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The Neopalatial architectural and ceramic sequence at Malia. New insights from Area Pi

Charlotte LANGOHR, Maia POMADÈRE, Maria Emanuela ALBERTI

SUMMARY This paper discusses the architectural, stratigraphic and ceramic phasing of the Neopalatial occupation of a sector of Malia, a major Bronze Age settlement located on the northeastern coast of Crete. The exploration of this sector, Area Pi, started in 2005 with the aim of providing a better understanding of how the Minoan town developed through the course of the Neopalatial period (ca. 1700–1425 BC). The imprecision of the internal phasing of Malia's Neopalatial occupation and the poorly defined ceramic sequence have indeed become more apparent in recent years as several seminal works at other Cretan sites have made possible a refined definition of the Middle Minoan (MM) III and Late Minoan (LM) I phases. The outcome of the research programme carried out on building Pi has allowed us to propose a new scenario for the development of the Neopalatial town, as it has identified five stratigraphic phases and provided a new definition of the related ceramic sequence. This article therefore details our present state of knowledge of the Neopalatial occupation of building Pi, from its earliest MM IIIA levels to its abandonment in LM IA and offers a preliminary framework for the nature and chronology of the newly excavated structures and deposits. In particular, we aim to highlight the important evidence for MM III occupation in this area of the town – a particularly unknown period at Malia – and even to suggest the identification of two MM III sub-phases in the chronology of building Pi. Moreover, most of the Neopalatial material recovered from building Pi comes from several rooms with massive fill deposits datable to LM IA mature, indicating an extensive destructive event at this time. These new results make it possible to reassess the temporality and sequence of the main disruptive events and rebuilding activities that punctuated the Neopalatial history of this major Minoan town.

ΠΕΡΙΛΗΨΗ Η νεοανακτορική αρχιτεκτονική και κεραμική ακολουθία στα Μάλια. Νέες αντιλήψεις από το τομέα Π Το παρόν άρθρο εξετάζει την αρχιτεκτονική, στρωματογραφική και κεραμική φάση της νεοανακτορικής κατοίκησης του τομέα Π των Μελίων, ενός σημαντικού οικισμού της Εποχής του Χαλκού που βρίσκεται στη βορειοανατολική ακτή της Κρήτης. Η διερεύνηση αυτού του τομέα ξεκίνησε το 2005 με στόχο την καλύτερη κατανόηση του τρόπου με τον οποίο η μινωική πόλη αναπτύχθηκε κατά τη διάρκεια της Νεοανακτορικής περιόδου (περίπου 1700-1425 π.Χ.). Η ανακρίβεια της εσωτερικής σταδιοποίησης της νεοανακτορικής κατοίκησης των Μελίων και η ανεπαρκώς καθορισμένη κεραμική ακολουθία έχουν πράγματι γίνει πιο εμφανείς τα τελευταία χρόνια, καθώς αρκετές πρωτοποριακές εργασίες σε άλλες περιοχές της Κρήτης κατέστησαν δυνατό τον εκλεπτυσμένο ορισμό των φάσεων της Μεσομινωικής (ΜΜ) ΙΙΙ και της Υστερομινωικής (ΥΜ) Ι. Το αποτέλεσμα του ερευνητικού προγράμματος του κτίριου Π μας επέτρεψε να προτείνουμε ένα νέο σενάριο για την ανάπτυξη της νεοανακτορικής πόλης, καθώς εντόπισε πέντε στρωματογραφικές φάσεις και παρείχε έναν νέο ορισμό της σχετικής κεραμικής ακολουθίας. Αυτή η εργασία περιγράφει επομένως λεπτομερώς την παρούσα κατάσταση των γνώσεων μας για τη νεοανακτορική κατοίκηση του κτιρίου Π, από τα πρώτα επίπεδα της ΜΜ ΙΙΙΑ έως την εγκατάλειψή του στη ΥΜ ΙΑ, και προσφέρει ένα προκαταρκτικό πλαίσιο για τη φύση και τη χρονολογία των πρόσφατα ανασκαμμένων δομών και αποθέσεων. Ειδικότερα, στοχεύουμε να αναδείξουμε τις σημαντικές ενδείξεις για την κατοίκηση της ΜΜ ΙΙΙ – μια ιδιαίτερα άγνωστη περίοδο στα Μάλια – σε αυτή την περιοχή της πόλης, και ακόμη να προτείνουμε τον εντοπισμό δύο υποφάσεων της ΜΜ ΙΙΙ στη χρονολογία του κτιρίου Π. Επιπλέον, το μεγαλύτερο μέρος του νεοανακτορικού υλικού που βρέθηκε στο κτίριο Π προέρχεται από διάφορα δωμάτια με τεράστιες αποθέσεις πλήρωσης που χρονολογούνται στην ώριμη ΥΜ ΙΑ, υποδεικνύοντας ένα εκτεταμένο καταστροφικό γεγονός κατά την περίοδο αυτή. Αυτά τα νέα αποτελέσματα καθιστούν δυνατή την επανεκτίμηση της χρονικής διάρκειας και της ακολουθίας των κύριων καταστροφικών γεγονότων και των δραστηριοτήτων ανοικοδόμησης που σημάδεψαν τη νεοανακτορική ιστορία αυτής της σημαντικής μινωικής πόλης.

RÉSUMÉ La séquence architecturale et céramique de l'époque néopalatiale à Malia. Nouvelles perspectives à partir du secteur Pi Cet article propose une reconstitution de la séquence stratigraphique, céramique et architecturale pour la période néopalatiale dans le Secteur Pi de Malia, un établissement majeur de l'Âge du Bronze sur la côte nord-est de la Crète. Débutée en 2005, l'exploration de ce secteur visait à mieux appréhender le développement de la ville minoenne au cours de la période des Seconds Palais minoens (ca. 1700-1425 av. J.-C.). L'imprécision de la séquence stratigraphique et céramique sur le site de Malia est devenue d'autant plus évidente ces dernières années que plusieurs publications importantes portant sur d'autres établissements crétois ont proposé une définition plus fine des phases du Minoen Moyen (MM) III et du Minoen Récent (MR) I sur ces sites. Le programme de recherche sur le bâtiment Pi a permis d'identifier cinq phases stratigraphiques et de renouveler la séquence céramique, invitant à construire un nouveau scénario pour le développement de la ville néopalatiale. Cet article détaille ainsi l'état actuel de nos connaissances sur l'occupation néopalatiale du bâtiment Pi et présente les structures et dépôts qui y ont été mis au jour depuis les niveaux du MM IIIA jusqu'à son abandon au MR IA. Cette étude met en exergue les preuves importantes de l'occupation de cette zone de la ville au cours du MM III – une période particulièrement mal connue à Malia – et de deux sous-phases dans l'occupation du bâtiment Pi au MM III. En outre, une majorité du matériel néopalatial collecté au sein du bâtiment Pi provient d'épais remblais datés du MR IA avancé, suggérant qu'une destruction de grande ampleur a alors touché le site, en totalité ou en partie. Ces nouveaux résultats permettent de réévaluer la temporalité et la séquence des principales destructions et reconstructions qui ont ponctué l'histoire néopalatiale d'une des plus importantes villes minoennes.

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Charlotte Langohr: Conceptualisation, Methodology, Ceramic analysis, Data preparation, Writing – original draft, Visualisation; Maia Pomadère: Conceptualisation, Methodology, Architectural and stratigraphic analysis, Writing – original draft, Funding acquisition; Maria Emanuela Alberti: Methodology, Ceramic analysis (mostly coarse ware), Writing – review & editing.

1. INTRODUCTION

1.1. THE EXCAVATION OF AREA PI AND THE GOALS OF THE RESEARCH PROJECT

The exploration of Area Pi, a residential quarter within the Bronze Age settlement of Malia, on the northeastern coast of Crete, started in 2005 for six seasons of excavation (2005, 2007–2008, 2010, 2014 and 2020). These excavation campaigns alternated with study seasons which all involved several specialists of different kinds of archaeological artifacts and paleoenvironmental ecofacts, as well as a large team of students.¹ This paper discusses the architectural and stratigraphic phasing of the Neopalatial occupation of this part of the settlement, and provides a new definition of the Neopalatial ceramic sequence at Malia based on the stratigraphy and the analyses of the ceramic assemblages excavated in Area Pi. Overall, the outcome of this research project makes it possible to propose a new scenario for the development of the town between the 17th and the 15th centuries BC (table 1). In broad terms, the study allows us to reconsider the different episodes of growth and turmoil of the major site of Malia within the general history of Minoan Neopalatial Crete.² Area Pi (ca. 500 m²) is located 150 m west of the Palace of Malia, within Quartier Delta, which was partially excavated in 1931³ (fig. 1). In the southeast part of the excavated area, a Neopalatial building was uncovered, labelled building Pi (fig. 2). It is bordered to the south by the “rue de la Mer,” leading to the West Court of the Palace, and is facing the buildings Delta beta and Kappa gamma, respectively located to the southwest and southeast of Area Pi.⁴ To the east, building Pi is delimited by an alleyway, separating it from the west outer wall of a large building (left unexcavated) located between building Pi and the Crypte Hypostyle, a monumental Protopalatial complex which stands 15 m further east. To the west is building Delta alpha.⁵ The Area Pi is then at the core of the Minoan settlement.

Extensive excavation was carried out and focused on the levels of the last occupation horizon of building Pi, i.e. the Neopalatial period, according to our project goals. The main aim of this project is to provide a better understanding of the diachronic developments of the Minoan town of Malia throughout the Neopalatial period (1700–1425 BC),

1. BRADFER-BURDET, POMADÈRE 2005–2006; POMADÈRE 2007; POMADÈRE 2008; POMADÈRE 2009; POMADÈRE 2010; POMADÈRE 2011; POMADÈRE 2012–2013a; POMADÈRE 2012–2013b; POMADÈRE 2014; POMADÈRE et al. 2015–2016.
2. This issue will be developed in a second article LANGOHR, POMADÈRE forthcoming.
3. DEMARGNE, GALLET DE SANTERRE 1953. The Neopalatial building excavated in Area Pi is part of the same urban block as building Delta alpha, which explains why we chose not to call the new excavated area “Quartier.”
4. DEMARGNE, GALLET DE SANTERRE 1953. Kappa gamma was excavated in 1962 and is unpublished (DAUX 1963, p. 878).
5. DEMARGNE, GALLET DE SANTERRE 1953.

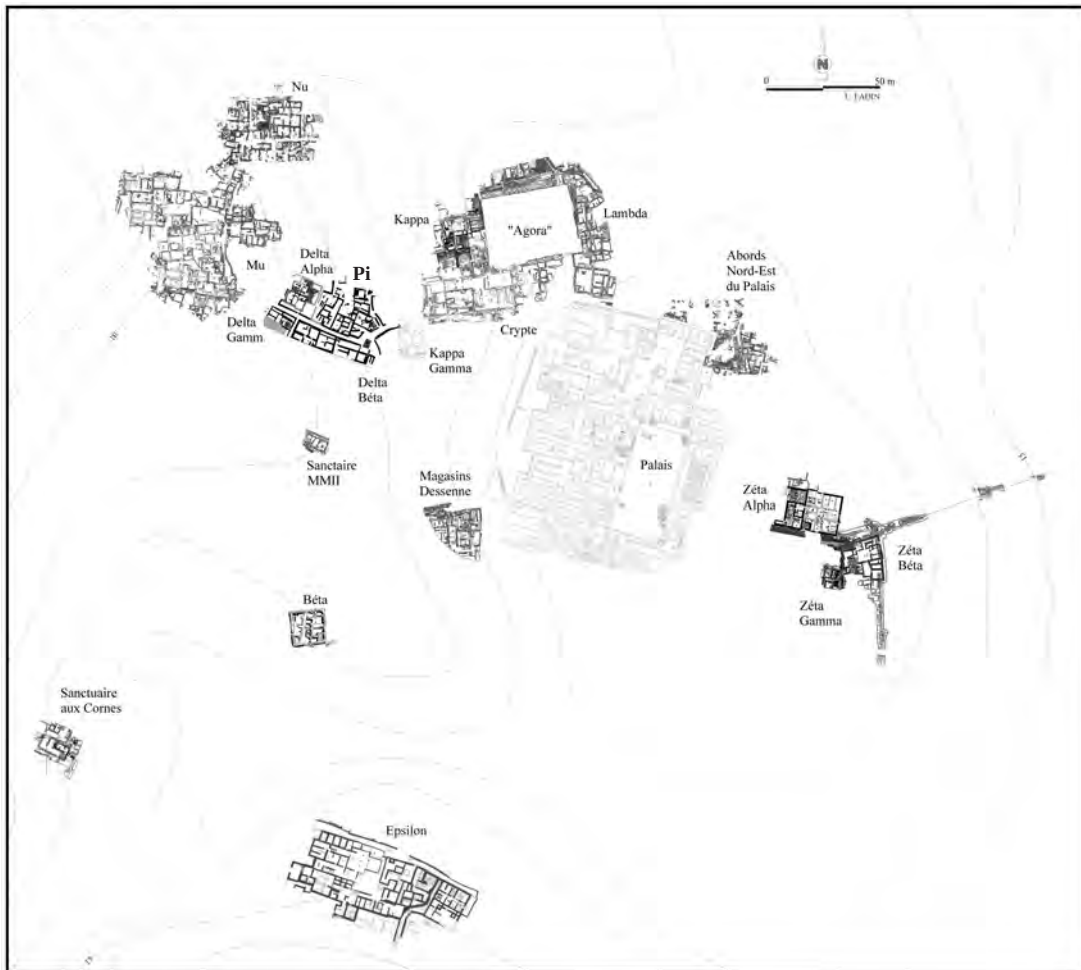


Fig. 1 — Location of the Area Pi in the Minoan town of Malia (L. Fadin / EFA).

for which we still only have a very partial picture.⁶ The inaccuracy of the Neopalatial ceramic sequence at Malia has become more apparent in recent years as several seminal works at other major Cretan sites have allowed a distinction and refined definition of the Middle Minoan IIIA–B and Late Minoan IA–B phases.⁷ The Middle Minoan (hereafter MM) III–Late Minoan (hereafter LM) I period, or “Deuxième Époque,” has long been considered by the archaeologists at Malia as a transitional phase without any

6. See LANGOHR, POMADÈRE forthcoming.

7. HATZAKI 2007, see Tables 5.1 to 5.9; BROGAN, HALLAGER (eds.) 2011; MACDONALD, KNAPPETT (eds.) 2013.



Fig. 2 — Area Pi. General plan of the excavated structures (G. Hilbert, M. Pomadère, M. Pateraki / EFA).

properly identified disruption nor dynamic developments. Especially, following the violent destruction of the wealthy MM IIB settlement of the Protopalatial period ca. 1700 BC, the MM III period (1700–1580 BC) and its internal phasing are presently poorly understood at the site, due to the scarcity of fully published assemblages and of a secure stratigraphy dated to this phase.⁸ Earlier excavators at Malia have assumed that “little MM III reconstruction is seen in the town”⁹ and related the major architectural developments to LM IA.¹⁰ Therefore, the main goal of the present project was twofold: assessing possible sub-phases of occupation for this relatively long period of the history of Malia, and identifying the related activities and practices of the local communities, i.e. the building activities as well as the production and/or consumption of different types of artifacts and ecofacts in a non-palatial building. While the different spaces and levels unearthed will be extensively described elsewhere,¹¹ this article details our present state of knowledge of the Neopalatial occupation of building Pi, from its earliest MM IIIA levels to its abandonment in LM IA, and offers a preliminary framework of the nature and chronology of these newly excavated structures and deposits.¹² In particular, we aim to highlight the important evidence for MM III occupation in this area of the town – a period particularly unknown at Malia – and even to suggest the identification of two MM III sub-phases in the chronology of building Pi. Such a subdivision is based on both stratigraphic and ceramic data, and is further strengthened by radiocarbon dating (table 1). In another article, we will consider how this new chronological framework fits in the history of the site as known from the other main buildings, between the major destruction of the MM II palatial town, on the one hand, and the advanced to final stages of the Neopalatial occupation of Malia in LM IA and LM IB, on the other.¹³ As a new picture of Neopalatial Malia emerges, it will also be worth examining the site in the light of the discussions of the different destructions that struck north-central Crete during the Neopalatial period and, in particular, of the scale and impact of earthquake(s) and/or tsunami that may have respectively preceded and accompanied the eruption of the Santorini volcano.

8. The MM III phase was first identified by Olivier Pelon in Quartier Epsilon (PELON 1970, pp. 167–168).

9. POURSAT 2010, p. 264.

10. POURSAT 1988, p. 75; DARCQUE, VAN DE MOORTELE, SCHMID 2014, pp. 180–181.

11. The publication of the Neopalatial building Pi and of its material is in preparation. It will take the form of three volumes to be published in the *Études Crétoises* series. A first volume presents the stratigraphy, architecture and inventory of the finds; a second volume details the activities attested in the building; a third volume includes the catalogues, descriptions and analyses of the pottery assemblages.

12. A preliminary examination of the Neopalatial pottery found in Area Pi was presented on the occasion of the 11th Cretological Congress held at Rethymnon in 2011. Our understanding of the local ceramic sequence has changed since then, and the recent publication of the conference is therefore already out of date (LANGOHR, ALBERTI 2018).

13. LANGOHR, POMADÈRE forthcoming.

It is worth noting that the last Neopalatial occupation level within building Pi (i.e. LM IA final) contained very little in situ material. This mirrors a situation evidenced in several other buildings at Malia, including the Palace, where the last floors were found almost empty.¹⁴ The majority of the Neopalatial material collected in building Pi comes from massive fills packed in several rooms. Several of these thick fills were intended to raise the floors for a new use of the space, but others were thrown into rooms which were then abandoned in this state. These deposits mainly contained pottery sherds and animal bones, mixed with building material debris. As detailed below, the analysis of these secondary assemblages – which correspond to different phases – has shown the homogeneity of several of these fills, i.e. in these cases, each fill resulted from a single deposition (or a couple of filling actions but close in time) rather than from successive filling episodes over time.¹⁵ This is indicated by numerous joins between the pottery sherds of the same fill, which have been observed both vertically between layers and horizontally in a same layer.¹⁶ Such evidence rather suggests a single cleaning and dumping operation for each of these fills, while in one case the discarding covered several spaces (joins are also observed between fills in different rooms).

In this context, two points must be clarified that relate to the characterisation and dating of this kind of archaeological deposit. First, the latest pottery within such a fill will date the moment of the deposition of the whole assemblage, while the chronological phase to which the main part of the ceramic assemblage belongs will date the content of the deposit, i.e. its main phase of use, whether or not it is more or less close in time to its final deposition. For example, it is considered that a fill mostly made up of LM IA pottery reflects an original activity that took place during the LM IA phase, even if its final deposition dates from a following phase, LM IB, as suggested by the presence of a few LM IB sherds mixed in the LM IA assemblage.¹⁷ Second, Neopalatial building Pi had a complex history and does not follow the binary pattern often highlighted in the publications of houses of Malia (i.e. “Première Époque” or Protopalatial horizon / “Deuxième Époque” or Neopalatial horizon). The life cycle of this residential structure was marked by successive destructions, rebuilding and heterogenous uses of its internal and external spaces.¹⁸ The different architectural units which constitute the Neopalatial

14. HATZIDAKIS 1919, pp. 56–59; PELON 2005, p. 196. See also LANGOHR, POMADÈRE forthcoming.

15. On the various types of fills at Malia, see DARQUE 2018.

16. We must admit, however, that due to the particularly large number of sherds for each of these deposits (with an average of 5,000–6,000 sherds), the search for joins for each vessel was not exhaustive. Joins identified between layers of the same deposit and between deposits (from different spaces) mainly concern very diagnostic vessels (distinctive due to fabric, or surface treatment). As a result, quantitative data related to ceramic joins, particularly those observed between superimposed layers of the same deposit, are not available.

17. *Contra* DARQUE, VAN DE MOORTELT, SCHMID 2014, p. 180.

18. For a microscale approach of the use of spaces within building Pi, using soil micromorphology, see MYLONA, POMADÈRE 2021.

building followed distinct developments, as suggested by their divergent stratigraphy and varied programs of repairs and rebuilding. Therefore, it is often difficult to compare the stratigraphy of two or more spaces, which makes the writing of the history of the whole building, and even the identification of its limits, particularly complex. The present article focuses on the various issues related to the chronology of the building, while the functional analyses of materials and spaces will be developed in the final publication.

1.2. THE EARLY OCCUPATION OF AREA PI FROM EARLY MINOAN II TO MIDDLE MINOAN IIB: A BRIEF SUMMARY

The occupation of the area started in Early Minoan (hereafter EM) I/IIA, when the settlement of Malia developed on the small hill where the Palace and the Crypte Hypostyle were later built, as evidenced by a deposit located to the north of the sector.¹⁹ Moreover, limited soundings in three Neopalatial rooms – 3, 10 and 19 – of building Pi revealed Prepalatial levels, dated to both the end of the EM IIA phase (or EM IIA–IIB transition) and the EM IIB phase.²⁰

During the Protopalatial period, the most extensive occupation in Area Pi took place in MM II, a situation consistent with the largest extent and important wealth of the MM II town.²¹ The excavated sector was probably entirely covered by buildings. In the south part of the area, their plan cannot be restored, as parts of these structures were integrated, covered or redesigned at the moment of the erection of the Neopalatial building. Conversely, in the northern and western parts of the area, most of the Protopalatial structures were not rebuilt: MM IIA²² and MM IIB deposits appeared immediately under the modern arable land, suggesting that the Neopalatial reconstruction only took place over the southern building(s) bordering the “rue de la Mer” (fig. 2). Moreover, immediately to the west of building Pi, in the area separating it from building Delta alpha, we excavated part of a Protopalatial building and some disturbed primary deposits related to an MM IIB destruction.²³ Thereafter, this zone (Zone 7) seems to have been mainly used as an external and dumping area for the occupants of the freestanding Neopalatial building Pi and other neighbouring houses (like Delta alpha). Finally, indications of Protopalatial occupation have been identified below the floors of several rooms of the

19. The study by Yannis Papadatos of the pottery assemblages from the Prepalatial levels excavated in Area Pi is ongoing and will be published separately. For the Prepalatial period at Malia, see POURSAT 1988; POURSAT 2010; DRIESSEN 2010; DEVOLDER, CALOI (eds.) 2019.

20. POMADÈRE 2011, pp. 603–606.

21. MÜLLER-CELKA 2007, p. 856; POURSAT 2010; ALBERTI, MÜLLER-CELKA, POMADÈRE 2019.

22. KNAPPETT et al. 2017.

23. MÜLLER-CELKA et al. 2021.

later Neopalatial building Pi.²⁴ These primary destruction deposits, often – but not always – associated with fire, include MM IIB pottery assemblages, but also the remains of various domestic and craft activities, and add evidence for the violent destruction (an earthquake causing fires?) that put an end to the MM IIB phase at Malia.²⁵

2. THE DIFFERENT PHASES OF THE NEOPALATIAL OCCUPATION OF BUILDING PI

The excavation and research program held in Area Pi has allowed the clarification of the Neopalatial sequence at Malia, with the identification of five architectural and stratigraphic phases in building Pi, and the definition of the related ceramic sequence, including two phases in MM III and three phases in LM I (table 1).

Relative chronology – ceramic sequence in building Pi	Architectural and stratigraphic phasing in building Pi	Absolute chronology <i>Low chronology</i> ²⁶	Absolute chronology <i>Calibrated radiocarbon dates from building Pi</i> ²⁷
Middle Minoan IIIA	Neopalatial 1	1700/1675–1640	2 dates: 1877–1661; 1756–1620
Middle Minoan IIIB	Neopalatial 2	1640–1580	1 date: 1875–1638
Late Minoan IA early	Neopalatial 3	1580–1530	2 dates: 1633–1501
Late Minoan IA mature	Neopalatial 4	Santorini eruption ca. 1550–1530	
Late Minoan IA final	Neopalatial 5	1550/1530–1510	

Table 1 – Chronological table of the Neopalatial sequence of occupation of building Pi.

24. The study by Giorgos Doudalis of the pottery assemblages from the Protopalatial levels excavated in Area Pi is ongoing and will be published separately.
25. On the sequence of the MM IIB destruction at Malia and the evidence of earthquake and fire, see most recently DEVOLDER, CALOI (eds.) 2019, pp. 79–80; also POURSAT 1988, pp. 74–75.
26. WARREN, HANKEY 1989; WARREN 2006; WIENER 2009. The debate between a *High chronology* and a *Low chronology* centred on the absolute date of the eruption of the Santorini volcano, with a “high date” late in the 17th century BC, as suggested by dendrochronology, ice cores, speleothems and radiocarbon, and a late 16th century BC date, as suggested by historical methods, primarily synchronisms with Pharaonic Egypt. During the last decade, magmatic CO² biasing radiocarbon dating has been highlighted and adjustments to the numerical dating have been argued, with a date around the middle of the 16th century BC (ca. 1550–1530 BC) for the eruption being more likely (PEARSON et al. 2020; PEARSON et al. 2022).
27. These new radiocarbon dates were obtained at the Centre de Datation par le RadioCarbone (Lyon, dir. C. Oberlin). They are generally coherent with the sequence, but need to be completed by additional radiocarbon dates, in particular for the MM IIIB phase, here rather in line with the high chronology. The other dates provided do not help to settle the debate one way or the other between the high and low chronology.

The following section discusses the architectural and stratigraphic phasing of the Neopalatial building Pi and presents, for each phase, one key-deposit, i.e. the typological and stylistic ceramic repertoire of a defined pottery group. It ultimately provides us with a new definition of ceramic developments and changes at Neopalatial Malia. **Table 2** synthesizes all the contexts excavated in building Pi and organizes them space by space, and phase by phase. The contexts highlighted in grey are those described in detail below: these ceramic groups constitute the key-references of the revised Neopalatial ceramic sequence that we propose for the site of Malia. In order to keep the analyses proposed below to a reasonable size, we have deliberately limited ceramic comparanda at other Minoan centres to a minimum.²⁸

Ceramic sequence	Architectural and stratigraphic phasing																
	Pit 1		Space 1A	Space 1B	Space 2/3	Space 4-5-6-7	Space 8	Space 9	Space 10	Space 11	Space 12	Space 13	Space 14	Space 16	Space 19	Space 20	Space 24
MM IIIA	1														x	x	+
MM IIIB	2	+	+		x			+			+	+	x				
LM IA early	3			+													
LM IA mature	4		+	-	+	-	x	x	+	+	-	+		-			-
LM IA final	5				-						x			x			

Table 2 — Synthetic table of all contexts associated with the Neopalatial occupation of building Pi, organised by Space and by Phase. The contexts in grey are those described in detail. x = primary floor deposit/foundation deposit; + = homogenous secondary deposit (fill); - = architectural evidence but no association with a ceramic deposit.

With regard to production, the consistency in macroscopic fabrics groups, both within the same horizon and throughout time, suggests local manufacture for the large majority of the ceramic assemblages. It should be noted, however, that the microscopic analyses – petrography, electronic microscopy, and/or elemental analysis – of the ceramic

28. It is worth highlighting that the recent pottery analyses carried out by Iro Mathioudaki on several Neopalatial assemblages from the settlement of Sissi indicate very similar developments to Malia (MATHIOUDAKI 2022).

material from Area Pi have not yet been carried out, since the long process of macroscopic analysis has just been completed. Our current observations on fabric recipes and forming processes are therefore all based on visual inspection of ceramic sherds, sometimes with a hand lens, but they already provide solid research questions for a future comprehensive program of petrographic and elemental analysis.

2.1. NEOPALATIAL PHASE I: MIDDLE MINOAN IIIA

The MM IIB destruction represents a major break in the history of the site.²⁹ Many large Protopalatial buildings and monumental complexes were never rebuilt (Agora, Quartier Mu, Sanctuaire aux Cornes) or very partially (Crypte Hypostyle, Bâtiment Dessenne),³⁰ whereas the residential quarters of the town were generally reoccupied, like Quartiers Delta, Epsilon, Zêta. In Area Pi, a partial but possibly rapid reconstruction took place, as MM IIIA levels lie directly over MM IIB primary destruction deposits (Space 17) or floors (Spaces 19, 20, 24)³¹ (fig. 3). Within the latter spaces, the MM IIB floors were probably cleaned before their reuse. A remarkable feature of the beginning of Phase 1 is a small foundation deposit consisting of an MM IIB or MM IIIA trefoil-mouthed juglet placed in a cavity at the internal facing of the foundation of wall 103, the southeast limit of Space 20.³² It was adjacent to a block of sandstone, hollowed out to form a cavity, a common object at Malia usually identified as a *gourna* or trough.³³ In the adjoining small Space 19 (2.25 × 1.10 m), a primary MM IIIA destruction deposit lay on the floor, partially burned (fig. 4). Finally, to the north of building Pi, Space 24 provided important evidence for MM IIIA occupation, on which we will focus here.

2.1.1. Architectural and contextual analysis

To the north of the Neopalatial building Pi, a complex of rooms built in MM IIA and/or MM IIB and abandoned at the end of the Protopalatial period was reused as a dumping area after an MM IIIA destruction episode. Among these rooms, the basement Space 24 (pres. dim. 2.15 × 1.80 m) is delimited by walls with an MM IIA terminus ante quem for their construction, as the north and west walls supported an MM IIA deposit located immediately west of Space 24.³⁴ During the Protopalatial period,

29. POURSAT 1988, pp. 74–75; KNAPPETT, SCHOEP 2003, p. 86; DEVOLDER, CALOI (eds.) 2019, pp. 78–80.

30. AMOURETTI 1970, pp. 79–81; DEVOLDER, CALOI (eds.) 2019, p. 81.

31. We use the neutral term “Space” to refer to the diverse types of open spaces or closed spaces (rooms) of the building.

32. POMADÈRE 2018a, p. 185, figs. 1–3.

33. TREUIL 1971.

34. “Dump 1,” KNAPPETT et al. 2017.



Fig. 3 — Main structures and deposits of Phases 1 and 2 (G. Hilbert, M. Pomadère / EFA).



Fig. 4 — Space 19, floor deposit of Phase 1, cut by the Pit 1 (Phase 2) in the southwest corner (left) (L. Manousogiannaki / EFA).

the room was connected by a passage to the east to Space 17, where a rich MM IIB deposit was uncovered. In Space 24, the Protopalatial phase was only evidenced by rare sherds which come from the lower level of the room, possibly associated with a floor that was not clearly identified. It was probably made of beaten clay directly laid on the bedrock and had been entirely cleared of its MM IIB debris in advance of its MM IIIA reoccupation. While there is no evident trace of primary MM IIIA activity in Space 24, it was chock-full of a large assemblage of MM IIIA broken pottery, lithic tools (several grindstones, hammers) and architectural destruction debris (hard-fired mudbricks, rubble, and fragments of plaster, notably several fragments of red painted plasters). The ceramic deposit contains 14,727 sherds, as well as 36 complete cups, often found stacked together, and 11 almost complete larger containers. The majority of the assemblage is made up of partially mendable vessels, mainly plain open shapes, cooking pottery and coarse storage vessels. The ceramic analysis suggests the rapid redeposition of discarded groupings of material derived from a major destruction of surrounding spaces. Specifically, the stratigraphy of the deposit and scarcity of cross-joins show that it corresponds to two successive filling actions. The MM IIIA assemblage indeed divides into upper and lower dense layers of sherds and debris, separated by an intermediate layer of architectural remains (fig. 5 and fig. 6). Micromorphological analysis even suggests that a floor surface could have temporarily separated the two levels, as evidenced by signs



Fig. 5 — Space 24. Upper deposit (M. Pomadère / EFA).



Fig. 6 — Space 24. Stratigraphic section under the LM IA pavement (M. Pomadère / EFA).

of trampling on a levelling earth layer, possibly formed by packed mudbricks.³⁵ It also shows that the upper deposit was left open to the elements when the space was no longer covered by a roof. There are very few cross-joins between the upper and lower ceramic deposits, but no major distinction can be detected between them in terms of typological and stylistic features, state of preservation, and rate of breakage. Therefore, we suggest a reconstruction involving two episodes of cleaning, close in time, certainly related to the removal of debris from several buildings or spaces, as indicated by the differences in type of the plaster fragments between the upper and lower strata.

These MM IIIA secondary deposits were not fully excavated, as they extended south under the north part of building Pi which was built during Phase 3 and reorganised in Phase 4 (**fig. 6** and see below). The deposits were then covered by soil and partially topped by a pavement, forming the northern limit of the building (north end of Space 1B).

In sum, the MM IIIA occupation phase in Area Pi is attested, on the one hand, by a small foundation deposit which is indicative of some rebuilding operations in the east sector at the beginning of the phase and, on the other, by primary (Space 19) and secondary (Space 24) deposits related to a major destruction of one or more buildings which put an end to this phase. The large secondary deposits from Space 24 attest to the rapid cleaning of these collapsed structures. Except for Spaces 19 and 20, the architectural outline of the residential structure(s) occupied in Area Pi during the MM IIIA phase is unknown, due to the later rebuilding activities. In this sense, nothing precludes the western unit of building Pi, labelled Pi West (**fig. 2** and **fig. 3**), being an MM IIIA construction which was already in use at such an early date, but we lack the stratigraphic and ceramic evidence to prove it. A clear terminus post quem for the construction of the west wall of Pi West (113) is given by an MM IIB cup with barbotine decoration found at its foundation level. A final piece of evidence tends to confirm the importance of the MM IIIA occupation in this part of the town. In the open-air area located immediately to the west of building Pi (Zone 7), separating it from building Delta alpha, we excavated a huge dump of about 13,000 sherds weighing 230 kg (**fig. 3**). This context requires further study, but preliminary analysis of the ceramic assemblage indicates an MM IIIA date, as suggested by the large quantities of very distinctive types of handleless cups and broad straight-sided cups (see below). This zone was mostly left in ruins after the MM IIB destruction and may have been used as a courtyard during MM IIIA. This huge dump could therefore represent the clearing of destroyed structures in the vicinity.

