

JENNIFER M. WEBB

TECHNIQUES OF POTTERY MANUFACTURE AT MARKI, CYPRUS (PLATES I - VI)

The Early and Middle Bronze Age settlement of Marki Alonia extends over at least 10 hectares of gently sloping terraced fields below the small village of Marki on the edge of the north-eastern foothills of the Troodos mountain range in central Cyprus. It lies in the igneous/sedimentary contact zone, a favoured location for sites of the earlier Bronze Age, with access to the agricultural fertility and clay beds of both igneous and sedimentary soil types and also to the copper ores associated with the Troodos pillow lavas. The site is surrounded by extensively looted cemeteries. Both settlement and cemeteries appear to have been in use from the mid-third millennium to the late C18th BC¹.

The first season of excavations at Marki by the Australian Cyprus Expedition, under the direction of Dr David Frankel from La Trobe University, took place in late 1991². Two areas of the site were investigated. In one area four rooms and an associated floor forming part of a Middle Bronze Age habitation unit were uncovered. In the other upper deposits and wall tops were cleared over a larger area. The site was not fortified and occupation appears to have been generally peaceful. Almost all the finds are fragmentary and incomplete, suggesting that the inhabitants removed valuable objects at each stage of rebuilding for subsequent reuse.

The first season produced nearly 19,000 sherds and a handful of more complete pottery vessels, mended from fragments. During the course of the season this material was sorted and classified at a basic level according to major wares, size and primary shapes. In addition 2,285 diagnostic sherds were documented in greater detail. These comprised 11.5% of the total number and included decorated items as well as all rim, handle, base and other significant fragments. The vast majority of the material (over 90%) is Red Polished Ware, a dark monochrome fabric in use across the island for some 600 or 700 years throughout the Early and Middle Bronze Age. About 5% of these sherds are decorated, primarily with incision or in relief. Half are from small open vessels, predominantly hemispherical bowls, 40% from small closed vessels and the remainder from larger vessels or of indeterminate shape.

In recording the pottery from Marki our primary aim is to establish a framework which will allow detailed comparison between different site contexts as well as with related assemblages from other settlements, in order to investigate patterns of variation within a single regional system and on a broader inter-regional and island-wide scale³. Our interests lie also in identifying the social context of ceramic production and the mechanisms by which technology and ideographic systems were transferred between potters. With these aims in mind an extensive data bank recording size, shape, type, fabric texture, colour and hardness, surface treatment and decoration is being created for all diagnostic sherds.

1. A preliminary survey of the area was carried out in 1990; cf. D. Frankel and J.M. Webb, "Archaeological research in the Marki region, Cyprus. 1990", *Mediterranean Archaeology Supplementary Volume 3*, in press.
2. Cf. D. Frankel and J. M. Webb, "Excavations at Marki Alonia, 1991-1992", *RDAC* (1992), in press.
3. For a more detailed discussion of the theoretical and methodological aspect of this research cf. D. Frankel, "Pottery production in Prehistoric Bronze Age Cyprus", *Journal of Mediterranean Archaeology* 1/2 (1988), 27-55; *idem*, "Ceramic variability: measurement and meaning", in J. Barlow, D. L. Bolger and B. Kling (eds.), *Cypriot Ceramics: Reading the Prehistoric Record* (1991), 241-252.

In the course of the first season it became apparent that observations relating directly to techniques of manufacture might also be of value, both in providing insights into ceramic technology and an alternative means of establishing the identity of potters and production centres. In this respect the fragmentary nature of the assemblage has very clear advantages. Whereas the unbroken pot normally conceals its method of manufacture, sherds provide access to interior detail, cross-sections and breakage patterns all of which throw light on the preparation, forming finishing and firing methods used by the ancient potters. Sherds from closed vessels are particularly informative because the interior is seen neither by the potter nor the user and so often retains markings indicative of earlier stages of manufacture. Sherds from settlements, furthermore, represent a wide range of material, including poorly made and misfired examples, and provide related contextual information on vessel function.

This paper presents some preliminary observations on the techniques used in the production of Red Polished pottery at Marki, derived from the results of the first season.

Selection and Preparation of Clays

At present no compositional data concerning clays, slips, inclusions and paints are available from Marki. Both petrographic and chemical analyses, however, have been carried out on pottery from a Middle Bronze Age settlement at Alambra Mouttes, 8 kilometres south-east of Marki, and some comparability between the two assemblages may be assumed⁴. The Marki potters, like those at Alambra, had ready access to both calcareous clays associated with the sedimentary soils of the Mesaoria plain and volcanic clays found in the igneous formations of the Troodos foothills. Clays from both zones appear to have been used with some degree of selectivity, the sedimentary clays producing a soft pale buff fabric with fewer naturally-occurring inclusions well-suited to the manufacture of small thin-walled vessels with a high surface lustre and finely incised decoration, while the dark red clays of volcanic origin were used in the manufacture of larger, coarser vessels. The majority of sherds, however, lie between these two ends of the spectrum and appear to have been made with less selectively prepared clays or with an admixture of calcareous and non-calcareous clay types.

Inclusions include calcite, quartz, feldspar, biolite (black and gold mica), igneous and metamorphic rock fragments and organic grasses, a range typical of Bronze Age Cypriot wares and probably occurring naturally in the clays⁵. Fine-textured decorated vessels generally show only a few small inclusions, suggesting that the clay was carefully prepared before use. On coarser vessels irregular particles of differing size and colour are present in varying quantities. Organic material, probably chaff or dung, was added as temper to the fabric of cooking pots and the finer calcareous clays to increase porosity. Non-calcareous red-firing clays with a high iron content were used for slips in order to achieve the characteristic red or red-brown surface. Slip preparation must have included grinding, levigation or other treatment to reduce the size of the particles and promote rapid sintering.

