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**LET'S START FROM (A) SCRATCH:
NEW WAYS OF LOOKING AT VESSELS' FUNCTION**

ABSTRACT. *The article discusses various types of use-wear that can be observed on Mycenaean tableware. It is demonstrated that careful analysis and interpretation of such traces can provide new insights into the vessels' function. Material presented here derives from two sites, Lefkandi and Tsoungiza, and provides evidence for at least three types of abrasion on vessels' surfaces. These surface marks are illustrated throughout with numerous photographs. The most visible type of use-wear, which is attested on a variety of forms, consists of heavy abrasion of exterior rim and protruding part of lower body. This wear pattern is associated with scooping action from coarse containers, like cooking pots, pithoi, or vats.*

INTRODUCTION¹

Although pottery is often used to identify the function of particular spaces or deposits, the discussion in most of the publications rarely goes beyond broad categories such as eating and drinking/pouring/storage/cooking, or well-established associations between particular shape and function.² It seems that not much

has changed since the publication of an important article by I. Tournavitou devoted solely to this topic.³ Function of Mycenaean vessels still remains a “neglected aspect.”

One important reason for this state of affairs is the fact that we lack literary sources that would refer to the function of particular vessel types. What are, then, the methods one can use to shed some light on this issue? The most successful approach to date is careful analysis of morphology and size. This has led I. Tournavitou to many interesting conclusions regarding a number of LH IIIB1 shapes that were found in the Ivory Houses at Mycenae.⁴ A similar method was used by J. Hruby in her study of Pylian assemblage, aimed at identification of forms that could signify presence of class-differentiated cuisine.⁵ Ch. Podzuweit arrived at valuable insights by looking at form and size, a method that he complemented by use of frequencies of particular types in the assemblage.⁶ Despite the unquestionable value of

¹ In the first place I would like to thank J. Rutter for the inspiration to deal with issues of wear on vessels' surfaces. It was he who, at the tables strewn with pottery from Mitrou, bothered us with the question “Where is the wear?,” which at the beginning we did not fully comprehend. I owe my thanks to R. Jung, Š. Rückl and S. Vitale for their comments to an earlier draft of this article, and to Tina Ross for language corrections. I am grateful to the British School at Athens, Lefkandi Subcommittee, James Wright, Pat Thomas and the American School of Classical Studies for permission to study the material from Lefkandi and Tsoungiza. Finally, I thank K. Kapiec for editing all the photographs. All photographs of vessels from Lefkandi are reproduced with the permission of the British School at Athens. All photographs of vessels from Tsoungiza are reproduced with the permission of the Nemea Valley Archaeological Project and the American School of Classical Studies. Small line drawings indicate location of the use-wear. Arrows on the left side of the drawing indicate wear on the exterior surface, while arrows on the right side of the drawing (the side with the profile) indicate wear on the interior.

² With regard to Mycenaean pottery, good examples would be krater = wine mixing, or kylix = wine drinking.

³ I. TOURNAVITOU, *Practical Use and Social Function: a Neglected Aspect of Mycenaean Pottery*, BSA 87, 1992, pp. 181–210.

⁴ TOURNAVITOU, *op. cit.* (n. 3).

⁵ J.A. HRUBY, *Feasting and Ceramics: a View from the Palace of Nestor at Pylos*, PhD thesis, Cincinnati 2006, pp. 103–177.

⁶ CH. PODZUWEIT, *Studien zur spätmykenischen Keramik*. Tiryns: Forschungen und Berichte 14, Wiesbaden 2007.

such approaches, they have some obvious limitations. For instance, it is difficult to verify their results, and in most cases they must remain speculative.

A new avenue for the study of function, and also an opportunity to verify the results of the method described, is created by the residue analysis. So far, interesting results have been obtained for prehistoric Greek pottery,⁷ yet what is clearly lacking at the moment is a larger project that would produce a number of results for one and the same form.

