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Highlighting specialization in prehistoric societies with a use-wear approach

Catalhöyük, Central Anatolia (neolithic phases) and Arslantepe, East Anatolia (EBA phase) in comparison

Cristina Lemorini, Davide D'Errico, Antonella De Angelis

Abstract: The assessment of criteria that define all the countless ways specialization materializes in human societies is a challenge. In this paper, we will propose a brief overview of the criteria found in literature to identify specialization in archaeology and, then focus especially on one of these possible criteria: the function. The integration of the use-wear approach with data from raw material, technology and spatial analyses may reveal "functional dissimilarities" that testify specialization otherwise invisible in archaeological contexts. In these contexts, the similarity of the spatial organization at the household level, the low characterization of the artefacts found in it may suggest that the activities carried out were unspecialized. However, use-wear analysis may "raise to "complex" tasks. We observed these indicators in two famous prehistoric contexts taken as case studies, Çatalhöyük (Neolithic phases, Central Anatolia) and Arslantepe (Early Bronze Age level VIB2, Eastern Anatolia).
Our analyses underlined that in Building 97 at Çatalhöyük, "atypical" activities of tanning were carried out with one obsidian end-scraper and one flint knife of "atypical" large size. The dimensions and the morphology of these tools are perfectly adapted to a prolonged use on the thick hide of large animals. These results are highly evocative of the possible processing of the hide of aurochs, the large wild cattle that played an important symbolic role at Çatalhöyük.
At Arlsantepe VIB2, the whole community shared the simple technology applied to the production of macro-lithic tools that were shaped and used in domestic areas. However, our analysis shed light on specialized activities carried out with macro-lithic tools in communal areas and communal installations where villagers dedicated part of their time to metalworking, other craft activities, and the production and cooking of special food.

Keywords: Neolithic, Early Bronze Age, Near East, specialization, use-wear analysis.

Résumé : Définir des critères pour caractériser les multiples formes que peut prendre la spécialisation est difficile. Après une brève synthèse des critères proposés dans la littérature pour identifier la spécialisation dans des contextes archéologiques, nous nous intéressons à l'un des critères possibles : la fonction. L'intégration de l'analyse tracéologique avec les données de provenance des matières premières, de la technologie et de l'analyse spatiale peut révéler des « différences fonctionnelles » témoignant de la spécialisation, celle-ci étant imperceptible dans les contextes archéologiques. Dans un contexte archéologique, l'organisation similaire des espaces domestiques et la faible standardisation des artefacts suggèrent le déroulement d'activités non spécialisées. Au contraire, l'analyse tracéologique permet d'identifier des « activités anormales » qui peuvent être des indices de spécialisation pas nécessairement associés à des tâches complexes. Nous avons identifié ces indices dans deux contextes présentés ici comme exemples. D'abord, les niveaux néolithiques de Çatalhöyük (Anatolie Centrale), puis le niveau VIB2 du Bronze ancien de Arslantepe (Anatolie Orientale).
À Çatalhöyük, l'identification d'activités spécialisées de tannage de peaux de grands animaux est incontestablement évocatrice des aurochs, lesquels jouaient un rôle symbolique très important sur ce site. En effet, des crânes et des représentations peintes ont été retrouvés dans de nombreux édifices. Dans le bâtiment 97, notre analyse a démontré l'utilisation d'un grand grattoir en obsidienne et d'un grand couteau en silex dans des activités de tannage. Leurs dimensions, leur morphologie et leur usage peuvent être considérés comme atypiques dans un espace domestique. Ils sont cependant parfaitement adaptés à une utilisation prolongée sur des surfaces épaisses et larges comme celles des peaux des grands animaux.
Dans le niveau VIB2 d'Arslantepe, la distribution des outils macrolithiques dans tout le village nous permet de supposer que tous les habitants avaient accès aux matières premières nécessaires à leur production. ~~De plus, des déchets de façonnage de ces outils ont été retrouvés en milieu domestique, suggérant que toute la communauté produisait ces outils sur place.~~ L'aspect intéressant réside dans

l'identification d'activités non domestiques effectuées avec les mêmes types d'outils macrolithiques dans des espaces communautaires où, probablement, les habitants d'Arslantepe VIB2 dédiaient une partie de leur temps à des activités spécialisées de travail des métaux et de transformation alimentaire.

Mots-clés : Néolithique, Âge du Bronze Ancien, Proche Orient, spécialisation, tracéologie.

INTRODUCTION

Criteria that define specialization in prehistoric societies originate from ethnographic and ethnoarchaeological observation, and description of traditional societies and traditional handicraft (see, as an example, Arnold, 2000 and references therein). The assessment of criteria that can define all the countless ways specialization materializes in modern societies is a challenge. It clearly appears in the attempt to critically discuss and merge the various points of view on "what specialization means" made by R. K. Flad and Z. X. Hruby in the introduction of the volume of the American Anthropological Society devoted to specialization in archaeology (Flad and Hruby, 2007). In this attempt the authors insert a variety of definitions coming from the literature between two "extremes" or "poles": one pole is the broadest definition of "specialization as production for exchange"; the other pole is the most restricted definition of "specialization as division of labour". These two definitions and all the other definitions in between are linked to other two definitions that consider the specialization from the point of view of the objects (product specialization) and the human agents (producers' specialization). Even if some general criteria are shared, as the intensity, the scale, the context, the concentration of production, the relationship among workers, the identification of craftsmen and consumers, the meaning of production (Flad et Hruby 2007, p. 6) their application, or rather their recognition in the remains that form the archaeological contexts is a difficult task.

In the prehistory of the Near East, E. Baysal (2013) put the attention on possible signs of specialization in archaeological sites related to Neolithic egalitarian communities. The author underlines that, although it is undeniable that in complex societies hierarchy-based, specialized products or specialized producers own an important social role, specialization is not exclusive to these types of societies. Specialization is present in non-elite based communities as well, even if its expressions are more nuanced than in the hierarchy-based societies. For this reason, E. Baysal proposes to check specialization in archaeological contexts with more attention to the technological aspects of the production, their function, and their cultural meaning compared to other productions of the same community (see Baysal, 2013, p. 239 for criteria and tabl. 2, p. 243 for their application in two archaeological case studies).

We think that the criteria proposed by E. Baysal significantly increase the scanning of the archaeological contexts to put in light and give significance to standardized technologies and localized areas of production or waste that may testify specialization and the presence of specialists. Nevertheless, without these signs, specialization may become difficult to recognize. To know how and for what a tool was used may increase our understanding of the specialization in the past shifting the focus from "specialized" technology to "specialized" function.