4. J. A. Barlow and P. Idziak, "Selective use of clays at a Middle Bronze Age site in Cyprus", *Archaeometry* 31 (1989), 66-67; J. A. Barlow and S. Vaughan, "Regional differences in EB and MB Red Polished pottery" in P. Åström (ed.), *Acta Cypria. Acts of an International Congress on Cypriote Archaeology, Studies in Mediterranean Archaeology*, Pocket-Book 107 (1992), Part 2.
5. Cf. M. Yon, *Manuel de Céramique Chypriote I. Problèmes historique, vocabulaire, méthode* (1976), 46.

Primary and Secondary Forming

Red Polished Ware is exclusively hand-built. Vessels were pinched, coiled or formed in a mould. Adjoining surfaces were smoothed over on both exterior and interior in subsequent finishing, normally obliterating evidence of construction methods. Larger vessels were probably coil-built as suggested both by variations in vertical wall thickness and the irregular meandering contours of large vessel sherds. Slab-building, a technique likewise suited to the rapid production of large vessels, is also evident at Mar-ki, where some sherds show laminar fractures parallel to the surface of the vessel indicative of this method of forming⁶. Small open vessels were probably pinch-formed or, in the case of the round-based hemispherical bowls which are very regular in their proportions and degree of curvature at the rim, possibly mould-made⁷.

Small round-based vessels were supported in the hand or in a mould during forming and set to dry in a ring of clay or, in the case of bowls, resting on the hardened rim. Larger round-based vessels were probably placed in a concave sherd or hemispherical bowl of the appropriate size to support the vessel and allow some rotation of the pot during forming, as well as to enable it to be moved to a different spot for drying. One cooking pot shows a roughly circular imprint of the object on which it stood while still in a plastic state, as well as a faint concentric impression left by a band of organic material (cloth, grass, rope or straw) apparently wound around the edge of the base to prevent sagging and distortion during drying (Pl. Ia). Flat-based vessels were placed on a flat surface during forming and drying. In some cases a piece of matting or basketry was used, leaving a distinctive base impression which remains visible where the base was not subjected to subsequent forming or finishing (Pl. Ib).

While still wet or in a soft leather-hard state vessels were carefully scraped on both interior and exterior surfaces to thin and shape the walls and remove surface imperfections. Scraping marks frequently remain visible on the interior of closed vessels. Where the clay paste contained inclusions these were dragged along the surface producing linear scars or ridges showing the direction of movement of the scraping tool. In the case of Pl. IIa the tool, apparently a narrow stick or cane, was inserted into a cylindrical neck and pulled upward from the neck base, leaving parallel linear striations which show both the width of the tool and the position and direction of each stroke. Similar marks are visible on the interior of the tubular spout in Pl. IIIa.

The necks of jugs, amphorae and other closed shapes were made separately and inserted into the body of the vessel while leather-hard. Adjoining surfaces on the exterior and where possible on the interior were smoothed over with extra clay to strengthen the join. In the case of very small closed vessels, such as juglets and flasks, the neck was formed as a solid cone of clay, inserted into the body of the vessel and pierced with a stick. Secondary attachments, such as handles, spouts and lugs, were added after the body of the vessel was completely formed. Vertical handles on closed vessels were attached to the exterior of the neck, body or rim at the upper end and thrust through the vessel wall at the lower end

6. On the correlation between fracture type and forming methods cf. O. S. Rye, *Pottery Technology. Principles and Reconstruction, Manuals on Archaeology* 4 (1981), 60, 67-72.
7. The use of a mould has been proposed also for Red Polished III Black-Topped Ware bowls from Lapithos, which show both regularity of proportion and curvature and a slight thickening and flatness at the widest diameter. Cf. E. Herscher, *The Bronze Age Cemetery at Lapithos, Vrysi tou Barba, Cyprus*, Unpublished Ph. D. Dissertation, University of Pennsylvania (1978), 723.

leaving the extremity of the handle visible on the interior (Pl. IIb). Spouts were also inserted into the vessel on both open and closed shapes. On the former both the points of entry and exit were smoothed and, on the exterior, reinforced with extra clay and subsequently slipped. In section, however, the join void which occurs between the vessel and spout wall at the point of insertion is clearly visible (Pl. IIIa). In the case of closed vessels, where the internal juncture of spout and vessel wall was inaccessible and could not be strengthened by smoothing, the former was thrust well through the wall and the extremity left intact inside the vessel (Pl. IIIb). In the case of Pl. IIIb over one third of the full length of the spout was inserted, so that the contents of the vessel could not have been completely emptied via the spout.

Rather than being a disadvantage, however, this may have been a deliberate device intended to separate a liquid from its lees during pouring, in similar fashion to the strainer on the spout of a modern tea-pot.

Surface Finish

Surface finishing involved sequential processes of smoothing, slipping and burnishing or polishing. Smoothing appears to have been done with a brush or handful of straw, often leaving irregular shallow horizontal striations on the interior of closed vessels. Open vessels, being more accessible, were more regularly smoothed producing a more even interior surface. Wet-smoothing at the rim, particularly in the case of the hemispherical bowls, is probably responsible for the characteristic thinning and rounded rim-sections of these and other vessels in the assemblage.