After this very brief review, I would like to suggest another way of studying vessels' function, which can be considered complimentary to the methods described above. It is based on the analysis of use-wear marks, which, in the case of pottery presented below, usually consists of looking for... scratches. This use-wear approach is definitely not a new concept, and the ground breaking research was carried out by D. Hally, M. Schiffer and J. Skibo.⁸ Regarding prehistoric Greek pottery, however, apart from the study of soot and other marks on cooking pottery,⁹ this method has not been extensively used so far. Below, I would like to present preliminary results of such an approach applied to fine pottery, mostly open tableware.

DISCUSSION OF EVIDENCE

The prerequisite for such a study is a set of well-preserved vessels. The more they were in use, the higher the chances that use-wear marks will be prominent. Therefore, pantries (like those at Pylos) containing masses of unused pottery, or tombs, in which many vessels were not used before their deposition, are not the best contexts for such an analysis. For this study I have chosen the LH IIIC contexts from

⁷ Y. TZEDAKIS, H. MARTLEW, *Minoans and Mycenaean: Flavours of Their Time*, Athens 1999.

⁸ D.J. HALLY, *Use Alteration of Pottery Vessel Surfaces: An Important Source of Evidence for the Identification of Vessel Function*, *North American Archaeologist* 4, 1983, pp. 3–26; IDEM, *The Identification of Vessel Function: A Case Study from Northwest Georgia*, *American Antiquity* 1986, pp. 267–295; J.M. SKIBO, M.B. SCHIFFER, *The Effects of Water on Processes of Ceramic Abrasion*, *JAS* 14, 1987, pp. 83–96; M.B. SCHIFFER, J.M. SKIBO, *A Provisional Theory of Ceramic Abrasion*, *American Anthropologist* 91, 1989, pp. 101–115; J.M. SKIBO, *Pottery Function: A Use-Alteration Perspective*, New York–London 1992.

⁹ D. UREM-KOTSOU, K. KOTSAKIS, B. STERN, *Defining Function in Neolithic Ceramics: The Example of Makriyalos, Greece*, *Documenta Praehistorica* 29, 2002, pp. 109–118; A. YASUR-LANDAU, *The Last Glendi in Halasmenos: Social Aspects of Cooking in a Dark Age Cretan Village*, *Aegean Archaeology* 7, 2006, pp. 49–66; B. LIS, *Late Bronze Age Cooking Pots from Mitrou and Their Change in the Light of Socio-Economic Transformations*, Unpubl. PhD thesis, Warsaw 2012.

Lefkandi,¹⁰ and, as an addition, the LH IIIA2 Early deposit from Tsoungiza,¹¹ as they both contain well-preserved pottery that was put into use before its final deposition.¹² This is the first presentation of results of a project focused on the function of Mycenaean pottery,¹³ and in the future more contexts will be investigated using the same methodology.

There are at least three groups of use-wear marks that one can expect to find on fine pottery, and which I was able to identify during this study. First group results from simple handling of the pot, i.e. from direct contact with hands and from moving the pot around. Because such activities usually do not cause much damage to the surface, they are best visible on fine unpainted vessels covered with a slip of different colour than the clay, or/and on highly burnished surfaces. Another group of marks derives from the use of utensils, for instance spoons, inside of the vessel. Such marks usually take the form of scratches on the interior, most often around the base. It is easiest to spot (and illustrate) them if the vessel is painted on the inside. Third group of marks derives from contact with other vessels/objects that was intensive enough to cause some damage to the exterior surface. It is this group that will be of most interest for the discussion.

