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THE NEOPALATIAL POTTERY  
FROM THE CERAMIC  
WORKSHOP AT ZOMINTHOS

And Its Implications for Minoan  
Relative Chronology



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# **The Neopalatial Pottery from the Ceramic Workshop at Zominthos**

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**and its implications for Minoan Relative Chronology**

## **Foreword**

The limited amount of securely datable archaeological deposits on Minoan Crete poses one of the crucial problems of Neopalatial relative chronology. The new finds at Zominthos however, seem to resemble the exception to that rule. The ceramic assemblage found in the area of the pottery workshop derives from a sealed deposit and is thus of paramount chronological significance. All, or at least most of the vases probably belong to the final series of pottery production at Zominthos which facilitates the exact dating of the destruction of the “Central Building” and may offer a chronologically fixed point of time for the use of LM I style pottery.

The study and analysis of the assemblage, especially its shapes and modes of decoration, raised questions concerning the relative chronology of Neopalatial Crete as a whole, and the interconnection, or respectively distinction, between the stylistic phases of MM III to LM IB in particular. The material from Zominthos may hopefully contribute to the continuing discussion and refinement of chronological schemes as well as the understanding of regional characteristics and island-wide interrelations in Late Minoan Crete.

The main focus of this PhD thesis, submitted to the Institut für Klassische Archäologie of the Ruprecht-Karls Universität at Heidelberg in 2008, lies on the analytical examination of the characteristics of ceramic vessels and how to excerpt chronological information from it. Thus, the pottery from Zominthos forms the core and basis of this study and of the further reflections uttered in the following chapters. I have tried to limit the introductory remarks and other excursions to a proportion that does not cause the topic and aim of this examination as a whole to become indistinct. All flaws and mistakes are of course entirely my own.

The recording and editing of the material took place as an integral part of the large-scale project “Zominthos 2004 – 2008. Reconstructing a Minoan Landscape” under the auspices of the Archaeological Society of Athens in collaboration with the Institute of Archaeology of the University of Heidelberg. It is directed by Prof. Yannis Sakellarakis (Athens) and Prof. Diamantis Panagiotopoulos (Heidelberg) to whom I am deeply indebted for entrusting me with the publication of this material. I cordially thank them for their continuous guidance and support. I further thank Efi Sapouna-Sakellarakis and Maria Bredaki for enabling me to work at the Apotheke of the Museum at Archanes, and the local guards for their sympathy and patience. I would also like to thank T. Brogan and E. Hallager for inviting me to participate in the LM IB workshop „*LM IB Pottery. Examining new evidence for relative chronology and regional differences.*” held at the Danish Institute at Athens in 2007. The discussion with the participants of the workshop, especially with K. Barnard, P.P. Betancourt, T. Brogan, E. Hallager, C. MacDonald, A. Kanta, C. Knappett, W.-D. Niemeier, L. Platon, A. van de Moortel, and P. Warren, was a great stimulus for the present study. K. Barnard and T. Brogan were so kind as to invite me to see the LM I pottery from Mochlos at the INSTAP Study Center for which I am very thankful as well. Finally, I would like to thank all the members of the Zominthos excavation teams from 2004 – 2007 and even more importantly, the kind people of Anogheia for their hospitality and friendship during the excavation seasons and beyond.

*Foreword*

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## Chapter I: Introduction

*“The island of Crete is one of the most famous in the world, and undoubtedly the most famous in the East; not only because of its extent but also because of the mildness of its climate, the fertility of its soil and the other benefits with which Nature has endowed it. It has always been famous and glorious.”<sup>1</sup>*

Zuanne Mocenigo, 1589

The Venetian nobleman’s description of the island, as he knew it in the 16<sup>th</sup> century AD, rightfully focuses on the environmental magnificence of its nature. And indeed, Crete’s spectacular landscapes rival the island’s rich cultural and archaeological heritage. A rivalry that does not seek to compete against, but complement each other. Even more so, the cultural genesis and development of the island have always been, at least partly, determined by its natural setting – a remarkable Mediterranean landscape.

The following introductory chapter thus seeks to present some general information on the wider setting of the context in which the material under consideration, the pottery from the ceramic workshop at Zominthos, was unearthed. This includes a short description of the island’s geography in general, and the more detailed introduction to the extraordinary

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<sup>1</sup> Spanakis 1969, 9.

geographic location of the site itself. Further a discussion of the Minoan *Villa* phenomenon in the Neopalatial period and a description of the architectural remains at Zominthos are presented. An overview of the previous scientific research carried out in this area, and some thoughts on the relationship between the Cretan mountains and human interaction are also included in the introduction. I am convinced that all these aspects need to be considered in order to grasp and fully understand the significance of the material under study and the site as a whole.

## I.1 Crete – a Mediterranean landscape

*„NATUR! Wir sind von ihr umgeben und umschlungen – unvernünftig, aus ihr herauszutreten, und unvernünftig, tiefer in sie hineinzukommen. Ungebeten und ungewarnt nimmt sie uns in den Kreislauf ihres Tanzes auf und treibt sich mit uns fort, bis wir ermüdet sind und ihrem Arme entfallen.“*

J.W. Goethe, 1782

This is no attempt to comprehensively describe the physical appearance of the island of Crete, but merely to provide some general geographic information of the island and to introduce the reader to the dominant feature of the Cretan landscape: the mountains with all their socio-cultural and economic aspects, both ancient and modern.<sup>2</sup>

Crete, covering an area of roughly 8400km<sup>2</sup>, is the largest Greek island in the Aegean. The island lies in the center of the Hellenic, or south-Aegean, arc, a tectonic zone connecting the mountains of the Greek mainland with the southern Anatolian Taurus (Fig. 1).<sup>3</sup> This arc stretches from the south-eastern tip of the Peloponnese via Kythera to Crete and from there, past the islands of the Dodecanese, to the coast of Asia Minor. It literally forms a bridge between the shores of the Aegean Sea. Pendlebury described the central location of Crete as follows: “The position of Crete, almost equidistant from Europe, Asia and Africa, marked it

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<sup>2</sup> For interesting thoughts on “landscape” and “landscape archaeology” see also Fitzjohn 2007, especially 143-155.

<sup>3</sup> Gifford 1992, 17-25; “Crete rides, as if on the back of a bull, at the point where Africa burrows under Europe.” Rackham, Moody 1996, 13; Zöllner 2007, 3.

out from the earliest times as a stepping stone between the continents.”<sup>4</sup> The distance to the Greek mainland measures ca. 100km, the coast of Asia Minor lies at ca. 200km while the African north-shore can be reached after ca. 300km of sailing.<sup>5</sup> Consequently, the role of a mediator between different geographic, but more importantly, cultural regions has always been connected with Crete and affected the life of the Minoans during the Bronze Age, just as it affects the life of modern Cretans today. However the surrounding sea is never only a “bridge” to other regions, it also separates and isolates island communities from neighboring lands. And although maritime traffic of goods, people and ideas was already well established in the Neopalatial period, it is safe to say that most Cretans of the time never left their island. They stayed on what Cadogan termed “its own self-contained mainland” and Rackham and Moody called “a miniature continent”, regarding the natural diversity of Crete.<sup>6</sup> This variety of landscape with coastal plains, rolling hills and high mountain ranges inevitably influenced, and also partly determined, the nature of human interaction with the environment in each of these regions.

Crete’s coastline has a length of ca. 1050km. Its physical appearance differs considerably from place to place, but generally speaking the shore presents itself rather wild and inhospitable with rocky cliffs when viewed from the sea. This explains a lack of secure harbours, especially along the southern coast, with the western coast of the Mesara plain being one of the few exceptions. Still today Crete’s most important harbour towns lie along the northern shore, from Sitia in the east, over Aghios Nikolaos, Iraklion, and Rethymnon to Chania in the west.<sup>7</sup> The Minoans’ relationship to the sea must have been ambiguous. On the one hand it was the bearer of foreign goods and food on the other hand it was also the source of dangers and unknown threats. Piracy for example has always been a great distortion for the ecology of Crete.<sup>8</sup> To what extent sea-fish contributed to the nutrition of the Minoans is hard to determine since fish-bones hardly survive in archaeological contexts or are easily overlooked. But still there can be little doubt that coastal fishing was a part of the food production in Minoan Crete as illustrated by the frescoes of the fishermen in the West House at Akrotiri on Thera.<sup>9</sup> The relationship with the sea and the knowledge of its maritime flora and fauna found its most important expression in the motifs of the LM IB Marine Style

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<sup>4</sup> Pendlebury 1939, 1.

<sup>5</sup> Nowicki 2000, 20.

<sup>6</sup> Cadogan 1992a, 31; Rackham, Moody 1996, frontispiz.

<sup>7</sup> Willets 1974, 37.

<sup>8</sup> Rackham, Moody, 1996, 197.

<sup>9</sup> See Doumas 1992, figs. 18-21; see also Bintliff 1977, 117-122.

pottery. This contradicts Rackham's and Moody's oversimplifying judgement to some degree that "Crete is an inward-looking island. The wise mariner gave it a wide berth; the wise landsman avoided the sea, the bringer of enemies."<sup>10</sup>

The hinterland and the coastal plains provided wide areas for agricultural activities, such as farming and animal husbandry, as well as building space. It is thus not surprising that many of the most important Minoan settlements were founded here. The palatial centers of Knossos and Malia as well as the large settlements at Chania, Poros, Gournia, Mochlos, Petras, to name just a few, were all erected along the northern coast. The "Mesara-triangle" consisting of Phaistos, Aghia Triada and Kommos was situated in the Mesara plain, either not far from or directly on the coast. Kato Zakros seems to have been the most important harbour on the east coast of Crete, Palaikastro being another important site in this area. Minoan settlements in the central areas of the island were still concentrated in or along the larger plains such as Tyliisos, Archanes, Galatas or Vathypetro. This list could be continued further, but what becomes evident already is that most of the large settlements, and consequently most of the people, were situated in a proportionally very small area of the island, at least during times of relative peace and the absence of threats from the sea.

The plains cover only about 5% of the island's surface but provide by far the largest grounds for habitation and agriculture.<sup>11</sup> The largest and most important of these plains is the Mesara in south-central Crete. It lies between the mountain ranges of the Psiloritis to the north and the Asterousia to the south and covers an area of ca. 60km x 15km.<sup>12</sup> The fertile soils have always made the Mesara plain the *Kornkammer* of Crete. The yield of the agricultural exploitation of the plain formed and still forms the backbone of Crete's food supply. During Minoan times the control of the plain and thus over more than two-thirds of the best arable land in Crete must have been executed from Phaistos and later Aghia Triada.<sup>13</sup> Kommos appears to have been the harbour of the Phaistian palace.<sup>14</sup> The western part of the Mesara must have been more densely populated than the eastern area, at least from what we know today.<sup>15</sup> Other coastal or inland plains differ from the Mesara only in size, and sometimes in the quality of

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<sup>10</sup> Rackham, Moody 1996, 195.

<sup>11</sup> Chaniotis 1991, 102.

<sup>12</sup> Faure 1973, 61; Watrous et al. 1993, fig. 1; Zöllner 2007, 15-17.

<sup>13</sup> Watrous et al. 1993, 194.

<sup>14</sup> This is not the place to discuss the political geography of Crete during the Bronze Age but the probable Knossian hegemony in the Neopalatial period is shortly dealt with in Chapter I.2.

<sup>15</sup> Watrous et al. 1993, 195.

soils, but the agricultural functions remain the same.<sup>16</sup> Here, the cultivation of cereals, fruit, vegetables, olives, and wine seem to have dominated over animal husbandry which seems to be more at home in the mountainous regions.

The mountains of Crete have always played a significant part in the lives of the islanders. A short glance at the relief suffices to understand why. Crete basically is “une montagne dans la mer” with three out of 15 named mountain ranges exceeding a height of 2000m (Fig. 2).<sup>17</sup> The “White Mountains” (Ierapetra Ori) in western Crete are the largest range with more than 20 peaks higher than 2200m and an area of ca. 100km<sup>2</sup> above the tree border at an altitude of roughly 1650m.<sup>18</sup> The highest peak of the “White mountains” reaches 2453m. Just three meters higher is the highest peak of the Psiloritis mountains (Ida Oros), the Timios Stavros.<sup>19</sup> Located in Central Crete, Mount Ida dominates the island’s landscape and separates the northern coastal plain from the Mesara in the south. The infamous Ierapetra Cave, where, according to Greek myth, Zeus was hidden and raised, is situated at the eastern slope of this mountain, just above the largest Cretan highland plain, the Nida plateau. The third great mountain range lies further east, just west of the isthmus of Hierapetra: The Dikti or Lasithi mountains, surrounding the plateau of the same name. In these mountains, the Dictaeon Cave, the mythological birthplace of Zeus can be visited.<sup>20</sup> Smaller mountain ranges are the Siteia mountains in the far east of the island, or the already mentioned Asterousia mountains along the southern coast of central Crete. Altogether, 55% of the entire island’s surface lies above 400m which makes the island “truly mountainous”.<sup>21</sup>

The physical appearance of Crete and its mountains is largely the result of tectonic events related to the movement of the Eurasian and African continental plates. The continuing subduction of the African plate at the Hellenic Trench south of the island more or less led to the outline of today’s Crete ca. three million years ago during the late phase of the Pliocene.<sup>22</sup> Further tremors and convulsions continued to alter the coastline, such as the “Early Byzantine Paroxysm” that uplifted western Crete by up to 9m and submerged the central and eastern part of the north coast.<sup>23</sup> The Hellenistic harbour of Phalassarna in the west and the island of

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<sup>16</sup> „Crete has 25 mountain plains where farming can be practiced,...“ Chaniotis 1999, 186.

<sup>17</sup> Matton 1957, 13.

<sup>18</sup> Rackham, Moody 1996, 12.

<sup>19</sup> Cadogan 1992a, 31.

<sup>20</sup> For further information on Cretan caves see Faure 1964.

<sup>21</sup> Chaniotis 1991, 94; McNeill 1992, 14.

<sup>22</sup> Rackham, Moody 1996, 14.

<sup>23</sup> Ibid., 15.

Mochlos are silent witnesses of such convulsions. The main mountain ranges belong to the so called “Plattenkalk series” and were formed ca. 210-65 million years ago.<sup>24</sup> But this geomorphological data, as interesting as it may be, tells us nothing about the actual meaning of the mountains for the Minoan people of the Bronze Age.

The perception of the mountains in later Greek mentality, as expressed in several written sources, may offer some interesting clues on how the Minoans of the Bronze Age may have viewed the *ori* of their island.<sup>25</sup> For the people in the lowland settlements the mountains were “to be viewed from afar, visited only to be left again.”<sup>26</sup> So generally speaking, the mythical image of the mountains was that of the “outside and wild”.<sup>27</sup> Consequently the people who lived there were also considered to be outsiders.<sup>28</sup> The mountains were also the place for hunting, be it as a part of an initiation or simply for food supply, an occupation carried out by the *men*, and those on the verge of becoming one, of a community. Besides this, they were also seen as the places where the divine and the human come together. The Minoan Peak Sanctuaries serve as a neat illustration of this perception, as do several cave sanctuaries as well.<sup>29</sup> But apart from these rather abstract images and religious meanings, the mountains had another, even greater economic significance.<sup>30</sup>

The most important economic aspect of the mountains has always been animal husbandry and the procession of its secondary products such as wool, milk, cheese, meat and skin.<sup>31</sup> Zominthos actually is a perfect example to illustrate this facet of mountain economy. Its high plain and wider surroundings offer sufficient pasture land for large herds of cattle, water is provided by several springs (Fig. 3).<sup>32</sup> The Linear B tablets from Knossos mention large amounts of flock that can easily be envisaged grazing around Zominthos and in other parts of the Psiloritis.<sup>33</sup> Even today herding and animal husbandry are still the main economic occupations in the area. Besides the lucrative production of textiles from the wool of the sheep, dairy products have always been of great importance for the economy of the mountains. Two Late Minoan coarse ware vessels found at the “Central Building” may be

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<sup>24</sup> Gifford 1992, 17.

<sup>25</sup> See Buxton 1992.

<sup>26</sup> *Ibid.*, 15.

<sup>27</sup> *Ibid.*, 7.

<sup>28</sup> A perception that still exists today among Cretans.

<sup>29</sup> For the Peak Sanctuaries see for example Rutkowski 1972, 152-188; Rutkowski 1988.

<sup>30</sup> See Chaniotis 1999, 181-220.

<sup>31</sup> Chaniotis 1995, 39.

<sup>32</sup> Sakellarakis, Panagiotopoulos 2006, 51, note 17.

<sup>33</sup> Bennett, et al. 1956, 17-42; Sakellarakis 1996, 205.

attributed to the dairy industry (Fig. 4). A “Venetian” and a “Modern” *tyrokomio* were established right next to the Minoan settlement, and today a dairy called “Zominthos” is located just outside Anogheia which nicely demonstrates the tradition of dairy production in this region.<sup>34</sup> But pastoralism and animal breeding as well as the procession of related secondary products are not the only economic factors of the Cretan mountains.<sup>35</sup>

The exploitation of natural resources, especially timber as a building material, also took place in the Cretan uplands. The quarrying of stones was probably carried out in the plains as well, but the collection of wood seems to have been particularly important in the mountains. Although the existence of large forests on Crete during the Bronze Age and later Prehistory is dubious, several ancient written sources tend to support this assumption.<sup>36</sup> And even today some rather inhospitable and remote regions of the mountains exhibit a considerable amount of trees compared to the more barren coastal areas (apart from modern Olive and Orange plantations). Naturally, it is impossible to determine the exact coverage of the island with forests in the past and variations must have existed from region to region. But the general presence of wooded areas in the Cretan mountains appears very probable.<sup>37</sup>

Another activity concerns the collection of herbs, spices and possibly other plants of medicinal character. These could have been used for various purposes, like perfume, ointments, cures, or in religious ceremonies as incense. This is attested for Minoan Crete as well as for later periods.<sup>38</sup> The knowledge of the action and effects of certain plants and substances was certainly already obtained and refined throughout the various periods of prehistory.<sup>39</sup> Beekeeping and the production of honey are also among the economic activities of smaller scale. Another possible “product” available in the mountains may have been ice and snow which could have been used for food storage in a time when refrigerators had not yet existed.<sup>40</sup>

The exploitation of all these resources required a considerable labour force and organisation. Ideally, both the administration of these labourers and the work force itself ought to be

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<sup>34</sup> The role of dairy products as an addition to the prehistoric diet is also stressed by Broodbank for the Early Cyclades. See Broodbank 2000, 82-83.

<sup>35</sup> For the „secondary products revolution“ see Sherratt 1981.

<sup>36</sup> Chaniotis 1999, 207-209.

<sup>37</sup> “Crete was certainly not an island entirely covered with forests, but woods must have existed, possibly more than in other places in the Aegean or in Greece, possibly sufficient for the local supply with timber for fuel, domestic architecture, and shipbuilding.” Ibid., 209; see also Rackham, Moody 1996, 125-128.

<sup>38</sup> Chaniotis 1999, 209-210.

<sup>39</sup> See for example Möbius 1933.

<sup>40</sup> Panagiotopoulos 2007, 23.

situated close to the resources that are to be collected.<sup>41</sup> This leads us to the question of the mountains as an area of habitation.

It has already been stated that the bulk of Minoan settlements existed in the area of the coastal plains and lowlands of Crete. Nevertheless, the mountainous relief of the island inevitably required the existence of villages or other dwellings in the uplands as well, if these areas were to be controlled and economically exploited. Today, Anogheia at an altitude of ca. 800m represents the border of modern habitation on Crete (Fig. 5). Above this altitudinal limit, only few seasonally inhabited *mitata* testify human presence in the high mountains (Fig. 6).

However, the situation appears to have been rather different in the past. The so called “Defensive” or “Refuge Settlements” of the “Dark Ages” represent a well-known phenomenon in Cretan settlement systems.<sup>42</sup> These settlements, whatever size and form they had, were erected at altitudes up to 1100m as for example at Karphi in the Lasithi mountains. They mirror the timeless significance of the remote upland regions as areas of retreat and refuge during times of political instability or conflict. Recent studies have shown that the terminology of “Refuge settlements” and “Defensive” or “Defensible settlements” has been applied rather carelessly in the past and that not all sites under this label actually qualify as a true refuge.<sup>43</sup> Some of these settlements may indeed have been permanently inhabited villages located in the mountains to exploit their natural surroundings. Others were clearly established following strategic evaluations and considerations of security aspects. Each settlement seems to have controlled a certain area, if possible including fresh water sources, pasture grounds, and farmland. The areas required for the subsistence of a community, must have been largely determined by the diversity of the landscape, meaning natural frontiers such as mountain ranges for example.<sup>44</sup> In my personal opinion, these mountain settlements, each with its own territory, obviously foreshadow the genesis of the later Greek *poleis* system and the Crete of the 90 cities described in the *Odyssee*.<sup>45</sup> But this is a different (hi-) story and would lead us to far from the topic of this book if pursued any further. Instead, let us turn our attention back to the climax of the Cretan Bronze Age and focus on another kind of mountain dwelling: the Late Minoan *villa* at Zominthos.

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<sup>41</sup> Bintliff 1972, 111-112.

<sup>42</sup> See for instance Nowicki 2000; Zöllner 2007.

<sup>43</sup> See Haggis 2001; Kanta 2001; Zöllner 2007.

<sup>44</sup> Chaniotis 1999, 182.

<sup>45</sup> “In middle of the sea there lies an isle call’d Crete, a ravisher of eyes, fruitfull, and mann’d with many an infinite store; Where ninety cities crown the famous shore” Spanakis 1969, 13.

## I.2 The Minoan “Villa” at Zominthos

The heyday of Minoan prehistory, the Neopalatial period, has been widely underrepresented archaeologically in the mountains of Crete, apart from the numerous peak sanctuaries. But as already mentioned, the bulk of the settlements, including the palaces themselves, were usually situated in the coastal or inland plains. The discovery of a large building complex of that time high up in the Psiloritis Mountains at Zominthos in the early 1980s consequently arose wide attention and interest among archaeologists and historians. It is perhaps not too much of a venture to assume that more Neopalatial structures will be discovered as the research in the mountainous areas of Crete continues. But until now, the building and settlement at Zominthos represent an extraordinary and unique site in a virtually untouched region of Crete.

### I.2.1 The Geographic Location and Minoan Remains of Zominthos

Minoan Zominthos is situated on a small highland plain, half way between modern Anogheia and the Idean Cave (Fig. 7).<sup>46</sup> At a height of 1187m above sea level, the site lies on the northern slope of the Ida-Oros ca. 400m above the altitudinal limit of modern habitation and still ca. 100m above the highest known prehistoric “refuge settlement” at Karphi in the Lasithi mountains. The probably pre-hellenic place name ending in *-nthos* may well be the original name of the settlement and relate to the rich sources of water in the area.<sup>47</sup> Today, the plain itself is covered with scattered trees and offers wide pasture lands (Fig. 8). These features may well have made Zominthos “an ideal place to stop on the way up the mountain.”<sup>48</sup>

However the location of the site did not only embrace a harmonious landscape with rich sources of water and pasture, but lay at the cross-roads of two Minoan routes leading to the Idean Cave from the East and Northeast. These roads connected Zominthos and the central areas of the Psiloritis with such important sites as Sklavokampos and Tyliisos on the

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<sup>46</sup> Panagiotopoulos 2007, figs. 3, 9; Sakellarakis, Panagiotopoulos 2006, fig. 1.

<sup>47</sup> Sakellarakis, Panagiotopoulos 2006, 48, note 2; Rackham, Moody 1996, 104; Faure 1972, 181; Marounas 1979, 33-34; for further information on the water supply in the area see Sakellarakis, Panagiotopoulos 2006, 51, note 17.

<sup>48</sup> *Ibid.*, 50; for a possible interpretation of the Zominthian building as a “caravanserai” see Rehak, Younger 2001, 397.

northeastern route, and eventually Knossos on the eastern one, via Kroussonas.<sup>49</sup> From Zominthos the road continued to the Idean Cave, one of the most important sanctuaries of Minoan Crete.<sup>50</sup> The site was thus not as isolated as one may have thought at first, despite the remote geographic location, but well integrated in the Minoan road-network and “Villa-system” (see below Chapter I.2.3).

The site yielded traces of a large “Central Building”, on which research has so far been focused, the surrounding settlement and a cemetery.<sup>51</sup> The “Central Building” lies on a low hill in *Alones* at the southwestern edge of the small plain, overlooking most of the terrain. The modern road from Anogheia to the Nida plateau and the Idean Cave, passes by immediately east of the structure. The surrounding settlement must have had a considerable size (more than one acre) judging from surface finds and few test trenches in the area called *mnemata*. Unlike the “Central Building”, the settlement shows at least a second occupational phase dated to LM III.<sup>52</sup> The position of the cemetery, as indicated by few human bones and fragments of burial containers (pithoi and larnakes) along with small finds, probably lies on the summit of the *Spilari* hill ca. 500m south of the “Central Building”.<sup>53</sup>

The “Central Building” has a rather large size given its remote location and is exceptionally well preserved (Fig. 9).<sup>54</sup> It covers an area of roughly 1600m<sup>2</sup> with more than 40 rooms in the ground level alone.<sup>55</sup> The maximum length reaches 54m and the maximum width up to 37m, which makes the building the largest example of so called *rural villas* in Crete.<sup>56</sup> It was built of roughly-hewn local limestone blocks mortared with mud. The impressive northern façade is one of the best preserved architectural remains of Minoan Crete (Fig. 10).<sup>57</sup> It incorporates two windows and a door, and is built in false isodomic masonry, the outer face composed of massive blocks, the inner face made of smaller, horizontally set slabs. Its preserved height reaches up to 2.2m (Fig. 11). In some places the walls of the “Central Building” stand up to

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<sup>49</sup> Sakellarakis, Panagiotopoulos 2006, 50; Driessen, MacDonald 1997, 126.

<sup>50</sup> The mythological tradition claims that king Minos had to go to the Idean Cave every nine years to meet and consult Zeus. A regular pilgrimage to the sanctuary during Minoan times appears very probable indeed and the position of Zominthos does suggest that the people must have passed it on their way to Mount Ida.

<sup>51</sup> Sakellarakis, Panagiotopoulos 2006, 51. For the use of the term “Central Building” see below Chapter I.2.3.

<sup>52</sup> Ibid.

<sup>53</sup> Sakellarakis 1983, 445.

<sup>54</sup> Petrakos 2006, fig. 66.

<sup>55</sup> The exact dimensions of the building are still unclear due to the fact that the southern area is largely destroyed and yet unexcavated. The size of the building varies in different publications between 1360m<sup>2</sup> and 1600m<sup>2</sup>.

Panagiotopoulos 2007, 20.

<sup>56</sup> Sakellarakis, Panagiotopoulos 2006, 52; for the terminology see Chapter I.2.3.

<sup>57</sup> Petrakos 2005, figs. 39-45; Sakellarakis, Panagiotopoulos 2006, fig. 7.

2.5m and are about 1m thick.<sup>58</sup> A large amount of plaster fragments suggests that the outer face may have been originally plastered. The same is true for several rooms in the interior of the building and some may actually have been decorated with frescoes as indicated by the remains of colors on the plaster fragments.<sup>59</sup> The “Central Building” had at least two entrances. One of which was located in the East with a massive lintel that lay practically *in situ* and one in the western part of the northern façade.<sup>60</sup> The latter opens to a long corridor that leads into the core of the building. It is tempting to assume that this may have been the main entrance to the structure, however this has as yet to remain tentative. The existence of at least a second storey in most parts of the building is attested by numerous schist slabs that must have belonged to the floor of such an upper storey. The unusual height of the undisturbed layers within the building allows a clear distinction between upper and lower storey.<sup>61</sup> The “Central Building” incorporates some architectural features that have been termed “palatial” such as a proper north-south orientation and recesses or indentations on the western façade. These recesses had also been observed at Knossos, Phaistos, Malia and Zakros to name just the most prominent sites.<sup>62</sup> The imitation of such architectural features may or may not indicate a relationship with the authority of a *palace* but it certainly underlines the significance of the building at Zominthos.<sup>63</sup>

The ceramic workshop, the most important find of the earlier excavations, was situated in an annex at the northwestern corner of the main structure and will be described in detail below (see Chapter II.3).

## 1.2.2 Scientific Research at Zominthos

The Minoan remains at Zominthos owe their discovery to the resumption of the works in the Idean Cave by Iannis Sakellarakis in 1982.<sup>64</sup> The location of the site and its pre-hellenic name had already been known, however the archaeological remains had only been recognized

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<sup>58</sup> Sakellarakis, Panagiotopoulos 2006, 54; Petrakos 2006, 65.

<sup>59</sup> Sakellarakis, Panagiotopoulos 2006, 54; Petrakos 2006, figs. 67-68.

<sup>60</sup> Sakellarakis, Panagiotopoulos 2006, 53.

<sup>61</sup> Panagiotopoulos 2007, 22.

<sup>62</sup> Sakellarakis, Panagiotopoulos 2006, 52.

<sup>63</sup> For the so called “Versailles effect” see also Wiener 1984, 17; Rehak, Younger 2001, 397.

<sup>64</sup> See Sakellarakis 1996, 205.

during a survey in that year.<sup>65</sup> The results of that survey led to the initiation of a first systematic excavation at Zominthos. Between 1983 and 1990 five small-scale campaigns (1983, 1986, 1988, 1989, 1990) were executed that gradually revealed the remains of what has been termed the “Central Building” and the surrounding settlement.<sup>66</sup> According to information provided by the inhabitants of nearby Anogheia, illicit excavations took place at the site during the 1960s producing several finds.<sup>67</sup> After 1990 one more field season was held in 1994 but the research was limited to the area *Mnemata* northeast of the “Central Building” where LM III remains were uncovered. During these early campaigns, excavation was restricted to the northern and north-western areas of the “Central Building” where only a limited number of rooms was partially or completely excavated. The most significant result of these campaigns was doubtlessly the localization of the potters’ workshop in the northwestern annex to the main building. Room 12, the main room of the workshop, was one of the few spaces that had been excavated down to the Minoan floor level.

It took 15 years before the archaeological research at Zominthos resumed in 2004. A new, interdisciplinary project under the auspices of the Archaeological Society of Athens in collaboration with the Institute of Archaeology of the University of Heidelberg entitled “*Zominthos 2004-2008. Reconstructing a Minoan Landscape*” was begun under the direction of Iannis Sakellarakis (Athens) and Diamantis Panagiotopoulos (Heidelberg). The multi-layered approach of the project combines archaeological, architectural, environmental, geological as well as botanical and seismological evidence in order to fully examine not just a Minoan settlement but a Minoan landscape with all its components.<sup>68</sup> This is largely only possible thanks to the remoteness of the site, away from modern tourist centers and industries.<sup>69</sup> The first campaign of the new project in 2004 was devoted to the study and recording of the pottery from the early excavations.<sup>70</sup> The following campaigns saw the resumption of field work at the site with excavations in 2005, 2006, and 2007. The archaeological research continued to examine the northern part of the building as well as the western area (Room 21). Excavation also revealed more of the ceramic workshop in Rooms 10 and 11. It can be hoped and expected that the publication of the project will “...shed some

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<sup>65</sup> Marinatos 1956/1957, 241; Sakellarakis 1983, 443.

<sup>66</sup> Sakellarakis 1983, 488-498; Mylonas 1986, 139-141; Petrakos 1988, 165-172; Catling 1988/1989, 101-2; Touchais 1989, 690-692; Sakellarakis 1996, 205; Sakellarakis, Panagiotopoulos 2006, 49.

<sup>67</sup> See Sakellarakis 1983, 444; Sakellarakis, Panagiotopoulos 2006, 49.

<sup>68</sup> Sakellarakis, Panagiotopoulos 2006, 69.

<sup>69</sup> “The uncovered Minoan ruins lie today in one of the few unspoiled regions of Crete...” Ibid.

<sup>70</sup> I cordially thank Iannis Sakellarakis and Diamantis Panagiotopoulos for inviting me to participate in this project and eventually entrusting me with the publication of large parts of this material.

sidelights on ancient life in a remote part of the island and contribute to a better understanding of the Neopalatial buildings that dominated the physical and social landscape of the Cretan Countryside.”<sup>71</sup>

### I.2.3 Terminology and the Function of Minoan “Villas”

“Villa”, “Country House”, “Mansion”, “Farmstead”, “Landhaus”, “Herrenhaus” – many different terms, often defining very different functions, have been used by various scholars to describe one and the same phenomenon: the appearance of a specific type of building in Neopalatial Crete.<sup>72</sup> The most common term for these structures - “*villa*” - however, still, after roughly a century of employment, lacks an appropriate and generally accepted definition.<sup>73</sup> It was deduced from the *villae rustica* and *villae suburbanae* of 16<sup>th</sup> and 17<sup>th</sup> century Italy, and readily picked up by Evans and other early scholars to describe a group of buildings of considerable size and with particular, palatial features.<sup>74</sup> This interpretative label has since been applied and is continued to be used in the archaeological literature for the sake of comprehension despite its ambiguity.<sup>75</sup> The term however “has romantic 19<sup>th</sup> century overtones of the leisure life and the adjective ‘manorial’ similarly conjures up associations of rural gentry.”<sup>76</sup>

But as research continued throughout the island more and more *villas* were discovered and it became clear that the manifold appearances and characteristics of these buildings defied any uniform categorization.<sup>77</sup> Differences in size, architectural design, location and furnishing required a more detailed typology and resulted in three broad categories of *Minoan villas*.

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<sup>71</sup> Sakellarakis, Panagiotopoulos 2006, 70.

<sup>72</sup> For possible earlier examples of “Villas” and the origins of the “Villa” system see Niemeier 1997.

<sup>73</sup> “The task looks rather Sisyphean, not only because of the normal maladjustment of every word to qualify any thing, but because of the different cultural background of the terms employed by modern archaeologists and also because of the personal moods of the scholars and diggers when they give names to what they are discovering.” Van Effenterre, Van Effenterre 1997, 9.

<sup>74</sup> See e.g. PM II, 396 “Royal Villa”; Hazzidakis 1934.

<sup>75</sup> Van Effenterre, Van Effenterre 1997, 10; the modern sense of the term “a residence of a superior or handsome type, in the suburbs of a town or in a residential district, such as is occupied by a person of the middle class...” (OED), can certainly not be projected on the Minoan buildings. See also Cadogan 1997, 99-100.

<sup>76</sup> Rehak, Younger 2001, 396.

<sup>77</sup> „Moreover, the buildings usually called Minoan villas vary widely in size, architectural complexity, and sophistication of their contents.” Ibid., 397.

This tripartite division was mainly based on the location of the *villa* since all three classes shared certain traits, including an architectural vocabulary recalling the palaces.<sup>78</sup> Such palatial architectural elements are the use of ashlar masonry, and the existence of pier-and-door partitions, pillar crypts and lustral basins to mention only a few. Betancourt and Marinatos distinguished between “Country Villas”, “Manorial Villas” and “Urban Villas”.<sup>79</sup> A rather similar typology names “Palatial Villas”, “Urban Villas” and “Rural Villas”.<sup>80</sup> However, both typologies differ in what their categories actually describe. Betancourt’s “Country Villa” is supposed to be an isolated building in the countryside.<sup>81</sup> However, such isolated structures hardly exist at all, since almost all of the supposed “Country Villas” have been shown to be surrounded by a village or town. Even the so called farmstead at Zou seems to have been the central building of a larger settlement.<sup>82</sup> Thus most, if not all, of these *villas* ought to be included in his second category, the “Manorial Villas”. These buildings are said to dominate a small village or town. Prominent examples of this group are Vathypetro, Myrtos Pyrgos, Nirou Chani and others. Zominthos also belongs to this group. Finally, “Urban Villas” are set in a greater city or its suburbs. Turning to Knossos, one may include the “Little Palace”, the “House of the Chancel Screen”, the “South House” and other large structures in this category.

An alternative typology, as summarized and presented by Westerburg-Eberl, uses the term “rural villas” as an equivalent for Betancourt’s “country” and “manorial villas”. The “urban” and “palatial villas” of the second classification are both situated in large settlements, with or without palatial centers, the only real difference being that “palatial villas” are to be found in the immediate vicinity of the palaces. They do thus relate to Betancourt’s rather broad class of “urban villas”. Regarding the absence of real “country villas” and the proper differentiation between “urban” and “palatial villas”, it seems appropriate to follow this second categorization. The inevitable flaws of any such classificatory scheme, such as oversimplification and dependence on willfully constructed prototypes, must of course be kept in

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<sup>78</sup> Betancourt, Marinatos 1997, 91. According to Betancourt all “Villas” correspond to Type 1 of McEnroe’s typology of Minoan houses, however it seems more appropriate to regard each “Villa” by itself before adding it to an already established category. For the typology of Minoan Neopalatial houses see McEnroe 1982.

<sup>79</sup> Ibid.; “Country Houses” may be used as a synonym for “Country Villas”. See Cadogan 1976, 135.

<sup>80</sup> Westerburg-Eberl 2000, 87.

<sup>81</sup> Betancourt, Marinatos 1997, 91.

<sup>82</sup> Tsipopoulou, Papacostopoulou 1997, 210.

mind and there ought to be enough flexibility and space to allow regional, local, and naturally also functional differences in the design of the *villas*.<sup>83</sup>

Judging from the architectural layout and contents of the different types of these buildings, a variety of functions appears to be tangible. Following Westerburg-Eberl, a relatively clear-cut distinction concerning the function of the buildings is possible between “rural” and “urban” or “palatial” *villas*. The latter type seems to have had a strong cultic and representative connotation while economic aspects such as storage areas or craft ateliers are practically absent.<sup>84</sup> Typical architectural units and elements in these *villas* are for example the so called *Pillar Crypt* and the *Lustral Basin*. The “urban villas” combine ceremonial and economic aspects to some degree. They are usually situated in the center of a settlement that has an urban character with streets and open places, etc.<sup>85</sup> Finally, the “rural villas” or “Landhäuser” define the largest and most manifold group of buildings. Specimen of this type can be found in all parts of the island. Generally speaking the level of sophistication of these buildings is a little lower than that of the former types but still *palatial* elements do occur in their architectural design. However, the layout of these *villas* seems to be largely determined by their function and less by their representational aspects. These “rural establishments” were usually situated in strategic locations of the Cretan hinterland in order to control a region of either political, administrative, or economic interest.<sup>86</sup> In addition to their administrative and political function which clearly exceeded the limits of a private *oikos*, many “rural villas” also incorporated workshops or other economic aspects, such as the famous wine or olive press at Vathypetro for example (Fig. 12).<sup>87</sup> It is very probable to assume that these buildings served a higher authority as subcenters or satellites, trying to exercise control over large areas of the island.<sup>88</sup> The fact that these *villas* represent a primarily Neopalatial phenomenon suggests that a connection to the *palaces* did indeed exist.<sup>89</sup> For Zominthos the only possible authority should have been located in the *palace* at Knossos. This represents the common view of a

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<sup>83</sup>“The lavish Minoan villa fully equipped with ashlar facades, canonical Minoan hall, lustral basin, and pillar crypt is a stereotype that is more likely to be found at Knossos or in our imagination than anywhere else – attesting to the power that Arthur Evans’ Knossos has exercised over generations of visitors and scholars.” Preziosi, Hitchcock 1999, 122.

<sup>84</sup> “In ihrer Bauweise und Ausstattung weisen sie auf eine vorrangig kultisch-zeremonielle und repräsentative Nutzung hin, während Vorratsbereiche nahezu fehlen.“ Westerburg-Eberl 2000, 88.

<sup>85</sup> Ibid., 89-90. See also Branigan (ed.) 2001.

<sup>86</sup> Sakellarakis, Panagiotopoulos 2006, 63.

<sup>87</sup> Ibid.

<sup>88</sup> “It is difficult to see how some villas could have operated outside the authority of a nearby palace.” Rehak, Younger 2001, 397; see also Sherratt, Sherratt 1991 for the control of “peripheries” by “cores” and their interaction; Broodbank 2000, 46.

<sup>89</sup> For the genesis of the villa phenomenon see Niemeier 1997.

majority of scholars, however, a different opinion claims that the *villas* may have been the residences of an aristocracy that had only limited bounds with the *palaces*.<sup>90</sup> The discussion on the Neopalatial socio-political landscape of Crete is still ongoing and without written sources it has so far proven to be very difficult to reconstruct an entirely convincing model.<sup>91</sup> Personally, I favor the centralistic approach with a palatial authority that established the villa-system in order to control and exploit the Cretan territory.<sup>92</sup> Zominthos may thus have served as a Knossian subcenter in the high mountains to control this remote area and possibly the final part of the route to the Idean Cave as well.

For the complex at Zominthos the conventional and neutral term “Central Building” has been chosen by the excavators.<sup>93</sup> This term is also used in the present study, although “rural villa”, as defined above, would certainly describe the character of the building as well. The Minoan name for these buildings, if it actually ever existed, is of course unknown and modern research found itself in need of a terminology to describe these structures. And generally there ought to be no severe problem with modern labels as long as it is remembered that there will hardly ever be a perfect semantic match when describing archaeological finds with modern words.

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<sup>90</sup> See for example Cadogan 1971, 148; Schoep 1996, 84-85; Schoep 1999, 220-221.

<sup>91</sup> See Driessen 2001.

<sup>92</sup> Van Effenterre, Van Effenterre 1997, 11-12; Nixon 1987.

<sup>93</sup> “Our inability to define the character and function of this building type with certainty makes the problem of terminology even more complicated.” Sakellarakis, Panagiotopoulos 2006, 63.



## Chapter II: Neopalatial Pottery Workshops on Crete

*“An individual potter’s workshop means more to him than a mere setting where the routine of production can conveniently go on. Here he has to seek and weigh new ideas, comparing them and his finished work with the standards of the past and the needs of an unborn future.”*<sup>94</sup>

Ceramic products, and pottery in particular, represent by far the most common artifacts encountered in archaeological excavations throughout the Aegean from Neolithic times onwards. The often huge amounts of vessels and fragments found in manifold contexts clearly underline the important *rôle* pottery played in all areas of prehistoric life, be it domestic, ritual or funerary. Accordingly, the demand for ever new pots of all shapes and sizes must have been immense. The vast numbers of such artifacts still found today certainly resemble this very need and therefore the requirement of a steady output of the pottery manufacturing centers.

Interestingly, the great numbers of vases contrast sharply to those of securely identified production areas, even during the Neopalatial period, certainly the best known era of

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<sup>94</sup> Leach 1960, 214.

prehistoric Crete. This phenomenon has long been realized and subject to many discussions.<sup>95</sup> Several reasons contribute to this situation, especially the problems of identifying such workshops (see II.2), but also questions of preservation and methodological procedures during and after excavation.

The following sub-chapters are supposed to introduce the reader to all relevant aspects of Minoan pottery workshops in order to be able to evaluate and understand the context of the material under consideration in this book, namely the pottery from Zominthos.

## II.1 Definition

Before studying Cretan Neopalatial pottery workshops, the term *workshop* needs to be defined as used in this examination. Several attempts and suggestions have been made to grasp the exact meaning of the term and define it properly and I would like to follow the rather broad interpretation of a workshop as “a place where some work activity occurred”.<sup>96</sup> This definition does not imply the existence or need of any structural prerequisites like a room or building and its simplistic understanding of the term *workshop* is most useful due to the “deficiencies in the physical evidence”.<sup>97</sup> The modern comprehension of a *workshop* as an architecturally defined place does not necessarily apply to the workshops of Minoan Crete and other cultures of the Bronze Age as will be shown below. Actually, it appears almost certain that at least some of the processes of manufacturing pottery were executed not within a building but in an open space or a poorly roofed part of a yard (see III.5.2).<sup>98</sup> The distinction between “Domestic” and “Permanent” workshops as put forward by Tournavitou is followed here with focus solely on the “Permanent workshops” which she described as “spaces, not necessarily specifically designed for, but certainly devoted to, all, or most of the year, workshop activities; spaces where a number of specialists are employed, i.e. individuals depending more or less completely on their craft for their livelihood.”<sup>99</sup>

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<sup>95</sup> See for example Evely 2000, 311; Hansen Streily 2000, 180.

<sup>96</sup> See Evely’s definition of “work area”. Evely 1988, 399; See also Tournavitou 1988, 447 “A Room, or an Apartment, or building, in which manual or industrial work is carried on.”

<sup>97</sup> Ibid.

<sup>98</sup> Michaelidis 1993, 33.

<sup>99</sup> Tournavitou 1988, 447.

According to this interpretation of the term *workshop*, a *pottery workshop* describes an area where pottery and possibly other ceramic products were manufactured. This may have taken place within a special building, a specific room or part of a building that may have served other functions as well, or in an open space such as a yard or court. Obviously, a combination of the locations mentioned above is well imaginable, especially since most of today's traditional potters in the Aegean seem to exhibit both, a building as well as an open air work area.<sup>100</sup> More so, "The complete process of pottery manufacturing requires spaces necessarily wider than those requested by other crafts, such as ivory carving or stoneworking. (...) In fact only a part of the vase manufacturing process could have taken place in the interior or on the first floor of a house (...)"<sup>101</sup> Naturally, such outdoor work spaces only become visible archaeologically if permanent structures had been erected or diagnostic finds reveal the nature of their findspot.

A *pottery workshop*, as defined here, always represents a certain degree of organization. And since "Ceramic production systems exhibit considerable variation ranging from simple small-scale household-level production to much more complex large-scale production systems", the level of organization may be used as a defining aspect of pottery workshops.<sup>102</sup> A typology presented by Van der Leeuw offers useful terms and descriptions of various levels of pottery production.<sup>103</sup> The first level is characterized as "Household production" – a small-scale production within a household and for its own use. The products are manufactured by non-specialists with little investment in equipment such as tools, raw material and installations. In addition, the production of pottery was limited to a short period of time only.<sup>104</sup> Such a level of production does not qualify as being carried out by a *pottery workshop* in the author's opinion. However, the following stages of production called "Household industry", "Workshop industry" and "Large-scale industry" all share certain common traits that are here ascribed to a *pottery workshop*. These include a level of production beyond the use within the single household, an increased level of specialization and efficiency and the use of permanent installations such as kilns as well as a longer period of pottery production.<sup>105</sup> The most common levels of production in Minoan Crete are certainly found within the categories of

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<sup>100</sup> Hansen Streily 2000, 181.

<sup>101</sup> Carinci 1997, 321; See also Voyatzoglu 1984, 130 "The preparation of the clay, the kneading, the drying, and the firing are all generally done out of doors."

<sup>102</sup> Sinopoli 1991, 98.

<sup>103</sup> Van der Leeuw 1977, Table 1.

<sup>104</sup> Sinopoli 1991, 99.

<sup>105</sup> Ibid., 99-100; Van der Leeuw 1977, 70f.

“Household industry” and “Workshop industry” at least from the Early Bronze Age on.<sup>106</sup> Both employ a certain degree of specialization, specific tools and installations for the production of pottery but still in a somewhat limited scale. Single workshops were run by families, be it nuclear or extended, possibly with the addition of few extra workers. Production was probably limited to the summer months when the climate allowed working outside and also restricted by additional agricultural occupations of the potters.<sup>107</sup> The last stage of “Large-scale industry” is characterized by highly specialized and extremely standardized working processes which are being carried out by a large number of full-time workers.<sup>108</sup> Such industries are uncommon for most of the Cretan Bronze Age, including also the highly developed Neopalatial period and may only have been achieved by the largest palatial centers.<sup>109</sup>

*Pottery workshops* have been identified within several archaeological contexts throughout the island of Crete. These include settlements and the so called *palaces* and *villas*. When located within larger buildings of multi-functional character, pottery workshops are often situated in specific areas or wings of such a central building, mostly in the vicinity of other work areas for example for stone carving or metal working as can be observed for parts of the east wing of the palace at Knossos<sup>110</sup> or the northeast wing and the east court at Phaistos.<sup>111</sup> Several workshops have also been identified in Minoan Villas<sup>112</sup> or farmsteads, for example in Vathypetro<sup>113</sup>, Zou<sup>114</sup> and of course in Zominthos. Other examples were unearthed in settlements like Gournia<sup>115</sup>, Palaikastro<sup>116</sup> and Malia<sup>117</sup> or even encountered outside of the borders of any area of habitation as seen in the vicinity of Silamos ca. two kilometers south of

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<sup>106</sup> Davis, Lewis 1985, 82.

<sup>107</sup> Williams 1997, 87.

<sup>108</sup> Sinopoli 1991, 99-100; Van der Leeuw 1977, 70f.; see also Branigan 1983, 24.

<sup>109</sup> Branigan 1983, 26.

<sup>110</sup> Michaelidis 1993, 32, 36; Graham 1987, 136; Evans 1921, 366.

<sup>111</sup> For Phaistos see Pernier, Banti 1950, 213-219; for the organizational connection between palaces and workshops see Pelon 1987, 269-271; MacGillivray 1987, 273-279; Sakellarakis 1979, 16, 44-45; Branigan proposed the existence of guilds and designated areas of towns or palaces where they were located, see Branigan 1983, 29.

<sup>112</sup> For the discussion of the “Minoan Villas” see Hägg 1992; Walberg 1994; Westerburg-Eberl 2000.

<sup>113</sup> See Driessen, Sakellarakis 1997; Michaelidis 1993, 13-16.

<sup>114</sup> See Platon 1956; Michaelidis 1993, 16-17.

<sup>115</sup> See Boyd Hawes et al. 1908; Michaelidis 1993, 20-22. However, an identification of a pottery workshop in House Ac must remain tentative.

<sup>116</sup> See Davaras 1980. The kiln lies about 300 metres southeast of the excavated area of the town of Palaikastro probably due to the nearby clay sources on the slopes of Mount Petsophas. The workshop was probably situated very close to the kiln and quite possibly lacked any architectural features and structures. “It should be safe to assume that the pottery was made close to where it was going to be fired.” MacGillivray 1987, 276. However, this is purely speculative and further excavation in the area might well produce architectural remains.

<sup>117</sup> See Poursat 1996, 23-43, 111-113, Pl. 78-81; Poursat 1981, 964, figs. 1-3.

Knossos.<sup>118</sup> A selective list of rather securely identified Neopalatial pottery workshops from various contexts on Crete will be presented below (see II.4).

There seems to be no strict rule or regulation of where within a settlement workshops were established, however, pottery manufacture appears to have taken place mainly on the outskirts of villages and towns. The exact same phenomenon is still observable today in the village of Margarites south of Rethymnon where the ateliers of potters are concentrated on the slope of a low hill south of the actual town limits. This may well be due to the danger of fire and the inconveniences caused by the smoke of the kilns. But as stated above, no pattern is applicable and Zominthos represents one of the exceptions to the rule with its kiln and workshop in the supposed center of the settlement.

## II.2 Problems of Identification

The small number of securely identified pottery workshops in Neopalatial Crete is largely ascribable to the difficulties in recognizing such areas in the archaeological record.<sup>119</sup> This may be due to the often poor state of preservation, a lack of diagnostic finds or simply a misinterpretation of the material. The following paragraphs aim to present both the possibilities and restrictions of identifying workshops and analyze their common features, if at all traceable.<sup>120</sup>

It is the analysis of these features that forms the basis for the identification of pottery workshops. Several aspects including *Architecture*, *Installations* and the *Contents* of work areas must be put into consideration in order to reach reliable results. Since none of the above mentioned criteria can be relied on by themselves, a combination of more suggested characteristics is required to achieve relative certainty.<sup>121</sup>

If one accepts the notion that the establishment of workshops within their architectural context is connected to a superimposed, far-reaching planning and set-up, *Architecture* may well

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<sup>118</sup> MacGillivray 1987, 276.