Following smoothing a red or red-brown slip, varying in quality from thin to medium-thick, was applied to exposed surfaces (the most common Munsell colour readings are 2.5YR5/4, 2.5YR5/6 and 2.5YR4/6). This was done while the vessel was still relatively moist in order to avoid poor bonding of the slip caused by differential shrinkage of slip and clay body during drying. The method of slip application at Marki is not readily visible. Slip cover, however, is complete on open vessels and restricted to the exterior surface and immediate interior of the rim on most closed shapes. This suggests that it was wiped on to exposed surfaces with a cloth or brush, and applied in a vertical circular motion to the rim, producing a characteristic margin of slip extending several centimetres below the lip on the interior of closed vessels. Occasionally the surface shows thin horizontal lines of a darker colour, apparently also resulting from the use of a brush or cloth. The presence of slip is normally visible as a marked colour contrast between fabric and surface or by the appearance in section of a distinct outer skin.

Most Red Polished Ware vessels, with the exception of cooking pots, were polished before firing to produce a medium to highly lustrous surface. This was done with a smooth hard object (a stick, horn, bone or narrow pebble) while leather-hard to compact and reorient the clay and produce a characteristically uniform lustre and less porous surface. Individual polishing marks are not always visible, possibly because the whole surface was subsequently retraced with a broader tool. Occasionally, however, more careless treatment lead to an incomplete coverage of the surface. In these instances individual strokes are visible as narrow linear facets producing a streaky irregular lustre (Pl. IVa)⁸.

8. Red Polished Ware is for the most part polished rather than burnished, burnishing being an incomplete form of polishing which produces a combination of matte and lustre rather than a uniform lustre. Stroke-burnishing, a deliberate directional form of burnishing, does not occur although it is evident on fabrics of the Chalcolithic period.

Decoration

Decoration of Red Polished Ware is primarily by incision and impression with the occasional application of modelled or relief forms. For the most part these procedures were carried out after the final forming and smoothing of the vessel but prior to slipping and burnishing. Decoration occurs predominantly on vessels of well-levigated calcareous clays because of their greater plasticity, low shrinkage rate and the absence of large particles and coarse inclusions.

Incision, the cutting of lines into the surface of the vessel, appears on some 200 Red Polished Ware sherds from the first season. The form and effect of this type of decoration, however, varies considerably. On fine-textured vessels the incisions were carefully executed to create complex structured geometric patterns and filled with a white lime paste to offset the design against the dark background (Pl. IVb). This form of incision was done while the clay was leather-hard, producing sharp-edged lines with even margins showing little clay displacement, and prior to the addition of slip which is visible in the incised grooves. In the case of Pl. IVb some smoothing also appears to have taken place subsequent to the incision as the lines are partially obliterated toward the curve of the rim. The tools used were sharp-pointed, round in section, and applied with even pressure. The lime paste was probably applied after firing, as when added to unfired clay the excess cannot be wiped off without damaging the surface lustre⁹.

In the case of Pl. Va, however, the incision is restricted to a single line, executed with a broad blunt tool and with no evidence of a lime infill. The shallowness of the incision and its ragged margins indicate that it was done when the clay was already dry and following the application of the slip, which is cut through to reveal the underlying surface. Large particles visible as surface inclusions have also contributed to the tearing and disfigurement of the clay body by the incising tool. This form of incision, which may be referred to as coarse, differs from the fine incision illustrated in Pl. IVb not only in the type of clay body in which occurs but also in the type of tool used, the range and complexity of motif, the presence of lime fill and the stage in the manufacturing process at which it was performed. It is not clear whether these distinctions are due to the differing functional and symbolic requirements of finer and coarser vessels or reflect the varied expertise and traditions of the potters involved¹⁰.

Pl. Vb shows a typical example of relief or applied banding with additional impressed decoration on the body of an amphora. In this instance narrow rings and medallions of plastic clay were bonded to the leather-hard body of the vessel by pressure alone, without any additional strengthening of the join by smearing clay from the margins to the adjacent surface. When pressure is exerted over a surface area

9. Cf. I. Sterns, *Experiments in Red Polished Ware Pottery Technology*, 10, unpublished MS, Cornell University (1975), cited by T. Cullen and E. C. Wheeler in I. Todd (ed.), *Vasilikos Valley Project 1: The Bronze Age Cemetery in Kalavassos Village*, *Studies in Mediterranean Archaeology* 71:1 (1986), 136.
10. The latter possibility is of particular interest as it may indicate that individual household potters were not producing the full range of vessels, suggesting instead a more specialized production in some areas of the assemblage. Specialized production of highly decorated vessels is suggested also by J. A. Barlow, "Red Polished Ware: toward clarifying the categories", *RDAC* (1989), 56.

greater than one centimetre the force will deform the vessel wall unless opposing pressure is applied on the interior¹¹. It is therefore not surprising to find fingertip impressions on the interior of this fragment showing the manner in which it was held in order to support the inner wall during the application of the exterior decoration (Pl. VIa).

Firing

There is little direct evidence for the firing methods of Red Polished Ware. Vessels were probably fired individually or in small batches in fire-pits or open-air hearths, with firing beginning at low temperatures to drive out any water which had failed to evaporate during drying in order to prevent the vessels from cracking or exploding with the rapid escape of steam from the vessel pores. Firing temperatures probably did not normally exceed 750°, the approximate temperature at which large grains of calcium carbonate present in calcareous clays in the form of shell, crystalline calcite or limestone cause lime-spalling and subsequent damage to the vessel surface. Lime-spalling is not a regular feature of the Marki assemblage and appears to have been controlled by restricting temperatures or possibly by the addition of soluble salts during the preparation of the clays¹².

