently have similar rim types⁶⁵. One Tell 'Acharneh example is essentially neckless and features a slight protrusion or “tongue” below the top (**fig. 26:9**). Its best parallels are cooking vessel types found in LB levels at Tell Afis, and which continue into the Iron I period⁶⁶.

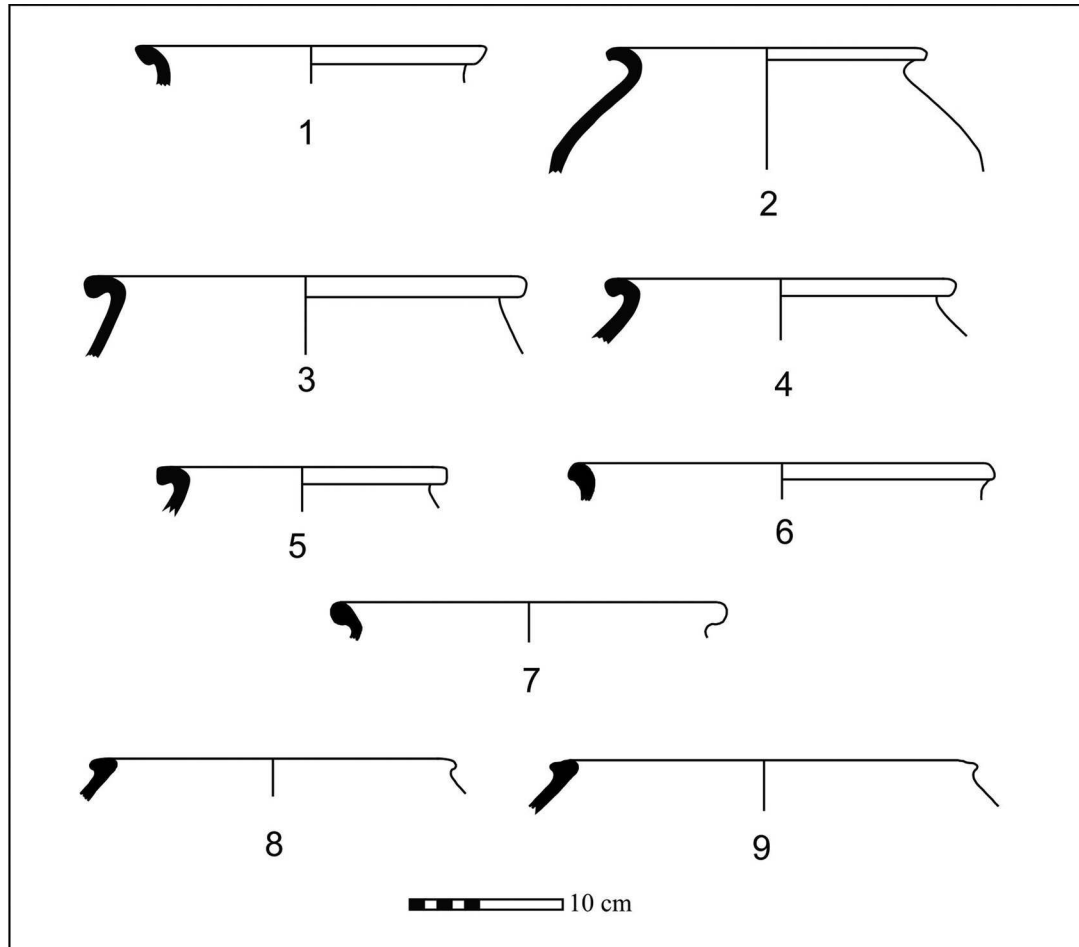


Figure 26. LBI-IIA cooking pots © L. Cooper.

A variety of necked jars are featured in the assemblage. A few of the smaller jars have collared necks and simple out-turned rims (**fig. 27:1-3**). The larger jars have an assortment of thickened, out-turned rims (**fig. 27:4-6**) and various examples of double or flanged rims (**fig. 27:7-12**), the latter identified in MB layers from Tell 'Acharneh and known to be widespread in Syria during this period⁶⁷. Based on the ceramic sequence from Tell Nebi Mend, such flanged rims persist into the beginning of the Late Bronze

63. IAMONI 2012, pl. 25:2-13; 58.

64. PINNOCK 2005, Tav. LXXXVI-LXIV.

65. THALMANN 2006, Pl. 112:4-9.

66. VENTURI 1998, fig. 9:4, 8.

67. COOPER 2006, fig. 24:11-12; PINNOCK 2005, Tav. XXXIII-XXXVII.

Age, and it is conceivable that many of the ‘Acharneh specimens from the *WOI* red-brick stratum (niveau 5) are comparable in date⁶⁸. Some of the simpler thickened jar rims have good parallels to those found in early LB levels at Qatna⁶⁹. Other jar types include those with a handle extending down from a flanged or thickened rounded rim to the shoulder (**fig. 27:13-15**). Some of these bear a resemblance to LB handled jars from Qatna and Hama level G⁷⁰.

A few lamp fragments were found in the red-brick layers of *WOI*, as well as one complete flat-based lamp with a pinched rim forming a spout on one side (**fig. 27:16**). The lamp is strikingly similar to those found in the LB Phase L at Tell Arqa, although the Arqa lamps have rounded as opposed to flat bases⁷¹. Comparable single-spouted lamps have also been reported in level G at Hama⁷².

Several round, flat baked clay objects, identifiable as pot lids, have been recovered (**fig. 27:17-19**). Many of them feature central circular perforations and roughly finished outer edges, often accentuated on the top by a shallow channel. Additional channels were also impressed lightly into the top surface of some of the lids, extending from one side to the other. The lids are often coarsely tempered with chaff; they appear to have been pressed when wet onto a work table or surface that was covered with this material, giving their undersides a rough, uneven appearance. We cannot be sure which pots utilized these ceramic lids — none were found *in situ* — although it is tempting to postulate the lids’ association with the large storage jars found in the burned rooms (**e.g. fig. 21**). Such jars’ rim openings have roughly comparable diameters.

Considering the corpus of pottery from the red-brick layers of *WOI* (niveau 5) as a whole and the vessels’ parallels with dated pottery from other sites, it seems reasonable to date the pottery, and by extension the date of the latest occupation of this *WOI* phase (niveau 5), to the Late Bronze Age. Many of the vessel types bear their strongest affinities to pots, which have been dated elsewhere to the Late Bronze Age, particularly its opening phases, namely LBI (c. 1500-1400 BCE) and LBIIA (1400-1355/1320 BCE). Vessel types which characterize the LBIIIB period or later elsewhere, examples of which are illustrated from Operation T1 at Qatna, for example, are not well attested in the *WOI* sounding at Tell ‘Acharneh⁷³. An early LB date for the Tell ‘Acharneh pottery is also suggested by the strong continuity of a number of pot forms from the earlier Middle Bronze Age. MB forms such as carinated cups and bowls, not to mention the abundance of MB-style cooking pots, have not experienced a significant diminishment as yet to warrant a later date in the Late Bronze Age. Overall, therefore, the red-brick strata should probably be dated to around the mid-14th cent. BCE. The violent fire which destroyed the multi-roomed brick building and its contents would have been the final event that brought an end to this phase. It is very tempting to associate this destruction at Tell ‘Acharneh to the same event, namely a campaign of the Hittite king Suppiluliuma I, that brought about the end of the Royal Palace at Qatna.

68. BOURKE 1993, p. 184-185; fig. 20:8-13; 21:1, 3, 5-6, 8, 10-11.

69. MORANDI BONACOSSÌ *et al.* 2009, fig. 26:9; IAMONI 2012, pl. 52:5, 11.

70. IAMONI 2012, pl. 54:9; FUGMANN 1958, pl. X:GXIII: 6A309, 6A305.

71. THALMANN 2006, pl. 111.

72. FUGMANN 1958, fig. 153:5A535; 161:5A910.

73. MORANDI BONACOSSÌ *et al.* 2009, fig. 23, 25.

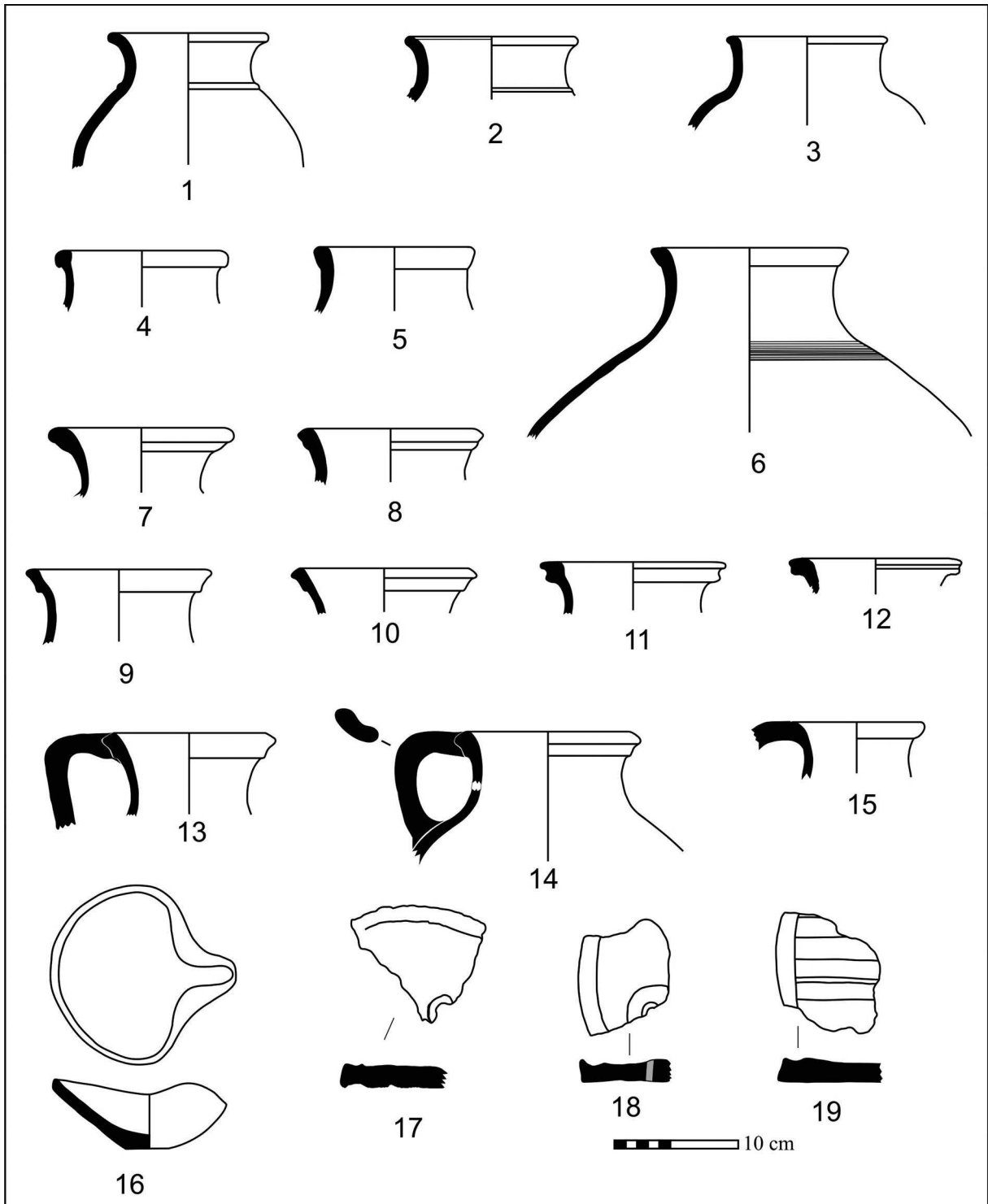


Figure 27. LBI-IIA jars, lamp and lids © L. Cooper.