35. MYLONA forthcoming.

2.1.2. Pottery analysis: Space 24

The two large, superimposed deposits collected in Space 24, and interpreted as the secondary deposition of the material resulting from the destruction of one or more MM IIIA nearby space(s) or building(s), constitute the current reference for the definition of the MM IIIA ceramic horizon at Malia. Being part of a larger, partially unexcavated deposit, the analysed assemblage comprises about 15,000 sherds.

2.1.2.1. *Fine wares*

The fabrics used for the drinking and serving repertoire are rather heterogenous and include semi-fine to semi-coarse (especially for the handleless cups) pinkish-orange to red pastes. Here we propose a typological analysis of the tableware since surface treatments may vary a lot for a same shape.

The handleless cup dominates the drinking repertoire³⁶ and includes three distinctive sub-types: (1) a broad and shallow type, with pronounced rilling marks, including a variation with a wide ledged rim (pl. 1a); (2) a broad and conical type, sometimes provided with a slight ledged rim (pl. 1b); (3) a tall and conical type, often thin-walled, sometimes slightly bell-shaped or carinated in profile, and either left plain or monochrome painted (pl. 1c). The third type is made in a rather homogenous fabric group, a reddish-orange gritty paste with calcareous inclusions. These three sub-types of handleless cups are rather similar to those encountered at MM IIIA Knossos.³⁷ The coexistence of heterogenous morphological types, and the variety of the fabrics used in their manufacture, in semi-fine to semi-coarse pinkish-orange to red pastes, appear as two typical features of the MM IIIA handleless cups at Malia.³⁸ In contrast to Knossos or the Messara, the handleless conical cups were entirely absent in MM II at Malia,³⁹ where they are introduced only in MM IIIA, dramatically increasing in numbers from then onwards. The smaller conical type present at MM IIIA Knossos is not recognised at MM IIIA Malia.⁴⁰

36. Forty examples preserved at 50% or more.

37. KNAPPETT, MATHIOUDAKI, MACDONALD 2013, pp. 14–15, fig. 1.6, types 1A–1B, 3A–3B.

38. The coexistence of different ceramic workshops at the site appears to be a convincing explanation that we will assess elsewhere.

39. A very different and uncommon class of plain handleless cups was in use in MM IIB Quartier Mu, comprising convex and very shallow handleless cups with a well-tooled ledged rim, made in a fine fabric (POURSAT, KNAPPETT 2005, pp. 80–81, type 1A, fig. 25, pl. 30).

40. KNAPPETT, MATHIOUDAKI, MACDONALD 2013, pp. 14–15, fig. 1.6, types 2A–2B.

The broad straight-sided cup with a wide base and a large flat handle is the second main drinking vessel in MM IIIA.⁴¹ It is covered with a dark monochrome painted slip, and probably often decorated in light-on-dark, but the surface is generally very worn and decoration is rarely preserved (pl. 2). It primarily consists of groups of horizontal bands and the spiral motive. The straight-sided cup is a common shape in MM IIIA Knossos where this type continues on directly from its MM IIB predecessor.⁴² At Malia, its morphological development from MM IIIA onwards marks a clear distinction from the earlier local narrow-based straight-sided cup with a roll handle, that was found by the hundreds in the MM IIB Quartier Mu for example.⁴³

A novel drinking vessel, also found in the nearby settlement of Sissi, is the convex cup (pl. 3): it will become a marker of the Neopalatial period in the Malia-Sissi area. It is left plain or dip-painted, either entirely (monochrome) or only at the rim, the latter treatment producing sometimes some drips of paint on the body.

In contrast to the previous MM IIB phase, evidence for other drinking shapes, such as the hemispherical cup, the carinated cup, and the rounded bowl, is very rare within the assemblage (pl. 4). While the domestic character of the deposit may not reflect the full range of fine open vessels in use at MM IIIA Malia, the simplification of the tableware repertoire however appears to be an important hallmark of the ceramic production at the site during this phase.

Fine ware also includes a few pouring vessels, with plain trefoil-mouthed juglets (pl. 5a), and monochrome or light-on-dark decorated bridge-spouted jars and cut-away/beak-spouted jugs (pl. 5b). Pouring vessels are however mostly made in coarse fabrics (see below).

In terms of surface treatment, particularly noteworthy is the introduction of the dark-on-light lustrous painted ware during this phase, with a hard-fired fabric, decorative motives painted in bright red, especially bands and ripple pattern, and a finely smoothed surface treatment (pl. 6). This new ware and technique still only concern a very limited number of vessels, including here a fine cylindrical bucket simultaneously decorated with ripple and featherwave motives (pl. 6a), and two small in-and-out bowls with basket handles decorated with bands (pl. 6b–c).⁴⁴ Although these three vessels have parallels

41. Seven examples preserved at 50% or more.

42. MACDONALD 2013; MATHIOUDAKI 2018, pp. 40–42.

43. POURSAT, KNAPPETT 2005, pp. 77–78, fig. 23, pls. 29, 52. Flat handle already characterised a, far less common, broad type of straight-sided cups at MM IIB Malia (i.e. type 2).

44. A lentoid flask in the dark-on-light lustrous ware, decorated with ripple and spirals, comes from another MM IIIA deposit of building Pi; it will be discussed in detail in the final publication. We previously dated this vessel to LM IA on stylistic grounds (LANGOHR, ALBERTI 2018, pp. 236–238, fig. 10), but the

at MM IIIA Knossos,⁴⁵ their pinkish-orange fabric does not suggest Knossian imports. Other production centres may have rapidly adopted, or even invented, this entirely new stylistic trend and technical process.⁴⁶

2.1.2.2. *Coarse wares*

2.1.2.2.1. Coarse plain ware

The MM IIIA coarse plain ware includes several types of storage, pouring and cooking vessels in orange to red fabrics. The paste recipe used for the production of local coarse ware is very consistent throughout the different phases of the Neopalatial period and, indeed, throughout all different periods of occupation at Malia.⁴⁷ It consists of a non-calcareous, orange-brown to red clay matrix with non-plastic inclusions that vary in size from large to very small, comprising mainly fine violet to brown phyllite and quartz, as well as some calcareous inclusions and rounded red clay pellets. Our tentative macroscopic distinction between the colour/firing of the clay and the function of the vessels, i.e. orange fabrics used for storage/pouring vessels, and red fabrics used for cooking vessels, works for a major part of the local Neopalatial coarse domestic ware but is not entirely constant. Our future programme of petrographic analysis will allow us to assess and refine such macroscopic observations and distinctions. The ovoid wide-mouthed jar, or pitcher, in different sizes (called “broc” at Malia), prevails within the coarse ware repertoire.⁴⁸ This shape clearly follows on from the plentiful MM IIB examples from Quartier Mu,

comprehensive analysis of the associated ceramic assemblage and the completion of the architectural and stratigraphic study allow us to securely relate it to an MM IIIA horizon. Another remarkable vessel in the dark-on-light lustrous ware, also decorated with ripple and spirals, comes from an MM IIIB foundation deposit at Sissi (CALOI 2018, pp. 10–11, fig. 7).

45. Association of ripple and featherwave: MACGILLIVRAY 1998, p. 148, pl. 92, no. 556. Although considered a hallmark of MM IIIB at Knossos, fine in-and-out bowls already exist in MM IIIA at the site, but not with basket handles (MACDONALD 2013, p. 28, fig. 2.6, cat. no. 2002d; MATHIOUDAKI 2018, p. 43, fig. 14a–f). In-and-out bowls with basket handles are common at LM IA Myrtos-Pyrgos but in a coarse fabric (HATZAKI 2015, pp. 52–53, fig. 5a–c).
46. On Knossian MM IIIA in-and-out bowls, the paint is said to be not especially lustrous when compared to the “best MM IIIB examples” (MATHIOUDAKI 2018, pp. 43, 67). Indeed, the “dark-on-light lustrous ware” is a style attested from MM IIIB onwards at the site (KNAPPETT, MATHIOUDAKI, MACDONALD 2013, p. 18; HATZAKI 2007, pp. 163–165). Recently, it has been suggested that the dark-on-light lustrous pottery technology was “invented somewhere in the region of modern Ierapetra in a ceramic workshop whose location has not yet been discovered” by MM IIIA (BETANCOURT et al. 2016, pp. 61–62, fig. 3.2.a, MM III–LM IA example from Bramiana, with the same association of ripple and featherwave motives).
47. For a summary and first petrographic approach of the paste recipe used for the production of local coarse ware, see LIARD 2019, pp. 178–184, fig. 7.
48. The MNI (minimum number of individuals) for the coarse medium to large vessels (rim diameter ranging from 9 to 17 cm) is 141. The MNI for ovoid wide-mouthed jars is ca. 80.

in terms of fabrics and technical, typological and stylistic features (pl. 7). The small examples are coil-built and wheel-fashioned while the bigger examples (H. 20–25 cm and more) are mainly coil-built and wheel-finished, the latter especially for the finishing of the upper part and rim.⁴⁹ As in MM IIB, they are provided with horizontal or, less commonly, vertical roll handles and sometimes a pulled-out spout.⁵⁰

Pouring vessels comprise collared, beak-spouted, trefoil-mouthed, and bridge-spouted jugs, the latter with typical grooved decoration at neck (pl. 8a–d).

The cooking repertoire is dominated by tripod cooking pots,⁵¹ which feature either an ovoid-shaped profile – and as such do not differ either typologically or in manufacturing techniques from the ovoid wide-mouthed jars – or, less commonly, a broad and shallow open shape (the so-called “chaudrons tripodes” of MM IIB Quartier Mu)⁵² (pl. 9a–b). Both shapes clearly continue from MM IIB, as does the smoothed light-coloured thick slip which sometimes covers the interior wall (pl. 9b).

Cooking dishes, by contrast, provide evidence for the introduction of a novelty. A first group, discoid in shape, with a shallower body, a plain unshaped spout and two lateral inward rims forming handles at right angle of the spout, follows the MM II tradition (pl. 10a).⁵³ It coexists however with a new and seemingly predominant sub-type, ovoid in shape, with a deep body, a short thick incurving rim, broadly triangular in section, and a trapezoidal prominent spout (pl. 10b).⁵⁴ Less common but rather standard is the

49. POURSAT, KNAPPETT 2005, pp. 31–33.

50. MM IIB Quartier Mu: POURSAT, KNAPPETT 2005, pp. 54–55: “broc 2” with a spout and “jarre-broc” without a spout. MM IIB Abords Nord-Est du palais (ANE): “broc A” (small-sized), “broc B” and “broc C” (medium-sized), and “broc D” (medium to large-sized) with and without a spout: DARQUE, VAN DE MOORTELE, SCHMID 2014, p. 39, pl. 21, cat. nos. 2018-020, -005, -057, -004, -042, -009, -021, -037 and -078 (niveau 5); p. 42, pls. 26–27, cat. nos. 7.3817-101, -105, -086, -100, -085, -087 (niveau 6); p. 53, pl. 41, cat. nos. 1509-009, 2007-005, 1509-006; p. 64, pl. 61, cat. nos. 0320-003, 0318-003, 0320-010, -042, E0264-008, -013, E0269-003 (niveau 7).

51. An MNI of ca. 30 cooking pots can be counted.

52. POURSAT, KNAPPETT 2005, pp. 56–58: “chaudrons tripodes” types 3 et 4. See also GIRELLA 2008, p. 373, fig. 3 (Phaistos, MM III).

53. POURSAT, KNAPPETT 2005, p. 59, fig. 13.1; DARQUE, VAN DE MOORTELE, SCHMID 2014, p. 35, pl. 15, cat. nos. 2022-031 (locus 3, MM IIB); pp. 64–65, pl. 59, cat. no. 0322-007 and pl. 65, cat. no. E0357-022 (niveau 7, MM IIB). See also GIRELLA 2008, p. 391, fig. 26 (Haghia Triada, MM III). For recent insights on the function of the shape through organic residue analysis, see TSAFOU, GARCÍA-GRANERO 2021.

54. From the large number of cooking dish sherds, an MNI of 13 can be counted, among which at least seven examples are of the new type B. This type also appears at MM III Haghia Triada (GIRELLA 2008, p. 391, fig. 25) and MM IIIB Palaikastro (KNAPPETT, CUNNINGHAM 2012, p. 177, fig. 5.33).

cooking tray, tripod or not, with a short vertical rim, generally provided with a pulled-out spout and covered on the interior with a thick, pale-coloured slip (pl. 10c).⁵⁵

Probably closely associated with this MM IIIA cooking set is the large and handleless conical bowl, made in the same coarse red cooking fabric, wheel-coiled, and always left plain (pl. 11).⁵⁶ Its fabric and rough finish suggest that this type of vessel was broadly used for the preparation of foodstuffs. Burning marks are sometimes observed, especially on the inner surface, so that it cannot be excluded that these bowls have been used in some cases as lids.⁵⁷ Finally, and again continuing MM IIB traditions, the MM IIIA coarse plain repertoire also includes the tripod flaring bowl (pl. 12) and the beehive (pl. 13). The latter has an ovoid-conical shape, vertical handles attached at a thickened flat rim, and a pattern of horizontal and cross-hatched incisions on the lower half of the inner wall, all features that are specific to Malia and its wider region throughout time (see also below, in MM IIIB).⁵⁸

2.1.2.2.2. Coarse painted ware

A main storage and transport vessel is the coil-built oval-mouthed and thin-walled amphora, with short and wide strap handles, and typically covered with a thick layer of light-coloured paint or a dark-on-light painted decoration of wide horizontal bands (pl. 14). This shape also continues on from the numerous examples from MM IIB Quartier Mu.⁵⁹ Coarse painted open vessels are dominated by a class of short ledge-rimmed and horizontal-handled bowls (“cuvette”), conical or rounded in profile, and typically dark-on-light painted on the inner surface only, either simply rim-banded or decorated with horizontal bands and frieze(s) of simple stylised motives (pl. 15). Provided with handles and interior surface treatment, this type of bowl is certainly functionally distinct from the coarse plain conical handleless bowl. It has some predecessors in MM IIB Quartier Mu.⁶⁰

55. POURSAT, KNAPPETT 2005, pp. 86–87, “plateaux” types 4–7 (MM IIB); KARETSOU 2013, p. 87, fig. 7.28 (Alonaki Juktas, MM III). For a thorough discussion of the shape, see ALBERTI 2016, pp. 78–85, figs. 18–20.

56. RETHEMIOTAKIS, CHRISTAKIS 2013, p. 103, fig. 8.15 (top) (Galatas, MM III).

57. Evgenia Tsafou (pers. com., July 2018).

58. Compare types 2 (Protopalatial) and 6 (Neopalatial) in D’AGATA, DE ANGELIS 2014, p. 353, pls. CXI and CXII. See MM IIB examples from Quartier Mu (POURSAT, KNAPPETT 2005, p. 50, fig. 6, pls. 13, 46, cat. nos. 222–226, “cuve” type 1) and the ANE (DARCQUE, VAN DE MOORTELE, SCHMID 2014, pl. 73e, cat. no. 0616-002), and a complete MM IIIA example from Sissi (LANGOHR 2022, p. 514, fig. 9.1.19a).

59. POURSAT, KNAPPETT 2005, pp. 40–42, fig. 1, pls. 2–4 (esp. types 2 and 4). See also comparable MM III examples from Alonaki Juktas (KARETSOU 2013, p. 87, fig. 7.29) and Kato Zakros (PLATON, GERONTAKOU 2013, p. 210, fig. 18.35).

60. POURSAT, KNAPPETT 2005, p. 52, fig. 8, pls. 14, 46, “cuvette.”

To sum up, based on the assemblages excavated in Area Pi, the MM IIIA ceramic phase at Malia demonstrates clear signs of continuity with the local MM IIB pottery repertoire, especially as far as storage and cooking vessels are concerned. However, shapes and styles also show important changes that essentially involve the important simplification, and reduction in size of the MM IIB drinking vessels' repertoire. In particular, the class of the handleless conical cups, which was entirely absent in MM IIB, is introduced and rapidly outnumbers other MM IIIA drinking vessels. This important change could be explained by a deliberate choice to transform the drinking repertoire, probably precipitated by the introduction of different consumption practices, which possibly necessitated the use of a large amount of less elaborate and smaller cups. This triggered a technological revolution in forming processes, with the increasing use and mastering of wheel-coiling techniques, for massive and fast pottery production. Other changes are evident when considering type-specific criteria. The new version of the straight-sided cup, for example, clearly follows Knossian developments.⁶¹ Moreover, concerning surface treatments, parallel to the majority of plain and monochrome wares, we observe the diminution of a rich light-on-dark painted decorative repertoire, and the emergence of dark-on-light lustrous painted ware, the latter associated with a restricted range of shapes and motives. All together, these entirely new features – the massive production of handleless conical cups, which replaced other cup types, and the technique of lustrous paint –, that distinctly transformed the modes of pottery production, appear to belong to a common phenomenon that characterised several new constructions in MM IIIA, at sites like Malia, Sissi, Galatas, Palaikastro and Kommos.⁶² A predominant hypothesis is that this phenomenon had begun to appear at Knossos from early MM IIIA onwards and rapidly spread to other Minoan centres, in a dynamic of Knossian growing supremacy which still needs to be properly defined.⁶³ However, the possibility that the dark-on-light lustrous painted ware was invented outside Knossos, in southeastern Crete, should not be overlooked⁶⁴ and may suggest that several dynamic ceramic production centres concomitantly emerged in MM IIIA. This hypothesis certainly needs to be further explored, considering the highest importance that this ware will have in LM IA as a major vehicle in the diffusion of Knossian styles and supposedly associated cultural, economic and political domination.

61. MACDONALD 2013, p. 28, fig. 2.6, no. 2005; WARREN 2013, p. 31, fig. 3.3, first row; MATHIOUDAKI 2018, pp. 40–42, fig. 12.

62. MACDONALD, KNAPPETT (eds.) 2013; MATHIOUDAKI 2022, pp. 562–563.

63. MATHIOUDAKI, GIRELLA 2022.

64. BETANCOURT et al. 2016.

2.2. NEOPALATIAL PHASE 2: MIDDLE MINOAN IIIB

Occupation levels in Area Pi that can be securely associated with the MM IIIB phase are rare. There is good evidence, however, to suggest that rebuilding operations took place at the beginning of Phase 2, that we place in MM IIIB. These operations seem to be part of an architectural reconfiguration of the area.

In the eastern unit, labelled Pi East, Spaces 19 and 20 were backfilled with soil and some debris around 30 cm thick. Backfilling operations probably took place in several other surrounding rooms and spaces, as suggested by the ceramic material found in tests made below the level of some portions of MM IIIB floors, but also below the last LM IA floors in different parts of building Pi (**fig. 3** and **fig. 7**). In the southeastern part of building Pi, within Spaces 2/3, portions of a plastered floor preserved in situ over two small areas indicate an MM IIIB level (depth 10.90–11.06 m). In the south part of Spaces 2/3, this plastered floor was connected to the street, which allows us to reconstruct an entrance there, south of two large sandstone blocks (**fig. 3**); this opening was closed by a wall after this Phase 2.

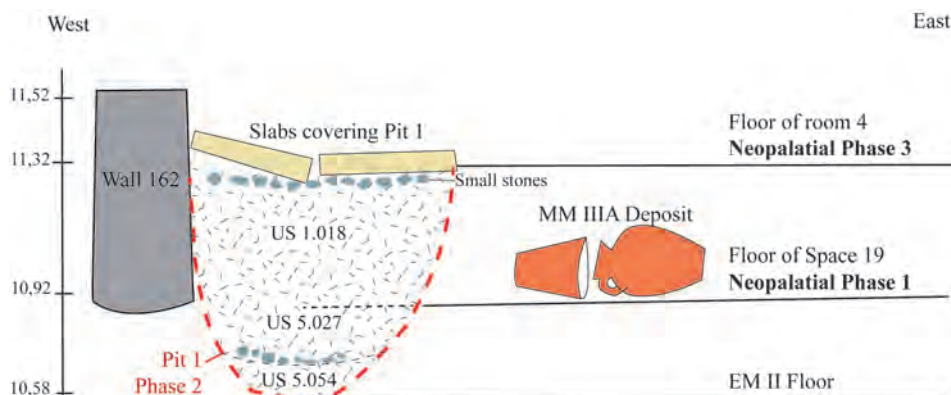


Fig. 7 — Stratigraphic section (sketch) in Space 19, below the floor level of the later (LM IA) Space 4 (M. Pomadère / EFA).

In the western unit, Pi West, the Protopalatial Space 14 was reorganised and partially reused in MM IIIB. Its original dimensions were reduced (1.10 × 1.15 m) by the construction of the south wall 119, built directly on the MM IIB plastered floor. To Phase 2 also belong the layout of a new clay floor and the development (or redevelopment) of a stone platform in the northeast corner of the room. The two conical cups and the bowl found on the platform suggest an MM IIIB date (**fig. 8**). The additional material found in the room and on the platform is very limited and does not help us to determine the precise function of the platform.

East of Space 14, it is assumed that Spaces 10 and 11, which share their west wall with Space 14, already existed as subterranean spaces during this phase, but any hypothetical MM IIIB ceramic material associated with such a horizon had been removed during their rebuilding in Phase 4. In the south part of this western unit, in Space 12, a few mendable MM IIIB vessels have been identified in the fill laid down in preparation for the last floor. These sporadic hints suggest that the quadrilateral formed by the well bonded walls 111, 113 (west façade) and 114 (south façade) was initially built during this phase (fig. 3).

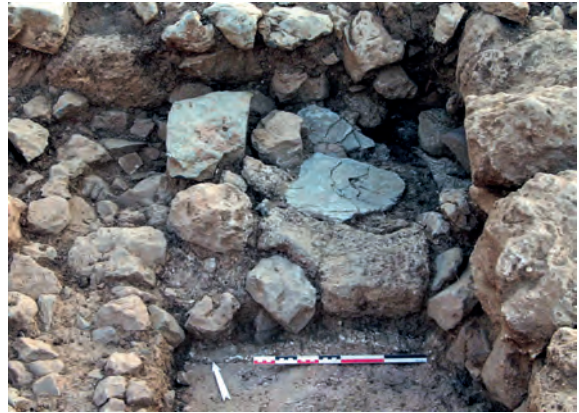


Fig. 8 — Stone platform on the northern side of Space 14, with a crushed conical cup and blocked channel on the left. The plastered red floor is Protopalatial (M. Pomadère / EFA).

Our knowledge of the MM IIIB structures and levels is limited and does not allow us to reconstruct a consistent nor complete plan of the building for this phase. The fact that evidence for an MM IIIB occupation horizon in Area Pi is only slight could be explained by at least two phenomena, one historical, one archaeological. First, evidence for post-MM IIIB building activities in building Pi suggests thorough cleaning operations and important architectural reorganisation, which could imply the clearance of most structures, that may also have been dangerous and/or too difficult to restore after another main destructive event (see below, Pit 1). Second, the excavations undertaken in Area Pi stopped at the last LM IA levels in most parts of the Neopalatial building, so that earlier occupation is only partially reconstructed through small tests dug below the latest floor levels.

2.2.1. Architectural and contextual analysis of Pit 1

Phase 2 also ends with a destruction. The clearest evidence for this is primarily indirect, with a large secondary deposit thrown into Pit 1. In other words, the assemblage collected in Pit 1 belongs to Phase 2 but its deposition can be associated with the redevelopment of the area which opens Phase 3.

Pit 1 (max. diam. 0.90 m at the top) had been dug to a depth of about 0.80 m into the thick fill that had been previously thrown into Space 19 after the MM IIIA destruction, more precisely in the southwest corner of the new Space 4 which is built at the same moment, i.e. at the beginning of Phase 3. The pit reached a Prepalatial floor below the Neopalatial layers. This secure stratigraphy provides a clear sequence of events in this area (fig. 7).

The material that had been discarded into Pit 1 includes a great deal of ceramic material, as well as many faunal remains and ash (green to grey) (fig. 9). The taphonomical analysis of the animal bones has demonstrated that this deposit barely suffered from post-depositional disturbance (contrary to the majority of the faunal remains excavated from Area Pi), implying that the burying of the material was relatively rapid. Moreover, it comprises complete portions of animal skeletons and some uncommon species, like hare.⁶⁵ Particularly noteworthy is the manner the pit was sealed, with a layer of small white to blue limestone pebbles on top of which were set three horizontal sandstone slabs. They protruded over the floor that had just been freshly laid within the new Space 4. It seems unlikely that the inhabitants would have excavated through the new floor in order to get rid of destruction debris, when

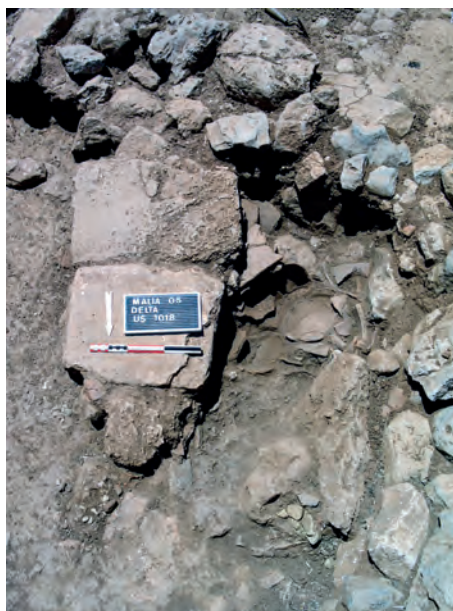


Fig. 9 — Photography of the upper filling of Pit 1 (M. Pomadère / EFA).

they could have simply thrown the debris outside the building, or reused it in construction fills, as was common practice. The human cost of this whole layout, its high visibility in the development of the new Space 4, the rapid nature of the deposition and the evident selection of the material (domestic, storage and culinary vessels, but no lithic tools, small stones but no architectural debris, ash but no charcoal) suggest that this pit is not a simple dump, created gradually over time, but is indicative of a deliberate action meant to preserve this assemblage when Space 4 was laid out. The hypothesis of a ritual act, possibly related to the preservation of relics and/or the memory from the past in the context of new and planned rebuilding activity, is therefore put forward here (“burying pit”).⁶⁶ This structured deposit may have included a punctual ceremonial event, as suggested by the numerous conical cups and a few more complete containers (a jug, an amphora, a lekane) present in the assemblage. However, when thrown into the pit, this material was mixed with a large group of much more fragmentary storage and cooking vessels that, we suggest, came from

65. A. Gardeisen, ongoing study.

66. POMADÈRE 2018a. On the practice of “feasting pits” or “ceremonial pits” in Minoan Crete, i.e. the practice of structurally depositing selected broken material in specially excavated or constructed containers or (abandoned?) wells, see also DRIESSEN, FARNOUX, LANGOHR 2008.

a recent destructive event. Whatever the nature of the actions that accompanied its digging and filling, this pit has a “special” character in area Pi.⁶⁷

2.2.2. Pottery analysis: Pit 1

The large ceramic assemblage collected from Pit 1 (1,465 sherds) allows us to define more extensively the pottery traditions related to Phase 2, and especially to the end of this phase. Again, we propose a morphological analysis since surface treatments may vary a lot for the same type of shape.

2.2.2.1. *Fine wares*

The types of *tableware* differ from those encountered in MM IIIA, seemingly as part of a standardisation process. Particularly numerous, the handleless cups still show an important heterogeneity in profile but are more regular size-wise, now smaller and thick-walled (pl. 16).⁶⁸ This tendency towards smaller dimensions and compact profiles will later be typical of LM IA (handleless) conical cups. A main change concerns the fabrics used in their manufacture. The pastes are lighter and show a pinker tint, so these new light orange to pinkish-orange fabrics clearly differ from the bright orange to red fabrics that characterise the handleless cups from the previous phase.⁶⁹ This suggests a change of practice in the selection of raw materials, with the use of more calcareous clays, possibly mixed with non-calcareous clays.⁷⁰ Evidence for other types of small open vessels is limited within the assemblage, but includes new shapes.⁷¹ There are a few monochrome (or possibly light-on-dark decorated) straight-sided cups, plain or dipped-decorated convex cups, as well as the new S-profile cups, bell-shaped cups, and hemispherical bowls (pl. 17). They are made in similar light orange to pinkish-orange fabrics. The fine “in-and-out bowl,” considered a hallmark of the phase at Knossos,⁷² is represented by a possible import made in a hard-fired light buff fabric and manufactured in the typical dark-on-light lustrous ware; the banded decoration in bright red paint has partly vanished, due to the nature of the soil at Malia (pl. 17f).⁷³

67. DARCQUE, VAN DE MOORTELE 2009.

68. 62 vessels preserved at 50% or more. A similar development is observed for the MM IIIB handleless cups at Sissi (CALOI 2018, pp. 18–27; MATHIOUDAKI 2022, p. 535).

69. A similar change characterised the handleless cups at MM IIIB Sissi (MATHIOUDAKI 2022, p. 535).

70. We thank Eleni Nodarou for drawing our attention to this point.

71. The MM IIIB drinking repertoire at Sissi comprises the same types of shape (CALOI 2018, pp. 11–13, 17; MATHIOUDAKI 2022, pp. 535–539).

72. WARREN 1991, fig. 7D–J; HATZAKI 2007, pp. 164–165 and fig. 5.4:6–8; MATHIOUDAKI 2018, p. 43.

73. For a version of “in-and-out bowls” in fine buff fabric with horizontal bands at LM IA Myrtos-Pyrgos, see HATZAKI 2015, p. 51, fig. 3a–b.

The fine jugs are mostly beak-spouted, with a wider flat base and ovoid profile, in continuation from MM IIIA (pl. 18a–b), while a new type is introduced, with a narrower raised base, a concave lower profile, and a more piriform body, that will especially develop in LM IA (pl. 18c–d).

2.2.2.2. *Coarse wares*

The large majority of the storage jars and cooking vessels are ovoid in shape with an incurving rim, continuing the previous MM IIB–IIIA tradition (pl. 19a).⁷⁴ However, jars and cooking pots with a short-marked or straight rim are now more common (pl. 19b). This introduces an important difference with respect to the previous MM II and MM IIIA phases and the long-lasting local tradition of coarse vessels with an inward rim. Such a new morphological trait is certainly linked to the increasing use of the wheel for the production of large vessels in MM IIIB at Malia (wheel-coiling techniques), which allows a different shaping and finishing of the rim.⁷⁵

Also demonstrating the strong continuity of the local MM IIIA repertoire are the large and plain conical handleless bowls, that begin to appear in a larger size than before and sometimes with a more concave profile (pl. 20a),⁷⁶ the ledge-rimmed and horizontal-handled rounded bowls, slipped and rim-banded on the interior (pl. 20b), the oval-mouthed amphorae covered with a thick light-coloured paint (pl. 20c),⁷⁷ as well as the beehive (pl. 20d).

Cooking dishes and trays are surprisingly few in this assemblage and no mendable vessels can be reconstructed, not even partially. As these types are common in the previous and next phases, this absence could be explained by the particular way in which the deposit was formed (see above).

74. The assemblage includes ca. 110 bases of medium to large-sized coarse ware vessels, with a base diameter of between 10 and 20 cm (the smaller bases more possibly belong to open shapes). Preserved bases from tripod cooking pots amount to 10. Rim fragments from ovoid wide-mouthed jars and cooking pots count an MNI of ca. 40 vessels with an incurving rim, ca. 20 vessels with a rolled marked rim, and ca. seven vessels with a straight rim.

75. The same novelty seems to characterise coarse vessels at other sites during MM III, whose typology however differs from the ovoid wide-mouthed jars of Malia, with a larger opening and a more cylindrical profile: BETANCOURT 1980, pp. 4–6, figs. 1–2, type B (late MM, Kommos); GIRELLA 2008, pp. 380–386, figs. 8, 16–17 (MM III, Haghia Triada); KARETSOU 2013, p. 87, fig. 7.28 (MM III, Alonaki Juktas).

76. A few bowls have downwards lug handles, similar to MM IIB examples from Quartier Mu (POURSAT, KNAPPETT 2005, p. 51, “Bassine 1,” fig. 7, pls. 14, 46).

77. With an MNI of 16 vases. See HATZAKI 2007, p. 168, fig. 5.8.1–3.

Finally, two isolated vessels complete this assemblage. A ewer with a ridge at the base of the cylindrical collar and a pronounced ledge-rim (pl. 21a) is a new shape at Malia and has good MM IIIB parallels.⁷⁸ An uncommon plain lekane with quatrefoil rim and four vertical grooves (pl. 21b) finds some comparison at MM IIIA Anemospilia⁷⁹ but has mainly MM II predecessors.⁸⁰

2.3. NEOPALATIAL PHASE 3: LATE MINOAN IA EARLY

After the assumed destruction which put an end to Phase 2, an occupation horizon related to an early stage of the LM IA phase can be reconstructed. This horizon is not documented by any primary evidence in the architectural sequence, but by clear stratigraphic data and a large secondary deposit excavated from Space 1B.