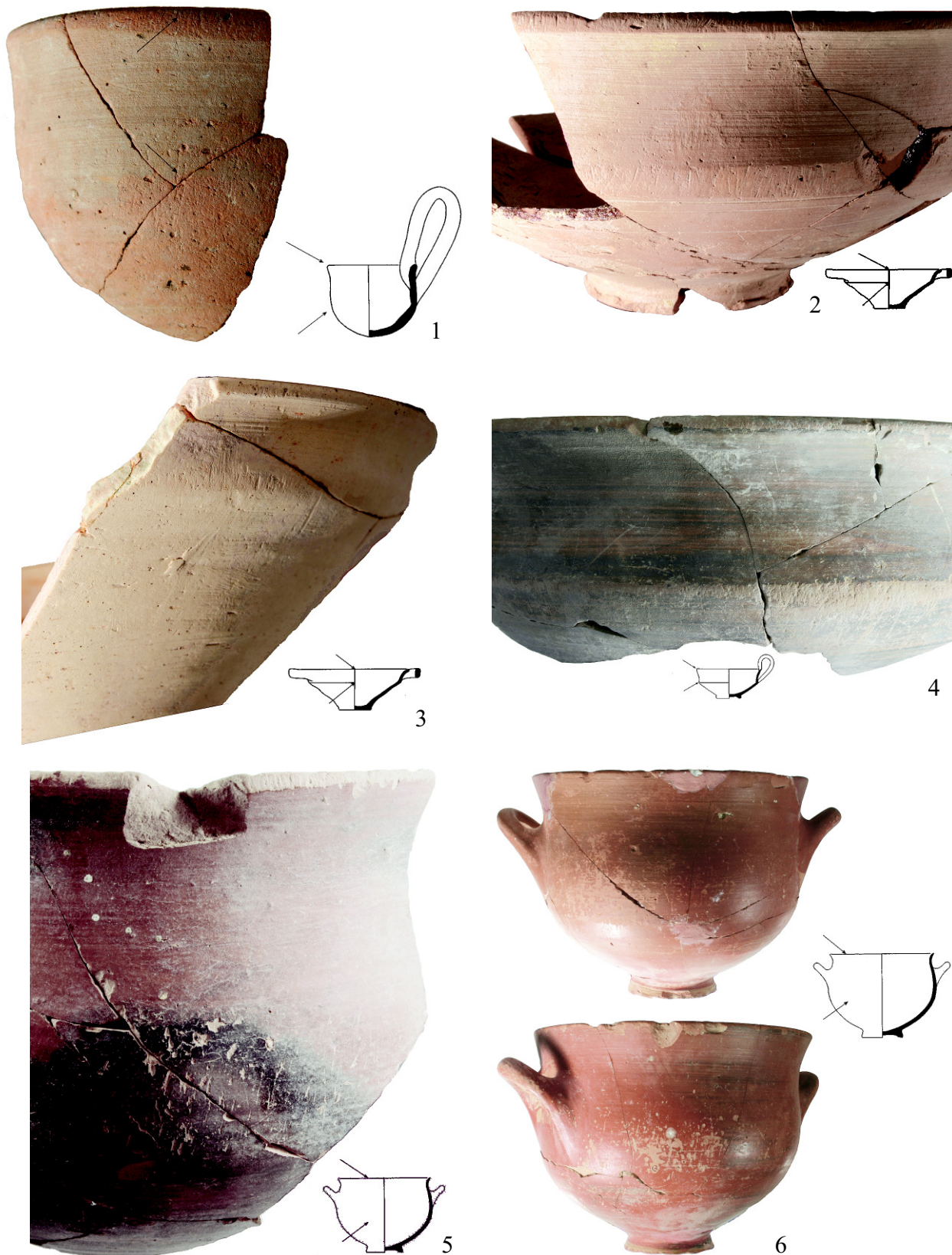
I decided to start with the dipper (Furumark shape [FS] 236), since its form, including the high-swung handle, leaves not much doubt as to how it has been used. If fine dippers (both unpainted and decorated) were used to remove wine from kraters, one should expect minimum wear on their surface, usually worn slip on the rim or slivers broken off. However, unpainted dippers from LH IIIC Lefkandi provide evidence for a very heavy wear in the part opposite the handle, both on the exterior rim and below it (Fig. 1). The wear takes the form of a rather heavy abrasion of the surface, and in many cases the thickness of the rim is substantially reduced. The abraded zone widens towards the middle, showing that greatest pressure was consistently applied to the same part of the rim, which is located exactly opposite the handle. Most importantly, these marks feature vertical

¹⁰ R.D.G. EVELY (ed.), *Lefkandi IV: The Bronze Age – the Late Helladic IIIC Settlement at Xeropolis*. British School at Athens Supplementary Volume 39, London 2006.