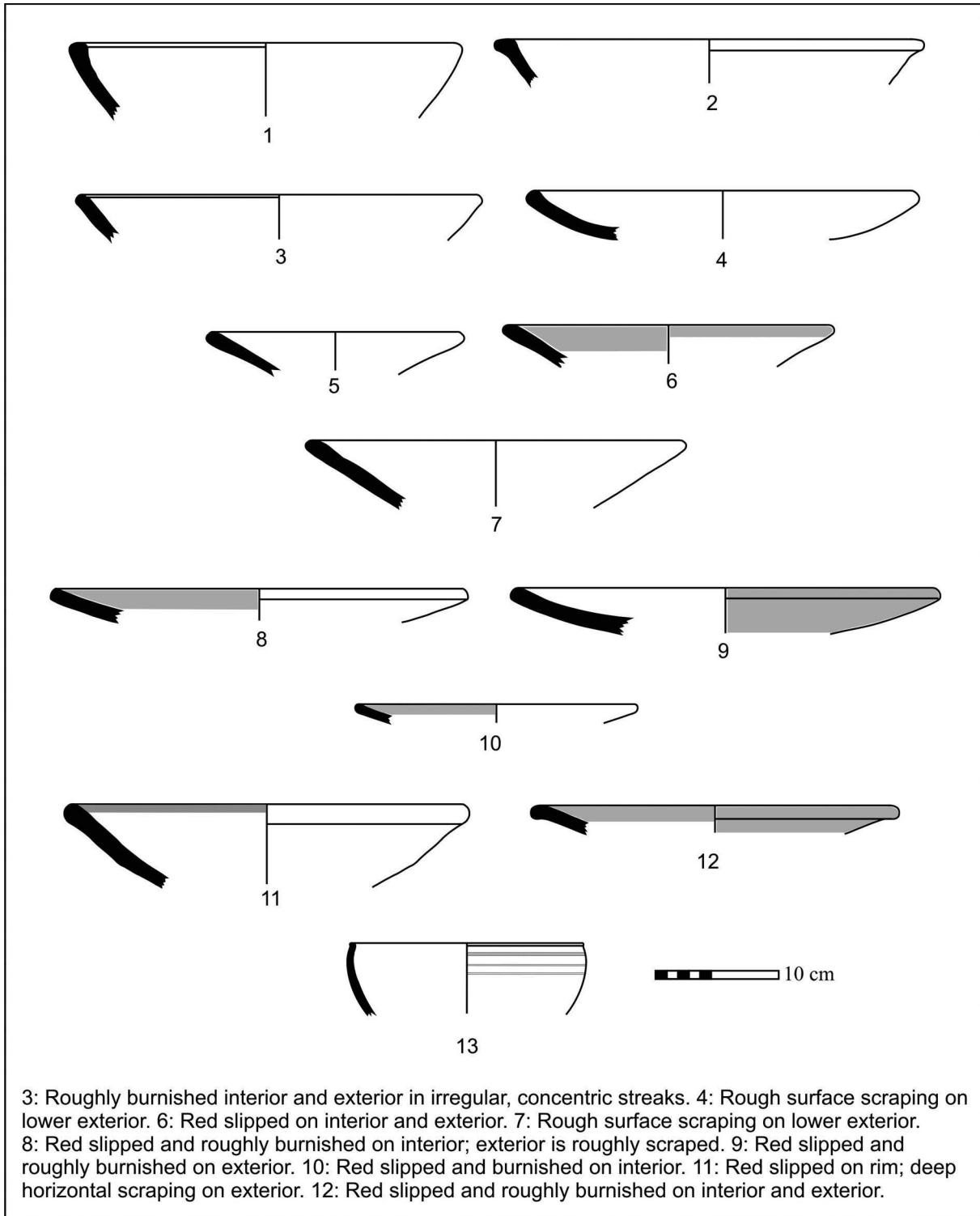
Iron I-IIA Pottery (fig. 28-30)

Figure 28. Iron I-IIA bowls © L. Cooper.

During the 2010 season at Tell 'Acharneh, excavations revealed strata (niveau 4) at the northern end of the *WOI* sounding which had been cut into by the later Iron II structure (niveau 3), with its stone walls and cobbled surface. These strata, assigned to Level 4 (niveau 4), had no definable architectural structures or associated features (**fig. 11**); they appear to consist of layers of debris that served as fill or leveling material associated with some other structure located beyond the excavated sounding. The pottery from the strata of Level 4 was very mixed, with MB, early LB and early Iron Age material all intermingled. The latest pottery in the strata appears to date from the Iron I to the earliest part of the Iron IIA, confirming that this deposition pre-dates the laying of the Level 3 cobbled floor and associated features, which is assigned to the Iron IIB period. An attempt is made here to illustrate some of the Iron I and early Iron IIA pottery forms from Level 4 since they represent a period of time whose material culture needs further clarification at Tell 'Acharneh. It must be acknowledged, however, that this material requires a great deal of further study. Although much of the pottery was drawn in 2010, fine-grained fabric analysis and the study of surface features, including slip and painted techniques and colors, were only cursorily recorded, as it was expected that a further field season would allow for such further examinations. Unfortunately, no subsequent study of the material took place, and so here is presented some tentative observations and conclusions based on the data collected thus far.

Most important for this pottery assemblage are the bowls and platters; many have the same form and size of bowls and platters abundantly represented in the Iron IIB levels at Tell 'Acharneh (**fig. 28:5-10**)⁷⁴. Nonetheless, those from Level 4 in the *WOI* are more variable in form, fabric, color and surface treatment and are believed to represent an earlier stage of the Iron Age sequence. The surface colors of the bowls include dark brown, pale brown, orange and red, and tend to be darker than the reddish-pink fabrics of the Iron II period. Surface treatment on both the interior and exterior often consists of either unpainted or a dark red-brownish slip that has been burnished, usually in very irregular concentric streaks. There are also a few instances of red slip applied without any additional burnishing. In some cases, the lower exterior of the bowls or platters exhibit rough surface scraping, this having either been executed by hand or with the use of a slow wheel. In sum, these bowls and platters, while bearing some of the same forms as those which become very popular in the subsequent Iron IIB are not yet of the uniformly well-applied red slip and well-burnished types which one sees in the later period. This development seems to parallel that which has been observed within the Iron Age assemblages at the site of Qarqur, where changes in colors from darker browns to red-browns to lighter shades of red, and developments from hand to wheel burnishing techniques from the Iron I to Iron II periods have been suspected⁷⁵. Certainly at Qarqur, bowl forms which first appear in the Iron I but which continue into the Iron II have been documented⁷⁶, and we argue for a parallel development at 'Acharneh.

A variety of jar rims (**fig. 29:1-5**) and one complete handled juglet (**fig. 29:6**) were found among the corpus of vessel fragments of level 4. Several of the jars are distinguished by their narrow necks and a variety of thickened rims (**fig. 29:1-3**), comparing favorably to the range of similar jar rims documented at Tell Afis, these appearing in the Late Bronze Age and then continuing up to the Iron IIA when they are replaced by jars with double rims⁷⁷. Several krater forms were also recovered, one of which matches well to a krater rim recovered from Iron II deposits in the lower town of 'Acharneh (**fig. 29:9**)⁷⁸. Two of the kraters are distinguished by the application of red slip below the rims (**fig. 9:10-11**). The flat-topped character of these krater rims compares well to similar specimens from Late Iron I-Early Iron II contexts at Tell Afis as well as from the Cremation Cemetery at Hama, where they have been dated

74. Comparable forms in COOPER 2006, fig. 1:6-13; 2:1-5; 5:4-16; 7:1-9.

75. DORNEMANN 2003, p. 44.

76. DORNEMANN 2003, p. 47.

77. VENTURI 2007, fig. 50:4-19; 61:3, 5-7; 71:17-19.

78. COOPER 2006, fig. 3:7.

between 1200-925 BCE ⁷⁹. On the other hand, the red slipped decoration foreshadows the prolific use of this application on krater types in the Iron IIB period, already well documented at Tell 'Acharneh ⁸⁰.

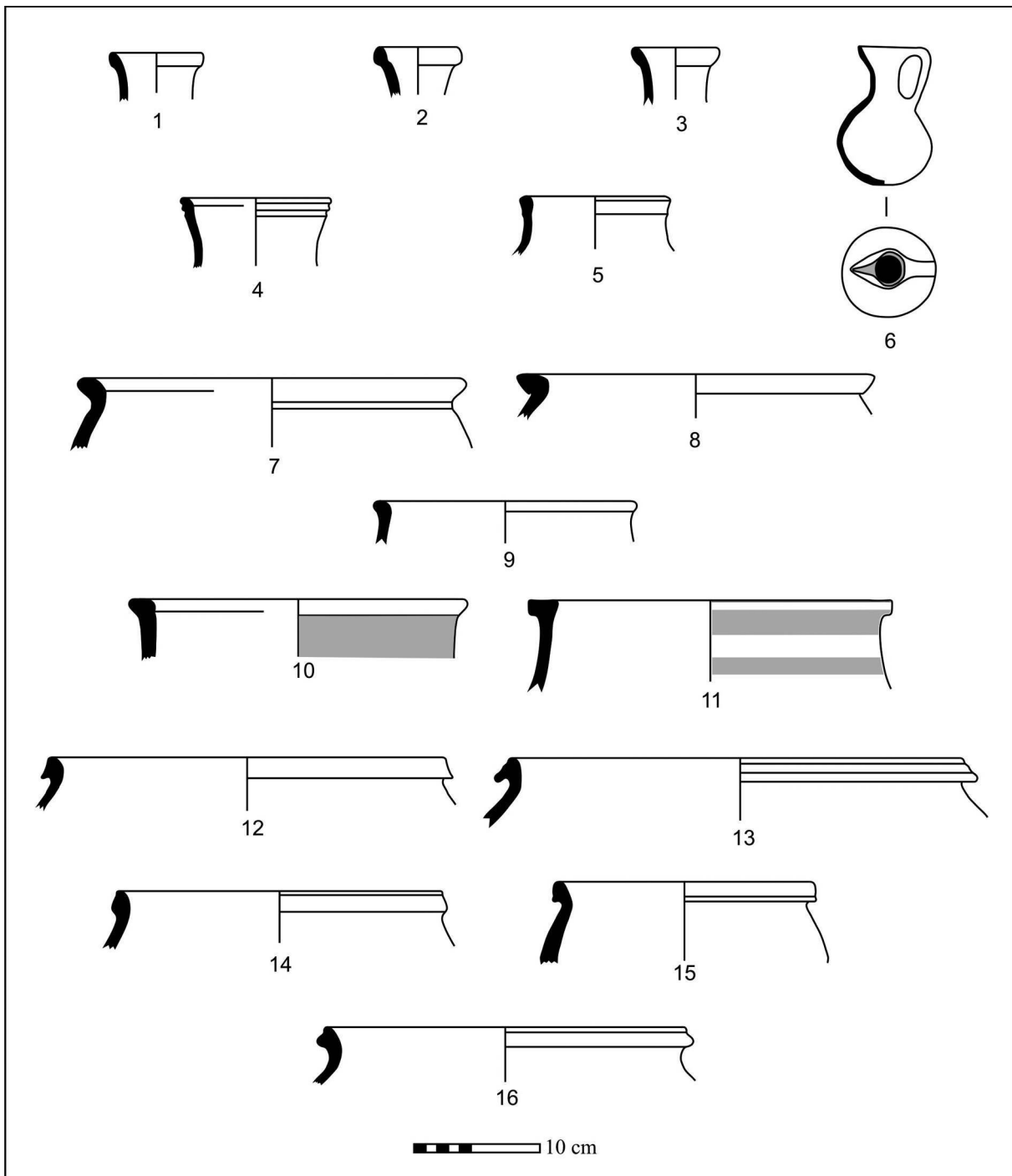


Figure 29. Iron I-IIA jars, kraters and cooking pots © L. Cooper.