<sup>119</sup> Pool 1992, 287-293.

<sup>120</sup> This is restricted to actual workspaces, not included are 'workshops' that may be identified by their final products and ascribed to certain artisans. See for example Pelagatti 1961-62; Betancourt 1973 for the LM IB "Polyp Workshop"; Mountjoy 1977; Müller 1997, 25-26.

<sup>121</sup> Evely 1988, 409; Dierckx mentioned five categories of evidence that need to be represented in order to indicate the existence of a workshop "with some confidence". Dierckx 1999, 211.

obtain relevance for the identification of certain room functions, including that of a workshop.<sup>122</sup> This encompasses the location of working areas in selected wings of a building or quarters of a town or village, a connection to courts or yards as open-air work spaces and to storage facilities and specific architectural features of the workroom itself such as a certain ground plan or built installations. However, "...it is clear that a reliance on formalist criteria, or indeed, any single criteria for establishing meaning, is insufficient and inadequate."<sup>123</sup> Therefore a combination of multiple criteria must be sought in order to limit the subjectivity and ambiguity of interpreting the function of architectural structures.

Beginning with the plan of a room or building itself it has to be stated that "The majority of the workshops have absolutely no distinctive design."<sup>124</sup> However, this is purely related to the shape and ground plan of a room, leaving aside built-in installations to which I will turn later on. It must be stressed that this statement is based on the study of Mycenaean workshops on mainland Greece and not on their Minoan Neopalatial counterparts.<sup>125</sup> Nevertheless, a survey of the examples from Crete suggests that Tournavitou's conclusion is also valid for the time and region under consideration here.<sup>126</sup>

The attempt to interpret architecture in terms of function is laden with numerous problems. Two main difficulties have been pointed out by Palyvou: 1. Complexity and multiplicity of function and 2. No one-way correspondence between built forms and functions.<sup>127</sup> Her arguments make it very clear that interpretations based on "form follows function" alone can hardly be reliable and the fact that "we are trying to reverse the process of architectural design and starting from the finished product to arrive at those initial factors that determined form, structure and function" ought to be kept in mind when interpreting architectural remains.<sup>128</sup> Besides, room functions may well be subject to change over a longer period of time and we are usually only able to grasp the final stage before the destruction or abandonment of a room or building.<sup>129</sup>

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<sup>122</sup> Michaelidis 1993, 32. For planning and construction see Preziosi 1983.

<sup>123</sup> Hitchcock 2000, 127.

<sup>124</sup> Tournavitou 1988, 449.

<sup>125</sup> Ibid.

<sup>126</sup> See also Soles 2003, 91: "...workrooms are not architecturally distinct, and it is only the presence of certain artefacts and facilities that identify areas as workrooms or work spaces."

<sup>127</sup> Palyvou 1997, 156.

<sup>128</sup> Ibid.

<sup>129</sup> For example, some areas in Mallia, Petras and Aghia Triada had been converted to storage areas at the end of the Neopalatial period. See Driessen, MacDonald 1997; Rehak, Younger 1998, 101; Hitchcock 2000, 128.

Since the plan of a room by itself does not allow an identification of a certain function, other aspects of architecture need to be considered if one tries to identify workshops within buildings or settlements. The location of work areas within specific wings or quarters of single buildings or villages has already been addressed above and may help identifying the function of a room or space as a workshop.<sup>130</sup> Such areas have often been termed “industrial” and usually contain more than just one craftsman’s atelier.<sup>131</sup> A good example is the so called “Room of the potters”, formerly known as the “School Room” in the east wing of the palace at Knossos.<sup>132</sup> However, the mere presence of a room within such a quarter, wing or annex does not automatically imply a functional connection to the surrounding workshops. Yet, the probability of a connection is rather obvious if no other function for that room can clearly be observed. The case of Zominthos is a good example for this with its pottery workshop located in an annex to the main “Central Building”. This annex consists of three rooms communicating via a corridor. And even though excavation in this area has not been entirely finished, it becomes rather probable that all three rooms somehow relate to the workshop in Room 12 (see II.3).<sup>133</sup>

Another architectural element seems to be the proximity of a pottery workshop to open spaces or courts. The necessity of these open-air work areas has been pointed out already and will again be of interest later on (see II.5). The combination of open and roofed working places can be observed at several sites and Michaelidis shortly commented on the situation at Knossos, Phaistos and Zou.<sup>134</sup> Other good examples are known from the artisans’ quarter in Mochlos where a work place had been identified in a rear yard of Building A or from Zominthos where the remains of the kiln were discovered north of the “Central Building” in an open area.<sup>135</sup> Apart from the connection to open spaces, the need of storage facilities and areas nearby seems to be another indicator for the location of workshops within larger architectural complexes. A certain amount of storage space was surely required for the output of a workshop, thus meaning the finished products, as well as for the tools and raw material.<sup>136</sup> But then again, the secure identification of such areas can also be problematic if

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<sup>130</sup> Michaelidis 1993, 32-33.

<sup>131</sup> See for example Marinatos 1955 for the Villa of Vathypetro.

<sup>132</sup> Evans 1921, 367; Evely 2000, 317.

<sup>133</sup> Sakellarakis, Panagiotopoulos 2006, 57; Michaelidis 1993, 17-20.

<sup>134</sup> Michaelidis 1993, 33.

<sup>135</sup> Soles 2003, 36-37.

<sup>136</sup> In contrast to this Hampe and Winter observed that no larger amounts of raw material were being stored by the traditional potters of Crete, but only so much as to be processed immediately. Hampe, Winter 1962, 88.

diagnostic finds are missing and the presence of storage rooms does not automatically suggest that workshops ought to be found close by.

Although the existence of upper storeys is attested for several workshops for example in Malia, Knossos, Gournia, possibly Zou and most probably in Zominthos as well, this cannot be regarded as a reliable indicator for the identification of working spaces.<sup>137</sup> Whenever a workshop was located on an upper storey, it was often connected to certain activities like weaving, ivory carving or stone working as seen for example in Knossos.<sup>138</sup> However, most workshops seem to have been located on the ground floors of buildings since the upper storeys appear to have been reserved mostly for “important public rooms” or residential quarters.<sup>139</sup> The accommodation of workshops on the ground floor has certain advantages: possibly heavy raw material does not have to be transported onto an upper floor, and direct access to an open-air work area and important resources like water and the use of fire (in the case of a pottery workshop) all point to a location on the ground floor.<sup>140</sup> On the other hand, the upper floors surely offered better light and ventilation but these aspects are hard to prove archaeologically.<sup>141</sup>

So far, the observation of architecture has been refined to the ground plan of single rooms, their location within larger structures and connection to other spaces. Another aspect of architecture, the built, *permanent Installations* now need to be considered since they can contribute significantly to the identification of workshops. “It is thus possible that (i) certain details built into one such (architecture) will reveal its intended use, or (ii) conceivably a repeated pattern of units within some large complex may do likewise.”<sup>142</sup> Not all crafts require such facilities and their presence depends completely on the activities involved, however, pottery making certainly belongs to the group of craftsmanship that does employ certain permanent installations. The most obvious feature being the kiln of course, but in addition to that, installations connected to water supply, and preparation and storage of raw materials are needed as well, i.e. cisterns and basins, benches, and a construction to set up the potter’s wheel. Not all of these possible structural elements are always preserved or were

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<sup>137</sup> Michaelidis 1993, 35.

<sup>138</sup> Tournavitou 1988, 449; Michaelidis 1993, 35; PM III, 269; Warren 1967, 195-199.

<sup>139</sup> See the quote of J.W. Graham in Hitchcock 2000, 126; Tournavitou 1988, 449.

<sup>140</sup> Tournavitou 1988, 449.

<sup>141</sup> Soles 2003, 91; Blitzer 1984, 148; Tournavitou 1988, 449.

<sup>142</sup> Evely 1988, 402.

always present in every pottery workshop and the existence of installations made out of perishable material must be kept in mind.

In his study of Minoan Pottery Workshops, Michaelidis stressed the significance of built benches which he recognized in almost all of the sites he listed, except for the Early Minoan II workshop at Myrtos and the Late Minoan I building at Zou.<sup>143</sup> Benches, however, are a common feature of Minoan architecture and by no means a reliable indicator for the presence of a workshop. They are truly multi-functional and can be observed in workshops as well as in sanctuaries, store-rooms and even tombs. Therefore, the existence of built benches alone cannot be taken as a criteria of a workshop.<sup>144</sup>

A significant structural element of pottery workshops may be seen in the settling basins for clay encountered at Zominthos and Zou.<sup>145</sup> These installations were almost certainly used for the purification of the clay raw material before it was processed further.<sup>146</sup> The basin at Zominthos is lowered into the ground of Room 12, the main room of the pottery workshop, immediately in front of the southern party wall and built of small to medium scale lime stones (Fig. 13). The excavator suggested that this basin may be the last one of a row of two or more linked basins, connected via a conduit through the southern wall of Room 12 (For a more detailed description see II.3).<sup>147</sup> However, such a row of basins does not seem to be mandatory and depends largely on the exact function of the installation. The “ellipsoidal cistern” in room Mα of the farmstead at Zou is the best parallel known so far from another Minoan workshop.<sup>148</sup> Ethnological comparisons with modern traditional potters substantiate the function of these basins, however, the modern examples are usually found outside of the potter’s workroom.<sup>149</sup> Such installations do not necessarily have to be built but may also be replaced by large, open vats or the lower parts of pithoi, as seen for example in Margarites (Fig. 14). Pure, strained clay was still found in situ above the paved bottom of the basin at Zominthos and the relation to water might be indicated by the recent discovery of fragments of a clay tube in Room 10 south of the workshop.<sup>150</sup> However, the basin itself has no drain and no traces or remains of waterproof plaster can be recognized on its walls and bottom

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<sup>143</sup> Michaelidis 1993, 33.

<sup>144</sup> *Ibid.*; Hansen Streily 182.

<sup>145</sup> For Zominthos see Petrakos 1988, fig.139; Michaelidis 1993, 18, 34-35; Sakellarakis, Panagiotopoulos 2006, 57-58. For Zou see Michaelidis 1993, 16-17; Platon 1956, 232-239; Evely 1988, 402, pl. 24b.

<sup>146</sup> “As quarried, the clay will almost certainly need cleaning, quite possibly refining too.” Evely 2000, 263.

<sup>147</sup> Sakellarakis, Panagiotopoulos 2006, 57-58; Michaelidis 1993, 19; Hansen Streily 2000, 239.

<sup>148</sup> Michaelidis 1993, 16; Platon 1956, 235, fig. 1, pls. 112b-113a; Evely 1988, 402, pl. 24b.

<sup>149</sup> Hampe, Winter 1965, 156, pls. 56.3-57.2.

<sup>150</sup> Soles 2003, 91; Blitzer 1984, 148; Tournavitou 1988, 449.

today.<sup>151</sup> Yet another function of the basin than the one proposed here seems highly unlikely. The so called “potter’s pit” behind building A in the artisans’ quarter at Mochlos differs considerably in its size and shape from the pits at Zominthos and Zou and has been securely identified as a workplace.<sup>152</sup> A similar function for the basin at Zominthos can be ruled out with relative certainty due to the lack of specific finds such as a pivot stone for the potter’s wheel and the modest size of the basin which would hardly provide a convenient working space.<sup>153</sup>

The most important structural element related to a pottery workshop certainly is the kiln. Other crafts requiring a kiln are metalworking, faience and glass making, and limestone burning in order to produce raw material for frescoes and plaster. The physical appearance of each kiln depends mainly on its specific task, however some types of kilns might have been used for more than just one material or their exact function was hard to determine.<sup>154</sup> Evely distinguished three types of kilns, each with several subtypes, that are all connected to pottery manufacture. Type 1a is hemispherical/horseshoe-shaped in plan and has no stoking tunnels, Type 1b is of the same plan with stoking tunnels and Type 1c is of circular plan with stoking tunnel and grate.<sup>155</sup> Unfortunately, only very few information exists on the shape and type of the pottery kiln at Zominthos. It was identified as an elliptical structure that was only partly unearthed north of the workshop’s northern façade.<sup>156</sup> The kiln has been reburied and nothing of it is visible on the site today, and there are no remarks on its contents or shape other than the elliptical form. Not that many kilns of a Late Minoan I date are known on Crete and from what can be observed, the Zominthian kiln most probably belonged to Evely’s Type 1a or 1c with an elliptical or horseshoe-shaped design and with or without stoking tunnels.<sup>157</sup> It has to remain hypothetical whether or not a grate existed on which the vases would have been put, as can be observed in modern traditional updraft kilns all over the island (Fig. 15). Therefore it appears difficult to draw any further conclusions based on the kiln concerning the date of its construction or firing techniques applied at Zominthos.<sup>158</sup> Other Type 1a examples were

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<sup>151</sup> The basin at Zou has a drain. See Evely 2000, 312.

<sup>152</sup> Soles 2003, 36, figs. 20-22; Morrison, Park 2007-2008, 6-10.

<sup>153</sup> An alternative for a pivot stone was observed by Hampe and Winter at a potter’s workshop in Chania in 1960. „Die Spindel dreht sich in einer Speckschwarte...“ Hampe, Winter 1965, 146.

<sup>154</sup> For the discussion on the kiln from Zakros see Platon 1976; Evely 2000, 310.

<sup>155</sup> Ibid. 301, figs. 119-121.

<sup>156</sup> Sakellarakis, Panagioutopoulos 2006, 59.

<sup>157</sup> Evely 1988, 402.

<sup>158</sup> “With so few kilns, and so varied at that, to go on, detailed conclusions would be premature: it is likely that several sorts of kilns existed contemporaneously throughout the Palatial times, conceivably with regional

identified in Zou and Phaistos, both dated to the Neopalatial period, which seem to be the best comparisons to the Zominthian kiln.<sup>159</sup> Another kiln of this type from Malia has been dated to the MM Ib period.<sup>160</sup> Evely's Type 2 represents another widespread kiln type of various proposed dates. It is characterized by long, multiple flues. Prominent examples are known from Zakros, Knossos, Aghia Triada, Kommos and other sites as well.<sup>161</sup> Type 3 is simply described as having squarish features and only few examples have been attributed to this group. All types seem to have been used contemporaneously, starting from the MM period.<sup>162</sup> The comparison to modern, traditional kilns suggests that at least Evely's Type 1 remained in use to the present day. The, also very common, Type 2 kilns, however, appear to have been rather short-lived and disappear after the end of the Bronze Age in Crete. Davaras distinguished only two types of kilns: A and B which represent Evely's types 1 and 2. And although his Type B exhibited "an important improvement" compared to Type A, he also concluded, that both types "seem to have overlapped to some extent chronologically, and probably did so over a considerable span of time".<sup>163</sup> Therefore it becomes quite obvious that dating a kiln solely on its appearance and without accompanying finds is hardly possible.

Besides *Architecture* and *Permanent Installations*, it is the specific *Contents* of a room that helps to identify its function. This may include tools, raw material, unfinished objects, ephemeral installations such as wooden shelves, tables or benches, the potter's wheels, debris and finished products. It must be stated once more that the sheer existence of these movable objects within a room alone cannot be regarded as reliable criteria for the identification of a workshop because they may also be found in storage areas or rooms of different functions.<sup>164</sup> Consequently, the relative or complete lack of tools in a suspected workshop does not exclude its existence either.<sup>165</sup> The appearance of the *Contents* of a room depends mostly on the conditions of the abandonment of the site. The small, movable objects are usually only found when a sudden abandonment or a destruction occurred and the site was not searched or looted afterwards.<sup>166</sup> This is especially true for objects made of precious and recyclable material like bronze. Besides that, aspects of preservation and durability always alter our perception of

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preferences in design, and certainly with varying degrees of effectiveness and levels of skill required to operate them." Evely 2000, 309.

<sup>159</sup> For Zou see Platon 1956, 238ff.; For Phaistos see Pernier, Banti 215, fig. 134, 135.

<sup>160</sup> Daux 1961, 947; Van Effenterre 1976, 31-45, pls. 6.2, 32.

<sup>161</sup> Evely 2000, 304, figs. 122, 123.

<sup>162</sup> Ibid. 301-308.

<sup>163</sup> Davaras 1980, 125-126.

<sup>164</sup> Evely 1988, 408-409; Sommer 1991, 57.

<sup>165</sup> Tournavitou 1988, 452.

<sup>166</sup> Ibid., 451; Kent 1984, 165.

prehistoric sites. Installations and objects of perishable material for example, are naturally hard to detect, if at all recognizable. However, carbonized wood and charcoal may sometimes hint at the existence of wooden furniture or structures within a room, as was proposed for Room 12 at Zominthos (see below II.3).<sup>167</sup>

Pottery manufacture certainly belongs to the group of crafts that require, apart from fixed installations, a certain array of tools. Potters may therefore use a large range of equipment during the process of pottery production and decoration. Since very few actual objects survived, archaeologists are usually forced to reconstruct these tools by the manufacturing marks and traces on the finished products or employ ethnographic comparisons. Pebbles can be used as polishers and burnishers,<sup>168</sup> shells might be applied for certain decorative elements, and a variety of small tools made of bone, wood, other organic material or even bronze were put to use in the course of formation and surface treatment.<sup>169</sup> The excavation of a Late Bronze Age pottery workshop at Tell ed-Duweir brought to light a rather complete set of tools, including burnishers, a pointed bone tool, shells, and ceramic sherds that were probably used for profiling.<sup>170</sup> Room 12 at Zominthos also yielded several bronze tools that seem to have been used by the potter. The rare combination of a potter's wheel and bronze implements is also attested in Building I at Nerokourou.<sup>171</sup>

This leads us to the most characteristic find in a potter's workshop: the potter's wheel. Here, the term "potter's wheel" is restricted to freely revolving wheels or wheelheads, excluding "mats" and "bats".<sup>172</sup> Potters' wheels were found at several neopalatial sites in Crete suggesting the existence of a workshop. However, the wheels did not have to be stored within the workroom itself and do therefore not necessarily indicate the function of their findspot. The potter's wheel from the Minoan Unexplored Mansion at Knossos is a good example for this. Here, a wheel was found within a building that "otherwise has shown no connection with the potting industry".<sup>173</sup> A secondary use of potters' wheels, for example as lids for pithoi or other storage containers may not be excluded, as shown by the stone wheel from Aghia Irini that was used as a lid of a burial pithos.<sup>174</sup> As observed with the traditional potters of

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<sup>167</sup> See also Sakellarakis 1996, figure on page 212.

<sup>168</sup> For the use of pebbles in modern traditional workshops see Hampe, Winter 1962, 40, 94.

<sup>169</sup> For a more or less complete set of tools see Evely 2000, fig. 106.

<sup>170</sup> Magrill, Middleton 1997, 68, fig. 1.

<sup>171</sup> Tzedakis, Sacconi 1989, 285-287, 328.

<sup>172</sup> For the definition of these terms see Evely 2000, 269-271.

<sup>173</sup> Evely 1984, 253, pl. 226.

<sup>174</sup> Georgiou 1986, 37, no 153.

Thrapsano, the wheels could also be taken with the craftsmen and set up at any suitable location.<sup>175</sup> Such workplaces may be characterized by small pits across which a wooden beam is placed to hold the wheel or by more elaborate constructions, possibly of wood and mud brick, that kept the wheel in place and allowed an unhindered revolution (Fig. 16).<sup>176</sup> Nevertheless, especially the larger versions were probably not moved over longer distances and stored either within the workshop or in storage areas nearby. The piece from Zominthos is one of the larger wheels (Diam. 0.44m) and its findspot in the northwestern area of Room 12 strengthens the functional interpretation of this room along with the other criteria mentioned above and below (For a detailed description of the Zominthian wheel and the development, distribution and typology of potters' wheels see Chapter III.1: Potter's Wheel).

Installations and structures made of ephemeral materials, i.e. wooden shelves and benches, are hard to trace within the archaeological record. It is therefore of no surprise that information on such elements is scarce and in most cases no remains were recorded at all. This is probably caused by the difficulties of recognizing such installations during excavation or by matters of preservation and not by the fact that they did not exist.<sup>177</sup> On the contrary, wooden structures are more than likely to have existed in workshops of various types and can still be seen in some traditional pottery workshops today, i.e. simple shelves on the walls of a potter's atelier in Margarites (Fig. 17).<sup>178</sup> These shelves, tables or benches have a number of advantages: they are easy to build, easy to deconstruct, movable, inexpensive and multifunctional. The remaining problem is their identification. In Zominthos, the existence of wooden shelves in the pottery workshop is reliably indicated by numerous pieces of charcoal and carbonized wood scattered in Room 12 that most probably did belong to such furniture.<sup>179</sup> Other examples of wooden furnishings might be seen in the workshop of the sanctuary at the Palace of Zakros<sup>180</sup> or, chronologically and geographically more distinct, in the ivory workshop of the "House of the Shields" in Mycena.<sup>181</sup> The workplace of a potter where the wheel was set up might well have been equipped with an ephemeral structure as well, which means that no

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<sup>175</sup> Rieth 1960, 35.

<sup>176</sup> Evely 1988a, figs. 10, 14.

<sup>177</sup> Sakellarakis 1979, 40.

<sup>178</sup> See also Hampe, Winter 1965, pl. 3. 1-3; Michaelidis 1993, 33-34.

<sup>179</sup> Petrakos 1988, 169; Sakellarakis, Panagiotopoulos 2006, 59; Michaelidis 1993, 33.

<sup>180</sup> Platon 1974, 115; Michaelidis 1993, 33.

<sup>181</sup> Sakellarakis 1979, 40; Michaelidis 1993, 34.

pits, either dug or built, were always necessary.<sup>182</sup> This is also quite possibly the case in the Zominthian workshop.

The pottery assemblages from different workshops do not necessarily show common characteristics.<sup>183</sup> However, it seems fair to assume that certain traits of such an assemblage can be identified. The existence of larger numbers of unused vessels, possibly arranged by shape, unfinished products, wasters, debris and raw material do, in my opinion, point towards a workshop-area. Both unfinished and finished products tend to be stored within the workshop for some time before they are either completed, transported elsewhere or sold (?) or distributed, although “Theoretically, finished products are not supposed to be kept within the actual working area where they were fashioned for any length of time”.<sup>184</sup> Nevertheless, finished objects can, under certain circumstances and in combination with other positive evidence, confirm, however not determine the identity of a workshop.<sup>185</sup> It is admittedly hard to recognize traces of usage on ancient pottery and it cannot be assumed that all vessels found within a workshop were always part of the current output or series of production. Several vases might have belonged to the equipment of the potter or even acted as models for his production. The manufacturing process of ceramic vessels does not involve precious raw materials like metals and therefore produces a certain amount of debris that remains unused or unrecycled. This debris, consisting of wasters, broken vessels, possibly bent or warped vases, is usually dumped and disposed. How much of this waste is discovered depends highly on the nature of the raw material itself, the subsequent history of the site and how the waste is treated.<sup>186</sup> The relation between dump and production space, or in this case the kiln, is very apparent in Kommos, where the kiln and an appertaining dump are located right next to one another.<sup>187</sup> The assumption of short distances between workshop and kiln might also indicate that such dumps were located close by as well. The relation between workshop, kiln and dump in Zominthos has to remain tentative since no dump has yet been identified. The filling between the northern façade of the workroom and the kiln yielded approx. 90 handleless cups and fragments of few other vases.<sup>188</sup> If this resembles a dump is unclear, however. The roughly 250 vessels from within Room 12 seem to have been stored on shelves and built

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<sup>182</sup> Hampe, Winter 1962, figs. 13, 14.

<sup>183</sup> Tournavitou 1988, 450.

<sup>184</sup> *Ibid.*, 454.

<sup>185</sup> *Ibid.*

<sup>186</sup> *Ibid.*, 453.

<sup>187</sup> Van de Moortel 2001, 25-26, figs. 26, 27.

<sup>188</sup> Sakellarakis, Panagiotopoulos 2006, 59.

benches along the walls and were probably arranged by shape.<sup>189</sup> The numbers and shapes of pots from a room or building alone, however, do not offer valuable help when trying to identify workshops.

The only raw material found in Zominthos is the pure, strained clay within the settling basin in Room 12. Neither half-finished products nor wasters have yet been identified within the ceramic assemblage.

Finally, although not exactly criteria for the identification of workspaces, certain *Prerequisites for the establishment* of a pottery workshop ought to be considered. These concern mainly economical and environmental aspects without which the establishment of a workshop appears to be highly unlikely. This does not imply that all of the following requirements had to be met in order to set up a workshop, however, certain criteria were surely decisive for the establishment of a potter at a specific place. Hampe and Winter, in their pioneering study on traditional Cretan potters in 1962, put together the most important demands for a workshop's location: "Es ist eine verbreitete Ansicht, die Lage des Erdvorkommens bestimme die Wahl des Werkplatzes. Dort, wo ein guter Ton anstehe, lasse ein Töpfer sich nieder. Aber nicht allein der Ton ist ausschlaggebend. Es muß auch Wasser zur Hand sein; die Nähe des Brennmaterials ist wichtig; nicht zuletzt auch die Nähe der Absatzmöglichkeiten."<sup>190</sup> Hence, the local existence of clay as the raw material for potters, sufficient water, fuel to fire the kiln and the marketability for the finished products had to be ensured.

Since the natural environment has not remained unchanged over the last 3500 years, be it by human interaction or ecological agents, it may appear difficult to reconstruct these conditions for Neopalatial Crete. However, several identified workshop sites show a clear connection to natural sources of water and fuel that is still visible today. A spring at Zou provides water for the town of Siteia, and Zominthos has three wells in its immediate vicinity that supply water for the modern village of Anogeia, the largest one giving the site its name.<sup>191</sup> The connection with water may already be expressed in the probably prehellenic name "Zominthos" since the root "Zo-" might have indicated a water source, as Faure suggested.<sup>192</sup> The same situation can

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<sup>189</sup> Ibid.

<sup>190</sup> Hampe, Winter 1962, 87; See also MacGillivray 1987, 276 "The location of a pottery kiln should depend on the availability of good clay and a plentiful supply of fuel and water."; Michaelidis 1993, 29-32.

<sup>191</sup> For Zou see Platon 1956, 232; for Zominthos see Sakellarakis 1983, 488; Petrakos 1988, 166; Sakellarakis, Panagiotopoulos 2006, 51, note 17.

<sup>192</sup> Faure 1972, 181.

also be seen in Palaikastro where a kiln was discovered on the slopes of the Anemospiliara and Petsophas hills with sources of clay, water and wood<sup>193</sup> and the Kairatos river will have supplied the Knossian workshops with water. Cisterns and basins might have been used for the storage of water where no natural source was close by. However, the existence of sufficient fuel, in this case timber to fire the kilns, is subject to speculation. Although the Homeric Hymn to Apollo (III. 475) refers to Crete as “polydendreos” and the ancient name of the Psiloritis Mountains, Ida, means forest, no clear evidence for the environmental and floral appearance of Crete during the Neopalatial period exists.<sup>194</sup> It cannot be excluded, however, that larger forests existed, especially in the mountainous regions of the island that were not used agriculturally. Besides, the phrygana that covers almost the entire island today might have been used as fuel too, as observed with the modern potters of Thrapsano.<sup>195</sup>

The local deposits of clay have long been regarded as the most important prerequisite for the establishment of a pottery workshop. And although clay raw material may be transported over considerable distances, it still seems clear that the immediate proximity of such deposits is favorable.<sup>196</sup> At this point no detailed analysis of Cretan clay deposits is desired and the broad distinction in three main composition zones as put forward by Jones shall suffice to shortly note upon this topic. He divided the island into an eastern, a central and a western zone, each with certain characteristics.<sup>197</sup> Zominthos obviously belongs to the central zone with rather calcareous clays. Other sites included in this region are Knossos, Vathypetro, Aghia Triada, Phaistos, Gournia and many more. The eastern zone encompasses the sites of Zakros and Palaikastro as the most important pottery production centers, while Chania represents the most prominent archaeological site of the western zone. This very broad division is naturally insufficient when it comes to the analysis of local ceramic fabrics and wares, but shall here suffice to show that natural clay deposits existed all over the island of Crete.

The last but not least important prerequisite for the existence of a workshop is the marketability for its products. Since pottery clearly is an everyday item, large amounts of all kinds of vessels had to be produced by the workshops of this craft. In order to understand the importance of a single manufacturing center, the context of each workshop needs to be considered and examined within the framework of Cretan Neopalatial economy. As

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<sup>193</sup> Davaras 1980, 124.

<sup>194</sup> Michaelidis 1993, 31; Rackham, Moody 1996, 125-128.

<sup>195</sup> Hampe, Winter 1962, 5.

<sup>196</sup> Ibid. 87-88.

<sup>197</sup> Jones 1986, 256-258.

mentioned above, pottery workshops were identified in several contexts, including the so called *palaces*, administrative sub-centers like *villas*, or settlements. In any case, the role of the “employer” certainly affected the production of the related workshop. Palatial workshops may have had to provide its products mainly for the central administration itself, meaning the demands of the palace, while workshops associated with *villas* or ateliers disconnected from the central authorities, possibly supplied whole communities with their products.<sup>198</sup> The questions of how these products, in this case ceramic vessels, were traded and who was in charge of their distribution must still remain tentative and open to discussion. The existence of independent pottery workshops and craftsmen in general, in the Neopalatial period is uncertain but cannot be excluded.<sup>199</sup> It appears rather obvious, however, that the palaces attracted the establishment of specialized craftsmen in particular since these political, economical and religious centers and their surroundings provided a market for all kinds of goods, but especially for prestigious objects.<sup>200</sup> This assumption seems to be coherent with the ceramic evidence as well, since the finest Neopalatial pottery was found in connection with the palaces where it was manufactured and used, quite possibly in the context of conspicuous consumption.<sup>201</sup>

### II.3 The Pottery Workshop at Zominthos

*“Rares sont, en Crète comme en Grèce continentale, les ateliers ou les habitations de potier. En Crète, l’installation de Zominthos, date du MR I A, est sans doute la plus importante et la mieux conservée;”*<sup>202</sup>

Poursat’s characterization of the Zominthian pottery workshop in 1996 has since been largely supported and evidenced by the recently executed excavations at Zominthos during 2005-2007. The ceramic workshop undoubtedly is the most important find of the old excavations carried out in the 1980s and one of the best preserved examples of such a workshop in

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<sup>198</sup> For the term “Palatial workshop” see Pelon 1987, 269; For workshops located in “Villas” and settlements see Michaelidis 1993, 31.

<sup>199</sup> Kopcke 2000, 183. He refers to architects, carpenters and painters as “freiberuflich Schaffende”; see also Van de Moortel 2002, 207; Gilman 1996, 67.

<sup>200</sup> Matthäus 2000, 72.

<sup>201</sup> Knappett 2002, 179.

<sup>202</sup> Poursat 1996, 111.

Minoan Crete. Its arrangement, contents and state of preservation are basically unparalleled on the island and underline the paramount significance of the find.<sup>203</sup> A short description of the ceramic workshop at this point may serve as an introduction to the context in which the pottery assemblage under discussion in the present work had been found.<sup>204</sup>

The architectural layout of the workshop is easily recognizable and definable in the architectural remains of the “Central Building”. The potter’s atelier has been located in an annex added to the NW corner of the *villa* at a later date, but still within the same ceramic phase (Fig. 18). The addition of the annex at a later point of time than the original construction of the “Central Building” is very clearly recognizable by the junctures of the walls. The annex is made up by a suit of three adjacent rooms (10-12), connected via a narrow corridor west of them (Fig. 19). Its overall dimensions range roughly around 5m x 10m and it is accessible via room 9 south of the corridor. The outer walls, as well as the walls separating the single rooms, are all made of roughly hewn lime-stone blocks and are thick enough to have carried an upper storey. All walls are well preserved, except the one separating rooms 10 and 11 which shows clear and significant traces of the seismic destruction that affected the entire site (Fig. 20), and stand up to heights of ca. 1.5m. According to its contents and installations, the main room of the workshop was room 12 (Fig. 21). This is also the only room that had been completely excavated during the 1980s campaigns while both room 11 and 10 had only partially been unearthed.

Room 12, the northernmost room of the annex, covers an area of ca. 10m<sup>2</sup>. It is accessible through a door in the southeastern corner that opens to the corridor which connects it to the other rooms within the annex. Its floor level is indicated by a lime-stone threshold, the floor itself seems to have been made of unpaved earth. The most significant structural element of Room 12 is a permanent installation used for the cleansing and purification of the raw clay consisting of a built circular basin (Fig. 13).<sup>205</sup> This basin was lowered into the floor of the room, its walls made of small and medium-sized lime-stones and its bottom paved with lime-stone slabs. The diameter of the basin reaches ca. 0.8m, and at the time of excavation its floor was still covered with pure, strained clay. No drain could be ascertained but according to its presumed function, the basin did not require such a thing at all. The raw clay was probably left in the basin until it deposited itself on the ground and the water was then skimmed off.

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<sup>203</sup> Sakellarakis, Panagiotopoulos 2006, 57-62.

<sup>204</sup> Exact information on the architecture of the site will be published elsewhere.

<sup>205</sup> Sakellarakis, Panagiotopoulos 2006, 57; Petrakos 1988, fig. 139. A previously assumed second basin connected to the one visible today could not be proved by the new excavations.

Built benches ran along the southern and northern walls of the room which now, in their restored appearance, stand up to ca. 0.5m. Several vessels had been found *in situ* placed upon these benches. Others had most probably been placed on shelves on the walls of the room as indicated by large amounts of carbonized wood found in the workshop area.<sup>206</sup> These vases had seemingly been arranged by shapes since many vessels of similar form had been found closely together and sometimes stacked into each other. Most of the roughly 250 vessels, among which ca. 160 were completely or almost completely preserved and are presented in the present work, probably belong to the final series of pottery production at Zominthos. Apart from the finished products, namely the pots, several pieces of a bronze tool set came to light in room 12 as well. The northwestern area of room 12 also yielded the excellently preserved potter's wheel of the so called "flywheel" type (see below III.1: Potter's wheel).<sup>207</sup> Outside of the annex, an elliptical structure north of the northern wall has only partly been unearthed but identified as the remains of the kiln.<sup>208</sup> However the type of kiln has not been established so far. The possibility of the existence of a workplace outside of the annex, in an open court or yard must be kept in mind, as suggested by the situation in some other workshops on Crete.

Taken all aspects of the pottery workshop at Zominthos under consideration there can be no doubt about the interpretation of the annex as a potter's atelier. The contents of room 12 yielded the finished product as well as the raw material and specific tools, built installations and the existence of the kiln nearby also point to the same result. Clay could be quarried in the vicinity or be brought to Zominthos via clearly established Minoan roads. Wood as fuel for the kiln must have existed at Zominthos in large quantities. The sources of the highland plain supplied more than enough water for the workshop and all other facets of life at the settlement. The market for the finished products was probably restricted to the settlement itself, but possibly also to the needs of pilgrims on their way up to the Idean Cave. The adjacent rooms 11 and 10 may have served as storage areas or as additional working areas may be for more than just one potter. The only open questions concerning the workshop, is the ventilation and light supply of room 12. There may have been small windows in the higher parts of the walls to regulate both aspects but this has to remain tentative. The existence of few clay lamps may indicate that the room was mainly lit by means of such items as well. All in all, the identification of the workshop area can be described as absolutely certain. Whether

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<sup>206</sup> Ibid.

<sup>207</sup> Petrakos 1988, fig. 138.

<sup>208</sup> Sakellarakis, Panagiotopoulos 2006, 59.

or not the annex also had a residential function must remain open at this point, although the remains of food and cooking pots may indicate such a function as well. Unfortunately the situation is not quite as clear at many other Minoan sites that have been interpreted as pottery workshops as will be shown in the following subchapter. Unlike Zominthos, installations have rarely been found and the often poor state of preservation makes useful comparisons with other sites difficult. Nevertheless, a list and the mapping of Neopalatial pottery workshops on Crete may provide a great deal of information on vase making itself and production and distribution patterns on a wider regional scale.

#### **II.4 Catalogue of Neopalatial Pottery Workshops on Crete**

The following list and short descriptions of pottery workshops on Crete are restricted to the Neopalatial period, mainly the MM IIIB, LM IA and LM IB ceramic phases, and include those sites that have previously been identified as such ateliers, although some of which cannot be defined as workshops with absolute certainty. The problems of identifying such a workshop have been mentioned above. This list may by no means be regarded as complete and as research continues, further excavations will surely bring more workshops to light. In order to avoid possible confusion and misleading comparisons I will restrict myself to listing sites that allow a more or less certain identification as ceramic workshops. This results in little more than a handful of examples, which sharply contrasts the enormous amounts of ceramic material of Late Bronze Age Crete. The scarcity of these rather well attested working areas is complemented by several other sites that yielded kilns and specific potting tools such as potters' wheels.<sup>209</sup> Although the existence of kilns is a clear piece of evidence for the production of ceramic vessels at a site, it is often hardly possible to identify the related working area of the potter and thus impossible to draw firm conclusions on its structure, appearance and contents. Much the same is true for the existence of potters' wheels, however, these movable objects are still less suited to define working areas since they could have been stored elsewhere and put to use at various places within a settlement or even a single building.

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<sup>209</sup> Evely lists 98 wheels of various types and dates from at least 26 different sites including the palatial centres at Knossos, Phaistos and Gournia apart from many smaller settlements and villas. Less than 30 wheels come from Neopalatial contexts or were attributed to MM III – LM IB. 12 out of 20 securely identified Minoan kilns, again of various types, were dated to the same period of time, covering the MM III to LM IB ceramic phases. Evely 2000, 271-281, 301-308. Kilns of Neopalatial date were found at Aghia Triada, Kannia, possibly Kato Zakros, Knossos SEX, Kommos, Mochlos, Palaikastro, Phaistos, Silamos, Vathypetron, Zou and Zominthos. See Hansen Streily 2000, 270-285.

This may again underline the unique situation and state of preservation at Zominthos. Ironically it is this state of preservation that makes comparisons with other workshops difficult since no other site produced results quite as telling as Zominthos. On the other hand the publication of the atelier at Zominthos with all its installations and contents may well help to identify ceramic production centers at other Minoan sites across the island. The following examples have been identified as pottery workshops and may in parts be compared to the Zominthian manufacture.<sup>210</sup>

## GOURNIA

The proposed pottery workshop in the settlement of Gournia is situated in House Ac at the northeast slope of the hill. The building consisted of at least five rooms in its basement.<sup>211</sup> Room 18 seems to have been a paved open court that may have served as the entrance area to House Ac. The pottery workshop is supposed to be situated in rooms 16 and 17, two “cellar-rooms” that were possibly reached via a ladder or wooden stairs from above.<sup>212</sup> Both rooms have benches running along their walls, a typical, although not unambiguous, installation of working areas. The identification of a pottery workshop in these connecting rooms is largely based on the only reported findspot of a potters’ wheel at Gournia. Although not being recognized as potters’ wheels at the time of the excavation (Boyd Hawes suspected these objects to be offering tables), five complete wheels were published from Gournia, only one having been ascribed to Room 16 of House Ac.<sup>213</sup> Room 16 also shows a peculiar, built wall in its center that may possibly have been related to a working place within the room. However, this must remain tentative. A window in room 17 may have served to regulate ventilation and lighting of the workshop. The associated pottery allows a dating to the “Town period” which correlates to the Neopalatial period elsewhere. The building itself may have been used for a number of purposes besides being a private residence and housing a potters’ workshop, since it also contained an oil-vat *in situ* in A 21. The combination of a wheel and running benches together with the presence of unused storage containers does not entirely

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<sup>210</sup> I refrain from listing workshops from other areas of the Aegean or from other chronological periods although the observation of modern Cretan pottery workshops has shown that such an enterprise may deliver valuable results. Instead I would like to try to picture a distribution of pottery workshops contemporary with Zominthos.

<sup>211</sup> Boyd Hawes et al. 1908, fig 8.

<sup>212</sup> *Ibid.*, 22; see also Michaelidis 1993, 20-22.

<sup>213</sup> Boyd Hawes et al. 1908, 22, 42, pl. VIII, no. 33; Xanthoudides 1927, 112-114, pl. XVIII.

prove the existence of a workshop but certainly “does allow of some suspicion”.<sup>214</sup> Unfortunately no kiln has as yet been discovered that could be related to the workshop in House Ac. The comparison with Zominthos shows some similarities, although just as many differences could be brought up. Both workshops seem to consist of more than just one room and both have running benches along their walls. In both cases the potters’ wheel was found inside the proposed area of production. The character of the buildings, House Ac at Gournia and the annex to the “Central Building” at Zominthos, is completely different, however. While the annex at Zominthos seems to be exclusively used by the potter, House Ac at Gournia appears to have been rather multi-functional, combining living and working areas. No specific installations, besides the benches, were uncovered in Gournia, unlike Zominthos with the built basin in Room 12. A large settlement such as Gournia must certainly have produced pottery to a large amount which is indicated by the finds of several potters’ wheels as well as the stylistic analysis of the pottery that indicates a production center at the site.<sup>215</sup>

## KOMMOS

The Kommos settlement on the western coast of the Mesara plain had been inhabited during the Middle Minoan IB to the Late Minoan IIIB periods roughly until the end of the Cretan Bronze Age. The geomorphological situation at the site resulted in the three-partite outline of the settlement separating the “Hilltop Houses” from the “Central Hillside” and the “Southern Area” with three successive large civic Neopalatial buildings “AA”, “J/T” and “P”.<sup>216</sup> Two of these areas delivered traces of alleged pottery workshops: the “Hilltop houses” and the “Southern area”.

The “Hilltop” was densely settled throughout the history of the site. Several building phases could be discerned within the conglomerate-like house units in the area. Court 11 in the eastern area of the hilltop yielded a “very hard limestone, pentagonal-shaped block into which has been carved a very deep, cylindrical depression with a round base”.<sup>217</sup> This block appears to be a stone pivot base intended to support a potters’ wheel. “Signs of turning” were still visible at the time of its discovery which further strengthens this assumption.<sup>218</sup> If this block

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<sup>214</sup> Michaelidis 1993, 22.

<sup>215</sup> Evely 1988a, nos. 35, 36, 45-47, 79; See Niemeier 1980, 63ff.

<sup>216</sup> Shaw 1992, figs. 18.4-18.6; Shaw, Shaw 2006, pl. 1.7; Shaw, Van de Moortel, Day, Kilikoglou 2001, 1.

<sup>217</sup> Blitzer 1995, 487.

<sup>218</sup> Ibid.

represents a permanent installation, the use of Court 11 as a working place of a potter seems very probable although “no other indications of pottery making” could be found in the area.<sup>219</sup> A court is quite suitable for pottery manufacture and thus by no means unusual. The complete lack of tools, raw material and other finds related to pottery making may be due to the fact that a second building phase overlay the area which caused the total absence of finds from the first period. The second phase dates to the LM III period as shown by the pottery finds from Court 11. However, the single pivot stone as the only piece of evidence for pottery making in Court 11 leaves reasonable doubts on the function of the area. Any comparisons to the workshop at Zominthos are unhelpful due to the entirely different character of both working areas.

Another part of the Kommos settlement provided more useful information on pottery manufacture at the site: the “Southern Area”. This part of the settlement is situated south of a Minoan road separating it from the “Central Hillside”.<sup>220</sup> The pottery workshop under consideration here has been located in the southern stoa of the large *palatial* Building T that had been constructed in LM IA and later been at least partly abandoned, still within that same period.<sup>221</sup> Both the North and the South *Stoa* were then reused by craftsmen, the southern stoa obviously by a potter. The most significant installation of the workshop is the kiln.<sup>222</sup> It belongs to Evely’s Type 2 kilns with long, multiple flues and is rather well preserved.<sup>223</sup> The kiln was set against the wall of the former South stoa of Building T and had four long channels.<sup>224</sup> The area immediately around the kiln was characterized by the debris of the stoa and the material from the kiln dump containing masses (26000) of fragments including numerous misfired waisters and fragments of several bats.<sup>225</sup> Another feature also adds to the identification of a workshop in this area. A small cylindrical hole ca. 4 m. west of the kiln may be interpreted as a pivot hole for a potters’ wheel.<sup>226</sup> The fresh condition of the pottery found in and around the kiln also points towards an identification of a workplace in the vicinity of the kiln.<sup>227</sup> Although no structural similarities between the workshops at Zominthos and Kommos existed, the pottery assemblages from both sites are well comparable concerning

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<sup>219</sup> Shaw, Nixon 1996, 71.

<sup>220</sup> Shaw 2001, fig. 1.

<sup>221</sup> Shaw, Shaw 2006, pls. 1.7, 1.8; Shaw 2001, fig.2.

<sup>222</sup> Shaw, Van de Moortel, Day, Kilikoglou 2001.

<sup>223</sup> Evely 2000, 304, fig.123.

<sup>224</sup> Shaw 2001, figs. 9-12.

<sup>225</sup> Shaw, Van de Moortel, Day, Kilikoglou 1997, 324; pl. CXXII, b, c.

<sup>226</sup> Van de Moortel 2001, 34.

<sup>227</sup> Shaw 2001, fig. 24.

shapes and decoration as well as the new and unused condition of the vases. The Kommian workshop appears to have been an open air atelier while the potter at Zominthos may also have worked indoors. This may be due to the very different climate on the coast and in the mountains, especially during the spring and autumn months, let alone winter. However, this must remain hypothetical since the Zominthian potter may also have worked outdoors in an open court or yard which has not yet been identified. The kiln at Zominthos seems to have belonged to a different, smaller type than the one at Kommos and other built installations are missing from the workshop area. The kiln and the material from it have been dated to a mature stage of LM IA, i.e. “Advanced LM IA” in Kommian terms and “Transitional MM IIIB/LM IA” and “Mature LM IA” in Knossian chronology.<sup>228</sup> It appears thus to be contemporaneous with the destruction of the “Central Building” at Zominthos, if not slightly earlier.

## MOCHLOS

The next example of pottery workshops is located at Mochlos on the north-eastern coast of the island. It dates to a later period of the Neopalatial time, namely the LM IB pottery phase. The workshop is situated across the island of Mochlos on the mainland in an area termed “artisans’ quarter” by the excavator.<sup>229</sup> Several workshops were identified within the area of two buildings, A and B, located apart from the main settlement, including a potters’ workshop as well as a lapidaries atelier, a textile workshop and metal a workshop.<sup>230</sup> The ceramic workshop was identified in building B, in rooms 2 and 10. Both rooms are equipped with benches and a depression in room 10 may have served as a pivot stone for a wheel.<sup>231</sup> The remains of 4 wheels were found in these buildings, an almost completely preserved example comes from room 8 in building B, together with bronze and stone tools and unused clay raw material.<sup>232</sup> An open court between both buildings yielded the remains of two typologically different kilns and a pit with a pivot stone at the bottom that probably served as a working place for a potter.<sup>233</sup> Both buildings also seem to have been used as residences by the craftsmen operating there. Traces of food consumption point towards this function, a feature

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<sup>228</sup> Van de Moortel 2001, 94-102.

<sup>229</sup> Soles 2003; see also Hansen Streily 2000, 201-204.

<sup>230</sup> Soles 1997, 425, pl. CLXII.

<sup>231</sup> *Ibid.*, 427.

<sup>232</sup> Soles, Davaras 1994, 422-423, fig. 17; Soles 1997, 427.

<sup>233</sup> Soles 2003, 36, figs. 20-22.

that has also been observed for the workshop at Zominthos where numerous animal bones and fragments of cooking vessels were found as well. The workshops at Mochlos were probably connected to some kind of shrine within the same buildings which nicely suits the known connection of craftsmanship and religion in Minoan Crete.<sup>234</sup> Taken all the evidence from Mochlos together, including the kilns, the potters' pit, the wheels, tools, raw material and vessels, the benches in rooms 2 and 10, little doubt can remain on the function of these buildings as workshops. The exact places where vases were formed are harder to locate since potters' wheels are movable objects. The pit behind building B is a very likely spot, however.<sup>235</sup> The assumption that maybe more than one potter worked at Mochlos is legitimate, however hard to prove. A comparison to the Zominthian workshop is possible at least in parts. Both workshops consist of more than one closed room, the kilns are located in the immediate vicinity, the assemblage of finds includes specific tools and the potters' wheel. A residential function of the annex at Zominthos is uncertain but may not be excluded. The benches along the walls of the workrooms are another common feature. No common function can be attributed to the pit at Mochlos and the built basin within room 12 at Zominthos. The mere difference in size makes a comparison problematic and a function as a workplace for the basin at Zominthos unlikely, although both pits contained pure, strained clay on the bottom.<sup>236</sup>

## NEROKOUROU

The *villa* at Nerokourou was situated in the coastal plain of Souda in south-western Crete, the next known major palatial center being Kastelli Chania on the north coast. "Building I" showed three architectural phases, all within the Neopalatial period, the final destruction being assigned to LM IB. The excavation of the building yielded several objects that suggested the presence of a pottery workshop at the site. Unfortunately no structural elements and permanent installations were found, however, the fragments of a potters' wheel and a number of waisters and the "somewhat idiosyncratic character of some of the pottery" may indicate the existence of a local workshop.<sup>237</sup> The lack of built installations may also be due to the rather poor state of preservation, especially in the northern part of the building that was badly damaged by modern road works. No signs of a suggested kiln have so far been

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<sup>234</sup> Soles 1997, 426.

<sup>235</sup> See also Morrison, Park 2007-2008.

<sup>236</sup> T. Brogan, pers. comm.

<sup>237</sup> Kanta, Rocchetti 1989, 327; Evely 2000, 280, no. 65.

discovered. The existence of workshops at *villas* is a common phenomenon and thus not unlikely for Nerokourou either but, admittedly, the hard pieces of evidence are scarce. The local pottery assemblage from the site, although having been assigned to the LM IB period, shows close similarities with the pottery from Zominthos. “However, the pottery of Nerokourou has a certain conservative flavor which is apparent in the dark brown or black paint which covers a substantial amount of the pottery, including that from the final destruction floors.”<sup>238</sup> This, and the range of vessel shapes are well comparable aspects of the assemblages from both sites. Nerokourou may have been a production center specialized in pithoi and other large storage containers as proposed by Christakis.<sup>239</sup> Bronze implements were also found in combination with a potters’ wheel at both *villas*.<sup>240</sup> But returning to the physical appearance of the assumed workshop at Nerokourou no definite statements are possible. A kiln may have been erected in a certain distance from the villa and may thus have avoided discovery until now, as seen for example at Palaikastro or Silamos where kilns were obviously located away from the settlements.<sup>241</sup> Whether or not the workshop was situated within the building or in its vicinity must remain unanswered as well.