In this paper we try to follow possible paths of specialization through the connections between raw material, tools and their function. We want to stress that, in a prehistoric community, different circulation and management of raw material may affect the type of tools owned by an individual or group and the types of viable function they may realize. In other terms, specialization can be originated by different access to a suitable raw material or a suitable tool-kits. Moreover, specialized activities can be realized in spaces that are not recognizable as workshops. For example, if the specialized production consists of organic and perishable matters it is rare to find a direct testimony of them and of the wastes of their production. Only the indirect observation of use traces or use residues on not perishable tool-kits may testify the presence of activities otherwise invisibles.

We have addressed our analysis to spaces interpretable as dwelling units or family household that are generally considered areas where small groups linked by kinship relations carried out a variety of "domestic activities" aimed at the sustenance of the group itself.

Chipped stone tools and macro-lithic tools found in these "domestic spaces" have been taken in consideration and their "specialized" or "not specialized" function have been inferred by use-wear approach and the integration with the spatial analysis.

In this paper, we will use the term "specialization" to indicate every testimony of activities that involve a modification of different materials than the materials usually processed in the same context or that involve different skills (see also knowledge/know-how definition in Baysal, 2013, p. 239) than those usually performed in the same context. We give to this definition a wide significance that comprises the expertise encircled in a household or the expertise aimed to produce goods for special events, for exchanges, for the market, for the elite.

THE ARCHAEOLOGICAL SITES

We have chosen as case studies the lithic artefacts of two famous Anatolian sites: Çatalhöyük (Neolithic phases, Central Anatolia) and Arslantepe (Early Bronze Age phases, Eastern Anatolia).

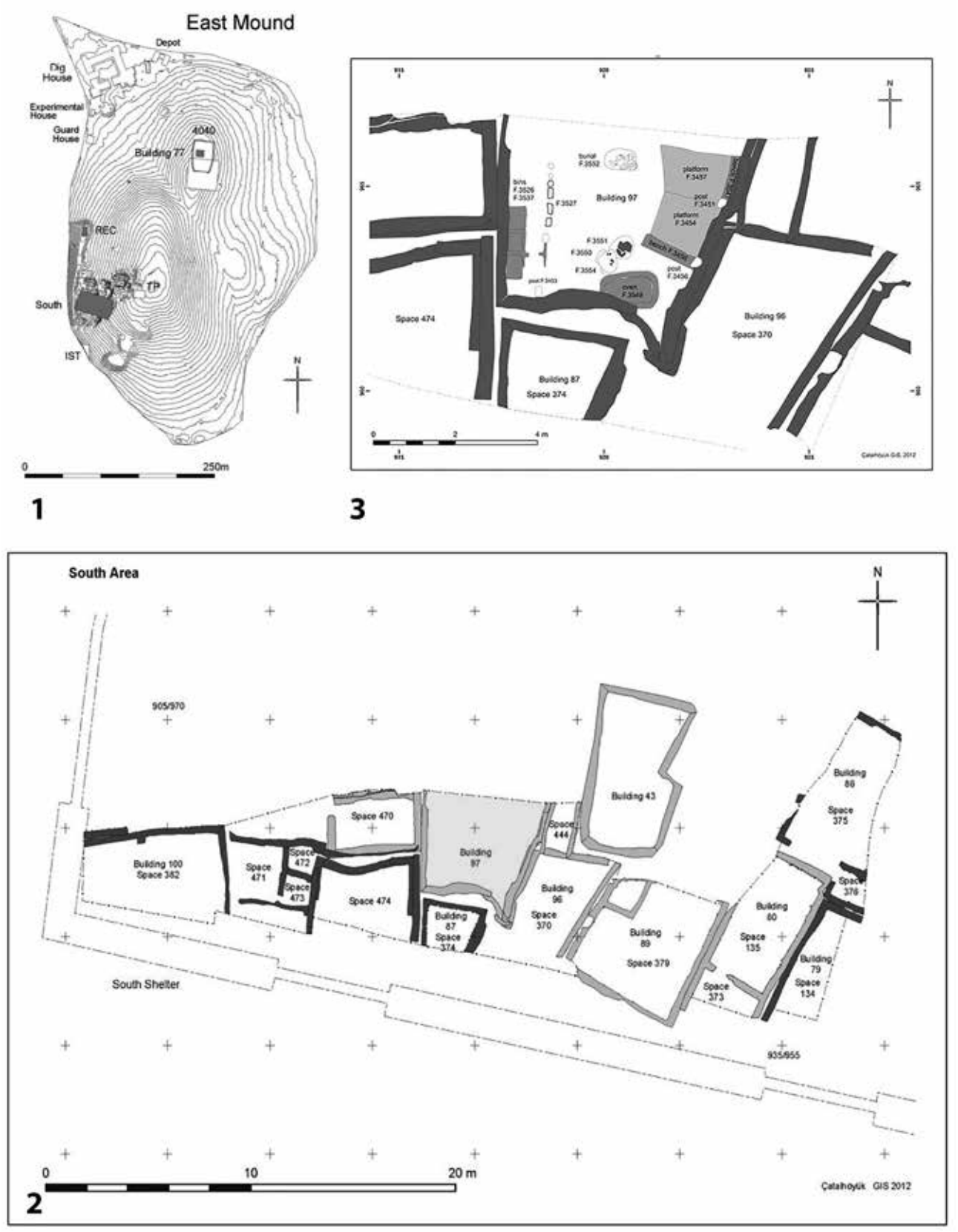

Fig. 1 – Çatalhöyük. 1. Plan des secteurs fouillés de la colline est (retravaillé à partir du plan de D. Mackie, Archive Reports 2011, p. 11); 2. Secteur sud de la colline est (retravaillé à partir du plan de D. Mackie, Archive Reports 2011, p. 12); 3. Plan du bâtiment 97 (secteur sud) (retravaillé à partir de C. Mazzuccato, Archive Report 2012, p. 49) (Çatalhöyük Research Project Archives).

Fig. 1 – *Çatalhöyük. 1. Map of the East Mound with sectors excavated (reworked from D. Mackie plan, Archive Reports 2011, p. 11); 2. South Area of the East Mound (reworked from D. Mackie plan, Archive Reports 2011, p. 12); 3. Map of Building 97 (South Area) (reworked from C. Mazzuccato, Archive Report 2012, p. 49) (courtesy of Çatalhöyük Research Project Archives).*

The Neolithic phases of Çatalhöyük testify the long-lasting persistency (7,100-5,950 cal. BC) of an equalitarian society consisting of a big community organized in a very large site localized in the modern region of Konya plain that is part of the Central Anatolian Plateau (Hodder and Cessford, 2004; Hodder, 2014).