Twenty percent of the Marki sherds show some variation in surface colour (from red to red-brown, brown or orange) or varying degrees of mottling (fire clouding or fire-flashing). This is caused by differential access to air during firing and cooling, possibly due to the stacking of pots so that some areas were prevented from being thoroughly oxidized, or by pieces of smouldering fuel coming into contact with the vessel in the fire. Mottling is normally associated with harder fabrics and may be linked with attempts to produce technically superior pottery by firing at higher temperatures¹³. In general, however, the uniformity of surface colour and appearance in Red Polished Ware across the island suggests reasonably good control of firing conditions¹⁴.

Small hemispherical bowls with black interiors and a black band below the rim occur at Marki and elsewhere in the Red Polished Ware tradition (Red Polished III Black-Topped bowls). These must either have been placed rim-downward in ash to create selective reducing conditions during firing, covered with wet leaves during the last stages of firing or fired normally and placed upside down in a carbonizing material while still red-hot¹⁵. The contrasting red and black areas are aesthetically pleasing and the surface is normally highly lustrous and decorated with incision.

11. Cf. Rye, *op. cit.*, 92.

12. At temperatures above 750-800° calcium carbonate (CaCO₃) decomposes to form calcium oxide (CaO). Once the vessel has cooled CaO may combine with water vapour in the air to form calcium hydroxide. As the volume of calcium hydroxide is greater than that of CaCO₃ or CaO, the expansion exerts pressure which can rupture the surface of the vessel causing a cone-shaped piece to spall off, leaving a shallow crater with whitish powder at the apex. Rye has found that the introduction of soluble salts, especially sodium chloride, either by wetting the clay with salt water or mixing ground salt with the plastic clay reduces the risk of lime-spalling by raising the temperature at which calcium carbonate decomposes. Cf. Rye, *op. cit.*, 107, 114, fig. 93 and D. E. Arnold, *Ceramic Theory and Cultural Process* (1985), 26-28.

13. This is suggested by E. Herscher, "Cretan and Cypriot ceramic techniques in the late Third Millennium BC" in V. Karageorghis (ed.), *Acts of the International Archaeological Symposium "Relations between Cyprus and Crete, ca. 2000-500 B.C."* (1979), 1-7.

14. Cf. D. Frankel, "Color variation on prehistoric Cypriot Red Polished pottery", *Journal of Field Archaeology*, in press.

15. Black-topped wares occur also in Chalcolithic Cyprus and the associated firing techniques were clearly widespread and well-known. Cf. J. D. Stewart, "Preliminary remarks on the Chalcolithic pottery wares from Lemba-Lakkous", *RDAC* (1978), 17 and D. Bolger, "Techniques of the Erimi potters. From typology to ethnology", *RDAC* (1985), 27, 33.

Many sherds, particularly those from larger thicker-walled vessels, show a dark core of varying intensity and thickness with diffuse margins. These core effects are primarily due to firing in oxidizing conditions with incomplete oxidization of carbon and occur in pottery fired below 1000°¹⁶. The relative proportions of core and surface layers vary within the same vessel, with maximum thickness normally occurring in handle or base fragments. In the case of cooking vessels, even where the vessel is completely oxidized during firing, surface layers frequently show blackening in cross-section caused by gases from the cooking fire (a reversed core effect).

Function

Little direct contextual evidence for vessel function is available from Marki owing to the fragmentary and disturbed nature of floor deposits and the apparent removal of complete vessels and other items for reuse elsewhere. It is clear, however, that a range of finely decorated vessels were in regular use in the settlement, contrary to the frequent assumption that such vessels were too fragile for domestic purposes and intended exclusively for mortuary or other non-utilitarian use¹⁷.

Cooking pots are of particular interest (Pl. VIb)¹⁸. In the forming of cooking vessels the most important consideration is resistance to thermal shock caused by repeated heating and cooling and the differential temperature between the exterior of the vessel, exposed directly to the fire, and the inner wall which is kept cooler by the contents (and, conversely, the more rapid cooling of the exterior surface once the vessel is removed from the fire). This is partly achieved by vessel shape. Thermal gradients, which cause cracking, can be minimized or removed by ensuring both a uniform thickness of the vessel wall and an absence of sharp angles or changes in direction in the vessel body. Most cooking pots, including the Marki examples, have simple body contours to reduce thermal stress and broad rounded bases, allowing a greater and more regular exposure of vessel and contents to heat. They are also consistently thin-walled, a feature which improves the conduction of heat and reduces the thermal gradient between the surfaces. Increased resistance to thermal shock is also provided by the presence of large pores or voids in the clay body of the vessel, which act to arrest cracks which may appear on the surface. The simplest method of achieving this is by the addition of organic temper during clay preparation which subsequently burns out during firing leaving voids in the form of organic pseudomorphs (Pl. Ia). Mineral inclusions with similar thermal expansion rates to those already present in the clay matrix may also be added, resulting in a coarser texture and increased porosity. Both these features are visible in the Marki cooking vessels, which typically show a high rate of mineral inclusions and organic temper as well as increased hardness due to higher firing temperatures.

The Marki cooking vessels are also relatively deep-bodied to converse heat, have large openings for adding and removing food and a low neck to help prevent boiling over and reduce evaporation dur-

16. On core effects cf. Rye, *op. cit.*, 114-118.

17. Cf. eg. Cullen and Wheeler, *loc. cit.*, 136 (with reference to vessels with lime-filled incision) and Barlow, *loc. cit.*, 56 (with reference to vessels of soft calcareous fabric).