79. MAZZONI 1998, fig. 16:8; RIIS 1948: fig. 56.

80. COOPER 2006, fig. 3:1-4; 7: 10-18.

Due to the mixed character of Level 4, an abundance of MB cooking vessels were identified in the corpus. Nonetheless, several sherds with different colors, fabrics and temper were also found and must derive from later time periods (**fig. 29:12-16**). These later fragments were often of a red-brick color, or sometimes dark brown, and they frequently exhibited smoke staining on their exterior walls. Interestingly, some of the rims of the vessels had rather worn edges, possibly suggesting that they were frequently covered with a lid. The fragments were invariably tempered with crushed-shell, this distinguishing them from MB cooking pots, which used other tempering ingredients. A few of the vessels' exteriors, particularly below the rim and neck, appear to have been roughly scraped with a hand tool.

The majority of cooking vessels is characterized by short necks and thickened out-turned rims that are square or triangular in profile (**fig. 29:12-16**). They sometimes feature a 'tongue' or protrusion below the rim-edge (**fig. 29:15-16**), and in one case, the rim is ribbed on top (**fig. 29:13**). At Tell Afis, where the LB to Iron Age sequence has been well documented, cooking pot rims with good parallels to those from Tell 'Acharneh make their appearance in the LB levels at the site, and then continue into the Iron I period⁸¹. One significant difference, however, is that triangular rimmed cooking pots often appear with handles at the sides beginning in the Iron I at Tell Afis, while at Tell 'Acharneh, handled cooking pots, by this time featuring simple thickened or swollen rims, do not appear until the start of the Iron IIB period⁸². One can also note the first appearance of the hole-mouth cooking pot with simple rim in the Iron I at Tell Afis⁸³. While this particular type has not yet been recovered from the Iron I materials in Sounding *WOI*, it has been found elsewhere at Tell 'Acharneh in deposits suspected to contain earlier Iron I pottery, making it likely that it also characterized this period⁸⁴.

The rims of several large *pithos* jars are distinguished by their thickened, outwardly projecting rims (**fig. 30:1-7**). While the forms of some of these *pithoi* parallel those coming from later Iron II contexts, their fabrics differ. Although made of the same marly fabric, they tend to be more dense and highly fired, and many have a brown or orange color in contrast to the typically reddish-pink color of the Iron II *pithoi* at Tell 'Acharneh which no doubt resulted from the iron-rich clay with which they were made. One can also note that while the later Iron II *pithos* rims are rounded on the interior, many of the earlier specimens described here are more angular or flared on interior (**fig. 30: 3-4, 7**). This developmental sequence matches observations of *pithoi* from other contexts, primarily on the main mound at Tell 'Acharneh⁸⁵. Similar internally angulated rims are also found in Iron I and Early Iron II levels at Tell Afis⁸⁶.

Several sherds with painted decoration were recovered from Level 4 in Sounding *WOI* (**fig. 30:8-11**). A fine-grained examination of these sherds has not been undertaken and thus it would be hazardous at this point to speculate too much on their provenance — Aegean, coastal or local — or the inspiration for their decorative schemes and painted techniques. Two of the specimens are decorated with a dark red or dark brown paint (**fig. 30:8-9**), while the remaining sherds feature bichrome decoration consisting of red and brown or red and grey colors (**fig. 30:10-11**). In one instance the bichrome decoration has been applied over a white slipped background (**fig. 30:11**).

It has been speculated elsewhere that painted decoration, including bichrome decoration, appears on pottery in the Iron I in western Syria, and this is confirmed by its appearance in Iron I levels at Tell Qarqur, Tell Tweni and Tell Afis⁸⁷. It is also noted that bichrome decoration continues into the early part of the Iron IIA period, at which point red slip or red painted decoration replaces it⁸⁸.

81. VENTURI 2007, fig. 51:3-8; 72:2, 4; 2010, fig. 6:7-8; 9:10-12.

82. VENTURI 2010, fig. 12: 1-2, 5; COOPER 2006, fig. 9:1-9.

83. VENTURI 2010, p. 7; fig. 13:10.

84. COOPER 2006, p. 147; fig. 9:1-2.

85. COOPER 2006, p. 149, fig. 16:1-3.

86. MAZZONI 1998, fig. 21; VENTURI 2007: fig. 12:7-9; 13:11.

87. COOPER 2006, p. 149; DORNEMANN 2003, p. 47 and 58; fig. 88:5; VANSTEENHUYSE 2010, p. 44; MAZZONI 1998, fig. 18:5; 19:5; 24:1; VENTURI 2010, p. 6.

88. VANSTEENHUYSE 2010, p. 45.

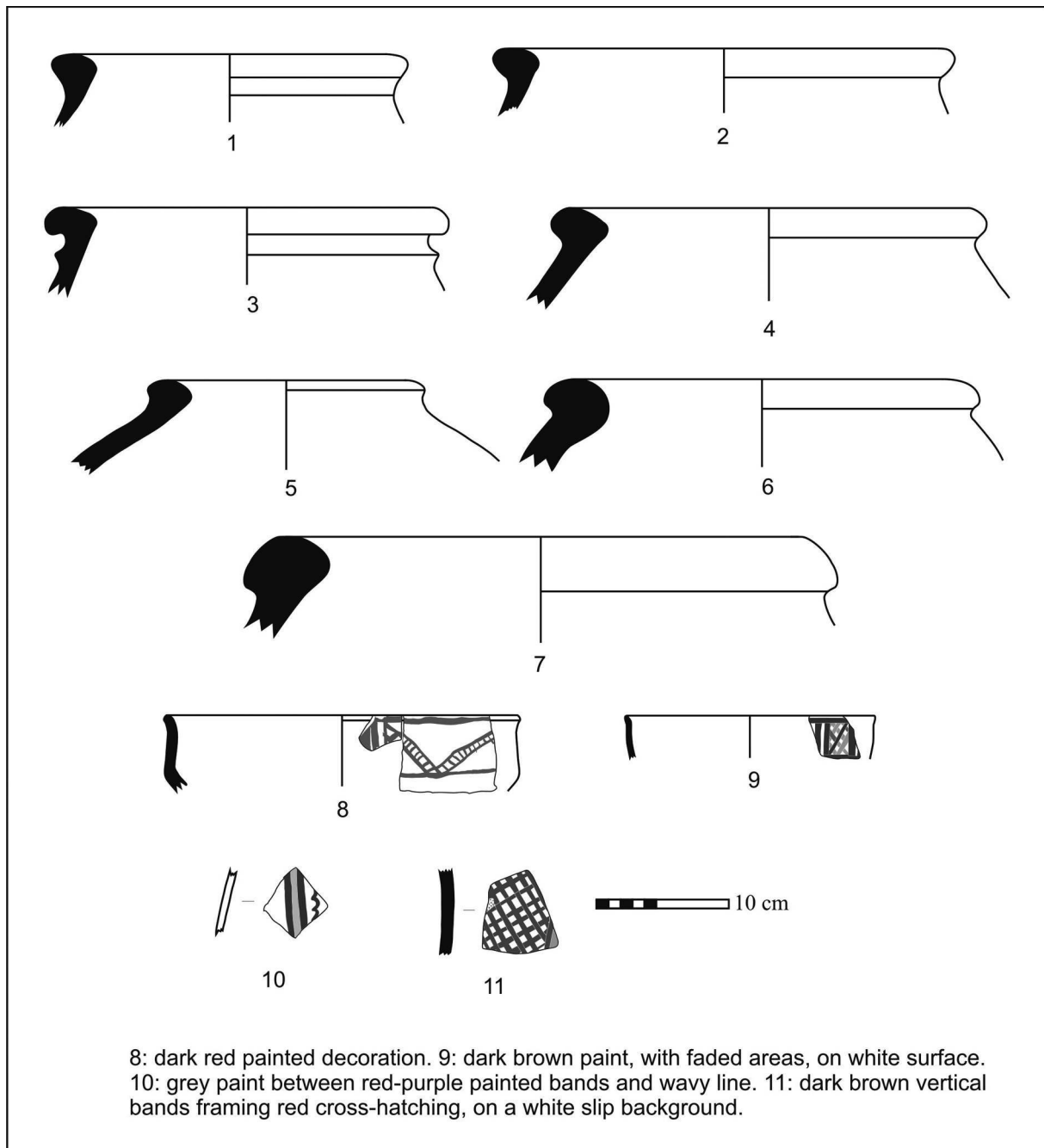


Figure 30. Iron I-IIA pithoi and painted vessels © L. Cooper.

Only a few parallels to the painted decorations have been discerned thus far: The ladder pattern on a carinated bowl form (**fig. 30:8**) matches a similar decoration on a krater from Area D at Tell Qarqur, which is said to come from the 12th cent. BCE⁸⁹. Painted ladder patterns are also attested on vessels from the Hama Cremation Cemetery, and dated to around 1200-1075 BCE⁹⁰. Rectangular zones of painted cross-hatching found on two of the 'Acharneh sherds (**fig. 30:9, 11**) are also attested at the Cremation

89. DORNEMANN 2003, p. 59, fig. 90.

90. RIIS 1948, fig. 25.

Cemetery at Hama from the same period ⁹¹, along with the appearance of wavy lines framed by vertical painted bands (**fig. 30:10**) ⁹². From the coast at the site of Tell Kazel, a locally produced Mycenaean imitation featuring painted metopes embellished with cross-hatching dates to the transition between the Late Bronze II and Iron I at the site, and thus is consistent with the dating of this decoration elsewhere in the Northern Levant ⁹³.

In sum, pottery collected in Level 4 of the 2010 *WOI* sounding appears to comprise a significant corpus of material dating to the Iron I and probably into the early Iron II periods, c. 1200-900 BCE. Particularly diagnostic of this period is the appearance of painted wares. These do not occur in the same prolific quantities as elsewhere in the Levant during this period and may be explained by 'Acharneh's inland location, falling outside the sphere of interaction within which Aegean, Cypriote and Levantine coastal wares and their decorative motifs were routinely exchanged or imitated. Nonetheless, this period is represented by a greater number of painted vessels than the subsequent Iron II period, during which time red slipped decoration takes over and dominates the assemblage. The other characteristic of the Iron I period seems to be its somewhat transitional character: forms that originated in the Late Bronze Age continue to be manufactured, while at the same time, vessel types that persevere into the succeeding Iron II period appear to originate in this phase. Nevertheless, unique characteristics of the Iron I vessels, observed in their color, fabric and varieties of surface treatment, serve to distinguish them from those of earlier or later periods.