2.3.1. Architectural and contextual analysis

During Phase 3, the area of the later Space 1B, a narrow compartment to the north of the central part of the building, is entirely remodelled. On this occasion, seemingly at the end of the phase, the floor surface of the northern part of the compartment was considerably raised by the deposition of a large fill. This fill rested on a surface level that was at the same height as the MM IIB and MM IIIA levels in the nearby Space 24, which suggests that these floors were continuously cleaned and used through Phases 1 to 3. The deposit was associated with two large, reused, vertical slabs, set up during this phase to form the northern limit of the space. The fill served as a foundation layer for the construction of a transverse (west–east) wall in the compartment, which then extended to the west, under the later Space 8. The excavation did not identify any floor surface which would have been associated with this new layout in Phase 3, i.e. a floor laid above the fill; this could be explained by the proximity of the modern surface, particularly disturbed in this area, and by the use of this space as a staircase, as suggested by the transverse wall.

The secondary deposit excavated in Space 1B consists of a homogenous ceramic assemblage, mixed with much debris, including faunal remains, rubble stones, and plaster fragments. Pottery fragments are large, breaks are fresh and joins between sherds are numerous, as well as largely preserved small vessels. By contrast, complete profiles of larger containers are less frequent, as the upper body and rim are repeatedly missing.

78. MACDONALD 2002, p. 45, pl. VIII: b, d; HATZAKI 2007, p. 168, fig. 5.9.3. At Knossos, ewers are already present in MM IIIA (MATHIOUDAKI 2018, p. 48, fig. 17c).

79. Anemospilia: SAKELLARAKIS, SAPOUNA-SAKELLARAKI 1997, p. 422, fig. 393.

80. WEINGARTEN 2016.

The homogenous technical, typological and stylistic repertoire of this ceramic assemblage clearly indicates an LM IA horizon. It also differs in many respects from the pottery traditions contemporary with the destruction that put an end to Phase 2. Moreover, this deposit is superimposed by another LM IA context in secondary or tertiary position (much more disturbed however) and by the eastern wall of Space 8, both related to activities dated to the next Phase 4 (fig. 10; see below, Phase 4). Therefore, with this LM IA early assemblage from the lower level of Space 1B, we face indirect evidence of an intermediate phase, for which clear primary evidence is lacking in Area Pi but which can be securely reconstructed.

Very peculiar to this deposit are the extensive and thick concretions clumped together on the surfaces and sections of the ceramic sherds. This seems to be due to the specific conditions of the deposition. During the excavation of this context we observed that sherds were piled one on top of each other with large air holes between them and no earth at all (fig. 10); this could explain the formation of these concretions. It also suggests that the deposit was quickly sealed after its deposition, by the layout of a hypothetical earthen floor level on top of it, or by the installation of stairs made of perishable materials (see below for Phase 4).



Fig. 10 — Space 1B. Photography of the east section (M. Pomadère / EFA).

2.3.2. Ceramic analysis: Space 1B

This ceramic assemblage from Space 1B comprises 5,151 sherds. With this ceramic phase, important changes are observed within the technological, morphological and stylistic repertoire of Neopalatial pottery in Area Pi, with the emergence of new standards. First, a significant morphological homogenisation characterises the fine wares, primarily visible in the drinking shapes. Homogenisation in profile goes hand in hand with a standardisation of shaping processes. This seemingly coincides with an

important change in pottery production modes, related to an increasing demand for drinking assemblages. This large-scale production was facilitated by and/or required the widespread use of the wheel. We indeed observe a mastering and spread of the use of wheel-coiling techniques. The greater homogeneity of fabric groups (more standardised paste recipes) used for the handleless conical cups is probably part of the same phenomenon.

A second major change is the sudden larger proportion of light buff fabrics as well as, concomitantly, the increasing amount of fine dark-on-light non-lustrous painted wares with characteristic LM IA decorative syntax and motives. Dark-on-light painted pottery has a light buff slip, slightly smoothed, and decoration in red to brown paint which mainly consists of a frieze of spirals associated with horizontal bands. The addition of details in white paint is very occasional.⁸¹ Fine dark-on-light painted wares include new shapes, such as the conical rhyton, the cup-rhyton, the chalice, and the piriform jug – the latter seems to have started in the previous phase. The changes observable in coarse ware are less significant, but the use of wheel-coiled technique(s) becomes even more widespread in this phase, and with it, an increasing number of jars and cooking pots are produced with more rounded profiles and straight or slightly everted thickened rims. The other and long-lasting morpho-technical tradition of coarse medium-sized containers almost exclusively ovoid in shape with an enlarged upper body, and with an inverted plain rim still continues in use in LM IA early.

2.3.2.1. *Fine wares*

From LM IA onwards, an increasing consistency between the fabric, the morphology and the surface treatment of the ceramic vessels is observed. The description and analysis of the ceramic repertoire therefore follow an arrangement according to wares, and, within each ware, according to shapes.

2.3.2.1.1. Plain and monochrome painted wares

The conical handleless cups comprise the vast majority of the tableware repertoire, with an MNI of 169 vessels which form 78.7% of the drinking tableware of the assemblage.⁸² This shape is characterised by a greater morphological standardisation,

81. We cannot exclude that the absence of decorative details in added white paint relates to the nature of the soil at Malia, which seems partly responsible for the particularly bad preservation of the painted decoration on ceramic vessels.

82. 41 handleless conical cups from the assemblage are preserved between 50% and 100%.

with a shorter, more compact profile and a smaller base (pl. 22).⁸³ We also observe an important standardisation in technical practices. Fabric groups become more homogenous, with the common use from this phase onwards of the semi-fine gritty orange to dark red fabric, which will be typical and by far the largest fabric group for conical cups in the next Phase 4. Diagnostic of this LM IA early horizon in particular is the gritty orange group with a characteristic grey-blue core and thick walls (pl. 23). The latter is a good distinctive criterion compared to the next LM IA phase when this specific group, that suggests a more experimental stage in clay selection and firing techniques, disappears. In parallel, finer orange to pinkish-orange fabrics continue to be used – some with possible mixing of clays (see above) – while a new fine light buff group is introduced (pl. 24). Concerning shaping techniques, interior rilling and coil-seams are much less visible compared with the two previous phases, which suggests a refined finishing of the rough-out on the wheel, rather than a hypothetical increasing use of the wheel-throwing technique (pl. 25a). Wheel-coiling techniques indeed seem to remain preponderant (pl. 25b), although such a statement, based on macroscopic observations, is impossible to quantify. All conical cups are left plain.

The rest of the fine plain and monochrome painted wares include five different types of drinking vessels, all in continuation with the previous phase. These fine open shapes mainly belong to an orange to pinkish-orange fabric group (80%), and a smaller light buff fabric group (20%). A limited proportion of the drinking repertoire consists of straight-sided cups with a flat handle (pl. 26) and convex cups with a rolled handle (pl. 27) with an MNI of, respectively, 15 and 11 specimens in this assemblage. The former no longer show the strict profile of the MM III straight-sided cup with a wide base, but appear to mimic the more concave lower part and more conical profile of the convex cup, that alone will ultimately prevail in the next Phase 4. The S-profile cup is still limited in numbers (MNI = 9) (pl. 28), while we note a couple of bell-shaped cups (MNI = 3) (pl. 29). Surface treatment is sometimes difficult to identify, as the nature of the soil at Malia has heavily damaged the surface of the vessels. In this phase, cups are generally plain or monochrome painted, while convex cups are more typically decorated with a dip-painted rim band which trickles down the body. The bell-shaped cup appears as a derivation of the more common convex cup at Malia, which in turn may allude to LM IA rim-banded bell-shaped cups at Knossos.⁸⁴

Fine bowls complete the drinking repertoire (MNI = 8). This category is characterised by a certain heterogeneity in terms of profile – from rounded to ogival, with an inverted,

83. Rim diameter varies between 8 and 9 cm; height varies between 3.7 and 4.7 cm; base diameter varies between 2.8 and 4 cm.

84. POPHAM 1977, p. 194, pl. 31a–c; HATZAKI 2007, p. 178.

straight or everted rim, sometimes provided with small horizontal handles at the rim –, dimensions, and surface treatment – either plain or monochrome (pl. 30). Interestingly, these fine bowls are for the most part made in fine light buff fabrics. In some instances, the base has been pierced after firing, which suggests that they may have served as rhyta in a secondary use.

2.3.2.1.2. Dark-on-light painted wares

In contrast to the drinking vessels, fine medium-sized vessels, including jugs and an array of new shapes, i.e. cup-rhyta and conical rhyta, chalice-like forms and fine globular jars, are almost exclusively made in fine light buff fabrics and most often treated with a dark-on-light non-lustrous painted decoration (pl. 31). Decorative motives are limited to spirals and bands. On rare occasions, details are added in white paint (pl. 31c), a feature common at MM IIIB and LM IA Knossos on the dark-on-light lustrous painted ware.⁸⁵ Again, the nature of the soil may partly or mostly explain the poorer and non-lustrous appearance of the local dark-on-light painted vessels at Malia, compared to the dark-on-light lustrous ware from MM IIIB and LM IA Knossos, with bright coloured paints and selective surface polishing.⁸⁶ An exception concerns a remarkable “in-and-out bowl” in this assemblage from Space 1B, which is made in a fine hard-fired light buff fabric and shows an exquisite dark-on-light lustrous painted decoration (pl. 32). It is adorned with floral motives including crocus with details in added white paint.⁸⁷ This vessel is probably an import, and the high firing would explain the better quality and preservation of the surface treatment.

Finally, this assemblage provided a light-on-dark decorated bridge-spouted jar, reminiscent of an MM IIIB stylistic tradition (pl. 33).

2.3.2.2. Coarse wares

2.3.2.2.1. Coarse plain wares

The typological repertoire of the plain coarse wares continues from MM III, with wide-mouthed jars, tripod cooking pots (pl. 34) and conical bowls (pl. 35) made in

85. HATZAKI 2007, pp. 163, 175.

86. HATZAKI 2007, pp. 163, 175; HATZAKI 2015, p. 50.

87. In-and-out bowls with one or two thin incised lines *below* the rim are characteristic of MM IIIB at Knossos (HATZAKI 2005, p. 134, fig. 4.8:1, no. 59; HATZAKI 2007, p. 165, fig. 5.4:6–8). At Malia, a comparable example comes from level 10 in Esplanade nord 26 at the ANE; this is a mixed context, but the later material is “MR IA avancé,” i.e. a phase which corresponds to ceramic Phase 3 in building Pi (“MR IA mature” at the ANE corresponds to Phase 4). Aleydis Van de Moortel suggests a Messara product (DARCQUE, VAN DE MOORTELE, SCHMID 2014, p. 114, pl. 94b).

the same local orange-brown to red pastes. As already noted, new morphological traits, such as more rounded profiles and straight or slightly everted thickened rims for jars, but also more concave profiles for conical bowls, can be explained by developments in forming techniques, i.e. a more intense and controlled use of the wheel. Clearly globular coarse shapes, for storage and cooking, appear in the Malia region from the end of LM IA onwards (see below, Phases 4-5) and increase with the transition between the Neopalatial and Final Palatial periods.⁸⁸ Rather, the main techno-morphological change from Phase 3 onwards, is the preponderance of shapes with more comparable diameters at base and rim (maximum diameter at mid-body) and the progressive disappearance of jars with an enlarged upper body (maximum diameter at shoulder). A last change seems to concern the function of the plain conical bowls. Most of the examples from this assemblage, especially those with a concave profile, show well defined traces of burning on both exterior and interior surfaces. Their hypothetical use as cooking vessels, and more particularly as lids, rather than as a general container for food preparation, deserves further study. Their identification as lids is especially convincing considering the evidence from the following phase (see below, Phase 4).

2.3.2.2.2. Coarse painted wares

Short ledge-rimmed rounded bowls (“cuvette”) (pl. 36) and oval-mouthed amphorae with a short neck and large flat handles (pl. 37) also continue from MM IIIB, typically covered with a thick light buff slip and often decorated with dark-on-light painted horizontal bands – selectively applied to the interior only for the rounded bowls, with a few exceptions.

2.4. NEOPALATIAL PHASE 4: LATE MINOAN IA MATURE

Phase 4 constitutes a major construction phase in this area of the settlement during the Neopalatial period. We will present the main characteristics of the architecture and use of the different spaces of building Pi in this phase, for which a general plan can now be reconstructed (fig. 11).

88. This follows a general trend in Neopalatial Crete (see discussion in ALBERTI 2016, pp. 65–66). For LM IB more globular coarse jars and cooking pots in the Malia region, see for example LANGOHR 2022, pp. 518–519, fig. 9.1.21 G–H (Sissi).



Fig. 11 — Plan of building Pi during Phase 4 (G. Hilbert, M. Pomadère / EFA).

2.4.1. Architectural and contextual analysis

2.4.1.1. *Building Pi East*

2.4.1.1.1. Space 4-5-6-7

In the east unit (Pi East), Space 4 possibly extended over a large area to the east, but its original organisation is difficult to comprehend due to later modifications (see below, Phase 5). Its southwest corner was covered of thick sandstone slabs closing Pit 1, filled at the end of Phase 2 and mentioned above (fig. 9). The whole north sector of Pi East (the future Spaces 4, 5, 6, 7 in Phase 5) could indeed have constituted a single space of 55 m² in Phase 4, partially if not entirely paved. The southeast façade of this extended space was largely open towards the “rue de la Mer”: the threshold (removed, appearing in negative) was extended on its south side by a compact pavement of large limestone slabs, polished by wear. Beyond this large entrance, a finer paving made of regular slabs of blue and



Fig. 12 — Space 4-5-6-7. Photography of the pavement with pebbles (M. Pomadère / EFA).

grey limestone, as well as schist, with pebbles of various colours in the interstices, was carefully laid in this whole north sector.⁸⁹ It forms a kind of “mosaiko” which covered at least 32 m² (fig. 12). Moreover, a column base inserted in the paving on the axis of the threshold gives evidence of a portico, which suggests a monumentalised entrance (fig. 13). In the western part of Space 4, this “mosaiko” was recharged by a simpler paving of scattered limestone slabs that rests directly on it, at a later stage of the same Phase 4. In this area, the slabs are associated with two column bases forming another portico parallel to the north and south walls, which suggests the layout of a light well. We cannot

89. This kind of construction is unusual at Malia, but a parallel exists in the “Maison de la cave au pilier” (VAN EFFENTERRE H., VAN EFFENTERRE M. 1969, p. 119). Joseph Shaw mentions a vogue for polychromy in the paving installations at Malia (North entrance of the Palace) and Myrtos-Pyrgos during the Neopalatial period (SHAW 2009, p. 166).



Fig. 13 — 3D reconstitution of the entrance of Space 6 (A. Rakitina / EFA).

exclude however that a third column base existed further east and that, rather, a central colonnade extended on an east–west axis until the entrance, although such a layout is not usual in Minoan architecture.⁹⁰ In Phase 4, the large Space 4-5-6-7 can therefore be interpreted as a public or “semi-public” hall. Unfortunately, the absence of any deposit that can be linked to this phase precludes any further interpretation.

2.4.1.2. *Building Pi West*

The western unit of building Pi probably underwent significant reconstruction and/or redevelopment in Phase 4.

2.4.1.2.1. Space 12

The two sandstone vats installed in pits dug into the floor of Space 12, and framed by a platform of small stones and earth, are attributed to Phase 4 (fig. 14). They were probably used as large mortars, but the material or substance that was processed in them

90. Light wells are usually installed on the small side of a main internal room, but some examples exist with a longitudinal orientation, i.e. the space B2 in the nearby “Crypte hypostyle” (SCHMID 2012).

could not be identified by macroscopic observation nor by the carpological analyses. Palaeobotanical remains are indeed poor at Malia; here, only a few olive stones come from the floor deposit.⁹¹ Next to these vats lay a thick slab of fine white limestone with a surface carved of shallow cavities, usually called *kernos* (a misleading term, to which we prefer the more neutral “cup holes” proposed by Hillbom, in French “pierre à cupules”⁹²). The slab, fixed by rubble onto the floor, could have alternatively been used as a work slab and for other activities such as a game board.⁹³ Directly to the south of this “table,” the earth floor is partially burnt and full of ashes, which suggests a fireplace. The latter is immediately adjacent to a small paving in the southeast corner of the room that could indicate an opening (chimney) in the roof⁹⁴ (see also below, in Spaces 8 and 16). Finally, there is evidence in Space 12 for the working of obsidians tools, the latter also possibly relating to food preparation, or to other craft activities.

2.4.1.2.2. Space 13

The small Space 13 (1.95 × 1.40 m) was formed with the construction of walls 123 (north) and 124 (west, separating it from Space 12) (fig. 14). Wall 123 includes a sandstone block with a shallow cavity (“gourna”) that appears to provide the only communication between Space 1A and Space 13. The absence of any primary floor deposit in Space 13 precludes any interpretation of its function, but its small dimensions combined with the wide opening onto the street (via the large threshold 1) suggest the layout of a shop, perhaps in relation to the material processed in large quantities in the vats of the adjacent Space 12. A homogenous ceramic assemblage in secondary position was collected from this room. It corresponds to a fill that was thrown in this space at the end of the phase, like the deposits excavated in Spaces 10 and 11 with which it joins (see below).

2.4.1.2.3. Space 16

Space 16 is accessed from Space 12 via a small sandstone threshold. Provided with a beaten earth floor, Space 16 had a central pillar, of which only the base (a sandstone block) survived, a stone platform or bench leaning against the south façade wall, and a small area of paving in its southwest corner, similar to that of Space 12 (i.e. possibly linked to a chimney). In its west wall, a small threshold provided a passage to an area that appears to have been largely left in ruins during this phase and probably corresponded to an open, or partly open, exterior space (Zone 7, see above). It is assumed that the small

91. We have suggested elsewhere that these mortars could have been used in the dehusking of cereals (ALBERTI, MÜLLER-CELKA, POMADÈRE 2019, pp. 59–60).

92. HILLBOM 2011. For the different interpretations of cup holes, WHITTAKER 2002; CUCUZZA 2010; LETESSON 2015.

93. POMADÈRE 2018b.

94. MYLONA, POMADÈRE 2021.



Fig. 14 — Spaces 12 and 13 seen from the south (Chr. Gaston / EFA).

primary deposits discovered on the floor of Space 16 correspond to its last occupation, in Phase 5 (see below).

2.4.1.2.4. Spaces 10 and 11

In the twin semi-subterranean Spaces 10 and 11, the upper courses of the walls are reconstructed with sandstone rubble and small blocks during this phase.⁹⁵ Their floor level corresponds to the Protopalatial level in the area (alt. ca. 10.60 m), about 0.70–0.80 m lower than the Neopalatial floors of the surrounding spaces. The partial modification of the walls also resulted in the blocking of the channel that originally led from Space 14 to Space 10 (see Phase 2). These rooms do not have thresholds, but in both cases the only possible access, from the east side, was formed by a block carved with one (Space 11) or two cavities (Space 10) (“gournes”).⁹⁶ The top level of these “gournes” (alt. 11.50 m)

95. A block with a “mason mark” of a double-axe belongs to the northern wall of Space 11. For the development of these marks at Malia during the Neopalatial period, see DEVOLDER 2018.

96. “Gournes” are often observed in small rooms of the Protopalatial and Neopalatial houses at Malia (e.g. DESHAYES, DESSENNE 1959, p. 23; POURSAT 1966, p. 529, n. 2; POURSAT 1996, pp. 45, 62;

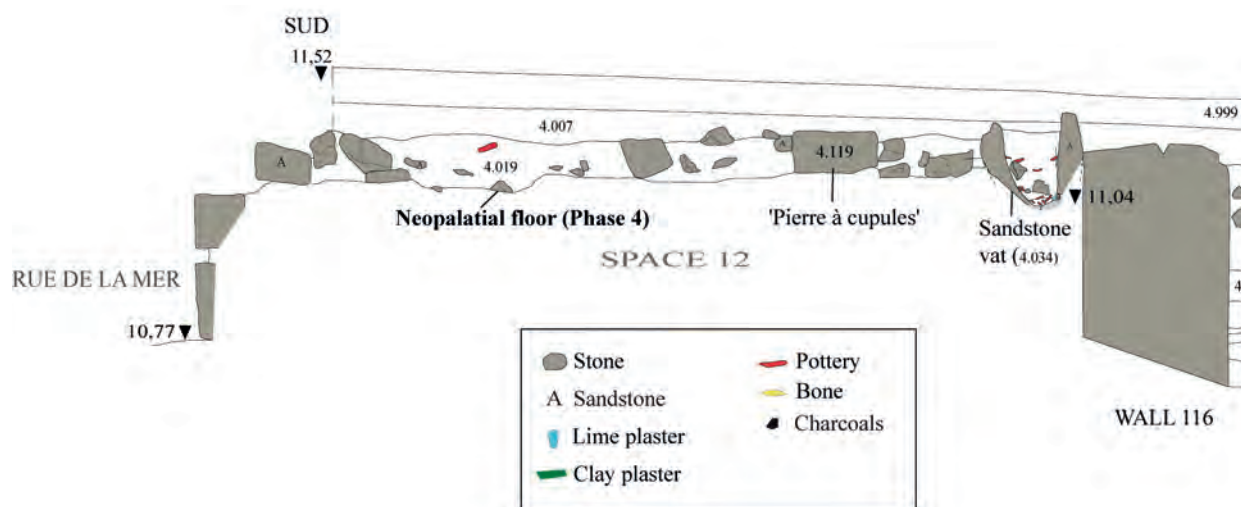


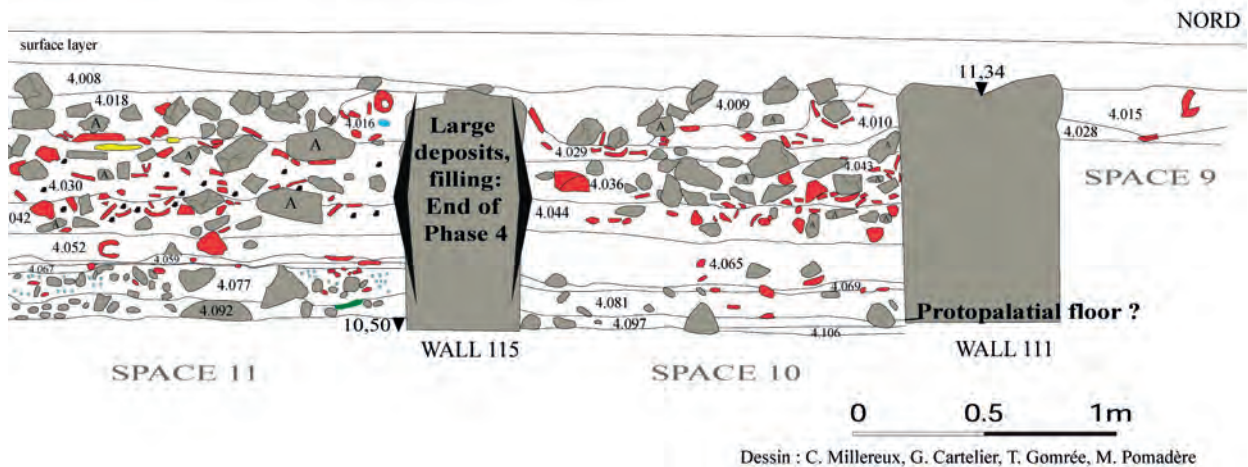
Fig. 15 — Spaces 10, 11, 12. South–north section (P. Dessaint, C. Millereux, G. Cartelier, T. Gomrée, M. Pomadère / EFA).

was probably slightly protruding above the floor level of Space 1A to the east.⁹⁷ Several conical cups were found in one of these cavities, suggesting that the cavities were not closed by a wall above but formed the basis of a niche or access device, as has already been suggested.⁹⁸ No proper floor related to Phase 4 has been identified within these two rooms. While no primary floor deposit has been discovered in Spaces 10 and 11, a huge and homogenous ceramic assemblage was collected from the two rooms, with several joins throughout (fig. 15). The latter corresponds to a secondary destruction deposit, linked to the end of Phase 4. Therefore, in the absence of direct evidence, we suggest that these semi-basement spaces be interpreted as storage spaces during Phase 4, that have been entirely emptied some time before the destruction at the end of Phase 4 already mentioned.

TREUIL 1971, pp. 26–27; DARCQUE, VAN DE MOORTELE, SCHMID 2014, p. 57; SCHMID, TREUIL 2017, p. 264). For a parallel of small twin rooms at Sissi, each accessed via a “gourna,” see CARPENTIER 2009, pp. 102–106, fig. 5.10.

97. The “gournes” are generally placed on the upper course of the stone base of a wall, or at the floor level, at the location of the threshold (TREUIL 1971, pp. 25–27).

98. TREUIL 1971, p. 26. Small vessels were also discovered in one of the cavities of “gournes” in two other cases at Malia, in the Atelier Sud in Quartier Mu (POURSAT 1996, fig. 37) and in room V2 in the Palace (conical cups, PELON 1980, p. 42).



2.4.1.2.5. Space 1B

The building of this elongated compartment with the transverse wall 140 seems to indicate the substructure of a staircase, whose plan and direction are however difficult to reconstruct. It was probably accessible from the exterior, from its north extremity, where a carefully laid square pavement was installed during the same Phase 4 (fig. 16). Nevertheless, this small exterior paving seems to have no direct link with the interior of the building, as it does not lead to any threshold which would be expected north of Space 1B. In place of the expected threshold, there was a U-shaped sandstone block. This large block was probably installed during the subsequent Phase 5, and then obfuscates the original layout of the supposed staircase in Phase 4. The latter is only indicated by a preserved stone base and a layer of fragmented plaster, associated with a few sherds and conical cups.

2.4.1.2.6. Spaces 8 and 9

West of Space 1B, and with no access from it, Space 8 is a large square space 4 m wide, provided with an off-centred column base (fig. 16). The absence of a stone wall to the north implies that it was partly open on this side as well as to the sky; a roof may have covered the southeast area of this semi-external space (column base). To the north, a double alignment of stones indicates a light closing system (possibly an earthen



Fig. 16 — Aerial view from “Pi West,” from the north (Chr. Gaston / EFA).

wall or wooden fence) which limited the access from, and to the large open Space 25, located to the north. East of the column base, a stone-built rectangular structure set into the floor is interpreted as the negative of a device that could have accommodated a portable terracotta hearth, according to comparable evidence from house Zêta bêta at Malia.⁹⁹ This hypothesis is supported by the micromorphological analysis which shows a concentration of microcharcoals within this stone-built structure.¹⁰⁰ The discovery of a tripod cooking pot in the vicinity, seemingly in situ, points to cooking activities in this area. In the southeast corner of Space 8, the small Space 9 was also built during this phase, and probably comprised a small storage room. As for the contemporary Spaces 10 and 11, access to Space 9 is from the north over a “gourna” that forms the upper course of the wall 134 directly built on a small area of paving. The entire arrangement was put in place during this Phase 4, but after the layout of Space 8, as the walls of Space 9 rest upon the floor of the latter. While Space 8 appears as a main room of building Pi, it was

99. DESHAYES, DESSENNE 1959, pp. 12–13.

100. MYLONA forthcoming.

not the focal point of circulation throughout the structure, as no direct access to the south sector of the building can be reconstructed.

Phase 4 appears to end in a massive destruction in the area. This destruction is followed by large-scale cleaning operations and the redeposition of debris in several spaces, such as Spaces 1A, 1B, 2/3, 10, 11, 13, and the floor level will be therefore significantly raised in the following phase. These huge secondary or tertiary deposits of debris include different kinds of remains: fine and coarse pottery, stone vases, various tools of bone, stone and terracotta (including a fragment of a potter's wheel), faunal remains, building debris including painted plaster, hundreds of pieces of pumice, three sealstones, and a fragmentary anthropomorphic figurine. Considering the huge quantities of material, these probably come from different spaces, or even buildings, i.e. building Pi and some surrounding ones, like the houses of Quartier Delta. These structures were probably destroyed during a single episode, as suggested by several joins observed between fragments of pottery collected from different spaces.¹⁰¹ Two main observations on the composition of these assemblages shed light on the nature and formation of the deposits. First, the different kinds of material and, in particular, the different functional and typomorphological categories of ceramic vessels – mostly tableware, a good proportion of cooking ware, a small quantity of storage ware – are equally spread across the different deposits.¹⁰² This speaks in favour of a common origins, that one can broadly define as domestic contexts, i.e. one or two houses sharing a common domestic set. Second, the fragmentation state of all different kinds of material is important. Although several joins have been recognised for several ceramic vessels in each deposit, the join rate is not as high as one would expect for a deposit resulting from clearance activities after a destruction and its rapid redeposition as a secondary deposit.¹⁰³ For example, complete conical cups and largely mendable small vessels are numerous, but full profiles of larger coarse containers are barely present although they are numerically very numerous, in the form of a few or several joined fragments.¹⁰⁴ This can partly be explained by our difficulty in mending large containers from the several thousands of similar plain coarse sherds, but even for very distinctive large vessels (in terms of fabric or surface treatment),

101. Joins exist between Spaces 2 and 10, e.g. 4036.011; between Spaces 10 and 11, e.g. 4030.030; or even between Spaces 10, 11 and 13, e.g. 4024.032.

102. Some differences can be highlighted: the material was mixed with a powdery green to grey sediment (probably ashes) in Spaces 10 and 11, where fine painted plasters were also concentrated; a concentration of pumice was noticed in Spaces 2/3.

103. This assertion takes into account the fact that, as admitted above, our search for joins for vessels within the same layer and between layers was limited in time, due to the particularly large number of sherds (see below).

104. In quantitative terms, for Spaces 10 and 11 alone, we counted ca. 6,490 sherds in fine wares (respectively 3,300 and 3,190 sherds) and at least 3,778 sherds in coarse wares (respectively more than 2,266 and more than 1,512 sherds).

important parts of their profile were missing. Therefore, the limited number of joins does not support our first assumption that the deposits had been retrieved as whole clusters from one or more building(s), and then directly dumped in. It could suggest that significant movement happened before the final deposition, i.e. that the debris was removed out of the building(s) and first temporarily deposited in a working area, before being discarded in the different spaces here considered, during the rebuilding process that followed the major destruction at the end of Phase 4. In other words, these deposits may well be tertiary. However, the apparent homogeneity of these deposits, with very limited contamination of earlier MM II–III sherds, and not a single sherd of LM IB pottery, suggests that this final dumping occurred fairly soon after the destruction and first clearing of the houses. Finally, the higher fragmentation and erosion of the ceramic material from the Spaces 1A-B and 2/3 in comparison with the deposits of Spaces 10, 11, 13 can be explained by the fact that the former remained or became zones of circulation in the next Phase 5, and by their greater proximity to the modern arable surface.

The geochemical analysis of ashes and one piece of pumice collected from these different dumps did not show any link with the Late Minoan IA eruption of the Santorini volcano.¹⁰⁵ The pumices present in many contexts in the settlement of Malia appear to have come from previous eruptions and were probably retrieved by the inhabitants on the shore for various activities such as building material and/or as tools.¹⁰⁶ Moreover, no traces attributable to an earthquake that might have preceded the eruption of Santorini have been properly identified in the architecture of the area, although the latter is preserved only to a limited height, to the stone base of the walls. Therefore, we lack evidence to explain the reason for this massive LM IA destruction, for which no direct link with the LM IA Santorini eruption can be established at the moment.

2.4.2. Pottery analysis: Spaces 10, 11, 13

The majority of the pottery deposits collected within building Pi belong to this phase. All are secondary or tertiary deposits – in Spaces 1A, 1B, 2/3, 10, 11, 13 – that resulted from the seemingly rapid clearing operations undertaken after the destruction that occurred at the *end* of Phase 4. In other words, the original primary deposits related to this occupation horizon, that were potentially first sealed by the destruction that struck the building at the end of the phase, seem to have been entirely removed at that time, as some parts of the building were thoroughly cleaned in order to be reused in the next Phase 5 – especially Spaces 4, 6, 7, 12, 16. Therefore, the last floor deposits excavated

105. Major and trace element chemical analysis on the ashes and pumice samples from Area Pi was conducted at the SARM laboratory of the CNRS, Nancy, France, by Christophe Cloquet.

106. DRIESSEN 2019; LESPEZ et al. 2021.

within these spaces relate to the next and final occupation phase (see below, Phase 5). In this section, we will examine in detail the large secondary deposits that have been collected from Spaces 10, 11 and 13 and are here considered as a homogenous ceramic group.

2.4.2.1. *Fine wares*

The fine tableware – drinking and pouring/serving vessels – comprises 6,490 sherds. The repertoire is dominated by the conical cups (at least 56%), and otherwise comprises the S-profile cups, convex cups, bell-shaped cups, hemispherical bowls, piriform jugs, conical rhyta, and cup-rhyta. All these shapes already appeared in the previous Phase 3 but are characterised by an important morphological homogenisation during Phase 4. The straight-sided cup is no longer part of the repertoire. Noteworthy is the introduction of a new shape, possibly at the end of the phase, as it only occurs in a few examples: the short ledge-rimmed and horizontal-handled bowl.