18. The following observations are largely based on discussions of cooking vessel manufacture in Rye, *op. cit.*, P. M. Rice., *Pottery Analysis. A Sourcebook* (1987), 235, 237-242 and Arnold, *op. cit.*, 23-26.

ing prolonged heating. The rim is characteristically thickened and flattered to strengthen it against breakage, at the same time avoiding reduction in resistance to thermal shock which would be caused by a pronounced or angular rim. Also characteristic are the high asymmetrical vertical handles, rising from the upper body, which are well-suited to manoeuvring and tilting the vessel in the fire as well as for pouring, lifting and carrying. In order to reduce thermal shock these handles, unlike those of other closed vessels, are attached to the exterior rather than thrust through the vessel wall.

Finally, the presence and location on the vessel body of soot, a by-product of fuel combustion comprising carbon and resins, may indicate how the vessel was placed in the fire. Where the soot blackening appears primarily on the sides of the pot, from the base up to or near the maximum diameter, the vessel was probably set directly in the fire. Vessels utilized in this fashion also have a lighter-coloured fully oxidized area at the centre of the base and were probably used primarily for boiling. Cooking pots, however, with soot deposits over both base and sides were probably suspended over the fire and used for simmering or frying. Although the sample from Marki is still too small to indicate the full range of cooking methods, several vessels are evenly blackened over the whole surface suggesting that they were suspended above rather than set into the fire. Such cooking pots may have been used in conjunction with semi-circular clay hearth surrounds or pot supports, an example of which was also found at Marki in 1991¹⁹. This is the first occurrence of such a hearth surround on the island and further excavation is needed to show whether or not they were in widespread use.

Cooking pots of the type found at Marki occur across the island in the Early and Middle Bronze Age. They have no predecessors in the Chalcolithic period and appear to have been introduced to the island, along with new cooking techniques, at the beginning of the Bronze Age. Such technologically sophisticated and successful vessels, showing a high degree of adaptation to function and differing in fabric, shape and surface finish from the rest of the Red Polished repertoire, are unlikely to have been the result of general household production. Their presence suggests more specialized manufacture in certain areas of the Red Polished assemblage and some movement of potters or vessels across the landscape.

Conclusion

Some of the benefits to be gained from a close examination of sherd material in the search for clues relating to manufacture, function and the context of production should be apparent from the above. Although preliminary, these observations set the stage for a more extensive collection and assessment of data at Marki in 1992 and subsequent seasons of excavation. Inferences drawn from such technological data and from the degree of uniformity in manufacturing techniques within and between sites may throw considerable light on ceramic production and distribution, as well as into reuse and discard patterns and the context and structure of potting industries. It is hoped that our efforts at Marki will prompt parallel studies of related assemblages and offer a useful alternative approach to the study of Red Polished Ware.

Jennifer M. Webb

19. Cf. *supra* n. 2.

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ΠΕΡΙΛΗΨΗ

Ο προϊστορικός οικισμός Μαρκί-Αλώνια έχει έκταση δέκα εκταρίων και χρονολογικά καλύπτει την περίοδο μεταξύ 2500 και 1700 π.Χ. Με στόχο τη σύγκριση του υλικού του οικισμού με άλλους σύγχρονους τους οικισμούς, καθώς και τον εντοπισμό της κοινωνικής συνάφειας της κεραμικής παραγωγής και των μηχανισμών με τους οποίους η τεχνολογία και οι ιδέες διακινούνταν μεταξύ των αγγειοπλαστών, άρχισε να δημιουργείται τράπεζα δεδομένων. Καταγράφονται το μέγεθος, το σχήμα, ο τύπος, η σύνθεση του πηλού, το χρώμα, η σκληρότητα, η περιποίηση της επιφάνειας και η διακόσμηση. Όμως και η τεχνική κατασκευής φαίνεται σημαντική, γιατί επιτρέπει τη γνώση της τεχνολογίας που χρησιμοποιούσαν, κάτι που ίσως επιτρέψει τον εντοπισμό των αγγειοπλαστών καθώς και των κέντρων παραγωγής.

Η επιλογή και η ετοιμασία του πηλού είναι πάντα ένα σημαντικό στάδιο και στο Μαρκί οι αγγειοπλάστες είχαν την ευχέρεια επιλογής πηλού από ηφαιστειογενή εδάφη του Τροόδους ή προσχωσιγενή της Μεσσαορίας, ενώ γινόταν και προετοιμασία του επιχρίσματος των αγγείων. Διακρίνεται η τεχνική κατασκευής ανοιχτών και κλειστών αγγείων. Ο λαιμός των τελευταίων γινόταν χωριστά και τον προσέθεταν, ενώ το αγγείο ήταν ακόμη σχετικά μαλακό. Το ίδιο γινόταν και με τις λαβές, τις προχοές κτλ.

Η ολοκλήρωση της επιφάνειας περιλάμβανε ομαλοποίηση της επιφάνειας με τρίψιμο, τοποθέτηση επιχρίσματος και λείανση ή στίλβωμα. Μετά το πρώτο στάδιο, πολλά μέρη του αγγείου καλύπτονταν με αραιό ή σχετικά πυκνό ερυθρό ή ερυθροκάστανο επίχρισμα, ενώ το αγγείο ήταν ακόμη σχετικά υγρό. Όλα σχεδόν τα αγγεία πλην αυτών που χρησιμοποιούνταν για μαγείρεμα στιλβώνονταν πριν από το ψήσιμο. Για το σκοπό αυτό χρησιμοποιούσαν ένα ομαλό αλλά σκληρό αντικείμενο, όπως είναι μια βέργα, ένα κέρατο, ένα κόκκαλο ή ένα στενό χαλίκι.