Iron II Pottery (fig. 31-33)

Pottery dating to the Iron II period comes mainly from a large stone cobbled floor of a courtyard and associated stone walls (niveau 3). Much of the pottery was found directly on top of the cobbled pavement. In addition, however, pottery fragments, particularly those of large *pithos* jars, were also found embedded within the cobbled pavement of the courtyard. This pattern duplicates the cobbled floor encountered in the 2001 and 2002 in Sounding TE on the main mound, which was also heavily embedded with large pottery sherds ⁹⁴. Although the cobbled pavement encountered in Sounding *WOI* (niveau 3) is more than 6 m below the level of TE, it nonetheless has generated pottery from the same period of the Iron II, indicating in all probability that contemporaneous Iron Age occupation on the main mound was terraced along and down its slopes ⁹⁵.

The Iron II pottery from *WOI* largely duplicates the similarly-dated pottery found in earlier seasons both in the Lower Town and Upper tell which has already been heavily documented ⁹⁶, so only a brief description and accompanying plates are provided here. Particularly prolific in the corpus are shallow platters and slightly curving, simple rimmed bowls, which are either undecorated or covered with a red, slip and frequently burnished (**fig. 31:1-6**). Unlike the bowls of the earlier Iron I occupation described above, the burnishing is performed in regular strokes over the entire surface of the bowls, resulting in a high sheen that is quite striking, especially when executed on the red slipped decoration. One can also remark that the vessels usually comprise a reddish-pink iron-rich marly fabric that was favored during the Iron II period and bespeaks local production ⁹⁷. In general, the range of bowl and platter shapes matches those documented elsewhere at Tell 'Acharneh ⁹⁸, and appears to fall within the same general time period. Larger, deeper bowls which feature expanded rims that have been thickened on the interior,

91. RIIS 1948, 101, no. 56.

92. RIIS 1948, 98 nos. 66-72.

93. BADRE 2006, 82, fig. 13:3.

94. FORTIN 2006c, p. 125.

95. See FORTIN above.

96. COOPER & FORTIN 2004; COOPER 2006.

97. BOILEAU 2006, p. 197, 200.

98. COOPER 2006, fig. 1:6-18; 2:1-5; 5:6-19; 6:1-2; 7:1-9; 8:1-7.

exterior or both (**fig. 31:7-11**) also parallel those found elsewhere at Tell ‘Acharneh⁹⁹. Like the smaller bowls and platters, these were either covered with red slip and burnished or left undecorated.

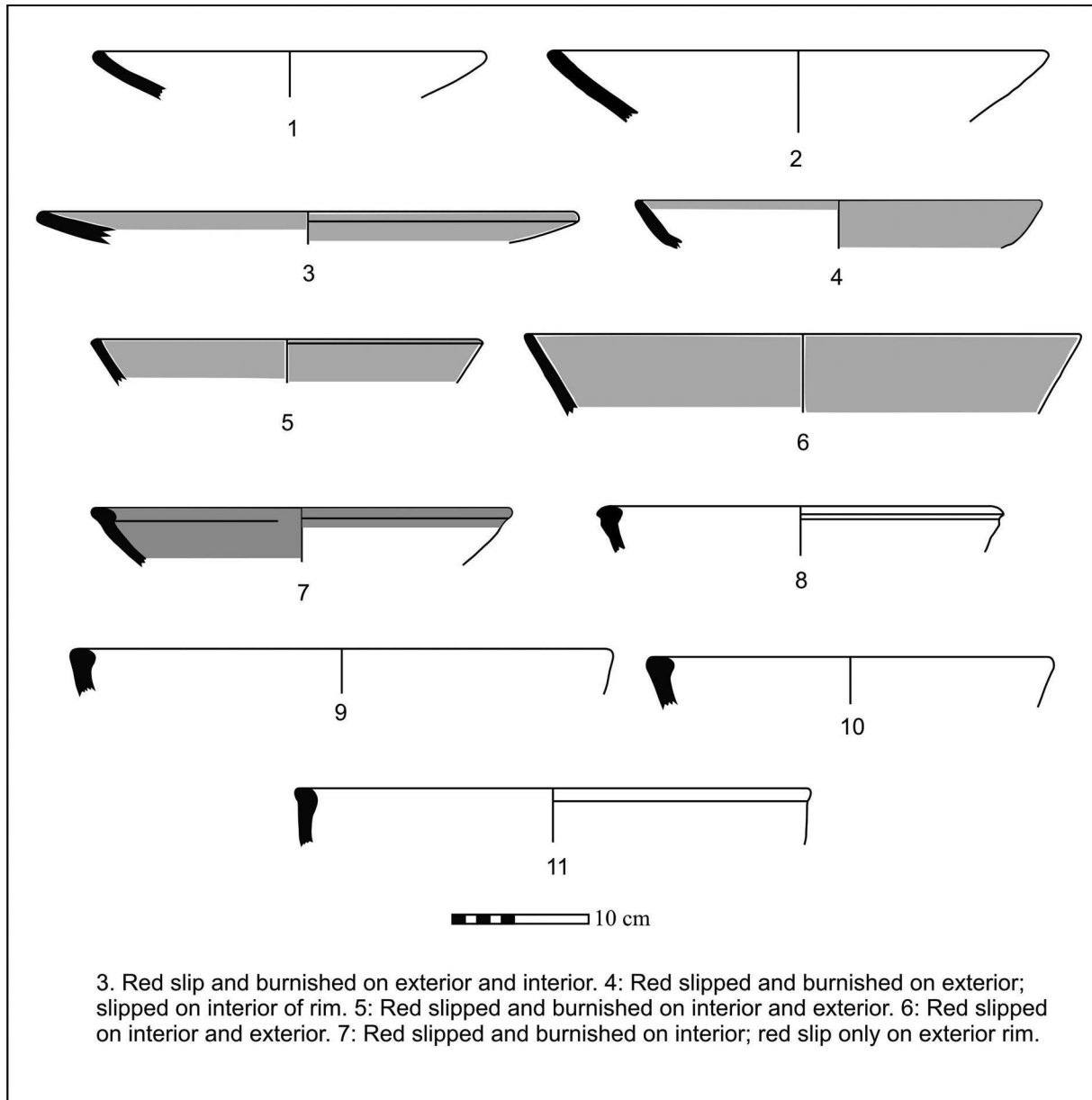


Figure 31. Iron IIB bowls © L. Cooper.

A few krater forms with gently out-turned, thickened rims were found which compare quite nicely to previously documented ‘Acharneh examples, including those with handles extending down from the rims (**fig. 32:1-3**)¹⁰⁰.

99. COOPER 2006, p. 143; fig. 2:6-13; 6:10-21; 8:8-13.

100. COOPER 2006, fig. 3:5-7, 9.

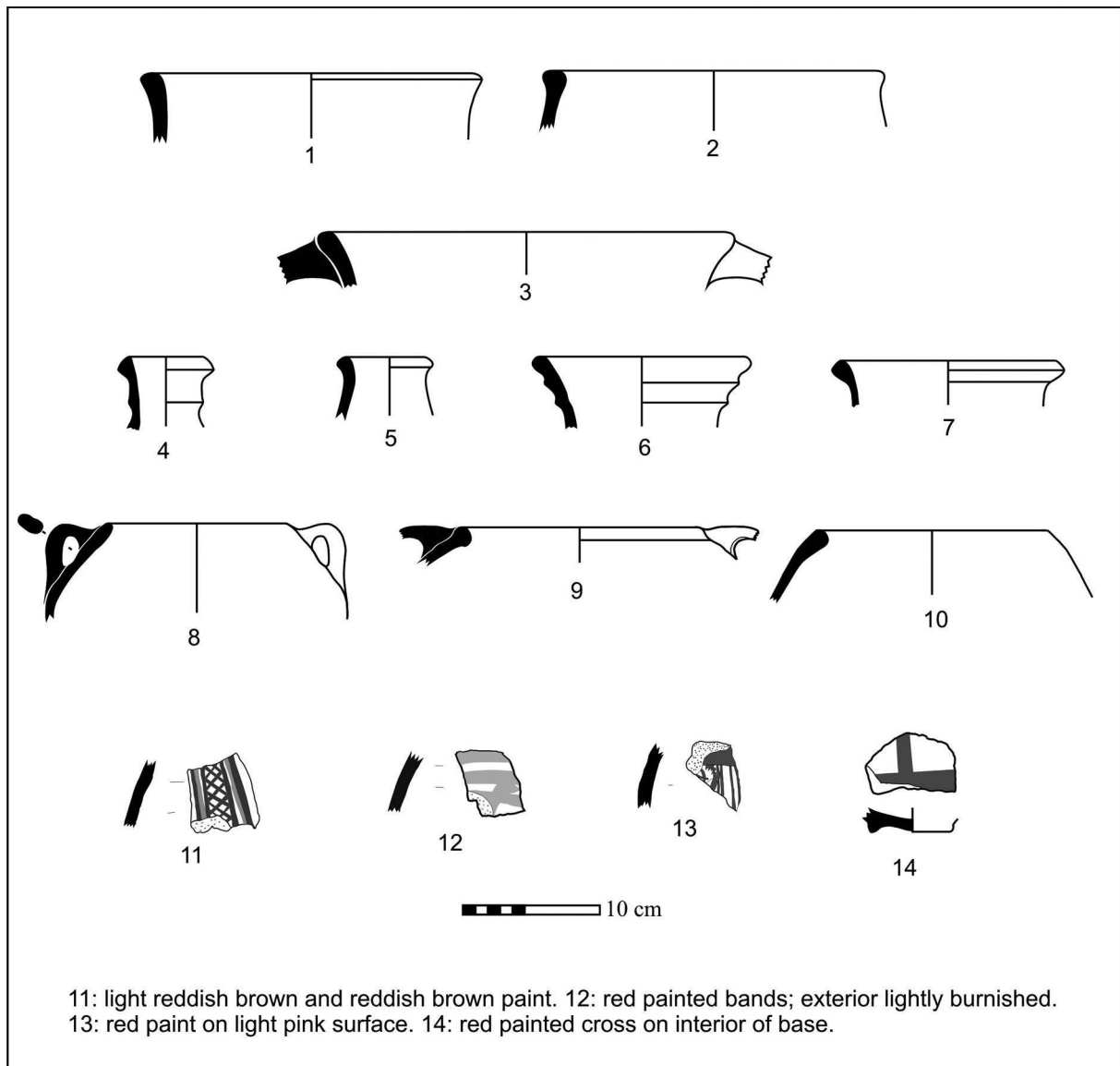


Figure 32. Iron IIB kraters, jars and painted fragments © L. Cooper.

Several jar rims of varying diameters and forms were uncovered (**fig. 32:4-7**), but on these whole, these seem consistent with Iron II jar types found at Tell 'Acharneh and elsewhere in western Syria (for the double-rim jar, **fig. 32:4**)¹⁰¹. Handled hole-mouthed cooking pots dated to the Iron II, mainly distinguished by slightly thickened, internally angulated or rounded rims and globular bodies are well represented here (**fig. 32:9-10**), along with a simple rimmed, hole-mouthed pot with handles and a slight carination on the body, which may be earlier in date (**fig. 32:8**). This was already postulated for a similar cooking pot found in Sounding TE 1 at Tell 'Acharneh, which parallels Iron Ib-c pots from Tell Afis¹⁰².