## PHAISTOS

The Italian excavations at Phaistos also brought signs of pottery manufacture during the Neopalatial period to light. Although no exact information on a workshop, as defined in this book, are available, the remains of a kiln seemingly used for the firing of pithoi and other large vases had been unearthed west of the “Piazzale I”.<sup>242</sup> The kiln was rather well preserved and showed three long ventilation channels. The date of the “forno da vasaio” is either the MM IIB phase or, according to Levi, the Neopalatial period.<sup>243</sup> Evely listed three potters’ wheels from the palace at Phaistos, two of which seem to belong to the MM I-II period and one which might be of a Neopalatial date.<sup>244</sup> A connection of these wheels to the kiln west of the palace may not be excluded but cannot be proved either.<sup>245</sup> Two other kilns are reported from Phaistos, one in the East Court and another at Chalara, however both are presumably

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<sup>238</sup> Ibid., 326.

<sup>239</sup> Christakis 2005, 72.

<sup>240</sup> Sakellarakis, Panagiotopoulos 2006, 58.

<sup>241</sup> MacGillivray, Sackett et al. 1984, fig. 2; MacGillivray 1987, 276.

<sup>242</sup> Levi 1965/66, 351-354, figs. 40, 43, 44.

<sup>243</sup> Ibid., 353; Tomasello 1996, 29-30.

<sup>244</sup> Evely 2000, 273-276, nos. 29, 31, 48.

<sup>245</sup> Ibid., 317.

later in date and therefore omitted here. A possible workshop with MM III material was located in “Edifice XLIII” northeast of the palace and the east court with the kiln.<sup>246</sup> The “bottega del vasaio” probably had a bench along the north wall and numerous vessels were found stacked inside each other in the room.<sup>247</sup> Both of these features were also encountered at Zominthos.

## PITSIDIA

An interesting but until now insufficiently published workshop of a potter was discovered at the rural *villa* of Pitsidia, southwest of Phaistos. Room XIX (ca. 2.30m x 2.60m) yielded several specific elements attributable to a pottery workshop.<sup>248</sup> A “real-rotating by foot-wheel” could be reconstructed by the excavators thanks to the excellent state of preservation.<sup>249</sup> The finds included a wheel, a stone base and a built pillar to support the revolving wheel. The workshop was destroyed with the rest of the building during LM IB. No signs of a kiln have been recorded but it must have existed nearby. The entire situation of a workshop connected to a *rural villa* compares well to Zominthos, as well as Vathypetro and Zou. In addition to that, the state of preservation and the documentation of the relevant finds in situ allow further comparisons concerning especially technological procedures.

## VATHYPETRO

Another well attested pottery workshop is located within the eastern part of the *villa* at Vathypetro. The *villa* itself is situated in an area rich in water, fertile soil and clay sources. It was operating in two successive periods of occupation, all in Neopalatial times. The south-east quarter of the building was described as “industrial” by the excavator Marinatos. Here, in Room 50, a pottery workshop was identified.<sup>250</sup> The room is equipped with benches and two stone slabs with shallow depressions might have served as pivot stones.<sup>251</sup> A little east of the room the remains of a kiln were excavated that must have belonged to the pottery workshop

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<sup>246</sup> Pernier 1935, 367-367; Michaelidis 1993, 12-13.

<sup>247</sup> Ibid., 13.

<sup>248</sup> Chatzi-Vallianou 1997, 489-492, figs. 4, 5.

<sup>249</sup> Ibid., 502.

<sup>250</sup> Marinatos 1955, 310; see also Driessen, Sakellarakis 1997.

<sup>251</sup> Michaelidis 1993, 13.

of Room 50.<sup>252</sup> The rectangular kiln belongs to Evely's Type 2 with five channels. Waisters and burnt earth were revealed nearby.<sup>253</sup> Three potters' wheels, complete or at least partly preserved were found in the *villa*, although no exact findspots are mentioned.<sup>254</sup> They belong to the same type of "Flywheel" as the example from Zominthos. In addition to the wheels a number of pebbles, interpreted as burnishers, were found in the building as well.<sup>255</sup> Taken all the evidence together no doubt on the identification of a potters' workshop remains. Several sites in the Archanes area, to which Vathypetro belongs, show traces of pottery making which may indicate a "center of intense activity of Minoan potters" in this region.<sup>256</sup> The workshop at Vathypetro appears to have been located in a closed room, however the area around the kiln may also have been used by the potter to process his vessels. This closely relates to the situation at Zominthos although no pivot stones were here discovered within Room 12. Again, benches are the only built installation that both sites have in common. The workshop activity in Vathypetro may be restricted to a second phase of occupation (still LM IA) according to a more economic function of the entire building as perhaps originally intended.<sup>257</sup> Unfortunately no detailed information on the production of pottery at Vathypetro can be obtained through the only preliminarily published excavation of the site. It is certain that the ceramic production, along with other crafts, at several *villas* as shown by the examples at Pitsidia, Tourtoulou, Vathypetro, Zominthos and Zou, was an important function of these multi-purpose administrative centers.

## ZOU

The farmstead at Zou, near Siteia in East Crete yielded probably the best parallel for the pottery workshop at Zominthos. The building was excavated in 1956 and significant pottery establishments were discovered.<sup>258</sup> Rooms Ma and L in the northeastern part of the *villa* have been interpreted as the workrooms of the local potter. These rooms were connected to an open court to the north in which a pottery kiln could be located. Room Ma contained a built cistern-like basin in its northern half with a drain that was probably used in the process of vase

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<sup>252</sup> Marinatos 1951, 270-271; Michaelidis 1993, 15.

<sup>253</sup> Evely 2000, 312.

<sup>254</sup> *Ibid.*, 276-277, nos. 50-52.

<sup>255</sup> Michaelidis 1993, 13.

<sup>256</sup> *Ibid.*, 16.

<sup>257</sup> Hansen Streily 2000, 207.

<sup>258</sup> Platon 1956, 232-239; Michaelidis 1993, 16-17; Hansen Streily 2000, 208-209.

making or better, clay preparation.<sup>259</sup> A row of stone slabs runs through Room L, starting at the edge of the cistern in Room Ma. This is where the production of the wares may have taken place before they were fired in the kiln as suggested by the finds of some stone tools.<sup>260</sup> From here, a corridor leads to the yard with the kiln. Another built basin was set against the wall of the corridor from the court which may also have been used for the purification of the clay. The horseshoe-shaped kiln itself seems to be a Type I kiln according to Evely's typology. The same type of kiln is assumed for Zominthos. A second kiln was reported outside of the area of the *villa*.<sup>261</sup> The workshop at Zou might have had a second storey as is also suggested for Zominthos. The cistern at Zou is the only known parallel to the built basin at Zominthos and although the Zominthian example does not have a drain, it seems probable that both installations had a rather similar function.<sup>262</sup> Unfortunately no potters' wheel was found at Zou and no other installations may indicate the exact working space of the potter. But given that those installations may well have been made of perishable material such as wood, no traces of those installments need to have survived. The previous assumption by Platon that the rooms Z1-4 may also be the remains of a pottery kiln is very problematic and rather unlikely and shall thus not be commented on further at this point.<sup>263</sup>

## II.5 Prehistoric and Modern Traditional Pottery Manufacture on Crete

*"It is entirely likely that the conditions current among modern village potters also obtained in prehistory."*<sup>264</sup>

As shown by most of the above mentioned examples of ancient pottery workshops, it is hardly possible to get a complete picture of production procedures and technological processes simply by relying on the limited physical clues these ateliers offer. This owes largely to the fact that almost no workshop site yielded a mutual combination of permanent installations, an architectural frame, specific finds such as raw materials, tools and "fresh" products, and

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<sup>259</sup> Platon 1956, fig.5.

<sup>260</sup> Evely 2000, 312.

<sup>261</sup> Hansen Streily 2000, 285, no.K33.

<sup>262</sup> For a modern parallel in a workshop at Karoti see Hampe, Winter 1962, 41.

<sup>263</sup> Platon 1956, 233.

<sup>264</sup> Rice 1987, 52.

additional hints of the different stages of manufacture that had been carried out during the production of ceramic vessels. However, the unique state of preservation and the presence of built installations at Zominthos together with much of the potters' toolkit and finished products do allow us to get a grasp of Minoan pottery production technique. This, and the comparison with modern day traditional pottery production on Crete may lead to a rather secure and reliable reconstruction of Minoan ceramic technology.<sup>265</sup>

Not all stages of producing pottery, starting with the quarrying of the raw clay and ending with the firing in the kiln, leave marks on the finished vessel.<sup>266</sup> Thus, the reconstruction of the entire process of pottery making depends on other sources of information as well. Ethnoarchaeological surveys and experimental archaeology have long been an inspiring and informative addition to conventional archaeological fieldwork.<sup>267</sup>

In the next paragraph, I will shortly describe the production procedures occurring during pottery manufacture as suggested by the archaeological remnants at Zominthos and the observation of a traditional pottery workshop at the village of Margarithes south of Rethymnon during two visits in 2005 and 2007.<sup>268</sup> Margarithes has a long tradition of pottery making and the manufacture of ceramics still is one of the main occupations of the village's inhabitants. The ateliers were, and still are, located along the main road leading south, outside of the town-center. Several workshops are still in use, however an even greater number has fallen to ruins. The remains of kilns and potters' pits are visible at various places and offer a glance of former industries (Fig. 22). The most significant change in the work of the potters seems to have been the introduction of the electric kiln while the general techniques of preparation and formation of the clay are still practiced in ways that seem to have survived the passage of time from antiquity onwards. A single potter whose workshop lies at the very edge of the settlement still fires his wares in a traditional "kamini", fueled by nothing but wood. The observation of this craftsman and his techniques may help to enlighten the process of ancient pottery production procedures and clarify some questions on the manufacture of vessels at Minoan Zominthos. The existence of such a "local" ethnographic parallel to the

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<sup>265</sup> See Voyatzoglou 1997; But: see also Childe 1956, 49 „Ethnographic parallels in fact afford only clues in what direction to look for an explanation in the archaeological record itself.“

<sup>266</sup> Evely 2000, 259.

<sup>267</sup> See for example Hampe, Winter 1962, 1965; London 1990; Bey III, Pool 1992; Morrison, Park 2007-2008; Vossen 1991, 21; Eggert 1991, 39-42, 48-51.

<sup>268</sup> See also Noble 1984.

Zominthian workshop certainly provides much useful information and is thus preferable to comparisons with 'exotic' craftsmanship such as Mesoamerican or African potters.

The first, and one of the most important steps in producing pottery is the *localization* and *acquisition* of the raw material since "A potter's prime need is good clay."<sup>269</sup> Minoan potters worked empirically without the understanding of the physical and chemical principles underlying the characteristics of each type of clay and thus relied solely on their experience and expertise concerning earth and soils.<sup>270</sup> Zominthos lies in a tectonic unit characterized by the Tripolitza limestone and calcareous sediments.<sup>271</sup> These central Cretan sediments also define the rather calcareous character of clays from this area. Several sources of clay have been localized on the Zominthian highland plateau, although no signs of ancient quarrying have been detected.<sup>272</sup> Yet, there can be little doubt that the potters at Zominthos relied mainly, if not exclusively, on the local clay beds in order to ensure their supply with raw material. The same is also true for the modern potters of Margarithes who quarry their raw material only ca. 30 min. outside of the village. The proximity and thus the unproblematic transportation of the clay was extremely desirable for the potters since no great amounts of raw material needed to be stored over a longer period of time.<sup>273</sup> A certain reluctance to store larger amounts of clay has also been observed with modern potters on Crete and elsewhere.<sup>274</sup> If clay, or better clayish earth (*choma*), is stored at a workshop, it is usually kept in rather small amounts and processed and used as fast as possible. The raw material may be stored in large vessels such as *pithoi* or even just laid down in an open yard or court, as seen in Margarithes, possibly, but not necessarily roofed (Fig. 23). At Zominthos, the *storage* of raw clay, if it was stored in the workshop – no traces of which were found during the excavation, may have been located in Rooms 10 and/or 11 south of the main workshop area in Room 12. But in accordance with the observation of modern pottery workshops I would like to think that no storage of larger amounts of clay existed at Zominthos. Storage must have been of greater importance at sites that did not have clay beds within their immediate surroundings and suitable spaces, meaning shaded or roofed areas, must have been reserved for storage

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<sup>269</sup> Leach 1960, 43; London 1989, fig. 35; Noble 1984, fig. 1.

<sup>270</sup> Evely 2000, 259; Jones 1984, 30.

<sup>271</sup> Gifford 1992 19. For a more detailed study of clays and their composition, see Jones 1986.

<sup>272</sup> Ch. Siart, pers. Comm.; A potter from Margarithes collected several clay samples from the immediate vicinity of Zominthos and fired a small amount of pots from them. The overall characteristics of the fabrics were well comparable to those of the Minoan vases, however, observable differences in colour may have been due to the firing in an electric kiln.

<sup>273</sup> See also Arnold 1989, 32.

<sup>274</sup> Hampe, Winter 1962, 88.

purposes. This may concern workshops in larger settlements or possibly the palaces which depended on shipments of raw materials from elsewhere.

“Clay as it is dug from the pit contains a variety of impurities including sticks, vegetable debris, sand and pebbles, and sometimes pieces of quartz and limestone.”<sup>275</sup> Thus, the *preparation of the clay* is the next mandatory step after having acquired all necessary resources. This preparation may be divided in several different and successive steps, varying geographically, involving breaking up the clay, weathering, refining and tempering. These steps are time- and labour-intense but absolutely necessary in order to provide workable and plastic clay.<sup>276</sup> Unfortunately, hardly any of these steps are visible in the archaeological record but can be demonstrated by the final fabrics themselves.<sup>277</sup> The first of these steps is the breaking up of the clay. This can be done using various tools, mostly of agricultural character or simply a stick.<sup>278</sup> Since such tools were usually made of perishable material no traces of them survived but the continued usage of similar tools offers interesting parallels (Fig. 24).<sup>279</sup> Weathering requires a flat surface in the open. The clay is spread out and subjected to rain, sun and wind in order to improve its quality.<sup>280</sup> Obviously this must take place outside of the architectural frame of a workshop, as do several other activities connected to pottery making.<sup>281</sup> Where and to what extent this step was carried out at Zominthos is dubious, however an area next or close to the kiln may be quite possible. Another assumable locality would be a flat roof of the workshop.<sup>282</sup> The plasticity of the clay is then improved by means of addition and subtraction. The latter include for example weathering and levigation or picking out coarse grits by hand. The former may involve the mixing of clays and tempering as obvious examples.<sup>283</sup> The only archaeological remnant of these activities at Zominthos is the basin in Room 12 that most probably served for floatation/levigation purposes, like the one at Zou. At Margarithes, a row of three lower parts of pithoi fulfilled the same task collecting the settled, purified clay at their bottom (Fig. 14). As already mentioned, the basin at Zominthos still contained such pure, strained clay at the time of excavation. The additive measures taken by a potter are usually invisible archaeologically but may be inferred from the

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<sup>275</sup> Noble 1984, 31.

<sup>276</sup> “The ultimate concern in making clay vessels is a material’s plasticity and workability.” Rice 1987, 52.

<sup>277</sup> Evely 2000, 263.

<sup>278</sup> Ibid.

<sup>279</sup> See also London 1989, fig. 36.

<sup>280</sup> Leach 1960, 47.

<sup>281</sup> Carinci 1997, 321; Voyatzoglu 1984, 130; Blitzer 1984, 148.

<sup>282</sup> See also London 1989, fig. 39.

<sup>283</sup> Evely 2000, 263.

final product on one hand and possibly by the presence of specific tools, such as querns or mortars on the other hand. These intentional inclusions were ground, crushed or chopped and probably sieved “to ensure an evenness of grain size”.<sup>284</sup> The bronze knife found in Room 12 may have been used to prepare organic materials as tempers but this is speculative and cannot be proved. Such tempers fulfill a number of functions. They help to control the plasticity of the material, they serve as binders, and minimize the effects of thermal shock.<sup>285</sup> The fabrics used at Zominthos, although no petrographic analysis has yet been carried out, seem to contain small stones, organic materials and grog as their main tempers. Kneading and the careful addition of water finally serve to achieve the desired grade of plasticity before the vessels are formed.

There are several main *methods of formation* that may be used alternatively or, probably more often, in combination. They can broadly be divided into two classes: hand-made and wheel-made. Although a general chronological difference between hand-made and wheel-made wares exists, the former preceding the latter, the hand-made techniques continued to be used especially for large and coarse vessels and sometimes also for miniature shapes. I shall refrain from discussing each method in detail at this point since all vases from Zominthos appear to have been thrown on the wheel, but merely list the other modes of formation as possible alternatives. The first and most easily recognizable method of formation is the use of coils. These rings of clay are put one on top of the other and then joined by smearing the clay of the upper coil down on the preceding, dryer one. This method dominates the EM hand-made wares on Crete and loses its importance in MM I and MM II with the increasing establishment of the wheel.<sup>286</sup> Other hand-made wares were formed by the connection of individual slabs, the usage of moulds and forms, paddle and anvil, or by pinching and drawing up. All of these methods may be combined with each other, which creates a wide range of different final products. Not all of those types of formation are easily detectable in the archaeological record, especially when applied with care and expertise. Sometimes it may also be hard to distinguish the products of hand-made wares from those that have been thrown on the wheel, however, certain features visible on the pots themselves offer clues to how they had been manufactured. As already mentioned, and typical for the pottery of LM Crete, the entire assemblage from Zominthos appears to have been wheel-made. Thanks to the great number of complete vessels from the pottery workshop the significance of the Zominthan assemblage concerning

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<sup>284</sup> Ibid.

<sup>285</sup> Ibid., 264.

<sup>286</sup> Ibid., 266-267.

technological aspects rises considerably. Whole vessel exhibit much more specific features and allow a much more precise observation than single sherds and fragments would. The features exhibited by vessels that had been made on the revolving wheel are manifold. The first rather general aspect is a very regular profile, which may in cases be altered by warpings caused by thermal shocks either during the process of firing or also afterwards. Another very important feature are fine parallel lines caused by the hand of the potter or other tools. These lines are here called “traces of smoothing”.<sup>287</sup> An even more salient feature are the grooves that occur during the pulling up of a vessel on the wheel which are here called “rillings” or “wheel-ridges”.<sup>288</sup> These grooves may either be rather horizontal or run along the body of the vessel in spirals, especially on the interior (Fig. 25). The bases of the vases also offer a distinctive feature of wheel-made vessels. Concentric, horseshoe-shapes or elliptical lines are created when the vase is cut off from the wheel with a cord. These lines are called “striations” (Fig. 26). Additionally, the interior of a base may often have a raised central pimple caused by the opening up of the clay lump on the wheel (Fig. 27). All of these features are well represented by numerous examples in the assemblage from Zominthos. The formation on the wheel requires the set-up of the work-place of the potter. The various modes of setting up the potters’ wheel are known from several sources, including Egyptian reliefs and illustrations on Attic pottery, but also from experimental archaeology and modern parallels (Fig. 28).<sup>289</sup> The set-up may vary considerably in different geographic regions as shown by examples from South America, Asia and Africa, however, the main objective is always to ensure a free and unhindered revolution of the wheel.<sup>290</sup> Returning to Crete now, the location where a wheel is set up may also be characterized through various factors. A pit that was used for this purpose was found at Mochlos, a pivot stone still in situ.<sup>291</sup> Similar pits, although not built of stones but lowered into solid rock, can still be seen at Margarithes today (Fig. 22). Alternatively, the wheel may be set up in a wooden structure, possibly incorporating also mud-brick structures (Fig. 29). If the latter is the case, hardly any traces of it will survive archaeologically. It seems reasonable to suspect that this was the case at Zominthos where nothing, except for the wheel-head itself, remained of the original work-place of the potter. Regarding the situation in the pottery workshop at Margarithes and taken Evely’s, and Morrison and Park’s reconstructions

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<sup>287</sup> Evely uses the term “rillings”. However, the term “rillings” is here employed to describe what may be called “wheel-ridges” or “torque-ridges”.

<sup>288</sup> See also Rice 1987, fig. 5.7c.

<sup>289</sup> See Evely 2000, figs. 105, 116; Schreiber 1999, figs. 2.8, 2.9, 3.1; Morrison, Park 2007-2008, figs. 1-2, 4; Rieth 1960, figs. 36-37, 39, 50-51, 55, 58.

<sup>290</sup> Rice 1987, figs. 5.4, 5.10.; Rieth 1960, figs. 109-110, 116-124.

<sup>291</sup> Soles 2003, 37; Morrison, Park 2007-2008.

at Mochlos into account, it appears very likely that the Zominthian wheel had been placed on an axle that revolved in a socket or pivot stone and was held by a wooden structure.<sup>292</sup> The missing socket or pivot stone may be explained by an observation made by Hampe and Winter at Chania: “Die Spindel der Fußscheibe dreht sich in einer Speckschwarte (derma chirino)”.<sup>293</sup> This does not suggest that the exact same method was used at Zominthos but may merely indicate that a solid socket or pivot stone is not necessarily needed to support a wheel. The resources being acquired, the clay prepared and the wheel set up, the potter starts producing his goods using the methods mentioned above.

The last stage before the firing of the vessels is the phase of *decoration*, if aspired.<sup>294</sup> After their formation, the vases are left to dry before any kind of decoration is applied at a leather-hard stage of the clay. The ways of decorating a vessel are manifold and differ regionally, chronologically and technically. In this paragraph I will shortly comment on the technical aspects only. The main distinction of decorative schemes may be “plastic decoration” vs. “painted decoration”. Both types are present in the assemblage from Zominthos, however the first on two fragments of one vessel only. Plastic decoration in LM I is mainly restricted to large storage vessels such as pithoi and hardly found on small shapes and fine wares.<sup>295</sup> Painted decoration clearly dominates the assemblage, especially if the application of slips is considered to be decorative as well (see also Chapter IV.4). The paint is applied to the vessels’ surfaces by using a brush or by dipping the vase into a container filled with paint. The latter method is clearly observable on the so called “dip-rim” cups or bowls, often with trickles running down the surfaces of the vessels. Brushes may be recognized by short, narrow grooves left on the surface of a vessel that have here been called “traces of brush strokes”. However, these traces are rarely visible and may easily be confused with traces that are left when smoothing the vessel’s surface by hand or a piece of cloth. Brushstrokes, however, seem to leave more accentuated and sharp grooves than those caused by fingerprints. Still both methods could be observed on several vessels from Zominthos. All of the painted designs, meaning actual motifs, on the Zominthian vases have been drawn free-hand, as indicated by sometimes severe irregularities in form and layout. Unfortunately no direct evidence for this stage of production can be found among the finds from the pottery workshop, maybe except for a bronze point that may have been used for incisions. But again, this must remain

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<sup>292</sup> Evely 2000, fig. 116 top.

<sup>293</sup> Hampe, Winter 1965, 146.

<sup>294</sup> Evely 2000, 289-296.

<sup>295</sup> For the decoration of Pithoi see Christakis 2005.

hypothetical. Remains of pigments have not survived if they ever existed within the workshop.<sup>296</sup> The only proof is the designs on the vases themselves. At Margarithes the wife of the potter was in charge of the painted decoration which may lead to the question whether or not Minoan potters were also vase painters. But this problem shall not be pursued further at this point. All decorations were applied to the vases before firing.<sup>297</sup>

The *firing* poses the “most crucial test” for the manufactured vases.<sup>298</sup> Since Minoan potters had no knowledge of the chemical and mineralogical components of their goods, the firing process and the control of the temperature within the kiln had to be learned simply by trial and error. And judging from the finished products, the “Minoans were quite up to the challenge...” with much expertise developing from Neolithic times onwards.<sup>299</sup> This becomes especially apparent with the fine wares of the MM and LM periods. The much appreciated studies on temperatures, chemical analysis, and behavior of different clays during the process of firing are here neglected since they result from modern technological examinations and are thus hardly applicable for the improvement of our knowledge on original Minoan pottery manufacturing skills.<sup>300</sup> Instead, it appears to be fruitful to observe and describe the firing process as conducted by traditional potters who still employ much the same materials, kilns and methods that underwent little changes since “...by the closing days of the First Palaces, the potting craft was equipped with all the necessary skills and sensitivities.”<sup>301</sup> First, the dried pots are carefully placed on the grate of the kiln. In the observed case, the kiln is a simple updraft kiln, fueled only by wood (Fig. 30). Its walls are built of limestones, bound and sealed by clay. The upper part of the kiln is made up by a dome-like structure made of clay or mud-bricks. Its open top is covered with large sherds, stones and mats of organic material in order to create the closed chamber of the kiln (Fig. 31). Next, the firing begins. Large amounts of wood are used to achieve the desired temperature which is subject only to the estimation and experience of the potter (Fig. 32). The kiln needs to be continuously supplied with fuel over the entire period of firing in order to achieve the best results possible. After the time of the firing expired, again only a matter of judgment by the potter, the fire is extinguished and the vessels are left to cool off. Unfortunately no traces of any of the stages

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<sup>296</sup> For a detailed study and scientific analysis of pigments and materials used in ancient ceramics see Noll 1978; 1982; 1991.

<sup>297</sup> Nowadays, the demand for touristic souvenirs has supported a modern way of vase-painting after the firing of the vessel. See Noll 1984, 53.

<sup>298</sup> Evely 2000, 298.

<sup>299</sup> *Ibid.*, 300.

<sup>300</sup> See for example Evely 2000., 298-300; Maniatis, Tite 1978, 483-492; Noll 1991, 83-118.

<sup>301</sup> Evely 2000, 317.

of the firing process could be detected at Zominthos where almost nothing is known about the kiln except for its location.

However, the following stage, the *storage of the completed vases*, is well attested at the site. Many vessels were found arranged by shape in Room 12 (see also Chapter II.3), just as can be seen in the modern workshop at Margarithes (Fig. 33). Vessels are placed upon wooden shelves on the walls or simply put on the ground in groups. The existence of wooden constructions such as shelves is very probable for Room 12 at Zominthos as well since fairly large amounts of carbonized wood were identified as remains of such installations. How long the finished products were stored within the workshop is uncertain, however, it seems rather probable that they were moved elsewhere relatively shortly after their completion in order not to occupy too much space within the working area of the potter.

As just described, most of the manufacturing procedures of pottery making are at least partly recognizable in the finds and structural elements of the ceramic workshop at Zominthos. This allows a rather clear view on the different stages of pottery production in a Minoan, rural ceramic workshop and helps to understand both, the technical measures and achievements as well as individual skills and innovations of the potters of Neopalatial Crete. The comparison with a modern day, traditional workshop shows overwhelming similarities with its Bronze Age predecessor and demonstrates the long continuity of manufacturing procedures over centuries, as long as similar external conditions prevailed.

## II.6 The Potters

After discussing the workshops and modes of production, it seems appropriate to throw some light on the people who actually made the vases that so greatly dominate the archaeological record all over the Aegean and elsewhere. Although laden with difficulties and insecurities I shall shortly introduce and discuss some aspects concerning the Minoan potters and what may be said about their role in Cretan Neopalatial society. This excursion may by no means be regarded as a profound study of Minoan potters but merely represents a collection of archaeological evidence and general thoughts on their persona, their activities, and their social status.

Apart from his/her work -the finished pots- little is known about the Minoan “Kerameus”.<sup>302</sup> Nevertheless, it may be of interest to have a closer look at the little information we may be able to gather on the artists themselves, in order to get a fuller picture of their work. Before commenting on the iconography, the written sources, and the social position of Minoan potters (see Chapters III.6.1-III.6.3), I would like to utter some rather general thoughts on their craft with special reference to the situation at Zominthos.

Pottery making in the Aegean and Eastern Mediterranean has always been and still is considered to be a seasonal occupation. It is apparently restricted to the summer months, slightly varying between single sites according to regional differences in temperature and rainfall.<sup>303</sup> The period usually starts in April or May and may extend to September and sometimes even to November as recorded for Cyprus.<sup>304</sup> How much time of this period is actually used for the production of pottery depends on various factors and may differ considerably from place to place, but this is of no significance at this point. During the cold and wet winter months rain inhibits clay mining and the drying of vessels outdoors, and moist wood cannot easily be used to fire the kiln.<sup>305</sup> Low temperatures also complicate the stages of production that are carried out in the open or may even make it completely impossible to work unsheltered.<sup>306</sup> This must have been especially important for the workshop at Zominthos, located at an altitude of roughly 1200m. Here, the season of pottery manufacture can have begun in April at the earliest, more probably in May, and can hardly have lasted until the beginning of October. This high up in the mountains, snow and very low temperatures would certainly have made a longer period impossible. This leads to the question what the potters did beyond the season of their primary occupation. It has been suggested that they pursued agricultural occupations as did most of the traditional potters studied by Hampe and Winter during the 1960s in Thrapsano on Crete.<sup>307</sup> These potters however seem to have followed both occupations during the same season and not one after the other, especially since most agricultural activities, except animal husbandry which is a year-round occupation, are also carried out during the spring and summer months. At Zominthos, animal husbandry and the production of dairy products are the only possible agricultural endeavors that might possibly have been carried out during the winter due to the climatic

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<sup>302</sup> Eckstein 1974, 26-27.

<sup>303</sup> See for example Hampe, Winter 1962, 104; Blitzer 1984, 145; London 1989, 52.

<sup>304</sup> London 1989, 52.

<sup>305</sup> MacGillivray 1987, 277.

<sup>306</sup> Carinci 1997, 321.

<sup>307</sup> Hampe, Winter 1962, 5.

conditions of the site. However, it is far more likely that the animals had to be taken to lower pasture lands than to let the flock stay in the mountains. Textile industry most probably was another main factor at Zominthos but this required own specialists. It remains thus questionable what the Minoan potters of Zominthos did during the winter months.<sup>308</sup>

Leaving Zominthos and its rather special geographic location aside, some other problems concern the “semi-professional” potters of Minoan Crete. To me it may appear useful to differentiate between potters that can be associated with palatial centers and potters that worked in rural areas and villages. The only arguments in favor of this division are few mentions of potters on Linear B tablets and of course the products, the vases themselves. Judging from the finished products, at least some of the Minoan potters must have been highly specialized craftsmen. These specialists are best associated with palatial centers. Their level of expertise and skill could hardly have been achieved by a part-time potter who also had to invest time in keeping life-stock or working on his (or someone else’s fields). On the other hand, the products of rural potters, although showing some skill as well, are often of a lower quality than the finest vases of palatial workshops.

Mentioning of potters is found on some of the Pylos Linear B tablets which even name two artists, *qe-ta-ko* and *pi-ri-ta-wo*, the latter being described as *wa-na-ka-te-ro* -“royal”- and belonging to the group of “*te-re-ta* who hold *ko-to-na ki-ti-me-na* land that they can sub-lease” (see also Chapter III.6.2).<sup>309</sup> These written sources do of course relate to a later phase in Greek prehistory and were found on the mainland, but a comparison of the Minoan and Mycenaean Palatial System and their economies does make good sense. The distinction between different modes of craft production has already been proposed by Brumfield and Earle who separated “attached” and “independent specialization”.<sup>310</sup> This distinction has then been applied to archaeological contexts by Costin (among others) who ascribed “attached specialists” to artists that worked for an elite producing prestige items, and “independent specialists” who produced utilitarian objects for non-elite consumption.<sup>311</sup> The focus on luxury and prestige goods and the very sharp differentiation between the two modes of

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<sup>308</sup> Maybe we ought to put aside modern views of productivity and the obligation to work day by day. In a society where goods were produced only when needed and only to sufficient numbers a long period of rest during the winter months appears at least imaginable. This may vary considerably from site to site but a general tendency towards a period of rest or at least limited activities during the winter months including agriculture and seafaring is well attested for the Aegean and Crete.

<sup>309</sup> Knappett 2001, 85; Palaima 1997, 410. The name *pi-ri-ta-wo* is listed on PY En 467 and Eo 371, *qe-ta-ko* is mentioned on Cn 1287.4.

<sup>310</sup> Brumfiel, Earle 1987, 5-6.

<sup>311</sup> Costin 1991.

production may be misleading as shown by Knappett, but the general idea of the distinction between “attached” and “independent specialists” does well suit a possible distinction between Minoan palatial and rural potters.<sup>312</sup> The lack of direct evidence for the palatial control of at least parts of the pottery manufacture in Minoan Crete does naturally weaken this assumption and it is of course very tentative to suggest that there might be a relation between rural potters and agricultural occupations while palatial potters engaged in other, possibly craft-related activities during the winter months, however, it is a very tempting imagination. To go even further, the institution of the palace would surely have required a large quantity of ceramic vessels which may even have demanded a year-round production. On the other hand, the palaces may also have acquired enough vessels during the potting season from rural as well as palatial potters, by direct or indirect taxation or other obligations, which would then go well with the seasonality of pottery production. Unfortunately, this problem will not be solved in this work and requires still more written and archaeological pieces of evidence in order to be satisfactorily dealt with.

After all, and considering the differences between workshops in small, rural communities and large urban environments, a broad division of palatial and rural workshops appears reasonable and suits the varying demands and clientele of every potter (see also Chapter II.1).<sup>313</sup> Potters affiliated with the *palaces* may also have had much better working conditions, that allowed to produce throughout the entire year, considering storage space for raw material and finished products. But again, this is only a tentative suggestion, lacking any hard evidence. The potter of Zominthos, being attached to the *villa*, ought to be considered rather rural than palatial, which also shows in the quality of his products and range of shapes.

### II.6.1 Iconography

Representations of potters are very scarcely found in Minoan Art. The depiction of human beings and other figural motifs in general is almost exclusively restricted to wall-paintings and seals.<sup>314</sup> Minoan Wall paintings usually did not portray profane activities such as craftsmanship but were mainly reserved for somewhat religious or sacral imagery, including

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<sup>312</sup> Knappett 2001, 87-94.

<sup>313</sup> See also Branigan 1983, 26.

<sup>314</sup> For depictions of human beings on seals see Yule 1980, 118-121.

depictions of nature.<sup>315</sup> Pottery never played an important role as a medium for figural illustrations in Minoan Art, apart from the LM IB Marine Style vases which did not show human figures, and very few examples decorated in the MM Kamares style.<sup>316</sup> Textiles may have carried such depictions as well, however none have so far been found. It is thus little surprising that the only known Minoan depictions of potters have been identified on seals. They come from very few sites and are mainly dated to the Pre- and Protopalatial periods. A number of three-sided steatite prism-seals was found in the stone carving workshop at Malia, datable to MM IB-II.<sup>317</sup> They mostly show a probably male figure that lays a hand on a vessel next to it. Whether or not the person on the seal is actually potting has to remain uncertain. Another three-sided steatite prism of unknown provenance in the Wiegandt collection in Marburg also shows a human figure in immediate connection to a large pithos and an amphora above it.<sup>318</sup> Two three-sided steatite prism beads from Kastelli Pediada also have characteristic depictions of human figures with ceramic vessels.<sup>319</sup> A possible connection to the pottery workshop at the site is uncertain but quite attractive to assume. Finally, a three-sided steatite prism from the area of Knossos, now in the Velay collection in New York, shows a female figure handling a round vessel above a two-handled vase.<sup>320</sup> It must be kept in mind that these representations of human figures in combination with ceramic vessels are merely interpreted as scenes of potters. And although highly probable, no unambiguous evidence for this interpretation exists. If one does accept the recognition of potters on these seals, the information that can be drawn from them still remains very limited. The only rather secure piece of information concerns the gender of the artists: Except for one example all potters are male. This coincides with the written sources (see Chapter II.6.2) and most modern ethnoarchaeological parallels. However, the scene from the area of Knossos and the feminine form *ke-ra-me-ja* on one tablet (Ap 639) from the same site suggest that also women engaged in pottery manufacturing.<sup>321</sup> This is supported by the observations of Hampe and Winter on Crete, as well as the studies by London on Cyprus.<sup>322</sup> Unfortunately no depictions of the actual production of ceramic vessels are clearly recognizable on the Minoan seals. This is by no means surprising considering the non-narrative function of the seals as administrative

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<sup>315</sup> See for example Morgan 2005.

<sup>316</sup> Walberg 1976, 194, figs. vi.1-4.

<sup>317</sup> Michaelidis 1993, 26; CMS II.2, 118a, 178a, 179a, 190a; Yule 1980, pl. 2, nos. 34, 37, 39.

<sup>318</sup> CMS XI, no. 122a.

<sup>319</sup> Kenna 1960, 92-93, nos. 38-39, pl. 2; Michaelidis 1993, figs. 9a, b.

<sup>320</sup> CMS XIII, no. 80; Michaelidis 1993, fig. 9c.

<sup>321</sup> Michaelidis 1993, 26-27; Bennet et al. 1956, 6.

<sup>322</sup> Hampe, Winter 1962, 92-93; London 1989, figs. 41-56.

tokens and their small size. However, Egyptian representations from various tombs of the Old to New kingdoms show organized pottery workshops including the staff and all stages of the manufacturing process in detail.<sup>323</sup> These illustrations may not be uncritically transferred and applied to Cretan Neopalatial workshops but might just give a broad impression on how to imagine the daily routine in such an atelier.

## II.6.2 Written Sources

A second source of information on the actual people that worked as potters are the Linear B tablets found in some palatial sites on the mainland and Crete. Mycenaean bureaucracy registered various fields of the economy and craftsmen are listed in different contexts.<sup>324</sup> However the limited number of recorded potters sharply contrasts the vast amount of vases produced by them. (Two tablets from Knossos taken together list ca. 1000 stirrup jars, however the tablets stand more or less alone and cannot be linked with any contextual information).<sup>325</sup> This may be due to the fact that pottery making probably was a kind of “Basisindustrie” unlike the production of luxury and prestige goods which are mentioned far more often.<sup>326</sup> Unfortunately little more than the description of the potters’ occupation is mentioned and none of the stages of production are referred to in detail.<sup>327</sup>

The Linear B term for potters in the Nom. sing. is *ke-ra-me-u*. Several grammatical forms of the root of this word have been identified on a relatively small number of tablets from Pylos, Mycenae and Knossos.<sup>328</sup> One tablet was found at Knossos, one at Mycenae and four at Pylos. In two cases the potters are even called by their names: *pi-ri-ta-wo* and *qe-ta-ko* (see also above Chapter II.6).<sup>329</sup> As already mentioned, the first of these names is attributed with the adjective *wa-na-ka-te-ro* which may define this potter as a potter or a member of a group of craftsmen that worked either exclusively or at least mainly for the demands of the elite. That

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<sup>323</sup> Singer et al. 1958, figs.232, 234, 243; Michaelidis 1993, fig. 10.

<sup>324</sup> Bech Gregersen 1997, 43.

<sup>325</sup> Tablet K 700 lists 900 jars and tablet K 778 mentions 180 jars.

<sup>326</sup> Hiller 2004, 384; see also Haskell 1997, 107 “...although the Linear B tablets make very few references to pottery production, we all know that Mycenaean pottery in the IIIB period was produced in great abundance. But, bureaucrats at central administrative centers reveal little direct interest in pottery production.”

<sup>327</sup> Ibid., 383; Whitelaw 2001, 71.

<sup>328</sup> *ke-ra-me-u* (Nom. Sing.) on PY Cn 1287; *ke-ra-me-we* (Nom. Dual) on PY An 207; *ke-ra-me-wo* (Gen. Sing.) on PY En 467 and PY Eo 371; *ke-ra-me-wi* (Dat. Sing.) on MY Oe 125; the female form *ke-ra-me-ja* is found on Kn Ap 639. See Ventris, Chadwick 1973, Glossary 553.

<sup>329</sup> The name *pi-ri-ta-wo* is listed on PY En 467 and Eo 371, *qe-ta-ko* is mentioned on Cn 1287.4.

is if the title was not “...more *ad hominem* rather than directly reflecting the scale or nature of the contribution of that individual to the palace.”<sup>330</sup>

To sum it all up, it appears that the tablets support the notion that both men and women worked as potters and that some workshops may have been affiliated with the palaces. Finally, the tablets from Pylos give us at least two names of potters which remind us that we are actually talking about people instead of abstract terms like “craftsmen” or “potters”, and their occupations and daily life.

### II.6.3 Social Status

Pottery manufacture and thus those who exercise it are “...embedded in society...” and “...bound equally by practical/physical and social constraints.”<sup>331</sup> The question that shall be considered here for a moment concerns not the technological and practical aspects of ceramic manufacture, but rather the social position and consequently the possibilities and limitations in Neopalatial society of those who produced the vessels that so greatly influence our modern understanding/imagination of the ancient Minoan culture.

Before I start presenting some thoughts on the social status of Minoan potters it must be remembered that absolutely no direct archaeological evidence and information on the topic exists and everything that is uttered here is purely speculative. And without written sources this will remain to be the case, I regrettably suppose. Nevertheless, more general reflections on social and economic relations and the comparison with other ancient cultures of the eastern Mediterranean and the Near and Middle East as well as ethnological parallels may possibly help to understand the social role of Neopalatial potters on Crete.<sup>332</sup> The following may respectively be viewed as no more than an attempt to interpret the pottery-makers’ status in Late Minoan times.

This enterprise inevitably leads to aspects of “specialization”, “dependency”, and “clientele” of Minoan potters and their workshops. Aspects that have already been hinted at earlier (see Chapter II), and I will thus only shortly offer a general summary in specific relation to the person of the potter at this point. The Minoan potters were no homogeneous group of

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<sup>330</sup> Whitelaw 2001, 71, 79, fig. 8.

<sup>331</sup> Day, Relaki, Faber 2006, 28.

<sup>332</sup> See especially Evely 2000, 547-560 for ancient parallels.

craftsmen that more or less worked under the same conditions and restraints. It seems probable to assume that the larger part of the group belonged to the potters that have here been called “rural”, meaning that they worked primarily as potters but also engaged in agricultural activities such as farming or animal husbandry. These potters were most probably situated throughout the entire countryside of Neopalatial Crete providing vessels for their own small communities as well as for larger administrative centers by means of tribute or taxes to the authorities. A smaller group of potters seems to have been a highly specialized workforce producing luxury and prestige items mainly for the needs and demands of the palaces/elites. These potters have been labeled “royal” or “palatial”, meaning that they were mostly and directly dependent on these institutions of power. Their typical products would have been for example the Middle Minoan Kamares Ware and the LM IB Marine Style pottery. This is not meant to imply that exactly the same political and social circumstances existed in MM I and LM I, but both, Old and New Palaces seem to have had a direct influence on the crafts and craftsmen. Since written sources on the topic are lacking, it may prove useful to turn to the Near East to look for further information.

During the Late Bronze Age, Mesopotamia was a region of large territorial states with a clearly established “palace economy”. And even though the political situation of Neopalatial Crete is not undisputed, these states offer tempting analogies for Crete, and later, Mycenaean Greece.<sup>333</sup> The Mesopotamian records distinguish between what has been called a group of “free citizens” and the “king’s people” within the palace economies of the Near and Middle East.<sup>334</sup> It seems that both communal and even private land tenure existed as well as land that was property of the palace/ruler which was then granted to his associates. This concerns mainly the agricultural surplus production and not so much the crafts and industries but certain similarities appear to have existed. However, “in contrast to agriculture and commerce, the relationship among Late Bronze Age Western Asiatic palace economies and industrial production has been little explored...”.<sup>335</sup> Still, the existence of craftsmen directly related to the palaces is also known in Mesopotamia. Unfortunately the known written records date to the Early Bronze Age and do not list potters among the craftsmen belonging to a palace. Nevertheless it still seems probable that “some craftsmen were fully dependent on palace economies and worked for them in return for a ration dole or plots of palace land on which to maintain their families. Others were members of the community of free citizens and

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<sup>333</sup> Foster 1987, 12.

<sup>334</sup> Ibid.

<sup>335</sup> Ibid. 15.

produced how and for whom the market required.”<sup>336</sup> Whether or not potters were among these craftsmen has to remain unanswered. Much the same conditions can be assumed for the Levant, Anatolia and Assyria.

Egypt, although highly centralized and focused on the person of the Pharaoh, shows a number of differences but also some general analogies to the Near and Middle East. Contacts to Neopalatial Crete are abundantly recorded and it may thus prove useful to look for inspirations regarding the reconstruction of the nature of the Cretan workforce here. Thanks to innumerable written accounts we know relatively much about the organization of the labor-force in Egypt from the Old Kingdom onwards. This organization is explicitly expressed through numerous titles and offices that characterize the hierarchy of different craftsmen and workers.<sup>337</sup> It becomes very clear that among the producers, craftsmen and artisans formed a higher status group than the ordinary workmen.<sup>338</sup> Especially the higher ranks within this group seem to have been in close relationship to the king. It may thus be regarded as certain that “royal” craftsmen formed a defined social group in Egypt. The degree of this relationship to the king and whether an independent market and trade existed or not, is rather uncertain. However, a small number of depictions from tombs showing market scenes suggest that at least some private enterprise had existed as well.<sup>339</sup> And indeed, “It would be an extraordinarily rigid social organization that had no local trade in such commodities among the lower classes.”<sup>340</sup> Good evidence for this open market comes from Deir el Medina, the settlement of New Kingdom tomb builders, where specialized workers also produced goods for their own benefit “on the side”.<sup>341</sup> However, during the New Kingdom “the degree to which craft ateliers or specialized workforces might be independent of state or institutional authority is unclear.”<sup>342</sup> The Egyptian written sources do not mention potters among the crafts directly related to the king or state. This may be due to the everyday character of the items they produced and the low level of prestige and status connected to the vessels.<sup>343</sup> That the

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<sup>336</sup> Ibid.; see also Evely 2000, 557-558.

<sup>337</sup> See Eyre 1987, 26-27.

<sup>338</sup> Ibid.; Evely 2000, 555.

<sup>339</sup> See for example Moussa, Altenmüller 1977, fig. 10.

<sup>340</sup> Eyre 1987, 31.

<sup>341</sup> Eyre 1987a, 199-200.

<sup>342</sup> Ibid., 199.

<sup>343</sup> In the „Lehre des Bw3-Htj“ a father urges his son to become a scribe in order not to suffer from the consequences of hard work connected to several crafts, including the potters. The description of the potters gives a hint at the low social position of these people in ancient Egypt. “Der Töpfer ist unter der Erde, obwohl seine Lebenszeit noch unter den Lebenden ist, indem er sich in das Feld hineinwühlt mehr als die Schweine, um seine Gefäße zu brennen.” Helck 1970, 53-57.

state and palace required pottery is out of the question, however, the potters of Egypt seem to have been largely independent due to the nature of their produce.

Before summarizing the analogies from different ancient cultures and deducing possible aspects for the Cretan potters, I shall shortly give an account of some modern ethnological parallels. On their visit to Camerota, a potters' village in Campania, Hampe and Winter described the living conditions of the potters as very modest.<sup>344</sup> Most of them did not own the workshop in which they worked but had to pay a lease to the landlord. Such low social status is also known from other societies with hierarchically arranged groups, e.g. in Peru, Mexico, India and elsewhere.<sup>345</sup> A common reason for this low status might be seen in the utilitarian character of the pottery. However, contrary examples, even from the same geographical regions such as Mexico or Guatemala, exist as well. Potters may also have a high social position often resulting from contextual factors such as a steady income or even wealth acquired through trade of highly valued pieces.<sup>346</sup> An example for such highly valued pieces may be seen in medieval Islamic tiles that were needed to decorate mosques. The production of such tiles could have led to a higher social status of an Islamic potter in comparison to his European, Christian colleagues.<sup>347</sup> But also in this case, the decisive factor for the social status is the actual or symbolic value of the produced goods. In terms of Minoan Crete, the LM IB Marine Style pottery may well have qualified as such a valued item.

As shown by the ancient and modern ethnological parallels, no definite or generally valid statements on the social status of the Minoan potter can be expressed. On the contrary, the social position of the potter seems to have been directly related to the actual worth, and even more importantly, the symbolic meaning and prestige of the produced object. This does comply with the postulation of social divisions within the workforce in general, and even within single groups of craftsmen in particular.<sup>348</sup> Thus a division between "rural" and "royal" or "palatial" potters for Neopalatial Crete may in fact come close to historical reality. The first

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<sup>344</sup> "Die Töpfer müssen fieberhaft arbeiten, um nur das Notwendigste zum Leben – einem sehr bescheidenen Leben – zu verdienen." Hampe, Winter 1965, 13.

<sup>345</sup> Arnold 1989, 196.

<sup>346</sup> *Ibid.*, 197.

<sup>347</sup> Hodges 1974.

<sup>348</sup> For an example of a tri-partite division of a workforce see Steinkeller 1987, 100-101. He distinguished "(a) workers employed full time in productive type of labor, without means of production, receiving rations throughout the whole year (...); (b) workers employed part-time in productive type of labor, with means of production, possessing land allotments in return for services, receiving rations for the duration of their work duty, cultivating their land allotments themselves (...); (c) managers (various types of administrators, military officers, priests, etc.), employed full time in non-productive type of labor, with means of production, possessing land allotments in return for services, their land allotments being cultivated by the workers of the *a* and *b* categories."

category being composed of part-time craftsmen that also engaged in agricultural activities during the autumn and winter months, either for their own benefit or as services to a higher authority, the second group being a rather small group of highly specialized artisans that worked mainly, or even exclusively, for the demands of the elite/palace. Such different categories of craftspersons probably result from a combination of several factors including the type and quantity of raw material involved, the type of final product, the labor-intensity of production and the positioning of required installations, meaning whether or not these structures were directly related to central administrative buildings.<sup>349</sup>

The question of land ownership and private property in general in Minoan Crete is hard to answer and shall not be pursued further at this point. In my opinion, it does appear reasonable however, to expect that both private households as well as the “state” did own land and that especially the latter could have allotted it in return for certain services. It may also be reasonable to accept that a certain degree of free markets existed on which everyday items and utilitarian goods were traded without the control of the central administration. Luxury and prestige items however were probably manufactured under direct control of the palaces and the residing elites in order to secure the provision of objects necessary for gift exchange and the establishment and up-keeping of social hierarchy.

Judging from the finished products and the remoteness of his workshop, the Zominthian potter probably belonged to the group of “rural” potters, providing vessels mainly for the community and possibly pilgrims to the Idean Cave. It is these final products that form the basis for this entire work and to which we shall now turn our attention.

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<sup>349</sup> Tournavitou 1997, 37.



## Chapter III: The Pottery from Zominthos

*“Pottery preserves in its shape, decoration and physical properties a permanent though very fragmentary record of some man’s activities. Therefore, it must be studied intensively if the archaeologist is to reclaim from it all that is possible of the record remaining in such objects, and of their associations with other materials, in his excavations of ancient villages and towns.”*<sup>350</sup>

*“More than any other category of evidence, ceramics offers archaeologists their most abundant and potentially enlightening source of information on the past.”*<sup>351</sup>

Ancient pottery has indeed come a long way from being only an aesthetic object worth collecting and exhibiting.<sup>352</sup> Today ceramics, more than ever, hold a prominent position in any archaeological examination. Due to its abundance and preservation, pottery has been one of the most important types of archaeological artifacts. This inevitably led to numerous ways of approaching the ceramic evidence and trying to excerpt information on various questions,

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<sup>350</sup> Matson 1969, 592.

<sup>351</sup> Sinopoli 1991, v.