¹¹ P.M. THOMAS, *A Deposit of Late Helladic IIIA2 Pottery from Tsoungiza*, *Hesperia* 80, 2011, pp. 171–228.

¹² It should be remarked that traces of use presented below were found only on a limited number of vessels from these assemblages. Other pots were either not used long enough to acquire distinct use-wear on their surfaces, or were used in a way that did not leave any distinct marks.

¹³ The project is funded by Polish Ministry of Higher Education and Science, within a programme Iuventus Plus (first edition, 2010), and is scheduled for years 2011–13.



Figs. 1–6. 1. Lefkandi, Room 8 (Yard 8/13), phase 1. Use-wear on a fine unpainted dipper. – 2. Lefkandi, 66/P114, phase 1a. Use-wear on a fine unpainted shallow angular bowl. – 3. Tsoungiza, 1584-2-1, LH IIIA2 Early. Use-wear on a fine unpainted shallow angular bowl. – 4. Lefkandi, 64/P21, phase 1a. Use-wear on a monochrome carinated cup. – 5. Lefkandi, 66/P200, phase 1a. Use-wear on a monochrome deep bowl. – 6. Lefkandi, 65/P109, phase 1b. Use-wear on a monochrome deep bowl.

grooves, or scratches. All of these observations indicate that the marks did not derive from contact with fine, smoothed surfaces of kraters' interiors. In particular, kraters lack any protrusions on their surfaces, like hard inclusions in the fabric, that could be the source of the grooves observed on the dippers. Moreover, contemporary kraters from Lefkandi do not display any signs of abrasion on their interiors. Therefore, marks observed on these dippers derive from contact with rough and coarse surfaces of other containers, most probably cooking pots.¹⁴

The Lefkandi unpainted dippers are small enough (rim diameters between 6 and 9 cm) to fit into restricted mouths of the majority of contemporary cooking pots. This was a major obstacle in accepting a similar use for dippers made in coarse, cooking pot fabric, like the examples from Mitrou which are too big (rim diameters of 11.5 and 12.5 cm¹⁵) to fit into contemporary cooking pots.¹⁶ Furthermore, removal of hot content does not require use of specific fabric, and this function could have been fulfilled by fine unpainted dippers, as it seems to be confirmed by the use-wear analysis. The differences within the dipper family were noted by I. Tournavitou, who suggested that the factor behind their lack of homogeneity was a variety of functions that they served.¹⁷

Surprisingly, the identical pattern of wear as that witnessed on unpainted dippers appears on other open shapes, rarely or never associated with the function of scooping. Among many painted shapes with such a use-wear there is one other unpainted form – shallow angular bowl (SAB, FS 295) 66/P114, deriving from a deposit of Lefkandi phase 1a.¹⁸ As can be seen on Fig. 2, it shows extreme wear on both rim and carination. In particular the latter shows much abrasion, and it is completely flattened. Deep vertical grooves are very distinct and the wear is located exactly between the two handles (only one side of the vessel is preserved).

Apart from shape, there is at least one more important difference between the SAB and the previously described dippers. The rim diameter of this SAB (14.4 cm) is much larger than the dimensions of an average unpainted dipper and hence it would not fit into majority of cooking pots. Furthermore, its shallowness and, in particular, type and placement of handles render it a cumbersome pot to scoop out contents from deep and closed containers. What vessel would this bowl be used with? The best candidate appears to be a vat, a large container with spreading walls, thus easily accessible to any kind of scooping device. The LH IIIC contexts at Lefkandi are particularly rich in vats.¹⁹

For the chronological and geographical extent of such marks on SABs, the evidence of bowl 1583-2-1²⁰ from Tsoungiza is of particular importance. It displays the same marks (Fig. 3), but comes from another region and it is earlier by some 200 years. The evidence for open, coarse containers in the LH IIIA2 Early deposit from Tsoungiza is meagre, but there is at least one fragment of a vat attested.²¹

At Lefkandi, there is also a number of decorated vessels that display the same pattern of wear. The form most consistently showing strong wear on the lip and protruding part of the lower body is a carinated cup (FS 240). Virtually all well preserved examples of this form feature a varying degree of this type of use-wear. By far the most acute marks are present on cup 64/P21 (Fig. 4), again from a context of phase 1a.²² The carination opposite the handle is entirely flattened due to abrasion, and the vertical scratches continue towards the base. The rim also bears traces of heavy wear. Although cups are usually small forms, the carinated version can be quite large – rim diameter of 64/P21 is 17.7 cm. Therefore, even more than in the case of the SAB, large coarse vats are the best candidates as the “sources” of this use-wear. The high-swung handle of the carinated cups renders them more useful for scooping out the content than the SABs.