Fabric recipes also show more homogeneity. Hence, the distinctive semi-fine gritty orange to dark red fabric that was introduced in the previous Phase 3 is now predominant (ca. 70%) in the production of the conical cups. The rest of the fine wares is made in two recurrent fabric groups: a fine, soft to slightly gritty, orange to pinkish-orange fabric group (60%), and a fine soft light buff fabric group (40%), the latter being increasingly used in Phase 4, in comparison to Phase 3 (when an 80% to 20% proportion occurred for the two respective groups).¹⁰⁷ Fine closed shapes used for pouring (jugs and rhyta) are made almost exclusively in light buff fabrics.

In terms of forming techniques, the more sinuous profiles of small-based S-profile cups and jugs epitomize the mastering and generalisation of the use of wheel-coiling techniques in Phase 4.

Apart from conical cups, that are always left plain, dip-painted rim (with or without trickle decoration) and monochrome painted treatments are more common. In parallel, fine wares include a larger proportion of dark-on-light non-lustrous painted pottery, made in light buff to light pinkish-orange fabrics. This especially concerns S-profile cups, jugs and rhyta, adorned with characteristic LM IA decorative syntax and motives. Because different fabric groups and distinct surface treatments characterise identical morphological types, the description of fine wares is here presented by shapes.

107. It is worth noting that at the neighbouring site of Sissi, LM IA tableware of fine light buff fabric is absent from the domestic contexts currently under study by I. Mathioudaki; two LM IA S-profile cups in a buff fabric are interpreted as possible imports from north-central Crete (MATHIOUDAKI 2022, p. 548).

The conical handleless cups compose ca. 56% of the fine tableware, with an MNI of 1317 vessels within this assemblage. In Phase 4, the conical cups typically show a short and compact profile with an average height of between 3.6 and 4.1 cm (pl. 38). This homogenisation in shape and size goes hand in hand with a clear standardisation of the fabrics used, with a dominant group made in the typical gritty orange to mostly dark red fabric (pl. 39). A less homogenous group (30%) includes, on the one hand, a finer light buff to pinkish-orange fabric group and, on the other hand, a coarser dark pinkish-red fabric group; these conical cups are also broadly less homogenous in size compared to the dominant group. In terms of morphological details, some variations are observed in the three different fabric groups. The base is large and unmarked (with an average base diameter of between 3.5 and 4 cm), and more rarely small and raised (base diameter of between 3 and 3.2 cm); walls are thick, especially for the conical cups in the dominant fabric group; the profile is either rounded or conical; and the rim is mostly rounded, slightly inverted but rarely tapered (with an average rim diameter of between 7.6 and 8 cm). The surface finishing lacks any other refinement than a rapid smoothing with hands on completion of the primary forming stage. Generally speaking, the correspondence of slight differences in size according to the three different fabric groups seems to indicate different clusters of conical cups which suggests in turn that this material is indicative of distinct lots of production, and therefore, perhaps, of various potting workshops. Finally, it is worth noting that the plain tall ledge-rim conical cup/bowl, common at LM IA Knossos as well as Galatas,¹⁰⁸ is absent at Malia.

Altogether, standardisation processes, absence of refinement, and the huge quantities of conical cups that characterised the contexts here examined suggest mass production of this type in Phase 4. However, such an increase of production output and, in parallel, of standardised manufacturing methods does not seem to have been linked to the development of *wheel-throwing* techniques for forming vessels. It is worth noting that our analysis of the forming techniques related to the Neopalatial pottery of building Pi is by no means systematic, given the large quantities of material involved. Nevertheless, the qualitative macroscopic examination of the traces left by shaping processes on the vessels' wall surfaces provides some valuable insights. The LM IA conical cups at Malia, as evidenced by the assemblages of Phase 4 from building Pi, show important evidence for coil seams, most often paired with medium rilling (pl. 40). The presence of "incompletely joined coil seams despite obvious evidence of rotational shaping," that is a common feature of the conical cups of this assemblage, constitutes "one of the most reliable indices of method forming 3" in Jeffra's systematic examination of macroscopic traces observed on an experimental type set (including, but not exclusively,

108. Knossos: HATZAKI 2007, p. 178, figs. 5.15:3–5, 5.16:3 where it also appears with ripple or a rim band; Galatas: RETHEMIO TAKIS, CHRISTAKIS 2011, p. 211, fig. 5.

conical cups) produced according to four different forming methods within the *wheel-coiling* technique (rotative kinetic rotation and coil combination).¹⁰⁹ Another study, that focused on macroscopic observation of both archaeological and experimental handleless conical cups using, distinctively, the *wheel-coiling* technique and the *wheel-throwing* technique, has pointed three features as possibly closely linked to proper *wheel-thrown* plain handleless cups:¹¹⁰ (1) a short (H. max. 4.5 cm) and conical profile with a small and raised base (diam. 2.5–3.2 cm), (2) a narrow and deep hollow in the interior base, and, (3) strong rilling marks, but with few microfractures (coil seams) on the surface. By contrast, experimental handleless conical cups using the *wheel-coiling* technique¹¹¹ “do not show up all together on the same pot the three abovementioned features.”¹¹² Conical cups of Phase 4 in building Pi most frequently show short profiles and pronounced rilling marks, although small raised bases and narrow deep internal hollows are comparatively few, while irregular surfaces, showing asperities and especially microfractures resulting from coil joins (and larger than holes potentially left from bubbles or inclusions), are common. Therefore, we assume that the mass production of conical cups at LM IA mature Malia mostly makes use of *wheel-coiling* techniques; *wheel-throwing* methods are not excluded but our macroscopic observations, based on the results of experimental studies, do not support this.

The S-profile cups are particularly common in Phase 4¹¹³ and, by then, overtake the three other previous cup types: the straight-sided cup, which disappears in Phase 4, the convex cup, and the bell-shaped cup. The profile is more generally sinuous, dimensions are more homogenous, and the strap handle becomes the rule. Two different groups are however clearly distinguished with regard to fabric, morphological details and surface treatment.¹¹⁴ The first, main, group is made in a semi-fine reddish-orange fabric (pl. 41). It shows a compact, sinuous and narrow-based profile, with an average rim diameter of between 8.5 and 9.5 cm, and is typically treated as a monochrome, or rim-banded vessel with drips of paint. The second group is made in a fine light buff fabric (pl. 42). These

109. JEFFRA 2013, p. 37, table 2.

110. CALOI 2019, p. 16; CALOI 2021. This study is in progress and concerns MM IIA pottery from Phaistos, where the plain handleless cup was the most common drinking cup since Prepalatial times.

111. A combination of coil-building using three coils, each 1 cm in diameter, built on a circular base, and finished on the wheel (CALOI 2019, p. 15; CALOI 2021).

112. CALOI 2019, p. 16; CALOI 2021.

113. MNI are difficult to define among the fine open vessels other than conical cups, since they are all made in the two recurrent fabric groups (see above). We have counted 41 catalogued S-profile cups for this assemblage, and an MNI of 96 vessels on the basis of the strap handles, although these may in some instances belong to the more heterogenous type of the bell-shaped cup (see below).

114. At LM IA Sissi, the S-profile cups also include two morphological sub-types but they differ from those encountered at Malia (MATHIOUDAKI 2022, p. 547).

S-profile cups are typically wider (rim diameter of between 10 and 14 cm) and often show a more sharply everted rim, while the surface treatment consists of a monochrome interior and dark-on-light non-lustrous painted decoration on the exterior, essentially a frieze of linked spirals, with some details occasionally in added white paint. Finally, a well-preserved S-profile cup in a fine hard-fired pinkish-buff fabric, and decorated in dark-on-light of thin ripple in red lustrous paint, was found at the bottom of the deposit in Space 10 (pl. 43).¹¹⁵

The convex cup is well represented in Phase 4, easily recognizable in sherd material with its typical roll handle forming a loop (pl. 44).¹¹⁶ The shape has a convex profile but varies from shallower, more everted types to taller and more compact ones. Convex cups are plain, monochrome painted, and/or painted with a rim band which sometimes trickles down.

Limited in numbers, the bell-shaped cup appears at LM IA Malia as a heterogeneous type (pl. 45). The examples from Phase 4 in building Pi associate features common to both the S-profile and convex cups, with strap or roll handles, and plain, monochrome or rim-banded surface treatments. A few specimens have light-on-dark painted decoration of thin horizontal bands. The bell cup, monochrome or with a rim band, with or without a handle, is frequent at LM IA Knossos, where it also appears with a typical reed pattern, absent at Malia.¹¹⁷

Highly characteristic of the LM IA phase at Knossos is the Vapheio cup, a straight-sided cup with medial rib, decorated with the “little spiral painter” motive.¹¹⁸ Three fragmentary examples were found in Spaces 10 and 11 (pl. 46). They are made in a fine

115. S-profile cups decorated with ripple decoration are found in phase II in Quartier Epsilon (i.e. MM III), when it constitutes the major dark-on-light motive, consisting often of thicker ripple bands, and continue in phase IIIA (i.e. LM IA), when the motive is however rarer, mostly in the form of thin ripple (PELON 1970, pp. 64, 94–95, pl. XIII: 3, and pl. XX: 5h). Aleydis Van de Moortel has argued that the thin ripple is a characteristic feature of LM IA at Malia, and at the ANE it was found associated with conical cups of a compact profile (VAN DE MOORTELE 2011, p. 535, n. 19). At Knossos, thin ripple produced by applying a single thin wavy line occurs in both MM IIIB and especially LM IA contexts (HATZAKI 2013, p. 40, fig. 4.4 right; WARREN 1991, p. 330, fig. 10J–L).

116. We count 22 catalogued convex cups for this assemblage, and an MNI of 72 vessels on the basis of counting the characteristic roll handles.

117. East–west staircase: POPHAM 1977, pp. 194–195, pls. 30a, 31a–c; HATZAKI 2007, p. 178, figs. 5.15:2, 5.16:2. Rim-dipped bell-shaped cups include the MM IIIB and LM IA repertoire at Galatas, but also in small numbers, especially in LM IA (RETHEMIOTAKIS, CHRISTAKIS 2013, p. 102, fig. 8.11 top [MM IIIB]; RETHEMIOTAKIS, CHRISTAKIS 2011, p. 211, fig. 7 [LM IA]). The few bell-shaped cups found at LM IA Myrtos-Pyrgos are decorated with thin ripple and are seen as the result of a north-central Cretan (Knossian) influence at the site (ODDO 2019, p. 37, fig. 18).

118. HATZAKI 2007, pp. 154, 176, figs. 5.1:5, 5.13:3. At LM IA Galatas, rare Vapheio cups appear with thin ripple pattern (RETHEMIOTAKIS, CHRISTAKIS 2011, p. 211, fig. 8).

light buff fabric with very thin walls and, in two instances, dark-on-light lustrous painted decoration in red. Lustrous red paint is rare in building Pi and this suggests that these cups are imports.¹¹⁹

Fine hemispherical bowls become more frequent during this phase (pl. 47).¹²⁰ They are almost exclusively made in a fine light buff fabric, are rather homogenous in size, with an average rim diameter of between 10 and 11 cm and an average height of between 7 and 8 cm. They show a slightly incurved rounded rim and a characteristic painted rim band that has sometimes dripped; some are monochrome painted. Very similar hemispherical bowls, also with a slightly inverted rim and a monochrome surface treatment or a rim band, are common at MM IIIB and LM IA Knossos.¹²¹ Introduced in MM IIIB at Galatas, this shape becomes common in LM IA at the site, where it mostly appears as a plain vessel.¹²²

Horizontal-handled bowls appear in a small number in Phase 4 (pl. 48). Hemispherical in profile, this type is larger (with an average rim diameter of between 14 and 15 cm) and characterised by a pronounced ledge-rim and two small roll or flat handles fixed at the rim. Made in a semi-fine light buff or orange fabric, they are plain or monochrome painted.

Fine jugs are almost exclusively made in light buff fabrics and all full or reconstructed profiles are piriform in shape (pl. 49). Whole examples are few; the only complete vessel consists of a spouted jug. Surface treatment is homogenous, with a dark-on-light non-lustrous red to brown painted decoration of bands at body and a frieze of linked or retorted spirals on the shoulder. A hard-fired jug with a dark-on-light lustrous decoration in red paint of bands, and a row of simple quirks, may well be an import (pl. 49, second row, first vessel). We also note a closed shape decorated with the typical LM IA reed pattern, a singleton in Area Pi.¹²³ Bridge-spouted jars are only recognised from a few isolated fragments, some of which are earlier intrusions.

119. The cup painted with a spiral on the exterior base has good parallels at Knossos (HATZAKI 2007, p. 176, fig. 5.13:3).

120. We count 22 catalogued hemispherical bowls for this assemblage; complete profiles are few.

121. WARREN 1991, p. 323, fig. 7A–C (MM IIIB); POPHAM 1977, pp. 194–195, pl. 31h (LM IA).

122. RETHEMIOTAKIS, CHRISTAKIS 2013, p. 102, fig. 8.11 below (MM IIIB, called hemispherical cups); RETHEMIOTAKIS, CHRISTAKIS 2011, p. 211, fig. 6 (LM IA, called ogival cups). The hemispherical bowl, either plain or monochrome, was also introduced in MM IIIB at Sissi; it has not yet been widely recognised in LM IA contexts at the site, but is common in LM IB assemblages (LANGOHR 2022; MATHIOUDAKI 2022).

123. Parallels from earlier Neopalatial contexts include sherds with a motive of “tiges jaillissantes” painted in a more naturalistic manner, found in Quartier Epsilon, Phase II, layer 7, which corresponds to the end of the MM IIIB phase (PELON 1970, p. 64, pl. XIII, 4f–g, i); closed vessels with a stylized reed pattern, like the one from building Pi, come from later, LM IB levels at the site (VAN DE MOORTELE 2011,

Fine conical rhyta and cup-rhyta continue from the preceding LM IA sub-phase, all made in fine light buff fabrics and decorated with bands and spirals in the dark-on-light non-lustrous painted ware (pl. 50).

2.4.2.2. *Coarse wares*

Plain coarse ware material is highly fragmentary and particularly plentiful, so that complete profiles could rarely be reconstructed. Quantitative analysis was particularly difficult to conduct and must be considered incomplete.

Storage/cooking jars and/or tripod cooking pots manufactured in the local orange to red coarse fabric group show an important techno-morphological homogeneity in Phase 4. The typology of these middle-sized containers continues and develops from the previous phase. The most common type has a wide mouth and a smoothly everted rim, either rounded or tapered, a rounded to ovoid profile and two solid horizontal roll handles attached below the rim (pl. 51a). The proportion of more rounded profiles versus the previously most common ovoid types is impossible to define, as complete profiles are absent. Dimensions are consistent with an average rim diameter of between 19 and 21 cm. Among the smaller examples, however, the majority always have a wide mouth, but a straight simple rim (pl. 51b).¹²⁴ The majority of medium-sized coarse jars and cooking pots related to this phase are typically wheel-coiled, as shown by the recurrent breakage of the body parts at coil joins and the regular strong rilling marks all over the inner wall, except the zone just below the rim which is more smoothed. An important innovation is however the presence of a reduced number of small to medium narrow-mouthed, globular cooking pots with an everted rim, that marks a further improvement of the wheel-coiling techniques (pl. 51c).¹²⁵ Feet from tripod cooking pots are short, with an average height of between 8 and 10 cm, triangular in shape and ovoid in section; they are attached slightly obliquely to the edge of the base and lower part of the body (pl. 51d). Most of the cooking pots are left plain but the external surface wall is carefully smoothed.

Particularly interesting is the identification of cooking lids within this assemblage of Phase 4, in the form of “conical bowls” made in the same characteristic red coarse fabric

pp. 545–546, figs. 13–14, nn. 66–67, with references). At Knossos, however, reeds commonly ornated LM IA cups as well as closed vessels (POPHAM 1977, pp. 193–194, pl. 30a; HATZAKI 2007, pp. 175, 178, figs. 5.12:1, 5.13:5, 5.17:3).

124. See contemporary parallels at LM IA Petras (ALBERTI 2016, p. 67, fig. 11, CW 1) and Palaikastro (KNAPPETT, CUNNINGHAM 2012, p. 192, fig. 6.3, cat. no. 695).

125. This is a general trend in LM IA Crete which is observed at several sites. The globular cooking pot with an everted rim is the “type A” in BETANCOURT 1980. See discussion in ALBERTI 2016, pp. 66–67 with previous examples and parallels from LM IA Petras (ALBERTI 2016, p. 69, fig. 12, CW 15, 17). This shape profile will become more common during LM IB (e.g. TSIPOPOULOU, ALBERTI 2011, pp. 485–487, figs. 30–33; MORRISON 2017, p. 102, fig. 9.4a–c).

and all bearing burning marks but typically limited to their lower edge and/or inside the base (pl. 52). Their interior diameter varies between 20 and 22 cm and is then entirely consistent with the average rim diameter of the cooking pots.¹²⁶

Among the cooking dishes, the ovoid type, with a deep body, a short thick incurving rim, broadly triangular in section, and a prominent trapezoidal spout, is predominant in Phase 4 (pl. 53).¹²⁷

With the exception of a few fragments, cooking trays are rare in this assemblage, and this observation applies to all Neopalatial phases in Area Pi.

The category of large bowls includes the two types already encountered, the plain conical bowl and the dark-on-light painted short ledge-rimmed bowl, usually slipped on the interior only, with a band at rim (pl. 54). The former type of bowl is now more regularly deep in profile,¹²⁸ while the second has a conical variant next to the usual rounded form.

No full profiles of storage or pouring vessels in coarse wares, like oval-mouthed amphorae, large storage jars or coarse jugs, could be reconstructed from these assemblages. Mendable fragments from an otherwise very fragmentary large container, decorated with a frieze of tangent spirals in dark-on-light, may belong to a piriform jar (pl. 55).¹²⁹

2.5. NEOPALATIAL PHASE 5: LATE MINOAN IA FINAL

2.5.1. Architectural and contextual analysis

The extended filling of Spaces 1A, 1B, 2/3 and 10, 11, 13 opens the last phase of construction and occupation in Area Pi. In particular, a new architectural installation in Space 2/3 proves that the occupation of building Pi continued after its main destruction in LM IA mature. In this southeast part of the building, the raising of the floor level is associated with the laying of a paved way that allowed to cross this “court” in the direction of a threshold which in turn gave access to the western part of the building

126. In most cases only rim fragments are preserved. However, an almost complete example has a narrow pierced based, and a markedly concave profile; it is burnt throughout (pl. 52, no. 4.024.066, first row, first drawing on the left; photographs in the middle of the plate). A similar shape is attested in LM IB Petras (TSIPOPOULOU, ALBERTI 2011, p. 470, fig. 8j).

127. See discussion in ALBERTI 2016, pp. 86–87.

128. See for parallels, KNAPPETT, CUNNINGHAM 2012, p. 163, fig. 5.23, cat. no. 414 (MM IIIB Palaikastro); TSIPOPOULOU, ALBERTI 2011, p. 470, fig. 8b–c, type 1, and fig. 8h type 4 (LM IB Petras); CHATZI-VALLIANOU 2011, p. 353, fig. 9, cat. no. Pit.VII.A13 (LM IB).

129. A complete piriform jar, decorated in dark-on-light with two friezes of spirals, and details added in red and white paint, has recently been found in an LM IA context in the Court-centred Building at Sissi, associated with dozens of conical cups (LANGOHR 2022, p. 509, fig. 9.1.12d). This is the only find of this type at that site for the moment.

(fig. 17). A wide terrace wall made of large limestone blocks was built along and partly upon the “rue de la Mer” to maintain the backfill of Space 2/3 towards the street, and presumably to protect the area from flood water that could rush downwards the “rue de la Mer” after heavy rains and strike the southeast angle of the building. Based on this evidence for reconstruction, we assume that several spaces of building Pi remained in use, following cleaning operations and rebuilding along the same general architectural outline of Phase 4. Although no floor level nor primary deposit linked to this last reoccupation has been recognised in Spaces 1A, 1B, 10, 11 and 13, small groups of in situ material (pottery and lithic tools) have been identified on the floors of Spaces 12 and 16 in the west part, and of Space 6 in the east part, that we relate to this last phase. This material was left there when the building was finally abandoned during this phase. The proximity of the modern arable land has probably intruded on these hypothetical last occupation layers. The only other building operation that can be securely associated to Phase 5 is the transverse walls that divided Space 4 in small compartments (4-5-6-7) (fig. 17).



Fig. 17 — Plan of building Pi in Phase 5 (G. Hilbert, M. Pomadère / EFA).

This last phase of occupation may have been short. This would explain the morpho-technological continuity of the ceramic material with Phase 4. The nature and scarcity of the deposits found on the last floors suggest that the building faced a progressive abandonment. More particularly, a micromorphological analysis of the floor in the southeast corner of Space 16 has revealed an infrequently and/or poorly maintained floor.¹³⁰ Semi-open Spaces 8-9 may no longer have been used, as no trace of activity or floor was found on top of the layer of mixed material which was spread over the occupation level of Phase 4.

2.5.1.1. *Space 16*

Although the main layout of Space 16 took place at the beginning of Phase 4, some specific installations found in situ characterised its last occupation in Phase 5. In the southeastern corner of this room, a niche was built, reusing large fragments of coarse ceramic vessels (a beehive and a basin) and forming a kind of cupboard (fig. 18). About thirty conical cups and twenty loom weights were collected inside; they were probably stored on or in perishable furniture. Next to the stone platform built against the south façade wall, a stone grinder and a large fragment of a pithos lid, that could have been reused as a working table or tray, were discovered on the floor. Furthermore, the presence of a tripod cooking pot, several hammerstones and refuse material from the preparation



Fig. 18 — Cupboard at the southwest corner of Space 16 (M. Pomadère / EFA).

130. MYLONA forthcoming.

of obsidian blades indicate a room with multiple domestic and/or craft activities and functions.¹³¹

2.5.1.2. *Spaces 4, 5, 6, 7*

In the northeast part of building Pi, the last building activity mainly consisted of the construction of small walls, that directly stand on the previous paved floor of the former larger Space 4 (see Phases 3-4). This introduced a major change in the layout of this area, with the partition of the formerly large space into the smaller compartments 4-5-6-7. It is not excluded however that the Walls 118 and 136 had already been installed during Phase 4. By contrast, the construction of Wall 105 and the repair of Wall 108 certainly belong to the last phase, as their construction disturbed the eastern part of Space 6 and destroyed part of the previous floor (**fig. 12**). The divergent orientations of these short partition walls suggest that they were not built all at once, but their erection does at any rate indicate the change in function of this part of the building, which now seems to have lost its public or semi-public character. In parallel, a second entrance was opened to the north (in the east part of Wall 109), leading to a small alley (Rue 2).

Only a few small primary deposits of conical cups could be related to this last occupation horizon within this part of the complex. Their stratigraphic and spatial position, and the way they were mixed with fallen stones (presumably from the walls), suggest that they could have been disturbed and displaced after the abandonment of the building.

The occupation sequence within Area Pi ended with the definitive abandonment of the building. Several rooms were emptied and valuable objects (e.g. metal), if present, were taken away. Archaeological levels with clear LM IB diagnostic features or material have not been recognised, suggesting that this area of the town had been abandoned at the beginning of this phase.

2.5.2. Pottery analysis: Space 16

The pottery related to this final stage of LM IA follows on from the pottery in the deposits which characterised the previous phase. Very few differences are noted.

2.5.2.1. *Fine wares*

Handleless conical cups continue from the preceding Phase 4, made in the typical gritty orange or dark red fabric, all compact in profile, either conical or convex (**pl. 56**). Small

131. A hearth laid out some meters west of the building, in an open court or garden (Zone 7), was probably used by the inhabitants of building Pi, possibly during this Phase 5 and before.

drinking vessels made in a fine pinkish-buff fabric comprise a bowl with small basket handles set upright at the rim, decorated with thin ripple, and a monochrome bell-shaped cup, both characteristic of an LM IA mature ceramic horizon (pl. 57).

2.5.2.2. *Coarse wares*

Tripod cooking pots with a more rounded profile and an upright or everted rim epitomize the evolution of middle-sized coarse containers toward more globular, as opposed to ovoid, shapes from the end of LM IA onwards (pl. 58).

3. THE ARCHITECTURE OF BUILDING PI

The architecture of building Pi can be characterised as non-palatia. The building materials are local and include very little ashlar masonry, made only of local soft sandstone (“ammouda”). The increased use of cut blocks of sandstone during the reconstruction that took place in Phases 3 and 4 seems to belong to a phenomenon widely observed in the Malia Palace, which could have boosted the quarrying of local “ammouda” on the nearby shores.¹³² The use of cut masonry in building Pi is however limited, so that the contrast with the monumental façade of cut limestone of building Delta bêta, on the south side of the “Rue de la Mer,” must have been striking.¹³³ The fact that the building had not been affected by fire explains the rarity of preserved mudbricks that were certainly laid above the stone base of the walls. Most of the floors were of beaten earth, the sole exception being the fine pavement laid in the northeast sector (Space 4, Phase 4). While red-coloured plasters, some of fine quality, are evidenced in MM IIIA deposits (Phase 1),¹³⁴ the majority of the preserved plasters of the Phases 2 to 5 are white or pinkish in colour. However, a special group of polychrome painted plasters, with traces of motifs, come from the discarded LM IA mature deposit in Space 11 (Phase 4): perhaps the debris from the destruction of a nearby building?

The dimensions of the construction depend on the identification of one or two independent units. In fact, the relation of the more refined eastern sector (especially the large Space 4 that covered 57 m², before its compartmentalisation into Spaces 4, 5, 6, 7) with the west part of the building is not clear. It could be that two distinct buildings

132. DEVOLDER 2017; about the quarries, see MÜLLER-CELKA et al. 2011.

133. DEMARGNE, GALLET DE SANTERRE 1953, p. 48; BRADFER-BURDET, POMADÈRE 2011, fig. 9.4. The plastering of the walls of the façades could have reduced this effect however.

134. We cannot exclude that these plasters from Spaces 19 and 24 were remnants of the previous MM IIB phase.

existed side by side during most of the Neopalatial occupation of these structures. The differences in the interior arrangement of the various spaces at ground floor level indicate that they did not replicate the same function(s) and, therefore, that we are not dealing with two houses. The Neopalatial houses of Malia were however often divided between a residential sector, carefully constructed, and a “service sector,”¹³⁵ a layout possibly followed in Area Pi; the whole complex would then have a surface area of 183 m², similar to the nearby house Delta alpha (170 m²).¹³⁶ By contrast, if we exclude the northeast “public” sector (Space 4 in Phases 3–4) and the Space 2/3 that became an exterior or semi-open space during LM IA, the western, quadrilateral, unit measures 104 m², that is similar to the house of Haghia Varvara at Malia. In this latter case, it would correspond to the dimensions of a modest house at Malia.¹³⁷

Few vertical supports were used and they are concentrated in the northeast sector: an interior portico (with a possible light-well) and a porch, with one column that opened onto the large entrance to the east, suggest the (semi-)public function of this area as a reception area (fig. 13). This communal function was abandoned in the last phase, when the construction of small partition walls divided the space, a phenomenon observed in several other settlements in the mature LM IA and LM IB phases.¹³⁸ It is possible to reconstruct an upper floor (or terrace)¹³⁹ above, at least, a part of the building, and we suggest that there was a staircase accessible from outside in Space 1B in Phase 4.

The building lacks “palatial” architectural features: it did not include a *polythyron* (quite common within the large Neopalatial houses at Malia, like Delta alpha, Delta gamma, Zêta alpha, Zêta bêta and Epsilon) nor lustral basin. In the northwest sector, the large Space 8 (27 m²), with evidence for a hearth and cooking activities, can be compared to similar extended living and working rooms with a central column identified in several Neopalatial houses, at Malia and elsewhere.¹⁴⁰ It however differs from most of these examples, not only because it was only partially roofed¹⁴¹ and largely open onto a garden

135. VAN EFFENTERRE 1980, pp. 401–402.

136. On the probable use of modules in urban planning and construction at Malia, see SCHMID 2011.

137. Type 3 in the typology of Minoan Houses of McENROE 1982, pp. 10–13.

138. DRIESSEN, MACDONALD 1997, p. 43.

139. Although no material can be properly identified as fallen from above, the thickness of the walls in the southern part of building Pi, as well as the pillar which has no structural necessity in the basement Space 16, seem to indicate the existence of an upper floor, with a column above the pillar.

140. At Malia especially, in Quartier Zêta and in the House of Haghia Varvara, similar spaces can be observed, with an average surface area of 25 m² (Zêta bêta: DESHAYES, DESSENNE 1959, p. 12; PELON 1966, p. 558; MICHAILIDOU 1987; LETESSON 2015, pp. 720–725). See also at Zakros, SALICHO 2013–2015, pp. 105–106, 114.

141. This could however also be the case in other Neopalatial houses provided with this kind of large working room, PREZIOSI 1983, p. 12.

or court to the north, but mainly because it did not function as an important nodal point of access. To the south, Space 16 with a central pillar probably had a similar polyvalent function as Space 8, perhaps especially during the last Phase 5, when Space 8 had been abandoned. With its two vats, Space 12 was a specialised area, likely used for processing food, at a scale that could have surpassed the domestic one. The adjacent small Space 13, largely open onto the street, may have operated as a workshop for the distribution of products prepared in Space 12.¹⁴² In addition to the vats, three blocks carved with one or two cavities (“gournes”) are also concentrated in this area, where they seem to function as thresholds. This recurrent location at possible access points, certainly not due to chance or to the reuse of these blocks, remains difficult to understand.¹⁴³ These blocks also appear to have been used as mortars and for the pouring or processing of liquids, as evidenced by traces left in these cavities. A seal found on the floor of Space 12 could have been used in the control and/or exchanges of goods.

This modest architecture corresponds well with the domestic nature of the ceramic material presented above, and also, of the activities attested by other artifacts and ecofacts found within the different parts of the building. The latter include ground and chipped stone tools, small concentrations of loom weights, a few bronze and bone tools (points and awls), evidence that all together point to food processing, cooking, a variety of small crafts, and textile production at the domestic scale, but that often cannot be localised precisely.¹⁴⁴ The majority of the artifacts found within this building indeed comes from secondary deposits or relates to its abandonment horizon. Therefore, the architectural layout and fixed furnishings play a key role in the functional interpretation of the different spaces, as we have just seen. Nevertheless, a few activities can be reconstructed on the basis of movable finds. A small metallurgical activity could be reconstructed in Space 2/3, where a crucible and some melted waste were collected. This material was however found mixed in a fill with evidence for MM II to MM IIIB ceramic sherds, so its use in the Protopalatial period is not excluded. Lastly, six Neopalatial seals were recovered from building Pi. The only one which stands out by reason of its semi-precious material (onyx?) and style (talismanic) comes from Space 5 and could be associated with less mundane activities held in the large reception space of this eastern sector, at least in Phase 4.

142. FOTOU 2013, III, pp. 360, 400: buildings with several entrances may have integrated small workshop(s) and/or store(s); at Akrotiri: MICHAILIDOU 2008, pp. 223–224. On the issue of markets in Neopalatial economy and towns, see CHRISTAKIS 2019.

143. TREUIL 1971, pp. 26–27.

144. This broad picture will obviously be refined in the final publication where the analysis and interpretation of the different categories of material will be detailed by the different specialists.

Building Pi and its different units have a peculiar architecture that sharply differs from the other buildings in this quarter (Quartier Delta) and can be better compared to modest houses of the Quartier Lambda, east of the so-called “Agora.” It shows that the town was not organised in functional districts and had socially heterogeneous quarters, especially in this central area with a long history of occupation.¹⁴⁵

4. CONCLUDING REMARKS

The excavations and research programme undertaken in Area Pi at Malia provide us with a stratigraphic and ceramic sequence which sheds new light on the history of this major settlement during the Neopalatial period (except for the LM IB phase). The refined articulation of the successive occupation horizons in this area of the settlement opens up new avenues of investigation regarding the diachronic evolution of Malia in, at least, two respects.

First, stratigraphic layers properly related to the MM III period (1700–1580 BC) were recognised by previous excavations at Malia but barely supported by detailed architectural and ceramic data until now.¹⁴⁶ Based on our architectural, stratigraphic and ceramic study, we have demonstrated that an important occupation actually took place in Area Pi during MM III. This brings new and solid evidence for a consistent MM III horizon at Malia, marked by transformations in material culture and settlement layout. Moreover, two sub-phases are distinguished, dated to MM IIIA and MM IIIB respectively. The interpretation of the MM III occupation of building Pi eventually deserves to be considered against the background of the rest of the town, in order to evaluate whether the traditional assumption that Malia in MM III had great difficulty in recovering from its site-wide MM IIB destruction needs adjustment. Older data, including the evidence for the early rebuilding of the Palace, need to be reassessed.¹⁴⁷

Second, our stratigraphic reconstruction of the architecture and deposits related to the LM IA phase within building Pi has allowed us to recognise three different sub-phases, the middle one ending in a major and extensive destructive event in LM IA mature.