<sup>352</sup> For the tradition of pottery collections see Nørskov 2002, 27-80.

from chronology to sociology, from the clay vases.<sup>353</sup> Consequently, pottery has played a major role in the archaeological literature of the past decades from rather comprehensive sourcebooks to very specialized articles.<sup>354</sup> Concerning the general development of pottery studies, a three-stage system has been proposed by various authors.<sup>355</sup> First the “art historical” stage then the “typological” stage and finally the “contextual” stage. Day, Relaki and Faber rightly remark that these “classifications coincide broadly with the trajectory of the discipline of archaeology, with the duration and impact of the stages varying according to local archaeological traditions.”<sup>356</sup> This system does indeed nicely illustrate the development of our discipline from antiquarism over extensive material studies to contextual and multi-layered scientific approaches. The incorporation of scientific methods to pottery analysis from the 1960s onwards considerably widened the archaeologists’ perception of ceramics. Mineralogy and petrography have contributed to the study of provenance, raw materials and technology of pottery, while other directions of research focused on chronology, ethnoarchaeology, distribution patterns, modes of production and socio-political organization.<sup>357</sup>

The situation at Zominthos and the material from the pottery workshop allow several suggestions and conclusions concerning many of the above mentioned questions and approaches. After having already touched upon some aspects of technology and the socio-political as well as archaeological context of this material, it is time to take a close look at the clay vessels themselves, the essential core of this study.

The following chapter is thus dedicated to the detailed analysis of the pottery finds from the ceramic workshop at Zominthos. The basis of this study is formed by the complete or nearly complete vessels found in Rooms 10-12 with the addition of few vases from other rooms in the northern area of the “Central Building” at Zominthos (see Table 1). Of the approximately 250 vases found during the 1980s excavations, 161 vessels, including the potters’ wheel, are here recorded and described.<sup>358</sup> Further, a number of fragments with painted decoration are also taken into consideration in order to present the full spectrum of decorative elements encountered on the Zominthian vessels (see Chapter III.2).

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<sup>353</sup> „Potsherds are asked to be heat-resistant or water-proof, matrilocal or patrilocal, relics of traumatic invasion or begin diffusion, insignia of domestic or market economies – in short, sensitive measures of virtually all cultural phenomena.“ De Boer 1984, 529.

<sup>354</sup> See for example Rice 1987; Sinopoli 1991; Arnold 1985; Van der Leeuw, Pritchard 1984 as comprehensive works; see also van Wijngaarden 1999, 1-11.

<sup>355</sup> Orton, Tyers, Vince 1993, 3-22; Van der Leeuw 1984, 710-718; Day, Relaki, Faber 2006, 23.

<sup>356</sup> Day, Relaki, Faber 2006, 23.

<sup>357</sup> Noll 1982; Sinopoli 1999, 161-171.

<sup>358</sup> Petrakos 1988, 169; Sakellarakis, Panagiotopoulos 2006, 58.

At first sight, the assemblage from Zominthos resembles what we know from many excavations of Neopalatial sites on Crete. The pottery includes relatively few shapes (see Chapter III.1) that may occur in several subtypes, mostly of a fine fabric but medium coarse and coarse pastes are also found (see Chapter III.3). Most vases show a relatively good quality of manufacture although numerous pieces exhibit minor to sometimes grave irregularities in shape and surface treatment. Nevertheless, the pottery from Zominthos surely betrays “an expertise in ceramic production”.<sup>359</sup>

The fact that the pottery presented here derives from the closed context of a ceramic workshop has several important implications. An exact study of the material may portray valuable technological aspects of pottery manufacture during the Neopalatial period on Crete, as well as a rather definite, chronologically fixed point within the Cretan relative sequence. The possibility to observe a complete ceramic inventory of a workshop is merely unique in Minoan Crete and could provide information on what is to be expected in comparable contexts throughout the island. It is quite possible that all, or at least the majority of the vases found in Room 12, represent the final series of pottery production at the site just before its destruction. But, however tempting this assumption may be, we cannot be entirely sure if this is the case. Some of the vessels may have been stored in the workshop for a while before it went out of use, others may have functioned as models, or the vases might represent a specific order that was being produced exclusively for a certain customer. Production and consumption are interrelated processes and the public/private demand certainly influenced the output of Neopalatial workshops as well.<sup>360</sup> Naturally a combination of the just mentioned possibilities may also account for this particular assemblage. However, if we are dealing with a “fresh” series of vessels, its chronological importance can hardly be overestimated. Coming from a single, sealed destruction deposit, the pottery assemblage may represent an array of shapes and decorative elements that were clearly in use contemporaneously and therefore offer decisive clues for the Minoan relative chronology, at least for this part of the island (see Chapter IV, especially IV.3).<sup>361</sup>

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<sup>359</sup> Sakellarakis, Panagiotopoulos 2006, 60.

<sup>360</sup> Day, Relaki, Faber 2006, 28.

<sup>361</sup> For the problems of synchronisation of regional pottery developments see Momigliano 2007, 2.

### III.1 The Shapes<sup>362</sup>

The ceramic assemblage from the pottery workshop at Zominthos incorporates a limited range of vessel shapes (Table 2). The most common find is represented by the simple handleless (conical) cup as in practically every other archaeological site of the Neopalatial period on Crete.<sup>363</sup> Other shapes include kalathoi, or flaring bowls, hemispherical cups, bell-shaped cups, rounded cups, straight-sided cups, bridge-spouted jars and jugs, beaked jugs, ewers, lekane, so called milk jugs, bowls, incense burners, a conical rhyton, a karpodochos and several other vessels that appear in few or even single pieces only. Subtypes to a vessel shape have been established whenever this seemed necessary and possibly meaningful. These subtypes, although distinguished according to physical characteristics, like the size of the vessel, and shape of the rim, wall or base of a vase, are merely intended to present types that might have been recognized as being different from one another by the Minoan user of these vessels himself.<sup>364</sup> No functional diversity of subtypes is implied in this division by the author.

A general study of the development and functions of Minoan vases throughout the periods of the Bronze Age on Crete would clearly exceed the limits of this work and therefore only a broad account for each vessel shape can be given here.<sup>365</sup> This will be limited to the Middle Minoan III and Late Minoan I periods since they form the chronological frame of the pottery under consideration.

“The repertoire of vessel forms remained more or less the same from the Classical Kamares phase to LM I and the function of the vessels is likely to have been the same throughout the period”.<sup>366</sup> Few new shapes, or better vessel forms, had been introduced during this time but certain alterations within each shape can be observed. Generally speaking, a tendency towards taller, elongated shapes starting in MM III and continuing into LM I becomes apparent while

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<sup>362</sup> The difference between “shape” and “form” as expressed by Furumark is acknowledged but for reasons of better comprehensibility omitted here. See Furumark 1941, 16.

<sup>363</sup> The term “handleless cup” is preferred here instead of the often used “conical cup” because the majority of these cups from Zominthos are often carelessly made, warped or irregularly shaped and have a rather unconformal appearance.

<sup>364</sup> For the recognition of “the same” see Berg 2004, 75.

<sup>365</sup> For more extensive, general studies of Neopalatial Minoan Pottery, although mainly based on painted decoration, see for example Furumark 1941, Popham 1967, Niemeier 1980, Walberg 1983, Betancourt 1985; Walberg 1992, Stürmer 1992, Schiering 1998, Momigliano 2007.

<sup>366</sup> Walberg 1992, 49.

the typical contrast of convex-concave body shapes in MM III do not seem to survive in LM I. This is especially true for the larger vessel forms such as amphorae, jugs and jars and can also be seen in the material from Zominthos. In LM I, shapes with high maximum diameter, rather straight sides, narrow bases and convex shoulders succeeded their MM predecessors.<sup>367</sup>

More specific aspects of changes within each vessel shape will be discussed below while, due to regional developments and diversity in pottery production, generally valid references can hardly be established. The chronological significance of such shape-alterations will be commented on again later (see Chapter IV).

### *Handleless Cups*

“The Minoan conical cup, a truly ubiquitous item found in all Minoan settlements from at least Early Minoan II-III until Late Minoan IIIC, is the epitome of an “uninteresting”, low-status artefact.”<sup>368</sup> And although found to the thousands, few attention had been paid to the most common vessel shape of Minoan Crete during the early archaeological research due to its supposedly insignificant and crude appearance.<sup>369</sup> But things changed considerably when archaeology turned towards a more holistic approach, taking all artefacts into account including coarse and plain pottery. The handleless, or conical, cup now became one of the most commented-on plain vessel shapes for Minoan Crete and even beyond the frontiers of the island.<sup>370</sup> Extensive studies concerning shape, function, date, technique and social implications were conducted based upon these cups, however, their vast numbers still defies and demands further analysis at the same time.<sup>371</sup>

Before turning our attention to the handleless cups from Zominthos, some basic aspects of their shape, production and function in Neopalatial times need to be considered:

The overall form of the Minoan Handleless Cup is rather simple. The integral parts of the cup, meaning base, wall and rim, exhibit a number of variants, however, the general appearance of

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<sup>367</sup> Walberg 1992, 56.

<sup>368</sup> Gillis 1990, 1.

<sup>369</sup> For the vast numbers of cups found see for example Wiener 1990, 137; The lack of attention towards the handleless cups is also mirrored by Furumark’s description of the Conical Cups. See Furumark 1941, 52.

<sup>370</sup> See for example: Wiener 1984; Wiener 1990; Gillis 1990; Gillis 1990a; Schofield 1999; Rupp, Tsipopoulou 1999; Hitchcock 1999; French, Tomlinson 1999; Knappett 1999; Berg 2004.

<sup>371</sup> Knappett 1999, 415.

the shape is merely uniform which makes the cups a “repeat item”.<sup>372</sup> This may be due to a certain degree of standardisation in the production, which becomes especially apparent in LM IB, or simply the skill and experience of the potters in forming these cups.<sup>373</sup> The reasons for such standardisation can be manifold. Increasing production, craft specialisation and economic competition may all result in standardisation as well as socio-political and technological factors such as the consumers’ demand or the use of similar tools.<sup>374</sup>

Nevertheless, differences in size, surface treatment and details of shape led to the establishment of local typologies of handleless cups (see below for the Zominthian cups) implying also a chronological significance.<sup>375</sup> The value and expressiveness of such typologies, however, may be limited, especially on a wider regional scale. The handleless cups are often carelessly made and may portray severe irregularities in shape which makes a definite attribution to a certain type almost impossible and therefore also hard to date.<sup>376</sup> They are usually undecorated or covered with a solid monochrome coating although some pieces with painted decoration exist as well, as illustrated by some finds from Kato Zakros.<sup>377</sup> Generally, MM III pieces tend to have wider low or high raised bases, relatively low, curving walls and a variety of rim versions with a large diameter. Compared to the finer MM II cups, the MM III examples show an irregular range of shapes and variable dimensions but also deformed and irregular walls, small or medium inclusions, sloped bases and other irregularities in shape.<sup>378</sup> Particularly the MM IIIA cups are rather shallow and open compared to their later counterparts from MM IIIB and especially from LM IA.<sup>379</sup> The ledge-rim cups are common but continue also into LM IA. Pronounced rillings, or wheel-ridges, on the interior of the cups are also frequently observed. The walls tend to be thicker in MM III and often of a coarser fabric than in LM I. The typical LM IA cup generally follows the trend towards smaller dimensions and a more elongated shape. A narrow, straight to low raised base, slightly curving to straight walls and straight rims appear to be the most common type during this time. However, the regional diversity and great variety of these cups allow hardly

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<sup>372</sup> Van As 1984, 136.

<sup>373</sup> Knappett 1999., 415-416. See especially the term “routinisation”; For a discussion of “standardisation” and “standard products” see Berg 2004, 74-75.

<sup>374</sup> Berg 2004, 74-76.

<sup>375</sup> See Van de Moortel 1997, 32-81; Davis, Lewis 1985, fig. 5.3 after Caskey.

<sup>376</sup> See Walberg 1992, 54 “...and unless there is some decoration to date the cups, the irregularities in them often make them difficult to ascribe to any specific phase, if the find context is unknown”. Although based on MM cups, this assumption proved to be valid also for the LM IA material.

<sup>377</sup> Siebenmorgen (ed.) 2000, nos. 215-217.

<sup>378</sup> Girella 2007, 241. These criteria are based on the cups from the western Mesara.

<sup>379</sup> Gilis 1990, 127-128; Knappett 1999, 417.

more than a very broad distinction.<sup>380</sup> The possible chronological significance of these cups will be of interest again when the date of the Zominthian assemblage is discussed (see Chapter IV).

“Archaeological study has tended to focus on the consumption of these vessels rather than their manufacture, which may be because we assume that their production was monotonously standardised and ‘industrial’ in character, and therefore does not hold much scope for discussion”.<sup>381</sup> And indeed, the purely technological aspects of production seem to be rather simple. Handleless cups were seemingly easy to form, inexpensive and did not require a high labour input.<sup>382</sup> They were produced to vast numbers in a highly standardised manner, although the degree of standardisation may vary considerably from site to site. While Myrtos Pyrgos and Malia seem to produce highly standardised cups in LM I, Knossos, and Zominthos as well, exhibit a wider variety within the vessel shape and its fabrics.<sup>383</sup> They were mostly wheel-made as indicated by striations underneath the bases of many cups and rillings on their walls. However, the quality of each cup may differ significantly from another. Heavily warped and badly thrown cups were not disposed but kept and used alongside accurately shaped and finished ones. Some show no surface treatment at all while others were decorated with painted motifs, and both coarse and fine fabrics were put to use as raw material. A possible explanation for the lack of standardisation in the Knossian cups may be the existence of several workshops that all supplied handleless cups to the large settlement and palace, however, the single workshop at Zominthos also shows considerable differences in the quality of the locally produced cups. Therefore, the size of a settlement, and respectively the number of workshops located there, do not necessarily influence the quality of production carried out. The idea of apprentices of a workshop producing the simplest shape we know in Minoan pottery, the handleless cup, may seem naïve but ought to be kept in mind as shown by experiments and ethnological comparisons.<sup>384</sup> But whatever the reasons for the varying quality of these cups were, it seems that “..., the ways in which the conical cups were used did not demand a particularly competent product.”<sup>385</sup> This leads to the question of the function of the handleless cups in Minoan Crete, especially during the Neopalatial period.

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<sup>380</sup> Gillis 1990, 128.

<sup>381</sup> Knappett 1999, 415.

<sup>382</sup> Davis, Lewis 1985, 83-84.

<sup>383</sup> For Myrtos Pyrgos and Mallia see Knappett 1997, 305-311; For Knossos see Knappett 1999, 416.

<sup>384</sup> Knappett 1999, 416.

<sup>385</sup> *Ibid.* 416-417.

Handleless cups have been found in various sites in Crete and beyond the frontiers of the island.<sup>386</sup> These cups, along with other household shapes, have often been cited in the discussion on Minoan colonies, for example at Akrotiri on Thera, Aghia Irini on Keos, Phylakopi on Melos, Kastri on Kythera or Miletus on the western coast of Asia Minor, and a Minoan *Thalassocracy* throughout the Aegean.<sup>387</sup> Their existence in domestic, funerary, industrial and ritual contexts underlines the multi-functional character of these vases. It is the simple shape of these cups that made them practically universally applicable, be it as drinking vessels, containers for food or other goods, lamps or ritual vases.<sup>388</sup> It seems certain that one of the many uses of handleless cups had been ritual, as stressed by Wiener.<sup>389</sup> They were probably used in feasting ceremonies as well as containers for offerings. An example for such ritual feasting, or in that case a postulated reception ceremony involving drinking, was presented for the site of Petras by Rupp and Tsipopoulou.<sup>390</sup> The proposition was that this may have been the primary function of handleless cups and all other attested usages were merely derivative from this or simply opportunistic.<sup>391</sup> Handleless cup assemblages from other sites such as Haghia Triada and Kastelli Pediada may also point to such an interpretation, however no clear evidence for a primary function of the cups can be recognized.<sup>392</sup> Several examples of handleless cups as offerings have been found at various sites. They are frequently encountered as foundation deposits or laid down in inverted rows containing organic and other material. The most prominent example of this practice is probably the find of ca. 200 cups in a pillar crypt of a house on the Gypsades Hill at Knossos.<sup>393</sup> A comparable situation was encountered at Vathypetro and Zakros although the cups were not quite as arranged as at Knossos.<sup>394</sup> The peak sanctuary at Juktas also revealed many cups, partly inverted and in layers.<sup>395</sup> Only relatively few funerary contexts of Neopalatial date have been thoroughly studied and accordingly only few graves with handleless cups are known. Nevertheless, two examples shall illustrate the funerary function of handleless cups in Minoan Crete. A tomb in Poros yielded 233 vases, 128 of which were

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<sup>386</sup> See e.g. House A in Aghia Irini on Keos with thousands of conical cups. Cummer, Schofield 1984, 140, pl. 47.

<sup>387</sup> See Hägg, Marinatos 1984 for the discussion of a Minoan Thalassocracy.

<sup>388</sup> Gillis 1990, 133-135; Schofield 1999, 757; Wiener 1984, 20; Wiener 1990, 137.

<sup>389</sup> Wiener 1990, 137-138; see also Schiering 1998, 68 for the German terms “Kultnäpfe” and “Kultbecher”.

<sup>390</sup> Rupp, Tsipopoulou 1999, 737.

<sup>391</sup> Ibid.

<sup>392</sup> For Haghia Triada see Halbherr, Stefani, Banti 1980, 69: “La sala 4, il cubicolo e la grande sala 3 con i loro annessi portici e cortile (vani 49; 11; 12) sembrano destinati a ricevere amici, visitatori e ospiti...”; For Kastelli Pediada see Rethemiotakis 1992-1993, 29-64.

<sup>393</sup> Hogarth 1899-1900, 76, pl. VI.

<sup>394</sup> For Vathypetro see Marinatos 1951, 261, eik. 2; for Zakros see Platon 1971, 196-197.

<sup>395</sup> Karetsoy 1978, 62.

conical cups (55%).<sup>396</sup> Another tomb from Pyrgos contained more than 450 cups out of about 1000 vessels.<sup>397</sup> Unfortunately, for most tombs no reconstruction of the original inventory is possible due to disturbances caused by illicit excavations. Building 4 in the cemetery in Archanes Phourni, although not being a tomb, revealed 250 conical cups that “were found placed upright or overturned; as we know from numerous Minoan finds, these suggest some cult act”.<sup>398</sup> The connection of cult and tombs is also shown by a so called “altare” with reversed conical cups at the Tholos of Kamilari near Phaistos.<sup>399</sup> These ritual usages together with domestic functions e.g. as a part of the Minoan kitchen kit, make clear that the handleless cups embody a “great functional flexibility” and “Frustratingly, evidence from a broad spectrum of sites in Crete and beyond demonstrates little more about their consumption than they had multiple functions”.<sup>400</sup>

I myself encountered the same problems just mentioned for some of the material from Zominthos but certain formal differences between the established types could securely be recognized and will be presented below. Due to the great regional diversity general characteristics of handleless cups are hard to establish.<sup>401</sup> Still, a short summary of formal elements is given in order to provide some criteria for the definition of different types for the Zominthian material. The applied typology is based only on the shape of the vessels (Table 3). *Fabrics* and *Wares* (see below) were not included in the distinction of different types and may occur in each category. This was decided mainly because of the assumption that the form or shape of a vessel is the most obvious and firstly recognizable feature that would have been used by a Minoan user to distinguish between different vases.

The shape of the base, wall (or body) and rim were described following Gillis’ nomenclature and definition.<sup>402</sup> No exhaustive search for comparanda for the handleless cups has been conducted since they are found in manifold versions and vast numbers in every Neopalatial site on Crete and elsewhere.

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<sup>396</sup> Muhly 1992, 185.

<sup>397</sup> Hankey 1986.

<sup>398</sup> Sakellarakis, Sapouna-Sakellarakis 1997, 228, fig. 178.

<sup>399</sup> Levi 1961-62, fig. 106.

<sup>400</sup> Knappett 1999, 419, 415.

<sup>401</sup> See Hood 1971, 35: “Although the civilization of Crete throughout the Bronze Age was basically homogenous, local differences and divergences of fashion existed in the pottery as they did in other aspects of life such as burial customs”.

<sup>402</sup> Gillis 1990, figs. 1, 2.

Type 1:

Of the recorded 84 handleless cups 31 belong to Type 1 (R12-001, R12-002, R12-003, R12-004, R12-005, R12-006, R12-007, R12-008, R12-009, R12-010, R12-011, R12-012, R12-013, R12-014, R12-015, R11-001, R11-002, R10-001, R10-002, R10-003, R10-004, R10-005, R10-006, R10-007, R10-008, R10-009, R10-010, R10-011, R10-012, R10-013, R13-001). This Type is characterised by a straight or low raised base, straight walls and a straight or slightly inverted rim. The height varies from 3.2cm to 5.3cm. However, the majority of cups do not exceed a height of ca. 4.5cm. The maximum diameter usually equals the rim diameter and varies from 6.7cm to 10.8cm. The average maximum diameter lies between 8.0cm and 8.5cm. The base diameters range from 2.9cm to 5.0cm but mostly from 3.0 to 4.5cm. The wall thickness shows a relatively wide span of 0.3cm to 0.9cm, however the vast majority of cups exhibit a thickness of 0.4cm to 0.6cm. 22 cups were made of fine fabrics (6 of FF 1, 15 of FF 2, 1 of FF 1-FF 2), 1 of a fine – medium coarse fabric (FF 1-MC 1), 7 of a medium-coarse fabric (MC 1) and 1 of coarse fabric (CF 1). The surfaces of 9 vessels are left plain, this includes buff real slip, self-slip and unslipped surfaces, while 22 cups show a dark monochrome coating. No cup of this type has painted decorative elements. All cups are wheel-made as indicated by circular to elliptic striations underneath the bases and circular to spiral-like rillings on the interior and exterior of most vessels, and most of them are relatively regularly shaped although some warped examples exist as well, e.g. R10-002 (see individual Catalogue entries for more detailed descriptions of single cups).<sup>403</sup> Generally speaking, the Type 1 cups resemble the typical characteristics of LM IA handleless cups in Crete.

Type 2:

Type 2 comprises 13 cups (R12-016, R12-017, R12-018, R12-019, R12-020, R12-021, R12-022, R12-023, R11-003, R11-004, R11-005, R10-014, R15-001). The bases are straight or low raised, the walls are slightly curving to curving and the rims are either straight or slightly everted. The height ranges from 3.3cm to 4.8cm, but the majority of cups group around 4.0cm or lower. Overall the cups of Type 2 tend to be slightly lower than Type 1, the variation of single cups however, makes it difficult to draw any significant conclusions from this. The maximum diameter concurs with the rim diameter and lies within a scope of 6.5cm to 10.9cm. The average diameter lies between 7.5cm and 8.7cm. The Base diameters range from 3.1cm

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<sup>403</sup> For a good illustration of spiral-like rillings see Rethemiotakis 1992-1993, fig. 12γ; for an illustration of elliptical striations see Rice 1987, fig. 3.6; Rieth 1960, fig. 49. The existence of rillings and striations is valid for all Handleless Cup Types from Zominthos.

to 5.2cm with a clear peak around 3.7cm to 4.2cm. The thickness of the walls usually is 0.5cm with few exceptions of 0.6cm to 0.7cm. 7 of the 13 cups of this Type were made of a fine fabric (FF 2), 2 of a fine to medium-coarse fabric (FF 1-MC 1) and 4 of medium-coarse fabrics (3 of MC 1, 1 of MC 2). 4 cups have plain surfaces while 9 show a monochrome dark coating. Again, none have painted decorative elements. All cups are wheel-made and except 1 (R12-018) all are relatively regularly shaped.

#### Type 3:

Only 3 cups belong to the third Type of handleless cups from Zominthos (R12-024, R12-025, R10-015). This Type exhibits straight or low raised bases, straight or flaring walls and everted rims. The lowest cup has a height of only 3.3cm while the other cups range from 4.0cm to 4.9cm due to their warped walls and rims. Maximum and rim diameter are the same and vary from 7.9cm-8.6cm to 11.4cm. The diameters of the bases range from 3.6cm to 4.3cm. The thickness of the walls differs from cup to cup and lies between 0.4cm and 0.7cm. 2 of the 3 cups were manufactured from fine fabric (FF 2) and 1 from medium-coarse to fine fabric (MC 2-FF 1). 1 cup seems to have a plain surface (R10-015) although very faint traces may indicate the remains of a monochrome dark coating, 1 has clearer traces of such a surface (R12-024) and 1 was decorated with black splashes on its interior and exterior surface (R12-025). All are wheel-made and all have slightly warped walls and rims.

#### Type 4:

This type resembles the most distinct variant of the handleless cups from Zominthos. 8 pieces represent the third largest category (except Type 10 “miniature cups”) of this typology (R12-026, R12-027, R12-028, R12-029, R12-030, R12-031, R12-032, R12-033). All cups were exclusively found in Room 12. The characteristics of Type 4 cups are a low or high raised base, straight or slightly curving walls and everted rims with lip. The height of these cups varies considerably and two groups, a lower one and a higher one, may be established. The lower cups range from 3.3cm to 4.8cm (R12-028, R12-030, R12-031) while the higher group varies between 5.3cm and 6.4cm (R12-026, R12-027, R12-029, R12-032, R12-033). Again, the maximum diameter concurs with the rim diameter and lies between 7.8cm and 11.3cm. The taller vases tend to have larger maximum diameters than the lower cups but exceptions exist, e.g. R12-031 belongs to the lower group with a height of 4.3cm-4.5cm but has a diameter of 10.6cm. Still, the lowest cup, R12-030, also has the smallest diameter with 7.8cm.

The diameters of the bases vary from 3.3cm to 4.5cm, the 3.3cm again belonging to the smallest cup of this type. All other bases range from 3.7cm to 4.5cm. The thickness of the walls is fairly regular and focuses around 0.4cm to 0.6cm. Only R12-026 has walls of 0.9cm thickness. All cups were made from fine fabrics (1 of FF 1, 4 of FF 2, 3 of FF 3). No piece has a plain surface. 7 cups were coated with a monochrome dark color and 1 example (R12-026) was decorated with a dip rim and trickle pattern on its exterior and interior. All are wheel-made and regularly shaped with sometimes only slightly warped walls and rims.

The lower version of Type 4 cups find good parallels in the ledge-rim bowls from Palaikastro, while the taller examples, especially R12-027 and R12-033, can be compared to cups from Kastelli Pediada.<sup>404</sup>

#### Type 5:

3 cups belong to this Type (R12-034, R12-035, R12-036). Type 5 cups are marked through straight or low raised bases, straight to slightly curving walls and everted rims. All come from Room 12. Their height varies from 4.4cm to 5.5cm on a warped cup (R12-036). The rim diameters and maximum diameters are equally close to one another in width and range from 9.0cm to 10.4cm, the lowest cup having the smallest diameter. The base diameters lie between 3.4cm and 4.4cm. The thickness of the walls is rather similar ranging from 0.4cm to 0.6cm. All cups were made from fine fabrics (1 of FF 1-FF 2, 1 of FF 2, 1 of FF 3). 1 cup has a plain, self-slipped surface, 2 exhibit a monochrome dark coating on their interior and exterior. All 3 cups have warped bodies and rims.

#### Type 6:

This type comprises 7 pieces (R12-037, R12-038, R12-039, R12-040, R12-041, R12-042, R12-043) and is the fourth largest category of handleless cups. They were all found in Room 12. These cups have either straight or low raised bases, slightly curving to curving walls and slightly inverted rims. Type 6 cups embrace a rather wide variety of heights, beginning with 3.5cm and going up to 6.3cm. However, no further distinction between groups, as with Type 4, was possible. The maximum diameter lies either at the rim or shortly below it. Due to the often only slight inversion of the rims the difference between maximum and rim diameter does in no case exceed 0.02cm (R12-038), if it is at all measurable. The covered range starts

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<sup>404</sup> For Palaikastro see Knappett, Cunningham 2003, figs. 8-10, 30; for Kastelli Pediada see Rethemiotakis 1992-1993, fig. 13στ, ζ.

with 8.2cm and reaches up to 10.2cm. Smaller cups tend to have narrower diameters than taller ones. The differences in the base diameters are not quite as significant as in the height but still considerable. They vary from 3.0cm to 5.2cm. The walls appear relatively similar with thicknesses varying from 0.4cm (1 cup) to 0.7cm (1 cup). The average thickness lies between 0.5cm and 0.6cm. Again, all cups were made from fine fabrics (1 of FF 1, 3 of FF 2, 3 of FF 3). Only 1 cup seems to have had a plain surface (R12-040) although very faint traces might indicate either a monochrome dark coating or remains of a trickle pattern on its interior and exterior. R12-039 has a monochrome dark coating on its exterior and a black rim band and splashes on the interior. All other cups have a monochrome dark coating on their interior and exterior surface, except for R12-042 which only has a coated exterior surface. The cups are either relatively regularly shaped or portray slight to heavier irregularities in shape due to warped body parts.

#### Type 7:

Type 7 is represented by 5 cups that were all found in Room 12 (R12-044, R12-045, R12-046, R12-047, R12-048). They have a high raised base, straight or slightly curving walls and straight or slightly inverted rims. The heights range from 3.9cm to 5.0cm but only one piece (R12-044) exceeds 4.5cm. The maximum diameters are usually situated in the upper half of the cups and lie between 6.6cm and 9.4cm. The rim diameters measure from 6.6cm to 8.7cm. The diameters of the bases vary between 3.0cm and 4.0cm. The thickness of the walls may differ from 0.3cm to 0.7cm. 4 cups were made of fine fabric (FF 2) and 1 cup of a medium-coarse paste (MC 1). Except for 1 cup (R12-048) which has a plain surface, all are covered with a solid monochrome dark coating on their interior and exterior surfaces. All Type 7 cups are wheel-made and either relatively regularly formed or show warped walls and rims.

#### Type 8:

Only a single cup is considered to belong to Type 8 (R12-049). It was found in Room 12. The cup has a high raised base, curving walls and a slightly inverted rim. With a height of 6.3cm it belongs to the taller cups from Zominthos. The maximum diameter lies shortly below the rim and exceeds the rim diameter by only 0.01cm, 9.2cm and 9.1cm. The base has a diameter of 3.3cm and the thickness of the walls measures 0.6cm. R12-049 was made of fine fabric (FF 3) and is possibly coated with dark monochrome color on its exterior surface. Only very faint traces of the color remain. The cup is wheel-made and of a relatively regular shape.

Type 9:

Type 9 is made up by 2 cups, again both from Room 12 (R12-050, R12-051). They have low raised bases, bell-shaped walls and straight to slightly everted rims. Both cups are relatively tall with heights of 6.3cm-6.4cm and 6.5cm. The maximum and rim diameters are equally wide and measure from 8.2cm to 8.4cm. The base diameters vary from 3.6cm to 4.25cm. The thickness of the walls is 0.6cm for both vessels. Both are made of fine fabrics (1 of FF 1 and 1 of FF 2). R12-050 has a monochrome dark coating on its interior and exterior surfaces, R12-051 also has a monochrome dark coating on the exterior of the vase, the interior shows a dark rim band. As with most vessels from Zominthos, the color is preserved in sparse traces only. Both cups are wheel-made and fairly regularly shaped with slightly warped walls and rims.

Type 10:

Type 10 represents a special variant of handleless cups: the *miniature* or *minute* cups. These cups were distinguished from the other types merely by their size. Formal aspects of shape were not used to establish this category since it seemed inappropriate to lay importance on any other feature than their overall size. It is hard to imagine any other function for these cups than a ritual one. The very small volumes of the minute vessels would not appear useful for any mundane employment except maybe for drinking raki, which in itself may have been part of a rather ritual act as well. This might be exemplified by a foundation deposit found in a LM I house by the acropolis of Knossos, where miniature conical cups were buried underneath the floor of one room.<sup>405</sup> Another example of such a deposit was found in Nirou Khani where “hundreds of diminutive conical cups” were found in a walled enclosure under a doorway.<sup>406</sup> These 11 pieces from Rooms 10 and 12, make up for the third largest group of handleless cups found in Zominthos (R12-052, R12-053, R12-054, R12-055, R12-056, R12-057, R10-016, R10-017, R10-018, R10-019, R10-020). The bases vary from straight to high raised, the walls can be straight, curving or also flaring. The shape of the rims ranges from straight to inverted. The height of the cups lies between 1.8cm and 3.0cm, however, the average height revolves around 2.0cm. The maximum diameter may vary from 2.9cm to 5.4cm, although the largest dimensions all belong to just one cup (R10-020) that is clearly larger than all other cups but still too small to fit in any other category. The rim diameters mostly concur with the maximum diameters and lie within the same range of 2.9cm to 5.3cm. The bases measure

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<sup>405</sup> Catling et al. 1979, 77.

<sup>406</sup> Wiener 1984, 20; Platon 1947, 636; Hood 1978, 688.

between 1.8cm and 2.5cm. The wall thickness may reach up to 0.6cm but lies mostly around 0.3cm to 0.5cm. The cups were made of fine and medium-coarse fabrics (1 of FF 1, 6 of FF 2, 1 of FF 3, 3 of MC 1). 3 cups have plain surfaces (R12-055, R10-017, R10-019) while 8 have a monochrome dark coating on their exterior only (R12-054), or on their exterior and interior (R12-052, R12-053, R12-056, R12-057, R10-016, R10-018, R10-020). These cups were either handmade (R12-052, R12-054, R12-056, R12-057, R10-016) or wheel-made (R12-053, R12-055, R10-017, R10-018, R10-019, R10-020). All cups are relatively regularly shaped except R10-016 which is heavily warped. As already indicated comparanda for this type of conical cup were mostly attributed to a ceremonial or ritual context. The same is true for a “dedicatory miniature cup” from Akrotiri that exhibits the same variety of shapes as the Zominthian cups.<sup>407</sup>

### *Hemispherical Cups*

The semiglobular or hemispherical cup existed from Early Minoan times onwards in several variants and was very common for MM II.<sup>408</sup> It continued to exist until the end of the Bronze Age with minor changes in shape and features. “During the course of development of the semiglobular cup and bowl shapes, it is chiefly in the proportions of the vessel itself, and in the shape and size of the lip, that changes are observable”.<sup>409</sup> The general shape is therefore rather unalterable but some details, such as the height of the maximum diameter or the modelling of the rim and base, may be subject to change.<sup>410</sup> These only slight modifications of the shape resulted in a problem of terminology when such cups were addressed in the archaeological literature over the last decades. Besides “semiglobular”, the terms “hemispherical”, and “ogival” have been used to describe the profiles of the vessels under discussion.<sup>411</sup> However, the term “ogival” is mainly used for cups of a later date, namely LM IB, and ought to be abandoned for the earlier versions of this shape.<sup>412</sup> The “ogival” cups also seem to be taller and have a more everted rim than the LM IA hemispherical cups.

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<sup>407</sup> Marinatos 1971, pl. 86a.

<sup>408</sup> Furumark 1941, 46. Walberg 1983, 20.

<sup>409</sup> Furumark 1941., 48-49.

<sup>410</sup> Walberg 1983, 20.

<sup>411</sup> For the term “hemispherical” see Betancourt 1985, 123, fig. 93; for “semiglobular” see Furumark 1941, 48; Walberg 1992, 54; Watrous 1992; for “ogival” see Sakellarakis, Panagiotopoulos 2006, 60; Barnard, Brogan 2003, 42, figs. 4, 5.

<sup>412</sup> Barnard, Brogan 2003, 43.

Nevertheless, terminological confusion remains, causing also chronological difficulties.<sup>413</sup> But this will be commented on later, when the chronological significance of shape is discussed.

The hemispherical cups are a hallmark of LM I and make up for the second largest group of cup shapes in Zominthos. 7 of 8 complete or nearly complete pieces were found in the NW-annex to the “Central Building” that houses the pottery workshop (R12-061, R12-062, R12-063, R12-064, R11-007, R10-021, R10-022). 1 cup comes from Room 13 (R13-002). All are wheel-made and of regular shape. Their body is usually rounded or slightly s-shaped with straight or slightly everted rims. The bases are mostly low raised and rather narrow. The diameter of the bases varies between 3.3cm and 4.3cm. The heights are relatively similar, except for one lower piece (R11-007). They range from 5.6cm (R11-007) to 7.7cm. The average height lies at ca. 7.0cm. The maximum diameter differs between 9.4cm (R11-007) and 11.1cm, mostly grouping around 10.5cm, and it usually concurs with the rim diameter. However, two cups (R11-007, R12-062) show a slightly wider diameter in the upper half of the body than at the rim. The thickness of the walls may vary from 0.3cm to 0.6cm. None of the cups seem to have had a handle. The cups are all made from fine fabrics (3 of FF 1, 4 of FF 2) except for 1 cup that is made of a medium-coarse paste (R12-064 of MC 1). 4 vessels have a plain, either self-slipped or slipped surface (R12-061, R12-063, R10-021, R13-002), the remaining 4 show traces of a monochrome dark coating on their exterior and interior, or on the exterior only (R12-062).

6 of 8 cups (R12-061, R12-063, R11-007, R10-021, R10-022, R13-002) have a slightly everted rim and their shape is well comparable to numerous examples from other Minoan sites.<sup>414</sup> The two cups with a rather straight upper wall and rim (R12-062, R12-064) seem to belong to a typical LM IA type of hemispherical cups.<sup>415</sup> A group of Type F “conical cups” from Kommos represents a good comparison for these vessels, as do some cups found in a

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<sup>413</sup> See for example a cup from Palaikastro that would perfectly qualify as an ogival cup but is decorated in typical LM IA style. MacGillivray et al. 1989, fig. 5.

<sup>414</sup> See e.g. Watrous 1992, fig. 12, no. 30; Popham 1984, pl. 143, no. 7; Catling et al. 1979, fig. 31, no. 227, fig. 37, nos. 255, 256 (although these vessels have wider diameters than the cups from Zominthos); Popham 1972, pl. 30a, d; Mountjoy 2003, fig. 4.10, no. 134 (ogival cup); Warren 1991, fig. 7, F, H, fig. 10, J; Cummer, Schofield 1984, pl. 57, no. 521, pl. 74, nos. 1150, 1151; Bevan et al. 2002, fig. 20, no. 245; Rethemiotakis 1992-1993, fig. 14 στ.

<sup>415</sup> MacDonald pers. Comm.

tomb at Poros.<sup>416</sup> Other parallels were found in Nerokourou and have there been labelled “Coppe campaniformi” (Handleless Bell Cups).<sup>417</sup>

### *Bell-shaped Cups*

Bell-shaped cups or bell cups are rare within the Zominthian assemblage. Only 3 pieces were attributed to this type of vessel (R12-065, R12-066, R12-067). They all come from Room 12 and are all wheel-made. Their shape is characterized by narrow, low raised bases, flaring walls with a slight carination on the lower body and lipless, flaring rims. The height of the cups varies from 5.2cm to 7.0cm. The maximum diameters equal the rim diameters and range from 8.0cm to 9.4cm, the bases from 3.4cm to 3.9cm. The wall thickness lies between 0.4cm and 0.5cm. All 3 cups are of fine fabrics (1 of FF 1-2, 1 of FF 2 and 1 of FF 3). R12-067 had a handle which is only preserved at the joints with the body of the cup. This cup also shows a painted decoration of dark splashes on the exterior and interior surfaces. The other cups (R12-065 R12-066) have a monochrome dark coating on the vessels' surfaces. Comparisons for the handled cup were found at Knossos coming from MM III/LM IA (MUM) and other LM IA deposits.<sup>418</sup> The handleless version (R12-065, R12-066) can be compared to (unstratified) finds from the South House at Knossos, the little Palace, and cups from the Stratigraphical Museum Extension Site.<sup>419</sup> Other examples come from Palaikastro and Kommos.<sup>420</sup> Two “Tazze carenati” from Nerokourou also recall the handleless shape from Zominthos, as does a cup from Deposit ζ at Kastri on Kythera.<sup>421</sup>

### *Rounded Cups*

Although close to the hemispherical cups in shape, the rounded cups have been recorded separately due to their overall globular/rounded appearance and their lack of slightly convex-concave walls. The rims are slightly inverted, except for 1 piece with an everted rim (R12-070). 3 cups from Zominthos belong to this type of vessel (R12-068, R12-069, R12-070). The

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<sup>416</sup> Van De Moortel 2001, fig. 32, nos. 12, 13, 15; Muhly 1992, pl. 10, nos. 50-52.

<sup>417</sup> Kanta, Rocchetti 1989, 137, figs. 34, 35, 49, 50.

<sup>418</sup> Popham 1984, pl. 141, nos. 14, 15; Warren 1999, pl. CCVI, P2331.

<sup>419</sup> Mountjoy 2003, fig. 4.10, no. 138; Hatzaki 2005, fig. 4.3, no. 1; Warren 1991, fig. 7, K.

<sup>420</sup> Knappett, Cunningham 2003, fig. 15, no. 149, fig. 44, no. 419; Van De Moortel 2001, fig. 32, no. 23.

<sup>421</sup> Kanta, Rocchetti 1989, figs. 128, 130, 133; Coldstream, Huxley 1972, fig. 39, no. 34.

bases are low raised, no handles were attached to the walls. They were all found in Room 12 and are wheel-made. The height lies from 6.6cm to 7.0cm, with a peak at 7.9cm because of the gravely uneven rim of R12-068. The maximum diameter lies shortly below the rim and lies at 11.2cm to 11.3cm. Since only ca. 30% of R12-070 is preserved, neither maximum diameter nor rim diameter could be measured for this cup. The rim diameters of the other two cups vary from 10.6cm to 11.0cm. The bases range from 3.9cm to 4.7cm. The thickness of the walls tends to lie within a scope of 0.4cm in the higher parts of the walls up to 0.8cm shortly above the bases. The cups are made of fine fabrics (2 of FF 1, 1 of FF 2). R12-069 and R12-070 are regularly shaped while R12-068 has a heavily warped body and rim. R12-068 has plain, self-slipped surfaces. R12-069 shows a monochrome dark coating on its exterior surface and R12-070 is similarly coated on its interior and exterior. The shape of R12-069 compares well to two teacups from Kommos with also slightly inverted rims and narrow bases.<sup>422</sup> R12-068 resembles the shape of a rounded bowl from Palaikastro.<sup>423</sup> The fragment of a rounded bowl from the South House at Knossos seems to be comparable to R12-070 although the cup from Zominthos is only fragmentarily preserved.<sup>424</sup> Other comparanda were found in the southern area in Kommos that recall the shape of R12-069.<sup>425</sup>

### *Straight-sided Cups*

The straight-sided cup is one of the most common shapes of the MM period, especially after MM IIB, and does continue into the Neopalatial period as well.<sup>426</sup> From LM IA onwards other cup shapes become more popular and usually outnumber the straight-sided version by far. It is clearly designed as a drinking vessel and exhibits a number of variations in shape. These vessels tend to become slightly higher and narrower in LM times but are difficult to date when found on their own based on their morphology only.<sup>427</sup> Generally, the cups are characterized by a flat base, straight walls, straight or slightly everted lips and a strap-like, vertical handle. The walls may be horizontally ribbed or relatively even.

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<sup>422</sup> Van de Moortel 2001, fig. 32, nos. 18, 19;

<sup>423</sup> Knappett, Cunningham 2003, fig. 45, no. 432.

<sup>424</sup> Mountjoy 2003, fig. 4.3, no. 39.

<sup>425</sup> Rutter, Van de Moortel 2006, pl.3.33, 19/1, 19/2, pl. 3.40, 34/2.

<sup>426</sup> Stürmer 1992, 144; Walberg 1983, 19; Walberg 1992, 54-55.

<sup>427</sup> Walberg 1992, 54.

The excavations at Zominthos revealed 3 pieces of this shape (R12-071, R12-072, R15-002), two of which were found in Room 12. All were wheel-made and exhibit rather pronounced rillings on their bodies. The height of these cups varies from 6.8cm to 8.3cm, the maximum and rim diameters from 9.0cm to 12.0cm. The bases range from 4.6cm to 8.8cm in diameter and are relatively wide proportionally to the heights and maximum diameters. The largest measurements all belong to one cup (R12-072) that clearly differs from the others in size. The handles are preserved on two vessels (R12-071, R15-002) and are of the strap-like, vertical type. The thickness of the walls lies at 0.4cm. All cups were made from fine fabrics (1 of FF 1, 1 of FF 2, 1 of FF 3). R12-071 and R12-072 were coated with monochrome dark paint on their interior and exterior, R15-002 shows traces of relatively large black splashes on its interior and possibly on the exterior as well, however, the paint is preserved in very faint traces only. The best comparanda for the Zominthian straight-sided cups come from Deposits A and B from the Basement Room of a MM III House by the Acropolis at Knossos.<sup>428</sup> Several straight-sided cups with horizontal ribs and a monochrome dark coating compare indeed very well to R12-072, although some of the Knossian pieces show also white dots on the dark coating.<sup>429</sup> The shape of R12-071 without horizontal ribs and slightly everted rim is recalled by a cup from deposit B.<sup>430</sup> The same is also true for the slightly more conical form of R15-002 which can be compared to V.117 also from Deposit B in Knossos and a cup from Quartier E at Malia.<sup>431</sup> Other parallels were found in the already mentioned tomb at Poros, the MUM at Knossos, the South House at Knossos, Palaikastro, Kommos and various other sites as well.<sup>432</sup>

### *Spouted Cups*

The vessel in this category (R10-023) recalls the shape of the rounded cups but has a spout and a handle. Only one example of this vase shape was found in Zominthos. The overall form and size reminds one of a modern teapot with a wide rim. The dimensions of the cup lie well

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<sup>428</sup> Catling et al. 1979.

<sup>429</sup> Ibid., fig. 16, no. 5; fig. 18, nos. 49, 95-98,

<sup>430</sup> Ibid., fig. 18, no. 50.

<sup>431</sup> Ibid., fig. 19, no. 117; for Mallia see Pelon 1970, pl. XIV, no. 4.

<sup>432</sup> For Poros see Muhly 1992, fig. 4, pls. 8, 9, figs. 34-36, 40-45; Lembessi 1967, pl. 180β; for the MUM see Popham 1984, pl. 142, nos. 4, 6; for the South House see Knappett 2003, fig. 3.2, no. 40; for Palaikastro see Bernini 1995, fig. 9, nos. 9-11; Knappett, Cunningham 2003, figs. 12-14, fig.31 nos. 254-257, fig. 43, nos. 406-410, fig. 44, nos. 411-419; for Kommos see Van de Moortel 2001, fig. 32, no. 21; Rutter, Van de Moortel 2006, pl. 3.13, L7-L9, pl. 3.24, 1/5 and many more; for Kythera see Coldstream. Huxley 1972, fig. 39, nos. 1, 3; for Phaistos see Levi 1976, pl. 208-210.

within the ranges observed for the rounded cups from Zominthos, the only difference being a narrower rim diameter for the spouted version. The cup is made of fine fabric (FF 2) and coated with a reddish to yellowish-pinkish slip. Despite the fine fabric the vessel has a rather coarse appearance due to the misshaped handle and a carelessly formed spout. The body of the cup is relatively regularly shaped, but the rim is warped. It is wheel-made and shows pronounced rillings on its interior and exterior walls. The vertical strap-handle is grooved and the bridge-spout is of horseshoe shape.<sup>433</sup> The comparison to bridge-spouted jugs does not seem to be applicable for this vessel because of the rounded shape of its body and the limited height. Due to the axial placement of handle and bridge-spout it should also not be compared to semiglobular cups with pinched spouts on one side as sometimes found in MM III contexts.<sup>434</sup>

### *Kalathoi*

The Kalathoi, or flaring bowls, represent the second largest group of vessels after the various cup shapes in the Zominthian assemblage from the pottery workshop. The shape itself seems to be typical for LM I, especially LM IA and the transitional MM IIIB/LM IA phase.<sup>435</sup> Altogether, 15 pieces of this shape were found in Rooms 10 and 12. Due to a considerable difference in size two types of Kalathoi have been distinguished: A large (Type 1) and a small type (Type 2). The overall shape of both types is rather similar. The vessels are characterized by flaring walls and flaring rims with or without lip. However, some differences exist between Type 1 and Type 2 vases.

#### Type 1:

9 of the 15 Kalathoi found in Zominthos belong to the large version of this vessel shape (R12-073, R12-074, R12-075, R10-024, R10-025, R10-026, R10-027, R10-028, R10-029). The height varies from 8.6cm to 12.3cm, mostly clustering around 10.0cm to 11.0cm. Their bases are usually raised, although R12-073 shows a rather straight base, with diameters ranging between 5.3cm and 6.9cm. The walls are always flaring and exhibit pronounced rillings. The maximum diameter always lies at the rim and measures from 17.7cm to 22.1cm. The

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<sup>433</sup> For exact dimensions and a more detailed description see the catalogue entry for R10-023.

<sup>434</sup> Walberg 1983, pl. 16, no. 221; Levi 1976, pl. 212g, 214c.

<sup>435</sup> Betancourt 1985, fig. 93; one beautifully decorated piece from the MUM has been dated to the MM IIIB/LM IA transitional phase, however a stylistically pure LM IA date seems also quite possible. See Popham 1984, pl. 143, no. 14.

thickness of the walls reaches from 0.5cm up to 0.9cm. The vessels were formed out of fine and medium-coarse fabrics (1 of MC 1, 1 of MC 2, 1 of FF 2, 3 of FF 1-2; 2 of FF 1, 1 of FF 1-3). All are wheel-made. The general shape of the body may vary from a rather coarse, broad form (R12-073) to a more slender, elegant body (R12-74) with a slight concavity above the base. The surfaces of the vases are either left plain (R12-074, R12-075, R10-028) or coated with monochrome dark paint (R12-073, R10-024, R10-026, R10-027, R10-029). R10-025 exhibits traces of a black rim band on the exterior of the vessel. The Type 1 Kalathoi are mostly relatively regularly formed although minor irregularities and warped bodies and rims may occur. Comparanda for this shape can be found in several sites throughout Crete and the Aegean. An already mentioned piece comes from the MUM that best recalls the shape of R10-27.<sup>436</sup> Three Kalathoi of medium-coarse fabric from the area of the kiln at Kommos also compare well to the vessels from Zominthos.<sup>437</sup> Others were found on Kythera, both in settlements and tombs, and in Aghia Irini on Keos.<sup>438</sup> A coarse fabric Kalathos from Gournia also resembles the general shape of the Zominthian vessels.<sup>439</sup>

#### Type 2:

The remaining 6 Kalathoi from Zominthos belong to the second, the smaller type (R12-076, R10-030, R10-031, R10-032, R10-033, R10-034). Their overall shape is rather similar to the vessels of Type 1, however their walls appear to be a little straighter and less flaring. The height of the smaller vases lies between 6.6cm and 7.6cm. The bases are mostly straight or low raised and have diameters of 3.6cm to 4.4cm. Rim and maximum diameters range from 11.3cm to 12.9cm. The thickness of the walls lies quite uniformly around 0.4cm to 0.5cm. Again all vessels are wheel-made and all are made of fine fabrics (1 of FF1-2, 5 of FF 2). A monochrome dark coating has been applied to the interior and exterior of R10-033 and R10-034. R10-031 and R10-032 exhibit a similar coating on their exterior only, while R10-030 and R12-076 were left plain. The exterior of R12-076 possibly shows very faint traces of dark splashes but this has to remain tentative due to the poor state of preservation. Unlike their taller counterparts, these vessels might have been used for drinking among other possible usages as well. A good parallel has been illustrated from Deposit B of the Acropolis Houses at

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<sup>436</sup> Popham 1984; supra 180.