The carinated cup is a form that is not native to the Mycenaean repertoire, and it was most likely copied from South Italian models.²³ It is interesting that some of the *impasto* carinated cups from that area feature exactly the same wear pattern on the

¹⁴ Other coarse vessels, like pithoi or vats, are also possible.

¹⁵ The difference between the diameters of Lefkandi dippers may not seem too big, but if the handle is added (it also must fit into the cooking pot), the difference becomes crucial.

¹⁶ See S. VITALE, *Ritual Drinking and Eating at LH IIIA2 Early Mitrou, East Lokris. Evidence for Mycenaean Feasting Activities?*, in: L. HITCHCOCK, R. LAFFINEUR, J. L. CROWLEY (eds), *DAIS: The Aegean Feast*. Aegaeum 29, Liège 2008, Fig. XLV: g.h.

¹⁷ TOURNAVITOU, *op. cit.* (n. 3), p. 197.

¹⁸ EVELY (ed.), *op. cit.* (n. 10), p. 12. This SAB was illustrated as an LH IIIB form in M. POPHAM, E. MILBURN, *The Late Helladic IIIC Pottery of Xeropolis (Lefkandi): A Summary*, BSA 66, 1972, p. 347, Fig. 8.1. For the relative chronology of Lefkandi phases, see P.A. MOUNTJOY, *Regional Mycenaean Decorated Pottery*, Rahden 1999, Tab. 2.

¹⁹ They are called tubs in the publication, see EVELY (ed.), *op. cit.* (n. 10), Figs. 2.36–2.38.

²⁰ THOMAS, *op. cit.* (n. 11), p. 215, Fig. 24: 270.

²¹ *Ibidem*, p. 220, Fig. 26:305; possibly also some of the rim fragments on Fig. 27.

²² EVELY (ed.), *op. cit.* (n. 10), p. 96, Fig. 2.1:4.

²³ See R. JUNG, *Chronologia Comparata: Vergleichende Chronologie von Südgriechenland und Süditalien von ca. 1700/1600 bis 1000 v.u.Z.*, Vienna 2006, p. 49, n. 351 with further references.

rim and carination. I noticed it in the early twelfth century BC material from Punta di Zambrone (Calabria), before I identified such marks on Mycenaean pottery.²⁴ This may mean that not only the shape was copied, but, more importantly, the shape was used in the same way. The fact that Lefkandi is one of the findspots of Handmade Burnished Ware, a group of pottery associated with people originating from southern Italy, may not be a pure coincidence.²⁵

Another form displaying wear marks composed of the abraded rim and protruding body part is a deep bowl (FS 284). In a typical way, 66/P200²⁶ (Fig. 5) displays these marks between the handles. They are usually slightly shifted towards one of the handles, as 65/P109²⁷ clearly demonstrates (Fig. 6). The lower protruding body is not abraded, in contrast to carinated cup or SAB, but features multiple small scratches. This is probably due to the more rounded profile of this body part. The location of the wear, in particular its slight shift towards one of the handles, suggests that the deep bowl was held by the handle during scooping and this would require a lot of additional space inside of the container being scooped from. Once again, the vats with their impressive rim diameters are the most plausible candidates.

There are two small shapes – semiglobular cup (FS 215) and one-handled bowl (FS 242) – which feature the same type of heavy abrasion. There is an interesting difference in the location of wear between these two forms. Cup 66/P102²⁸ (Fig. 7) displays abrasion on the rim and protruding lower body, located at 90° angle left of the handle, suggesting that it was held in the right hand. For the one-handled bowl 65/P51²⁹ (Fig. 8), the wear is located opposite the handle, as in the case of other one-handled forms (dippers and carinated cups). In this respect, the different location of abrasion on the cup is surprising, but it may be simply due to the preference of the user.