145. It contrasts with the concentric organisation between a “favoured quarter” around the palace, and a “poorer outlying zone” posited for Knossos by Evans (EVANS 1928, pp. 560–563). The hypothesis of functional zonation of Minoan towns can therefore be seriously questioned (WHITELAW 2001, p. 24; BUELL 2014, pp. 66–67; ORGEOLET, POMADÈRE 2015).

146. STÜRMER 2013.

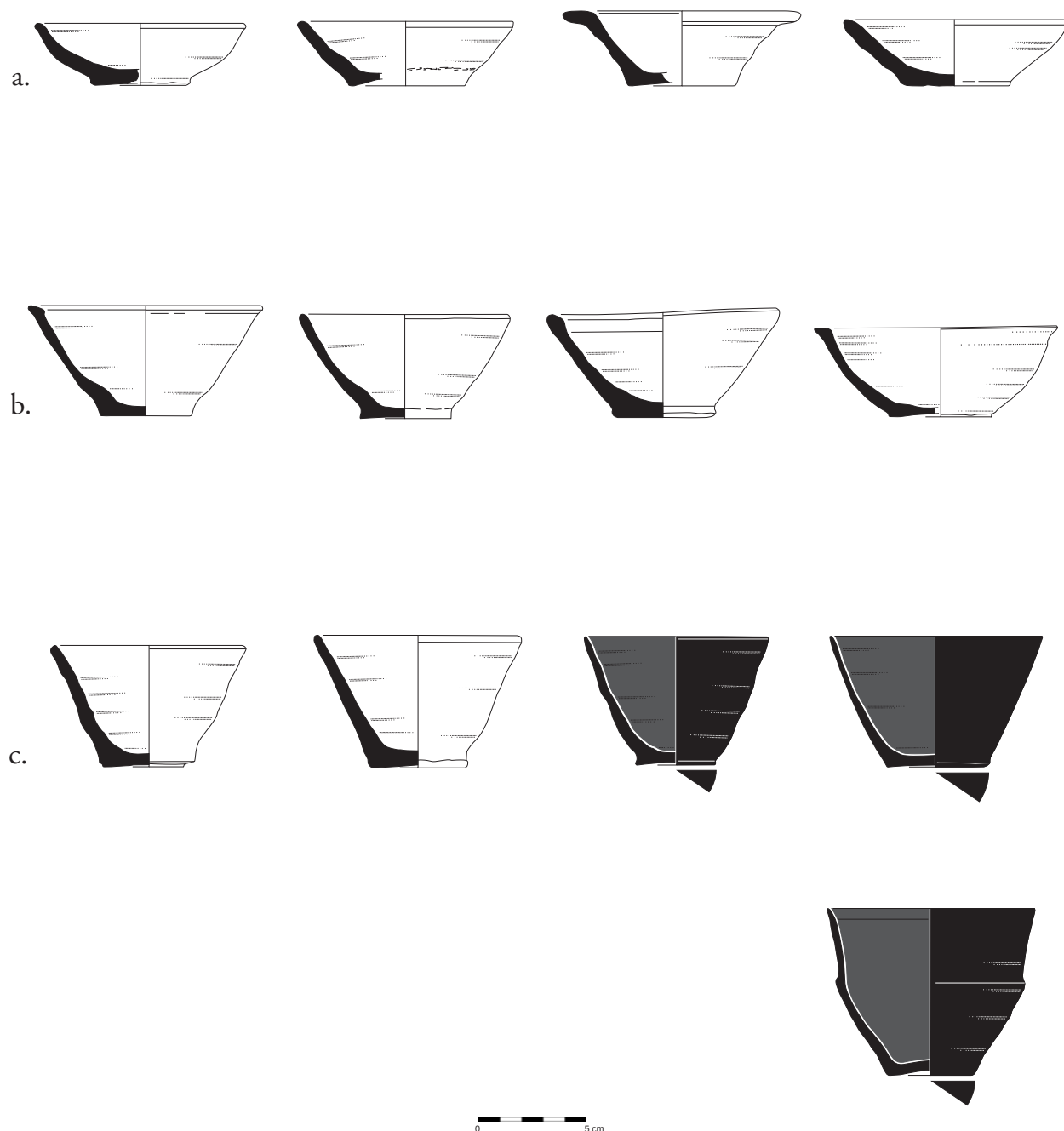
147. LANGOHR, POMADÈRE forthcoming. The restitution of the Neopalatial stratigraphy of the Palace is at the core of an ongoing research project lead by Maud Devolder (UGent/EFA) which deals with the study and publication of the numerous soundings made by Olivier Pelon in the Malia Palace.

The LM IA levels excavated from the different buildings of Malia comprise a variety of deposits, potentially linked to successive sub-phases, and suggest similar or distinct stories and developments which would be worth scrutinizing in a comprehensive comparative analysis. In particular, such a comparative work would allow us to evaluate whether we can refine our understanding of the stages directly preceding and following the moment of the assumed massive destruction of the town (evidenced in building Pi at the end of Phase 4), but also to assess the evidence for the contemporaneity, or conversely, the non-synchronicity of this destruction with the Thera eruption.¹⁴⁸ Such an investigation could help us in turn to refine the process that led to the abandonment of several buildings and areas of the town at the end of LM IA. If an earthquake just preceding or accompanying the Santorini eruption is responsible for the destruction of building Pi at the end of Phase 4, we have evidence of rapid reoccupation, with important cleaning operations and partial reconstructions. It is however difficult to explain why the building was finally abandoned after a short period of reoccupation (Phase 5), while other houses had a longer life span. Indeed, the last levels of Neopalatial occupation in several buildings, notably the Palace, have little evidence for LM IB material *in situ*, while some residential units, such as Houses Delta alpha, Zêta alpha and Zêta bêta have been found with abundant primary deposits related to a fire destruction in LM IB. The sequencing of the specific history of the town and its respective sectors of habitation during the LM IA, when Malia seems to have endured a highly troubled time at an advanced stage of the phase, could help to explain the sudden and rather radical abandonment of certain parts of the town.

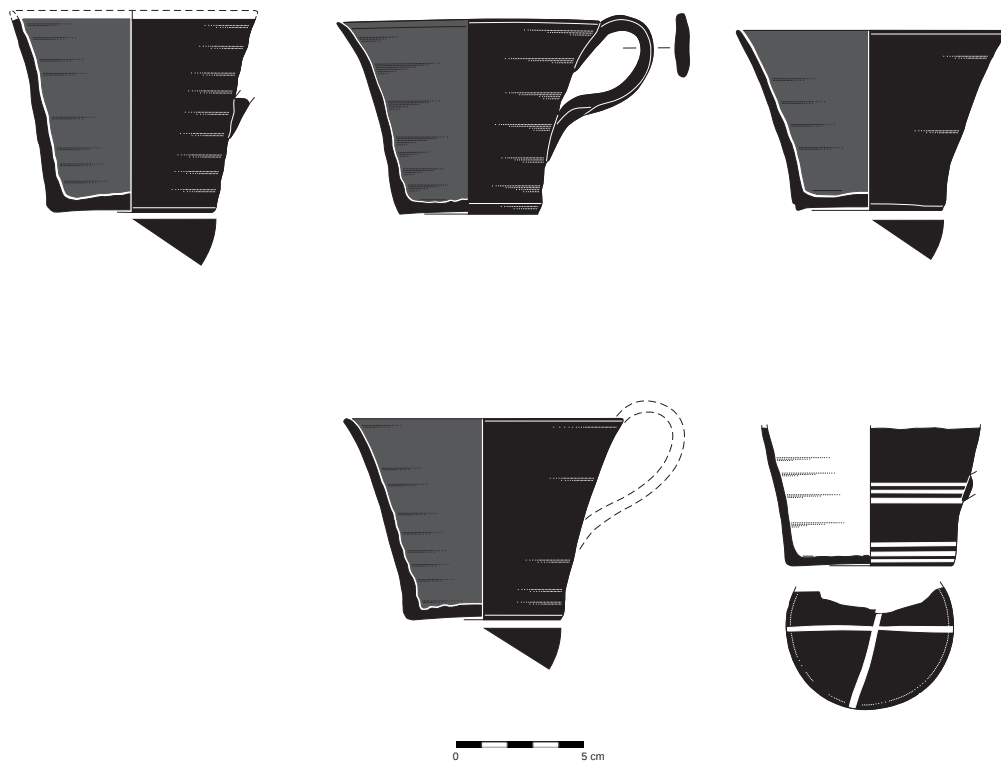
Finally, from a functional and, more broadly, socio-economic perspective, Neopalatial constructions in Area Pi are characterised by simpler habitation units in comparison with the Protopalatial period, limited in size and extent, and associated with more open spaces (courts, gardens, wasteland?). Specialised craft production activities identified in the area during the Protopalatial period (e.g. stone and bone carving) seem to be abandoned for production more based on the processing of agricultural products for the household, and possibly also to produce some surplus. These activities are mainly evidenced in the western unit of building Pi, whereas the eastern one is oriented towards the function of public reception. The eastern unit nevertheless lost its “public” function in a late stage of LM IA. Assessing the role of building Pi in its neighbourhood and in the town of Malia would require comparison with other buildings of the settlement. Unfortunately, the abandonment of building Pi and the very incomplete available data on the finds collected in the “Maliote” buildings do not allow us to go very far in such a functional analysis. Therefore, our original research question “what did a ‘normal’ Neopalatial house at Malia look like?” remains largely unresolved. This important issue is left aside for the

148. DARCQUE, VAN DE MOORTELE, SCHMID 2014, pp. 180–181.

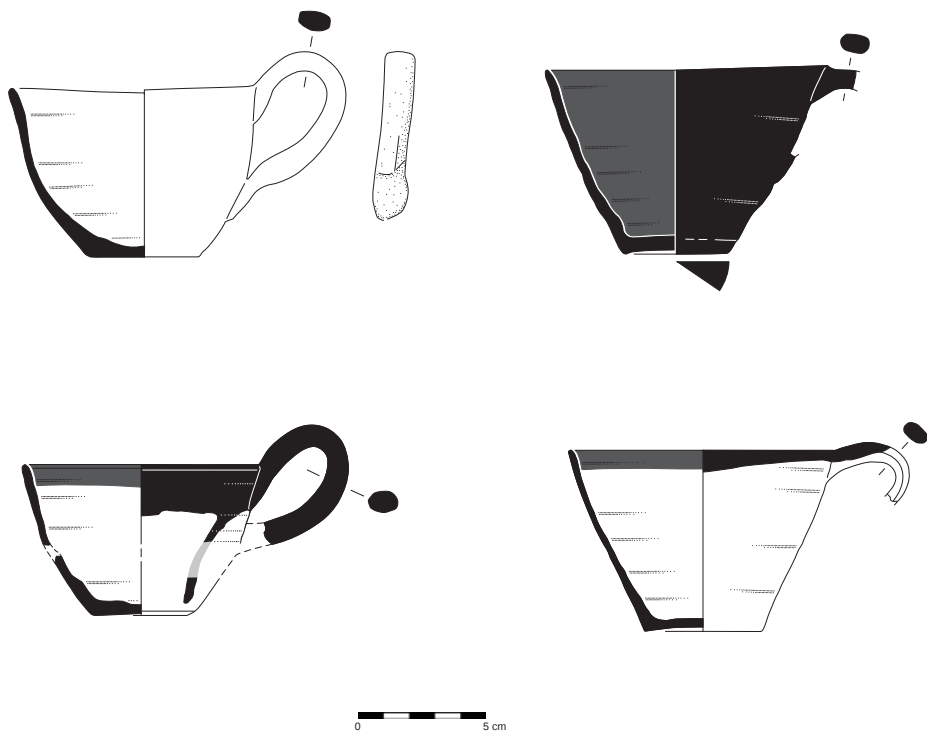
time being but will be developed within a more holistic approach in the final publication. Eventually, in a second article, we will focus on the Neopalatial sequence of occupation at Malia and will propose a recontextualisation and interpretation of the available data related to the main disruptive events that punctuated the Neopalatial history of the town in the light of the new results presented here.



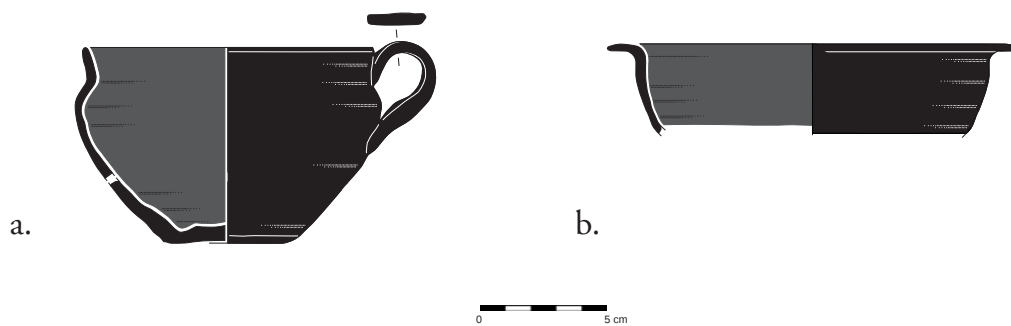
Pl. 1 — Space 24. MM IIIA deposit. Handleless cups. a. broad and shallow type; b. broad and conical type; c. tall and conical type (B. Konnemann; © EFA).



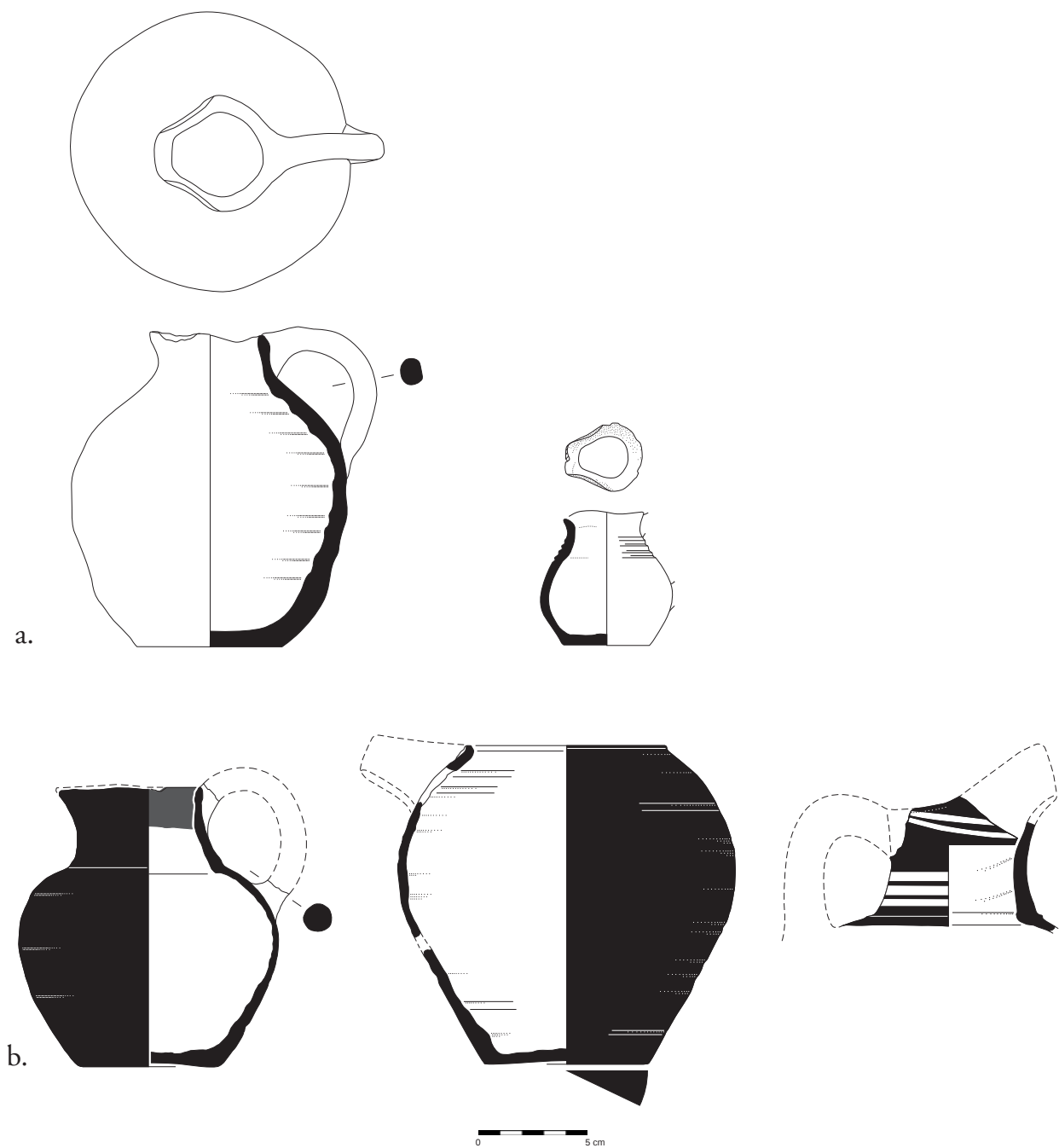
Pl. 2 — Space 24. MM IIIA deposit. Broad straight-sided cups (B. Konnemann; © EFA).



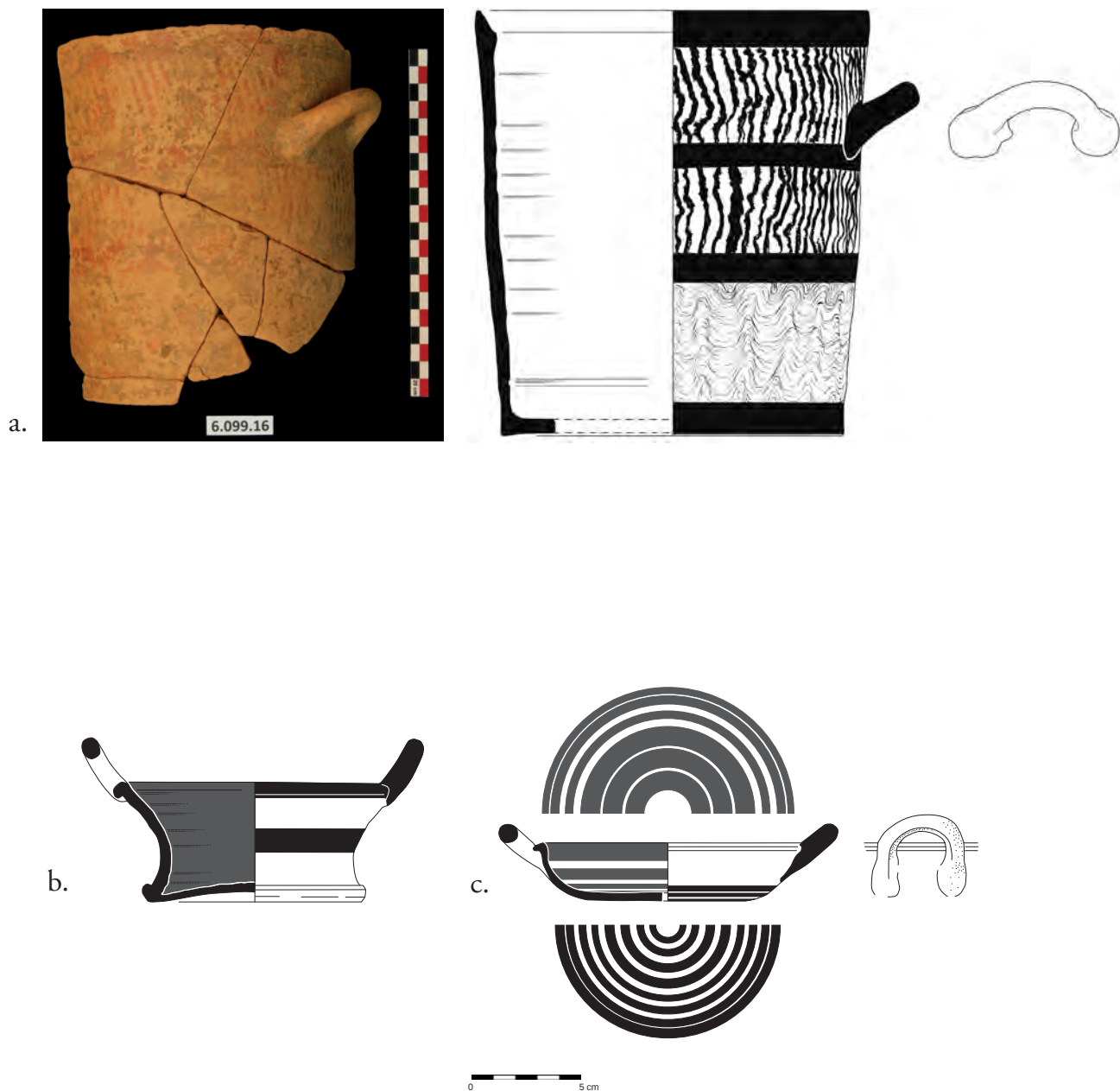
Pl. 3 — Space 24. MM IIIA deposit. Convex cups (B. Konnemann; © EFA).



Pl. 4 — Space 24. MM IIIA deposit. a. hemispherical cup; b. rounded ledge-rim bowl (B. Konnemann; © EFA).



Pl. 5 — Space 24. MM IIIA deposit. a. plain trefoil-mouthed juglets; b. monochrome or light-on-dark decorated bridge-spouted jars and cut-away/beak-spouted jugs (B. Konnemann; © EFA).

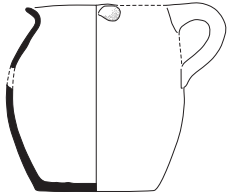


Pl. 6 — Space 24. MM IIIA deposit. Dark-on-light lustrous painted fine ware. a. cylindrical bucket; b.–c. “in-and-out bowls” with basket handles (B. Konnemann; © EFA).

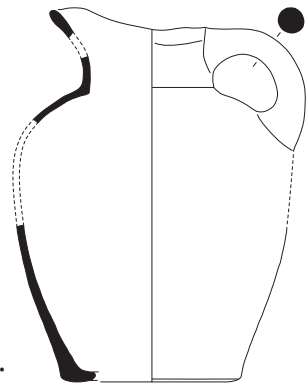


Pl. 7 — Space 24. MM IIIA deposit. Coarse plain ware. Ovoid wide-mouthed jars of various sizes (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).

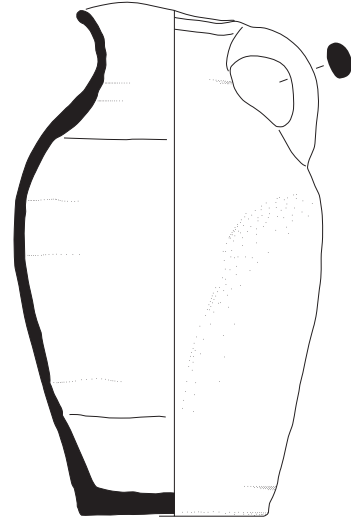
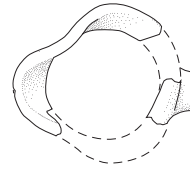
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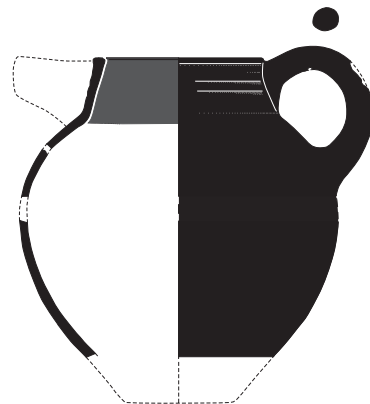
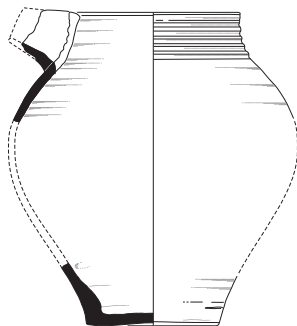
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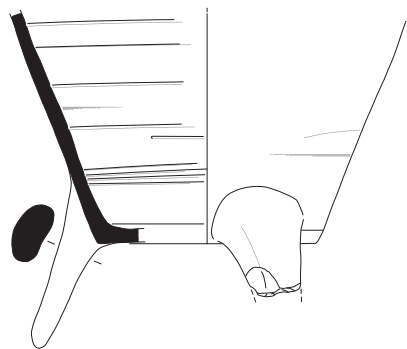
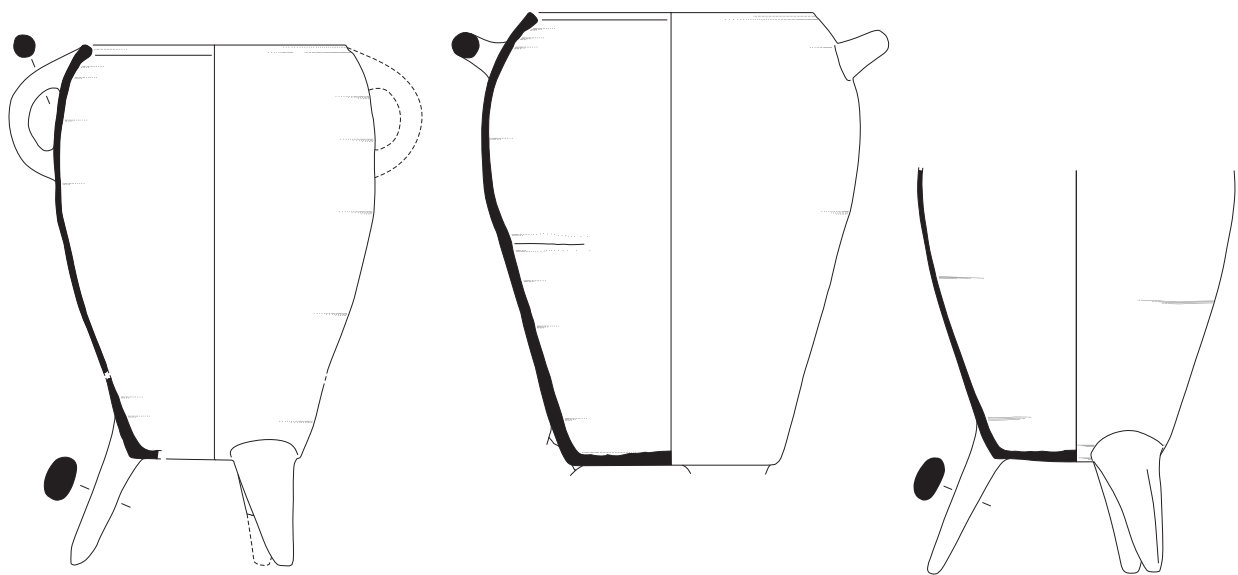
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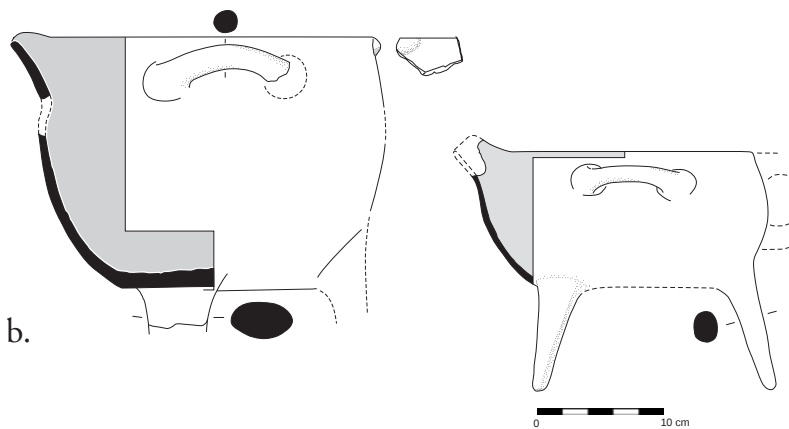
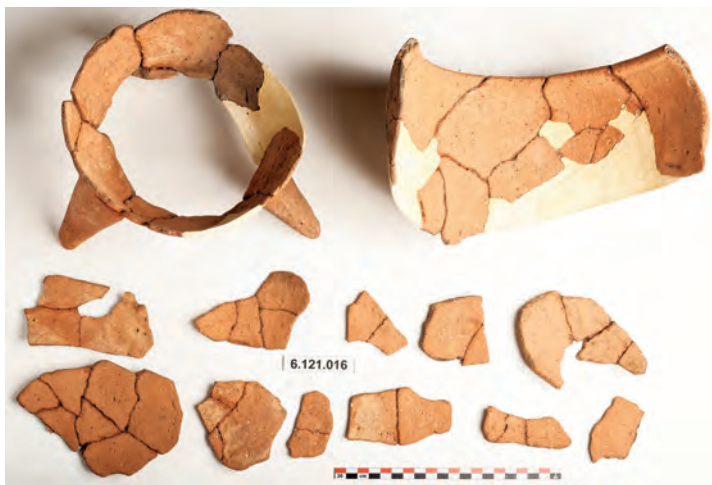
d.



Pl. 8 — Space 24. MM IIIA deposit. Coarse plain ware. a. collared jug; b. beak-spouted jug; c. trefoil-mouthed jug; d. bridge-spouted jugs (B. Konnemann; © EFA).



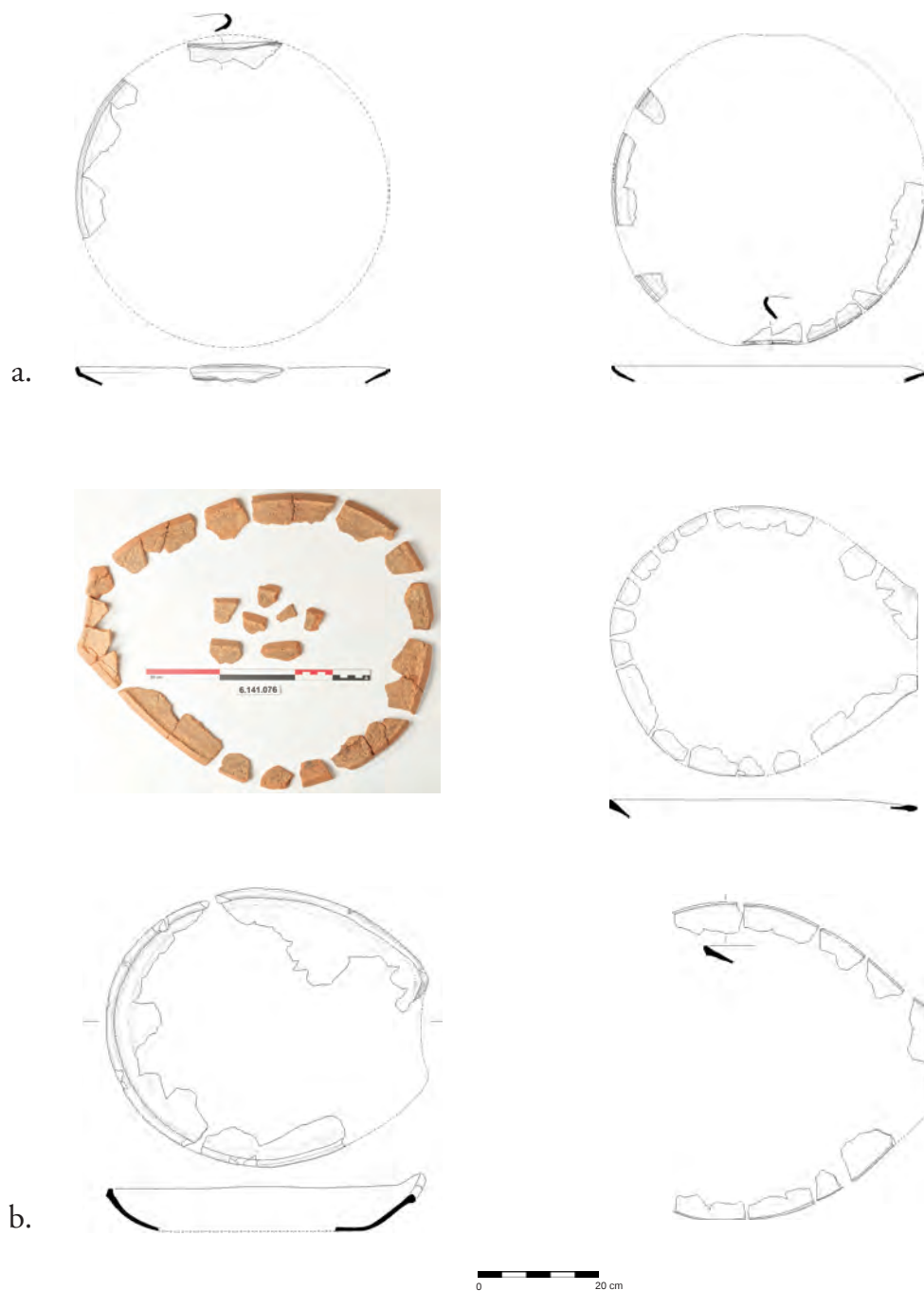
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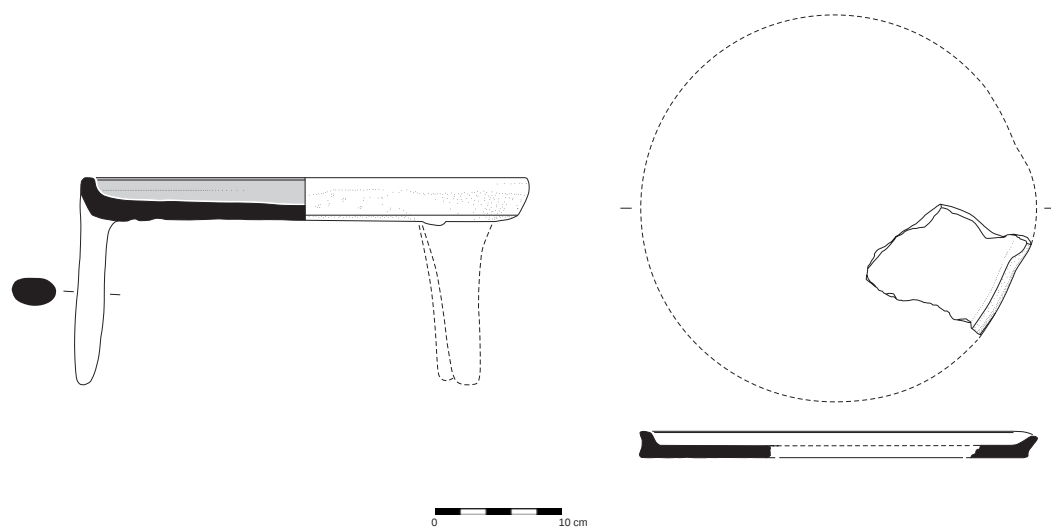


b.