A few painted pottery fragments may come from vessels from the earlier Iron I period, as suspected in the case of a bichrome sherd decorated with vertical bands and cross-hatching (**fig. 32:11**), which is not unlike a fragment from the Iron I corpus in *WO1* (**fig. 30:11**). On the other hand, two sherds

101. COOPER 2006, fig. 9:18; see espec. CECCHINI 1998, fig. 19:15; IWASAKI *et al.* fig. 4.5:8; 4.12:4; 4.45:12.

102. COOPER 2006, p. 147; fig. 9:1; MAZZONI 1998, fig. 20:11; 22:7.

with red painted decoration appear to be made of the typical local Iron II marly clay (**fig. 32:12-13**), and seem to indicate that certain red painted decorative schemes carry on into this period. Certainly, the interior of a footed base, probably that of a bowl, in which has been found a red crossed pattern (**fig. 32:14**), matches well with other red painted bowl bases known from Iron II contexts elsewhere at Tell 'Acharneh and Hama ¹⁰³.

Of all of the Iron II vessel types, Operation *WOI* (niveau 3) has yielded the highest number of *pithos* jar fragments on account of the fact that many were used to make the cobbled pavement that was excavated in a broad exposure in both the 2009 and 2010 seasons. Well over 100 *pithos* rims have been documented in addition to about 10 heavy *pithos* bases. Only a few are illustrated here (**fig. 33**), but in general, the fragments constitute a roughly uniform corpus of large jar rims characterized by a thickened, out-turned rim above a long, ovoid body which tapers to a solid flat or slightly convex base.

As reported in an earlier publication, similarly shaped *pithoi* seem to characterize the inland Syrian assemblage, differing from those found along the coast, which have a sack-shaped appearance ¹⁰⁴. Ovoid *pithoi* have been found in significant numbers at Tell Mastuma, Tell Afis, Hama, and Qatna, not to mention other Iron II contexts at Tell 'Acharneh itself ¹⁰⁵. Most of the Iron II *pithos* jars feature rims that are rounded and thickened on the interior. The few which are more internally angulated (**fig. 33:1**) probably represent a slightly earlier phase in their development which goes back to the Iron I and beginning of the Iron IIA periods ¹⁰⁶. A rim sherd with two finger impressions on the interior of the rim (**fig. 33:4**) has been documented before at Tell 'Acharneh ¹⁰⁷. Finger impressions on *pithos* rims are also abundantly documented at Tell Mastuma ¹⁰⁸.

Given its striking parallels to the pottery from other areas of Tell 'Acharneh that have been dated to the Iron II period, not to mention other sites in Syria which have been similarly dated, it is reasonable to assign the pottery from the *WOI* Sounding (niveau 3) to the same period. In terms of absolute dates, we continue to favor an 8th cent. BCE date for this pottery, and argue that the lack of development of the ceramic repertoire into the Iron III period indicates that occupation at the site came to an end, possibly with the campaigns of Sargon II into this part of Syria around 720 BCE.

103. COOPER & FORTIN 2004, fig. 12:6; COOPER 2006, fig. 8:17; FUGMANN 1958, fig. 305:5B108 Q17; 344:4B767, 4B835.

104. LEHMANN 1998, fig. 3: 24-25; COOPER 2006, p. 145.

105. IWASAKI *et al.* 2009, fig. 6.7-6.8; CECCHINI 1998, fig. 19: 22; FUGMANN 1958, fig. 269:6B612, 6B580, 7A606; BESANA *et al.* 2008, fig. 12; COOPER 2006, fig. 4:14-17; 10-11; 16-17; 27:10-12.

106. COOPER 2006, p. 149; fig. 16:1-3.

107. COOPER 2006, fig. 16:1.

108. IWASAKI 2009, p. 355, fig. 6.13.

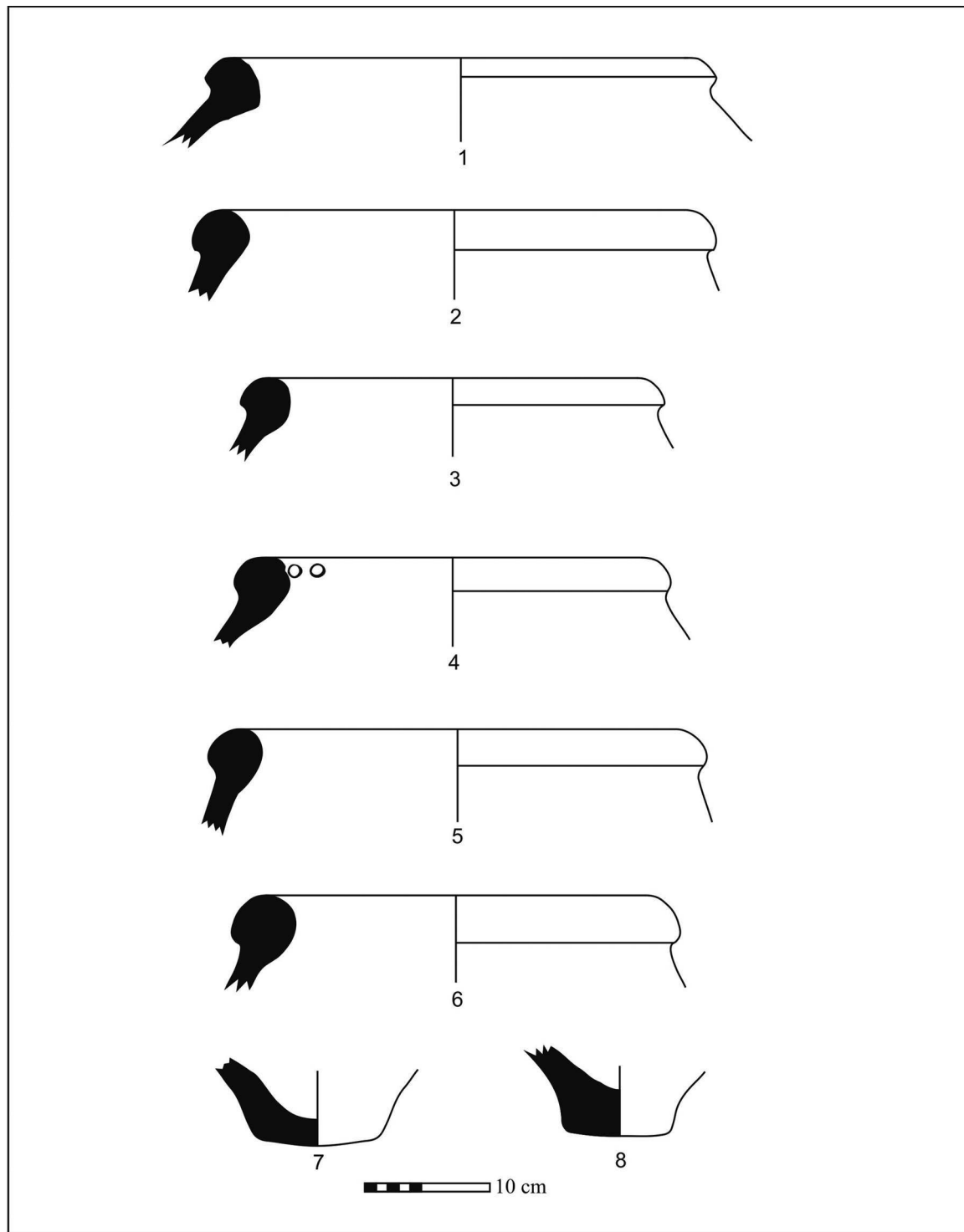


Figure 33. Iron IIB pithoi © L. Cooper.

PETROGRAPHIC ANALYSIS OF THE LATE BRONZE AGE POTTERY¹⁰⁹

At the end of the 2010 field season, a total of 55 ceramic samples were selected for petrographic analysis. These samples represent the large jars found *in situ* in the storage rooms, smaller pots excavated in the vicinity of the storage jars, clay structures (possibly basins and benches) and a brick from the red-brick rubble (*WOI*, niveau 5, described by Fortin, above). These LB samples complete the previous 250 samples taken in 2002 that date to the EB IV, MB and Iron II periods¹¹⁰.

Petrographic analysis¹¹¹ of the 55 LB samples permitted the identification of three fabric groups and two loners (i.e. single-sample fabrics) based on mineralogy and clay paste recipe. All fabrics are consistent with the local geology and are considered to have been produced by potters active at Tell 'Acharneh during the LB period. The geology around Tell 'Acharneh is essentially characterized by Holocene lacustrine deposits and Continental Upper Miocene-Continental Pliocene marls with phosphatic, glauconitic and quartz grains, intercalated by sandy and silty lenses and calcareous beds. Cretaceous formations with marls, marly limestone, dolomitic limestone, dolomite, and flint nodules and lenses outcrop further west of the site¹¹².

All fabric groups are highly calcareous, low fired and characterized by a brown marly groundmass (mixture of clay and micrite) with a coarse fraction of fine to medium sand-sized inclusions of micritic limestone, quartz and chert (see full description below). The groups display some variability but the main differentiating factor is the addition of temper. The main group — Marl Fabric Group — is naturally coarse with fine to medium sand-sized inclusions, mainly rounded grains of micrite (**fig. 34A**).

Firing temperatures are estimated to be low, less than 650 °C in a mainly oxidizing atmosphere, as the carbonates show no sign of decomposition and the groundmass is optically active. Overall, it is a heterogeneous fabric comprising 27 samples, 11 of which are further subdivided into two subgroups based on firing and coarseness:

Subgroup A: Higher fired dark brown micromass with 9 samples (9 / 10 / 11 / 14 / 15 / 21 / 22 / 28 / 45) representing a range of shapes, including small jar, bowls, bases, and a large storage jar (**fig. 34B**). The partial decomposition of the carbonates suggests that these pots were fired at slightly higher temperatures, closer to 700 °C.

Subgroup B: Fine grained with two samples only (27 and 50) from the base of a small pot (27) and a large storage jar. They have a finer fabric almost lacking a coarse fraction, suggesting that the potters might have levigated the clays to remove the sand-size inclusions.

This fabric group is well attested in the Tell 'Acharneh fabrics¹¹³, with some samples dating to the Middle Bronze Age but the majority belonging to the Iron II marly fabric groups. Slight differences have been observed between the periods with regards to density, firing and percentages of different inclusion types but overall the LB Marl Fabric Group fits very well with the locally produced pottery at the site. Unfortunately no Iron I pots were sampled for analysis. Nonetheless, the use of the same raw materials and clay paste recipes in the Late Bronze and Iron II periods points to a strong continuity of raw materials selection and preparation from the second to the 1st millennia BCE.

The two other fabric groups are closely related to the Marl Fabric but differ by the addition of tempering material, either organic (Chaff Temper Fabric Group, n = 14) or shell (Shell Temper Fabric Group, n = 9) (**fig. 34C-D**). While the total number of samples is low, it appears so far that the choice of temper by Tell 'Acharneh potters reflects the intended function of the pots: shell for cooking pots and chaff for large storage jars. When mixed in with the local marly clays, these tempers enhance the

109. By Marie-Claude BOILEAU.

110. Preliminary petrographic observations were published in BOILEAU 2006 but the complete petrographic characterization and interpretation of provenance and technology is not yet published.