There are two other types of use-wear marks that can be observed on the deep bowl. One of them is the abrasion on the interior, caused probably by removal of food with a spoon-like object.³⁰ Usually it is concentrated on the base. This kind of wear could be expected on deep bowls (Fig. 9), as this shape is associated also with consumption of food,³¹ yet it shows up also on vessel types not suspected of such a function. A good example is a carinated kylix (FS 267) 1588-2-30 from Tsoungiza (Fig. 12).³² Even though the interior is not coated with paint, an abraded surface is clearly visible, exposing also small inclusions invisible on the original slipped surface. This evidence is particularly valuable as kylikes of any kind are rarely associated with anything else than wine drinking. It seems that, apart from usually poor fabric and frequent flaws in manufacture, this is yet another indication that carinated kylikes might have been used for consumption of food.³³ It is not impossible that the unpainted dippers discussed above were used to move the contents from cooking pots into the carinated kylikes, which are also rather small in their capacity (ca. 0.25 litres on average).

During my study, I identified two instances of interior wear located not around the base, but in the upper body. The abrasion takes a form of a long stripe. This wear was observed on deep bowl 69/P94 (Fig. 10) and carinated cup 69/P45 (Fig. 11).³⁴ The source of this abrasion was probably the same as previously, i.e. a spoon used to remove food. Thus also carinated cup can be included among forms that, at least sometimes, were used as food serving dishes.

Another kind of wear can be noticed on the exterior, and it derives probably from handling of the vase. Deep bowl 66/P74³⁵ (Fig. 13) provides a good illustration. The wear covers half to two-thirds of the body between the handles, on both sides. However, in contrast to 65/P109 (Fig. 6), the abrasion does not include scratches and is shifted towards the same handle on both sides. Interpretation of such a use-wear is not straightforward, but one possibility is that the bowl was held in the palm of one's hand, and the thumb was wedged behind the handle. The location of wear shifted towards one handle suggests that the deep bowl was held using only this one handle. This could have been the case if the other

²⁴ I am grateful to R. Jung and M. Paciarelli for allowing me to mention this observation.

²⁵ See *ibidem*, pp. 21–47; B. LIS, *Handmade and Burnished Pottery in the Eastern Mediterranean at the End of the Bronze Age: Towards an Explanation for Its Diversity and Geographical Distribution*, in: CH. BACHHUBER, R. G. ROBERTS (eds), *Forces of Transformation: The End of the Bronze Age in the Mediterranean: Proceedings of an International Symposium Held at St. John's College, University of Oxford, 25–26th March 2006*, Oxford 2008, pp. 152–163 with further literature.

²⁶ Phase 1a, EVELY (ed.), *op. cit.* (n. 10), p. 11.

²⁷ Phase 1b, *ibidem*, p. 19, Fig. 2.20: 2, Pl. 26.2.

²⁸ Phase 1b, *ibidem*, p. 17, Fig. 2.15: 6, Pl. 17.2; the same wear is present on cup 66/P97 from the same context. They were found together with a large vat (65/P370) featuring capacity of 33 litres.

²⁹ Phase 2b, *ibidem*, p. 71, Fig. 2.12: 4.

³⁰ Another possibility is that the abrasion derives from washing (possibly with the help of sand), as the food would probably stick to the bottom.

³¹ TOURNAVITOU, *op. cit.* (n. 3), pp. 199–200.

³² THOMAS, *op. cit.* (n. 11), p. 215, Fig. 23: 257.

³³ See B. LIS, *Cooked Food in the Mycenaean Feast – Evidence from the Cooking Pots*, in: HITCHCOCK, LAFFINEUR, CROWLEY (eds), *op. cit.* (n. 16), p. 145, n. 28.

³⁴ EVELY (ed.), *op. cit.* (n. 10), p. 55, Fig. 2.1: 1.