Pl. 9 — Space 24. MM IIIA deposit. Coarse plain ware. a. ovoid tripod cooking pots; b. broad and shallow tripod cooking pots (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



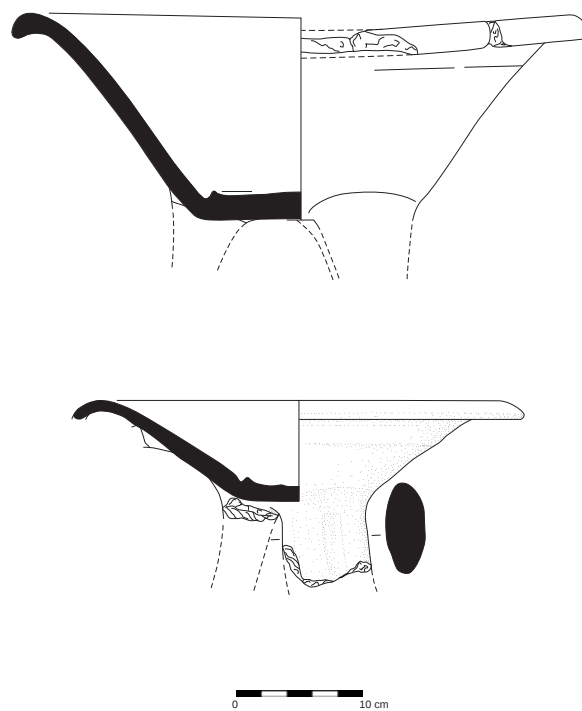


C.

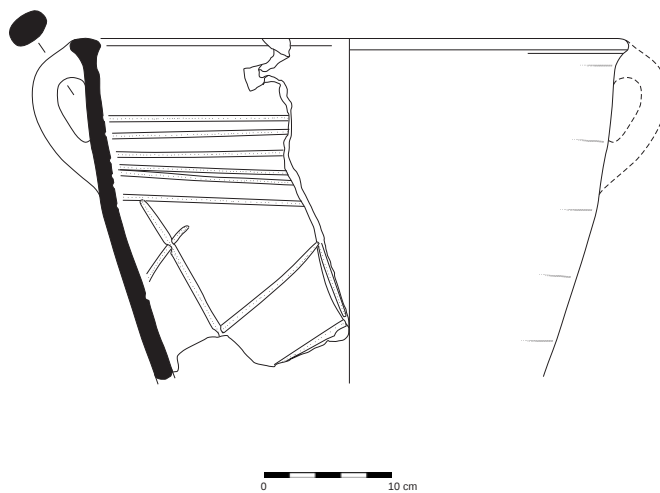
Pl. 10 — Space 24. MM IIIA deposit. Coarse plain ware. a. discoid cooking dishes (type A); b. ovoid trapezoidal-spouted cooking dishes (type B); c. (tripod) cooking trays (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



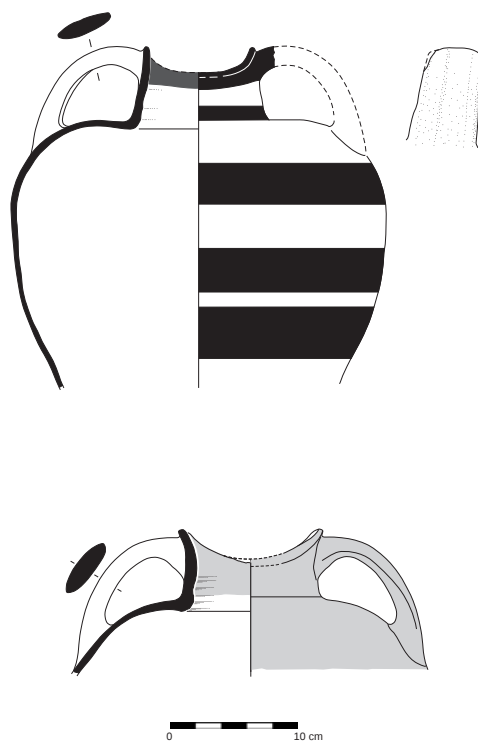
Pl. 11 — Space 24. MM IIIA deposit. Coarse plain ware. Conical bowls (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



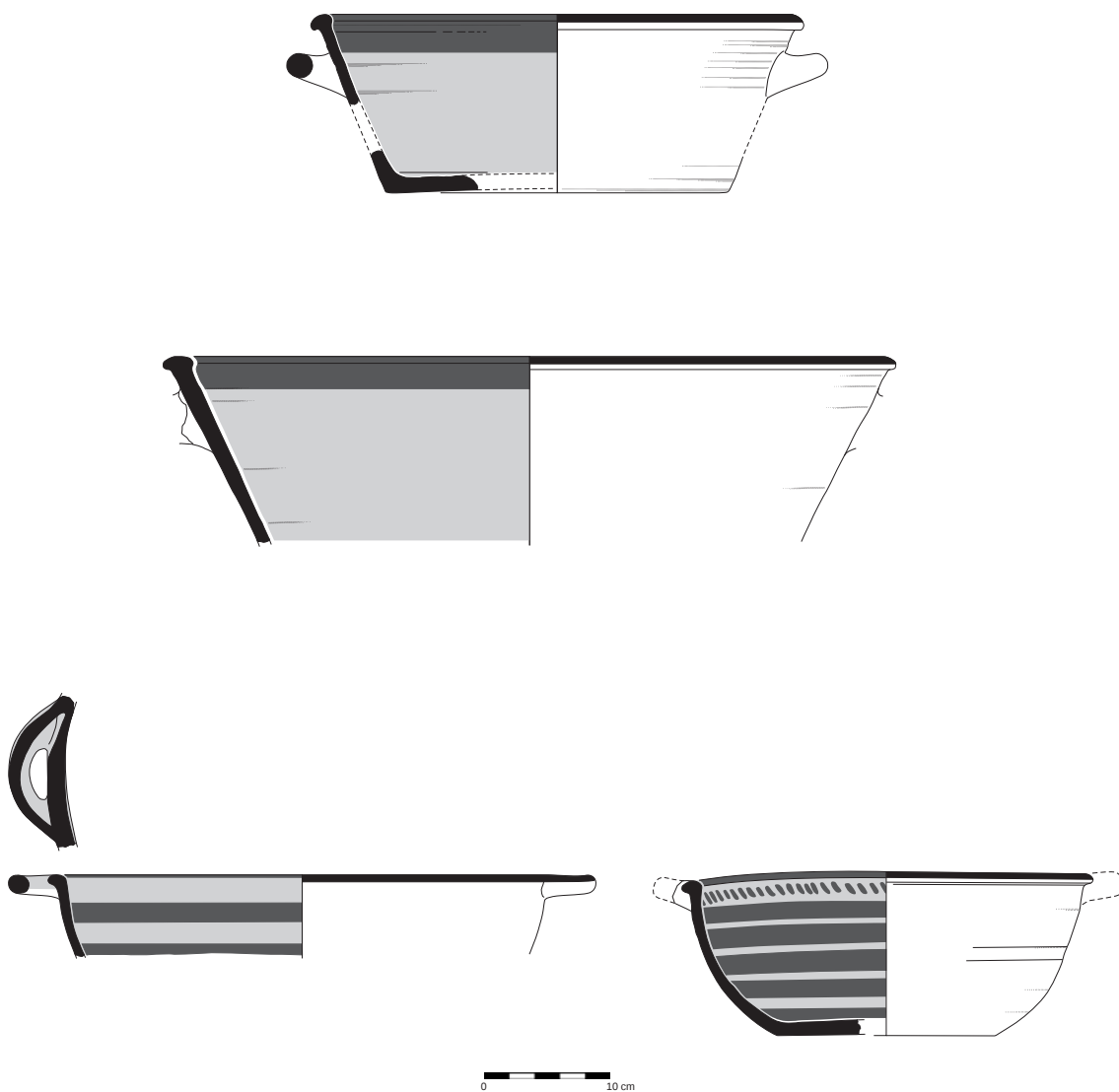
Pl. 12 — Space 24. MM IIIA deposit. Coarse plain ware. Tripod flaring bowls (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



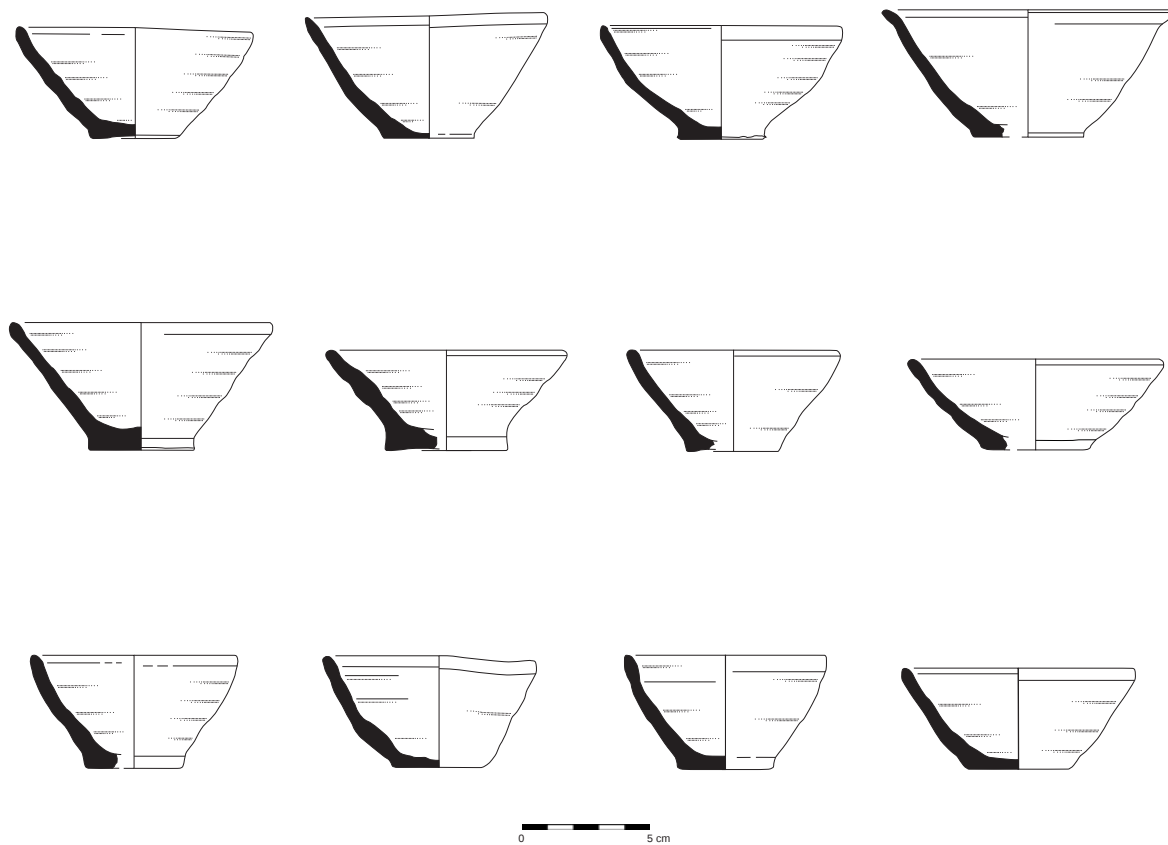
Pl. 13 — Space 24. MM IIIA deposit. Coarse plain ware. Beehive
(photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



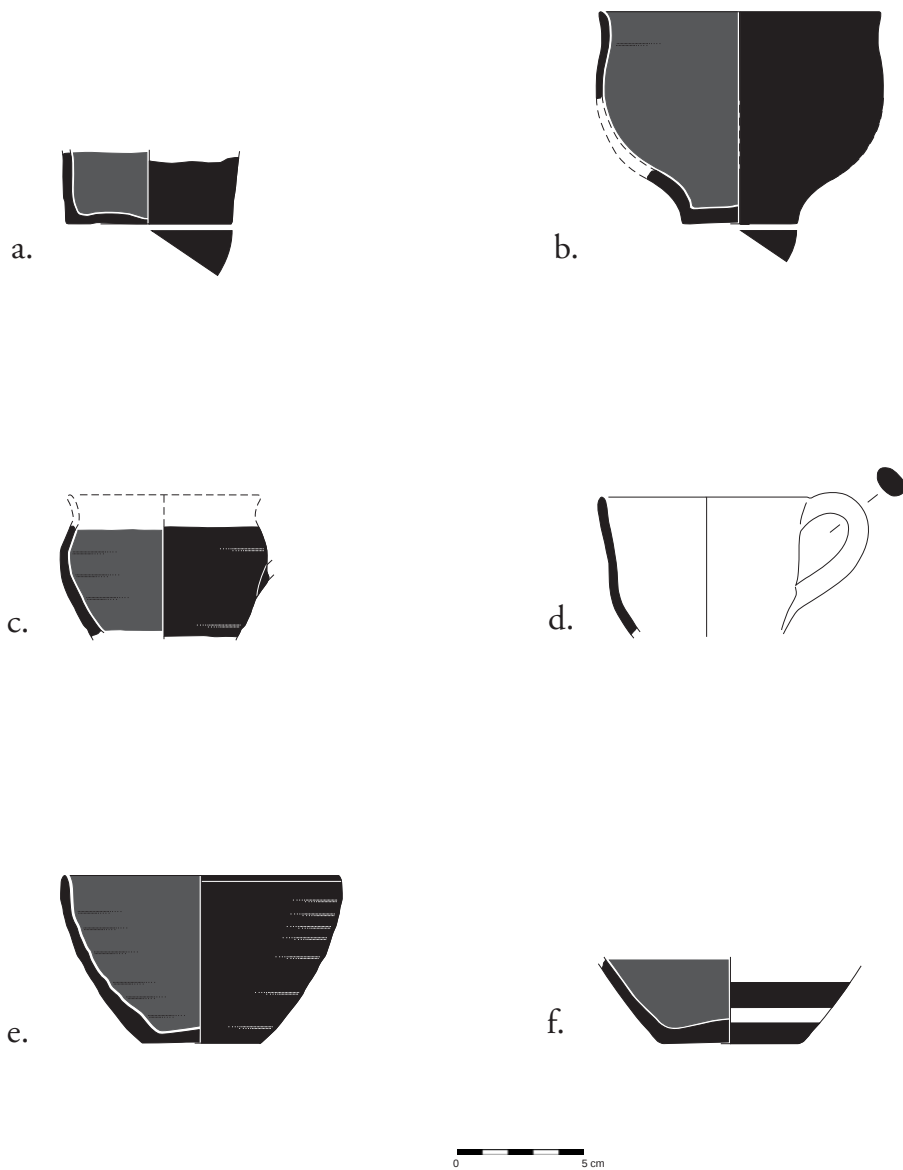
Pl. 14 — Space 24. MM IIIA deposit. Coarse painted ware. Oval-mouthed and thin-walled amphorae (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



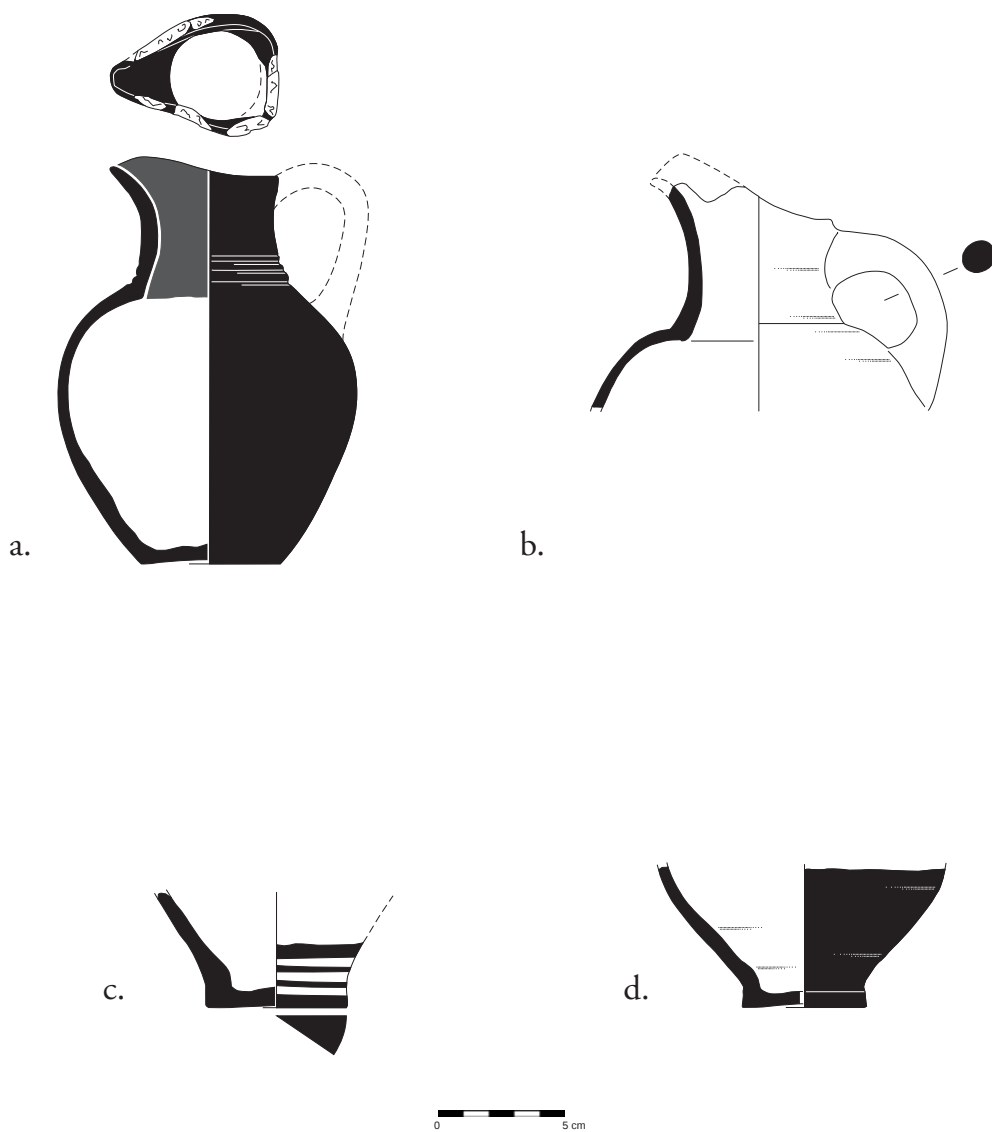
Pl. 15 — Space 24. MM IIIA deposit. Coarse painted ware. Short ledge-rimmed bowls and horizontal-handled bowls, conical or rounded in profile (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



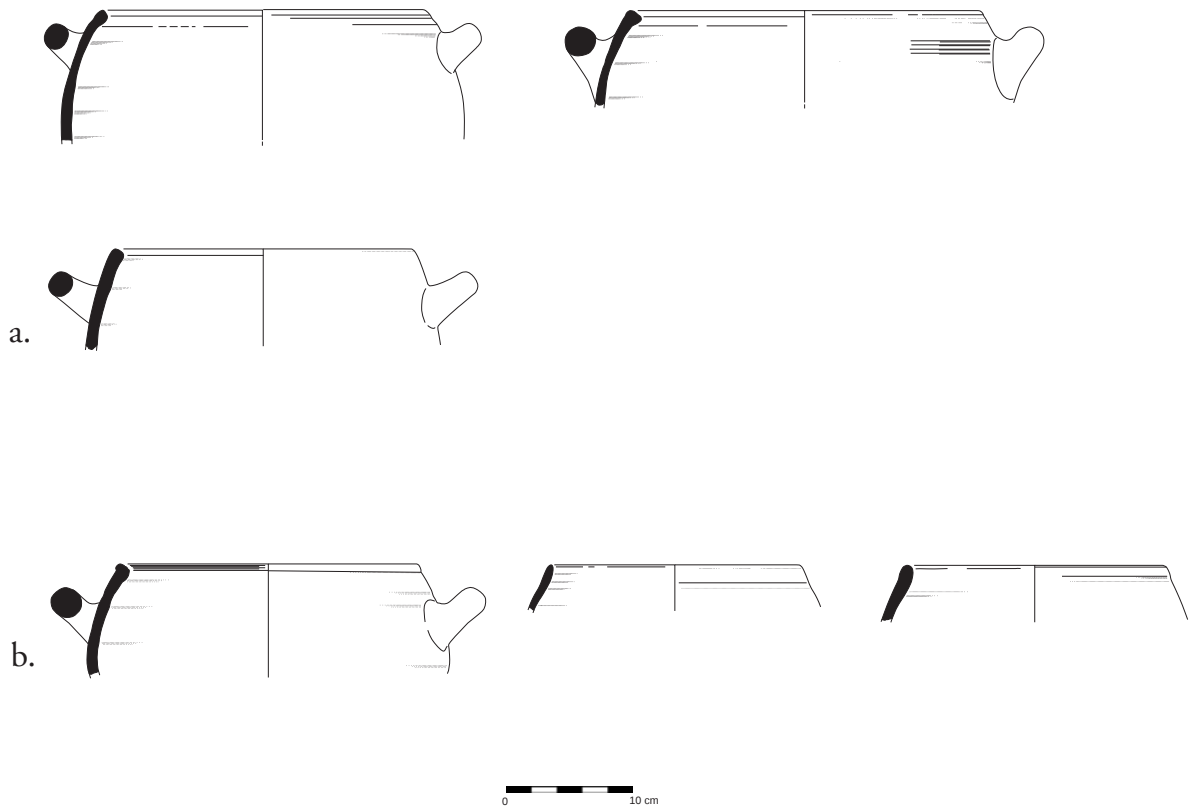
Pl. 16 — Pit 1. MM IIIB deposit. Handleless cups (B. Konnemann; © EFA).



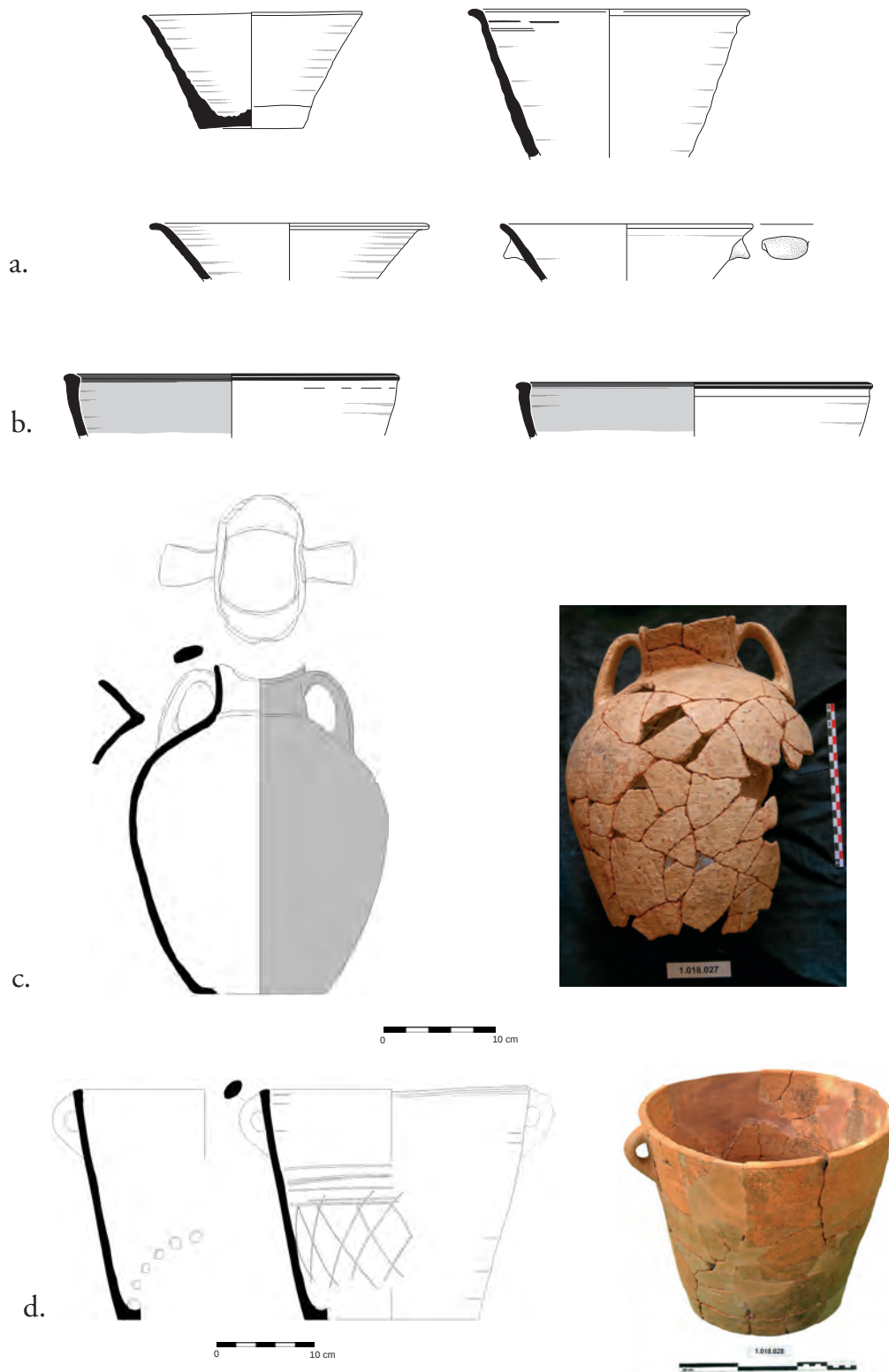
Pl. 17 — Pit 1. MM IIIB deposit. a. straight-sided cup; b.–c. S-profile cups; d. bell-shaped cup; e. hemispherical bowl; f. “in-and-out bowl” (B. Konnemann; © EFA).



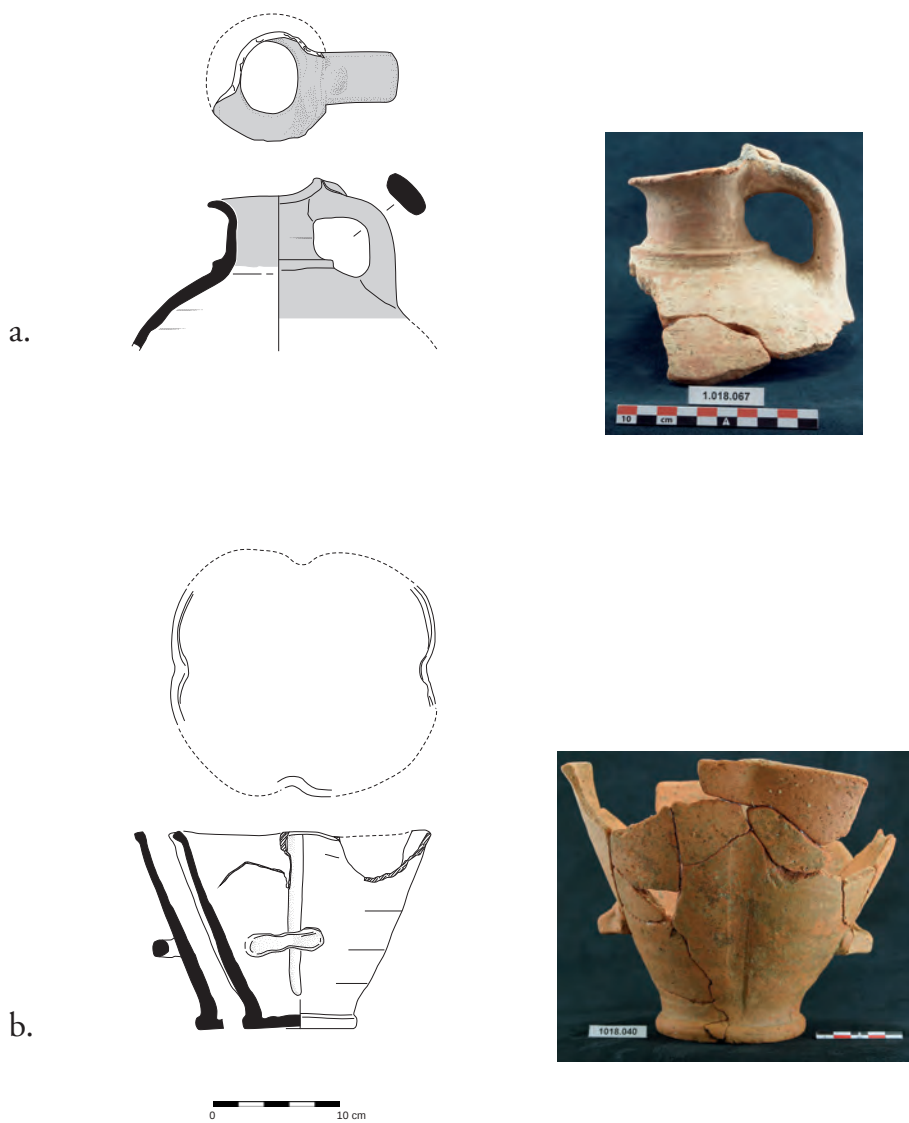
Pl. 18 — Pit 1. MM IIIB deposit. a.–b. wide-based ovoid beak-spouted jugs; c.–d. narrow-based piriform jugs (B. Konnemann; © EFA).



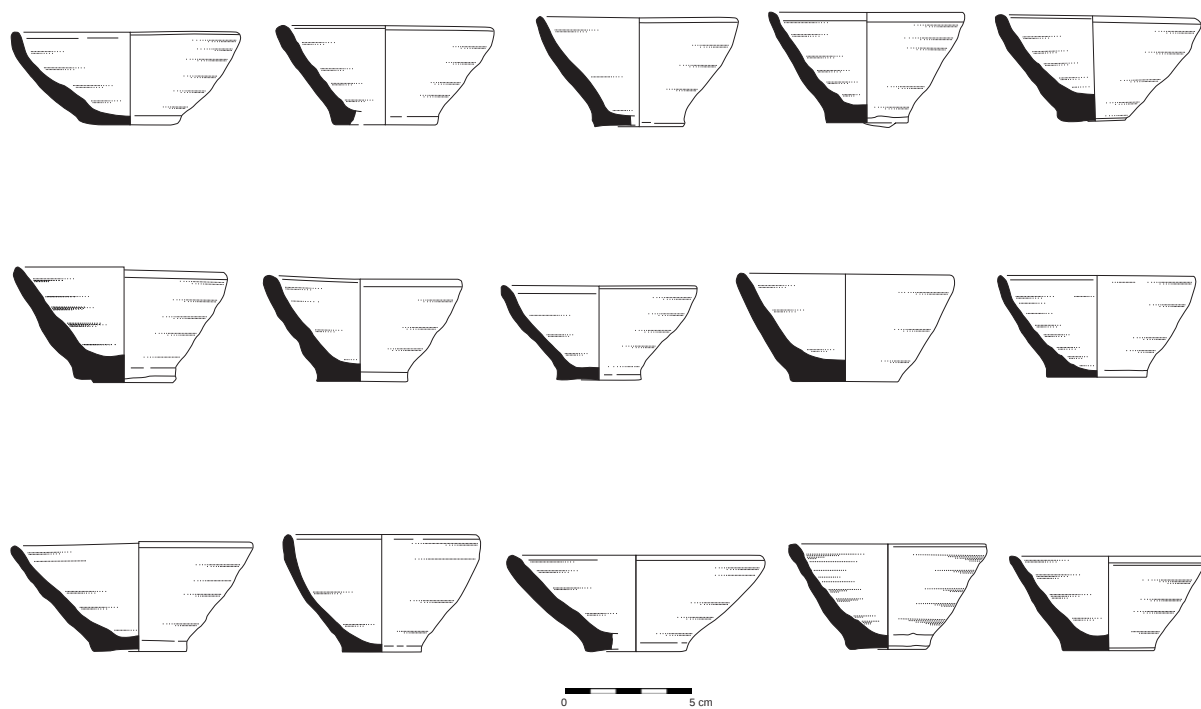
Pl. 19 — Pit 1. MM IIIB deposit. Ovoid wide-mouthed jars and cooking pots with: a. an incurving rim; b. a short-marked or straight rim (B. Konnemann; © EFA).