Arslantepe is one of the most important archaeological sites of the Eastern Anatolian Plateau. It is localized in the modern Malatya Plain bounded by the Euphrates valley to the east and the Taurus Mountains to the south and south-east. This site shows an uninterrupted sequence of occupations from Late Chalcolithic to Hittite, Roman and Medieval periods.

At Arlsantepe, the time span (second half 5th-3rd millennium BCE) that comprises Late Chalcolithic (levels VIII, VII, VIA) and the Early Bronze Age (levels VIB, VIC, VID) represents an extraordinary testimony of the rise and the collapse of proto-urban societies élite-based. Levels VII (LC3-4, 3,650-3,400 BCE) and VIA (LC5, 3,400-3,200 BCE) are the core of this social and political transformation characterized by the centralization of power, expressed by "palatial buildings" devoted to administrative and redistribution activities and by élite residences. This socio-political organization collapsed at the beginning of the Early Bronze Age (EBI level VIB1, 3,200-3,100 BCE) making way to new types of societies expressed by pastoral and agricultural villages (Frangipane, 2000; Frangipane *et al.,* 2005; Vignola *et al.*, 2019).

In both sites the extraordinary preservation of the remains and the excavation system allow to locate accurately the findings in the inhabited spaces. This degree of accuracy is extremely important if, as in this paper, we want to understand the social role of the activities carried out with lithic tools.

Moreover, the wide chronological, cultural differences between these two case studies allow to investigate through lithic tools the presence of traits of specialization in societies where the role and the related testimonies of the presence of specialists or specialised products or specialised activities may consistently change.

Çatalhöyük is the expression of an egalitarian society that persisted for a millennium through the creation, the reinforcement and the maintaining of social bonds inside the community with various medium, rituals at first. It is possible that specialization was a way to reinforce or to refresh these social links as well.

At Arslantepe, the millennium that comprises the Late Chalcolithic and the Early Bronze Age was the scenario of societies that rapidly changed their organization from villagers to hierarchy-based communities that collapsed and reorganized again in pastoral and agricultural non-hierarchical communities. In this so unstable situation, specialists and specialized products must have surely had an important role of mediation between the various social actors, internal and external to these communities.

METHODOLOGY

Chipped stone-tools and macro-lithic tools have been analysed through the use-wear approach (Lemorini, 2000; Adams *et al.*, 2009). Use-wear have been observed at different magnifications by means of a reflected light system and an optical equipment (Optical Light Microscope, OLM) composed of a stereomicroscope (Nikon SMZ-T in the field and Nikon SMZ-U in the laboratory; oculars 10X, objective 1X, zoom 0,75X-7,5X) and a metallographic microscope (Nikon M in the field and Nikon Eclipse in the laboratory; oculars 10X or 15X; objective 10X, 20X). The documentation of the use-wear has been carried out with a Nikon Digital Camera DX (field) and a ToupCam Camera (field and laboratory). Pictures of the use-wear were processed with the focus staking software Helicon Focus®

On the field, all the items presenting traces of use have been selected and preliminary documented. Use-wear have been moulded (two components silicon Provil Novo Light Fast Heraeus®) and analysed in detail in the LTFAPA laboratory of Sapienza. An epoxy resin cast (Araldite© LY 554 plus hardener HY 956) of the moulds of the macro-lithic tools have been shaped and metalized with a gold film to allow a better observation with OLM.

DISCUSSION OF THE ARCHAEOLOGICAL RESULTS

Çatalhöyük

This Neolithic site is characterized by dwelling units (Buildings) closely grouped and surrounded by areas of waste accumulations and open areas (Middens). The Neolithic levels were excavated in the East Mound, in two areas, North and South (fig. 1, n° 1).

The typical houses of Çatalhöyük consist of a room with an oven, a hearth and various platforms and a small separate space with storage facilities (fig. 1, n^{os} 2 et 3). The access to the houses was located at the roof level that can be considered an additional space where carrying out daily activities. In the late phases, chipped stone tools at Çatalhöyük are especially represented by retouched and un-retouched blades and bladelettes made of obsidian (Carter and Milić, 2013), often intentionally fragmented in pieces of small size. In middle and early phases, obsidian raw material is abundant as well than in later phases if compared to flint raw material. A peculiar technological trait of these phases is the presence of large blanks, especially big percussion blades, worked bifacially (Carter and Milić, 2013; Doyle, 2016 and 2017).

At the household level it seems that various activities were carried out with the chipped stone tools inside and outside the buildings (Lemorini and D'Errico, 2013, 2014 and 2017). Herbaceous plants gathering, wood, hide and hard animal materials processing are the most represen-