111. Petrographic analysis was conducted on standard thin sections at the Penn Museum's Ceramics Laboratory using a Zeiss AxioScope A1 transmitted polarized light microscope.

112. SWEIDEH & AL-MONAJED 1996, Geological Map of Syria; BEYDOUN 1977.

113. BOILEAU 2006.

performance characteristics of vessels. For example, the low expansion coefficient and elongated shape of the shell fragments help reduce thermal stress and crack propagation during the repeated cooling and heating cycles of cooking over fire 114. Moreover, the addition of organic temper for thick-walled pots increases porosity (by burning out during firing), creating a lighter fabric and one that is more resistant to mechanical stress as pores stop small crack propagation 115. The same correlation between intended function and type of temper has previously been made for the Iron II pottery at Tell 'Acharneh 116, highlighting again continuity in pottery production from the LB to the Iron II.

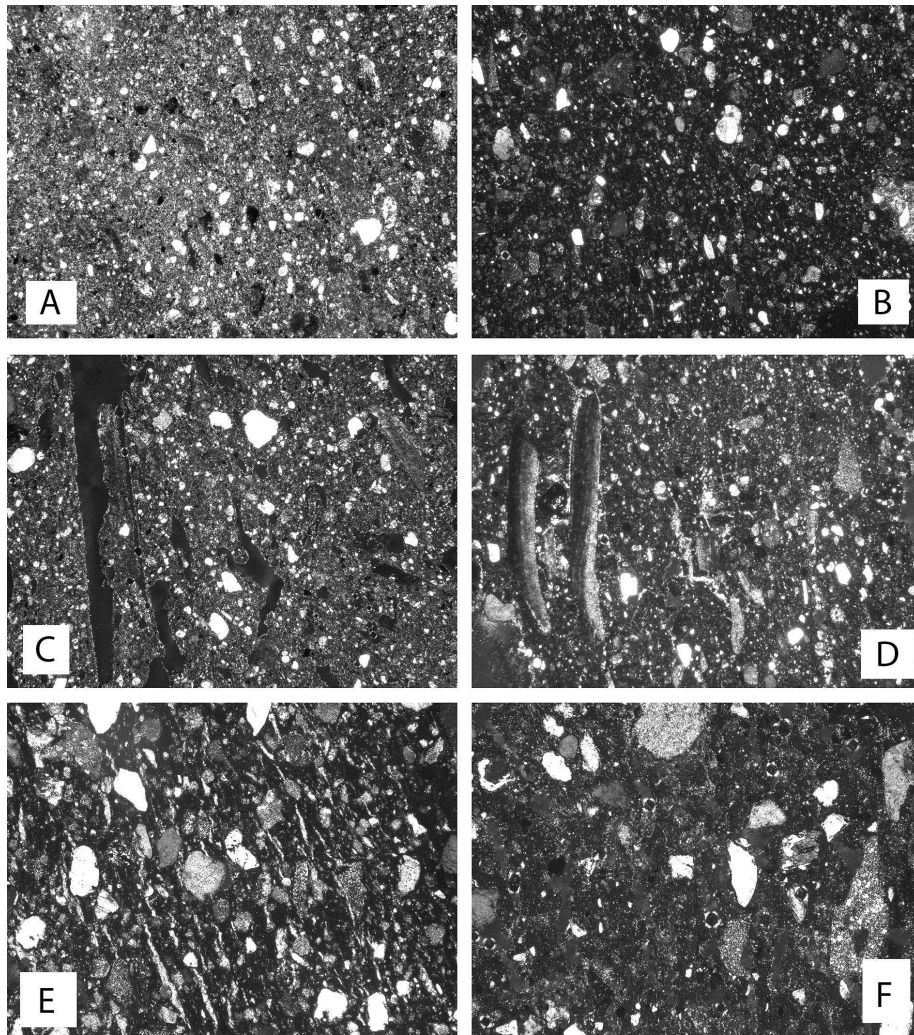


Figure 34. Photomicrographs of LB petrographic fabrics © M.-Cl. Boileau.

As for the single-sample fabrics, they are tempered with a well-sorted sand of quartz and chert and fired at higher temperature (**fig. 34E-F**). The temperature is estimated to be closer to 850 °C based on the decomposition of the carbonates and the inactive groundmass. As such, the LB sand-tempered fabrics closely resemble those dating to the MB period whose higher fired greenish fabrics were tempered with glauconitic, chert & quartz or weathered basaltic sand ¹¹⁷. Four MB samples exhibit a chert and quartz

114. RYE 1981; TITE *et al.* 2001.

115. TITE *et al.* 2001.

116. BOILEAU 2006.

117. BOILEAU 2006; COOPER & FORTIN 2001.

sand-tempered fabric similar to the fabrics of the two LB loners. While the number of samples is low, the presence of this fabric in both periods shows that sand tempered fabrics were still being produced in the later part of the 2nd millennium, a pattern also identified at Qatna ¹¹⁸. With regards to provenance, the chert and quartz sand-tempered fabrics, as well as the glauconitic sand fabric, are considered to have been locally produced as these inclusions are compatible with the local geology. The basalt sand-tempered fabric ¹¹⁹ was probably imported from another area, possibly from further south where fabrics with volcanic inclusions have been identified ¹²⁰ and where Pliocene basalt extrusions occur over a large area ¹²¹. However, a small amount (<1 %) of detrital minerals of basalt (i.e. plagioclase feldspar, pyroxene and iddingsite after olivine) is part of the fine fraction of the Tell 'Acharneh local pottery fabrics, as well as in the brick and clay structures. It seems that these minerals are part of the silt transported by the Orontes River.

In addition to the pottery, four samples for petrographic analysis were taken on contemporaneous clay structures for comparative purposes. Sample 1 is a brick from the red-brick rubble of the storage rooms; Samples 2 and 31 were taken from clay structures from room ST 1003; and Sample 32 is a 'clay bench' near Sample 4 (one of the *in situ* jars, c5993) in room ST 1002. The brick, originally a dried mud-brick, was fired in the destruction of the store rooms. It is now red, high fired, with very few to rare fine to medium sand-sized inclusions of quartz, chert, radiolarian mudstone, glauconite (?) and void pseudomorphs after organic temper. Overall the mineralogy of the brick is the same as the pottery but the texture and firing make it hard to associate with a particular fabric. In contrast, Samples 2, 31 and 32 exhibit the same fabric as the Marl Fabric Group, with Sample 32 being the most different by its abundance of micrite and chaff temper.

Marl Fabric Group (including Subgroup A, higher-fired) ¹²²

Microstructure

Moderate porosity with dominant mesovughs, few microvughs and rare macrovughs. The distribution of the inclusions is double- to open-spaced in the coarse fraction and single- to double-spaced in the fine fraction. Voids that are elongated have a preferred orientation parallel to the vessel wall but the inclusions are randomly oriented.

Groundmass

Homogeneous within each sample but rather heterogeneous between subgroups with regards to firing (i.e. optical activity and color). When moderately active, the groundmass has a random b-fabric and is brown in PPL (x50) and yellowish brown to light reddish brown in XPL (x50). Optical activity is often lost near the outer surface. When optically inactive (Subgroup A), the groundmass is dark brown in both PPL and XPL (x50).

Inclusions: c:f:v0.125 mm = C.15:78:7 to 7:88:5

The inclusions are moderately sorted with an overall unimodal grain-size distribution. <2.4 mm, mode 0.4 mm, a-wr, mainly sr-r.

118. MARITAN *et al.* 2005.

119. BOILEAU 2006.

120. For ex., see MARITAN *et al.* 2005.

121. BEYDOUN 1977.

122. Abbreviations used in the descriptions are as follows (after WHITBREAD 1989; 1995): Frequency labels: predominant >70 %, dominant 50-70 %, frequent 30-50 %, common 15-30 %, few 5-15 %, very few 2-5 %, rare 0.5-2 %, very rare <0.5 %. Size of voids: mega >2 mm, macro 0.5-2 mm, meso 0.05-0.5 mm, micro <0.05 mm. Angularity of inclusions: a = angular, sa = sub-angular, sr = sub-rounded, r = rounded, wr = well rounded. PPL = plane polarized light; XPL = cross polarized light. The c:f:v ratio expresses the relative proportions of coarse (c), fine (f) components and voids (v) while the boundary between the fine and the coarse components is indicated as a subscript. Concentration features: TCF = textural concentration features, KCF = crystalline (depletion) concentration features.

Fine fraction (<0.125 mm)

Dominant	Micrite
	Microfossils
Few	Monocrystalline quartz
Rare	Chert
	Glauconite (?)
	Opaques, dark red
Very rare	Plagioclase feldspar
	Pyroxene (?) 2 nd -3 rd order colored mineral, strong birefringence, rarely twinned, weak to no pleochroism, high relief

Coarse fraction (>0.125 mm)

Dominant to common	Micritic limestone: equant, sr-r, <2.4 mm, mode 0.4 mm. Some grains have fine sand-sized inclusions of quartz and chert, others have bioclasts and spar.
Few	Microfossils: equant, sr-wr, <0.8 mm, mode 0.14 mm. Single or multi-chamber filled with spar or micrite. Very rare mollusk fragments or single ostracod bivalves.
	Monocrystalline quartz: equant, sa-r, mainly sr, <0.6 mm, mode 0.3 mm. Straight extinction, very rare grains with undulose extinction. Rare grains have tiny colorful inclusions and/or vacuoles.
Few to very rare	Chert: equant and elongated, a-wr, mainly sa-sr, <0.62 mm, mode 0.2 mm. Microquartz with rare megaquartz veins or grains. Some grains are red, jasper-like. Very rare chert grains with large radiolarian tests or as gypsum pseudomorphs (lenticular shape).
Rare	Chaff pseudomorphs: elongated, <1.1 mm, mode 0.8 mm. Organic material has completely burnt out during firing. Some voids are filled with calcium carbonates.
Very rare	Glauconite: equant, r, <0.2 mm, mode 0.13 mm. Orange-red with very fine granular texture. Light orange non pleochroic in PPL.
	Radiolarian mudstone: equant, sr, <1.6 mm, mode 0.5 mm.
Very rare to absent	Feldspar: equant, sa-sr, <0.4 mm, mode 0.2 mm. Orthoclase (?) grains with calcite recrystallization (alteration) and plagioclase grains with polysynthetic twinning.
	Altered silicate mineral/rock fragment: elongated to equant, sr. <0.35 mm, mode 0.16 mm. Weathering, mica (sericite?) development is oriented along the long axis. These highly altered inclusions with an elongated shape are not the result of low-grade metamorphism as it was previously suggested (BOILEAU 2006, p. 202, 'phyllite'). The mineralogical characterization in this article replaces the previously published summary of the MB and Iron II marl fabric groups.
	Pyroxene: equant, sa, 0.14 mm. Simple twin, possibly augite.

Concentration features

Very few to rare TCFs, clay or iron-rich concentrations with silt-size quartz inclusions, orange to reddish brown. Some grains could be glauconitic. <0.6 mm, mode 0.2 mm.