<sup>437</sup> Van de Moortel 2001, fig. 33, nos. 31-33.

<sup>438</sup> Bevan et al. 2002, fig. 17, no. 146; Coldstream. Huxley 1972, fig. 87, no. 17; Cummer, Schofield 1984, pl. 61, no. 697.

<sup>439</sup> Betancourt, Silverman 1991, fig. 18, no. 551.

Knossos.<sup>440</sup> Another example with straight sides, recalling the shape of R10-031, comes from the MUM.<sup>441</sup> Still another possible comparison is represented by a vase that was found in the South House at Knossos, also showing rather straight sides.<sup>442</sup>

### *Bridge-spouted Jugs/Jars*

Three vessels from Zominthos have been comprised in this category (R10-035, R10-036, R18-001). None of the vases comes from Room 12, however, at least two were found in Room 10 in the same annex as Room 12. The vase from Room 18 has been added due to its chronological significance.<sup>443</sup> The vases of this category have a jar-like body without a real neck. However, only R18-001 is a typical bridge-spouted jar with two horizontal handles, while the other two pieces, R10-035 and R10-036, have only one vertical handle. All vessels have a high maximum diameter and more or less elongated forms. They all exhibit wide rims and horseshoe-shaped spouts and all are wheel-made. These are the reasons why Jugs/Jars are put together in just one category at this point. R10-035 and R10-036 are made of a fine fabric (FF 2), while the jar R18-001 is made of a medium coarse paste (MC 2). The dimensions of the vases differ considerably and each vessel seems to be of a distinct type.<sup>444</sup> Functionally, the vessels all are made for pouring liquids and their use in ritual and domestic contexts is well established.

R10-035 is a relatively large vase with a slightly ovoid body, a wide, slightly everted, collar-like rim and a vertical handle with oval section. Its surface is covered with a buff slip that is rather well preserved. Pronounced rillings are observable on the interior and exterior of the vessel. The specific shape with just one vertical handle is rather rare compared to the usual bridge-spouted jar. Some pieces were found in Xeste 3 at Akrotiri on Thera, and there labelled bridge-spouted jugs.<sup>445</sup> The shape of the bridge-spouted jug itself is popular during the Neopalatial period, especially in LM IA and LM IB.<sup>446</sup> Other examples come from Phylakopi on Melos with rather globular bodies and painted decoration.<sup>447</sup> A Cretan comparison was

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<sup>440</sup> Catling et al. 1979, fig. 20, no. 135.

<sup>441</sup> Popham 1984, pl. 145 no. 6.

<sup>442</sup> Mountjoy 2003, fig. 4.1, no. 13 (splaying-sided bowl).

<sup>443</sup> The vase will be discussed in detail when “Decoration” and “Chronology” are thoroughly presented below.

<sup>444</sup> For a detailed description of each vase see the respective catalogue entry.

<sup>445</sup> Papagiannopoulou 1995, fig. 1.

<sup>446</sup> Schiering 1998, 53, pl. 22-25.

<sup>447</sup> Atkinson et al. 1904, pl. XXV, nos. 4-6.

found in Gournia and described as a “wide mouth pitcher with bridge-spout and ring handle opposite spout”.<sup>448</sup> Others come from Knossos, Kato Zakros, Malia or Sklavokampos.

What has been said concerning the appearance of R10-035 is also applicable to R10-036, the differences being the size of the vessel and the surface treatment. R10-036 is a very small example of a bridge-spouted jug with a height of only 13.1cm. Its shape compares well to that of R10-035 with a wide mouth, globular-conical body, and the bridge-spout opposite the vertical handle. The exterior surface of R10-036 is coated with monochrome dark color and the interior shows traces of a dark rim band. The overall qualitative impression of this vase exceeds the previous vessel due to a smoother surface and fewer irregularities in shape. The comparanda for R10-036 are the same as for R10-035.

The bridge-spouted jar R18-001 is one of the highlights of the Zominthian pottery assemblage. The relatively tall vase (27.0cm) has a torus-like base, an ogival to globular-conical body with high maximum diameter, a wide mouth, and two horizontal handles. The spout has a horseshoe-shaped section. The two vertical handles are solid with oval to circular sections. The shoulder of the vase is decorated with a frieze of reed/grass pattern. The lower body, rim and the base are painted with solid black bands. The horizontal handles were decorated with dark stripes.<sup>449</sup> Although made of medium-coarse clay, the vessel has a fine appearance due to its well smoothed, self-slipped surface and the fine decoration. It is also very regularly shaped and almost completely preserved. The vessel form of the bridge-spouted jar itself continues from Early Minoan times onwards until at least the LM II period, becoming less frequent after Middle Minoan III. The later examples are usually more slender and elongated than their MM predecessors.<sup>450</sup> Comparanda for this vessel come from numerous sites on Crete. A good example was found in Nirou Chani that matches the Zominthian piece in shape and decoration.<sup>451</sup> Another vase recalling the shape of R18-001 was found in Nerokourou, however the handles of that vessel reach higher than the ones of the piece from Zominthos.<sup>452</sup> The bridge-spouted jar from the upper deposit of the Gypsades Well

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<sup>448</sup> Boyd Hawes et al. 1908, 60, pl. G.

<sup>449</sup> For a detailed description of the painted decoration see below Chapter III.2 “Decoration”.

<sup>450</sup> Schiering 1998, 50.

<sup>451</sup> Ibid. pl. 18.4.

<sup>452</sup> Kanta, Rocchetti 1989, fig. 77, no. 574.

also resembles the shape of R18-001.<sup>453</sup> Still other comparanda come from Palaikastro and Kommos.<sup>454</sup>

### *Beaked Jugs*

The Beaked Jug certainly is the most prominent variety of jugs during the entire Bronze Age on Crete. The spout of these jugs is designed to pour liquids as effectively as possible and control the flow of whatever is being poured out of the vessel.<sup>455</sup> Numerous types of this vase shape developed over time starting from rather globular depressed shapes in EM vases of the Aghios Onouphrios Style with high, long spouts, over already more slender vessels of the Vasiliki Style with longer necks. The MM pieces of the Kamares Style exhibit a trend towards piriform bodies and slightly s-shaped profiles which becomes even more apparent in MM III. Generally, two main types of these jugs can be distinguished: a more ovoid shape with short neck, and a more globular shape with high neck and spout. Predecessors of this shape may well be found in metal vessels, especially when such elements as neck mouldings are present.<sup>456</sup> The LM I pieces continue the development towards more elongated forms and often have a more conical to globular-conical profile with a high maximum diameter, however, the *habitus* of the vases remains rather unchanged in the Neopalatial period.<sup>457</sup> The LM IB pieces often show a very distinct transition from body to shoulder which makes them distinguishable from their LM IA counterparts.

During the excavation of Room 12 in Zominthos' "Central Building" 6 Beaked Jugs were found (R12-077, R12-078, R12-079, R12-080, R12-100, R12-101). The vessels have a number of common traits but also differ in several aspects. All of the jugs were found in Room 12 and all were wheel-made. Their surfaces are well smoothed and rillings on the exterior are only very unpronounced if at all existent. Except for 1 piece (R12-077), which is made of a medium coarse to coarse fabric (MC 2-CF 3), all vases are of fine fabrics (3 of FF 2, 1 of FF 1 and 1 of FF 4). All jugs have a single, vertical handle, usually with solid, oval to circular section, opposite the beaked spout and all jugs are regularly shaped with minor irregularities only. Besides these common aspects, the jugs from Zominthos differ

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<sup>453</sup> Driessen, MacDonald 1997, fig. 7.20; Hatzaki 2007, fig. 5.12 (2).

<sup>454</sup> For Palaikastro see Knappett, Cunningham 2003, figs. 17, 18; for Kommos see Van de Moortel 2001, fig. 34.

<sup>455</sup> Schiering 1998, 35.

<sup>456</sup> Stürmer 1992, 151; Furumark 1941, 86-87.

<sup>457</sup> Schiering 1998, 40.

considerably from one another. The most obvious difference is the size of the vessels. While the smaller jugs reach only up to ca. 16.0cm (R12-078, R12-079), the taller vases vary between 21.3cm and 31.8cm (R12-080, R12-077). The vessels R12-100 and R12-101 are only partially preserved and their heights were not measurable. However, both seem to belong to the higher version of jugs. Another difference concerns the surface treatment of the vases. 3 of the jugs were left with plain, buff surfaces (R12-077, R12-079, R12-101), although R12-079 shows very faint traces of a dark color on its exterior. However, those traces are too sparse to reconstruct a dark coating or painted decoration. The other 3 vessels (R12-078, R12-080, R12-101) all have painted decoration on their exterior surfaces, some of which belong to the finest decorative elements encountered at Zominthos.<sup>458</sup> Finer differences than these rather obvious features relate to details in the shape of each vessel.

R12-077 is the tallest example of beaked jugs from Zominthos. Its shape is characterized by a straight base, a slender conical lower body and rounded shoulders that lead up to the rather straight neck of the vase. A clay application on each side of the spout may possibly recall eyes. Such applications are known from some MM III jugs from Kommos and Akrotiri.<sup>459</sup> Earlier examples can also be observed on Kamares Ware jugs from Phaistos.<sup>460</sup> The slender body shape is recalled by a MM IIIB jug from the KS 178 Group from Knossos, unfortunately this jug does not have clay “eye”-applications.<sup>461</sup> Other examples for a similar shape come from the Neopalatial tomb at Poros and from Knossos.<sup>462</sup> Finally, a jug that resembles both the rather slender body and the applications at the spout was also found in Akrotiri, probably being a Minoan import.<sup>463</sup>

The small jug R12-078 is of a rather globular shape with a high, straight neck. This body shape with an only very slightly conical lower body and a maximum diameter roughly at the center of the vessel contrasts to the other beaked jugs from Zominthos. The high neck seems almost artificially attached to the body and the spout is mostly lost. The overall shape of this jug has a rather crude appearance and lacks the harmonious outline of the other vessels of this type. The most important aspect of this vase is its painted decoration which will be discussed

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<sup>458</sup> Again, the decoration will be dealt with in detail in the following Chapter III.2.

<sup>459</sup> For Kommos see Betancourt 1990, pl. 45, no. 763, pl. 78, no. 1547; for Akrotiri see Marinatos 1968, 33, fig. 47.

<sup>460</sup> Schiering 1998, pl. 4, nos. 2, 3.

<sup>461</sup> Hatzaki 2007, fig. 5.9, no. 4.

<sup>462</sup> Muhly 1992, pl. 15, no. 195, pl. 18, no. 212, pl. 19, no. 210; for Knossos see Catling et al. 1979, fig. 22, no. 139.

<sup>463</sup> Marinatos 1972, pl. 66a.

below. A comparable jug, regarding the shape of the body, was found in Akrotiri. However, that jug has a lower neck.<sup>464</sup> Another example from Aghia Irini misses the entire neck and spout, however, the body has a similar shape as R12-078.<sup>465</sup> A MM IIIB jug from the Houses by the Acropolis at Knossos also exhibits the same shape.<sup>466</sup>

R12-079 and the remaining jugs R12-080, R12-100 and R12-101 are very similar in shape and also relatively close to one another in size (except for R12-079 which is smaller than the others). Their overall shape is best described as follows: a straight or low raised base, conical lower body, globular-rounded shoulders and a high neck and spout. The general profile of this group of vessels reflects the common traits of LM IA jugs of this type with a high maximum diameter. In no case is the spout completely preserved so that no exact description of the length and shape was possible. Since R12-100 and R12-101 are only partially preserved, their shape had to be reconstructed and their size is a matter of guesswork. The shape of these vases is recalled by several jugs from other sites. A number of comparanda comes from the by now well known tomb in Poros, the *villas* at Tylissos, Kastelli Pediada, Pseira, Palaikastro, and others were found in Akrotiri on Thera.<sup>467</sup> R12-079 and R12-101 both have a ledge neck moulding illustrating the relation between metal and ceramic vessels.<sup>468</sup> Neck mouldings are frequently encountered in MM III and LM I and may occur on several vessel shapes. Jugs with neck mouldings were found, among other sites, in Palaikastro, Kommos and Knossos.<sup>469</sup> The finely painted decoration on R12-080 and R12-100 will be of interest again when the Decoration and Chronology are discussed (see Chapter III.2 and IV).

### *Ewers*

The term “Ewer” has been used to define a certain type of jug with almost circular or circular mouth and no real spout. This type of jug seems to have various predecessors in EM and the earlier MM periods but only becomes important during the “*Blütezeit*” of Late Minoan

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<sup>464</sup> Marinatos 1969, pl. 23.1.

<sup>465</sup> Cummer, Schofield 1984, pl. 48, no. 171.

<sup>466</sup> Catling et al. 1979, fig. 18, no. 90.

<sup>467</sup> For Poros see Muhly 1992, pl. 16, nos. 197, 200, 201; for Tylissos see Hazzidakis 1921, fig. 14c, d; for Kastelli Pediada see Rethemiotakis 1992-1993, fig. 11γ; for Pseira see Betancourt 1983, fig. 9, nos. 56-57; for Palaikastro see Knappett, Cunningham 2003, fig. 34 no. 282; for Akrotiri see Marinatos 1969, pl. D, no.6.

<sup>468</sup> Furumark 1941, 86-87, fig. 22.

<sup>469</sup> For Palaikastro see Bernini 1995, fig. 11, no. 31; for Kommos see Watrous 1992, fig. 14, nos. 111, 112; for Knossos see Catling et al. 1979, fig. 31, no. 223.

pottery.<sup>470</sup> Two very different types of ewers can easily be distinguished. The first type comprises vessels of globular-conical shape, usually with straight or slightly splaying bases, concave necks, sloping handles and everted rims. Examples of this type are found in MM III and LM IA contexts such as the Kamilari Tholos tomb or the settlement and palace of Phaistos.<sup>471</sup> Other vases were found in Kastri on Kythera, Kommos, Aghia Irini and Knossos.<sup>472</sup> These sometimes rather coarse vessels may have served everyday domestic functions and are often undecorated. However, pieces with painted decoration also exist and might have fulfilled other, more distinct functions as well. The second type of Ewers is represented by a number of vases that account for some of the finest vessels known from Minoan Crete. The shape of these vases is characterized by a raised base, often a round clay disc, a concave lower body that fluently merges into a globular upper body and shoulder area, again a concave neck and everted rim. Well known examples of this type are the vase decorated with argonauts found in Egypt and today visible in the Musée Borély in Marseille, a ewer, also with argonauts from Kato Zakros and another vase from Palaikastro.<sup>473</sup> These vases are all dated to LM IB and differ considerably in shape from the vessels of the first type. Whether or not a chronological overlap of both types exists is uncertain, but intermediate pieces between the two types might indicate a development from one type to the other. The vessel shape itself was not restricted to ceramics but also used for metal and stone vases as seen in pieces from Mycene, *Schachtgrab V*, and Knossos.<sup>474</sup>

The ewers from Zominthos all belong to the first type just described, except for one (R12-086) which shows a somewhat intermediate shape between the rather coarse, utilitarian vessels and the very fine luxury vases of the second type. Altogether 7 pieces from Zominthos have been identified as ewers. All but one were found in Room 12 (1 in Room 10) and all are wheel-made as indicated by rillings on their surfaces. The vessels R12-081, R12-082, R12-083, R12-084, R12-085 and R10-037 are relatively similar in shape and size, although one vase (R12-081) is clearly taller than the others. The vessels have slightly splaying bases, a globular-conical profile, concave necks and everted rims. The handles, if preserved, show oval to circular sections. The heights usually range from 19.8cm to 24.1cm, the tall vase R12-

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<sup>470</sup> Schiering 1998, 41.

<sup>471</sup> Levi 1961-62, figs. 74, 164, 160c.

<sup>472</sup> For Kastri see Bevan et al. 2002, fig. 14, no. 12; for Kommos see Van de Moortel 2001, fig. 36, nos. 47, 48; for Aghia Irini see Cummer, Schofield 1984, pl. 60, no. 686, pl. 63, no. 828; for Knossos see Catling et al. 1979, fig. 24, nos. 155-157.

<sup>473</sup> Schiering 1998, pl. 9, no. 3, pl. IV.2, pl. 10, nos. 1, 3.

<sup>474</sup> *Ibid.*, figs. 24, 25, 26.

081 reaching 28.8cm. The maximum diameters lie at the shoulder and vary from 11.8cm to 14.7cm. Various fabrics have been used for the formation of this group of ewers. However, despite their probably utilitarian character, most pieces were made of fine pastes (3 of FF 2 and 1 of FF 3) and only 1 was made of a medium coarse fabric (MC 2) and 1 of a coarse fabric (CF 1). Their surfaces were left plain and either self-slipped or coated with a buff real slip (R10-037). The vases were relatively regularly shaped and exhibit minor irregularities only. Unfortunately some of the vessels were only partially preserved and had to be restored. The ewers compare best to the above mentioned comparanda for the first type of this vessel shape.<sup>475</sup>

R12-086 is an exceptional piece in this category. It differs from the other ewers in shape, size and decoration. The vessel is taller than all other ewers (32.0cm), has wider diameters and thicker walls. Its shape seems to be somehow in between the globular-conical form of the other ewers and the fine LM IB ewers mentioned above. In addition, R12-086 has a ledge neck moulding and a clay rivet where the handle is attached to the rim. It was made of a fine fabric (FF 2) and exhibits polychrome painted decoration. The color of the paint is relatively well preserved on this vase which makes it possible to recognize both black and reddish brown bands on its body. Two zones of tortoise shell ripple pattern cover the shoulder and lower body, the neck and base are covered with a solid dark (black) coating. Both shape and decoration find good comparanda in other Cretan sites. A very close comparison for the Zominthian piece was found in the Psychro Cave which also has a neck moulding and tortoise shell ripple decoration. Unfortunately the piece is only partly preserved.<sup>476</sup> It has been dated to MM III. Another suitable comparison comes from Palaikastro. This ewer has all the same details as the vessel from Zominthos, meaning the neck moulding, the additional clay rivet and tortoise shell ripple decoration. The vase is also only partially preserved and has also been dated to MM IIIB.<sup>477</sup> The shape of the body is recalled by a ewer from Kastri on Kythera, however without the neck moulding and no clay rivet at the handle.<sup>478</sup> Yet other comparanda were found in Anemospilia, Knossos and Kommos.<sup>479</sup> The relatively early dates of the ewers here mentioned seem to reject the idea that the shape might be an intermediate form in the

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<sup>475</sup> Levi 1961-62, figs. 74, 164, 160c; for Kastri see Bevan et al. 2002, fig. 14, no. 12; for Kommos see Van de Moortel 2001, fig. 36, nos. 47, 48; for Aghia Irini see Cummer, Schofield 1984, pl. 60, no. 686, pl. 63, no. 828; for Knossos see Catling et al. 1979, fig. 24, nos. 155-157; Schiering 1998, pl. 9, no. 3, pl. IV.2, pl. 10, nos. 1, 3

<sup>476</sup> Watrous 2004, fig. 2.

<sup>477</sup> Knappett, Cunningham 2003, 179, fig. 20, no. 176.

<sup>478</sup> Bevan et al. 2002, fig. 14, no. 11.

<sup>479</sup> MacDonald 2004, fig. 18.5, b; Warren 1991, fig. 5C; Van de Moortel 2001, fig. 36, no. 49.

development of this shape. The bichrome decoration and the tortoise shell ripple motif probably point to the same direction. The chronological aspects of this vase will be of interest again below (see Chapter IV).

### *Miscellaneous Jugs*

The category “Miscellaneous Jugs” comprises few vessels that could not be attributed to one specific vessel shape with absolute certainty. This may be due to an insufficient state of preservation or the unusual form of a vase. Very little can be said about these vessels, which could contribute to the interpretation of the Zominthian assemblage in general. Of the 4 pieces in this category only 1 is said to have been found in Room 12 (R12-087). Another, very fragmentarily preserved, vase comes from Room 10 (R10-038) while the remaining two vessels were found outside the NW-annex in Room 15 (R15-003, R15-004).

The small (H: 13.3cm), wheel-made jug R12-087 is of a peculiar shape. The straight base merges into a rounded, globular body with a low maximum diameter (9.4cm). The cylindrical, slightly concave neck is separated from the body by a carination on the shoulder. The rim is everted and the mouth has a horseshoe-like shape. The single vertical handle is not preserved. The vase is made of fine fabric (FF 3-FF 4) and the exterior surface may have been coated with monochrome dark paint. The walls have a thickness of only 0.3cm. Finding comparanda for this type of vessel has proved difficult. The shape itself appears to be rather ‘*non-Minoan*’ and the vessel may possibly be not of a Minoan date.

R10-038 is only preserved in its base and lower body. From what can be observed, the vessel probably was a jug or ewer due to the admittedly rather small part of the profile. The base is straight with a diameter of 4.7cm and the body might have had a globular-conical shape. The vase was wheel-made and of fine fabric (FF 2-FF 3). The thickness of the walls varies from 0.4cm to 0.5cm, the surfaces were plain with a buff self-slip. All retrievable data points towards an identification as jug or ewer.

R15-003 is only ca. 50% preserved but has a complete profile. The vessel might best be defined either as an open mouth jug or jar due to a pinched spout at one side of the rim. The vase has a height of 16.6cm and a maximum diameter of 13.6cm. The diameter of the base is 6.0cm and the wall thickness differs from 0.3cm to 0.5cm. A presumed handle is missing. The

vessel was wheel-made as indicated by numerous pronounced rillings on the interior and exterior surfaces. It is made of fine fabric (FF 1-FF 2). The surfaces are coated with a buff red slip. A possible comparison might be the piriform open jug from a LM I deposit at Palaikastro.<sup>480</sup>

The other vessel from Room 15, R15-004, has a strange shape and does not fit into the Zominthian assemblage, just like R12-087. The vase is ca. 75% preserved and of globular shape with a high, straight collar neck. The height lies at 13.9cm, the maximum diameter in the center of the body at 13.0cm. The base is low raised with a diameter of 5.8cm. A fragment of a handle was found with it but its attachment to the vessel is uncertain. The vase is characterised by very thin walls (0.2cm). It is wheel-made and of very fine fabric (FF 4). It is also regularly shaped and the well-preserved color proves a monochrome black coating on the interior and exterior of the vessel. Like R12-087 the shape appears to be rather uncommon in Minoan times. These vessels may have been found in an upper stratum above the actual Minoan destruction horizon together with a few presumably Hellenistic sherds that turned up during the excavation of the topsoil in Zominthos.<sup>481</sup>

### *Bowls*

Although only 3 vessels from Zominthos were ascribed to this category they belong to two different types (R12-088, R12-089, R12-090). They are generally characterized by a straight or raised base, straight to slightly flaring walls and straight to everted rims with a wide mouth. Such bowls may vary considerably in size and are therefore distinguished as “Deep” or “Shallow”. The term “Bowl” is rather indistinct and may comprise a number of vessel shapes that differ sometimes considerably from one another in formal details. For example, bowls may have conical sides, convex sided profiles or rounded walls and a variety of rim shapes as well.<sup>482</sup> The shape of the pieces from Zominthos is actually rather similar however the size of the vases differs to a great extent. All vases are conical bowls. R12-088 is a partly preserved deep bowl with a height of 8.5cm, the other bowls R12-089 and R12-090 are of the shallow type with heights of 3.4cm to 4.1cm-4.7cm.

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<sup>480</sup> Knappett, Cunningham 2003, fig. 45, no.437.

<sup>481</sup> Unfortunately, the exact findspot of these two vessels is unknown to me since I had no access to the excavation diaries of the early campaigns at Zominthos.

<sup>482</sup> See for example Warren 1991, fig. 7; Popham 1984, pl. 145, nos. 3-6.

R12-088 has a base diameter of 7.3cm, the maximum and rim diameter could not be reconstructed since only a very small part of the rim is preserved. The walls have a thickness of 0.5cm to 0.7cm. The bowl is wheel-made and of coarse fabric (CF 1). It shows rillings on its interior and exterior and has a central pimple on the inside of the base. The surfaces were smoothed and covered with a monochrome dark coating. The shape of the bowl compares well to a conical bowl from Palaikastro.<sup>483</sup> Another close parallel comes from Kommos.<sup>484</sup>

R12-089 and R12-090 both are shallow conical bowls. The maximum diameters range from 12.3cm to 14.0cm. The bases are rather narrow with diameters of 4.7cm and 3.9cm. The thickness of the walls lies between 0.4cm and 0.6cm. Both vessels have a low raised base and straight walls. R12-089 has an everted rim while R12-090 has a straight rim. The bowls are made of fine fabric (FF 2). Both are wheel-made as indicated by rillings on their surfaces. R12-089 is coated with a buff red slip, R12-090 has a monochrome dark coating on its interior and exterior. Comparanda for this shape were found in numerous sites. The terminology for these bowls varies. They may be called “saucers”, “shallow bowls”, or “shallow conical cups”. A saucer from Aghia Irini closely resembles the shape of R12-090.<sup>485</sup> R12-089 finds a close parallel in a bowl from the MUM at Knossos.<sup>486</sup> Other examples come from Kommos, Knossos, Nerokourou and Kythera.<sup>487</sup> These shallow bowls are often dated to MM III and seem to be typical for that period. However, they are also found in later contexts.

### *Trays*

Only one example of this shape was found in the ceramic workshop at Zominthos. R12-091 is wheel-made and of medium coarse clay (MC 2). Its height of the walls varies between 4.0cm and 4.2cm, the rim and maximum diameter is 22.5cm. The diameter of the straight base is only little smaller with 18.5cm to 19.0cm. The thickness of the walls lies between 0.6cm and 0.9cm. The exterior surface is covered with a monochrome dark coating, the interior is left plain. The overall shape resembles that of a shallow basin. The vessel has no distinct characteristics as to ascribe it to a specific function. A comparable vessel was found in

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<sup>483</sup> Knappett, Cunningham 2003, fig. 22, no. 185.

<sup>484</sup> Rutter, Van de Moortel 2006, pl. 3.16, M/3.

<sup>485</sup> Cummer, Schofield 1984, pl. 58, no. 596.

<sup>486</sup> Popham 1984, pl. 144, no. 22.

<sup>487</sup> For Kommos see Betancourt 1990, fig. 26, no. 567, fig. 34, nos. 725, 728; for Knossos see Mountloy 2003, fig. 4.1, no. 14; for Nerokourou see Kanta, Rocchetti 1989, fig. 37 nos. 52, 54; for Kythera see Coldstream, Huxley 1972, pl. 71, no. 32.

Deposit 6 on the Hilltop of Kommos. A large tray (max. Diam. 44.0cm) does recall the general shape of the Zominthian vessel, however the walls are lower and the tray is made of coarse fabric.<sup>488</sup> Another, closer parallel was found in Tomb C near Kastri on Kythera. A complete clay “plate” with a diameter of 17.0cm of coarse fabric resembles the shape of R12-091.<sup>489</sup> The same type of vessel was found in the House of the Sacrificed Oxen in Knossos.<sup>490</sup> Yet another example made of coarse fabric was found in Gournia. With a maximum diameter of 31cm, it is larger than the piece from Zominthos and also has straighter sides.<sup>491</sup>

### *Milk Jugs*

The second known miniature shape from Zominthos is the so called “Milk Jug” or “Juglet”. These small vessels were found in numerous Neopalatial and even earlier contexts and are relatively hard to date. Popham suggested that they may “turn out to be one of the type vases” for LM IA, but as Mountjoy pointed out, they can also be dated to MM IIIB-LM IA and continue into LM IB as well.<sup>492</sup> The “Milk Jugs” certainly are a common shape of Neopalatial assemblages on Crete and elsewhere but cannot offer valuable aspects of exact dating. Their function is uncertain. They might have been used for pouring small amounts of liquids or possibly as containers for example for spices and herbs or perfume. The connection with minute conical cups, as seen in Akrotiri, may also indicate a cultic function.<sup>493</sup>

5 pieces of this shape were found in Zominthos. They all come from rooms of the NW-annex (R12-092, R12-093, R12-094, R11-008, R10-039). The vessels are wheel-made and of fine fabric (4 of FF 2). One vase, R12-094, is too poorly preserved to be even absolutely sure about its shape and defies any further description except for the fact that it was made of coarse fabric (CF 1). Its surface is totally worn off and the upper part of the vessel is missing. The other juglets have a rounded body, often above a low raised base, and a long flaring neck that merges into an everted rim. Several variations of this shape exist. Their heights vary from 6.2cm to 7.3cm. The maximum diameters lie at the center of the body and range between 4.8cm and 5.3cm. The rim diameters mostly correspond to the bases and measure 3.4cm to

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<sup>488</sup> Watrous 1992, 14, fig. 16, no.251.

<sup>489</sup> Coldstream, Huxley 1972, pl. 69, no. 27.

<sup>490</sup> PM II, fig. 176T.

<sup>491</sup> Betancourt, Silverman 1991, fig. 17, no. 544.

<sup>492</sup> Popham 1984, 157; Mountjoy 2003, 76.

<sup>493</sup> Marinatos 1969, pl. 16.1.

4.1cm. The wall thickness usually does not exceed 0.4cm to 0.5cm. The “Milk Jugs” may have handles or lugs, but handleless examples are also common. Of the Zominthian pieces R12-092 had a vertical handle which is lost. R10-039 shows a lug at one side of the rim. The other two vases had no handles. R12-092, R12-093 and R11-008 have solidly dark monochrome coated surfaces. It appears reasonable to assume that these small vases were simply dipped into the paint and not decorated using a brush, especially since the interior was also covered with black color. R10-039 has a self-slipped buff surface which shows clear traces of black splashes on the exterior.

Comparanda for the juglets are numerous and the examples given here merely represent a small selection. The South House at Knossos offers a number of unstratified LM IA pieces that recall the shapes of the Zominthian vessels quite well.<sup>494</sup> Other “Milk Jugs” from Knossos were found in the MUM and the Little Palace.<sup>495</sup> Several pieces are also known from the settlement at Gournia.<sup>496</sup> House A in Aghia Irini on Keos also produced some vessels of this kind and the above mentioned examples from Akrotiri prove the existence of this shape outside the boundaries of Crete as well.<sup>497</sup>

#### *Lekanes/Basins*

The Greek word *λεκάνη* basically means “bowl” or “basin”.<sup>498</sup> Variations in size, shape and proportions of these always open vessels are common and manifold. The four vessels from Zominthos combined in this category resemble three different types of vases. They are of utilitarian character but very different in shape, size and probably function as well. R12-095 and R12-096 are of a very unusual form that will be described in detail below. R12-102 is represented only by a relatively large body and rim fragment with a horizontal handle and painted decoration. R10-040 has a common basin-like shape with lugs or “*Handhaben*” and is of moderate size. Common traits of these four vessels are rather few. Three of them were found in Room 12, one in Room 10. They all appear to have been made on the wheel and all are of coarse fabric. They have wide bases and wide, open mouths.

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<sup>494</sup> Mountjoy 2003, fig. 4.11, nos. 167-174.

<sup>495</sup> Popham 1984, pl. 131j; pl. 143, nos. 15-17; Hatzaki 2005, fig. 4.3, nos. 9, 10.

<sup>496</sup> Betancourt, Silverman 1991, pl. 30, nos. 647-657.

<sup>497</sup> Cummer, Schofield 1984, pl. 56, nos. 429, 430; supra 239.

<sup>498</sup> Lüdorf 2000, 8.

R12-095 and R12-096 are quite exceptional vessels. They have wide, straight bases ( $\varnothing$  20.5cm to 21.0cm), straight to slightly flaring walls and everted rims with lip. The rim and maximum diameters vary between 28.2cm and 30.4cm. Both vessels have a pinched u-shaped spout at one side of the rim and a horizontal solid handle with round section on each side. The most characteristic feature of the vessels is a tall mushroom-like clay application in the center of the base. With R12-095 this application exceeds the height of the walls by several centimeters, while with R12-096 the walls are higher than that application. Their overall height is 14.3cm for the lower piece (R12-095) and 14.7cm to 15.0cm for the higher one (R12-096). As already mentioned they are made of coarse fabric (CF 1) and have 0.7cm to 0.9cm thick walls. R12-095 shows traces of a reddish yellow coating on its surfaces. R12-096 may have been covered with a monochrome black coating but the traces of the color are too faint to be certain. A protopalatial basin from Phaistos recalls the shape of the vessels, however without such a central application.<sup>499</sup> The function of these vessels is as yet uncertain. According to the opinion of several modern shepherds they could have been used for the processing of dairy products like cheese-making for example. This coincides nicely with the history of Zominthos where a modern and probably a Venetian *Tyrokomio* existed right next to the Minoan settlement and now serve as storage and workrooms for the new excavations there. Another modern dairy by the name of “Zominthos” still exists right above Anogheia. Another interpretation identifies these vessels as so called “rabbit feeders”. Such vessels also exhibit a similar central application but usually have no spout. They are used to feed cereals to small animals such as chicken or goose. Personally, I prefer the first suggestion as vessels for dairy production.<sup>500</sup>

R12-102 is only preserved to a small extent. A body fragment with a horizontal handle and an elaborate rim profile is all that survived of this vessel. The fragment probably belonged to a lekani or wide-mouthed jar with uncertain dimensions. The preserved height reaches 19.5cm, the thickness of the walls lies at 1.1cm to 1.3cm. The vessel was wheel-made as indicated by the many pronounced rillings on the interior. The most important aspect of this vessel is its painted decoration that will be discussed below (see Chapter III.2). The rim profile could

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<sup>499</sup> Levi 1976, pl. 19b.

<sup>500</sup> R. Prien pointed out to me that he had seen somewhat similar vessels of roman date that were also used for cheese-making. Minoan comparanda are unknown to me.

maybe be compared to that of a cylindrical jar from the South House, although it is not exactly similar.<sup>501</sup>

Finally, a for this shape relatively small vessel, R10-040, that was found in Room 10, belongs in this category. The lekani has a straight, wide base (ø15.0cm), straight to slightly curving walls and a straight rim with everted lip. The height of the vessel varies from 12.8cm to 13.4cm, the maximum diameter lies at the rim and measures from 22.0cm to 24.9cm. The vessel had two horizontal lug handles of which only one is preserved. The surfaces of the vessel were self-slipped and the exterior seems to have been decorated with black splashes. A basin from the Acropolis Houses at Knossos broadly recalls the shape of this lekani. The Knossian piece however does not have the lug handles and is coated with matt red color.<sup>502</sup>

### *Pithoi*

The Pithos certainly is the “most distinctive utilitarian form in the Cretan Bronze Age ceramic repertoire.”<sup>503</sup> It was used for storage purposes and sometimes as a burial container. Pithoi were found in several rooms of the Zominthian “Central Building” and recent excavation in Room 10 of the NW-annex brought to light a pithos with raised band decoration. Maybe this might indicate a storage function for Room 10 connected to the workshop in Room 12.

Room 12 itself did not yield a complete Pithos but only a base and lower body of such a vessel (R12-097). Interestingly, the breakage appears to be very regular and possibly intentional. Therefore the bottom of the originally large vessel might have served a specific, secondary function within the pottery workshop, possibly as part of the potter’s toolkit. The vessel basically recalls the shape of a large shallow basin. The diameter of the base measures 30.0cm to 30.5cm and the walls are broken at a height of 8.0cm. The thickness of the walls varies between 2.5cm at the bottom of the base and 1.0cm at the sides. The vessel is made of coarse fabric (CF 3). The interior of the base is characterized by numerous dents that seem to be traces of the kneading of the clay bottom. A good comparison for this can be seen on a LM IB basin or vat from Mochlos that also has these thumb-shaped impressions.<sup>504</sup> No traces of

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<sup>501</sup> Mountjoy 2003, fig.4.6, no. 65.

<sup>502</sup> Catling et al. 1979, 32, fig. 20, no. 131.

<sup>503</sup> Christakis 2005, 1.

<sup>504</sup> Barnard, Brogan 2003, fig. 15, IB.279.

any specific usage were observed so that no distinct function can be reconstructed for this vessel.

### *Pyxis*

A small rim fragment of what seems to have been a Pyxis was found in Room 12 (R12-098). Although this study is based mostly on complete vessels, this fragment is integrated in order to give an impression of the full spectrum of vessel shapes from the potter's workshop. The Pyxis generally recalls a smaller version of the shape of a cylindrical jar with much space for variety.<sup>505</sup> The Zominthian vessel is preserved in just one fragment measuring 8.6cm x 8.9cm with a thickness of 1.1cm. An estimated rim diameter lies at ca. 23cm, an also estimated maximum diameter at ca. 28cm. The inverted rim is separated from the straight walls by a sharp carination. The Pyxis was made on the wheel and of medium coarse fabric (MC 1-2). The surfaces were only slightly smoothed and the exterior exhibits a monochrome dark coating below the rim. Such vessels could have been used for several purposes, mostly as containers for all sorts of goods. A specific function for this shape within the workshop area at Zominthos is not attested and it probably belonged to the productive output rather than the inventory, meaning the potter's toolkit and storage vessels for raw material etc.

An unstratified, medium sized, decorated parallel with handles was found in the South House at Knossos.<sup>506</sup> Later comparanda dated to LM II were found in several variants in the MUM.<sup>507</sup>

### *Karpodochos*

A single piece that can be labeled Karpodochos, or Fruit Stand, was found at Zominthos (R13-003). It was not unearthed in the NW-Annex but in Room 13 of the "Central Building". It has the shape of a pedestalled bowl with a shallow saucer on top of a hollow, stemmed foot. The interior base of the upper part forms a domed projection. A carination on the exterior marks the transition from foot to upper body. The height of the Karpodochos varies between 16.0cm and 16.8cm due to a slightly warped rim. The rim of the vessel is everted with lip and

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<sup>505</sup> Mountjoy 2003, 65-66, 111.

<sup>506</sup> Ibid., fig. 4.7, no. 68.

<sup>507</sup> Popham 1984, pl. 155.

has a diameter of 20.2cm on the interior and a maximum diameter of 22.8cm at the exterior. The hollow foot has a concave shape and rises above a shallow base ring. The walls measure from 0.7cm to 1.7cm in thickness. The almost completely preserved vessel is wheel-made, as indicated by unpronounced rillings, and of coarse fabric (CF 1). The slightly smoothed, unslipped surfaces were covered with a solid, monochrome dark coating. This includes also the interior of the hollow foot. The vase is relatively regularly shaped except for the slightly warped rim. According to A. Van de Moortel, the Karpodochos could also have been used as a lamp however the piece from Zominthos shows no traces of fire or burning whatsoever.<sup>508</sup>

Room 31 of House A at Aghia Irini produced a good but smaller parallel to the vessel from Zominthos.<sup>509</sup> A finely decorated fruit stand with a rather straight foot and shallow saucer-like upper body comes from the upper deposit of the Gypsades Well.<sup>510</sup>

#### *Brazier Lid / Fire Box / Incense Burner*

The Brazier lid from Room 12 (R12-099) represents a very specialized shape within the ceramic repertoire in Zominthos. This vessel shape is sometimes also called fire-box and may occur in several types and forms. These vessels have been associated with burning aromatics or other substances in order to create and release pleasant scents. A typology for such vessels was put forward by Gergiou that distinguishes between three main shapes and further sub-types.<sup>511</sup> The Zominthian example certainly belongs to her Type IB with a flange beneath the rim that makes it very clear that the vessel was made to be put on top of another open vase. The vessels of this type are characterized by a pierced capsule in their center, usually with a larger central hole underneath and smaller holes or slits around it.

The piece from Zominthos only has the lower part of this capsule preserved, the upper, dome-like vault is missing. Overall, its preserved height is 5.3cm, the maximum diameter at the rim lies at 18.3cm. The thickness of the walls varies between 0.5cm and 0.6cm. It was certainly wheel-made and of medium coarse fabric (MC 1). The surfaces show remains of a monochrome dark coating, interestingly also on the presumed interior of the capsule. The underside of the capsule has 14 small holes surrounding the central, larger hole. A regular

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<sup>508</sup> Van de Moortel pers. comm.

<sup>509</sup> Cummer, Schofield 1984, pl. 87, no. 1578.

<sup>510</sup> Hatzaki 2007, fig. 5.17, no. 1; Popham 1969, pl. 76g.

<sup>511</sup> Gergiou 1980, 123-126; Evely 2000, 538.

flange made it easy to put the vessel on top of another one. The underside of the capsule lies below the level of the flange.

Many comparanda for this type of vessel could be listed from other Cretan sites as well as from the Cycladic islands.<sup>512</sup> The closest parallel for the piece from Zominthos was found in a tomb at Stavromenos.<sup>513</sup> This vessel was found in combination with a cylindrical open vessel with painted decoration and was dated to LM II. Another close comparison can be drawn with a “Boîte à feu” from House Z beta in Malia.<sup>514</sup> This vessel was dated to the MM III-LM I transition. Other examples were found at Amnissos, Chania, Gournia, Knossos, Palaikastro, Sklavokampos, Tylissos and Zakros. Several examples from outside Crete were found in Aghia Irini, Keos (14 of Type IB).<sup>515</sup> The chronological span for all of these vases covers the entire Neopalatial period from MM III to LM II.

#### *Open Vessel*

The remains of an open vessel from Room 13 (R13-004) are merely presented for the sake of completeness here. Only the base and the lower part of the body are preserved and it is not possible to ascribe them to a specific vessel shape. The most probable candidates are either a bowl or a jar. The preserved height varies between 5.1cm and 5.4cm. The base diameter is 5.7cm and the thickness of the walls is 0.6cm. The vessel is wheel-made and of fine fabric (FF 2). The interior and exterior surfaces are self-slipped and coated with monochrome dark paint, although the color is only preserved in traces. A large central pimple is the only significant feature of this vessel.

#### *Lamps*

The vessel shapes combined in this category have been termed either lamps, braziers or incense burners throughout the excavations on Crete and the Aegean.<sup>516</sup> To avoid terminological confusion and to clearly distinguish these vases from the above described brazier lid (R12-099), the vessel from Zominthos will be called *lamps*, although their function

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<sup>512</sup> Georgiou 1980, 142-146 with plates.

<sup>513</sup> Andreadaki-Vlasaki 1987, fig. 4; see also Siebenmorgen (ed.) 2000, no. 375.

<sup>514</sup> Deshayes, Dessenne 1959, 45, pl. X.4.

<sup>515</sup> Cummer Schofield 1984, pl. 83, no. 1531; Georgiou 1980, 126.

<sup>516</sup> Georgiou 1979, 427.

may have been manifold. Four pieces have been put together in this category (R12-058, R12-059, R12-060, R11-006). Their shape may vary considerably, however a common morphological source might be traced in the simple handleless cup.<sup>517</sup> Especially R12-058 shows the connection to those cups itself being a cup with just a handle attached to it. Such lamps may have been operated by various fuels among which beeswax and oils appear to have been the most prominent.<sup>518</sup>

R12-058 has the general shape of a handleless cup. It has a low raised base, relatively straight walls and a slightly everted rim. At one side a solid handle with oval section was attached to the rim. The other lamps are more alike in shape, showing the usual indentation where the handle is attached to the body of the vessel. Minor differences exist of course and R12-060 recalls the low shallow saucer shape rather than that of a typical handleless cup. The preservation of the lamps varies from piece to piece but all can be ascribed to this vessel shape with absolute certainty. They are all wheel-made and made of fine and coarse fabrics (1 of FF 1, 2 of FF 2, 1 of CF 1). Their heights range from 3.8cm to 5.8cm, the maximum and rim diameters from 9.2cm to 11.1cm. The base diameters vary between 3.6cm to 4.0cm. The thickness of the walls lies at 0.4cm to 0.7cm. The handles, where preserved, are all of the straight horizontal type. Their surfaces are all covered with a monochrome dark coating, except for the interior of R12-058. The clay of R11-006 is heavily burnt and underlines the usage as a lamp (or incense burner). Unfortunately the other examples do not show any traces of fire.

Comparanda for these vessels were found in several Minoan sites. A rather close parallel to R12-058 was found in the Acropolis Houses at Knossos.<sup>519</sup> Other examples resembling the remaining Zominthian lamps come from Phaistos, Aghia Irini on Keos or Mochlos in East Crete.<sup>520</sup> Lamps with *real* handles were also found at Mochlos or for example at Gournia.<sup>521</sup>

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<sup>517</sup> For a possible function of handleless cups as lamps see Gillis 1990, 133.

<sup>518</sup> Evershed et al. 2000, 50.

<sup>519</sup> Catling et al. 1979, fig. 23, no. 161.

<sup>520</sup> For Phaisto see Levi pl. 158; for Aghia Irini see Cummer, Schofield 1984, pl. 87, no. 1579; for Mochlos see Barnard, Brogan 2003, 88, fig. 53, no. IB.609.

<sup>521</sup> Betancourt, Silverman 1991, fig. 20, no. 592.

*Conical Rython*

Minoan rytha are certainly among the “most appealing, yet enigmatic classes of artifacts” of the Aegean Bronze Age.<sup>522</sup> They appear in a wide range of shapes, materials and contexts and usually display a high degree of expertise by the manufacturer. An early typology of these vases was introduced by Karo in 1911, and a further, more precise and thorough study by Koehl in 2006 distinguished various forms and types of rytha throughout the Aegean sphere.<sup>523</sup> Rytha, by definition, have a mouth and a secondary opening, in the case of the Aegean Bronze Age rytha, usually a perforation. Other than that, common features are often restricted to the types of vessels, and shapes and forms may vary considerably. Rytha can be of zoomorphic shape, they can have an ogival body, a conical body or simply occur in the shape of another standard vessel that only has a second opening which qualifies it as a rython for example a cup or jar. Rytha were found in domestic and funerary contexts and although such contexts may not always reflect a function or usage, the mere way these objects operate leave little doubt about their predominately ritual employment and connection to liquids. Another idea about the possible contents of conical rytha was put forward by Specht who liked to see a connection with cereals as an offering presented in such a vessel.<sup>524</sup> The rython found in Zominthos (R12-103) belongs to Koehl’s Type III Conical.<sup>525</sup> He rightly distinguished between the subtypes of convex conical and straight conical versions of this shape, and judging from the preserved lower part of the Zominthian vessel, it most probably belongs to the latter subtype.

The piece from Zominthos was found in the potter’s workshop in Room 12 of the “Central Building”. Unfortunately only the lower part of the vessel is preserved to a height of 14.3cm. The original height should be reconstructed to at least ca. 30.0cm or more. The walls are 0.4cm to 0.6cm thick and the pierced opening at the tip has a diameter of 0.8cm. The rython was wheel-made and is of fine fabric (FF 2) with pronounced rillings on its interior surface. The exterior surface is decorated with painted solid bands and tortoise shell ripple pattern of a monochrome dark color. Its body is regularly shaped and has straight walls, which attests an affiliation to the above mentioned Type III S Conical. The vessel certainly had a round mouth and a vertical handle but no additional fragments of the vase remained to prove this assumption.

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<sup>522</sup> Koehl 2006, 1.

<sup>523</sup> See Karo 1911 and Koehl 2006.

<sup>524</sup> Specht 1981, 17-18.

<sup>525</sup> Koehl 2006, 45-53.

The attribution to this specific type may have also chronologically significant implications. Koehl suggests that vessels of this type first occur in LM IA after the CV Conical version that is already attested from MM IIB onwards.<sup>526</sup> The straight conical shape reached its peak in LM IB, seems to be absent in LM II, but can again be found later until the end of LM IIIA2. Many examples from all over the Aegean can be compared to the piece from Zominthos and only a small selection of the closest comparanda will be presented here.

Four LM IA rytha from Gournia recall the exact same shape as the one from Zominthos and differ only in their painted decoration.<sup>527</sup> These vessels themselves are very similar to a rython from Akrotiri on Thera.<sup>528</sup> A piece from Aghia Irini on Keos, House A, resembles not only the shape of the Zominthian vessel, but also has the same decoration.<sup>529</sup>

### *Potters' Wheel*

The Potter's Wheel is the most characteristic find to be made in a ceramic workshop. The secure identification of these artefacts goes back to Xanthoudides who studied clay discs from several Minoan sites and recognized their function as potters' wheels.<sup>530</sup> A profound and thorough collection and study of these wheels throughout Minoan Crete was carried out by Evely who also established a typology and terminology that is adopted here to describe the Zominthian wheel.<sup>531</sup> He distinguished five general types, including simple mats, mostly known from the EM IIA site at Myrtos (Type 1), as well as discs made of stone (Type 5). By far the most common type is Type 3, the Wheelhead. Within this Type, three subtypes were established (a-c). The first two subtypes a and b are rarely found and mostly associated with Neopalatial contexts, Type 3c however is the most common type of wheelhead and with it "...the Minoans successfully reached the limits of their design's capability."<sup>532</sup> This type was in use from the Protopalatial period until the end of the Bronze Age in Crete. The hallmark of this type is the accentuated edge with projecting rim which permits the creation of the "flywheel-effect". Their tops are usually plain, the base is characterized by a socket, surrounded by a collar. The collar top may carry incised patterns such as zigzags or random

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<sup>526</sup> Ibid. 50.

<sup>527</sup> Hawes et al. 1908, pl. 7, nos. 26, 29, 30, 32.

<sup>528</sup> Marinatos 1972, pl. 63; see also Niemeier 1980, 64-65, fig. 34.

<sup>529</sup> Caskey 1972, pl. 92, no. G9; Cummer Schofield 1984, pl. 57, no. 511.

<sup>530</sup> See Xanthoudides 1927.

<sup>531</sup> Evely 1988a.

<sup>532</sup> Ibid., 100.

lines. The underside of such wheels may be plain or exhibit a number of concentric grooves. The edges are often accentuated with curving channels, possibly providing a better grip. Many variations in detail exist concerning the separation of the edges from the top, the design of the underside, or the characteristics of the base.<sup>533</sup>

The wheel from Zominthos was found inside the ceramic workshop in the north-western part of Room 12 (R12-104). It was made of coarse fabric (CF 2) and is basically completely preserved except for a few missing chips at the edges. The diameter of the wheel lies at 44.0cm, its height at 7.0cm. The socket at the base has a diameter of 2.7cm and a depth of 3.4cm. The plain top has a slightly raised platform, the edges are characterized by a heavy projecting rim with curved profile and channels at the lower part. The underside exhibits a central socket with surrounding collar, and eight concentric grooves. The top of the collar shows random incisions and tiny holes, presumably of no specific function. Very similar incisions can be seen on a wheel from Gournia.<sup>534</sup> A potters' wheel from Skhinias that exhibits unusual shell imprints on its underside also shows such random incisions on the socket.<sup>535</sup> The Zominthian wheel has a single hole penetrating through the body right next to the rim area. Such piercings are more often arranged in pairs, but single holes exist as well.<sup>536</sup> The upper part and the top of the wheel seem to have been coated with dark color.

Evely lists 25 Type 3c wheels and further probable candidates for this type from various Cretan sites.<sup>537</sup> A limited selection of these wheels will be presented here as comparanda for the Zominthian wheel. One wheel from Aghia Triadha recalls the underside of the Zominthian wheel with concentric circles and was dated to MM III.<sup>538</sup> Another parallel was found in Tylissos that is very close to our piece in size and shape.<sup>539</sup> A third good comparison comes from Knossos which is a little smaller but recalls the shape and several details of the wheel from Zominthos, like the concentric grooves underneath, the projecting rim with a vertically driven hole, and the channels at the side of the edges.<sup>540</sup>

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<sup>533</sup> Ibid., 100-101; Evely 2000, 269-286.