³⁵ *Ibidem*, p. 48, Fig. 2.9: 2, Pl. 42F.



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Figs. 7–13. 7. Lefkandi, 66/P102, phase 1b. Use-wear on a linear deep semiglobular cup. – 8. Lefkandi, 65/P51, phase 2b. Use-wear on a conical one-handed bowl. – 9. Lefkandi, Room 10, phase 1. Use-wear on a monochrome deep bowl. – 10. Lefkandi, 69/P94. Use-wear on a monochrome deep bowl. – 11. Lefkandi, 69/P45, phase 1b/2a. Use-wear on a monochrome carinated cup. – 12. Tsoungiza, 1588-2-30, LH IIIA2 Early. Use-wear on a fine unpainted carinated kylix. – 13. Lefkandi, 66/P74, phase 2a. Use-wear on a monochrome deep bowl

handle, now missing, was broken off already in antiquity.

CONCLUSIONS

The material presented here derives from a preliminary study of well-preserved vessels from only two sites. Observations on their abrasion reveal the potential hidden in faint traces on vessels' surface, often taking the form of the title *scratch*; many more forms are undoubtedly waiting to be investigated. The presented method will obviously not answer the question "what was in the vessels," yet it provides important hints on "how they were used," which, as a result, narrows down the range of possible substances that were put into them.

The most striking, and at the same time most revealing, marks consist of heavy abrasion on the rim and lower protruding parts of the body. The SAB from Tsoungiza and carinated cups from Punta di Zambone demonstrate that this is not something unique to Lefkandi, yet the frequency of such use-wear at Lefkandi seems to be quite high, and it shows up on a variety of open forms. Therefore, we may rightly question whether there was something special about the way the inhabitants of Lefkandi used their vessels. It is important to stress here that this particular way of use at Lefkandi was not restricted to a short period of time. While there is a number of forms showing this wear from the earliest LH IIIC phase (1a), many of them come from the destruction of the following phase (1b), and at least one (one-handled bowl 65/P51, Fig. 8) is as late as phase 2b. Therefore, this feature was persistent, though concentrated in the early phases of the LH IIIC period. In the discussion of particular forms, the large clay containers with spreading walls, here referred to as vats, were mentioned as most probable vessels out of which the content was scooped, and this activity produced heavy abrasion on the rim and body. The abundance of vats at Lefkandi is striking, and to my knowledge no other site of the Greek mainland yielded so many examples of that form.³⁶ This may be an artefact of lack of interest for utilitarian pottery, on the one hand, and the extraordinary preservation of Lefkandi contexts on the other, but let us assume for the moment that this represents a true preference for this form at Lefkandi. The vats from Lefkandi were considered appropriate for dry storage.³⁷ However, their spreading walls

and resulting very wide mouths make such a hypothesis rather improbable, as this would create constant need to cover these large containers and rendered them difficult to be sealed properly. Furthermore, the interpretation put forward here, which connects them to a number of serving vessels, contradicts such an interpretation as well. It is possible that they were used to prepare large amounts of food, maybe by mixing ingredients in them.³⁸ This would explain why typical food-serving vessels, like SAB, display heavy abrasion. The amounts of food would be truly massive, as the capacity of Lefkandi vats ranges between 13 to 34 litres!³⁹

Another possible interpretation can be suggested when one employs an additional methods of investigating vessels' function. If we analyse the Lefkandi assemblage at a very general level, comparing frequencies of forms and their absence/presence, an interesting pattern is revealed. The vats are in use from Lefkandi phase 1a to 2a, with particularly high occurrence in phase 1b, and this overlaps nicely with the most frequent appearance of heavy abrasion on the tableware.⁴⁰ There is one popular Mycenaean form, which is rare prior to the Lefkandi phase 2a, which then experiences a true explosion in terms of quantity and variety of decoration: the krater.⁴¹ Its rarity in phases 1a and 1b, in particular in the rich destruction levels of Lefkandi 1b, is quite surprising. It nevertheless seems that this phenomenon is not restricted to Lefkandi, because the drop in popularity of kraters during the first decades of the twelfth century B.C. can be seen at other sites as well.⁴² Can we therefore consider vats as coarse and unpainted equivalents to kraters? No matter how controversial