Marl Fabric (Subgroup B, finer-grained)

Inclusions: c:f:v0.125 mm = 1:94:5

The inclusions are poorly sorted with a unimodal grain-size distribution. The fine fraction is predominantly micrite. The nearly absent coarse fraction is represented by micritic limestone (<3 mm, mode 0.13 mm) with traces only of chert or quartz. Subrounded red to dark brown textural concentrations features are more abundant.

Chaff Tempered Fabric Group

Same fabric description as the Marl Fabric Group but with the addition of 5-10 % chaff inclusions in the coarse fraction:

Few	Chaff: elongated, <2.8 mm, mode 1.5 mm. The organic material has completely burnt out during the firing process, leaving void pseudomorphs after chaff. Some of the voids are filled or have rims of calcium carbonates. Samples 47 and 49 are more highly fired and have depletion features in the groundmass
-----	--

Shell Tempered Fabric Group

Microstructure

Moderately porous, with frequent microvughs, common mesovughs and rare macrovughs. Very rare planar macro voids with dark rim attest to burnt out organic matter. The distribution of the inclusions is single- to double-spaced in the coarse fraction and open-spaced in the fine fraction. The shell fragments and elongated voids are oriented parallel to the vessel walls.

Groundmass

Homogeneous within each sample but slightly heterogeneous between samples based on firing (i.e. color and optical activity). It is optically inactive to weakly active with crystallitic, random or unistrial b-fabrics. When active, the groundmass is brown in PPL (x50) and light brown to dark brown in XPL (x50). When inactive, it is brown in PPL (x50) and dark reddish brown in XPL (x50).

Inclusions. c:f:v0.125 mm = c. 30:63:7 – 25:68:12

The inclusions are poorly sorted with a clear bimodal gran-size distribution. <2 mm, mode 0.2 mm, a-wr.

Fine fraction (<0.125 mm)

Predominant	Micrite
	Microfossils
Few	Monocrystalline quartz
Very few to rare	Chert, some individual radiolarian tests
Rare	Opaques, dark red
Very rare	Glauconite (?), as pellets and mica laths
Very rare to absent	Plagioclase feldspar
	Pyroxene (?): 2 nd -3 rd order colored mineral, strong birefringence, rarely twinned, weak to no pleochroism, high relief

Coarse fraction (>0.125 mm)

Frequent	Micritic limestone: equant, sr-r, <0.8 mm, mode 0.2 mm. Some grains have spar, bioclasts and/or silt-size quartz inclusions
Few	Shell fragments: curved and elongated, <2 mm, mode 0.8 mm. Some fragments still show cross-laminated multi-layer internal structure; outer shell wall darker colored. Probably mollusk
Very few to rare	Monocrystalline quartz: equant, sa-r, mainly sr-r, <0.4 mm, mode 0.2 mm. Straight extinction, mostly clear grains but some have tiny colored inclusions

	Chert: equant, a-r, mainly sa-sr, <1.2 mm, mode 0.2 mm. Clear to muddy (dark red staining), microquartz chert but some megaquartz veins and rare radiolarian tests. Some grains are reddish, jasper-like
	Microfossils: elongated to wr. Multi and single-chamber, very rare single valve. Chambers are filled with spar or micrite. Part of marl clay base
Very rare to absent	K-feldspar (?): equant, sr, 0.3 mm. Cloudy with calcite replacement
	Organic material: elongated void pseudomorphs of chaff (?) burnt out during firing process.
	Glauconite: equant, sr-r, <0.6 mm, mode 0.25 mm. Bright orange- yellow, non-pleochroic in PPL, grains showing very fine granular texture. Usually pellet-like but as mica laths in Sample 38

Concentration features

There are few brownish red textural concentration features with sharp to diffuse boundaries. Silt-size quartz inclusions may be present. <0.6 mm, mode 0.2 mm, sr-r. These TCFs are probably part of the clay base and/or a reaction to the firing process (segregation of iron).

Sand tempered Fabric A, Loner 39

Microstructure

Moderately porous with dominant mesovughs, few microvughs and fine cracks (shrinkage?) filled with calcium carbonates (probably post-depositional). The distribution of the inclusions is single-spaced in the fine fraction and single- to double-spaced in the coarse fraction. The elongated voids are oriented parallel to the vessel walls.

Groundmass

Slightly heterogeneous based on the depletion features which are concentrated along the surface of the sample. It is optically inactive to weakly active with a random b-fabric. When optically inactive, it is dark brown in both PPL and XPL (x50). When weakly active, it is red brown in PPL (x50) and brown to reddish brown in XPL (x50).

Inclusions: c:f:v0.125 mm = 25:65:10

The inclusions are poorly sorted with a bimodal grain-size distribution. Each fraction is however well sorted. <1.5 mm, mode 0.3 mm, sa-wr.

Fine fraction <0.125 mm

Predominant	Micrite
	Microfossils
Very few	Quartz
	Chert, including individual tests
Rare	Glauconite?

Coarse fraction >0.125 mm

Common	Monocrystalline quartz: mainly equant, sa-r, mainly sr, <0.7 mm, mode 0.3 mm. Straight extinction, rarely with tiny colorful inclusions
	Chert: equant and elongated, sa-r, mainly sr, <0.75 mm, mode 0.3 mm. Microquartz with rare megaquartz vein. Some grains are reddish with radiolarian tests
	Micritic limestone: equant, sr-wr, <0.9 mm, mode 0.3 mm. Rare with glauconitic or clay concentrations. Very rare grains have silt-size quartz or are sparitic

Rare	Glauconite: equant, <1.5 mm, mode 0.3 mm, r-wr. Greenish orange to brown, with very fine granular texture. Light orange and non-pleochroic in PPL. Brown grains could be phosphate
Very rare	Phosphatic pellets? Equant, sr, 0.3 mm, dark gray with brown edge along grain boundary

Concentration features

Abundant crystalline depletion features as streaks, rims and infilling of cracks.

Sand tempered Fabric B, Loner 55

Microstructure

Porous with dominant mesovughs, few microvughs and rare macrovughs. In addition there are many fine shrinkage cracks. The distribution of the inclusions, uneven throughout the thin section, is single- to double spaced. Elongated voids are oriented parallel to the vessel walls.

Groundmass

Heterogeneous because of the crystalline depletion features (from the decomposition of the calcium carbonates). The matrix is optically inactive, dark brown in PPL (x50) and yellowish brown and dark green in XPL (x50).

Inclusions: c:f:v0.125 mm = 32:50:18

Overall the inclusions are poorly sorted with a bimodal grain-size distribution but each fraction is moderately sorted. <0.8 mm, mode 0.3 mm, a-wr.

Fine fraction (<0.125 mm)

Predominant	Quartz
Very few	Opagues
Rare	Chert, including individual tests
	Voids with micritic rims (partially depleted grains)

Coarse fraction (>0.125 mm)

Dominant	Monocrystalline quartz : equant, sa-r, mainly sr-r, <0.6 mm, mode 0.3 mm. Straight extinction. Rare grains with tiny colorful inclusions
Frequent	Chert : equant, a-r, <0.7 mm, mode 0.3 mm. Mainly microquartz, rare grains with megaquartz veins or with radiating fibrous chalcedony (and growth banding). Some grains have radiolarian tests and/or are reddish
Few	Micritic limestone: Partially depleted, often with iron-rich rim. <0.8 mm, mode 0.4 mm
Very few	Opagues: equant, a-sr, <0.25 mm, mode 0.2 mm

Concentration features

Abundant crystalline textural concentration (depletion features) across the fabric, from void rims to long streaks along the surfaces.

BIBLIOGRAPHIE

- AL-MAQDISSI (M.)
1996 « Reprise des fouilles à Mishirfeh en 1994 », *Akkadica* 99-100, p. 1-14.
- BADRE (L.)
2006 « Tell Kazel-Simyra: A Contribution to a Relative Chronological History in the Eastern Mediterranean during the Late Bronze Age », *BASOR* 343, p. 65-95.
- BESANA (R.) *et al.*
2008 « Excavations on the Acropolis of Mishirfeh, Operation J. A New Early Bronze Age III – Iron Age III Sequence for Central Inner Syria. 2: The Pottery », *Akkadica* 129, p. 129-179.
- BEYDOUN (Z. R.)
1977 « The Levantine Countries: The Geology of Syria and Lebanon (Maritime Regions) », A. E. M. NAIR *et al.* (éd.), *The Ocean Basins and Margins. 4A. The Eastern Mediterranean*, New York/Londres, Plenum Press, p. 319-353.
- BOILEAU (M.-Cl.)
2006 « The Pottery from Tell 'Acharneh, II: Technological Considerations », FORTIN 2006, p. 191-213.
- BOURKE (S. J.)
1993 « The Transition from the Middle to the Late Bronze Age in Syria: The Evidence from Tell Nebi Mend », *Levant* 25, p. 155-195.
- BOUZIGARD (A. C.) & SAIDEL (B. A.)
2012 « A Note on the Dating of the Clay Smoking Pipes Collected in the Course of Two Archaeological Surveys Conducted in Saudi Arabia: the Comprehensive Survey of Saudi Arabia (1976-1981) and Michael Gilmore's Survey of the Darb al-Hajj », *Arabian Archaeology and Epigraphy* 2, p. 116-124.
- CECCHINI (S. M.)
1998 « Architecture, Pottery and Finds », CECCHINI & MAZZONI 1998, p. 273-296.
- CECCHINI (S. M.) & MAZZONI (S.) éd.
1998 *Tell Afis (Siria). Scavi sull'acropoli 1988-1992. The 1988-1992 Excavations on the Acropolis*, Pise, ETS.
- COOPER (L.) & FORTIN (M.)
2001 « Analyse pétrographique de la céramique de Tell 'Acharneh, en Syrie (3000-700 av. J.-C.): résultats préliminaires », M. FORTIN (éd.) *Journées d'étude du Groupe de recherche en archéométrie du Célat (1997-1999), Cahiers d'archéologie du CELAT 10 and Série archéométrie 1*, Québec, Université de Laval, p. 137-148.
- COOPER (L.)
2006 « The Pottery from Tell 'Acharneh, 1. Typological Considerations and Dating According to Excavated Areas in the Upper and Lower Towns, 1998-2002 », FORTIN 2006, p. 140-190.
- COOPER (L.) & FORTIN (M.)
2004 « Tell 'Acharneh in the Middle Orontes Valley and the Assyrian Presence in Syria », G. FRAME (éd.), *From the Upper Sea to the Lower Sea: Studies on the History of Assyria and Babylonia in Honour of A. Kirk Grayson (PIHANS 101)*, Leyde, p. 17-51.
- DION (P.-E.)
1997 *Les Araméens à l'âge du Fer : histoire politique et structures sociales*, Paris, Gabalda.
- DION (P.-E.)
2006 « Tell 'Ašarneh in the Kingdom of Hamath », FORTIN 2006, p. 43-48.
- DORNEMANN (R.)
1979 « Tell Hadidi: A Millennium of Bronze Age City Occupation », D. N. FREEDMAN (éd.), *Excavation Reports from the Tabqa Dam Project. Euphrates Valley, Syria (AASOR 44)*, Baltimore, p. 113-151.
- DORNEMANN (R.)
1981 « The Late Bronze Age Pottery Tradition at Tell Hadidi, Syria », *BASOR* 241, p. 29-48.
- DORNEMANN (R.)
2003 *Seven Seasons of American Schools of Oriental Research Excavations at Tell Qarqur, Syria, 1993-1999 (AASOR 56)*, Baltimore.
- FORTIN (M.) éd.
2006 *Tell 'Acharneh 1998-2004 (Subartu 18)*, Turnhout, Brepols.
- FORTIN (M.)
2006a « Tell 'Acharneh : rapport préliminaire sur la campagne préparatoire de 1998, 2001 et 2002 », FORTIN 2006, p. 82-139.
- FORTIN (M.)
2006b « Tell 'Acharneh : rapport préliminaire sur la campagne de fouilles de 2001 », FORTIN 2006, p. 106-119.