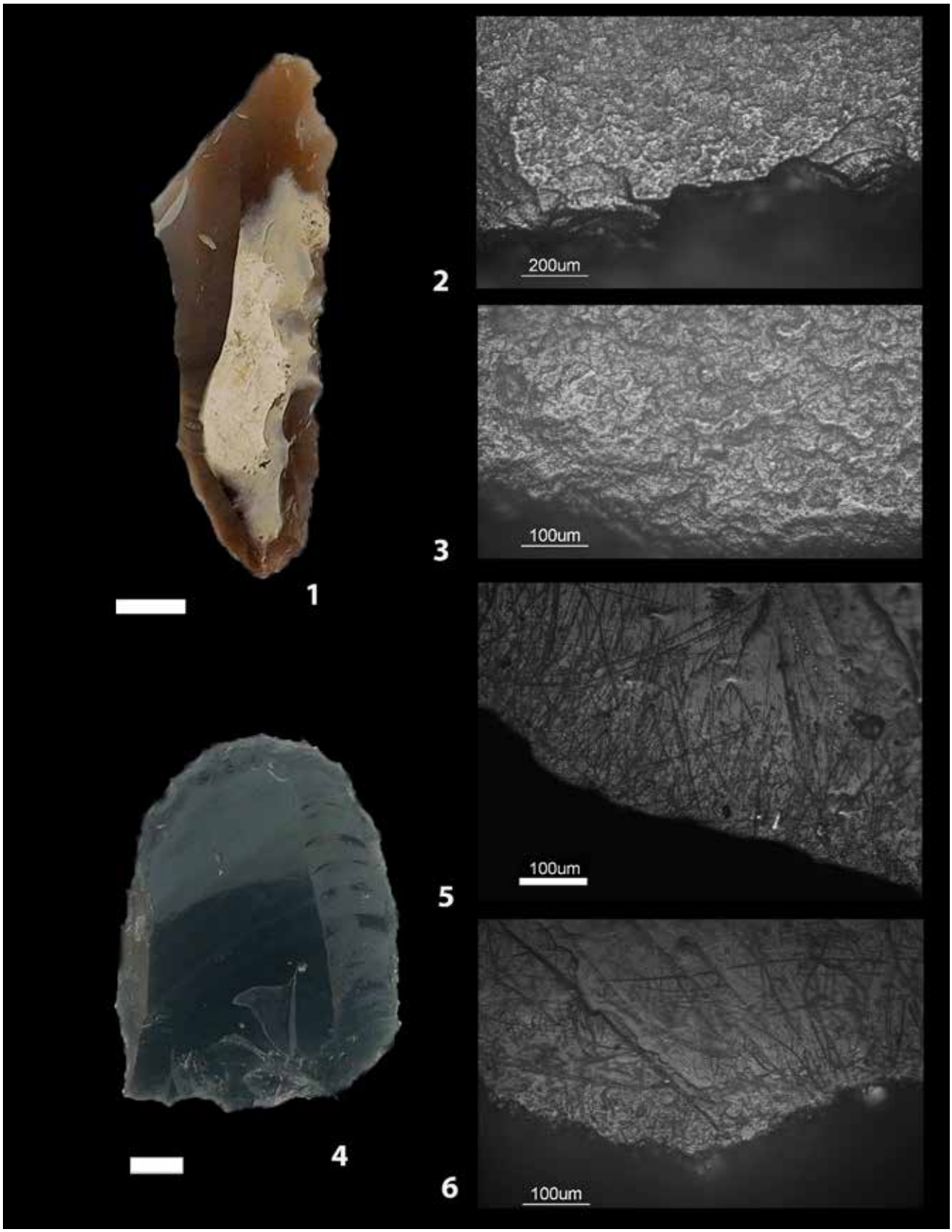

Fig. 2 – Çatalhöyük B. 97, Sp. 365. 1. Flint scraper-knife, scale bar equal to 1 cm; 3-4. Related micro-traces interpreted as meat and fresh hide cutting; 4. Obsidian end-scraper, scale bar equal to 1 cm; 5-6. Related micro-traces interpreted as scraping of hide (photographs C. Lemorini and D. D'Errico).

Fig. 2 – *Çatalhöyük B. 97, Sp. 365. 1. Racloir, échelle = 1 cm; 3-4. Micro-traces de decoupe de viande et de peau ; 4. Racloir en obsidienne, échelle = 1 cm ; 5-6. Micro-traces correspondant au travail de la peau (photos C. Lemorini et D. D'Errico).*

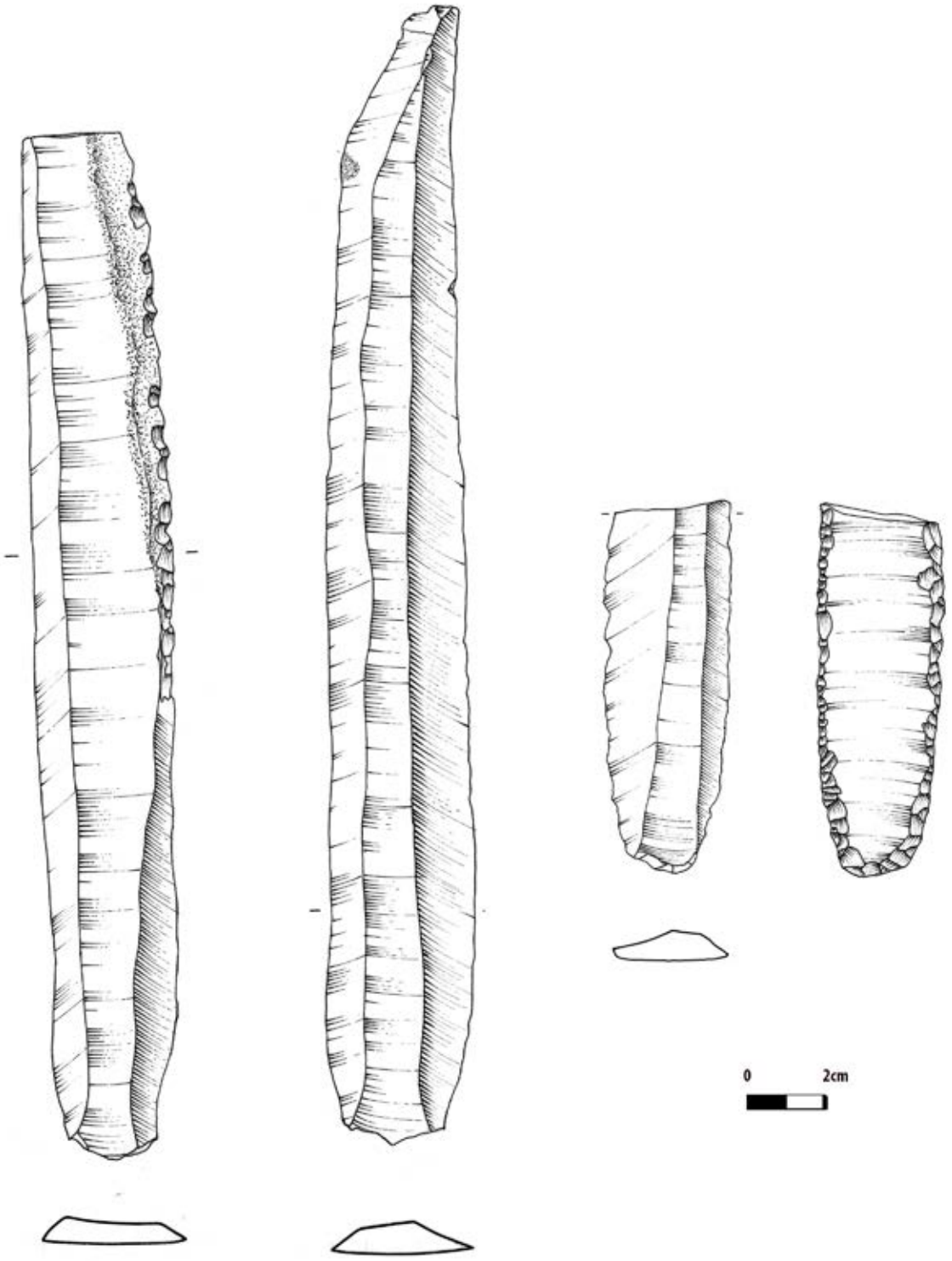

Fig. 3 – Arslantepe, level VIB2. Examples of long blades
(courtesy of Missione Archeologica and Arslantepe-Malatya Archives).
Fig. 3 – *Arslantepe, level VIB2. Exemples de grandes lames*
(avec l'autorisation de Missione Archeologica et Arslantepe-Malatya Archives).

tative activities inferred, followed by stone working and butchering. From these data it seems that house-based groups carried out similar activities without any sign of functional specialization.