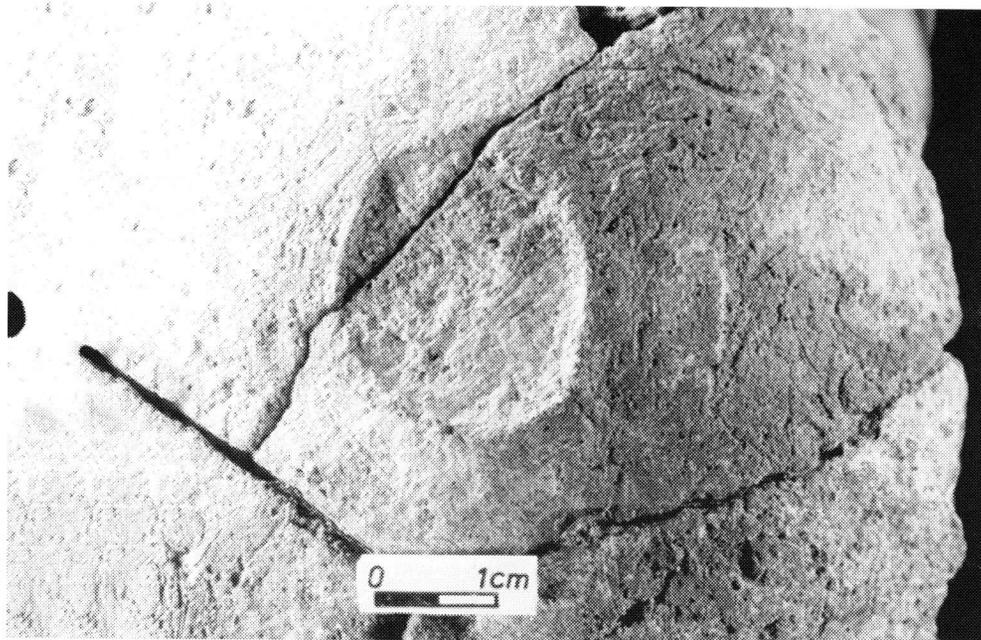
Η διακόσμηση των αγγείων με ερυθρό επίχρισμα γινόταν κυρίως με εγχαράξεις (πιν. II.2,3) και προσθέσεις (πιν. II.4) με τη χρήση προπλάσματος ή αναγλύφου. Οι εγχαράξεις γεμίζονταν συνήθως με λευκή ουσία.

Ο τρόπος ψήσιματος δεν είναι ακόμη γνωστός με σιγουριά, επειδή ελλείπουν τα τεκμήρια. Τα μεγάλα αγγεία ίσως να ψήνονταν ατομικά ή σε μικρές ομάδες σε κοιλώματα του εδάφους ή σε ανοικτές εστίες, αρχίζοντας πάντα με χαμηλές θερμοκρασίες, για να μη σπάζουν. Η θερμοκρασία ψήσιματος δε θα πρέπει να ξεπερνούσε τους 750°C.

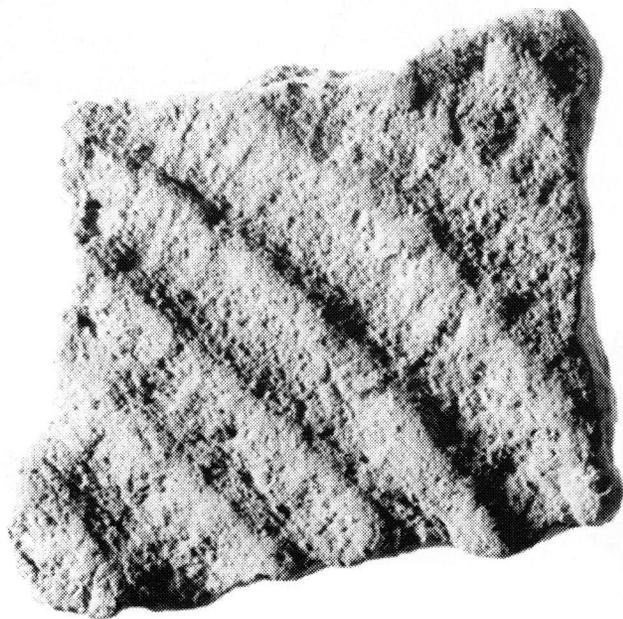
Η λειτουργικότητα των αγγείων δεν είναι ξεκάθαρη εξαιτίας της αποσπασματικότητας του υλικού, φαίνεται όμως πως αγγεία με λεπτά τοιχώματα δεν ήταν μόνο χρήσιμα για ιεροτελεστίες αλλά και για τις καθημερινές ασχολίες των ανθρώπων. Σημαντική είναι η κατηγορία των αγγείων για μαγείρεμα. Είχαν σχετικά βαθύ σώμα, ευρύ άνοιγμα και χαμηλό λαιμό. Το χείλος ήταν παχύ και επίπε-

δο. Τέτοια αγγεία δεν παρουσιάζονται στη Χαλκολιθική περίοδο της Κύπρου και φαίνεται να εισήχθησαν στο νησί από νεοαφιχθέντες στην αρχή της Πρώιμης Εποχής του Χαλκού.