Pl. 20 — Pit 1. MM IIIB deposit. a. conical handleless bowls, various sizes and profiles; b. ledge-rimmed and horizontal-handled rounded bowls; c. oval-mouthed amphora; d. beehive (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



Pl. 21 — Pit 1. MM IIIB deposit. a. ewer; b. lekane (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



Pl. 22 — Space 1B. LM IA early deposit. Fine plain ware. Handleless conical cups (B. Konnemann; © EFA).



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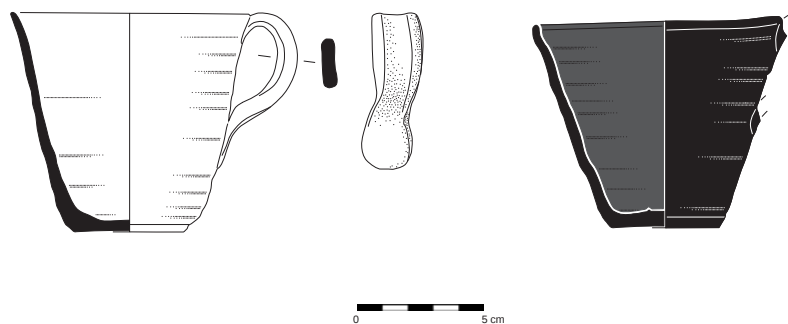
Pl. 23 — Space 1B. LM IA early deposit. Fine plain ware. Handleless conical cup in the gritty orange fabric group with a characteristic grey-blue core (Chr. Gaston; © EFA).



Pl. 24 — Space 1B. LM IA early deposit. Fine plain ware. Handleless conical cup in fine light buff fabric group (Chr. Gaston; © EFA).



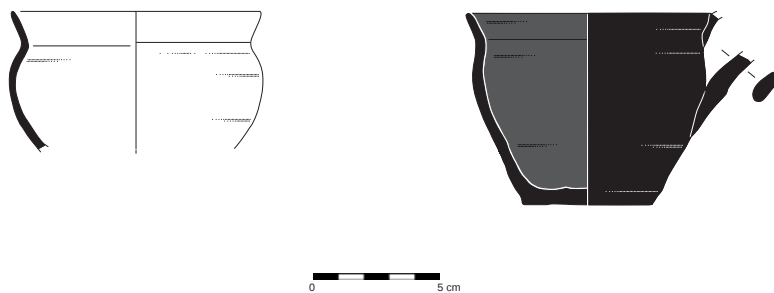
Pl. 25 — Space 1B. LM IA early deposit. Handleless conical cups with a. interior rilling and coil-seams invisible; b. interior rilling and coil-seams visible (Chr. Gaston; © EFA).



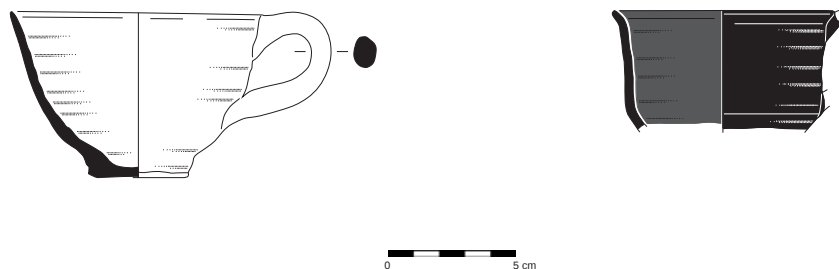
Pl. 26 — Space 1B. LM IA early deposit. Fine plain and monochrome painted ware. Straight-sided cups (B. Konnemann; © EFA).



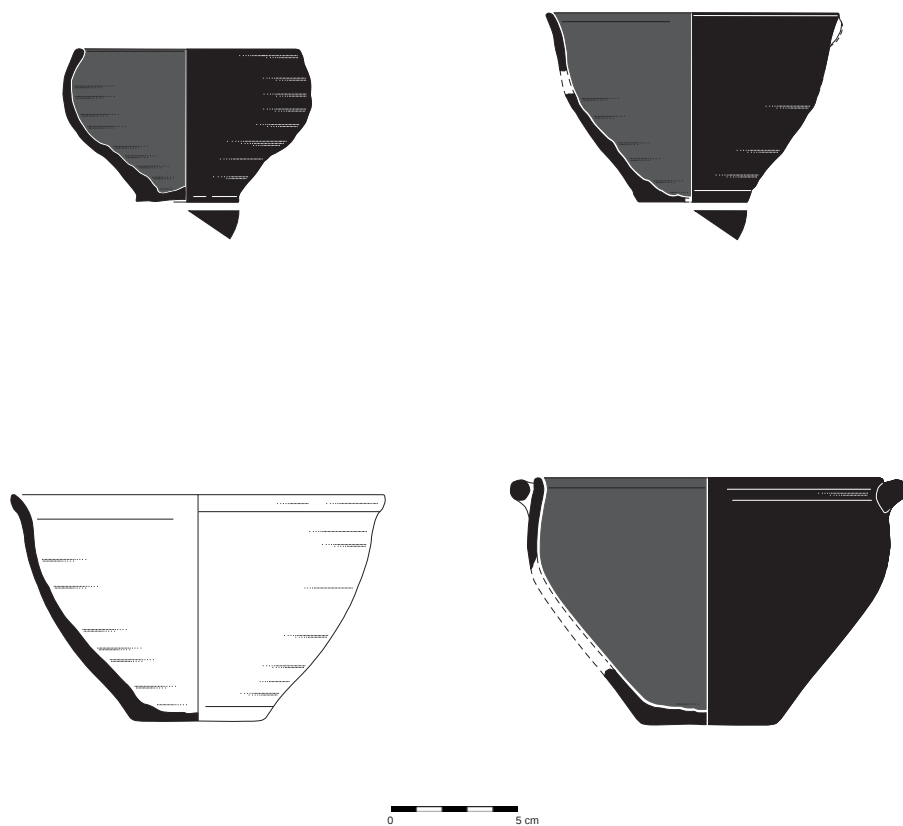
Pl. 27 — Space 1B. LM IA early deposit. Fine plain, monochrome and dip-painted ware. Convex cups (B. Konnemann; © EFA).



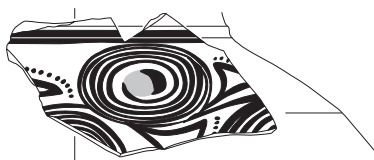
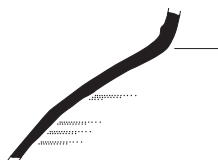
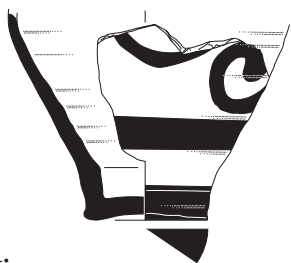
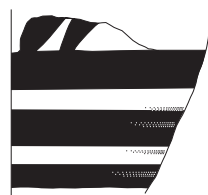
Pl. 28 — Space 1B. LM IA early deposit. Fine plain and monochrome painted ware. S-profile cups (B. Konnemann; © EFA).



Pl. 29 — Space 1B. LM IA early deposit. Fine plain and monochrome painted ware. Bell-shaped cups (B. Konnemann; © EFA).

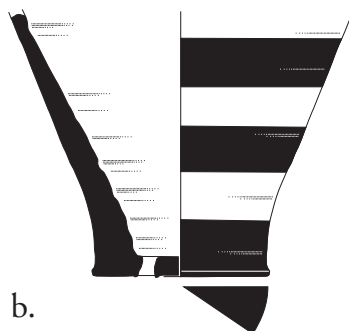


Pl. 30 — Space 1B. LM IA early deposit. Fine plain and monochrome painted ware. Bowls (B. Konnemann; © EFA).



a.

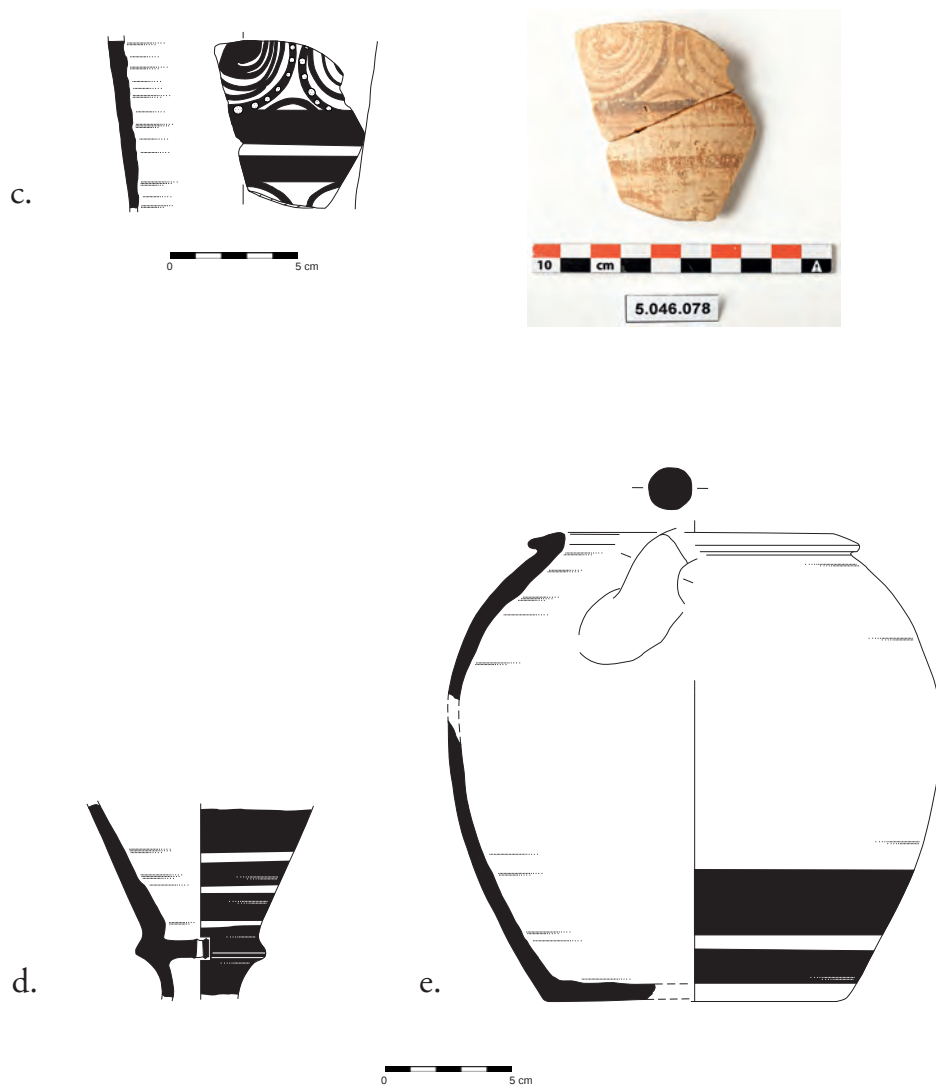
0 5 cm



0 5 cm



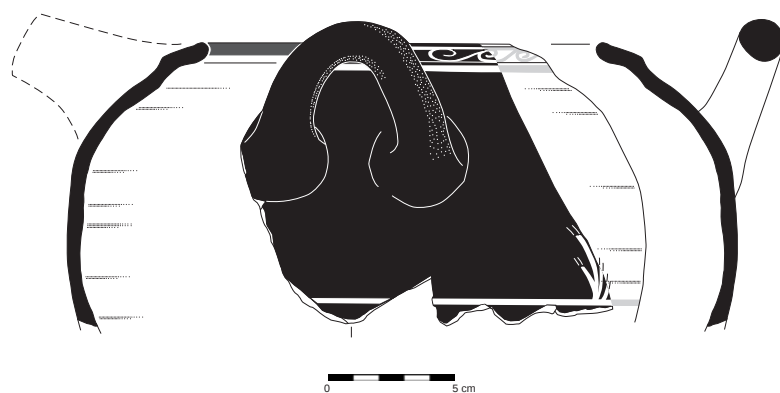
b.



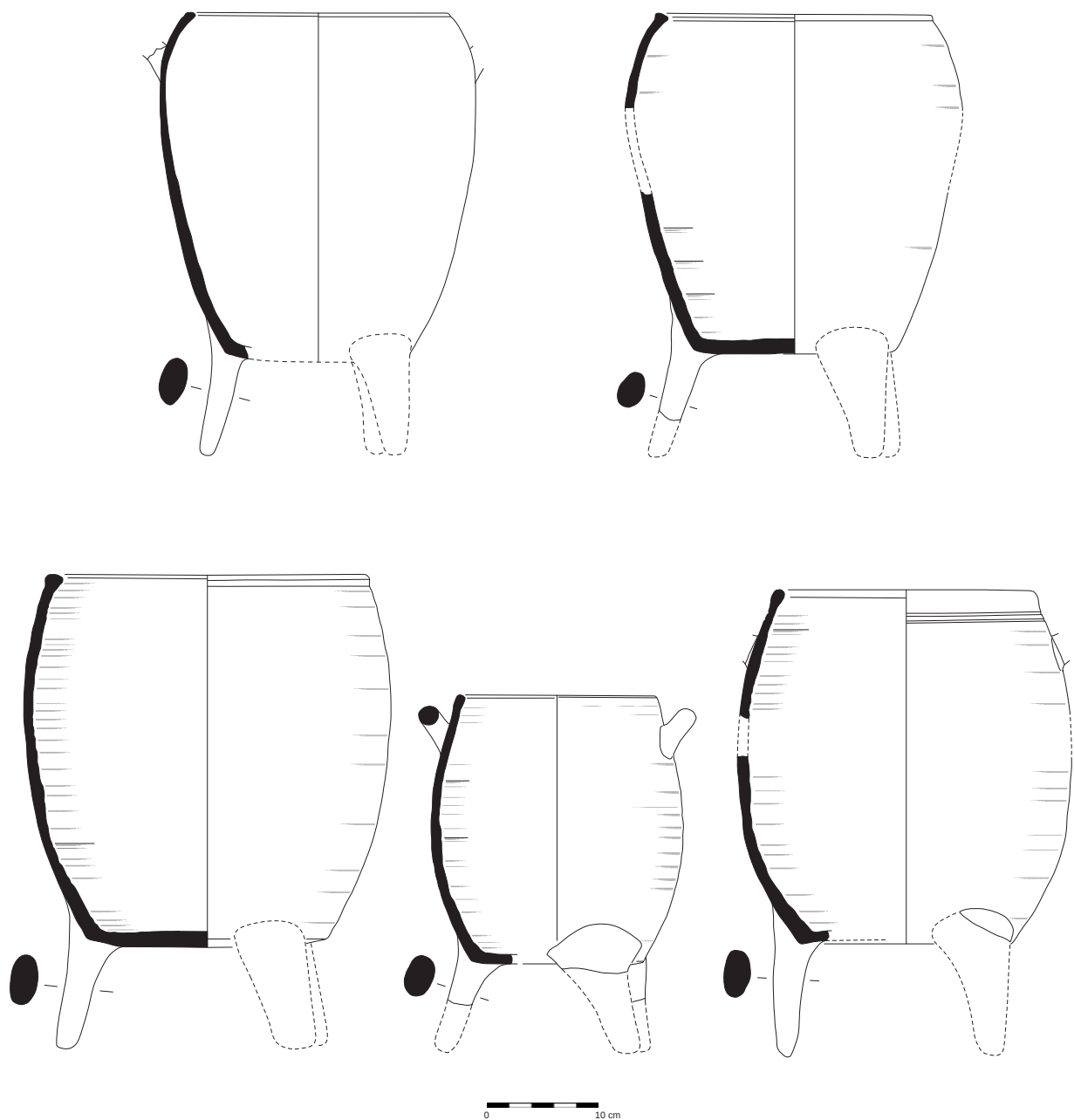
Pl. 31 — Space 1B. LM IA early deposit. Fine dark-on-light painted wares. a. medium-sized jugs; b. cup-rhyta; c. conical rhyton; d. chalice-like form; e. globular jar (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



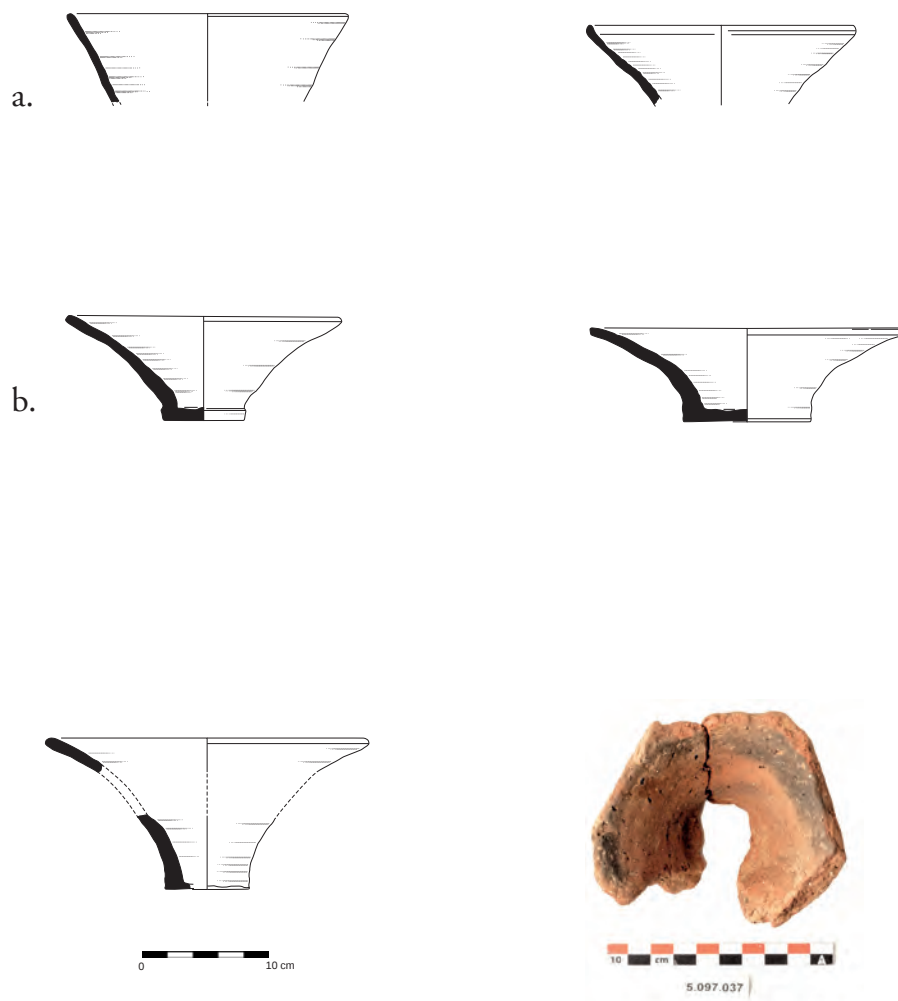
Pl. 32 —Space 1B. LM IA early deposit. “In-and-out bowl” in a fine dark-on-light lustrous painted ware (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



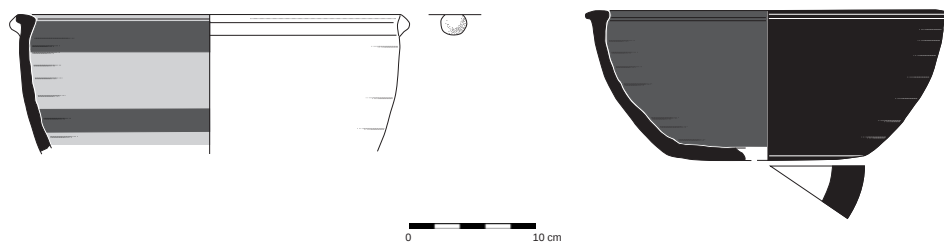
Pl. 33 — Space 1B. LM IA early deposit. Fine light-on-dark decorated bridge-spouted jar (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



Pl. 34 — Space 1B. LM IA early deposit. Coarse plain ware. Tripod cooking pots, various sizes and profiles (B. Konnemann; © EFA).



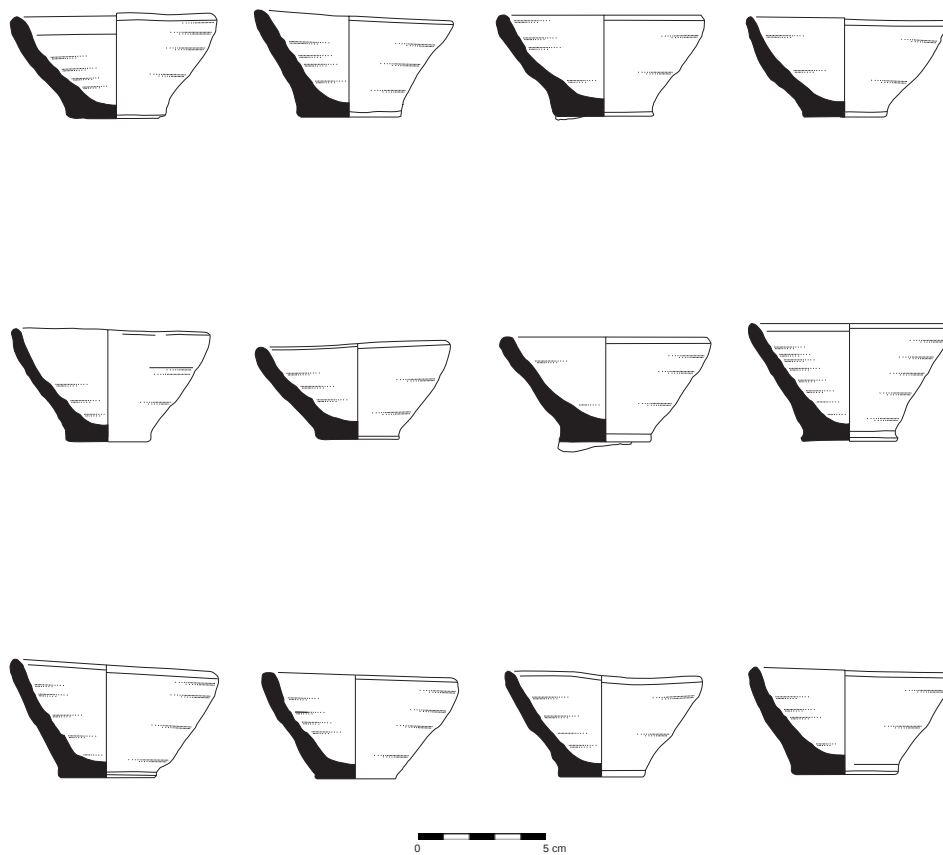
Pl. 35 — Space 1B. LM IA early deposit. Coarse plain ware. Conical bowls. a. conical profile; b. concave profile (B. Konnemann; © EFA).



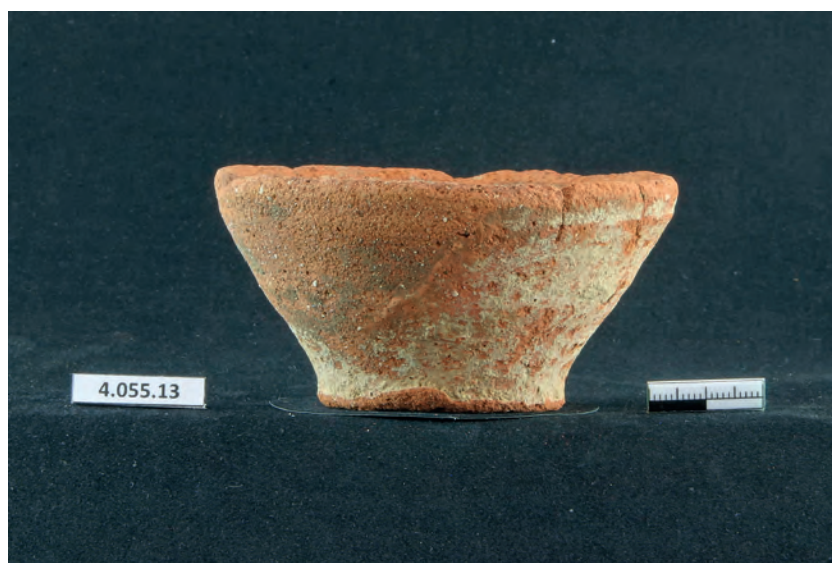
Pl. 36 — Space 1B. LM IA early deposit. Coarse painted ware. Short ledge-rimmed rounded bowls (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



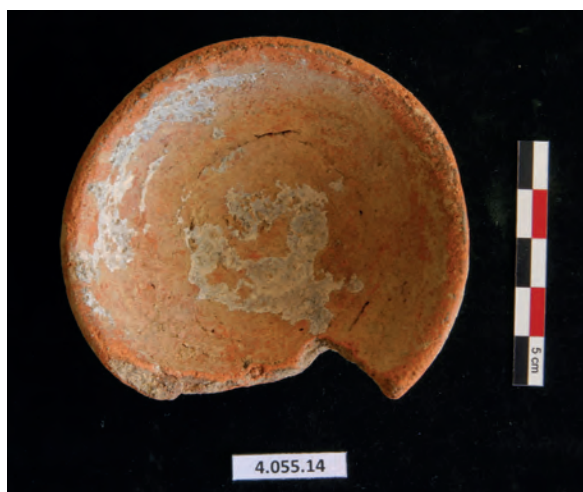
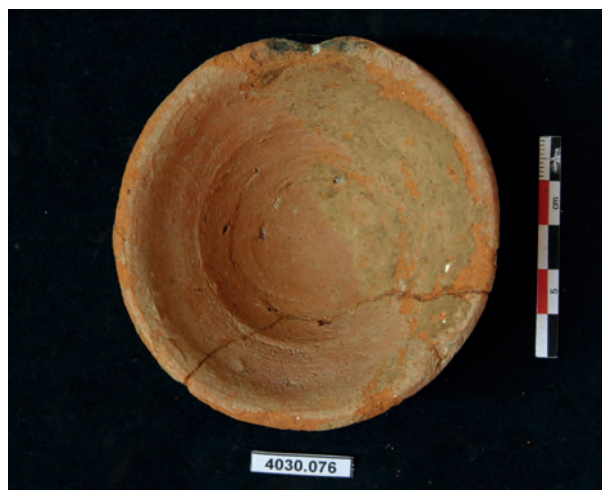
Pl. 37 — Space 1B. LM IA early deposit. Coarse painted ware. Oval-mouthed amphorae (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



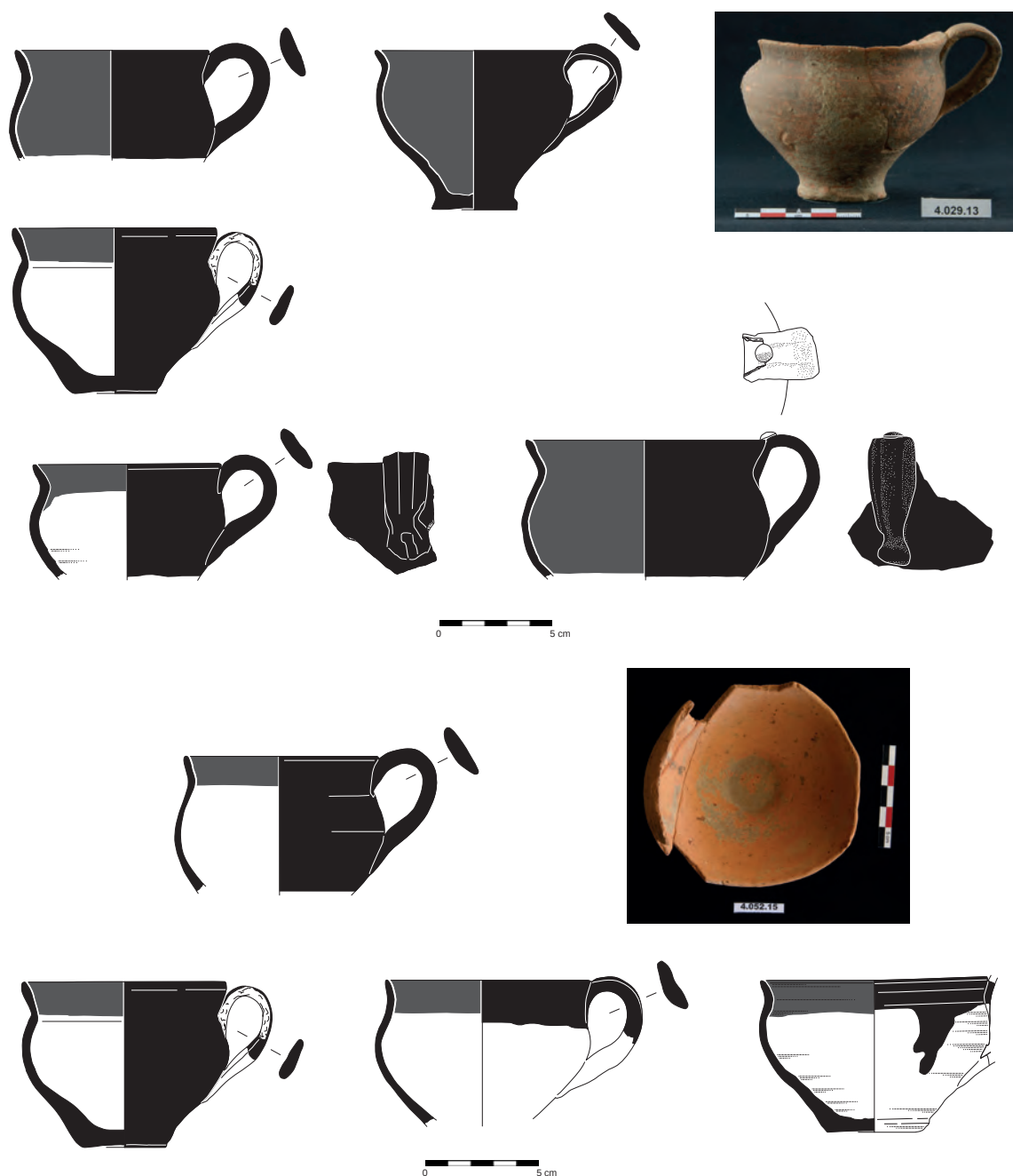
Pl. 38 — Spaces 10, 11, 13. LM IA mature deposit. Handleless conical cups (B. Konnemann; © EFA).



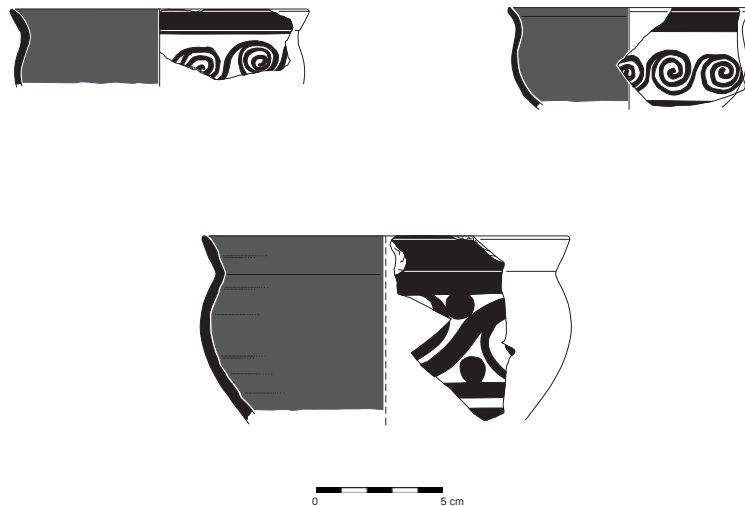
Pl. 39 — Spaces 10, 11, 13. LM IA mature deposit. Handleless conical cups in the gritty dark red fabric (Chr. Gaston; © EFA).



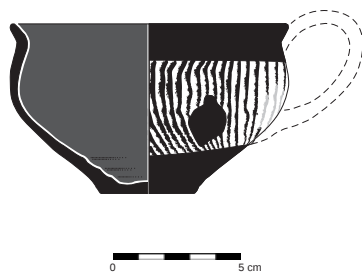
Pl. 40 — Spaces 10, 11, 13. LM IA mature deposit. Handleless conical cups with visible coil seams and medium rilling (Chr. Gaston; © EFA).