The size of a tool strongly affects its functional potential. The length and the thickness of the active edge, the wideness of the prehensile or hafted area define the possible movements and the strength exerted on the worked materials. At Çatalhöyük, a possible input to the appearance of germinal traits of specialization could have been the owing of a tool-kit made on large flakes and blades with which to produce strong tools, suitable for many steps of re-sharpening. A possible example of this kind of tool-kit are the two big retouched tools made of obsidian (one end-scraper) and flint (one scrapers-knife) found on living room Sp. 365 Unit 19653 of Building 97, East Mound, South Area (fig. 1, nos 2 and 3; fig. 2, nos 1 and 4). These tools show use-wear related to various stages of the hide processing. These items were found lying on the floor of room 365 (Yeomans, 2011, p. 10; Taylor, 2012, p. 49) together with another big flint end-scraper unused. They were repeatedly used (and re-sharpened) to deflesh the inner part of fresh hides (fig. 2, nos 1 and 3) and to scrape and softening semi-dry and dry hides (fig. 2, nos 4 and 6). At Çatalhöyük, use-wear related to hide working are observed especially on small truncations and small end-scrapers. These tools were used for working particularly dry hide, suggesting that these items participated to the finishing of hide or hide objects. The previous phases of cleaning and scraping of the fresh hide are less frequent. It is possible to suppose that these steps of the process were carried out with organic tools as documented in some traditional tanning procedures (see Beyries, 1999 and references therein). As well, it is possible to suppose that Çatalhöyuk people exploited especially the hide of animals of small size (as small fur animals or sheep and goat, smaller than today) whose thin subcutis does not need a strong cleaning action and a long softening treatment. The presence, in Building 97, of tools used for a long time for carrying out tanning procedures testifies that the inhabitants of this building owned an unusual tool-kit perfectly adapted for a type of processing unusual at the site. Reports on traditional tanning procedures of artic and semi-artic populations and experimental sessions (AAVV 1992; Beyries, 1999) show that tools with large convex active edges (more than 3.5 cm *in* Beyries, 1999, p. 123) are very useful for tanning large thick hides. Moreover, the large dimensions increase the strength of these tools and their capability to exert a strong pressure on the material worked (AAVV, 1992; Lemorini, 1999). All these arguments suggest that people from Building 97 were specialized in tanning hides, that they made long sessions of tanning with their tool-kit (highly developed use traces and evidences of re-sharpening), that they owned extra tool-kit ready for use (the unused end-scraper found in the same Space 365 and two other big flint end-scrapers found in another area of the building, Space 469) and that they should have been able to tan large thick hides.

ARSLANTEPE

The data presented in this paper pertain to EBA phase VIB2 (2,900-2,750; Piccione and Lemorini, 2012; Piccione *et al.*, 2015; De Angelis, 2015-2016). This phase is characterized by a village (fig. 3) that was destroyed by a fire. The sudden destruction of the village allowed to seal under the collapsed buildings the tool-kits stored or in use before the fire, giving to the archaeologists a quite intact picture of the life style of this community just before the dramatic event.

Apparently, there are no temples or palaces that may testify a centralized power. The village is dominated by an imposing wall that probably bordered an acropolis. This wall (early VIB2) precedes the village that developed successively on the south of the slope close to it. The village comprises standardized households separated by narrow perpendicular streets except for 1) the northwestern sector of the complex where rooms and spaces not separated by streets seem represent communal area and 2) structures abutting the fortification wall. The houses have a quite standardized internal partition, organized in two larger rooms with a circular heart, a small storage, sometimes a stable and a courtyard. The tool-kit found in the houses comprises some flint blades, grinding slabs, grinders, cooking pots and containers of various dimensions.

In this village chipped stone tools are represented exclusively by long blades (see for a technological discussion of this terminology, Angevin, 2018) made of flint (fig. 3). These blades were often fragmented in pieces to be used un-shaped; in rarer cases, these fragments were retouched before use. These items are found in the whole village, testifying that the villagers had an easy access to a standardized tool-kit produced by artisans with a very high technological know-how.

Macro-lithic tools offer a completely different picture. In the entire LC-EBA sequence these tools were made of the same local raw materials, rocks for the grinding slabs and fluvial pebbles for all the other types of tools, ~~see also Lemorini, 2000)~~ and were shaped with a very simple technology. Macro-lithic tools are diffused in the entire village suggesting that they took part to a great number of activities.

To verify the presence of specialized activities carried out with macro-lithic tools in different areas of the village we analysed with a use-wear approach the assemblages found in three different spaces: 1) a household, Building 38, 2) an area, in the north-western sector, where metallurgical installations are present, 3) a structure abutting to the wall (fig. 4, see spaces in red).

Building 38 is a typical house organized in a courtyard (A 710), a room with a circular heart in the centre (A 707), a small storage room (A 736) and a stable (A 738). Pottery and chipped stone tools testify food processing and craft activities as clay shaping and antler working (Piccione *et al.*, 2015, tabl. 1, p. 15). In the room A 707 two grinding slabs were used for processing hulled cereals (fig. 5, nos 1 and 2). This datum is also supported