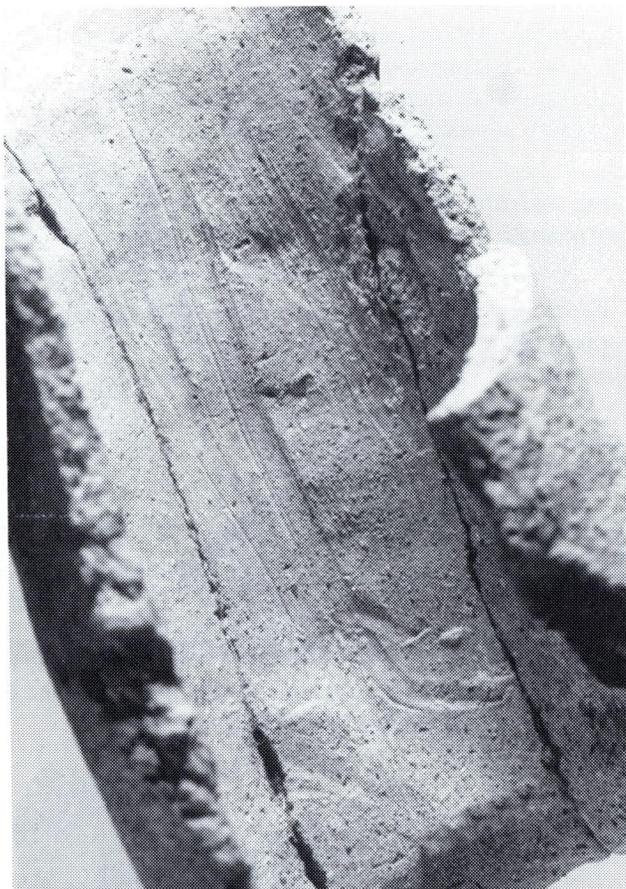
Τέλος, ελπίζεται πως ο τρόπος εργασίας στο Μαρκί θα οδηγήσει και άλλους ανασκαφείς σε παράλληλους τρόπους έρευνας, ώστε να μελετηθεί καλύτερα η κεραμική παραγωγή και η διασπορά της στην Κύπρο.



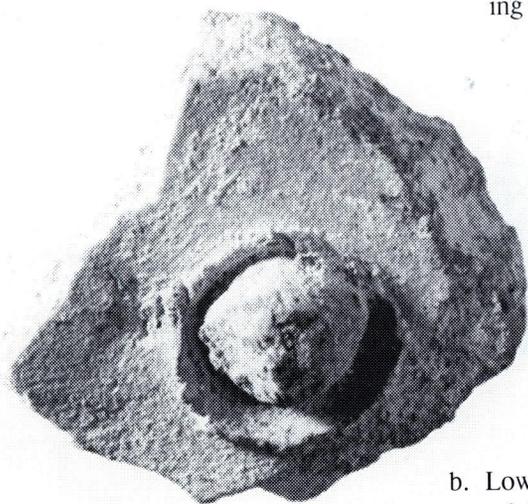
a. Base of cooking pot showing imprint of the object on which it was placed during manufacture (Marki *Alonia* P 614).



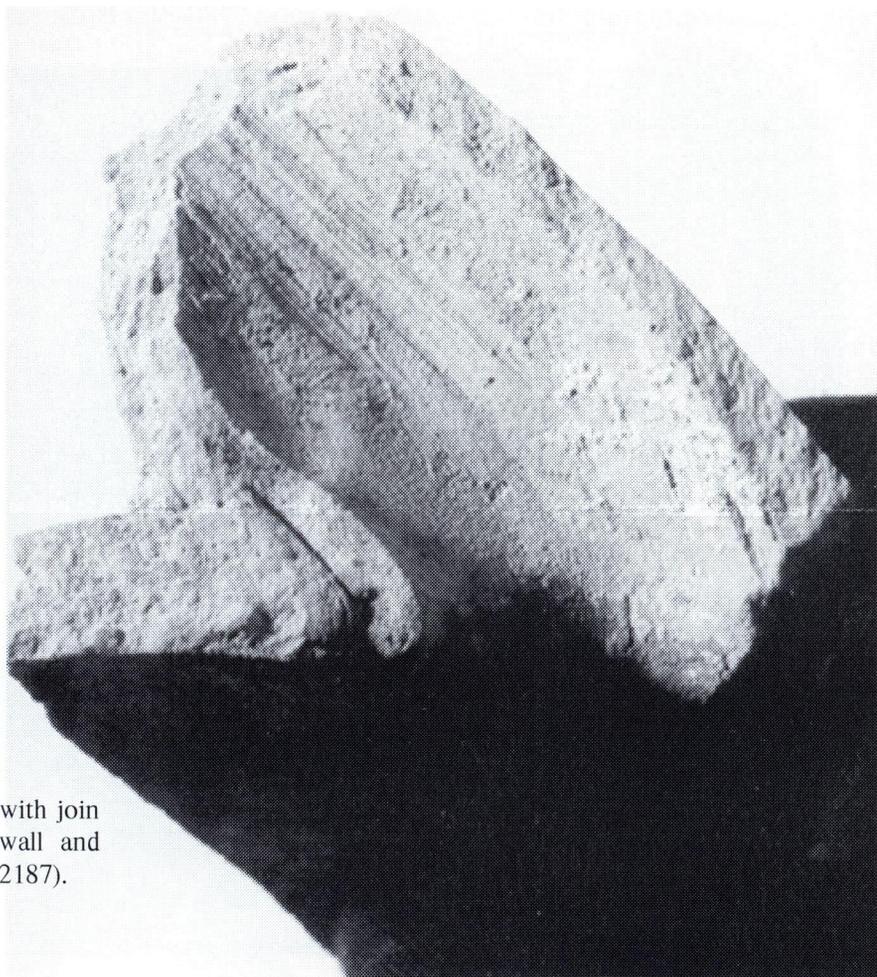
b. Base of flat-based vessel with basketry impression (Marki *Alonia* P 2055).