Pl. 41 — Spaces 10, 11, 13. LM IA mature deposit. S-profile cups in semi-fine reddish-orange fabrics, monochrome or rim-banded painted decoration (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



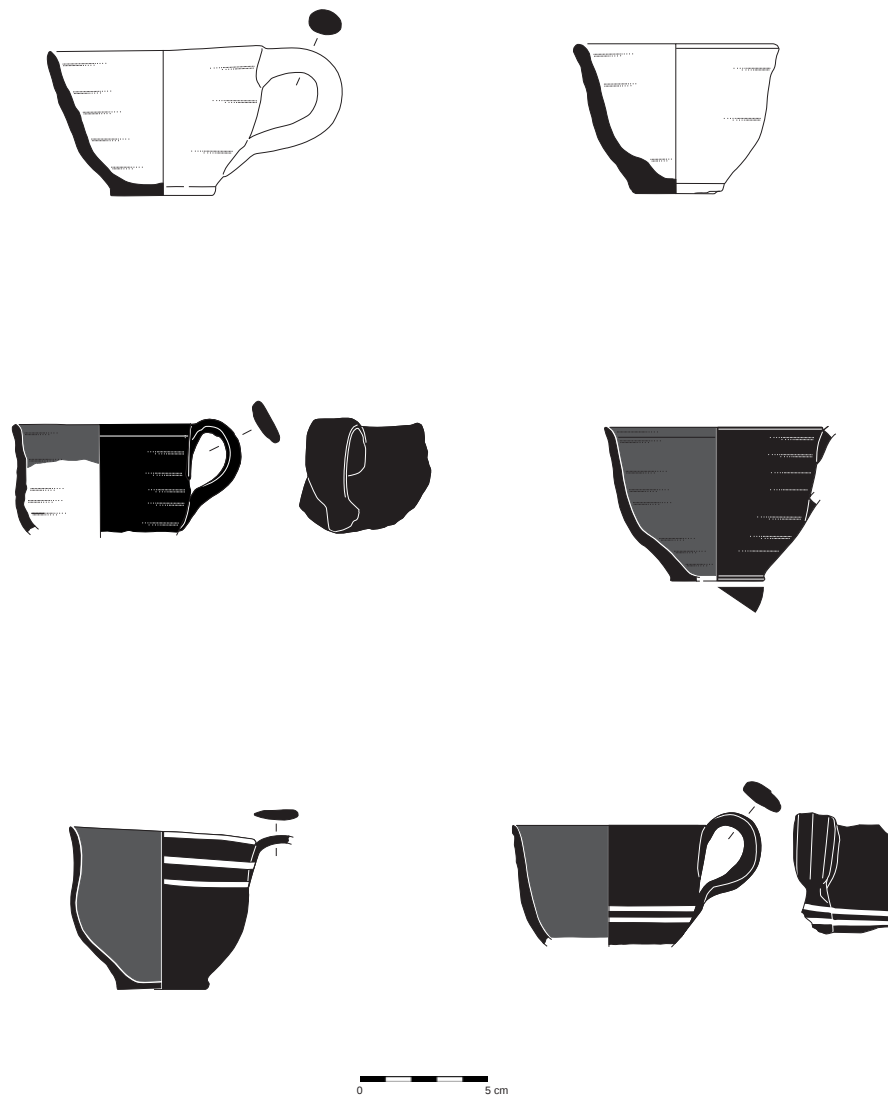
Pl. 42 — Spaces 10, 11, 13. LM IA mature deposit. S-profile cups in fine light buff fabrics, dark-on-light non-lustrous painted decoration (B. Konnemann; © EFA).



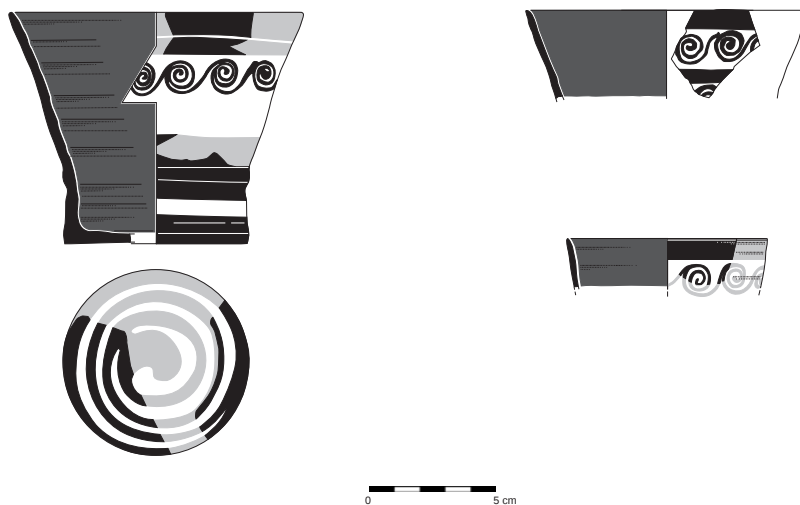
Pl. 43 — Space 10. LM IA mature deposit. S-profile cup in a fine hard-fired pinkish-buff fabric, dark-on-light lustrous painted decoration, thin ripple (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



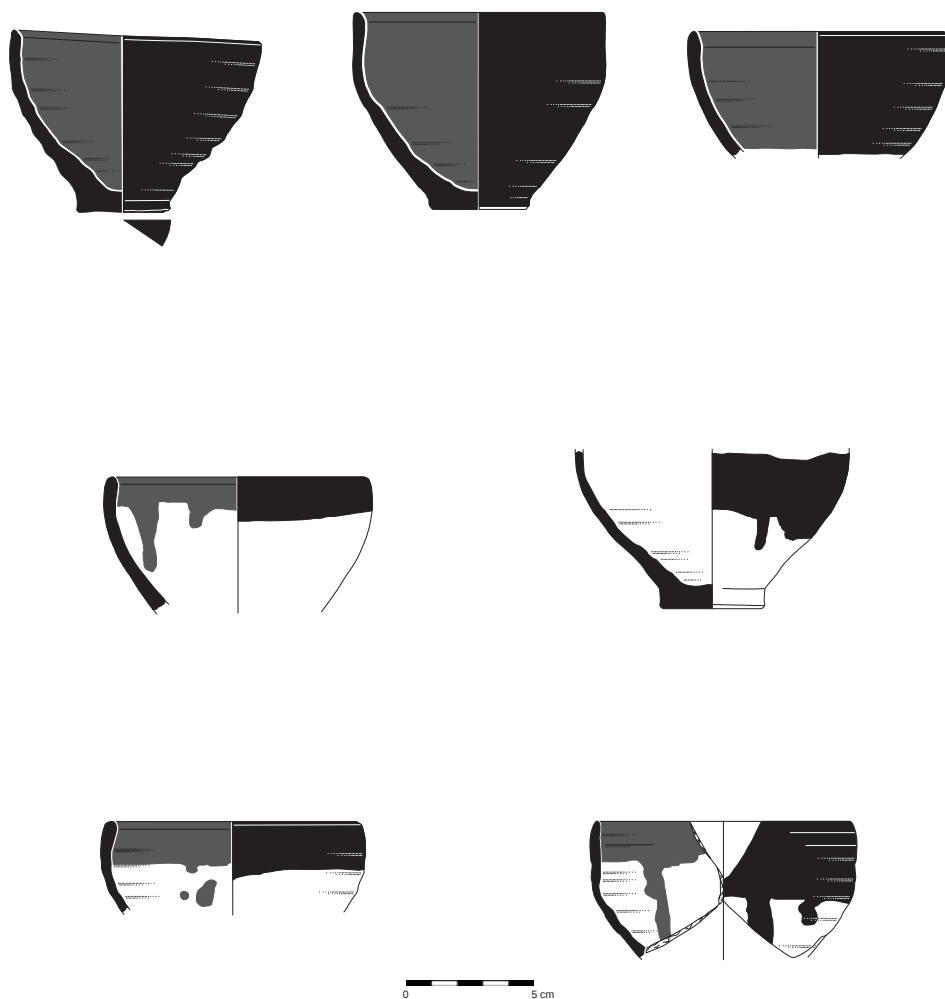
Pl. 44 — Spaces 10, 11, 13. LM IA mature deposit. Convex cups (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



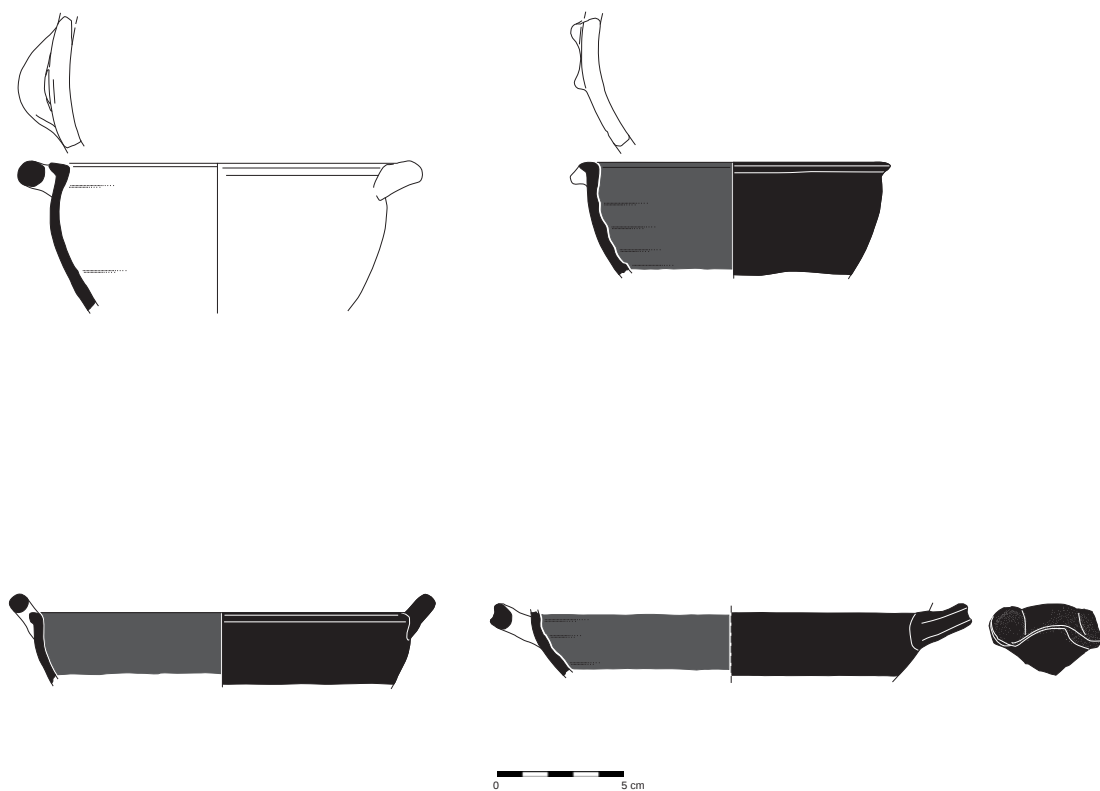
Pl. 45 — Spaces 10, 11, 13. LM IA mature deposit. Bell-shaped cups (B. Konnemann; © EFA).



Pl. 46 — Spaces 10, 11, 13. LM IA mature deposit. Vapheio cups decorated with the “little spiral painter” motive (B. Konnemann; © EFA).



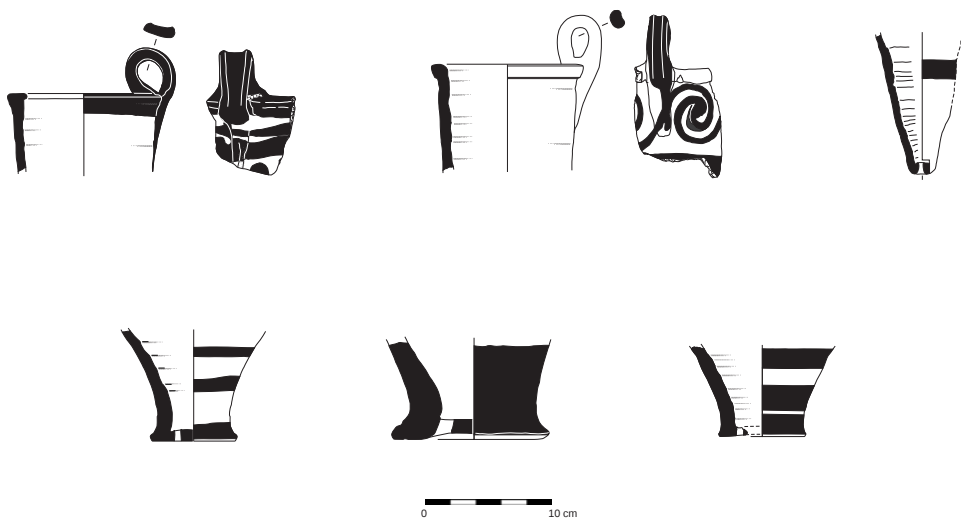
Pl. 47 — Spaces 10, 11, 13. LM IA mature deposit. Hemispherical bowls, monochrome or rim-banded painted decoration (B. Konnemann; © EFA).



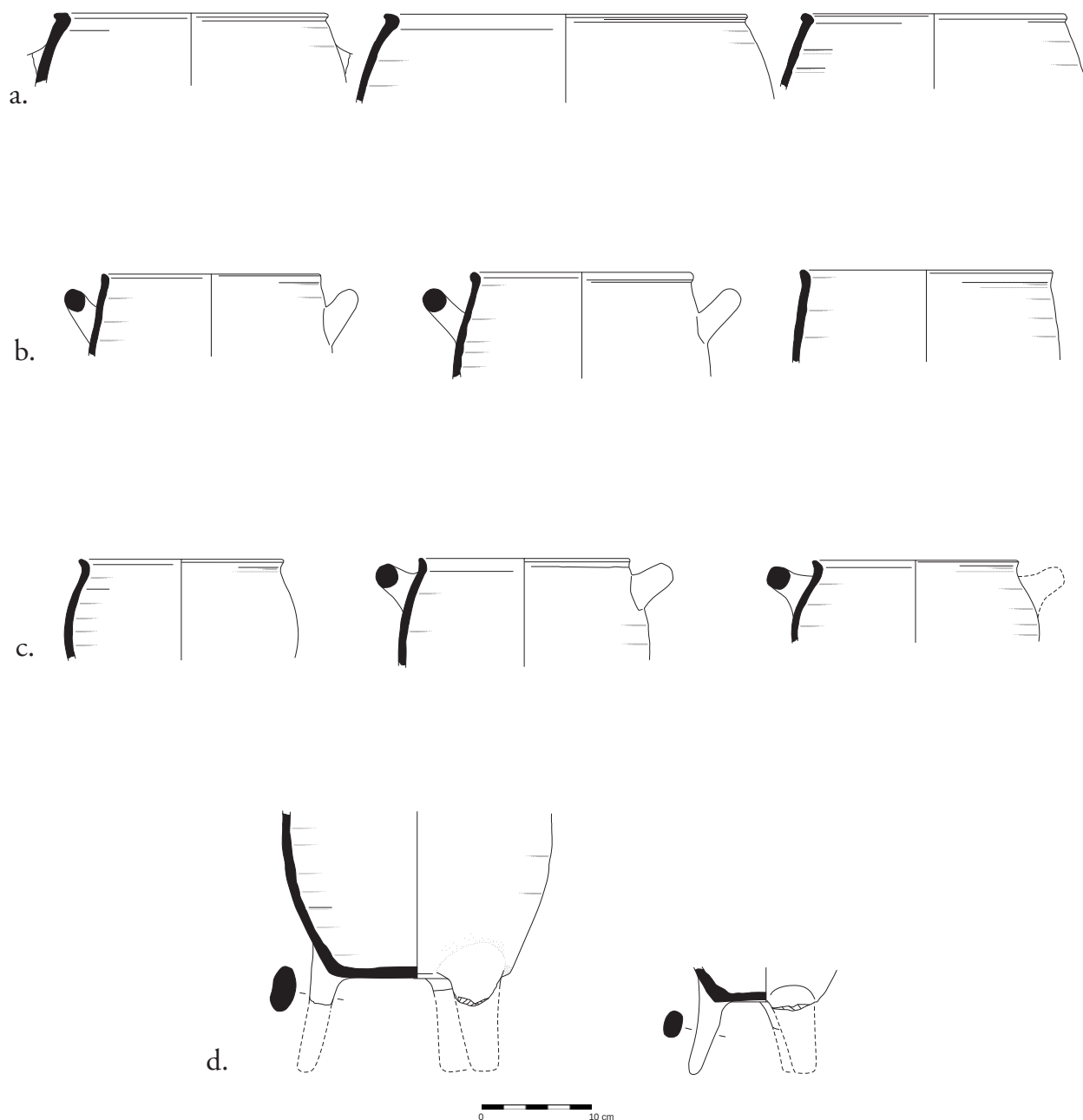
Pl. 48 — Spaces 10, 11, 13. LM IA mature deposit. Horizontal-handled bowls (B. Konnemann; © EFA).



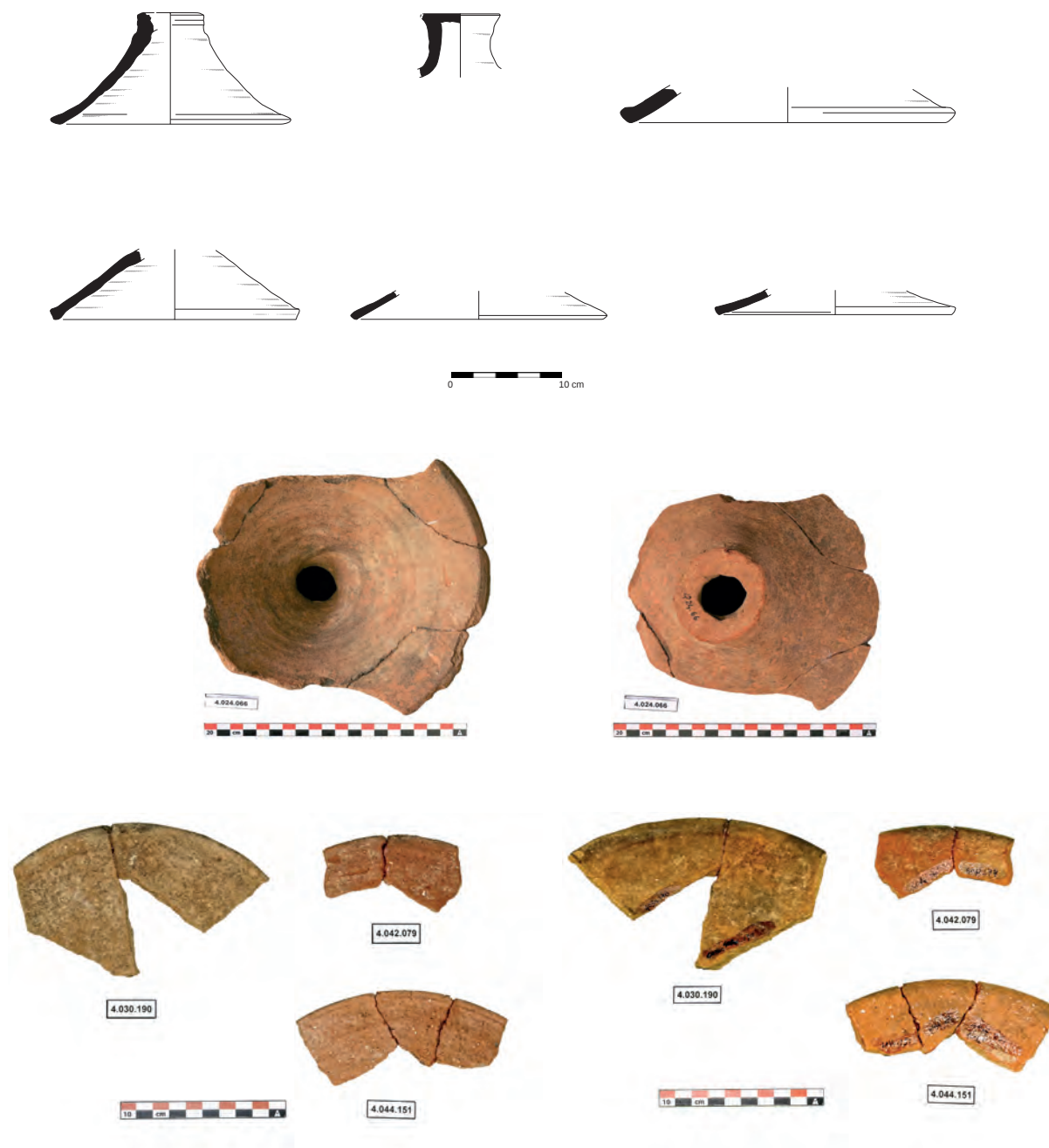
Pl. 49 — Spaces 10, 11, 13. LM IA mature deposit. Fine jugs and closed shapes; dark-on-light non-lustrous red to brown painted decoration (B. Konnemann; © EFA).



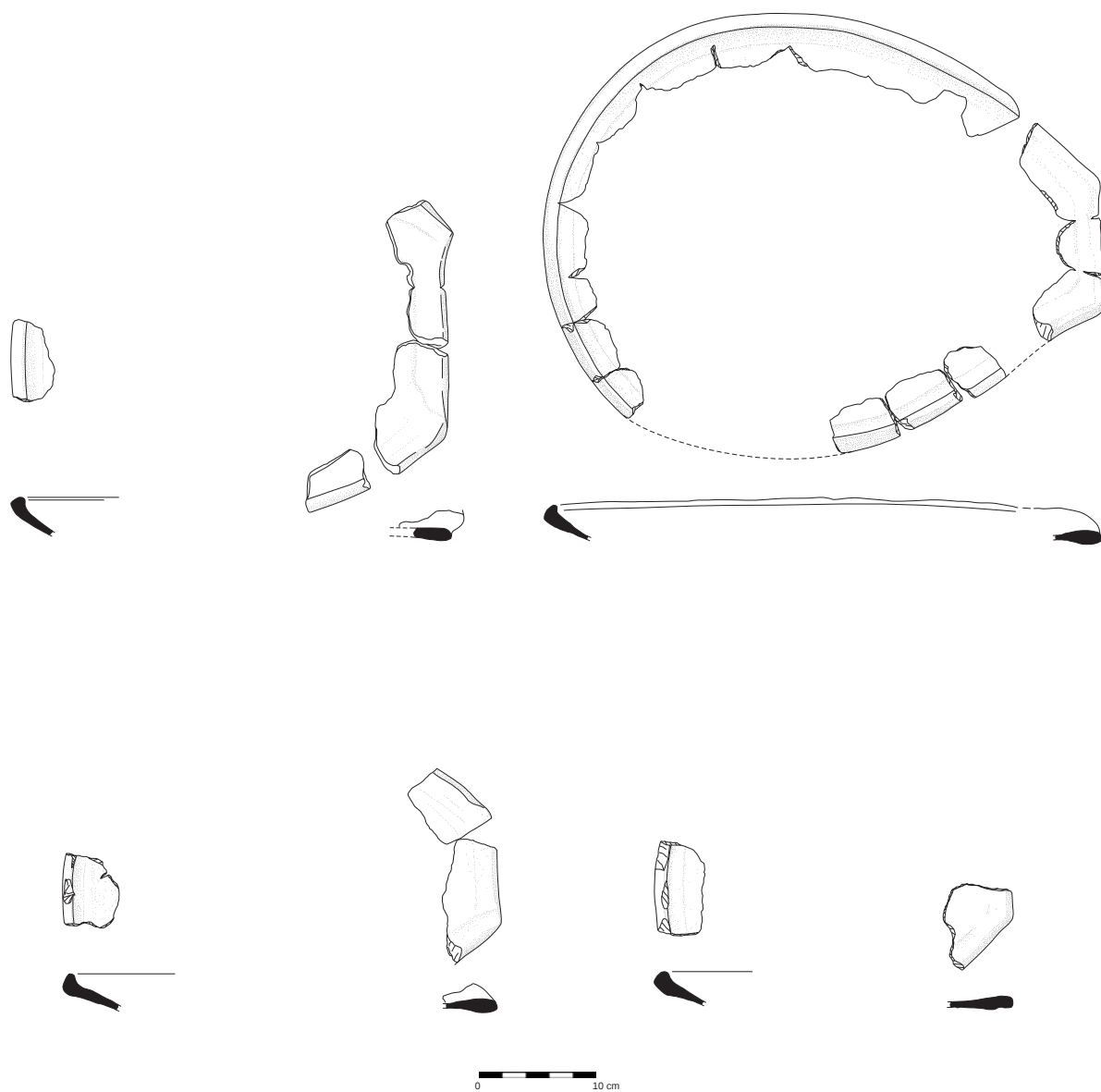
Pl. 50 — Spaces 10, 11, 13. LM IA mature deposit. Conical rhyta and cup-rhyta (B. Konnemann; © EFA).



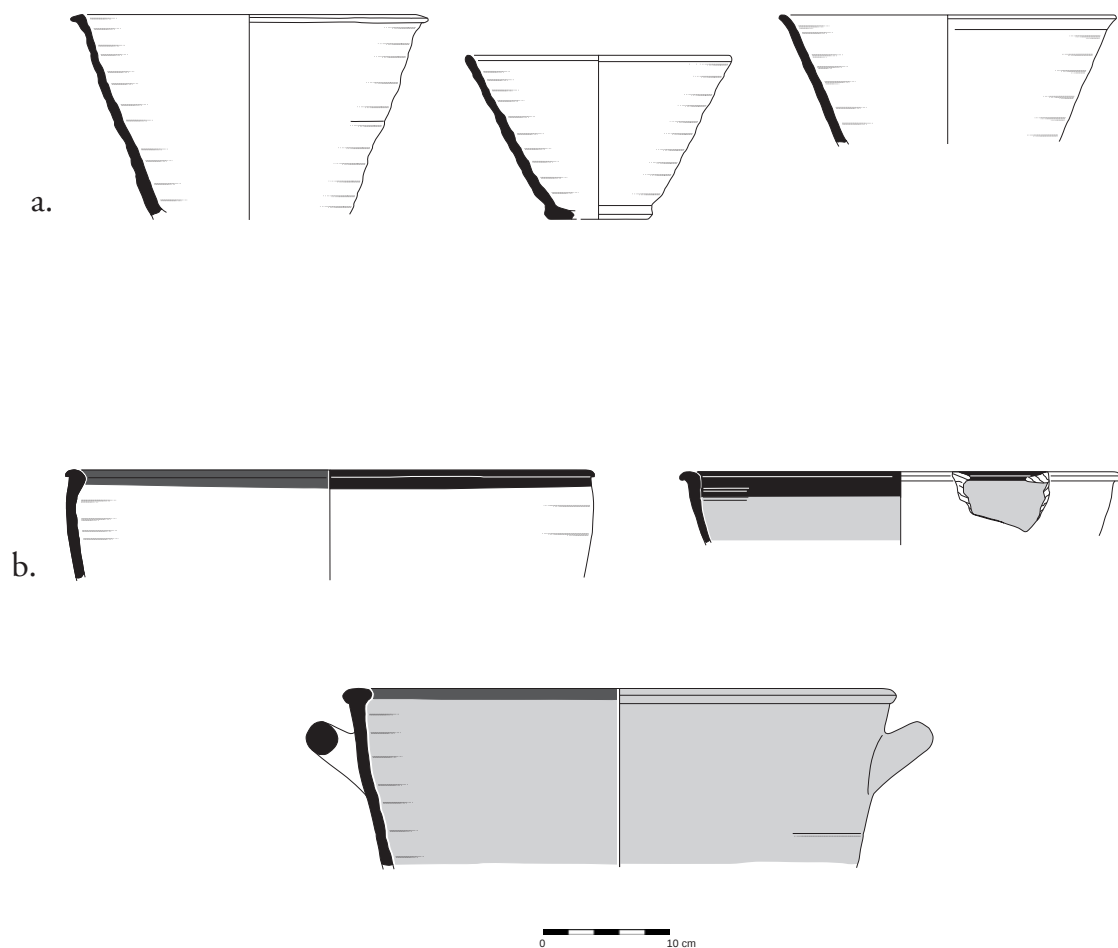
Pl. 51 — Spaces 10, 11, 13. LM IA mature deposit. Middle-sized jars and (tripod) cooking pots. a. wide-mouthed jars with a marked and rolled rim; b. wide-mouthed jars with a straight simple rim; c. narrow-mouthed, globular jars; d. feet from tripod cooking pots (B. Konnemann; © EFA).



Pl. 52 — Spaces 10, 11, 13. LM IA mature deposit. Cooking lids (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



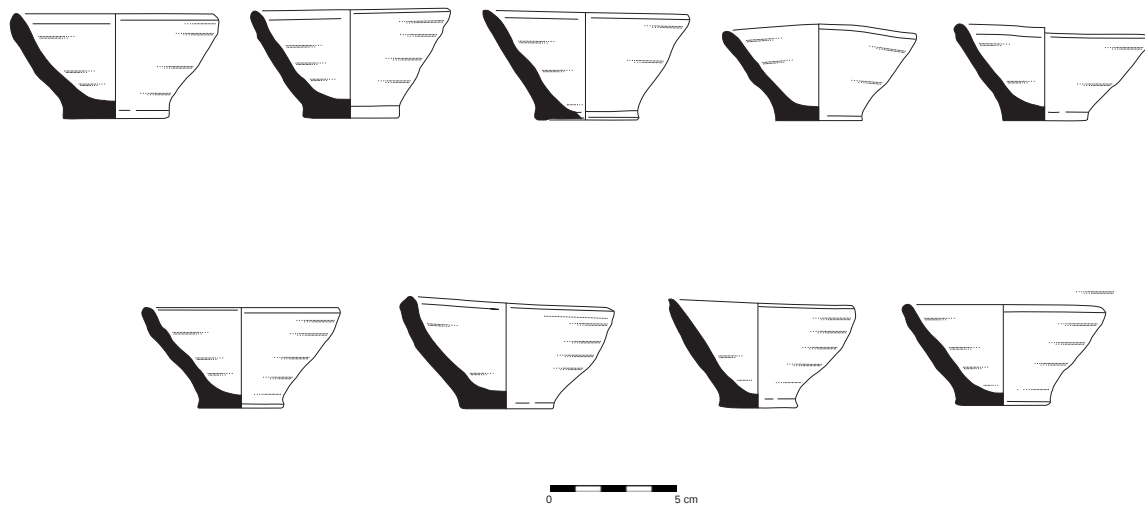
Pl. 53 — Spaces 10, 11, 13. LM IA mature deposit. Cooking dishes (B. Konnemann; © EFA).



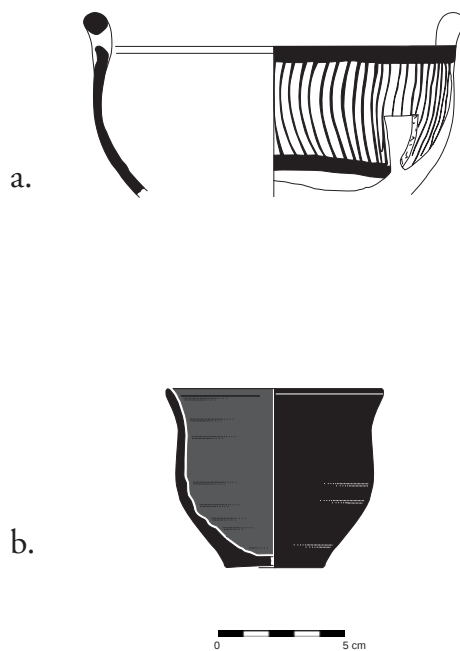
Pl. 54 — Spaces 10, 11, 13. LM IA mature deposit. a. plain conical bowls; b. dark-on-light painted ledge-rimmed bowls (B. Konnemann; © EFA).



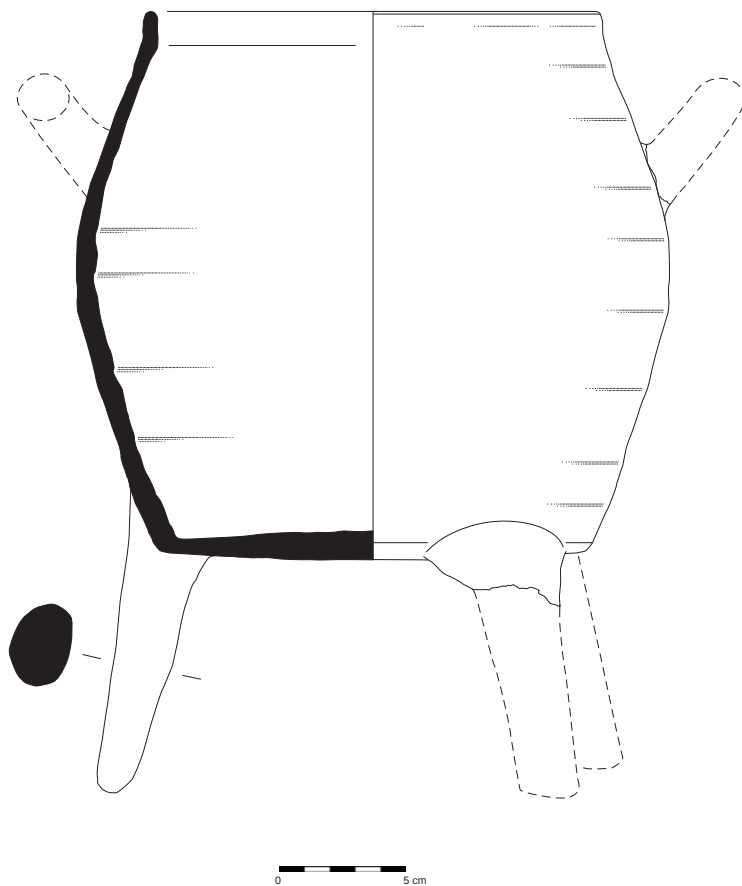
Pl. 55 — Spaces 10, 11, 13. LM IA mature deposit. Large container (piriform jar?), dark-on-light painted ware (B. Konnemann; © EFA).



Pl. 56 — Space 16. LM IA final deposit. Handleless conical cups (photo: Chr. Gaston; drawing: B. Konnemann; © EFA).



Pl. 57 — Space 16. LM IA final deposit. a. rounded bowl with small basket handles, thin ripple; b. bell-shaped cup, monochrome (B. Konnemann; © EFA).



Pl. 58 — Space 16. LM IA final deposit. Tripod cooking pot (B. Konnemann; © EFA).

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