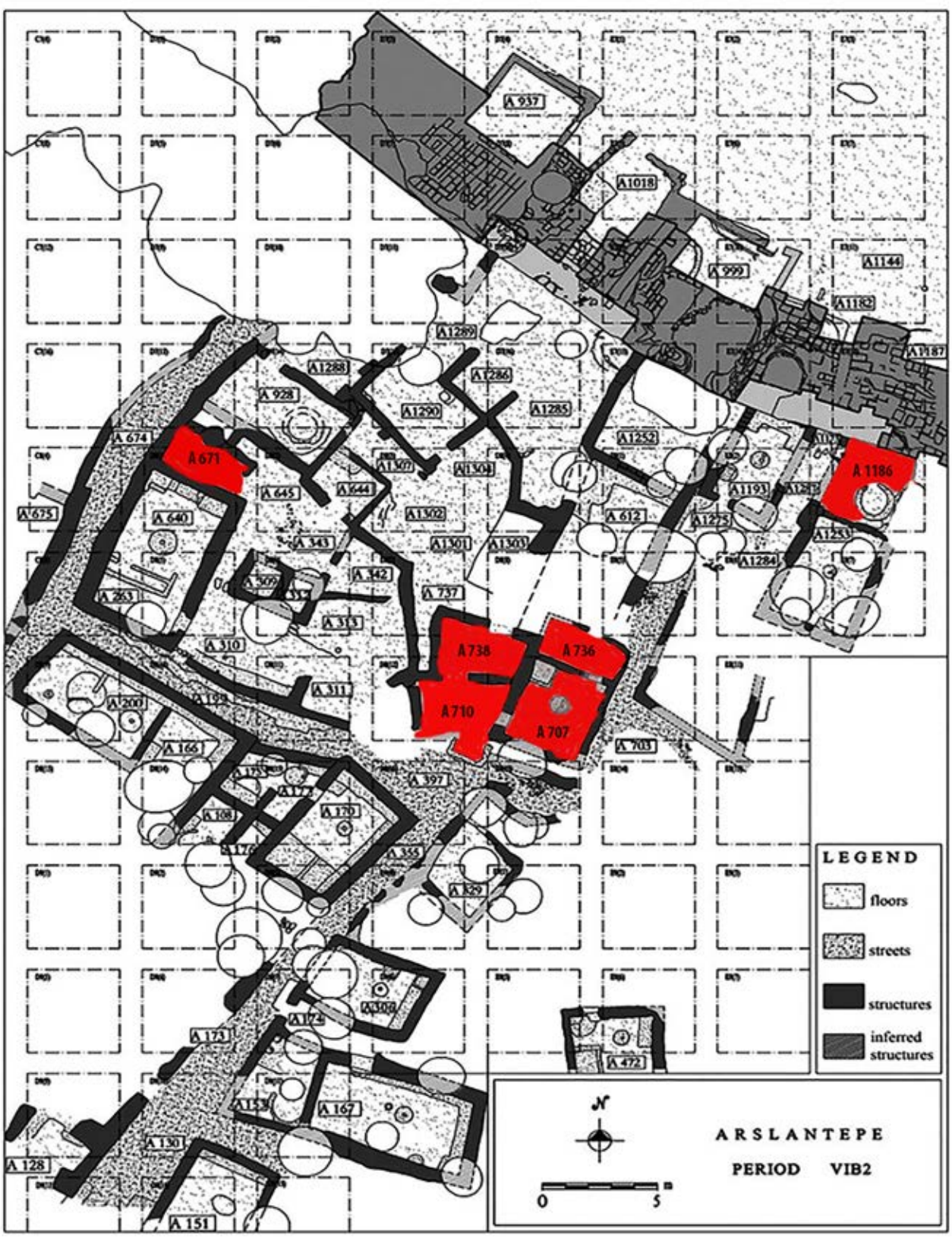

Fig. 4 – Arslantepe. General plan of level VIB2. The spaces studied in this paper are filled in red (reworked from C. Alvaro and G. Liberotti plan, Piccione and Lemorini, 2012, p. 281) (courtesy of Missione Archeologica and Arslantepe-Malatya Archives).
Fig. 4 – *Arslantepe. Plan général du niveau VIB2. Les espaces étudiées sont en rouge (retravaillé à partir du plan de C. Alvaro et G. Liberotti, Piccione et Lemorini, 2012, p. 281) (avec l'autorisation de Missione Archeologica et Arslantepe-Malatya Archives).*

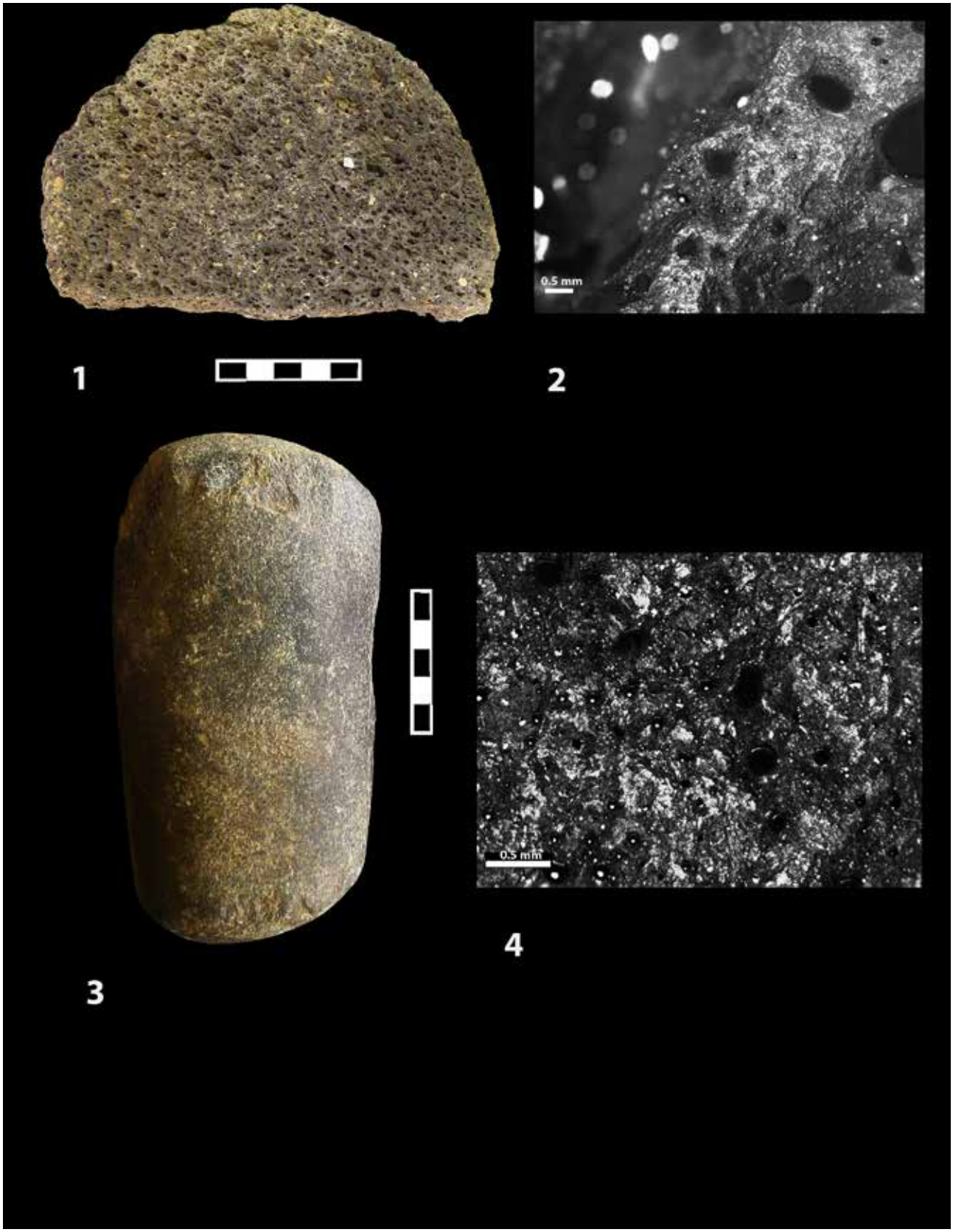

Fig. 5 – Arslantepe, level VIB2, ~~A 707~~. 1. Grinding-slab; 2. Micro-traces interpreted as grinding of hulled seeds of cereals ~~A 671~~. 3. Pestle; 4. Micro-traces interpreted as thrusting percussion of hard mineral (photographs, A. De Angelis).