<sup>534</sup> Boyd Hawes et al. 1908, pl. VIII, no. 32.

<sup>535</sup> Eliopoulos 2000, figs. 1-2.

<sup>536</sup> Evely 1988a, 106.

<sup>537</sup> Evely 2000, 273-280.

<sup>538</sup> Xanthoudides 1927, 115, pl. XIX a, b.

<sup>539</sup> Hazzidakis 1921, fig. 39 bottom left.

<sup>540</sup> Evely 1988a, Fig. 8, no. 56.

## III.2 The Decoration

The painted pottery of Minoan Crete certainly belongs to the most attractive and well-made ceramic products of the European Bronze Age and its Near Eastern neighbors. Especially the Protopalatial Kamares Ware with its polychrome character and the “Special Palatial Tradition” pottery of the later phase of the Neopalatial period are famous for their fine decoration.<sup>541</sup> According to the topic of this book, here the focus will be laid upon the later, Neopalatial decorative schemes, including the styles of MM IIIB to LM IB. Since a detailed discussion of the Minoan Pottery as a whole would largely exceed the limitations of this work, special attention will be paid to the motifs actually present in the Zominthian assemblage.<sup>542</sup> These designs first and foremost have a decorative function due to their aesthetic value. This means that the functionality of the decorated vessel does not depend on the decoration nor is affected by it. Whether specific motifs had an additional function, be it as an indicator of a vessel’s contents or as the bearer of a cultic or social meaning must remain tentative but cannot be excluded, at least for the later phase of the Neopalatial period.<sup>543</sup> Without written sources, such information on the Minoan user himself and his comprehension of painted pottery can hardly be deciphered today. The Minoan potters of the Neopalatial period used a rather limited set of decorative elements or motifs, if it were actually the potters themselves who painted the vessels. This set of motifs developed over a certain period of time and the LM outcome can only be understood by an acquaintance with its MM predecessors.<sup>544</sup>

I will restrict myself to a short summary of the developments of the MM III style, especially the later phase called MM IIIB. The Middle Minoan III “period” is difficult to define either stratigraphically or stylistically, both at its beginning and its end.<sup>545</sup> The proposed division of the period in two subphases, MM IIIA and MM IIIB as put forward by Evans, has been

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<sup>541</sup> For detailed studies of the Kamares Ware see Walberg 1987; for the term “Special Palatial Tradition” see Betancourt 1985, 140.

<sup>542</sup> For a summary of the Minoan Painted Pottery in general see the invaluable contributions by Furumark 1941, Popham 1967 and Betancourt 1985. For the latest comprehensive study of the pottery from a specific site (Knossos) see Momigliano 2007.

<sup>543</sup> “In LM IA, we are not at a stage when pottery was used as the medium for important and impressive representations whether of the natural or the man-made world, daily life or cult activities. There is an important change in LM IB, which launches pottery as the main medium for the latter which had hitherto been confined to frescoes, stone and metal vases, ivories, etc.” Driessen, MacDonald 1997, 18.

<sup>544</sup> Furumark 1941, 110.

<sup>545</sup> Warren, Hankey 1989, 54.

subject to discussion ever since, and it still appears problematic to prove such a distinction.<sup>546</sup> The MM III style overall is characterized by “a surprising and still unexplained recession in both style and technology” compared to the fine wares of MM II.<sup>547</sup> The painted decoration itself seems to follow several tendencies at the same time: a trend towards simplification on the one hand, a growing interest in pictorialization on the other hand, and finally the widespread appliance of the tortoise shell ripple pattern and other dark-on-light motifs as the predecessors of the following LM IA style pottery. “The majority of the motifs used in MM III ceramic decoration exist in Classical Kamares and even earlier, and many of them survive into the Late Minoan period”.<sup>548</sup> However, the complex compositions of several decorative elements on some Kamares vases seem to go out of fashion during MM III. Typical motifs are abstract, geometrical and floral designs such as a variety of spirals, wavy lines, foliate bands, stone patterns, crocuses, circular and semi-circular designs, trickle pattern and tortoise shell ripple pattern.<sup>549</sup> The predominant decorative style is executed in a light-on-dark painted manner. All motifs show a number of regional and stylistic varieties or types. Some of these motifs are also among the most common design in the mainland Helladic pottery, for example the tortoise shell ripple pattern, foliate bands and spirals.<sup>550</sup> This influx of Cretan pottery styles on the mainland wares is undisputed, especially during the earlier phase of the late Bronze Age.

Such single motifs are important for the classification and dating of vessels, but also form part of a higher-level composition. Walberg introduced five types of MM III “Unity Decoration” based upon the earlier studies of Matz and Furumark.<sup>551</sup> The term “Unity Decoration” was first used by Furumark who distinguished this type of decoration from “tectonic” or “structural” decoration.<sup>552</sup> The typically Minoan “Unity Decoration” treats the vessel as a three-dimensional object, taking the shape of the vase into account and thus creating overall impressions of optical illusions.<sup>553</sup> Walberg herself differentiated between “torsional decoration” which “accentuates the vessel as a unit with a central axis”, “rapport decoration”

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<sup>546</sup> PM I, 316-317; Walberg 1992, 10-30; Betancourt 1985, 103-114; Warren, Hankey 1989, 54-72; MacDonald 2004, 241.

<sup>547</sup> Betancourt 1985, 103; see also Pendlebury 1939, 158.

<sup>548</sup> Walberg 1992, 80; Walberg 1989, 12.

<sup>549</sup> For a better list of motifs see Walberg 1992, 92-97, pls. 8-14; a number of typical motifs from Central Crete are depicted in Betancourt 1985, fig. 84; an even greater collection of provincial MM III motifs can be seen in Walberg 1983, pls. 28-55.

<sup>550</sup> Mountjoy 1993, 35.

<sup>551</sup> Walberg 1992, 98-102; Matz 1928, 154-170; Furumark 1941, 112-116.

<sup>552</sup> Furumark 1941, 112.

<sup>553</sup> Walberg 1992, 100.

forming a kind of network, “outline decoration” following the profile of the painted vessel, “radiating decoration” with an enclosing effect, and “zonal decoration” resulting in separated fields.<sup>554</sup> In combining more overall effects, the vase-painters of the Post-Kamares phase seem to have given up the well-balanced impression of the Classical Kamares Ware in favor of more dynamic, more naturalistic designs. A trend that continued into LM I and produced some of the finest decorated vases of Minoan Crete.

The most important MM III sites include the palaces and settlements of Knossos, Phaistos and Malia. Some deposits from Knossos were found in the West Court, the South Front and the Town, all belonging to the seemingly older phase MM IIIA.<sup>555</sup> Later MM IIIB contexts of the KS 178 Group were excavated in the palace, the MUM, the SEX, the Acropolis Houses and in some tombs in Poros-Katsambas and the Temple Tomb.<sup>556</sup> The decoration of this group is characterized by the existence of both light-on-dark decoration and dark-on-light decoration. “l-o-d” is mainly restricted to cup shapes and comprises retorted spirals, floral motifs, interlocking S’s, white dots, wavy lines and decorative motifs like circles. The “d-o-l” ware shows mainly ripple pattern, wavy lines and trickle pattern, both in a lustrous and non-lustrous version.<sup>557</sup> The palace of Phaistos also exhibits rich evidence for this phase (MM III), there called *fase III*.<sup>558</sup> The destruction of the palace at Malia at the end of the MM III period left large quantities of vessels assignable to this phase in most of the rooms and basements of the building.<sup>559</sup> The houses of the town also yielded pottery finds of the MM III phase, for example from Quatier E, *phase II*.<sup>560</sup> A useful collection of MM III deposits from south-central Crete, including Phaistos, Aghia Triada and Kommos was recently presented by Girella who speaks out for a subdivision of the phase in MM IIIA and MM IIIB as already proposed by Evans.<sup>561</sup> Two deposits from Palaikastro (Building 6 R1/3, EP 87) also seem to compare well to the MM IIIB phase as defined for Knossos.<sup>562</sup> Comparisons to these pottery

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<sup>554</sup> Ibid., 99-100.

<sup>555</sup> MacGillivray 2007, 145.

<sup>556</sup> Hatzaki 2007, 161-162; see also Hatzaki 2007a and Warren, Hankey 1989, 54 for MM III deposits from Knossos.

<sup>557</sup> Hatzaki 2007, 162-165.

<sup>558</sup> See Levi 1976, 237-281; pls. 188-218 for some examples of painted pottery; Carinci 1989, 72.

<sup>559</sup> Chapouthier, Charbonneaux 1928, 52; Charpouthier, Joly 1936, pls. XI, XII, XXXI, XXXIII.2.

<sup>560</sup> Pelon 1970, 167-168, pls. X-XIII.

<sup>561</sup> Girella 2007, 252.

<sup>562</sup> Knappett, Cunningham 2003, 171-173.

groups outside the island of Crete can be seen in the seismic destruction level at Akrotiri on Thera and deposit  $\epsilon$  at Kastri on Kythera.<sup>563</sup>

The end of MM III and the beginning of LM I have been much debated over the last decades (see also Chapter IV).<sup>564</sup> What kept scholars busy and confused when trying to figure out the exact relative pottery sequence, was the fact that numerous deposits on Crete had a very ambiguous character and showed elements of both the older MM III style along with the new LM IA decorative scheme. This resulted in the introduction of a MM IIIB–LM IA transitional, or Early LM IA, phase which is characterized by the contemporaneous existence of older light-on-dark decoration and the new, lustrous dark-on-light patterns so typical of LM IA.<sup>565</sup> The ambiguity of this phase, although readily accepted at first, caused more recent studies to try to define the MM IIIB and LM IA styles rather separately from one another. This led to an assignment of previously MM IIIB/LM IA termed deposits to one of the two phases.<sup>566</sup> Thus, to present a more general characteristic and to somehow grasp the beginning of LM I, the growing popularity of dark-on-light decoration, especially spirals and floral motifs along with the decline of light-on-dark, may mark the beginning of the LM IA style.<sup>567</sup> Most of the MM III motifs continue into the new style but the spirals, floral motifs and also tortoise shell ripple pattern clearly dominate the repertoire. This early LM IA style appears as an “interesting mixture of novelty and conservatism”.<sup>568</sup> In an advanced stage of LM IA the grass or reed pattern and the retorted spiral become very popular as well and mark a further sub-phase of this style. Other motifs are the conglomerate pattern, cross-hatching, ivy leaf or rows of crescents and dots.<sup>569</sup> All designs are usually arranged in horizontal friezes but may also cover the entire body of a vessel. They are mostly executed in black but additions of white and sometimes red color may occur as well. Again, local and regional developments and characteristics in the pottery prevail and may differ considerably from the Knosso-centric, central-Cretan wares. East Crete for example proved to be rather reluctant towards the fast adaption of the new style and the traditional dark-on-light decoration was also kept in use well

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<sup>563</sup> For Akrotiri see Marthari 1990, 66; for Kythera see Coldstream, Huxley 1972, fig. 38, pls. 23-25.

<sup>564</sup> See e.g. Hood 1996.

<sup>565</sup> See Popham 1984, 158. However, Popham used MM IIIB/LM IA “to express continuing indecision, rather than to suggest that they [earlier deposits] belong to a transitional stage”; See also Furumark 1941, 152; D’Agata 1989, 93: “Chronologically it [large quantities of pottery and animal bones] belongs to the phase usefully, if ambiguously, referred to as MM IIIB/LM IA.”

<sup>566</sup> See e.g. MacDonald 2004, 241-248.

<sup>567</sup> Betancourt 1985, 123; Popham 1967, 337-338.

<sup>568</sup> Betancourt 1985, 130.

<sup>569</sup> For a collection of LM IA motifs see Popham 1967, fig. 1; Betancourt 1985, fig. 98; Niemeier 1980.

into the LM IA style period.<sup>570</sup> On the other hand the east Cretan vase painters used more “flamboyant” decoration than their Knossian colleagues who seem to have stuck to a rather limited scope of motifs and a relatively sober way of depicting them.<sup>571</sup> Such regional specialties and developments along with certain variations of single motifs led to the establishment of several sub-phases of the LM IA style. In Knossos we can now trace at least an early, or transitional, and a mature stage of LM IA. Much the same is true for Palaikastro, while at Kommos three stages (early, advanced, final) were distinguished.<sup>572</sup> A post-eruption LM IA horizon might also exist at Knossos but has as yet to be confirmed.<sup>573</sup> But more on that topic will be said later when the aspects of pottery and relative chronology are discussed in detail. The general “new feeling” of the LM IA decorated vessels as described by Betancourt is especially visible in the floral elements which seem to have a very naturalistic touch to them, including a “sense of movement”.<sup>574</sup> It seems appropriate to accept the notion that the stimulus for this new way of illustrating plant-life came from outside the vase-painting tradition, most probably from fresco painting. LM IA pottery shows an increased use of elaborate motifs such as reed pattern, retorted spirals and floral elements. Tortoise shell ripple remains to be popular as well. The dark-on-light patterns outnumber the older light-on-dark style by far (at least in Knossos) and the vessels are usually of a high quality. However, in general “the LM IA decoration continues the MM III style morphologically and stylistically” which often makes a clear distinction between the two styles difficult.<sup>575</sup> The LM IA style is represented by numerous deposits of varying contexts throughout the entire island of Crete and the eastern Mediterranean as a whole. Hatzaki combined the LM IA contexts from Knossos to the so called “Gypsadhes Well (Upper Deposit) Group”, including both primary and secondary deposits.<sup>576</sup> The importance of primary deposits for the establishment of chronologically relevant and stylistically definable phases cannot be overemphasized. Unfortunately only few such undisturbed deposits are known from the town and palace of Knossos. A primary deposit of LM IA is reported from the South-West Basement, south of the West Magazines of the palace. Evans dated this material to MM III but Hatzaki lists it among the LM IA group.<sup>577</sup> Another primary deposit assigned to LM IA comes from the

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<sup>570</sup> Popham 1967, 339; Betancourt 1985, 130; Rehak, Younger 1998, 121.

<sup>571</sup> Betancourt 1985, 130-131.

<sup>572</sup> See Van de Moortel 2001, 93, Table 9.

<sup>573</sup> MacDonald 2004, 250.

<sup>574</sup> Betancourt 1985, 123.

<sup>575</sup> Furumark 1941, 157.

<sup>576</sup> Hatzaki 2007, 172-184.

<sup>577</sup> PM I, 554-556; Hatzaki 2007, 173.

House of the Frescoes.<sup>578</sup> Other deposits, mostly of secondary character, were found in the palace itself, the MUM, including a foundation deposit consisting of miniatures, the Gypsadhes Well and Houses on the Gypsadhes hill.<sup>579</sup> Contemporary pottery groups were found in all regions of Crete, but most comparisons come from the central and eastern parts of the island, probably also due to the state of scientific research undertaken in these areas.<sup>580</sup> Synchronisms with other Aegean sites include the “Volcanic Destruction Level” at Akrotiri,<sup>581</sup> House A in Aghia Irini on Keos,<sup>582</sup> Deposits ζ and η from Kastri on Kythera,<sup>583</sup> Trianda on Rhodes<sup>584</sup>, and further north in Miletus on the western coast of Asia Minor.<sup>585</sup> These sites merely represent a limited selection among many other findspots with LM IA style pottery deposits on Crete and in the eastern Mediterranean.

Late Minoan IB marks the final stage of the so called Neopalatial Period on Crete. This stage of Cretan prehistory is probably the best known period in the relative chronological sequence, including also the main destructions of most major Minoan sites.<sup>586</sup> The beginning of the LM IB pottery style is conventionally connected to the Santorini eruption, but as already indicated, a post-eruption LM IA phase may be traceable in some sites on Crete. Here it must be stated that a new pottery style does not start abruptly. It usually follows already known tendencies and develops new motifs and shapes over a certain amount of time (see below, Chapter IV). Of course, this also applies to the beginning of LM IB. Recent studies seem to provide much evidence for a further sub-division of the LM IB phase, recognizable stratigraphically and stylistically at the sites of Chania, Kommos and Mochlos.<sup>587</sup> After the widespread destructions at the end of this period only Knossos seems to have prevailed while all other or at least most of the other main LM I sites were abandoned.

LM IB decorated pottery can roughly be divided in two main groups: the “*Standard Tradition*” and the “*Special Palatial Tradition*”.<sup>588</sup> The latter was made up by four different

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<sup>578</sup> PM II, 436-437, figs. 253-254; Popham 2004 for the East Cretan origin of the bridge-spouted jug found in Knossos.

<sup>579</sup> Hatzaki 2007, 174-175.

<sup>580</sup> See Hatzaki 2007, table 5.8 for a selection of LM IA deposits outside of Knossos.

<sup>581</sup> See e.g. Marthari 1990, figs. 4, 7.

<sup>582</sup> Cummer, Schofield 1984, pls. 61-65.

<sup>583</sup> Coldstream, Huxley 1972, pls. 25-30.

<sup>584</sup> Marketou 1990, figs. 17-18.

<sup>585</sup> Niemeier 1998, 33.

<sup>586</sup> Warren, Hankey 1989, 78.

<sup>587</sup> The matter was discussed at the workshop on Late Minoan IB pottery held at the Danish Institute at Athens in July 2007. Andreadaki-Vlasaki, Rutter and Barnard and Brogan all proposed the introduction of a LM IC phase in Minoan relative chronology.

<sup>588</sup> Betancourt 1985, 137-148.

styles termed “Marine Style”, “Floral Style”, “Abstract and Geometric Style” and “Alternating Style” by Betancourt.<sup>589</sup> These styles are naturally rather artificial and sometimes more than one “style” can be seen on just one vase. The products of the Special Palatial Tradition are characterized by very attractive and elaborate motifs which made Popham describe them as “an artistic achievement which is perhaps the greatest in Cretan pottery”.<sup>590</sup> And although relatively rare in number, these vases received wide attention through the scientific research of Minoan Crete due to their timeless attractiveness and naturalistic appearance.<sup>591</sup> This is particularly well illustrated by the “Marine Style”. Motifs, designs and scenes are taken from the marine environment including octopus, argonauts, dolphins, tritons, corals and other underwater flora and fauna, embracing “nearly every form of sea life”.<sup>592</sup> Some of the best-known pieces of Minoan pottery belong to this group, for example a lentoid flask from Palaikastro or the well-known “Marseilles Ewer”.<sup>593</sup> The comparison of certain traits and details of this style has led to the proposed identification of specific workshops, vase painters, and artists, like the “Marine Style Master” or the “Polyp workshop”.<sup>594</sup> Many pieces with this kind of decoration were found outside of Crete and were obviously favorable trading goods. But pottery was not the only medium for this theme and the role of wall paintings for it has often been cited. One may only think of the fresco with the dolphins from the so called “Queen’s Megaron” at Knossos or the well-known depiction of the flying fish from Phylakopi.<sup>595</sup> Objects of other material also showing marine motifs are a plaster stand from Akrotiri and a clay stand or lamp fragment from Phaistos.<sup>596</sup> These objects were dated to earlier periods (LM IA and MM III) and clearly represent forerunners of the later marine style decoration on clay vessels. Marine style motifs continue to be depicted in later periods as well but they become more and more stylized and differ considerably from the original designs of LM IB. Some Rytha from different Cretan sites depicted by Schiering finely illustrate the concept and several elements of the “Marine Style” at one glance.<sup>597</sup>

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<sup>589</sup> Ibid., 144-148.

<sup>590</sup> Popham 1967, 339.

<sup>591</sup> See for example Popham 1967, 341 “Indeed, one of the great achievements of this period is the success with which natural objects are adapted to the surface of vases, retaining a feeling of naturalism despite their stylization and, though balanced in design, yet conveying a vivid sense of movement”.

<sup>592</sup> Pendlebury 1939, 205; for a detailed description and interpretation of the “Marine Style” motifs and syntax see Müller 1997.

<sup>593</sup> Betancourt 1985, pl. 20G; Siebenmorgen (ed.) 2000, 281, no. 189.

<sup>594</sup> Betancourt 1977, 38-43; Popham 1967, 341.

<sup>595</sup> Atkinson et al. 1904, pl. III; Morgan 2005, pl. 42, nos. 2, 5.

<sup>596</sup> Marinatos 1971, pl. 82; Betancourt 1985, pl. 14A.

<sup>597</sup> Schiering 1998, pl. 29, nos. 4-7.

The “Floral Style” comprises traditional and new floral designs, making a significant contribution to the pottery of LM IB. Several of the motifs are already known from the MM III and LM IA styles, including the papyrus motif, the lily, the crocus, the iris, the ivy leaf, the palm tree, the olive spray and the grass or reed pattern.<sup>598</sup> These single designs may be combined to new patterns and appear in several combinations but “always retain their vital energy”.<sup>599</sup> In LM IB they are always painted in a d-o-l manner while earlier pieces of MM III and LM IA may still be executed in l-o-d.<sup>600</sup> As in the “Marine Style”, several vase painters of the “Floral Style” may become visible to us through their opus. An “Olive Spray Painter” was identified by Popham as well as a “Reed Painter”.<sup>601</sup> The development of traditional LM IA floral motifs in LM IB is best characterized by the increase in elaboration and exuberance seen on many vases of the period. Famous examples are a jug with reed pattern from Phaistos and a ewer with a “*Blattwirbel*” from Palaikastro.<sup>602</sup> Small flowers and rosettes are often used as accessory designs and fill open spaces on the surface of the vases. Like the “Marine Style” vessels, pieces decorated with the “Floral Style” were also exported to other Aegean regions, as fragments of such vases have been recovered at Rhodes, Melos, Keos, Kythera and on the mainland.<sup>603</sup> Many motifs of this style continue to be used in later periods of the Aegean Bronze Age but usually in a far more stylized fashion.

A third style within the “Special Palatial Tradition” is the so called “Abstract and Geometric Style”. This group is rather diversified and covers designs of religious symbols like double-axes to geometric elements such as spirals and zigzag patterns. Other motifs are imitations of stonework or arcades possibly recalling elements of metal vases.<sup>604</sup> The geometric motifs, especially the spirals in several versions, are also to be found in the “Standard Tradition” that will shortly be described below. Two examples of vases with geometric elements, in these cases spirals above arcades, in combination with floral motifs come from Kato Zakros, underlining Betancourt’s impression of “a multivariate tradition with many interrelated parts”.<sup>605</sup> A jug from Sklavokampos with zigzag pattern on most of the body belongs to the

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<sup>598</sup> For a detailed discussion of all the motifs of LM pottery see Niemeier 1985, 13-127; Furumark 1941, 236-424; For a selection of the most common motifs see also Popham 1967, fig.2. nos. 5-10.

<sup>599</sup> Betancourt 1985, 145.

<sup>600</sup> See for example an amphora from the Loomweight Basement at Knossos with white palms on dark ground. Betancourt 1985, pl. 12 I.

<sup>601</sup> Popham 1967, 341; Betancourt 1985, 147.

<sup>602</sup> Betancourt 1985, pl. 21A, G.

<sup>603</sup> Popham 1967, 342.

<sup>604</sup> See the silver ewer from Shaftgrave V in Mycenae. See Karo 1930, 148, no. 855, pl. CXXXIV.

<sup>605</sup> Betancourt 1985, 147, pl. 22A, B.

same group showing another variant of this style with a combination of “Marine Style” elements at the bottom, and geometric and floral designs on the body and shoulder.<sup>606</sup>

The “Alternating Style” differs considerably from the other decorative styles of the “Special Palatial Tradition”. It is characterized by isolated elements in strict alternation on an open field creating a formal overall effect. This style seems to have developed within the later phase of the LM IB period and clearly foreshadows LM II decorations with its characteristic composition. The possible chronological difference between the “Alternating Style” and the other LM IB styles was hinted at by Coldstream some 30 years ago, based on his research at Kythera where many examples of this decorative style were found.<sup>607</sup> But since other examples are also found within the LM IB destructions at Knossos, the “Alternating Style” is certain to have existed before the end of that very period. However, this style has mostly been defined by finds from Minoan imports at Kythera while relatively few examples were known from Crete itself.<sup>608</sup> Motifs arranged in this style are mostly taken from the repertoire of the other styles just presented. Included designs are figure-eight shields, double axes, trefoil rockwork, ogival canopy, argonauts and several others. A good example for the style is a jug from Kythera with alternating starfish and double axes on its body.<sup>609</sup> Other pieces illustrating the same kind of decoration are a stemmed cup from Phaistos showing double axes with sacred knots and a cup from Mochlos with trefoil rockwork.<sup>610</sup> These four styles of the “Special Palatial Tradition” combined, still only make up for a small amount of the LM IB ceramic material. The larger portion of the LM IB pottery is either decorated in the “Standard Tradition” or totally undecorated.

This kind of decoration, the “Standard Tradition”, enhances mostly motifs already known from previous periods, especially LM IA. These motifs may be geometric patterns like spirals or wavy lines, floral designs like foliate bands or grass/reed pattern, and also pictorial elements such as double axes. Its style is rather conservative and the development in LM IB is often so subtle that it can hardly be distinguished from LM IA.<sup>611</sup> The motifs are mostly arranged in a zonal composition, unlike the “Special Palatial Tradition” motifs which often cover large parts of a vessel or even the entire body of a vase.<sup>612</sup> The high standard of elaborateness of

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<sup>606</sup> Ibid., pl. 22H.

<sup>607</sup> Coldstream 1978, 398.

<sup>608</sup> Betancourt 1985, 147.

<sup>609</sup> Coldstream 1978, fig. 8.

<sup>610</sup> Betancourt 1985, pl. 22F, G.

<sup>611</sup> Ibid., 139.

<sup>612</sup> Furumark 1941, 161-165.

single decorative elements in LM IA seems to have only partially survived in the “Standard Tradition” of LM IB. Several motifs appear to have been drawn in a rather hasty or even sloppy way.<sup>613</sup> The “Standard Tradition” was divided into two styles by Silverman based mainly on east-Cretan material, and both developing out of the LM IA style: the “plain style” and the “polychrome style”.<sup>614</sup> The “plain style” is usually characterized by one or more ornamental friezes on an otherwise undecorated or sometimes banded surface. Additional colors to the ordinary d-o-l decoration are only sporadically used, mainly white while red is practically absent. The most common decorative elements are either spirals or foliate bands, mostly painted on the shoulders of the vessels.<sup>615</sup> The “polychrome style” is named after its frequent use of white and red color as an accessory ornament. The composition of this style is rather similar to that of the “plain style”, sometimes with more zones of decoration separated by bands or rows of large dots. The applied motifs are those of the “Standard Tradition” repertoire.<sup>616</sup> The “Standard Tradition” pottery of LM IB represents a group of material that may also be labeled “sub-LM IA”. This term, as introduced by Furumark and frequently used in the archaeological literature, describes mainly a chronological period rather than a decorative style and tends to cause confusion if improperly defined. The notion of an “in-between” connected to the term “sub-LM IA” is misleading and must be clarified before using the expression. What this term really describes is, in my opinion, nothing but the “Standard Tradition” pottery which is contemporary with the LM IB style, but employs mainly LM IA elements which, admittedly, may sometimes be virtually indistinguishable from their LM IB counterparts, although a general development towards decreasingly well executed decoration seems to be acceptable.<sup>617</sup> This becomes very apparent when one compares Niemeier’s “*Zusammenfassung*” of this style/period with Betancourt’s description of the “Standard Tradition” pottery.<sup>618</sup>

A typical example of the plain style is a semiglobular cup from building AC at Pseira with running spirals bordered by dark bands.<sup>619</sup> A rather similar cup from the same site was found in Area BE.<sup>620</sup> A jar from Gournia decorated in the plain style shows solid dark bands on its

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<sup>613</sup> Betancourt 1985, 137; Warren, Hankey 1989, 78.

<sup>614</sup> Silverman 1978, 31.

<sup>615</sup> Betancourt 1985, 139.

<sup>616</sup> For a selection of some LM IB Standard Tradition motifs see Betancourt 1985, fig. 103.

<sup>617</sup> Niemeier 1980, 41; see also Mountjoy 2003, 78.

<sup>618</sup> See Betancourt 1985, 137-140 and Niemeier 1980, 41.

<sup>619</sup> Betancourt, Davaras 1998, pl. 11, AC 78.

<sup>620</sup> Betancourt, Davaras 1999, fig. 7, BE 6.

lower body and a band of isolated leaf pairs on its shoulder.<sup>621</sup> Very similar jars were found at Mochlos which give the impression of a single source of production for the piece from Gournia and the ones from Mochlos.<sup>622</sup> The pottery from the Artisan's Quarter and the farmhouse at Chalinomouri offers many more examples of this style of decoration.<sup>623</sup> The polychrome style is represented by fewer vessels, but a large jar from Pseira with bulls' heads and double axes on the shoulder and friezes of spirals and ivy leaves on the lower body nicely illustrates the character of such vases.<sup>624</sup> The Knossian deposits of LM IB pottery were lately compiled by Hatzaki and grouped together in the "SEX North House Group", again including primary and secondary deposits.<sup>625</sup> These come from the palace, the town and from a few tombs at Poros-Katsambas. Most of them include both "Special Palatial Tradition" and "Standard Tradition" vessels. Hatzaki also presents an extremely useful collection of contemporary deposits throughout Crete which facilitates the comparison of the Knossos material with that of other sites on the entire island enormously.<sup>626</sup> These include Chania and Nerokourou in western Crete, Archanes, Galatas, Sklavokampos and Tylissos in central Crete and Gournia, Mochlos, Pseira, Myrtos-Pyrgos, Palaikastro and Kato Zakros in the eastern part of the island. Still more are listed by Hatzaki but I will refrain from presenting more examples of the LM IB styles at this point and return to the material from Zominthos.

This chapter is supposed to deal in detail with the elements of the painted decoration on the vessels from the ceramic workshop at Zominthos. This includes all the painted motifs that have been applied to a vessel due to their aesthetic appearance rather than any functional reason. Therefore the monochrome coating on many of the Zominthian vases is not considered here. Only a small minority of the vessels from Zominthos have painted decoration at all. 43 pieces, mostly only small body fragments, out of the entire assemblage show painted motifs or parts of painted decoration. Of the complete or nearly complete vessels less than ten are decorated, including all designs. Each decorative element will be presented by every piece that shows this motif within the assemblage. The development of the motif throughout the various periods will shortly be discussed before a detailed description of the Zominthian vessels and comparisons with finds from other Minoan sites follow

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<sup>621</sup> Betancourt 1985, pl. 18F.

<sup>622</sup> Barnard, Brogan 2003, fig. 27, nos. IB.353, IB.354.

<sup>623</sup> For a collection of motifs present at Mochlos see Barnard, Brogan 2003, fig. 57.

<sup>624</sup> Seager 1910, pl. VII.

<sup>625</sup> Hatzaki 2007, 184-186.

<sup>626</sup> *Ibid.*, 195, table 5.9.

afterwards. The motifs are arranged by their number of appearance at Zominthos starting with the most common designs (Table 4).

### *Spirals*

The spiral, in various types, is by far the commonest decorative motif applied to the vessels from the Zominthian assemblage. At least 12 pieces (R12-078; R12-080; R12-100; R12-102; Unit 12, 1988-001; Unit 70, 1988-006; Unit 70, 1988-013; Unit 70, 1988-014; Unit 70, 1988-019; Unit 76, 1988-001; Unit 76, 1988-003; Unit 115, 1988-001), complete vases and fragments, are decorated with this design in one form or another. All of the spiral illustrations from Zominthos generally render the running spiral motif (FM 46).

Although LM IA has been called the “high point” for the spiral and other motifs, the design had already been a part of Minoan ceramic decoration for a long time.<sup>627</sup> It can be traced as far back as EM III where spirals were depicted in the so called “East Cretan White-on-dark Ware” as seen on several sherds from Gournia.<sup>628</sup> The spiral continued to be a popular motif during the entire duration of the Middle Minoan periods and was frequently used on many different vessel forms.<sup>629</sup> The variety of spiral designs in the Protopalatial Kamares Ware for example, has clearly been presented by Walberg.<sup>630</sup> The continuation of the design through MM III is well established both as a running frieze or an isolated motif.<sup>631</sup> In LM IA three main versions of the running spiral were distinguished by Furumark: a “simple type”, a “medallion type” and the “fresco type”.<sup>632</sup> Within the “simple type” three variants were identified according to specific details in the depiction of the spirals. The first and most common variant is the “meander spiral”.<sup>633</sup> It was already very popular in MM times and can also be found in Neopalatial deposits throughout the entire island of Crete and on other Aegean islands as well.<sup>634</sup> It is characterized by a continuous, wave-like flow that may sometimes revolve around a solid center, but which is not to be confused with a central disc. The solid center of the meander spiral is not the starting point of the spiral but merely marks

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<sup>627</sup> Betancourt 1985, 128.

<sup>628</sup> Betancourt 1984, figs. 2-6.24; 2-8.13; 2-10.13; pl. 19, nos. 31, 33.

<sup>629</sup> Furumark 1941, 122.

<sup>630</sup> Walberg 1976, 48-52; figs. 35, 37, 38.

<sup>631</sup> Walberg 1983, pls. 31-33; Stürmer 1992, pl. 7, B4.1, B4.2, although these two examples from Mallia have previously been dated to MM IIB; Betancourt 1985, figs. 83-85.

<sup>632</sup> Furumark 1941, 153; Niemeier 1980, 29.

<sup>633</sup> Niemeier 1980, 29.

<sup>634</sup> Ibid. 29-30; fig. 11,1-13.

the point where the stroke of the brush changes direction and returns along the lines already drawn.<sup>635</sup> A second version, the “Tangent spiral”, has been described as a “simplification” of the meander type.<sup>636</sup> The spirals are connected by one or sometimes two tangents, a variety mostly applied during and after MM III.<sup>637</sup> This type also occurs in several variants as illustrated by Niemeier.<sup>638</sup> A related version, the “hooked spiral” is characterized by spirals that may also be connected via tangents but sometimes, especially in the sub-LM IA style, are drawn individually without any real connection and appear rather isolated.<sup>639</sup> According to Furumark, the “medallion spiral” is a hallmark of the earlier phase of the LM IA style.<sup>640</sup> The pure shape of the spirals is made up by their exterior circles filled with rosettes, which are connected by tangents. However, several variations of the design and combinations with the “fresco type” exist as well.<sup>641</sup> These types have already lost much of the original form as a spiral but are clear derivatives of this decorative element. This development becomes even more apparent with the “fresco spiral”. This kind of spiral mainly recalls the shape of the tangent spiral with the addition of wavy lines to connect the coils to one another. It was probably inspired by wall paintings as Furumark suggested. The centers of the coils are usually solid circles, sometimes with white dots recalling a simplified version of the rosettes of the “medallion spirals”. These solid circles become the only filling of the coils in a later, sub-LM IA variant of this type of spiral, known from Central and East Crete.<sup>642</sup> The spirals are usually arranged in horizontal friezes with the repeated individual elements rather than alternating with other motifs, although such examples exist as well (see Unit 76, 1988-003 with interlinked crocuses).<sup>643</sup> They are mostly applied to the shoulder and upper bodies of the vases, however, certain vessels, often large jars or jugs, also show friezes of spirals above the base or on their lower body.<sup>644</sup>

The spiral decoration on the vessels from Zominthos seems mostly to belong to the “simple spiral” type. The small beaked jug R12-078 exhibits a frieze of solid center running spirals on

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<sup>635</sup> See for example two vases from the House of the Frescoes with two versions of the running meander spiral, one with solid centre and one without. PM II, 436, fig. 253 A and B.

<sup>636</sup> Furumark 1941, 153.

<sup>637</sup> Coldstream 1972, pl. 29, no. 7.

<sup>638</sup> Niemeier 1980, fig. 12. 1-13.

<sup>639</sup> Furumark 1941, 153; Niemeier 1980, 31-32, fig. 13.1-7.

<sup>640</sup> *Ibid.*, fig. 14.1-4.

<sup>641</sup> *Ibid.*, 32-33.

<sup>642</sup> Niemeier 1980, 35-36, fig.15,1-8.

<sup>643</sup> Betancourt 1985, 130.

<sup>644</sup> See for example Mountjoy 2003, fig.4.5, no. 61; fig. 4.6, no. 65; A collection of Rytha from Gournia nicely illustrate a number of spiral variations in LM IA, see Boyd Hawes 1908, pl. VII; another useful collection can be seen on Marinatos 1974, colour plate 10.

its shoulder and upper body area (Fig. 34). The paint on this vessel is rather well preserved and the outline of the design was thus well recognizable. The solid centers of the spirals are encircled by three lines, the outermost connecting it to the following spiral. The general execution of the spirals on this vessel appears relatively careless and almost sloppy. The distances between the single spirals and their circular lines are irregular and may vary to a certain extent. The centers are not on a common level but lie on different niveaux on the body of the jug. The main frieze with the spirals is bordered by a solid black band at its bottom and the solidly black coated neck of the vessel at the top. Two further black bands cover the lower body and base of the jug. The shape and decoration of R12-078 is best paralleled by a jug from a tomb at Poros which exhibits the same kind of spirals in a frieze on its shoulder and the solid bands on its lower body.<sup>645</sup> The jug has been assigned to the MM III to LM IA phase. Another comparison can be drawn to a jug from Malia which also shows a frieze of running spirals with solid centers on its shoulder. The shape of the piece from Malia is rather more slender and elongated than the pieces from Zominthos and Poros.<sup>646</sup> This jug has been dated to MM III – LM IA as well.

A lavishly decorated beaked jug (R12-080) shows a different kind of spiral decoration (Fig. 35). It exhibits two friezes of hooked spirals that are separated by a solid black band. The upper register or frieze is placed on the vessel's shoulder and contains very simple, hooked spirals repeated one after the other. The spirals themselves consist of a single but elegantly drawn brush stroke which starts at the center of the spiral and ends in an s-line which connects the spirals by going underneath the following spiral and again coming up behind its center without actually touching the neighboring element. This kind of motif is quite common in LM IA and the disconnected, single spirals, as seen on the piece from Zominthos are also typical for sub-LM IA contexts.<sup>647</sup> The spirals on display here may be compared to the ones on a "Coppa globulare" from Kamilari which show much the same characteristics, however without the final, upward draught end of the s-line.<sup>648</sup> A cup from Phaistos also resembles this decoration.<sup>649</sup> The lower frieze on the central body of the Zominthian jug presents a different, although related type of spiral. The spirals in this frieze are also hooked spirals, however without the "hook", not unlike the comparanda just named for the spirals in the upper frieze.

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<sup>645</sup> Muhly 1992, 84, fig.18, no. 221, pl. 21, no. 221.

<sup>646</sup> Charpoutier, Demargne 1962, pl. XLII, jug right of 9218.

<sup>647</sup> Niemeier 1980, 31-32.

<sup>648</sup> La Rosa, Cucuzza 2001, fig. 246.

<sup>649</sup> Levi 1976, fig. 584, F. 369).

The ones in the lower register have no solid center and the coils of the spirals are characterized by two revolving lines around it. Each spiral had to be drawn individually which does actually not qualify them as running spirals, but the intention to imitate just that can particularly be observed in the lower frieze. The spirals can be compared to those on a cup from the “South House” at Knossos decorated in the sub-LM IA style.<sup>650</sup> The piece from Knossos comes from an unstratified context however. A teacup from Kommos also has comparable spirals but was dated to LM IB.<sup>651</sup> The lower part of the jug from Zominthos is again decorated with solid dark bands. One surrounds the body of the vase right below the lower frieze of spirals, two more are placed on the lower body, and a third band covers the base of the jug. The neck and handle are also coated with black paint just as with R12-078.

The preserved upper part of a beaked jug (R12-100) is also decorated with a frieze of running spirals (Fig. 36). Five coils of tangent spirals are placed within the frieze zone which is bordered by a solid black band at the top. The lower end of the frieze is not preserved. Every spiral has been drawn differently and shows a varying degree of elaboration. But in general, all appear relatively irregular with differences in the center and the spiral-lines around it. Some seem to have a solid center while others do not and the thickness of the lines also varies considerably. Four spiral-lines rotate around the center of each spiral, the outermost being slightly thicker than the ones closer to it. The paint is relatively well preserved, except for the part below the handle and on the neck. The area below the handle does not seem to have been decorated with another spiral but with a random application of lines, however, due to the state of preservation of the paint here, this must remain uncertain. The neck is coated with solid black except for a zone of buff ground with a dark wavy line. This zone and the line in it are also rather irregularly drawn. The rim and the handle seem to have been completely black. This decorative scheme can also be seen on a jug from Complex D at Akrotiri.<sup>652</sup> Another very similar decoration can be observed on a peg-top rython from Aghia Irini, House A, with fresco-type spirals.<sup>653</sup> Several comparanda for the spirals themselves were found on cups from Malia, Quartier E.<sup>654</sup> Others were discovered at Akrotiri on a variety of vessels.<sup>655</sup> The motif

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<sup>650</sup> Mountjoy 2003, fig. 4.22, no. 353.

<sup>651</sup> Rutter, Van de Moortel 2006, pl. 3.42, no. 37d/1.

<sup>652</sup> Siebenmorgen (ed.) 2000, 326, no. 333.

<sup>653</sup> Cummer, Schofield 1984, pl. 86, no. 1560a.

<sup>654</sup> Pelon 1970, pl. XV, no. 2; XX a, b.

<sup>655</sup> Siebenmorgen (ed.) 2000, 323, no. 319; 324, no. 323; 325, nos. 327-328.

continues to be painted in later phases as seen on a fragment of a cup from the “South House” at Knossos, dated to LM II, but certainly becomes less popular after the Neopalatial period.<sup>656</sup>

The body and rim fragment of a large open vessel (R12-102), probably a basin or vat, exhibits a different kind of spiral decoration (Fig. 37). Although no coil has been completely preserved on the sherd, it is possible to identify the type of spiral and its arrangement on the vessel. The spiral displayed on this vase fragment belongs to the meander type, which in this case is characterized by solid centers and the “back-and-forth” movement of the spiral. This kind of spiral probably is the most common type of LM IA and can be found in central- and east Crete as well as on Minoan sites outside of Crete.<sup>657</sup> The decoration on the fragment from Zominthos again shows a certain degree of carelessness by the painter. The coils seem to be of different size, as far as recognizable, and their centers most probably lay on different levels. A drop of paint seems to have run down from the upper line of the preserved spiral, an irregularity obviously not worth correcting. In addition to the spirals, the rim of the vessel had been coated with dark color and pendant semi-circles draping from it. The horizontal handle had also been coated with dark paint. A jug from the “House of the Frescoes” at Knossos shows much the same kind of spirals as the piece from Zominthos. They also have a solid center and exhibit an overall irregular impression.<sup>658</sup> This jug was dated to mature LM IA by Evans. Spirals similar to the ones on the vessel from Zominthos can also be seen on a cup from the “South House” at Knossos, here identified as retorted spirals.<sup>659</sup> A fragment of a jar or jug from House A at Aghia Irini on Keos resembles the same kind of spiral decoration as well. Again solid centers and a sense of carelessness characterize the spirals.<sup>660</sup> The fragment was identified as a LM IA import from Crete. Yet another example, a storage stirrup jar, comes from the Acropolis Houses at Knossos, Deposit H.<sup>661</sup>

The fragment Unit 12, 1988-001 must have belonged to a rather large, closed vessel, probably a jug or jar. The interior of the sherd has a buff ground, while the exterior exhibits a variety of decorative elements in dark-on-light technique (Fig. 38). Very little of a spiral frieze is preserved above a black band at the center of the fragment. The remains of only two coils allow an identification as tangent spirals, however no further features of the spirals are

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<sup>656</sup> Mountjoy 2003, fig. 4.33, no. 560; for a continuation in sub-LM IA see Niemeier 1980, 30.

<sup>657</sup> Niemeier 1980, 30.

<sup>658</sup> PM II, 436, fig. 253 B.

<sup>659</sup> Mountjoy 2003, fig. 4.10, no. 145.

<sup>660</sup> Caskey 1972, 392, pl. 92, G18.

<sup>661</sup> Catling et al. 1979, fig. 38, no. 265.

observable. They too seem to be rather different from one another as indicated by a varying thickness of the “*Spiralwindungen*”.<sup>662</sup> This fragment also shows a row or frieze of s-lines and will again be of interest when this ornament is discussed below.

Another fragment, Unit 70, 1988-006, seems to illustrate another type of spiral, a LM IA variant of the “fresco type” (Fig. 39). The preserved part of the spiral shows a solid circle as the center of the spiral. Four to five circular lines surround this center. Besides being connected by a tangent, the remains of black color at the top of this fragment could belong to a wavy line which would qualify this motif as a fresco-type spiral.<sup>663</sup> This identification might be supported by another fragment, Unit 115, 1988-001 (Fig. 40), which could possibly belong to the same vessel. Although being attributed to another deposit/unit, the shape of the fragment and the decoration suggest that the two sherds might have been part of one and the same vase. The close relation of Unit 70 and Unit 115 is also indicated by another cross-link of two fragments from these units, that show a rather unique kind of decoration, possibly a plastic version of the conglomerate pattern. The two sherds are indeed very much alike and must almost certainly have belonged to a single vessel (see below: Unit 70, 1988-003 and Unit 115, 1988-002).<sup>664</sup> Returning to the sherds with painted decoration, the fragment from Unit 115 exhibits the remains of a connecting (wavy?) line at the bottom of the frieze as well. The combination of both fragments thus points towards a decoration of fresco-type spirals, probably on the shoulder or upper body of a jug or jar. The spirals can be compared to a tripod jar from the “House of the Frescoes” at Knossos.<sup>665</sup>

Two more fragments from Unit 70, Unit 70, 1988-013 and Unit 70, 1988-014 (Figs. 41-42), may have belonged to a single vessel as well. The identical findspot of both fragments strengthens this assumption. Both fragments are very small and a secure attribution to a specific vessel shape is impossible. Tentatively, they could have been part of either a hemispherical cup, or a thin-walled jug. The undecorated interior may hint at a closed vessel shape rather than a cup, but this is pure speculation. The type of spiral decoration cannot be identified due to the poor state of preservation. The only retrievable information is the existence of at least four circular lines around the center of the spiral. The lines on Unit 70, 1988-014 appear to be more regularly drawn than the ones on the other sherd. All lines are

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<sup>662</sup> Niemeier 1980, 30.

<sup>663</sup> Ibid., 34.

<sup>664</sup> Unfortunately I had no opportunity to study the excavation diaries to confirm this suggestion.

<sup>665</sup> PM II, 426, fig. 253 C.

more or less of the same thickness. The fragments are not joining and seem to derive from a similar position of the vessel's body.

Yet another fragment with spiral decoration from Unit 70 clearly must have belonged to a different vessel (Fig. 43). Unit 70, 1988-019 is larger and better preserved than the pieces just mentioned. It shows the remains of a spiral in d-o-l technique with very thick lines. The exact type of the spiral is hard to recognize but a meander type spiral appears to be the best bet. However, a tangent type cannot be excluded. The rather wide angle between the outer, curving line and the center of the spiral suggests that this line connects the present coil with the next one to the right. The remains of dark paint in the bottom left area of the fragment, however appear to belong to the spiral coil as well due to its curvature, which would give the spiral itself a rather awkward appearance. Thus, no secure identification of the spirals on this vessel has been achieved.

The final two pieces with spiral decoration within the Zominthian assemblage come from Unit 76 of the 1988 excavation (Figs. 44-45). They are presented together because, again, an attribution to a single vessel seems appropriate again. The fragments Unit 76, 1988-001 and Unit 76, 1988-003 appear to have belonged to a large, closed vessel, most probably a jug or jar. The frieze seems to have been placed on the upper body of the vessel. The motif of running spirals with interlinked crocuses can best be seen on the larger fragment, Unit 76, 1988-003. The spiral preserved on this piece does not have a solid center and consists of four circular lines around it. The exterior line is thicker than the inner ones. Of the second spiral on the fragment only a small part survived, allowing for no further description of this coil. The area between both coils is taken up by a crocus flower that grows out of the connecting tangent between the spirals. The smaller fragment, Unit 76, 1988-001, does not show any complete designs. The remains of a spiral and the stem of a crocus flower only become apparent when comparing this sherd to the other one. The motif of the crocus is well attested in LM and LH decoration (FM 10) and may either be connected with other designs or stand on its own.<sup>666</sup> The combination with running spirals is attested by two pieces from Gournia. One, admittedly different, variant on a conical rython shows crocuses as centers of spirals and not alternating with the coils.<sup>667</sup> A better comparison is provided by a body fragment of a large closed vessel that exhibits the same kind of decorative scheme as the piece from

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<sup>666</sup> Furumark 1941, 260; Niemeier 1980, 22.

<sup>667</sup> Boyd Hawes et al. 1908, pl. F.

Zominthos.<sup>668</sup> However, the crocuses on this fragment are more slender than the rather bold examples on the Zominthian sherd. The general composition of both elements is also known from Akrotiri on Thera where a cylindrical jar has both motifs arranged together. The degree of elaboration on this vessel is very poor however.<sup>669</sup>

### *Grass or Reed Pattern*

The Grass or Reed Pattern (FM 16) is the second most common motif on vessels from Zominthos (R18-001; Unit 70, 1988-011; Unit 70, 1988-012; Unit 70, 1988-018; Unit 70, 1988-020), together with the Trickle Pattern. Both designs are found on five pieces, mostly fragments, but also on complete vases. The Grass/Reed Pattern is one of the most popular motifs of LM IA pottery painting, and generally typical for the mature stage of LM IA as defined for Knossos.<sup>670</sup> It developed out of the dentate band already attested for the Kamares Ware of MM I and continued through MM II and MM III.<sup>671</sup> The “cactus-like” form of the early variant with thick leaves and stems clearly foreshadows the development and continuation in LM IA.<sup>672</sup> Another variety with thinner, more elongated, and eventually detached leaves emerges within the LM IA style and continues also in LM IB.<sup>673</sup> Especially the version with detached leaves appears to be a rather late development and is usually ascribed to the sub-LM IA style.<sup>674</sup> The latter version is also often characterized by a sense of motion that may recall plants as moved by the wind.<sup>675</sup> However, both types have successors in that style, which are often hardly distinguishable from the pure LM IA examples.<sup>676</sup> The motif was painted on a wide variety of vessel shapes, from small cups to large storage containers. Furumark assumed that the design did not survive in the “palatial LM IB and LM

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<sup>668</sup> Betancourt, Silverman 1991, fig. 36, no. 740.

<sup>669</sup> Marinatos 1971, pl. 64c.

<sup>670</sup> Mountjoy 2003, 56.

<sup>671</sup> Niemeier 1980, 27; Furumark 1941, 155; Walberg 1976, 67.

<sup>672</sup> Furumark 1941, 155; see for example Seager 1910, figs. 6, 14; Mountjoy 2003, fig. 4.7, no. 71; Popham 1967, pl. 76 f; Betancourt, Silverman 1991, fig. 25, no. 627; Catling et al. 1979, fig. 31, no. 252.