- FORTIN (M.)
2006c « Tell 'Acharneh : rapport préliminaire sur la campagne de fouilles de 2002 », FORTIN 2006, p. 120-139.
- FORTIN (M.)
2006d « À la recherche de l'ancienne Tunip à Tell 'Acharneh, dans la vallée de l'Oronte (Syrie) », P. BUTTERLIN *et al.* (éd.), *Les espaces syro-mésopotamiens (Surbartu 17)*, Turnhout, Brepols p. 213-221.
- FORTIN (M.)
2007a « La vallée du Ghab : nouvelle prospection archéologique », D. MORANDI BONACOSSO (éd.), *Urban and Natural Landscapes of an Ancient Syrian Capital. Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria. Proceedings of the International Conference held in Udine, 9-11 Dec. 2004 (SAQ 1)*, Udine, Forum, p. 253-268.
- FORTIN (M.)
2007b « Reprise de la prospection de la moyenne vallée de l'Oronte (Syrie) par une mission syro-canadienne : 2004-2006 », *CSMS Journal* 2, p. 19-41.
- FORTIN (M.) & COOPER (L.)
2011 « Tell 'Acharneh : campagne de 2009 », *Chronique archéologique en Syrie* 5, p. 131-136.
- FORTIN (M.) & COOPER (L.)
2012 « Tell 'Acharneh : campagne de 2010 », *Chronique archéologique en Syrie* 6, p. 177-182.
- FORTIN (M.) & COOPER (L.)
2013 « Shedding New Light on the Elusive Late Bronze and Early Iron Ages at Tell 'Acharneh (Syria) », K. A. YENER (éd.), *Across the Border. Late Bronze-Iron Age Relations between Syria and Anatolia (ANES Suppl. Series 42)*, Louvain, Peeters, p. 149-173.
- FORTIN (M.) & COOPER (L.)
2014 « Nouvelle prospection archéologique dans la moyenne vallée de l'Oronte : entre Cheyzar et Tell Qarqur », K. BARTL & M. AL-MAQDISSI (éd.), *New Prospecting in the Orontes Region. First Results of Archaeological Fieldwork (Orient-Archäologie 30)*, Rahden/Westf., Verlag Marie Leidorf, p. 85-105.
- FORTIN (M.), GEYER (B.) & AL-DBIYAT (M.)
2005 « Observations préliminaires sur les schèmes d'établissement dans la vallée du Ghab (Syrie) durant les âges du Bronze et du Fer », J.-Fr. BERGER *et al.* (éd.), *Temps et espaces de l'homme en société, analyses et modèles spatiaux en archéologie. XXV^e Rencontres internationales d'archéologie et d'histoire d'Antibes*, Antibes, APDCA, p. 315-323.
- FRAME (G.)
2006 « The Tell Acharneh Stela of Sargon II of Assyria », FORTIN 2006, p. 49-68.
- FUGMANN (E.)
1958 *Hama : fouilles et recherches, 1931-1938, v. 2, pt. 1 : L'architecture des périodes pré-hellénistique*, Copenhagen, Nationalmuseum.
- GALLET (Y.) & AL-MAQDISSI (M.)
2010 « Archéomagnétisme à Mishrifeh/Qatna : nouvelles données sur l'évolution de l'intensité du champ magnétique terrestre au Moyen-Orient durant les derniers millénaires », *Akkadica* 131, p. 29-46.
- GOREN (Y.), FINKELSTEIN (I.) & NA'AMAN (N.)
2002 « Petrographic Investigations of the Amarna Tablets », *NEA* 65/3, p. 196-205.
- GOREN (Y.), FINKELSTEIN (I.) & NA'AMAN (N.)
2003 « The Expansion of the Kingdom of Amurru According to the Petrographic Investigation of the Amarna Tablets », *BASOR* 329, p. 1-11.
- GOREN (Y.), FINKELSTEIN (I.) & NA'AMAN (N.)
2004 *Inscribed in Clay. Provenance Study of the Amarna Tablets and other Ancien Near Eastern Texts*, Tel Aviv, Emery & Claire Yass publications in archaeology.
- HAWKINS (J. D.)
1982 « The Neo-Hittite States in Syria and Anatolia », *The Cambridge Ancient History* III/1, p. 372-441.
- HAWKINS (J. D.)
2009 « Cilicia, the Amuq and Aleppo: New Light in a Dark Age », *NEA* 72/4, p. 164-173.
- HAWKINS (J. D.)
2011 « The Inscriptions of the Aleppo Temple », *Anatolian Studies* 61, p. 35-54.
- IAMONI (M.)
2012 *The Late MBA and LBA Pottery Horizons at Qatna. Innovation and Conservation in the Ceramic Tradition of a Regional Capital and the Implications for Second Millennium Syrian Chronology (SAQ 2)*, Udine, Forum.

- IWASAKI (T.) *et al.* (éd.)
2009 *Tell Mastuma. An Iron Age Settlement in Northwest Syria (Memoirs of Ancient Orient Museum III)*, Tokyo, Ancient Orient Museum.
- JACOBY (R.)
1991 « The Representation and Identification of Cities on Assyrian Reliefs », *IEJ* 41, p. 112-131.
- KLENGEL (H.)
1995 « Tunip und Andere Probleme der historischen Geographie Mittelsyriens », A. SCHOORS & K. VAN LERBERGHE (éd.), *Immigration and Emigration within the Ancient Near East. Festschrift E. Lipinski (OLA 65)*, Louvain, Peeters, p. 125-134.
- LEHMANN (G.)
1998 « Trends in the Local Pottery Development of the Late Iron Age and Persian Period in Syria and Lebanon, ca. 700 to 300 B.C. », *BASOR* 311, p. 7-37.
- MARCUS (M. I.)
1987 « Geography as an Organizing Principle in the Imperial Art of Shalmaneser III », *Iraq* 49, p. 77-90.
- MARITAN (L.) *et al.*
2005 « The provenance and production technology of Bronze Age and Iron Age pottery from Tell Mishrifeh/Qatna (Syria) », *Archaeometry* 47, p. 723-744.
- MAZZONI (S.)
1998 « The Late Iron I and Early Iron II Levels », CECCHINI & MAZZONI 1998, p. 163-171.
- MCCLELLAN (T. L.)
1984-85 « El-Qitar: Second Season of Excavations, 1983-84 », *Abr-Nahrain* 23, p. 39-72.
- MCCLELLAN (T. L.)
1986 « El-Qitar: Third Season of Excavations, 1984-85 », *Abr Nahrain* 24, p. 83-106.
- MESNIL DU BUISSON (R.)
1935 *Le site archéologique de Mishrifé-Qatna*, Paris, De Boccard.
- MORANDI BONACOSSO (D.) *et al.*
2009 « The 'Eastern Palace' and the Residential Architecture of Area T at Mishrifeh/Qatna », *Mesopotamia* 44, p. 61-112.
- NOVAK (M.) & PFÄLZNER (P.)
2000 « Ausgrabungen in Tall Misrife-Qatna 1999. Vorbericht der deutschen Komponente des internationalen Kooperationsprojektes », *MDOG* 132, p. 253-296.
- NOVAK (M.) & PFÄLZNER (P.)
2001 « Ausgrabungen in Tall Misrife-Qatna 2000. Vorbericht der deutschen Komponente des internationalen Kooperationsprojektes », *MDOG* 133, p. 157-198.
- PEYRONEL (L.)
2007 « Late Old Syrian Fortifications and Middle Syrian Re-Occupation on the Western Rampart at Tell Mardikh-Ebla », M. BIETAK & E. CZERNY (éd.), *The Synchronisation of Civilizations in the Eastern Mediterranean in the Second Millennium B.C. III (CCEM 9)*, Vienne, p. 403-422.
- PFÄLZNER (P.)
2007 « Archaeological Investigations in the Royal Palace of Qatna », D. MORANDI BONACOSSO (éd.), *Urban and Natural Landscapes of an Ancient Syrian Capital: Settlement and Environment at Tell Mishrifeh/Qatna and in Central-Western Syria*, Udine, Forum, p. 29-64.
- PINNOCK (F.)
2005 *La ceramica del Palazzo Settentrionale del Bronzo Medio II (MSAE VI)*, Rome, La Sapienza.
- READE (J.)
1979 « Narrative Composition in Assyrian Sculpture », *BaghMitt* 10, p. 52-110.
- RIIS (P. J.)
1948 *Hama : fouilles et recherches de la Fondation Carlsberg, 1931-1938. II/3 : Les cimetières à crémations*, Copenhagen, Fondation Carlsberg.
- RYE (O. S.)
1981 *Pottery Technology. Principles and Reconstruction*, Washington DC, Taraxacum.
- SADER (H.)
1987 *Les États araméens de Syrie depuis leur fondation jusqu'à leur transformation en provinces assyriennes*, Beyrouth.
- SWIEDEH (M. I.) & AL-MONAJED (Z.)
1996 *Geological Map of Syria, Al Ghab-South Sheet, scale 1:50 000*, Damas, Ministry of Petroleum and Mineral Resources.
- THALMANN (J.-P.)
2006 *Tell Arqa I. Les niveaux de l'âge du Bronze (BAH 177)*, Beyrouth, Ifpo.
- THUREAU-DANGIN (F.)
1933 « La stèle d'Asharné », *RAAO* 30/2, p. 53-56.

- TITE (M. S.) *et al.*
2001 « Strength, toughness, and thermal shock resistance of ancient ceramics, and their influence on technological choice », *Archaeometry* 43, p. 301-324.
- VANSTEENHUYSE (K.)
2010 « The Bronze to Iron Age Transition at Tell Tweini (Syria) », VENTURI 2010, p. 39-52.
- VENTURI (F.)
1998 « The Late Bronze Age II and Early Iron I Levels », CECCHINI & MAZZONI 1998, p. 123-162.
- VENTURI (F.)
2007 *La Siria nell'età delle trasformazioni (XIII-X sec. A.C.). Nuovi contributi dallo scavo di Tell Afis (Studi e Testi Orientali 8, Serie Archeologica 1)*, Bologne, CLUEB.
- VENTURI (F.)
2010 « Cultural Breakdown or Evolution? The Impact of Changes in 12th Century BC Tell Afis », VENTURI 2010, p. 1-27.
- VENTURI (F.) éd.
2010 *Societies in Transition. Evolutionary Processes in the Northern Levant between Late Bronze Age II and Early Iron Age*, Bologne, CLUEB.
- WHITBREAD (I. K.)
1989 « A proposal for the systematic description of thin sections: towards the study of ancient ceramic technology », Y. MANIATIS (éd.), *Archaeometry: Proceedings of the 25th International Symposium (Amsterdam)*, p. 127-138.
- WHITBREAD (I. K.)
1995 *Greek Transport Amphorae: A Petrological and Archaeological Study (BSA, Fitch Laboratory Occasional Paper 4)*, Athènes, BSA.