Fig. 5 – *Arslantepe, niveau* ***VIB2, ~~A 707~~****. 1. Meule; 2. Micro-traces de la mouture des céréales* ***~~A 671~~****. 3. Mortier; 4. Micro-traces de la percussion de fragments de minerai (photos, A. De Angelis).*

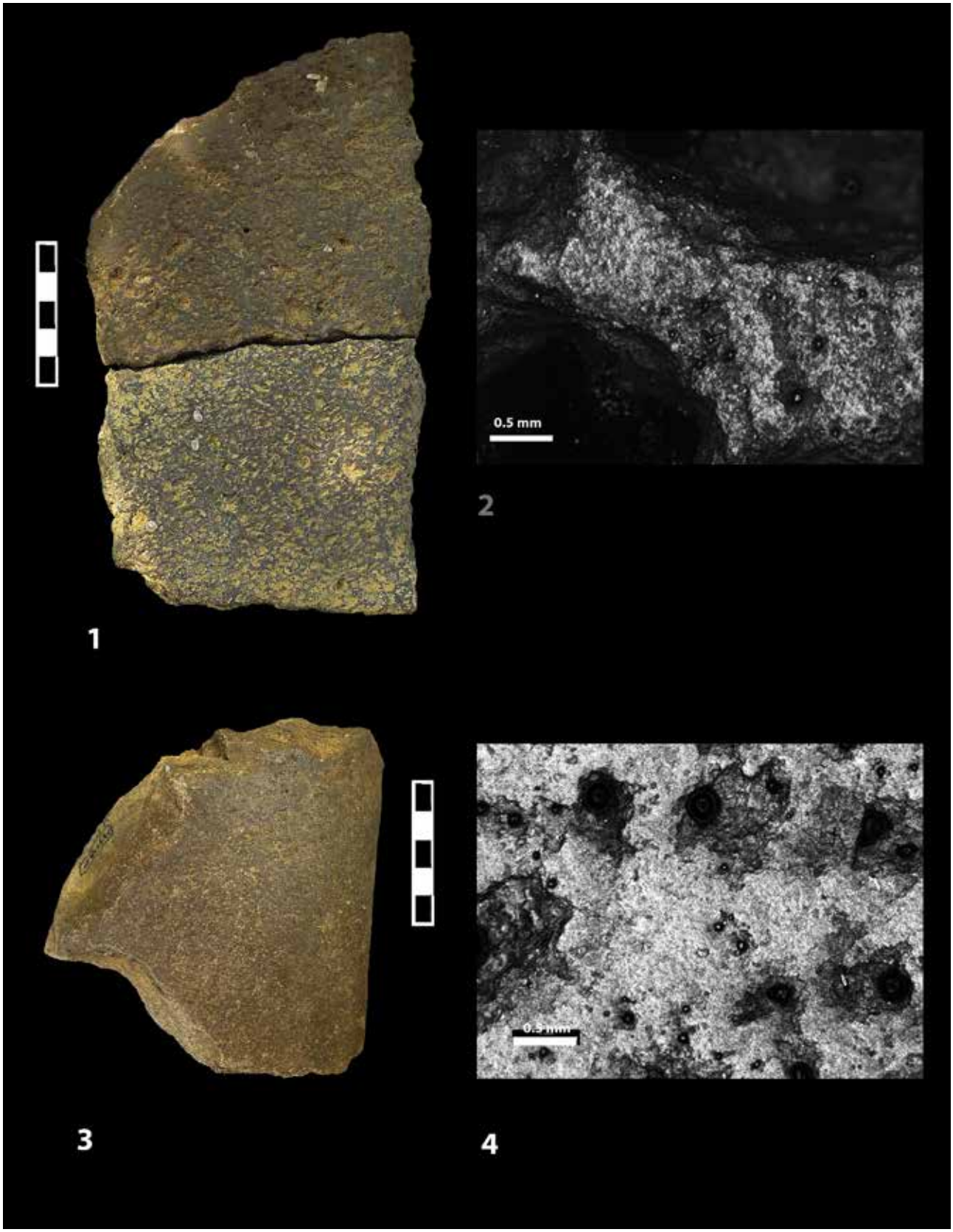

Fig. 6 – Arslantepe, level VIB2, A 1186. 1. Grinding-slab; 2. Micro-traces interpreted as grinding of cereals seeds; 3. Grinding-slab; 4. Micro-traces interpreted as processing of soft animal material (photographs A. De Angelis).

Fig. 6 – *Arslantepe, niveau* ***VIB2, A 1186. 1.*** *Meule; 2. Micro-traces de la mouture des céréales ; 3. Meule ; 4. Micro-traces du traitement de animales (photos A. De Angelis).*

by the presence, in the same room, of one mortar, one bin and various caryopsis of *H. Vulgare, T. Dicoccon e T. Monococcum*.

In the storage room A 736 one slab, two grinding slabs, four grinders, and two pestles were stored. They were especially used for plants manipulation except for the two pestles that show traces of mineral working confirming that in the household sphere food processing was the principal activity carried out together with some other production or repairing of tools. The traces of minerals may suggest that some limited metallurgy related activity could have been carried out at the household level, as the crumbling of small fragments of ores to be subsequently melted.

However, a consistent activity of fragmentation of metal ores was done in a communal area (A 671) were pits with traces of prolonged fire and remains of metal slags and minerals of copper clearly testify metallurgical actives. In A 671 five pestles/grinders produced with the same local fluvial pebbles than the pestles found in the household areas form a specialized toolkit for fragmenting and smashing copper minerals before melting (fig. 5, nos 3 and 4).

In a small room A 1186 abutting to the northern wall a big oven, three pestles, one pestle/grinder, one slab and two grinding slabs were found. The two grinding slabs and the grinder were used to refine flour from cereals (fig. 6, nos 1 and 2). Other pestles show traces of grog making, hide (fig. 6, nos 3 and 4) and plants softening (fig. 7, nos 1 and 2).