<sup>673</sup> Boyd Hawes et al. 1908, pl. VII, no. 24; PM II, figs. 276 f, g, 349, g, h, I; Popham 1984, pl. 143, no. 6; Popham 1967, pl. 76 a, c; Catling et al. 1979, fig. 31, nos. 223, 250.

<sup>674</sup> Watrous 1992, fig. 17, no. 265; A fine Kalathos from the Kiln Dump at Kommos exhibits the same, presumably late version of the reed pattern but is still decorated in light-on-dark technique. This piece was dated to an advanced stage of LM IA. Van de Moortel 2001, fig. 33, no. 29; Other examples of reed pattern in l-o-d are known from the “South House” and the Acropolis Houses at Knossos, see Mountjoy 2003, fig. 4.10, no. 147 and Catling et al. 1979, fig. 20, no. 135, fig. 29, nos. 209, 210; Marinatos 1939-1941, pl. 1, nos. 3, 4; Mountjoy 2003, figs. 4.8, no. 82, 4.16, nos. 220-222; La Rosa, Cucuzza 2001, figs. 259, 347.

<sup>675</sup> Niemeier 1980, 28.

<sup>676</sup> *Ibid.*, 27.

II styles” but continued to be painted in the “provincial Cretan decoration” which is probably better described as the “Standard Tradition” of LM I.<sup>677</sup> Nevertheless, the works of the so called “Reed Painter”, the most prominent example being a beaked jug from Phaistos, are certainly to be included in the Floral Style of the “Special Palatial Tradition” of LM IB.<sup>678</sup>

The best preserved example of Grass/Reed pattern at Zominthos is found on a bridge-spouted jar from Room 18 in the North-Western part of the “Central Building” (R18-001). The vase is decorated with a frieze of reeds on its upper body and three solid black bands below (Fig. 46). The rim and base ring are also coated with black paint and the remains of the spout show traces of black color as well. The horizontal handles were decorated with black stripes. The paint on this vessel is relatively poorly preserved. The reed plants consist of four leaves growing out of a single thick leaf at the bottom. This particular detail of the design on the Zominthian vase appears to be rather uncommon and is possibly a local trait of the painter since I know of no other examples that depict the same kind of “root”. Above this lowest leaf, a couple of leaves usually form an angle out of which the last and uppermost ones grow. These are mostly detached from the lower part of the plant. A sense of movement enhances the plants and underlines their natural, although pictorialized, appearance. These features are stylistically best compared to two pieces from the “South House”, which have been attributed to the sub-LM IA style.<sup>679</sup> The horizontal stripes on the handles are a characteristic that appears to be rather typical for later Neopalatial and even Postpalatial periods. An oval mouthed amphora from the “South House” and several pieces from the MUM date to LM IB and LM II.<sup>680</sup>

The remaining four fragments with Reed pattern from Zominthos all come from a single unit and probably belong to only two vessels (Figs. 47-50). The fragments Unit 70, 1988-011, Unit 70, 1988-012 and Unit 70, 1988-020 are rim fragments of what seems to have been a hemispherical cup. Unit 70, 1988-018 is a body sherd of either a cup or a thin-walled jug. Its precise position within the body of the original vase is no longer ascribable. The first three fragments of the hemispherical cup all show a black rim band on the exterior of the vessel underneath which a frieze of reed plants decorates the upper body of the cup. The smaller sherds only exhibit a single thin and elongated leaf of a plant that may or may not touch the

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<sup>677</sup> Furumark 1941, 282.

<sup>678</sup> Betancourt 1985, pl. 21 A, B, C; Popham 1967, pl. 79 a, e, f. Another example was found at House A at Aghia Irini on Keos, see Cummer, Schofield 1984, pl. 81, no. 1413.

<sup>679</sup> Mountjoy 2003, fig. 4.16, nos. 220, 221.

<sup>680</sup> Mountjoy 2003, fig. 4.13; Popham 1984, pl. 152, nos. 2-5; pl. 157 a, g; pl. 158, nos. 7, 9.

rim band. The plants are placed diagonally in the frieze and do not seem to overlap each other. The most information on the appearance of the plant design can be drawn from the larger fragment (Unit 70, 1988-020). Here an almost complete plant motif is preserved with only the tip of the uppermost leaf and the stem seemingly missing. This version of the Reed/Grass Pattern differs considerably from the one on the bridge-spouted jar described above. The leaves of the plants are also thin and elongated but are not detached from one another. The overall appearance of the motif recalls rather the “cactus-like” shape and motionlessness of earlier examples of the design than the reeds on the jar. Comparanda come from the “South House” at Knossos, the MUM, the Gypsadhes Well Upper Deposit, the Acropolis Houses, and also from Gournia.<sup>681</sup> The body sherd Unit 70, 1988-018 is also relatively small and shows only a preserved upper tip of a single leaf that crosses two parallel black bands above the area decorated with reeds. From what can be observed, the type of reed pattern is similar to that on the other fragments. The leaf seems to be attached to the rest of the plant and is of an elongated, thin shape. Although only a very limited part of the design is visible, there can be little doubt on the motif depicted.

#### *Trickle Pattern*

The name “Trickle Pattern” for the type of decoration considered here is actually a little euphemistic. The trickles on most vessels do not qualify as a pattern in the usual meaning as a planned and consciously laid out design but are rather “random drips” with “accidental effects”.<sup>682</sup> The decorative scheme may be traced back to the Middle Minoan dark-on-light style which started in MM IB and continued throughout the entire Middle Minoan Period.<sup>683</sup> Some even earlier examples already date to the Early Minoan IIB Period.<sup>684</sup> Despite its aesthetically moderate value, the style “illustrates a typical characteristic of Minoan life, a preference for decoration that pervades even the commonest household objects”.<sup>685</sup> The style has several regional variations and employs a number of different motifs, including the trickle ornament.<sup>686</sup> It is always executed in dark-on-light. The designs were often the result of

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<sup>681</sup> Mountjoy 2003, fig. 4.8, no. 80; Popham 1984, pls. 131d, e, 133d; PM II, 549, fig. 349 I; Catling et al. 1979, fig. 31, no. 250; Boyd Hawes et al. 1908, pl. VII, nos. 12, 24.

<sup>682</sup> Betancourt 1985, 87.

<sup>683</sup> Walberg 1976, fig. 50, Motif 31.

<sup>684</sup> Walberg 1992, 88; Walberg 1983, 64.

<sup>685</sup> Betancourt 1985, 87.

<sup>686</sup> See also Betancourt 1977a; Zois 1969.

dipping rather than actually painting as seen on quite a large number of vessels from MM contexts but also later deposits of a LM I date. A different version of the trickle ornament employs not dipping, but simple blots of paint that are left to run down the surface.<sup>687</sup> They appear on larger storage jars or small domestic vessels and “can, obviously, not be used for dating and do not throw light on changing taste and fashion”.<sup>688</sup> The Trickle Pattern ornament is not unpopular during the Neopalatial Period either and several sites have ceramic material decorated in this fashion. Kommos, Knossos, Mochlos and Palaikastro are just a few among many others that produced vases with trickle ornament during LM IA and even LM IB.<sup>689</sup> The Trickle Pattern has been identified on five pieces from the Zominthian pottery assemblage from the ceramic workshop area (R12-026, R12-040, Unit 70, 1988-002, Unit 70, 1988-004, Unit 70, 1988-007) (Figs. 51-55). A Type 4 Handleless Cup (R12-026) is the best preserved example of the trickle ornament which compares very well to a similar cup from the MUM at Knossos.<sup>690</sup> The trickle ornament is seen on both, the interior and exterior surfaces of the cup. Another close parallel is a MM III cup from Kommos which shows the exact same decoration.<sup>691</sup> The vases seem to have been dipped into the paint upside down and then turned around and left to dry. The downwards running paint thus created the patterns visible on the surfaces today. The cup from Zominthos appears to have been dipped into the paint quite deeply since the entire upper third of the vessel is coated with black color. In most cases from other sites, only the rims of the cups were dipped into the paint, creating the “dip-rim” effect. The larger vessels such as storage jars are more frequently decorated with blots of paint that were applied to the surface probably by a thick, soft brush or poured directly on the vase and not dipped into another vessel containing the liquid paint.

Another handleless cup, R12-040 (Type 6), also shows traces of the Trickle Pattern. Unfortunately the cup is only partially preserved but the paint is rather well recognizable. On the exterior, only a small spot of black paint survived which does not necessarily point towards a typical trickle pattern. However, on the interior, a very characteristic trickle runs down the wall of the cup. It is certain that the cup had not been dipped into paint because the preserved parts of the rim do not exhibit traces of color. Thus the paint must have been

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<sup>687</sup> See for example a jar from the “North-East Magazines” from the palace at Knossos. PM I, 572, fig. 416C.

<sup>688</sup> Walberg 1992, 88.

<sup>689</sup> *Ibid.*, 97; Betancourt 1990, pl. 95, no. 1873, pl. 96, no. 1881, pl. 99, no. 1963; Popham 1984, pl. 129b; Barnard, Brogan 2003, fig. 1, IB.15, fig. 3, IB.157, fig. 5, IB.197, fig. 8, IB.214; Knappett, Cunningham 2003, fig. 11, nos. 101, 104, fig. 15, nos. 152, 155, 156.

<sup>690</sup> Popham 1984, pl. 129b.

<sup>691</sup> Betancourt 1990, fig. 33, no. 708.

applied to the vessel by other means. A possible parallel from Palaikastro seems to have the “dip-rim” but only on its interior which is very unusual.<sup>692</sup>

The Trickle Pattern is also seen on three fragments from Unit 70 (Unit 70, 1988-002, Unit 70, 1988-004 and Unit 70, 1988-007). They belong to at least two different vessels of unknown shape. All are undiagnostic body sherds. Unit 70, 1988-002 could have been part of a jug according to the slight curvature of the fragment while the other two sherds are straight or relatively straight and may therefore belong to a cylindrical or pithoid jar, quite possibly the same vessel. The fragment Unit 70, 1988-002 is decorated with solid dark bands that are visible at the top and bottom of the sherd. In between both bands a trickle runs down on the buff ground area, connecting the two. It has to remain uncertain whether or not this trickle was purposely applied or created, or if it is simply the result of careless painting. The lower edge of the upper band is very regularly drawn and the trickle does not seem to be the result of dipping comparable to cups from Knossos and Palaikastro.<sup>693</sup> A pithoid jar from the Acropolis Houses shows a trickle running over two solid bands which also recalls the design on the fragment from Zominthos.<sup>694</sup>

The other two fragments from Zominthos, Unit 70, 1988-004 and Unit 70, 1988-007, may well belong to just one vessel. The type of Trickle Pattern and the thickness of the wall fragments along with the identical findspot, or at least identical unit, may point to such an interpretation. Both fragments are easily and quickly described. The first one, Unit 70, 1988-004 is very straight and shows two trickles on its exterior surface. The other one, Unit 70, 1988-007 is slightly curving and has one trickle on the exterior surface. The exact type of which and its appliance is hard to define and seems to correspond to numerous examples of large storage containers with the same kind of decoration.<sup>695</sup>

### *Tortoise-Shell Ripple*

The Tortoise-Shell Ripple decoration (FM 78) goes back to MM II, becoming more popular at the end of that phase.<sup>696</sup> In MM III it is one of the most common decorative designs in central and eastern Crete, as well as on several Aegean islands. Early examples of the motif can be

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<sup>692</sup> Knappett, Cunningham 2003, fig. 15, no. 154.

<sup>693</sup> Warren 1991, fig. 8 I; Knappett, Cunningham 2003, fig. 16, no. 162.

<sup>694</sup> Catling et al. 1979, fig. 34, no. 230.

<sup>695</sup> See for example Christakis 2005, pl. 2a.

<sup>696</sup> Niemeier 1980, 38; Betancourt 1985, 113; Walberg 1976, fig. 50, Motif 30.

seen on a cup and a fragment from Knossos and several fragments from Malia, where the design “constitue le motif essentiel de la decoration somber sue clair au cours de la phase II”.<sup>697</sup> On Kythera the motif is typical for the deposits dated to MM IIIB and the transition to LM IA as illustrated by deposits ε and ζ.<sup>698</sup> The transitional role between MM IIIB and LM IA of the Tortoise-Shell Ripple pattern and its connecting character was already described by Evans “as an element of connexion, indeed, the ‘tortoise-shell ripple’ ware which, as shown above, had a long Middle Minoan history, plays an important part, and its buff ground and glaze affords a real anticipation of Late Minoan fabrics. This class of ware may well be regarded as having led the way to the general adoption of the dark on light style, nay more, in its M.M. III *b* shape, it is practically indistinguishable from the form in which it survives into L.M. I *a*”.<sup>699</sup> Thus it is not surprising to find the design also on many pieces from the “transitional phase” which Popham postulated for the material from the MUM.<sup>700</sup> The same problem is illustrated by Bernini’s plates of diagnostic motifs both for the MM IIIB and LM IA periods at Palaikastro.<sup>701</sup> The motif continues to be popular during LM IA, especially the earlier phase of the style, but becomes less common in the advanced and final stages of the phase, and is only very occasionally found in LM IB and the contemporary sub-LM IA style.<sup>702</sup> The pattern itself consists of vertical lines that are, as a rule, absolutely parallel and often with ragged borders.<sup>703</sup> These lines may be rather straight or slightly curving. They are always depicted in the dark-on-light style. While Evans thought that they were applied using a brush, Furumark suggested the use of a comb-like tool or maybe multiple brush.<sup>704</sup> The design is usually arranged in horizontal friezes, and on small shapes, such as cups, often covers most of the walls.<sup>705</sup> The origin of the ornament is hard to trace and definite attributions to a specific pattern are barely possible, but Schiering suggested seeing an imitation of the lines of alabaster in the ripple pattern.<sup>706</sup>

The Tortoise-shell Ripple Pattern is preserved on four vessels and fragments from Zominthos (R12-086, R12-103; Unit 70, 1988-015, Unit 76, 1988-002) (Figs 56-59.). The ewer R12-086 is one of the best preserved decorated vases within the assemblage and shows two friezes of

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<sup>697</sup> PM I, 593, fig. 435; Pelon 1970, 63, pl. XIII, 3b, c, e.

<sup>698</sup> Coldstream, Huxley 1972, pls. 24-25.

<sup>699</sup> PM II, 363.

<sup>700</sup> Popham 1984, 158, pls. 140-142.

<sup>701</sup> Bernini 1995, figs. 7, 8.

<sup>702</sup> Niemeier 1980, 39; Betancourt 1985, 113.

<sup>703</sup> Furumark 1941, 423.

<sup>704</sup> PM I, 592; Furumark 1941, 423.

<sup>705</sup> Betancourt 1985, 114; see for example Marinatos 1968, fig. 26 for the frieze-arrangement of the design.

<sup>706</sup> Schiering 1960, 22.

the ripple design, one at the shoulder and one at the lower body. The lines are all parallel and slightly blurred at their borders. Their form is slightly s-shaped and the distance between each line is rather regular. The center of the vase is decorated with solid bands of black and reddish-brown color. The neck, rim and base are coated with black. The same kind of decoration is seen on neck and body fragments of a jug, or more probably a ewer from the Psychro Cave which has been dated to MM III.<sup>707</sup> A rython from Gournia also exhibits several friezes of the design on its body.<sup>708</sup> Another ewer from Palaikastro, which is only partly preserved, also has a frieze of tortoise-shell ripple pattern on the shoulder and neck. The main decorative zone, the upper body of the vase shows a spiral decoration below two solid bands that separate the friezes from another.<sup>709</sup> The shape of the vessel is very similar to that of the ewer from Zominthos and both recall the form seen in the “Temple Repositories” which have lastly been assigned to the LM IA phase.<sup>710</sup> An oval mouthed amphora from the “North-House” at Knossos is decorated with two friezes of the same design as well and was attributed to the transitional stage between MM IIIB and LM IA.<sup>711</sup>

R12-103, the preserved lower part of a conical rython exhibits a frieze of tortoise-shell ripple pattern surrounding the body of the vessel ca. 10-18cms above the bottom. The tip is coated with black and the frieze of ripple pattern is bordered by solid black bands. The lines of the ripple design are relatively thin and rather straight than curving or s-shaped. They seem to be rather irregularly and separately painted, probably by a single brush and not a multiple-brush tool. A rython from Gournia shows much the same decoration of three separated friezes of ripple pattern.<sup>712</sup> A number of LC I rytha from Akrotiri are also decorated in the same manner with several friezes of the ripple pattern.<sup>713</sup> Yet two more comparanda come from Aghia Irini on Keos, House A and House J.<sup>714</sup>

A relatively small rim fragment (Unit 70, 1988-015) of what seems to have been a hemispherical cup or bowl also shows the remains of this decorative element. The preserved lines start shortly below the rim, one neatly placed next to the other. They are relatively thin and regularly painted. The use of a multiple brush is quite possible for this piece. Cups of

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<sup>707</sup> Watrous 2004, fig. 2, no. 11.

<sup>708</sup> Betancourt, Silverman 1991, fig. 32, no. 686.

<sup>709</sup> Knappett, Cunningham 2003, fig. 20, no. 176.

<sup>710</sup> Hatzaki 2007, 173.

<sup>711</sup> Warren 1991, fig. 5 B, 332.

<sup>712</sup> Boyd Hawes et al. 1908, pl. VII, no. 28; Koehl 2006, 141, fig. 17, no. 432.

<sup>713</sup> Koehl 2006, fig. 19, nos. 452, 474, 488, 489.

<sup>714</sup> *Ibid.*, fig. 28; Cummer, Schofield 1984, pl. 57, no. 511; Catling 1970-1971, 3-26.

various shapes were frequently painted with the ripple pattern as seen on numerous examples from Knossos and other sites. However, most of the times the lines of the ripple pattern start from a solid band or right at the rim of a vessel and are not, as in this case, isolated from an upper border, be it decorative or morphological. This specific feature can also be seen on a bell cup and an in-and-out bowl from the “South House” at Knossos.<sup>715</sup> Here, this small selection of comparanda shall suffice to underline the widespread appliance of the motif.<sup>716</sup>

Finally, a rim fragment of an in-and-out bowl has the same ornament (Unit 76, 1988-002). A frieze of tortoise-shell ripple pattern bordered by two solid bands, one above and one below, is painted on the exterior of the vessel, while the interior is decorated with three solid dark bands. The lines on this vase are very irregularly drawn and best resemble the German term “*Tremolierstriche*”.<sup>717</sup> They are diagonal to slightly curving, no real pattern is recognizable however. The lines might have been drawn individually or by a means of a multiple brush. This type of vessel appears to be a “newcomer” in MM IIIB and is always manufactured with a d-o-l decoration.<sup>718</sup> The lipless variant appears to be typical during the time of the LM IA style.<sup>719</sup> Three examples with ripple pattern either on the interior alone or on both surfaces from Knossos are depicted by Hatzaki.<sup>720</sup> Also, the exterior of the Zominthian piece and numerous fragments from the MUM look very much alike.<sup>721</sup>

### *Solid Bands*

Solid bands of dark, usually reddish-brown to black, color were frequently applied on many Minoan vessel types. They are already an element of decoration during the Early Minoan period and continue with changing popularity until the end of the Bronze Age and even further.<sup>722</sup> The bands are more of an accessory than an autonomous decorative element and appear mostly in combination with other designs such as spirals, floral motifs or ripple patterns. Those motifs are usually arranged in friezes which are then bordered by bands. Other

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<sup>715</sup> Mountjoy 2003, fig. 4.10, no. 137; fig. 4.11, no. 161.

<sup>716</sup> Warren 1991, fig. 10 K, L, N, O, Q; Popham 1984, pl. 142, nos. 12-14; Catling et al. 1979, fig. 23, nos 149, 150.

<sup>717</sup> Niemeier 1980, 38.

<sup>718</sup> Hatzaki 2007, 165.

<sup>719</sup> Mountjoy 2003, 76.

<sup>720</sup> Hatzaki 2007, fig. 5.4, nos. 6-8.

<sup>721</sup> Popham, 1984, pls. 136, 137.

<sup>722</sup> See for example a beaked jug from EM IIa in Siebenmorgen (ed.) 2000, 274, no. 158 and representative for the many examples from Mycenaean Crete, two stirrup jars from Chania, Andreadaki-Vlasaki 1997, fig. 11.

appliances of bands are the rim bands that might also have a functional meaning rather than simply an aesthetic value, or a number of horizontal bands that cover the lower body of a larger vessel which is usually decorated with more elaborate designs on the main decorative zone, mostly the shoulder and upper body of the vase. This is also well illustrated by several Zominthian vessels like the bridge-spouted jar R18-001 or the beaked jug R12-078 and the ewer R12-086. However, some examples of vessels with solid bands as their only decoration exist as well.<sup>723</sup> All in all, solid bands, either as accessories, rim bands or separation elements, can be seen on seven complete, or almost complete vessels, and on nearly every fragment with painted decoration of any kind (R10-025, R18-001, R12-078, R12-080, R12-086, R12-100, R12-103; Unit 12, 1988-001, Unit 70, 1988-002, Unit 70, 1988-005, Unit 70, 1988-009, Unit 70, 1988-010, Unit 70, 1988-011, Unit 70, 1988-012, Unit 70, 1988-016, Unit 70, 1988-018, Unit 70, 1988-020, Unit 76, 1988-002). I will refrain from describing them in detail at this point, mentioning only that they may differ considerably in thickness and shade depending on their *locus* and function within the overall decorative scheme of a vessel.

### *Splashes*

Another complicated and problematic element of the ornamental repertoire of the Zominthian assemblage is the decoration of vessels with dark splashes. The definite characterization as a decorative design that was intentionally applied stands on rather shaky grounds, especially since the material basis from Zominthos is very limited and the paint often only poorly preserved. I am thus reluctant to suggest a connection between what we see on some vases from Zominthos with the “Stipple Pattern” described by Furumark (FM 77).<sup>724</sup> This design, in its first type, first appeared during the LM IB style and is much more elaborate than the few, isolated splashes seen on the Zominthian vases (Figs. 60-64). The paint seems to have been sprinkled on the surfaces rather quickly and randomly resulting in both small and also fairly large spots of paint. The stipple pattern as described by Furumark is a “surface-filling” ornament which generally cannot be stated for the Zominthos examples.<sup>725</sup> Warren stressed the same phenomenon for his “Jackson Pollock Style” as an “unlimited, irregular pattern” that exceeds any given perimeter and best resembles the “Stipple Pattern” of Furumark.<sup>726</sup> LM IA

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<sup>723</sup> Betancourt, Silverman 1991, fig. 14, no. 503; Barnard, Brogan 2003, fig. 34, IB.396.

<sup>724</sup> Furumark 1941, 421-423.

<sup>725</sup> *Ibid.*, 421.

<sup>726</sup> Warren 1996, 47.

predecessors for this speckled style can be seen in several fragments from the MUM with “a very fine overall mottle”.<sup>727</sup> These LM IA examples are characterized by a lighter version of the often very dense spotting associated with LM IB and LM II, and compare to some degree to the Zominthian pieces.<sup>728</sup> The origin of the ornament may be seen in stone surfaces or possibly in other natural material such as ostrich egg-shells.<sup>729</sup>

As just mentioned, the pieces from Zominthos (R12-025, R12-033, R12-063, R12-066, R10-040) can only allusively be compared to the styles described above. The splashes on none of the vases could be described as “surface-filling” or “unlimited”. They are rather isolated and few in number than part of a surface covering pattern. The examples listed here comprise four cups and a lekanis that show traces of multiple dark splashes, excluding very few vases with singular spots of dark color only. The Type 3 Handleless Cup R12-025 has small spots of dark paint on its interior and exterior surfaces that appear to have been sprinkled upon the vessel. The Type 4 Handleless Cup R12-033 has a solid monochrome dark coating on its interior and splashes on the lower part and base of the exterior surface. This cup may have been put upside down on its rim and then sprinkled with paint. In this very case, and due to the interior coating, I am not entirely sure whether we are dealing with a decoration of splashes or the remains of a dark coating that covered the entire exterior surface. The Hemispherical Cup R12-063 shows only very few and small splashes on its exterior surface. The interior is left plain. The same kind of splashes, however on both surfaces, can be observed on a handled Bell-shaped Cup, R12-066. The Lekanis R10-040 shows clear splashes on the upper half of its exterior surface. The splashes differ in size and are all of irregular, random shape. Again the paint seems to have been sprinkled upon the surface and, as with R12-063, the interior is left plain without any remains of decoration or coating. Parallels to this kind of decoration are found in several deposits of different sites. A cup fragment from the SEX that has been attributed to LM IB gives an impression of the sprinkled paint.<sup>730</sup> A hemispherical cup from Palaikastro shows random splashes on its interior only, unlike any example we know from Zominthos.<sup>731</sup> Another hemispherical cup from the MUM and assigned to MM III- LM IA has splashes on both surfaces, but especially on the interior.<sup>732</sup> Other east Cretan examples come

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<sup>727</sup> Popham 1984, 157, pls. 135c, 136a.

<sup>728</sup> Warren 1996, 48.

<sup>729</sup> *Ibid.*, 48-49; see also Schiering 1960.

<sup>730</sup> Warren 1996, pl. 13C.

<sup>731</sup> Knappett, Cunningham 2003, fig. 45, no. 430.

<sup>732</sup> Popham 1984, pl. 144, no. 20.

from Gournia, as seen on two jugs with splashes on their exterior surfaces.<sup>733</sup> Interestingly one has been ascribed to LM IB while the other to LM IA. A south-central Cretan parallel may be seen in an oval-mouthed amphora from Kommos with “paint splatters” all over the exterior surface.<sup>734</sup>

### *S-Lines (Curved Stripes)*

Furumark suggested a LM IB date for this motif (FM 67) with possibly metallic prototypes.<sup>735</sup> He distinguished three main types of the design, one variant with uniform continuous stripes, a second one with stripes arranged in groups, and the third type with broad stripes in alternation with thin ones.<sup>736</sup> The examples from Zominthos belong to his first type that might have developed out of the tortoise-shell ripple pattern (Figs 38 and 65.). Neither Popham nor Betancourt included this type of ornament in their discussions of Late Minoan Pottery, the latter only referring to Furumark’s third type as part of the “Special Palatial Tradition” repertoire.<sup>737</sup> The curved stripes of the Mycenaean decoration are clearly a torsional element with Minoan predecessors as indicated by a pithos from Gournia.<sup>738</sup> This vase, however, shows the curved stripes as a design covering the entire surface of the vessel and can hardly be compared to the narrow friezes or zones on the Zominthian pieces. A LM IB jar from Knossos exhibits the third type presented by Furumark with several friezes of curved stripes above each other and covering the entire body of the vase.<sup>739</sup> Two fragments give evidence to the existence of the motif at Zominthos (Unit 12, 1988-001; Unit 115, 1988-003). The first fragment has already been discussed when its frieze of running spirals was described. Underneath that frieze a second zone of painted decoration surrounded the body of the vase. This frieze shows the S-lines, or curved stripes, in Furumark’s first type. All stripes look almost identical and are very regularly arranged with practically similar distances between the single lines. The frieze has a height of only ca. 2.5cm. The second Zominthian example is a small body sherd of what may have been a cup of some sort. The curved stripes are arranged in a frieze above another decorative zone with tiny, crescent-like dark spots. These spots can

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<sup>733</sup> Betancourt, Silverman 1991, fig. 27, nos. 642, 643.

<sup>734</sup> Van de Moortel 2001, 60, fig. 37, no. 52.

<sup>735</sup> Furumark 1941, 159, 402.

<sup>736</sup> *Ibid.*, 402.

<sup>737</sup> Betancourt 1985, fig. 105L.

<sup>738</sup> Boyd Hawes et al. 1908, pl. VI, no. 38.

<sup>739</sup> Hatzaki 2007, fig. 5.26, no. 1.

be compared to the ones on a peg-top rython from Trianda on Rhodes.<sup>740</sup> The curved lines are incompletely preserved and recall a connection to the ripple pattern. From what can be observed, they are rather regularly shaped and arranged. The exact dimensions of the frieze cannot be reconstructed but it seems that the largest part of the design is preserved.

#### *Pictorial (?)*

This category has subjectively been labeled “Pictorial” for a lack of a better title. It consists of one piece only, Unit 70, 1988-008, a rim fragment of a bowl (Fig. 66). The fragment actually consists of two joining sherds that bear the painted design of what might be interpreted as an eye or possibly a sun disc with short rays. The paint is well preserved and there can be no doubt on the outline of the motif. Few spots of paint flaked off from the center of the disc and some tiny spots of dark paint were visible at the rim. The regularity of the short stripes or “rays” surrounding the central, solid disc shows that they have been drawn individually and are not the result of a blot of paint sprinkled on the vessel’s surface. The overall depiction of the design on this vase is uncertain as I have been unable to find any parallels to this motif in Late Minoan pottery painting. In addition to the painted ornamentation, a row of short incised stripes along the exterior of the rim decorates the vessel. This kind of decoration is very unusual for the Zominthian assemblage and only found on this single piece. One may have to think about the possibility of an import or perhaps a chronologically different intrusion when dealing with this fragment.

#### *Insecure*

From among the collection of vessels with painted decoration only two fragments, Unit 70, 1988-009 and Unit 70, 1988-017, could not be attributed to a specific motif or design (Figs. 70-71). Both pieces were found in the same deposit and are undiagnostic body sherds. The first piece, Unit 7, 1988-009, may have belonged to a larger closed vessel, possibly a jug, due to the thickness of the wall and the fact that the interior surface was left plain. The decoration observable on the exterior is made up of a solid band of dark color and a somewhat sloping,

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<sup>740</sup> Marketou 1990, fig. 18.

indefinable thick line of the same color curving downwards from it. This line appears to have been drawn and is not to be confused with a trickle pattern.

The second fragment, Unit 70, 1988-017, most probably belonged to a hemispherical or rounded cup. The thin walls and the dark coated interior may indicate such an attribution. The partly preserved painted design on the exterior recalls maybe a loop or noose, but a definite attribution has to remain impossible.

#### *Incision / plastic decoration*

Besides the painted decoration very few pieces from Zominthos have been fitted with incised/plastic decoration (Figs. 72-74). This kind of decoration is an ancient practice and “one of the mainstays of the Cretan Neolithic” but continues into EM I and IIA.<sup>741</sup> After a short revival in MM I this technique vanished almost completely from the repertoire of decorative elements in the Minoan Bronze Age. Thus the incised fragments at Zominthos are hard to explain. Three examples (Unit 70, 1988-001, Unit 70, 1988-003, Unit 115, 1988-002) of this kind of decorative scheme were found, two of which seem to belong to one and the same vessel (Unit 70, 1988-003 and Unit 115, 1988-002). The first fragment (Unit 70, 1988-001) is of coarse fabric and must have belonged to a larger, either closed or open vessel, probably of storage function. The wall has a thickness of ca. 1.0cm and the interior is undecorated. The fragment is a wall sherd and rather undiagnostic concerning the original vessel shape and its place in the body. The interesting thing about this piece is its incised decoration on the exterior surface. The remains of at least three thin lines can be seen, each one seemingly describing a curving turn of roughly 90°. Unfortunately none of the lines is completely preserved so that no clear idea about their arrangement can be beheld. The surrounding area is filled with small impressions of irregular shape, possibly made with a wooden stick or some other tool with a pointed tip. It is uncertain whether these imprints relate to the lines or need to be regarded as an autonomous element of decoration. The piece is unparalleled in Zominthos and I know of no comparanda from other sites either.

The other two fragments very clearly belong to only one vessel although they have been found in different units. The connection between both units, Unit 76 and Unit 115, has already been mentioned and the fragments under consideration here make this connection even more

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<sup>741</sup> Betancourt 1985, 81-82.

obvious. The fragments probably belonged to a larger closed vessel of fine fabric, may be a jug or jar of some kind. Their exact position in the vase's body is unclear. Both show the exact same decoration of thumb-like impressions and a thin incised line on their exterior surface. They are coated with black paint and might perhaps recall the so called "conglomerate pattern" in a plastic version. This is just an idea and should not be taken as the only possible explanation for this kind of decoration.<sup>742</sup> The decorative scheme of these fragments differs very clearly from the above mentioned sherd with incisions, and appears also technically and probably chronologically further developed.

### **III.3 Fabrics and Wares**

The pottery from Zominthos can relatively easily be divided into several groups of fabrics with the bare eye (Table 5).<sup>743</sup> The term "Fabric" as used here is strictly related to the physical characteristics and appearance of the clay material and its composition, meaning both, the natural composition as well as the actions undertaken by the potter in order to create the final paste, for example combining two or more clays, adding organic materials, or settling out coarser grits. It is more than likely that the Minoan potters had a profound knowledge of the characteristics of their raw materials, and knew exactly where to find them and how to work with them from at least the beginning of the Bronze Age on.<sup>744</sup> A "deliberate selection from among the available clays was being undertaken" in order to achieve the best results possible.<sup>745</sup> Being the finished product, the "Fabric" also shows characteristics derived from the firing process, first and foremost its color which is regarded as one of the crucial features of distinguishing one "Fabric" from another.<sup>746</sup> This final fired paste is what is referred to as "Fabric" in the following descriptions.

Aspects of surface treatment, decorative and undecorative, are not used for the distinction of fabric groups but for the characterization of different wares within each fabric since both

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<sup>742</sup> For the "conglomerate pattern" see for example Betancourt 1985, fig. 98K.

<sup>743</sup> See Evelyn 2000, 260: "little beyond an initial visual sorting of fabric types is possible by the eye alone."

<sup>744</sup> „Für die spätminoische Epoche darf unterstellt werden, dass die Töpfer sehr konkrete Vorstellungen von den Rohstoffvorkommen hatten, die ihnen Tone größter Gleichmäßigkeit und bester Verarbeitbarkeit lieferten.“ Noll 1982, 161; For the EM period see Warren 1972, 95: "The variety of distinct fabrics shows that the potters practised a developed ceramic technology with an excellent control and understanding of the uses of different clays and fabrics for different purposes."

<sup>745</sup> Maniatis, Tite 1978, 491.

<sup>746</sup> Myer, Betancourt 1990, 4.

attributes are “technologically independent and should not be combined into a single organizational level”.<sup>747</sup> The primary factors to separate the fabric groups are color, size and quantity of inclusions, and hardness. While only petrographical analyses will be able to provide the exact number of distinct fabrics, all data used for the descriptions in the catalogue are derived from visual observations with the bare eye only.

The colors are recorded using the nomenclature and codes of the Munsell Color Charts<sup>748</sup> in order to employ an “accepted and commonly available standard”<sup>749</sup> and facilitate the comparison with material from other sites, although such an enterprise is always limited by several factors from locally available clay sources to the expertise of the potter.<sup>750</sup> Whenever layers of more than one color can be observed from the surface to the core of a sherd, they are ascribed to “surface”, “near surface” and “core”. The colors of slips and coatings are recorded separately, using the same terminology.<sup>751</sup>

Besides color, the most reliable method of distinguishing between fabrics proved to be the analysis of the inclusions encountered within a fired paste.<sup>752</sup> Their size, frequency, shape and identity can be measured and recorded to allow a relatively secure distinction of different fabrics.<sup>753</sup> The size of the inclusions was estimated by eye and recorded in ranges rather than exact dimensions along with their frequency. The visual percentage estimation charts included in the Munsell Soil Color Charts were used to determine the percentage values of the inclusions. Their shape usually varies between “subangular” to “subrounded”. “Angular” and “rounded” inclusions exist as well, however they are less frequently encountered within the Zominthian material.<sup>754</sup> Despite the obvious differences of several inclusions, no attempt of identification was undertaken due to a lack of expertise in ceramic petrology on the author’s behalf. The only exceptions being reddish-brown inclusions interpreted as grog and some tiny whitish spots that might be mica.<sup>755</sup> All others were simply described as grits of different color and shape. It will be up to the petrological analysis to determine their identity. For much

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<sup>747</sup> Rice 1976, 539.

<sup>748</sup> Munsell Soil Colour Charts 2000 edition.

<sup>749</sup> Orton, Tyers, Vince 1993, 138.

<sup>750</sup> For the problems concerning a comparison of fabrics, see Rutter 1995, 53.

<sup>751</sup> For the definition of “slip” and “coating” see below.

<sup>752</sup> The terms “fabric” and “fired paste” can be used as synonyms. See Myer, Betancourt 1990, 4.

<sup>753</sup> Orton, Tyers, Vince 1993, 139.

<sup>754</sup> *Ibid.*, Fig. A.5.

<sup>755</sup> However, it must remain unanswered whether these inclusions were actually grog or previously unburnt, older clay. See also Noll 1982, 161: „Mit Sicherheit handelt es sich nicht um Schamotte, d.h. bereits einmal gebrannte und zerstoßene Keramik, die dem Ton als Magerung zugeschlagen wurde, sondern um Ton aus einer älteren Generation.“

the same reason a division between naturally present inclusions and artificially added ones (“temper”) has been avoided.<sup>756</sup>

Another, less precise characteristic of a fabric is its hardness. It is usually measured in terms of its resistance to scratching.<sup>757</sup> The hardness of the pottery fabrics from Zominthos was determined by scratching it with the finger nail, “hard” meaning that the surface could not be scratched at all, “relatively hard” meaning that it could be scratched, “relatively soft” meaning that it could easily be scratched and “soft” implying that it could be scratched easily and deeply. Since the hardness of a paste depends on several factors, including those of surface treatment, but also on the firing conditions and length, porosity and also the post-depositional environment, the hardness can only be a further contribution to the distinction of fabrics but never a decisive and precise indicator by itself.<sup>758</sup>

The pottery from Zominthos can be sorted into three main fabric groups termed “Fine”, “Medium Coarse” and “Coarse”. Each of these groups is subdivided into several fabrics. According to the above mentioned characteristics four fine fabrics, two medium coarse fabrics and five coarse fabrics were distinguished.<sup>759</sup> The overall impression of a fabric may sometimes lead to a placement within a specific fabric group even though not all typical characteristics of this group are fulfilled, e.g. a fine fabric may show a higher density of inclusions or have single larger inclusions than usually found in such a fabric. Irregularities in the color of the clay or frequency and size of inclusions can therefore be responsible for a categorization in between two defined fabric groups (or wares, see below) such as “FF 1 to FF 2”. However, most of the pottery can be assigned to a specific group with a high degree of certainty. This scheme of classification is based solely on the material from Zominthos and may therefore be of limited value to the application and comparison with finds from other sites, since the large majority of the vessels appears to be locally produced and dependent on nearby clay sources as well as the manufacturing process applied at the local workshop.

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<sup>756</sup> Evely 2000, 264.

<sup>757</sup> Orton, Tyers, Vince 1993, 138.

<sup>758</sup> *Ibid.*; Rice 1987, 354f., for Moh’s 10-point scale of hardness and possible substitutes see also table 12.1.

<sup>759</sup> The fabric groups were distinguished using the material from the 2005 and 2006 campaigns, mainly from Room 11, an adjacent room to room 12. Nevertheless, the established groups are totally applicable to the pottery from the old excavations as well.

*Fine Fabric:*

1. Fabric Group FF 1

The clay of this group shows an even – slightly uneven fracture. It is very compact and usually well-fired. The surface of the paste is mostly soft – relatively soft and exhibits a smooth feel. Inclusions vary from black to greyish and reddish brown to reddish yellow in color, the latter being interpreted as grog. Sometimes tiny spots of white can be observed, possibly being mica. The density of the grits does usually not exceed 1-3% and their maximum size ranges from 0.2-0.3 cm. The overall color of the fabric group covers the red – yellowish red (2.5YR8/4-7/8 – 5YR7/6-6/8) of the Munsell system.

2. Fabric Group FF 2

The second group of pastes shares basically all the same characteristics with Fabric Group FF 1, however, the color is limited to the reddish yellow (5YR7/8 – 7.5YR8/6-7/8) of the Munsell system.

3. Fabric Group FF 3

Again the clay is well comparable to the pastes of FF 1 and FF 2. The decisive difference from the above being the color, which covers the reddish yellow – yellow (7.5YR8/4-8/6 – 10YR8/4-8/8) notations by Munsell.

4. Fabric Group FF 4

A very fine fabric with even fracture, compact and well-fired. The surface is well smoothed or burnished and mostly soft – relatively soft with a very smooth feel. The frequency of inclusions is below 1% and the size of the grits does not exceed 0.1-0.2 cm. The color notations are the same as in FF 3, but usually rather yellow.

*Medium-Coarse Fabric:*

1. Fabric Group MC 1

The medium coarse clay of MC 1 has an uneven to friable fracture. It is rather compact, however slightly brittle. It is usually well-fired. The surface is relatively rough and hardly smoothed. The hardness varies from relatively hard to hard. The inclusions consist mainly of grits of different color, including black, grey, reddish brown, brown and white, and alternating shape (mostly subangular to subrounded). The density lies between 5-10% and the maximum size is ca. 0.3-0.4cm. MC 1 comprises the Munsell colors red – reddish yellow (2.5YR6/8-7/8 – 5YR6/8-7/8).

2. Fabric Group MC 2

The clay raw material resembles that of MC 1. The scope of colors, however, ranges from reddish yellow to yellow and even very pale brown (7.5YR8/6 – 10YR8/4-7/8).

*Coarse Fabric:*

1. Fabric Group CF 1

CF 1 is the typical “cooking ware fabric” that was especially used for tripod cooking pots and usually fired to a red color. The clay breaks to a brittle and rough fracture. It is often heavily tempered and has a rough, unsmoothed surface with protruding grits. If a core is visible, it has diffuse margins.<sup>760</sup> The pastes of this group usually have a relatively hard to hard surface. Various inclusions, also of organic material, are observed to a frequency of usually 20% and more. The size of single inclusions regularly exceeds more than 0.3cm. The shapes range from angular to rounded and the colors include black, brown, grey, reddish brown and whitish grey. The overall color of the fabric group is limited to red and light red (2.5YR5/6-7/8).

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<sup>760</sup> Tempering is usually more common in thicker walled vessels and describes the intentional adding of materials to the clay raw material. In this case the term is used especially in connection with organic material. See also Matson 1984, 54.

## 2. Fabric Group CF 2

The composition of the pastes from this group hardly differs from CF 1 and CF 3, except for their color and the fact that they are even more brittle and friable. The inclusions often reach even bigger sizes and a higher frequency as well. The color range of CF 2 comprises reddish yellow to yellow and pale light brown (7.5YR7/6 – 10YR8/4-8/6).

## 3. Fabric Groups CF 3a and CF 3b

The material shows a brittle and rough fracture. It is also often heavily tempered and has a rough, unsmoothed surface with many protruding grits and irregularities. If a core is visible, it has diffuse margins. The surface is relatively hard to hard. Various inclusions are observed to a frequency of 20% and more. The size of single inclusions regularly exceeds more than 0.3cm. The shapes range from angular to rounded and the colors include black, brown, grey, reddish brown and whitish grey as in CF 1. The colors of CF 3 cover most of the Munsell notations for reddish yellow (5YR6/8-7/6-7/8). A second group of CF 3 contains fewer and smaller inclusions and may be termed CF 3b.

## 4. Fabric Group CF 4

This fabric group is represented by very few fragments only. The coarse paste has much the same characteristics as the ones just described, however its color is a light greyish to white. No Munsell notation could be ascribed to it.

A further, more precise classification of the pottery finds from Zominthos is achieved by the introduction of “wares”. Even if the term “ware”<sup>761</sup> is often insufficiently defined or randomly used to describe also “fabrics” or “classes” and an organizational system for ceramics highly dependent on the material under study<sup>762</sup>, it seemed appropriate to the author to apply such a system for the Zominthian vases. As noted above, “paste composition and surface treatment

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<sup>761</sup> The definition of the term “ware” as proposed in Myer, Betancourt 1990 is followed here: “A classification of pottery based on surface treatment and/or surface decoration. Since neither fabric nor fabric group is included in the definition, wares may exist in several fabrics.” This is also the case with the material from Zominthos, as will be shown below.

<sup>762</sup> Rutter 1995, 11; see also Wace, Blegen 1918, 176ff. for the undifferentiated use of the term “ware”; also Orton, Tyers, Vince 1993, 135; Catling et al. 1979, even combine paste composition and surface treatment to describe “fabrics” instead of wares. They also use the term “Conical cups – saucers” to determine one “fabric”.

are two independent properties” and are therefore treated separately on different levels of organization.<sup>763</sup> The “fabrics”, as defined here, were distinguished solely on the characteristics of paste composition and the clay raw material that was used to produce the vessels. The definition of “wares” however, focuses on the aspects of surface treatment as decisive reference points of the applied classification. On this organizational “sub-level” several wares could be ascribed to each fabric group. The scope of different modes of surface treatment is rather limited in the Zominthian material. All fine fabrics exhibit smoothed surfaces, however no burnished or even polished surfaces have yet been encountered. Even most of the the medium-coarse and coarse fabrics appear to have been smoothed to some extent but not as carefully as the finer pastes. Unsmoothed surfaces exist but are hardly found within the array of wares. Four different modes of surface treatment have been distinguished for the Zominthos pottery finds: 1. unslipped<sup>764</sup>, 2. selfslipped<sup>765</sup>, 3. with real slip<sup>766</sup>, 4. with painted decoration.<sup>767</sup> All four kinds can theoretically be found in each fabric group. Consequently a “ware” is characterized by its fabric group in combination with one of the above modes of surface treatment (Table 6). Thus a “ware” could also be called “technological type” as suggested by Rice.<sup>768</sup> Even though a catching nomenclature for these wares may be desirable, it is avoided here in order not to imply a certain function or use of each ware.<sup>769</sup> Instead a short abbreviation was chosen to name them (see below), the term “cooking ware” being the only exception/addition to that rule.

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<sup>763</sup> Rice 1976, 539.

<sup>764</sup> No self-, or real slip has been applied to the surface of a vessel. The clay body is the actual surface of the vase. These surfaces are usually harder than slipped ones.

<sup>765</sup> Selfslip normally occurs as a result of wet-smoothing the surface of a vessel and is not applied to it by the use of a brush or another tool (e.g. a piece of cloth) except for the hands of the potter.

<sup>766</sup> A coating of real slip, however, is additionally applied to the already smoothed surface by using a tool (a brush or a piece of cloth). For the Zominthos material the term “real slip” is always considered to be buff in color and clearly distinguishable from the clay body itself. The term “slip” describes any liquid, finer particled clay slurry that derieves from the mixing of clay and water. At Zominthos, slips are used for overall coatings and usually not for ornamental patterns. See also Evely 2000, 263; Myer, Betancourt 1990, 5.

<sup>767</sup> This includes both monochrome dark coatings, usually of a reddish brown to black color, as well as painted ornamental motifs. Monochrome coatings are either applied to the whole vessel or the exterior of a vase. No example of a coated interior alone has yet been identified.

<sup>768</sup> Rice 1987, 286.

<sup>769</sup> See Popham 1984, 160: “...fine wares, kitchen wares and storage vessels,...”. Unfortunately no exact characteristics of this organization are listed or thoroughly described. A descriptive nomenclature as used by MacGillivray appears to be more appropriate, however the Zominthian material in its limited decorative schemes does not necessarily demand distinctive waresnames. See MacGillivray 1998, 56ff.

*Fine Wares:*

1. FW 1a  
Fabric: Fine                  Fabric Group: FF 1                  Surface Treatment: Selfslipped
  
2. FW 1b  
Fabric: Fine                  Fabric Group: FF 1                  Surface Treatment: Real Slip
  
3. FW 1c  
Fabric: Fine                  Fabric Group: FF 1                  Surface Treatment: Unslipped
  
4. FW 1d  
Fabric: Fine                  Fabric Group: FF 1                  Surface Treatment: Painted Deco.
  
5. FW 2a  
Fabric: Fine                  Fabric Group: FF 2                  Surface Treatment: Selfslipped
  
6. FW 2b  
Fabric: Fine                  Fabric Group: FF 2                  Surface Treatment: Real Slip
  
7. FW 2c  
Fabric: Fine                  Fabric Group: FF 2                  Surface Treatment: Unslipped
  
8. FW 2d

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Fabric: Fine                      Fabric Group: FF 2                      Surface Treatment: Painted Deco.

9. FW 3a

Fabric: Fine                      Fabric Group: FF 3                      Surface Treatment: Selfslipped

10. FW 3b

Fabric: Fine                      Fabric Group: FF 3                      Surface Treatment: Real Slip

11. FW 3c

Fabric: Fine                      Fabric Group: FF 3                      Surface Treatment: Unslipped

12. FW 3d

Fabric: Fine                      Fabric Group: FF 3                      Surface Treatment: Painted Deco.

13. FW 4a

Fabric: Very Fine                      Fabric Group: FF 4                      Surface Treatment: Selfslipped

14. FW 4b

Fabric: Very Fine                      Fabric Group: FF 4                      Surface Treatment: Real Slip

15. FW 4c

Fabric: Very Fine                      Fabric Group: FF 4                      Surface Treatment: Unslipped

16. FW 4d

Fabric: Very Fine                      Fabric Group: FF 4                      Surface Treatment: Painted Deco.

*Medium-Coarse Wares:*

17. MCW 1a

Fabric: Medium-coarse      Fabric Group: MC 1      Surface Treatment: Selfslipped

18. MCW 1b      “finer cooking ware”

Fabric: Medium-coarse      Fabric Group: MC 1      Surface Treatment: Unslipped

19. MCW 1c

Fabric: Medium-coarse      Fabric Group: MC 1      Surface Treatment: Real Slip

20. MCW 1d

Fabric: Medium-coarse      Fabric Group: MC 1      Surface Treatment: Painted Deco.

21. MCW 2a

Fabric: Medium-coarse      Fabric Group: MC 2      Surface Treatment: Selfslipped

22. MCW 2b

Fabric: Medium-coarse      Fabric Group: MC 2      Surface Treatment: Unslipped

23. MCW 2c

Fabric: Medium-coarse      Fabric Group: MC 2      Surface Treatment: Real Slip

24. MCW 2d

Fabric: Medium-coarse      Fabric Group: MC 2      Surface Treatment: Painted Deco.

*Coarse Wares:*

25. CW 1a      “cooking ware”

Fabric: Coarse      Fabric Group: CF 1      Surface Treatment: Unslipped (or very thin  
Selfslip)

26. CW 1b

Fabric: Coarse      Fabric Group: CF 1      Surface Treatment: Real Slip

27. CW 1c

Fabric: Coarse      Fabric Group: CF 1      Surface Treatment: Painted Deco.

28. CW 2a

Fabric: Coarse      Fabric Group: CF 2      Surface Treatment: Unslipped (or very  
thin Selfslip)

29. CW 2b

Fabric: Coarse      Fabric Group: CF 2      Surface Treatment: Real Slip

30. CW 2c

Fabric: Coarse      Fabric Group: CF 2      Surface Treatment: Painted Deco.

31. CW 3a

Fabric: Coarse      Fabric Group: CF 3a      Surface Treatment: Unslipped (or very thin Selfslip)

32. CW 3b

Fabric: Coarse      Fabric Group: CF 3a      Surface Treatment: Real Slip

33. CW 3c

Fabric: Coarse      Fabric Group: CF 3a      Surface Treatment: Painted Deco.