³⁸ For a similar view, see R. JUNG, *Tafeln in Enkomi vom 13. bis zum 12. Jh. v. u. Z.: Neue Töpfe auf dem Tisch oder neue Gäste am Tisch*, in: F. BLAKOLMER, C. REINHOLDT, J. WEILHARTNER, G. NIGHTINGALE (eds), *Österreichische Forschungen zur Ägäischen Bronzezeit 2009: Akten der Tagung vom 6. bis 7. März 2009 am Fachbereich Altertumswissenschaften der Universität Salzburg*, Wien 2011, p. 179.

³⁹ Capacity of the vats was calculated using an online application accessible at <http://lisaserver.ulb.ac.be/capacity/>.

⁴⁰ EVELY (ed.), *op. cit.* (n. 10), p. 208. Some of the open forms with heavy abrasion were found in the same contexts as vats.

⁴¹ *Ibidem*, p. 190.

⁴² The drop in frequency is particularly clear around the second part of LH IIIC Early, corresponding partly to Lefkandi phase 1a and 1b. The best quantitative data derives from Tiryns, see B. LIS, *A Revolution in the Study of Late Mycenaean Pottery? A Review Article of Ch. Podzuweit 'Studien zur spätmykenischen Keramik'*, *Archeologia* 58, 2007, p. 174, Tab. 2; P.W. STOCKHAMMER, *Kontinuität und Wandel. Die Keramik der Nachpalastzeit aus der Unterstadt von Tiryns*, Heidelberg 2008, p. 182. Also at Mycenae, the Tower phase experiences a drop in frequency of kraters, see E.B. FRENCH, *The Post-Palatial Levels*. Well Built Mycenae Vol. 16/17, Oxford 2011, p. 824 (CD), Graph 1.

³⁶ There are a few well-preserved vats reported from recent excavations at Midea, illustrated in the preliminary reports published in *Opuscula Atheniensia*.

³⁷ EVELY (ed.), *op. cit.* (n. 10), p. 208.

this proposal may sound, it should be taken into account. The coarseness of fabric can cause increased permeability, yet this is the same problem that many transport vessels were facing, and it seems it did not prevent the use of coarser fabrics. Coating of the walls with resin could be put forward as one of the solutions. The vats often bear incised decoration on rims,⁴³ which is a rare treatment for purely utilitarian pottery, but becomes understandable if one assumes that they were put on display. Furthermore, some of the vats have plastic bands just below the rim, which is a trait that makes them similar to later kraters. The capacity of vats is similar to that of larger kraters, and if wine was mixed with substantial amount of water, then their size appears as justified. They could also have functioned as simple containers for water used for every day needs.⁴⁴

This example demonstrates that a combination of methods, starting from use-wear marks with addition of a frequency analysis, can lead to interesting conclusions about the function of several types of vessels. It is necessary to verify these observations on other large bodies of material in order to see

whether similar traces can be found in deposits from other sites and/or other periods, but these preliminary results definitely show the great possibilities of such an approach. The use of experimental archaeology would be a good complement to this type of study as well.⁴⁵

Other use-wear marks are not that spectacular, but no less important and informative. They are usually more difficult in interpretation. Let us take a simple example – wear on the rim of a drinking vessel. Is it from contact with the lips? Or, maybe, the vessel was also used as a scoop to take wine out of the krater? Or is it a result of contact with other vessels when stored on a shelf? In order to interpret such ambiguous marks, more material needs to be studied. I hope that presentation of these preliminary results will encourage ceramologists to take another look at their assemblages, and start thinking about the function from scratch.

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⁴³ EVELY (ed.), *op. cit.* (n. 10), p. 213, Fig. 2.38.

⁴⁴ Just as in the case of almost any other shape, it would be inappropriate to assume a single function for the vats. Therefore, I am considering all mentioned suggestions to be complimentary, and not exclusive.

⁴⁵ I would like to thank S. Vitale for this suggestion.

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