It is worth mentioning that big ovens are present only in certain places of the village and they are not installation pertaining to the household level. Moreover, it seems that in the household the processing of legumes and cereals was aimed at the production of less refined products than the flour production observed on the two grinding slabs of A 1186. The presence, in this small room, of tool-kits for craft activities (grog, hide, plants…) suggests that the room was used as storage for tools maybe intended for a wide range of special uses (refined processing of various matters) generally not carried out in the households.

CONCLUSIONS

The two case studies proposed in this article show that the integration of raw material, technological and spatial data with a use-wear approach may reveal possible "functional expertise" or "functional dissimilarities" otherwise invisible in archaeological contexts. The homogeneity of the spatial organization at the household level, the low technological and morphological characterization of the artefacts may engender the impression that the activities carried out in these spaces were uniform, unspecialized. On the contrary, use-wear analysis may "raise the vail" and reviles anomalies in the activities

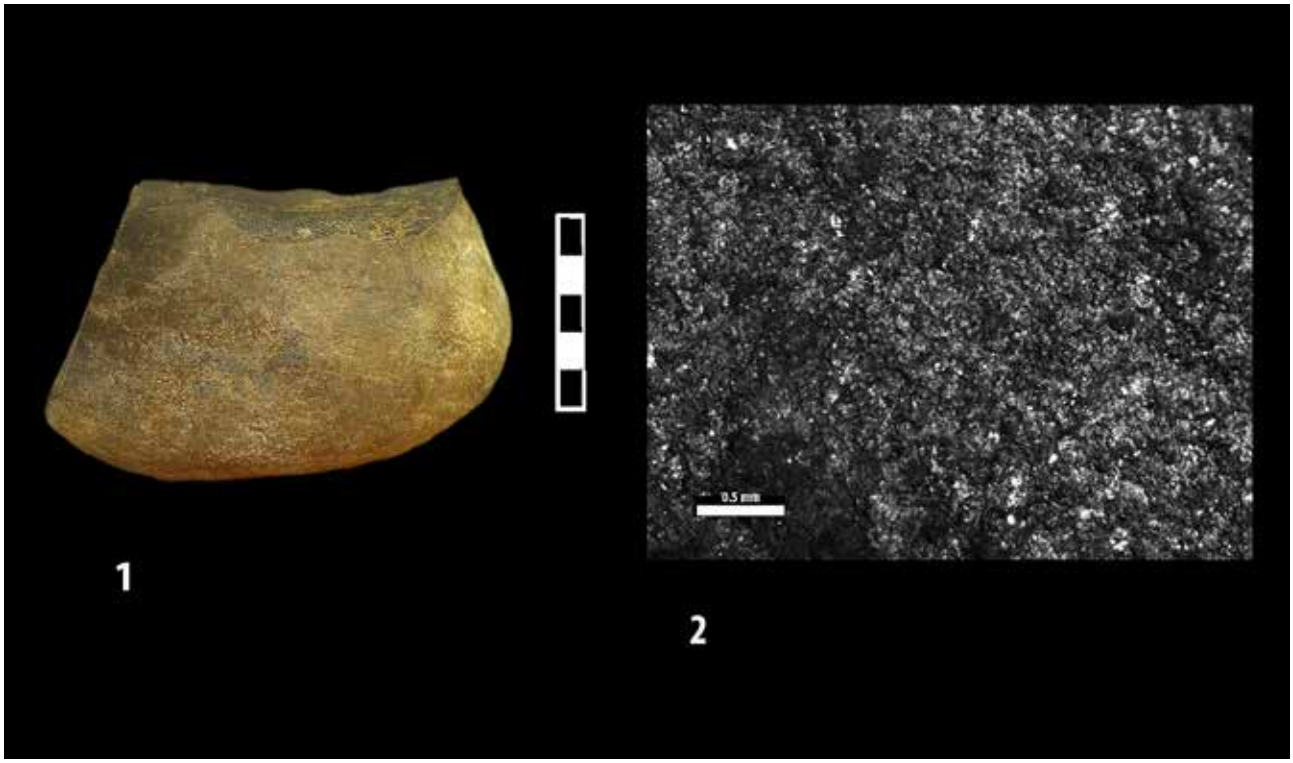

Fig. 7 – Arslantepe, level VIB2, A 1186. 1. Pestle; 2. Micro-traces interpreted as processing soft vegetal matters (photographs A. De Angelis).
Fig. 7 – Arslantepe, niveau VIB2, A 1186. 1. Mortier; 2. Micro-traces du traitement de fibres végétales (photos A. De Angelis).

carried out to be read as signs of specialization not necessarily associated to "complex" tasks, just tasks different from the daily subsistence activities.

In Building 97 of Çatalhöyük the morphology of the chipped stone tools and their use may be defined "atypical" in a typical domestic space. The morphology, the strength and the sharpness of the active edges of these tools is perfectly adapted to a prolonged use on thick and large surfaces as the hide of large animals. The tanning of the hide of a large animal is highly evocative of the aurochs, the big wild cattle, now extinct, that played an important symbolic role at Çatalhöyük, testified by skulls and painted representations found in many buildings (Hodder and Cessford, 2004).

The owning and the use of a dedicated and special tool-kit (large tools unusual in domestic spaces) restraint to few individuals (tools found in a single building) for "unordinary" activities may be considered a kind of specialization potentially occurring in egalitarian societies. Moreover, if these "unordinary" activities are aimed to process matters with a high symbolic value, maybe the hide of the hunted aurochs, the special matter to be processed and the skill of the specialist enter in the sphere of the ritual. The relation between specialization and ritual could be one of the possible reasons for the flourishing of the former in egalitarian societies.

In the case of Arslantepe VIB2, the raw-material, the technology and morphology of the macro-lithic tools of the entire village VIB2 is highly homogeneous and appears as an ordinary domestic tool-kit. Only the context and the use-wear interpretation shed light on their possible specialized role. In this case, an ordinary and domestic tool-kits may have a distinct functional and social role when: a) inserted in a network of specialized installations (pits for roasting and melting in A 671 and a big oven in A 1186) or b) localized in special places with communal connotations.

Since the distribution of the macro-lithic tools in the whole village, it is possible to assume that Arslantepe villagers had an easy access to the raw material exploited to produce these tools. Moreover, our observations of discarded shaping flakes in various domestic areas, suggests that all the community shared the simple technology applied to the production of slabs, pestles, grinders etc. In this scenario, the lack of competition for the owning of the tool-kit may have favored the sharing of areas and installations where villagers dedicated part of their time for metal working (partly done in the houses as well) and production and cooking of special food and special craft products.

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