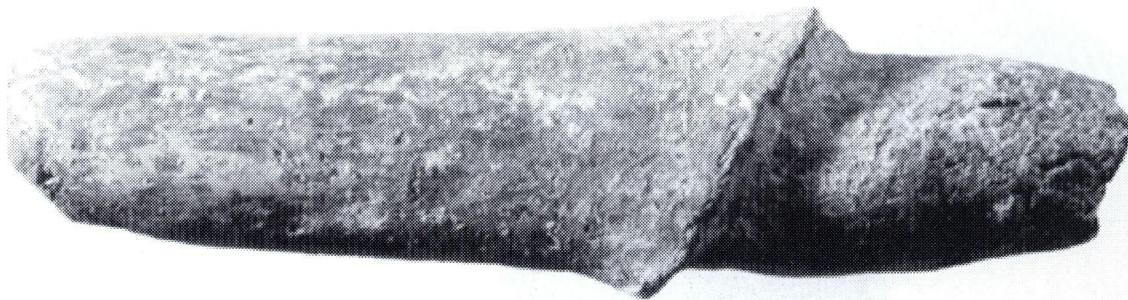
a. Interior of cylindrical neck showing marks of scraping tool (Marki *Alonia* P 741).



b. Lower terminal of handle from closed vessel (Marki *Alonia* P 977).



a. Spouted bowl sherd with join void between vessel wall and spout (Marki *Alonia* P 2187).



b. Spout from closed vessel (Marki *Alonia* P 627).

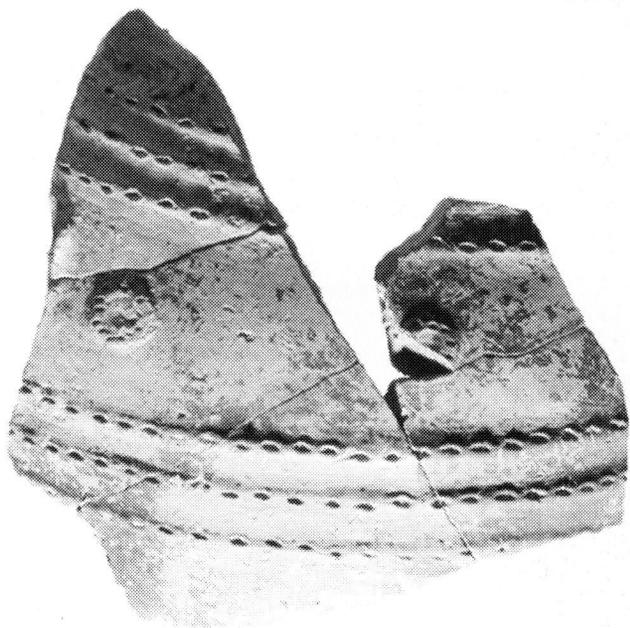
a. Handle with irregular lustre resulting from incomplete burnishing (Marki *Alonia* P 1064).



b. Sherd with fine lime-filled incision (Marki *Alonia* P 361).

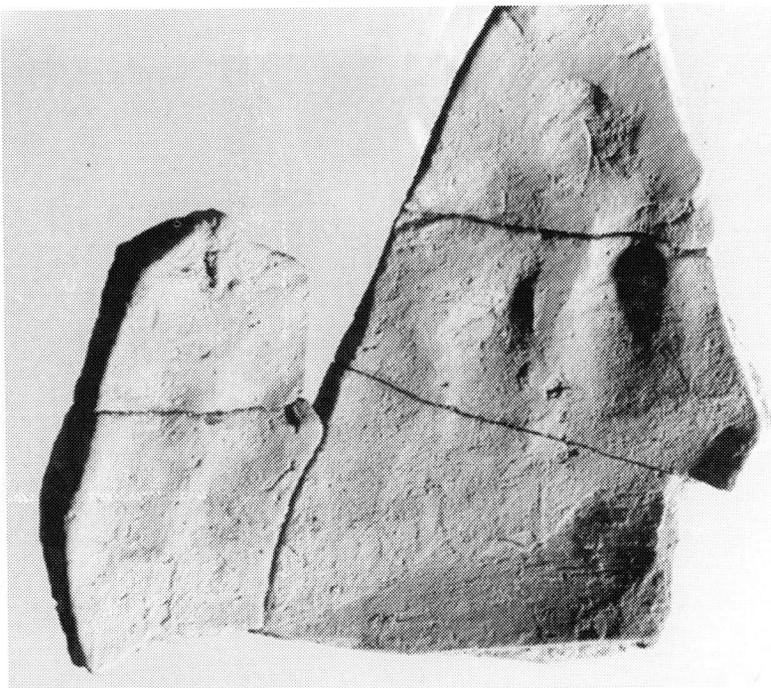


a. Sherd with coarse incision (Marki *Alonia* P 707).



b. Sherd with impressed relief decoration (Marki *Alonia* P 284).

a. Reverse of Pl. Vb showing fingertip impressions on interior.



b. Cooking pot (Marki *Alonia* P 614).