34. CW 3d

Fabric: Coarse      Fabric Group: CF 3b      Surface Treatment: Real Slip

35. CW 4

Fabric: Coarse      Fabric Group: CF 4      Surface Treatment: Unslipped

### III.4 Terminology and Drawing conventions

The following list of terms has been added in order to introduce the nomenclature, definitions and conventions used in the catalogue and drawings.

#### *Surface Treatment:*

The term “Surface Treatment” in a broader meaning describes any form of alteration of a vessel’s surface by the potter. In order to provide the reader with more precise descriptions, “Surface Treatment”, as used here, encompasses the above mentioned modes of smoothing, slipping, wet-smoothing, burnishing and polishing.<sup>770</sup> These procedures occur during the manufacturing process of a vessel, the latter ones mostly during the leather-hard stage of a

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<sup>770</sup> The terms “burnishing” and “polishing” are used as defined in Evely 2000, 290.

vase, the last phase before firing. Smoothing and wet-smoothing may well take place during the formation of the vessel already, before it is left to dry. Although the application of buff slips could be regarded as decorative since aesthetic considerations are probably involved, it has been decided not to include it in the definition of “*Decoration*”. This is mainly due to the fact that slips do have a functional aspect to them. A slip decreases the permeability of the surface texture of a vessel and provides a base for burnishing or painting on.<sup>771</sup> Decoration itself, painted or other, is of course also considered to be an element of “Surface Treatment” but is presented separately (see below).

*Decoration:*

“The last major procedural phase before firing, this encompasses a range of processes quite disparate in the way they work and are executed”.<sup>772</sup> Generally speaking, “*Decoration*” includes every form of ornamental alterations of a vessel that defy any functional meaning. Whether or not those changes appear aesthetic or “beautiful” to us is of no importance. Concerning the Zominthian material, painted decoration and very few examples of incised ornaments have been observed. The painted decoration includes painted motifs as well as solid coatings of a dark color. These coatings did not necessarily have to be painted using a brush but may have been applied by simply dipping a vessel into the paint. The terms “color” and “paint” are used alternatively without regards to their composition, simply referring to their final appearance. All decorative elements were added before the firing. A decoration of a more elaborate kind may well have taken more time than the actual construction of a vase itself and represents a considerable expenditure of labour. Unfortunately most of the painted decoration on the pottery from Zominthos is rather fugitive and only poorly preserved. It is exclusively carried out in the dark-on-light technique.

*Rillings:*

The process of constructing a vessel on a spinning wheel leaves several traces on the finished product. The grooves resulting from the drawing up of the walls are here referred to as “rillings”. The term “Wheel-ridging” can be used as a synonym, describing the exact same

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<sup>771</sup> Evely 2000, 289.

<sup>772</sup> Ibid.

phenomenon.<sup>773</sup> Such grooves can be observed on both the interior and exterior surfaces of a vase if they had not been erased by previous smoothing. They often revolve spiral-like on the interior surface starting from a central pimple in the middle of the base. However, in some cases such “rillings” could also indicate the junction of single coils that were used to make up the body of a vessel. In this case the grooves must be expected to be rather circular than spiral-like.

*Striations:*

This term describes fine, shallow grooves underneath the base of a vessel, mostly smaller vases, e.g. handleless cups. These “striations” are created by cutting the vessel from the still turning wheel by means of a thread. They evolve at a stage when the clay is still soft and relatively wet and are preserved by the firing process. Due to the rotation of the wheel these grooves usually display an elliptical or more rarely also a circular pattern. Besides the “rillings” and a “central pimple” they are also an indicator for wheel made pottery.

*Traces of smoothing:*

Almost all vessels display numerous very fine, shallow grooves, usually not exceeding 0.1cm in width and depth. These grooves often appear in groups of several parallel lines covering all parts of the vessel’s body in horizontal and vertical direction. They may result from several reasons. One possibility is the smoothing of a vase in its leather-hard condition using a piece of cloth. However, such traces might also be left by the hands of the potter when gliding on the surface or perhaps even by the bristle of a brush. It is often hardly possible to be sure what caused these traces, however, brush strokes seem to leave relatively sharp, accentuated grooves contrasting the traces of fingerprints or a piece of cloth.

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<sup>773</sup> Rutter, Van de Moortel 2006, 261ff; for an alternative use of the term see Evely 2000, 269.

*Irregularities on surface:*

Although the vast majority of the ceramic material from Zominthos is smoothed to a certain extent, manifold irregularities are usually observable on the surfaces of most vessels. Such may include bumps and dents, left over lumps of clay, protruding grits and holes of burnt out organic materials. In order to describe the overall character of a vessel the term “irregularities” has been used to sum up these aspects of manufacture, none of which being intentionally applied.

*Drawing Conventions:*

In this paragraph the standard conventions used to draw the pottery from Zominthos are briefly described. Several ways and conventions of drawing archaeological finds, in this case the pottery finds, are currently in use throughout the archaeological publications, each with specific advantages and disadvantages.<sup>774</sup> It is always a matter of subjective estimation what elements ought to be included in a drawing and how they are presented and accentuated. Nevertheless, these conventions are designed to portray as much detail of shape, size and decoration as possible without focusing on aspects of fabric or manufacture.

Finally, the paramount overall importance is to provide all necessary visual information, supplemented by a written description and, ideally, by a photograph as well. The following outline is supposed to make the illustrated drawings accessible and understandable to the reader.

The drawings of the Zominthian material follow mainly the well-established standards of the recently published anglo-american excavations at Kommos, Knossos, Pseira and Lerna, illustrating both an elevation and a section in a single drawing.<sup>775</sup> The elevation is shown left of a vertical axis running through the center of the vase, while the section and interior surface are drawn on the right hand side. The separating, central vertical line starts at the rim and ends at the base of the vessel. A line below the bottom of a vessel is drawn only if it helps to clarify the cavities of an uneven or concave base, usually portrayed in its section. The section is

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<sup>774</sup> Griffiths, Jenner, Wilson 1990, 51; Adkins, Adkins 1989, 164.

<sup>775</sup> Rutter, Van de Moortel, A. 2006; Mountjoy 2003; Hatzaki 2005; Betancourt, Davaras 1995; Rutter 1995. Many other, not just anglo-american, publications could be listed that use the same methods and conventions.

always illustrated in solid black. Buff surfaces on both, the exterior and interior, are left plain, as are missing parts, enclosed by a black outline. Dark paint or color of either decorative elements or coatings is shown in solid black on the exterior and solid grey on the interior. Wheel-ridging/rilling is visualized by irregularly dashed horizontal lines, either in black (on plain ground) or white (on dark ground). Very pronounced or accentuated rillings are usually expressed through longer dashes or even a regular line. In the section, the line marking the internal rim contour does leave a narrow strip between its end and the tip of the cross-section of the wall in order to allow a clear distinction. On dark (grey) ground, however, the line touches the section since in this case it does not cause any difficulties. Reconstructed parts are always rendered in dashed lines. Whenever parts of cross-sections or unmeasurable areas of walls, e.g. the lower parts of large closed vessels, are depicted, they are subject to guesswork and shown in hinted dashed lines without black filling. Handles are usually drawn in elevation on the section-side. A cross-section is shown next to the handle with lines marking the exact spot of the section. Handled vessels with spout are depicted with their spout in section and the handle on the elevation-side. Again a section is placed next to it. Minor damages such as missing chips are illustrated by a closed outline with *confetti* filling.

If the rim of a vessel was preserved to less than 50% the diameter was determined using a radius chart that also proved very useful for reconstruction drawings. The same method was used for rim fragments. Decorated sherds are also illustrated in elevation and section, the latter being adjusted to the estimated original position in the vessel's body. All vases and fragments were drawn in life-size and are depicted in a scale of 1:3, if not explicitly mentioned otherwise. Only very large vessels were drawn in 1:2 and are depicted in 1:6.

### III.5 Catalogue

All of the catalogued vessels derive from the excavation campaigns carried out in the 1980s, mostly from the 1986 and 1988 campaigns (Pls. 1-20). They are stored in the *Apotheke* of the Archanes Museum where the study of the vases was undertaken during three stays in 2004,

2006 and 2007, starting 15 years after the end of the last campaign in 1990.<sup>776</sup> Every vase was stored separately in a bag/box with labels recording the findspot and year attached to it.

The catalogue as a whole is organized by vessel shapes. The inventoried pieces represent the vast majority of complete vessels and fully restorable profiles from Rooms 10 to 12, situated in the NW annex of Zominthos' "Central Building". Most, if not all of the ceramic material found in this area probably belongs to the final series of pottery production at the workshop in Zominthos.<sup>777</sup> Few additional vases from other rooms are included in the catalogue as well, especially those of diagnostic shape or with painted decoration and therefore of chronological significance. The selection of diagnostic sherds is added to the catalogue in order to illustrate the full range of decorative elements on the vessels from Zominthos. These fragments are not organized by the shape of the original vessel, if at all possible to recognize, but simply attached in an Appendix to the main catalogue (Pls. 18-20).

Whenever possible, two or more subtypes of each vessel shape are distinguished according to distinctive characteristics of size and form. This seems to be especially important for the handleless cups, by far the most common shape in Zominthos, that appear in at least ten varieties.<sup>778</sup> The differentiation of each part of a cup (base, body and rim) and its nomenclature basically follow the division proposed by Gillis, however, the carelessness during the formation and irregularities within the group of these vases often make a clear distinction and assignment to a certain type difficult and vague.<sup>779</sup> At the same time the distinction between these subtypes merely tries to establish groups of vases that would have been recognized as different from one another by the Minoan user himself. No difference in function is implied by this typology. For each shape and subtype the pieces from Room 12 are listed first, followed by the vessels from other rooms.

Each catalogue entry follows a uniform scheme, starting with the catalogue number, composed of the room and consecutive numbering, e.g. **R12-005** (Room 12, Vessel No.5). The following parentheses include information on the Plate number, the Field number, the number of the original pencil drawing and the year and location (Room and Unit, if it is

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<sup>776</sup> My special thanks goes to Efi Sapouna-Sakellaraki, Maria Bredaki and the guards at the museum at Archanes for enabling me to work in the Apotheke.

<sup>777</sup> Sakellarakis, Panagiotopoulos 2006, 59.

<sup>778</sup> The author prefers the term "handleless" to the commonly used "conical" due to the marked differences in shape and wide variety of the cups found in Zominthos.

<sup>779</sup> Gillis 1990.

known) of the vessel's deposition.<sup>780</sup> The vessel shape and subtype are mentioned next, followed by fabric and ware. The color of the clay is described using the Munsell Soil Color Charts with the verbal description preceding the code in parentheses. Afterwards, information on the state of preservation and restoration are presented. The following dimensions are always given in centimetres. The "Description" contains additional information on manufacture and surface treatment, including the Munsell Colors of slips, coatings and painted decoration, followed by the description of base, body and rim profiles. The "Comment" adds further aspects of the manufacture, preservation and peculiar traits of a vessel. At the end of each entry, the "Parallels from Zominthos" offer a quick overview of all comparable, local vases. Additional parallels from other sites have been mentioned above, especially for pieces with painted decoration and specific vessel shapes.

### Handleless Cups

#### Type 1

**R12-001** (Pl. 1; A244; B16; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (7.5YR7/8); ca. 66% pres., complete profile, partly restored; H.: 4.0-4.4; Diam. max.: 10.8; Diam. Base: 4.5; Diam. Rim: 10.8; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave underneath; straight-low raised; Body: straight; Rim: straight.

*Comment:* rather shallow cup; fairly regularly shaped; body and rim slightly warped; slight irregularities on surfaces; color pres. only in traces.

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<sup>780</sup> The numbers of the drawings are composed from a letter and 1 or 2 digits. The letter indicates who made the drawing during the 2004 campaign in the museum of Archanes. All drawings starting with "A" were made by Panagiotis Dovas, with "B" by Loukia Flevari, with "C" by the author and with "D" by Yannis Georgiou. The digitized version of each drawing was made by the author, unless indicated otherwise.

*Parallels from Zominthos:* A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-002** (Pl. 1; A71; C28; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF 1-MC 1; FW 1d-MCW 1d; red-reddish yellow (5YR6/8); 100% pres., mended from 5 frgs.; H.: 3.9-4.2; Diam. max.: 8.3; Diam. Base: 3.3; Diam. Rim: 8.1; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; wet-smoothed; self-slipped (thin); monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave underneath; low raised; Body: straight; Rim: straight.

*Comment:* regularly shaped cup; rim slightly warped; central pimple; slight irregularities on surfaces; color rel. well pres.

*Parallels from Zominthos:* A244; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-003** (Pl. 1; A108; A19; 1988; Room 12; Unit ?) Handleless Cup; Type 1; CF 1; CW 1a; red (2.5YR5/8); ca. 90% pres., complete profile, mended from 3 frgs., partly restored; H.: 3.2-3.9; Diam. max.:8.0; Diam. Base: 3.8; Diam. Rim: 8.0; Th.: 0.4-0.7.

*Description:* wheel-made; rillings on int.; hardly smoothed; no slip; surface mostly worn; Base: slightly concave underneath; uneven; straight-low raised; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; cooking-ware fabric.

*Parallels from Zominthos:* A244; A71; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-004** (Pl. 1; A243; A23; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF 1-2; FW 1d-2d; reddish yellow (5YR6/8-7/8); 100% pres., mended from frgs.; H.: 3.6-4.0; Diam.max.: 9.7; Diam. Base: 4.1; Diam. Rim: 9.7; Th.: 0.4.

*Description:* wheel-made; rillings on int.; elliptical striations underneath; traces of smoothing int. and ext.; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly uneven-concave; straight; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; low central pimple; slight irregularities on surfaces; self-slip and color well pres.

*Parallels from Zominthos:* A244; A71; A108; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-005** (Pl. 1; A275; A18; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF1; FW 1d; reddish yellow (5YR6/8); 100% pres., mended from frgs., partly restored, small part of base missing; H.: 3.6-4.0; Diam.max.: 8.7; Diam. Base: 3.8; Diam. Rim: 8.2-8.7; Th.:0.6.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave; straight; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; central pimple; self-slip and color rel. well pres.

*Parallels from Zominthos:* A244; A71; A108; A243; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-006** (Pl. 1; A246; A3; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 90% pres., mended from frgs., partly restored; H.: 3.3-3-7; Diam.max.: 8.6; Diam. Base: 3.5; Diam. Rim: 8.6; Th.: 0.4.

*Description:* wheel-made; spiral-like rillings on int., rillings on ext.; elliptical striations underneath; traces of smoothing or brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave, uneven; straight-low raised; Body: straight; Rim: straight-slightly incurving.

*Comment:* regularly shaped cup; central pimple; self-slip and color partly pres.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-007** (Pl. 1; A75; A7; 1988; Room 12; Unit 70) Handleless Cup; Type 1; MC 1; MCW 1d; red (2.5YR5/6-5/8); 100% pres., mended from frgs., partly restored; H.: 4.1; Diam.max.: 8.1; Diam. Base: 4.1; Diam. Rim: 8.1; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing or brush strokes; smoothed on ext.; self-slip (thin); monochrome black coating (2.5YR2.5/1) on int. and ext.; Base: slightly concave, uneven; low raised; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped cup; body slightly warped; irregularities on int. surface; color rel. well pres.; 1 non-joining frg.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-008** (Pl. 1; A123; C5; 1988; Room 12, Unit ?) Handleless Cup; Type 1; FF 1; FW 1d; reddish yellow (5YR6/8); ca. 95% pres., complete profile, mended from frgs., partly restored; H.: 4.2-4.4; Diam.max.: 8.8; Diam. Base: 2.9-3.2; Diam. Rim: 8.8; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slip (thin); monochrome black coating (5YR2.5/1) on ext., black rim band on int.; Base: slightly uneven; straight; Body: straight; Rim: straight.

*Comment:* regularly shaped cup; body and rim slightly warped; color pres. in sparse traces only.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-009** (Pl. 1; A140; A20; 1988; Room 12; Unit ?) Handleless Cup; Type 1; MC 1; MCW 1d; red (2.5YR5/8); ca. 95% pres., complete profile, part of base missing; H.: 4.5-5.3; Diam.max.: 8.7; Diam. Base: 4.5-5.0; Diam. Rim: 8.5-8.7; Th.: 0.6.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; smoothed; unslipped; monochrome black coating (2.5YR2.5/1) on int. and ext.; Base: concave; straight-low raised; Body: straight w. slight carination in med. height; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slight irregularities on surfaces; hole in bottom probably not intentional; color pres. in traces.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-010** (Pl. 1; A132; C23; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 80% pres., complete profile, mended from 2 frgs., partly restored; H.: 4.0-4.5; Diam.max.. 6.7; Diam. Base: 3.6; Diam. Rim: 6.7; Th.: 0.4-0.6.

*Description:* wheel-made; rillings on int.; elliptical striations underneath; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: straight-slightly curving; Rim: straight.

*Comment:* body and rim warped; central pimple; color pres. in traces.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-011** (Pl. 1; A165; C25; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (7.5YR6/8); ca. 90% pres., complete profile, mended from 4 frgs., partly restored; H.: 4.2; Diam.max.: 8.4; Diam. Base: 3.3; Diam. Rim: 7.4-8.4; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; straight; Body: straight; Rim: straight.

*Comment:* body and rim warped; slight irregularities on surfaces; color rel. well pres.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-012** (Pl. 1; A113; A38; 1988; Room 12; Tom. 3) Handleless Cup; Type 1; MC 1; MCW 1d; red-yellowish red (core 2.5YR5/8, near surface 2.5YR5/8, surface 5YR5/6, slip 2.5YR6/8); ca. 80% pres., complete profile, mended from frgs., parts of wall and rim missing; H.: 4.1; Diam.max.: 7.3; Diam. Base: 3.2; Diam. Rim: 7.2; Th.: 0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing or brush strokes on ext.; smoothed; self-slip (thin); monochrome black coating (2.5YR2.5/1) on ext.; Base: slightly uneven; low raised; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; surfaces slightly smoothed; color rel. well pres.; uneven, friable fracture.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R12-013** (Pl. 1; A246.2; A3; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF 1; FW 1d; reddish yellow (5YR7/6); ca. 90% pres., complete profile; mended from frgs., partly restored; H.: 3.7; Diam.max.: 8.0; Diam. Base: 3.4; Diam. Rim: 8.0; Th.: 0.3-0.4.

*Description:* wheel-made; spiral-like rillings on int.; elliptical striations underneath; traces of smoothing on int.; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave; straight; Body: straight; Rim: slightly inverted.

*Comment:* Body and rim warped; central pimple; color pres. in several spots.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A7; A97; A178; A39.

**R12-014** (Pl. 1; A97; B22; 1988; Room 12; Tom. 3; Unit 90) Handleless Cup; Type 1; MC 1; MCW 1a; light red (2.5YR6/8); 100% pres.; H.: 3.7-3.9; Diam.max.: 7.9; Diam. Base: 3.7; Diam. Rim: 7.9; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slip (thin); Base: slightly uneven; low raised; Body: straight; Rim: slightly inverted.

*Comment:* regularly shaped cup; medium coarse fabric; no traces of color.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A178; A39.

**R12-015** (Pl. 1; A178; B3; 1988; Room 12; Unit ?) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 95% pres., complete profile, mended from frgs., small parts of rim restored; H.: 4.5; Diam.max.: 8.3; Diam. Base: 3.2; Diam. Rim: 8.3; Th.: 0.6.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on ext., probably rim band on int.; Base: slightly convex; straight; Body: straight-slightly curving; Rim: straight.

*Comment:* regularly shaped cup; rim slightly warped; irregularities on surfaces; slip and color rel. well pres.; color on int. traceable only along rim.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A39.

**R11-001** (Pl. 1; A141; B25; 1988; Room 11; Unit 83) Handleless Cup; Type 1; FF 2; FW 2b; reddish yellow (core 5YR7/8, near surface 5YR7/8, surface 7.5YR7/6, slip 7.5YR7/6); ca. 95% pres., complete profile, mended from frgs., small part of body missing; H.: 4.5-4.6; Diam.max.: 8.5; Diam. Base: 3.5; Diam. Rim: 8.5; Th.: 0.35.

*Description:* wheel-made; rillings on int.; elliptical striations underneath; traces of smoothing; wet-smoothed; real slip; Base: slightly uneven; straight; Body: straight; Rim: straight.

*Comment:* regularly shaped cup; slight irregularities on surfaces; fine-very fine fabric; slip well pres.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R11-002** (Pl. 1; A37; B27; 1988; Room 11; Unit ?) Handleless Cup; Type 1; MC 1; MCW 1c; yellowish red – reddish yellow (core 5YR5/8, near surface 5YR5/8, surfaces 7.5YR6/6, slip 7.5YR6/6); ca. 95% pres., complete profile, mended from frgs., small parts of body and rim missing; H.: 3.9; Diam.max.: 7.8; Diam. Base: 3.7; Diam. Rim: 7.8; Th.: 0.3.

*Description:* wheel-made; spiral-like rillings on int.; striations underneath; traces of smoothing or brush strokes; wet-smoothed; real slip; Base: slightly uneven; straight; Body: straight; Rim: straight.

*Comment:* regularly shaped cup; slight irregularities on surfaces; medium coarse fabric with real slip; slip well pres.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-001** (Pl. 1; A25; C4; 1986; Room 10; Unit 4) Handleless Cup; Type 1; FF 1; FW 1d; reddish yellow (5YR6/8); ca. 60% pres., complete profile, mended from frgs., partly restored; H.: 4.2; Diam.max.: 7.9; Diam. Base: 3.4-3.6; Diam. Rim: 7.9; Th.: 0.5.

*Description:* wheel-made; spiral-like rillings on int.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly uneven; straight-low raised; Body: straight; Rim: straight-slightly inverted.

*Comment:* rel. regularly shaped cup; central pimple; slight irregularities on surface; color pres. in traces.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-002** (Pl. 1; A6; C37; 1988; Room 10; Unit ?) Handleless Cup; Type 1; FF 1; FW 1a; reddish yellow (5YR7/6-7/8); ca. 95% pres., complete profile, mended from frgs., small parts of rim missing; H.: 4.3-4.9; Diam.max.: 8.1; Diam. Base: 3.5; Diam. Rim: 8.1; Th.: 0.4-0.6.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: even; low raised; Body: straight-slightly curving; Rim: straight.

*Comment:* body and rim heavily warped; very faint traces of possible black coating (?); rel. thin self-slip.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-003** (Pl. 1; A5; C35; 1988; Room 10; Unit ?) Handleless Cup; Type 1; FF 2; FW 2b; reddish yellow (core 5YR7/6, surface 7.5YR8/6, slip 7.5YR8/6); 100% pres.; H.: 3.9-4.4; Diam.max.: 8.4; Diam. Base: 3.2; Diam. Rim: 8.4; Th.: 0.4-0.6.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of brush strokes; smoothed; real slip; Base: slightly uneven; low raised; Body: straight; Rim: straight.

*Comment:* body and rim warped; slip well pres.; no traces of color.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-004** (Pl. 1; A4; A36; 1988; Room 10; Tom. 1) Handleless Cup; Type 1; FF 2; FW 2a; reddish yellow (5YR7/6-7/8); ca. 90% pres., mended from frgs., small parts of base, body and rim missing; H.: 4.0-4.1; Diam.max.: 8.4; Diam. Base: 3.3; Diam. Rim: 8.4; Th.: 0.4.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; wet-smoothed; self-slipped; Base: even; low raised; Body: straight; Rim: straight.

*Comment:* body and rim slightly warped; hole in bottom probably unintentional; self-slip well pres.; no traces of color.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-005** (Pl. 1; A62; A9; 1986; Room 10; Unit 5) Handleless Cup; Type 1; FF 2; FW 2a; reddish yellow (5YR7/8); 100% pres., mended from frgs., parts of body restored; H.: 4.6; Diam.max.: 9.2; Diam. Base: 4.0; Diam. Rim: 9.2; Th.: 0.4.

*Description:* wheel-made; rillings on int.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: uneven; straight; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped cup; slight irregularities on surfaces; low central pimple; self-slip well pres.; no traces of color.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-006** (Pl. 1; A52; C13; 1986; Room 10; Unit 4) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (5YR7/8); 100% pres., mended from frags., parts of body restored; H.: 4.0-4.5; Diam.max.: 8.3; Diam. Base: 3.4; Diam. Rim: 8.2; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped cup; rim slightly warped; slight irregularities on surface; low central pimple; color pres. in traces on ext., well pres. on int.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-007** (Pl. 1; A28; C10; 1986; Room 10; Unit 4) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 70% pres., complete profile, parts of body and rim restored; H.: 4.4; Diam.max.: 8.2; Diam. Base: 3.3-3.4; Diam. Rim: 8.2; Th.: 0.4.

*Description:* wheel-made; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; low raised; Body: straight; Rim: straight.

*Comment:* regularly shaped cup; slight irregularities on surfaces; color pres. only in traces; self-slip well pres.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A42; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-008** (Pl. 1; A42; C15; 1986; Room 10; Unit 3) Handleless Cup; Type 1; MC 1; MCW 1d; red (2.5YR5/8); ca. 85% pres., complete profile, mended from 5 frgs., parts of base, body and rim restored; H.: 4.2; Diam.max.: 8.2; Diam. Base: 4.4; Diam. Rim: 8.0; Th.: 0.5-0.7.

*Description:* wheel-made; slight traces of smoothing; wet-smoothed; self-slip (thin); monochrome black coating (2.5YR2.5/1) on int. and ext.; Base: slightly uneven; low raised; Body: straight-slightly curving; Rim: straight-slightly inverted.

*Comment:* rel. regularly shaped cup; irregularities on surfaces; finer cooking-ware fabric; color pres. only in faint traces.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A45; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-009** (Pl. 1; A45; C14; 1986; Room 10; Unit 4) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% complete, mended from frgs.; H.: 3.7-4.2; Diam.max.: 7.8; Diam. Base: 3.8; Diam. Rim: 7.3; Th.: 0.6.

*Description:* wheel-made; unpronounced rillings on int.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on ext. (and int. ?); Base: slightly uneven; low raised; Body: straight; Rim: straight-slightly inverted.

*Comment:* body and rim slightly warped; irregularities on surfaces and base; rel. thick self-slip; color pres. only in traces, esp. on int.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A24; A20; A46; A246.2; A7; A97; A178; A39.

**R10-010** (Pl. 1; A24; C12; 1986; Room 10; Unit ?) Handleless Cup; Type 1; FF 1; FW 1d; reddish yellow (5YR6/8); ca. 95% pres., complete profile; mended from frgs., parts of body and rim restored; H.: 3.9-4.5; Diam.max.: 8.0; Diam. Base: 3.9; Diam. Rim: 8.0; Th.: 0.5-0.7.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: straight; Rim: straight-slightly inverted.

*Comment:* rel. regularly shaped cup; rim slightly warped; irregularities on surfaces; color well pres.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A20; A46; A246.2; A7; A97; A178; A39.

**R10-011** (Pl. 1; A20; A11; 1986; Room 10; Unit 3) Handleless Cup; Type 1; FF 2; FW 2b; reddish yellow (core 5YR7/8 surfaces 5YR 7/8 slip 7.5YR7/6); 100% pres., mended from frgs., small parts of rim restored; H.: 4.6; Diam.max.: 8.6; Diam. Base: 3.3; Diam. Rim: 8.6; Th.: 0.4.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing; smoothed; real slip; Base: slightly concave; low raised; Body: straight; Rim: straight.

*Comment:* Body and rim warped; slight irregularities on surfaces and base; surfaces partly worn; no traces of color.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A46; A246.2; A7; A97; A178; A39.

**R10-012** (Pl. 1; A7; C36; 1988; Room 10; Unit ?) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (core 5YR6/8-7/8 surfaces 7.5YR7/6-8/6 slip 7.5YR8/6-7/6); ca. 80% pres., mended from frgs., small parts of body and rim missing; H.: 4.2-4.4; Diam.max.: 8.5; Diam. Base: 3.1; Diam. Rim: 8.5; Th.: 0.4-0.6.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of brush strokes on ext.; wet-smoothed; real slip; monochrome black coating (7.5YR2.5/1) on ext.; Base: even-slightly concave; straight; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped cup; Body and rim slightly warped; slight irregularities on surfaces; slip partly well pres.; color pres. in faint traces only.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A97; A178; A39.

**R10-013** (Pl. 1; A39; C9; 1986; Room 10; Unit ?) Handleless Cup; Type 1; FF 2; FW 2d; reddish yellow (core 5YR7/8 surfaces 5YR7/6); ca. 80% pres., complete profile; mended from frgs., parts of body and rim restored; H.: 4.6; Diam.max.. 8.4; Diam. Base: 3.3; Diam. Rim: 8.4; Th.: 0.4-0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on ext.; Base: concave; low raised; Body: straight; Rim: straight.

*Comment:* Body and rim warped; slight irregularities on surfaces and base; color pres. in faint traces only.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A46; A246.2; A7; A97; A178.

**R13-001** (Pl. 1; A46; A48; 1988; Room 13; Unit 45) Handleless Cup; Type 1; MC 1; MCW 1d; red (core 2.5YR4/8 surfaces 2.5YR5/8); ca. 70% pres., complete profile, mended

from frgs., parts of body and rim missing; H.: 4.2-4.4; Diam.max.: 8.4; Diam. Base: 3.7; Diam. Rim: 8.4; Th.: 0.9.

*Description:* wheel-made; few traces of smoothing; smoothed; unslipped; monochrome black coating (2.5YR2.5/1) on ext.; Base: very uneven; low raised; Body: straight; Rim: straight-slightly inverted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; irregularities on surfaces; finer cooking-ware fabric; rel. thick walls; color pres. in traces only.

*Parallels from Zominthos:* A244; A71; A108; A243; A275; A246; A75; A123; A140; A132; A165; A113; A141; A37; A25; A6; A5; A4; A62; A52; A28; A42; A45; A24; A20; A246.2; A7; A97; A178; A39.

## Type 2

**R12-016** (Pl. 2; A224; B12; 1988; Room 12; Unit ?) Handleless Cup; Type 2; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% pres., mended from frgs.; H.: 4.4-4.5; Diam.max.: 10.75; Diam. Base: 5.2; Diam. Rim: 10.75; Th.: 0.5.

*Description:* wheel-made; spiral-like rillings on int.; rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; straight; Body: slightly curving; Rim: everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slight irregularities on surfaces; self-slip and color partly well pres.

*Parallels from Zominthos:* A307; A269; A265; A15; A14; A114; A150; A90; A147; A105; A36; A58.

**R12-017** (Pl. 2; A307; B10; 1988; Room 12; Unit ?) Handleless Cup; Type 2; FF 3; FW 3d; very pale brown (10YR7/4); 100% pres., mended from 3 frgs.; H.: 4.3-4.5; Diam.max.: 10.1; Diam. Base: 4.2; Diam. Rim: 10.1; Th.: 0.5.

*Description:* wheel-made; spiral-like rillings on int.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (10YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: slightly curving; Rim: straight-slightly inverted.

*Comment:* regularly shaped cup; central pimple; thick self-slip; color pres. in faint traces only.

*Parallels from Zominthos:* A224; A269; A265; A15; A14; A114; A150; A90; A147; A105; A36; A58.

**R12-018** (Pl. 2; A269; D1; 1988; Room 12; Unit ?) Handleless Cup; Type 2; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 80% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 3.7-4.7; Diam.max.: 9.3; Diam. Base: 4.0; Diam. Rim: 9.3; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: uneven-concave; straight; Body: slightly curving; Rim: straight.

*Comment:* Body and rim warped; self-slip and color well pres.

*Parallels from Zominthos:* A224; A307; A265; A15; A14; A114; A150; A90; A147; A105; A36; A58.

**R12-019** (Pl. 2; A265; C33; 1988; Room 12; Unit ?) Handleless Cup; Type 2; FF 2; FW 2d; reddish yellow (5YR7/8); 100% pres., mended from frgs., small part of rim missing; H.: 3.8-4.0; Diam.max.: 10.9; Diam. Base: 4.8; Diam. Rim: 10.9; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on ext., black rim band on int.; Base: slightly concave; low raised; Body: curving; Rim: straight.

*Comment:* regularly shaped cup; body slightly warped; low central pimple; slight irregularities on surfaces; color pres. in faint traces only.

*Parallels from Zominthos:* A224; A307; A269; A15; A14; A114; A150; A90; A147; A105; A36; A58.

**R12-020** (Pl. 2; A15; C19; 1988; Room 12; Unit 7) Handleless Cup; Type 2; MC 1; MCW 1d; reddish yellow (5YR6/6-7/6); ca. 80% pres., complete profile; parts of body and rim restored; H.: 3.9-4.0; Diam.max.: 7.7; Diam. Base: 4.2; Diam. Rim: 7.5; Th.: 0.5-0.6.

*Description:* wheel-made; unpronounced rillings on int.; elliptical striations underneath; smoothed; self-slip (thin); monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: slightly curving; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; central pimple; irregularities on surfaces; color rel. well pres.

*Parallels from Zominthos:* A224; A307; A269; A265; A14; A114; A150; A90; A147; A105; A36; A58.

**R12-021** (Pl. 2; A14; C17; 1988; Room 12; Unit 7) Handleless Cup; Type 2; FF 1–MC 1; FW 1d–MCW 1d; reddish yellow (5YR7/6); ca. 80% pres., complete profile, parts of body and rim missing; H.: 3.9; Diam.max.: 7.9; Diam. Base: 3.7; Diam. Rim: 7.5; Th.: 0.6-0.7.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing or brush strokes; smoothed; self-slip (thin); monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: slightly curving; Rim: straight.

*Comment:* rel. regularly shaped cup; slight irregularities on surfaces; fine-medium coarse fabric; color rel. well pres.

*Parallels from Zominthos:* A224; A307; A269; A265; A15; A114; A150; A90; A147; A105; A36; A58.

**R12-022** (Pl. 2; A114; C39; 1988; Room ; Unit 84) Handleless Cup; Type 2; MC 1; MCW 1a; reddish yellow (7.5YR6/6-7/6); ca. 80% pres., complete profile; parts of body and rim missing; H.: 3.3-3.6; Diam.max.: 6.8; Diam. Base: 3.1; Diam. Rim: 6.8; Th.: 0.4-0.5.

*Description:* wheel-made; rillings on int., unpronounced rillings on ext.; traces of smoothing; wet-smoothed; self-slipped; Base: uneven-concave; low raised; Body: slightly curving; Rim: straight.

*Comment:* rel. regularly shaped, small cup; body slightly warped; self-slip rel. well pres.; no traces of color.

*Parallels from Zominthos:* A224; A307; A269; A265; A15; A14; A150; A90; A147; A105; A36; A58.

**R12-023** (Pl. 2; A105; B24; 1988; Room 12; Tom. 3; Unit 90) Handleless Cup; Type 2; MC 2; MCW 2c; light red – red, reddish yellow – pink (core 2.5YR5/8-6/8 surface 7.5YR8/4-8/6); 100% pres.; H.: 3.3-3.4; Diam.max.: 6.5; Diam. Base: 3.6; Diam. Rim: 6.4; Th.: 0.5.

*Description:* wheel-made; traces of smoothing; smoothed; real slip (7.5YR8/4-8/6); Base: slightly uneven; low raised; Body: slightly curving; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; real slip; no traces of color.

*Parallels from Zominthos:* A224; A307; A269; A265; A15; A14; A114; A150; A90; A147; A36; A58.

**R11-003** (Pl. 2; A150; A40; 1988; Room 11; Unit ?) Handleless Cup; Type 2; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% pres., mended from 2 frgs., tiny part of base missing; H.: 4.1-4.8; Diam.max.: 7.4; Diam. Base: 4.0; Diam. Rim: 7.4; Th.: 0.5.

*Description:* wheel-made; rillings on int., unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; low raised; Body: slightly curving; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; irregularities on surfaces; color pres. in traces only.

*Parallels from Zominthos:* A224; A307; A269; A265; A15; A14; A114; A90; A147; A105; A36; A58.

**R11-004** (Pl. 2; A147; B26; 1988; Room 11; Unit ?) Handleless Cup; Type 2; FF 1-MC 1; FW 1d-MCW 1d; reddish yellow (5YR6/8); 100% pres., mended from frgs., tiny part of base missing; H.: 3.7-3.9; Diam.max.: 8.7; Diam. Base: 3.8; Diam. Rim: 8.7; Th.: 0.7.

*Description:* wheel-made; rillings on int.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slip (thin); monochrome black coating (5YR2.5/1) on ext.; Base: slightly uneven; low raised; Body: slightly curving; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; irregularities on surfaces; no traces of color on int.

*Parallels from Zominthos:* A224; A307; A269; A265; A15; A14; A114; A150; A90; A105; A36; A58.

**R11-005** (Pl. 2; A36; C40; 1988; Room 11; Unit ?) Handleless Cup; Type 2; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 100% pres., mended from 2 frgs., tiny part of rim missing; H.: 4.4-4.8; Diam.max.: 8.1; Diam. Base: 3.7; Diam. Rim: 8.1; Th.: 0.5-0.6.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) or trickle pattern on ext., possibly black rim band on int.; Base: slightly uneven; low raised; Body: slightly curving; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; surfaces well pres.; color pres. in traces only.

*Parallels from Zominthos:* A224; A307; A269; A265; A15; A14; A114; A150; A90; A147; A105; A58.

**R10-014** (Pl. 2; A58; B6; 1986; Room 10; Unit ?) Handleless Cup; Type 2; MC 1; MCW 1a; reddish yellow (5YR6/8); ca. 65% pres., complete profile, mended from frgs., partly restored; H.: 4.2; Diam.max.: 7.2; Diam. Base: 3.7; Diam. Rim: 7.2; Th.: 0.6.

*Description:* wheel-made; unpronounced rillings on int.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slip (thin); Base: even; low raised; Body: slightly curving; Rim: straight.

*Comment:* regularly shaped cup; body slightly warped; irregularities on int. surface.

*Parallels from Zominthos:* A224; A307; A269; A265; A15; A14; A114; A150; A90; A147; A105; A36.

**R15-001** (Pl. ; A90; B33; 1988; Room 15; Unit 77) Handleless Cup; Type 2; FF 2; FW 2a; reddish yellow (5YR7/8); ca. 50% pres., complete profile, mended from frgs., parts of body and rim missing; H.: 4.1; Diam.max.: est. 8.5; Diam. Base: 3.2; Diam. Rim: est. 8.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: slightly uneven; straight-low raised; Body: curving; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slight irregularities on surfaces; few non-joining frgs. remaining; no traces of color.

*Parallels from Zominthos:* A224; A307; A269; A265; A15; A14; A114; A150; A147; A105; A36; A58.

### Type 3

**R12-024** (Pl. 2; A258; C34; 1988; Room 12; Unit ?) Handleless Cup; Type 3; MC 2–FF 1; MCW 2d–FW 1d; reddish yellow (7.5YR7/6); ca. 85% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 4.0–4.7; Diam.max.: 11.4; Diam. Base: 4.3; Diam. Rim: 11.4; Th.: 0.4.

*Description:* wheel-made; rillings on int.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: slightly flaring; Rim: everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; irregularities and protruding grits on surfaces and base; color pres. in traces.

*Parallels from Zominthos:* A145; A18.

**R12-025** (Pl. 2; A145; A21; 1988; Room 12; Unit ?) Handleless Cup; Type 3; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% pres., mended from frgs., tiny part of base missing; H.: 3.3; Diam.max.: 8.6; Diam. Base: 3.6; Diam. Rim: 8.6; Th.: 0.7.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; black splashes (7.5YR2.5/1) on int. and ext; Base: slightly concave; straight-low raised; Body: straight; Rim: everted.

*Comment:* regularly shaped cup; rim slightly warped; slight irregularities on surfaces; uncertain whether black splashes or remains of black coating; color pres. in traces only.

*Parallels from Zominthos:* A258; A18.

**R10-015** (Pl. 2; A18; A35; 1988; Room 10; Unit ?) Handleless Cup; Type 3; FF 2; FW 2a; reddish yellow (7.5YR8/6); 100% pres., mended from frgs., tiny part of rim missing; H.: 4.4-4.9; Diam.max.: 8.6; Diam. Base: 3.9; Diam. Rim: 7.9-8.6; Th.: 0.6.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; very faint traces of possible black coating on int. and ext.; Base: slightly uneven; straight; Body: slightly flaring; Rim: slightly everted-everted.

*Comment:* body slightly warped; rim warped; irregularities on surfaces; uncertain whether coated with black color or not; only faint traces of color remaining.

*Parallels from Zominthos:* A258; A145.

Type 4

**R12-026** (Pl. 3; A159; A31; 1988; Room 12; Unit ?) Handleless Cup; Type 4; FF 3; FW 3d; very pale brown (10YR7/4); 100% pres., mended from frgs.; H.: 5.7-6.2; Diam.max.: 10.1; Diam. Base: 4.3; Diam. Rim: 9.5-10.1; Th.: 0.9.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; black (10YR2.5/1) dip rim and trickle pattern on int. and ext.; Base: slightly uneven; straight-low raised; Body: straight; Rim: everted with lip (ledge rim).

*Comment:* rel. regularly shaped cup; body and rim slightly warped; central pimple; irregularities on surfaces; color rel. well pres.

*Parallels from Zominthos:* A135; A119; A267; A168; A295; A310; A134.

**R12-027** (Pl. 3; A135; C31; 1988; Room 12; Unit 70) Handleless Cup; Type 4; FF 3; FW 3d; very pale brown (10YR7/4); ca. 90% pres., complete profile, mended from frgs., partly restored; H.: 6.2-6.4; Diam.max.: 10.1; Diam. Base: 3.9; Diam. Rim: 10.1; Th.: 0.5-0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (10YR2.5/1) on ext.; Base: slightly concave; straight-low raised; Body: straight; Rim: everted with lip (ledge rim).

*Comment:* rel. regularly shaped cup; rim slightly warped; color pres. in very faint traces only (black coating uncertain).

*Parallels from Zominthos:* A159; A119; A267; A168; A295; A310; A134.

**R12-028** (Pl. 3; A119; C24; 1988; Room 12; Unit ?) Handleless Cup; Type 4; FF 2; FW 2d; reddish yellow (7.5YR6/6); 100% pres., mended from frgs., small part of base missing; H.: 4.5-4.8; Diam.max.: 9.4-9.5; Diam. Base: 4.0; Diam. Rim: 9.4-9.5; Th.: 0.5-0.6.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped (7.5YR7/6); monochrome black coating (7.5YR2.5/1) on int. and ext.;

Base: slightly concave; straight-low raised; Body: straight-slightly curving; Rim: everted with lip (ledge rim).

*Comment:* rel. regularly shaped cup; body and rim slightly warped; low central pimple; slight irregularities on surfaces with few protruding grits; color pres. in traces only.

*Parallels from Zominthos:* A159; A135; A267; A168; A295; A310; A134.

**R12-029** (Pl. 3; A267; C2; 1988; Room 12; Unit 115) Handleless Cup; Type 4; FF 1; FW 1d; reddish yellow (5YR7/8); ca. 80% pres., complete profile, mended from frgs., partly restored; H.: 5.3; Diam.max.: 10.3; Diam. Base: 4.5; Diam. Rim: 10.3; Th.: 0.4-0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped (5YR7/6); monochrome black coating (5YR2.5/1) on int. and ext.; Base: rel. even; low raised; Body: straight-slightly curving; Rim: everted with lip (ledge rim).

*Comment:* rel. regularly shaped cup; body and rim slightly warped; central pimple; color well pres., several non-joining frgs. remaining.

*Parallels from Zominthos:* A159; A135; A119; A168; A295; A310; A134.

**R12-030** (Pl. 3; A168; D2; 1988; Room 12; Unit 70) Handleless Cup; Type 4; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% pres., mended from frgs.; H.: 3.3-3.5; Diam.max.: 7.8; Diam. Base: 3.3; Diam. Rim: 7.8; Th.: 0.4-0.6.

*Description:* wheel-made; spiral-like rillings on int.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; straight; Body: straight; Rim: everted with lip (ledge rim).

*Comment:* rel. regularly shaped cup; body and rim slightly warped; low central pimple; slight irregularities on surfaces; color pres. in traces only.

*Parallels from Zominthos:* A159; A135; A119; A267; A295; A310; A134.

**R12-031** (Pl. 3; A295; A5; 1988; Room 12; Unit 123) Handleless Cup; Type 4; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 70% pres., complete profile, mended from frgs., partly restored, parts of body and rim missing; H.: 4.3-4.5; Diam.max.:10.6; Diam. Base: 4.4; Diam. Rim: 10.6; Th.: 0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: slightly curving; Rim: everted with lip (ledge rim).

*Comment:* regularly shaped cup; rim slightly warped; self-slip and color well pres.

*Parallels from Zominthos:* A159; A135; A119; A267; A168; A310; A134;

**R12-032** (Pl. 3; A310; B15; 1988; Room 12; Unit ?) Handleless Cup; Type 4; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% pres., mended from frgs., small parts of rim restored; H.: 5.4; Diam.max.: 11.3; Diam. Base: 4.5; Diam. Rim: 11.3; Th.: 0.6.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing or brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: curving; Rim: everted with lip (ledge rim).

*Comment:* regularly shaped cup; rim slightly warped; self-slip and color well pres.

*Parallels from Zominthos:* A159; A135; A119; A267; A168; A295; A134.

**R12-033** (Pl. 3; A134; A1; 1988; Room 12; Unit ?) Handleless Cup; Type 4; FF 3; FW 3d; yellow (core and surfaces 10YR7/6, slip 10YR8/4); ca. 60% pres., complete profile, mended from frgs., partly restored, parts of body and rim missing; H.: 6.1; Diam.max.: 10.5; Diam. Base: 3.7; Diam. Rim: 10.5; Th.: 0.5.

*Description:* wheel-made; rillings on int.; traces of smoothing or brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int., possibly black splashes or also coating on ext. (?); Base: slightly concave; low raised; Body: straight; Rim: everted with lip (ledge rim).

*Comment:* regularly shaped cup; body slightly warped; central pimple; irregularities on surfaces; color partly well pres.

*Parallels from Zominthos:* A159; A135; A119; A267; A168; A295; A310.

#### Type 5

**R12-034** (Pl. 3; A226; B20; 1988; Room 12; Unit ?) Handleless Cup; Type 5; FF 2; FW 2d; reddish yellow (7.5YR8/6); ca. 66% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 4.95; Diam.max.: 10.1; Diam. Base: 4.4; Diam. Rim: 10.1; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; low raised; Body: slightly curving; Rim: everted.

*Comment:* body and rim warped; slight irregularities on surfaces; rel. thick self-slip; color pres. in several traces.

*Parallels from Zominthos:* A240; A248.

**R12-035** (Pl. 3; A240; A2; 1988; Room 12; Unit ?) Handleless Cup; Type 5; FF 3; FW 3d; very pale brown (10YR8/4); 100% pres., mended from frgs., parts of body and rim restored; H.: 4.5; Diam.max.: 9.0; Diam. Base: 3.4; Diam. Rim: 9.0; Th.: 0.4.

*Description:* wheel-made; spiral-like rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (10YR2.5/1) on int. and ext.; Base: slightly concave; straight; Body: straight; Rim: straight-slightly everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; self-slip and color well pres.

*Parallels from Zominthos:* A226; A248.

**R12-036** (Pl. 3; A248; B17; 1988; Room 12; Unit ?) Handleless Cup; Type 5; FF 1-2; FW 1a-2a; reddish yellow (5YR7/8); 100% pres., mended from frgs., small parts of base and rim missing; H.: 4.5-5.5; Diam.max.: 10.4; Diam. Base: 4.0; Diam. Rim: 10.4; Th.: 0.6.

*Description:* wheel-made; rillings on int.; traces of smoothing; wet-smoothed; self-slipped; Base: slightly concave; low raised; Body: straight-slightly curving; Rim: everted.

*Comment:* body and rim warped; additional piece of clay underneath base (possibly ancient repair ?); central pimple; some non-joining frgs. remaining.

*Parallels from Zominthos:* A226; A240.

#### Type 6

**R12-037** (Pl. 3; A220; C1.06; 1988; Room 12; Unit ?) Handleless Cup; Type 6; FF 3; FW 3d; reddish yellow (7.5YR8/6); ca. 70% pres., complete profile, mended from 3 frgs., parts of body and rim restored; H.: 3.5 (pres.); Diam.max.: 8.2 (est.); Diam. Base: 3.0; Diam. Rim: 8.2 (est.); Th.: 0.4.

*Description:* wheel-made; unpronounced rillings on int.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: curving; Rim: slightly inverted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slight irregularities on surfaces; self-slip and color rel. well pres.; 5 non-joining frgs. remaining.

*Parallels from Zominthos:* A139; A61; A133; A208; A64; A230.

**R12-038** (Pl. 3; A139; C27; 1988; Room 12; Unit ?) Handleless Cup; Type 6; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 95% pres., complete profile, mended from frgs., small part of base missing; H.: 3.6; Diam.max.: 8.2; Diam. Base: 4.2; Diam. Rim: 8.0; Th.: 0.5-0.6.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; low raised; Body: curving; Rim: slightly inverted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slight irregularities on surfaces; color pres. in traces only; 3 non-joining frgs. remaining.

*Parallels from Zominthos:* A220; A61; A133; A208; A64; A230.

**R12-039** (Pl. 3; A61; A14; 1988; Room 12; Unit ?) Handleless Cup; Type 6; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 60% pres., complete profile, mended from frgs., parts of body and rim missing; H.: 5.6; Diam.max.: 9.2; Diam. Base: 4.2; Diam. Rim: 9.2; Th.: 0.6.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing or brush strokes; wet-smoothed; self-slipped; monochrome black (7.5YR2.5/1) on ext., black rim band and splashes on int.; Base: slightly concave; low raised; Body: curving; Rim: inverted.

*Comment:* regularly shaped cup; int. decoration uncertain; color rel. well pres.

*Parallels from Zominthos:* A220; A139; A133; A208; A64; A230.

**R12-040** (Pl. 3; A133; A13; 1988; Room 12; Unit 90) Handleless Cup; Type 6; FF 3; FW 3a; very pale brown (10YR8/4); ca. 40% pres., complete profile, mended from 3 frgs., large parts of body and rim missing; H.: 6.1; Diam.max.: 9.6; Diam. Base: 4.1; Diam. Rim: 9.6; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of brush strokes; smoothed; self-slip (thin); possibly monochrome black coating or trickle pattern on int. and ext. (?); Base: slightly uneven; low raised; Body: slightly curving; Rim: slightly inverted.

*Comment:* regularly shaped cup; central pimple; slight irregularities on surfaces; only very faint traces of color; 2 non-joining frgs. remaining.

*Parallels from Zominthos:* A220; A139; A61; A208; A64; A230.

**R12-041** (Pl. 3; A208; A16; 1988; Room 12; Unit 110) Handleless Cup; Type 6; FF 1; FW 1d; reddish yellow (5YR7/6); ca. 90% pres., complete profile, mended from frgs., partly restored, small parts of rim missing; H.: 3.1-4.2; Diam.max.: 9.2; Diam. Base: 3.6; Diam. Rim: 9.2; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: curving; Rim: slightly inverted.

*Comment:* body and rim warped; irregularities and protruding grits on surfaces; hole in base (intentional?); color pres. in traces only.

*Parallels from Zominthos:* A220; A139; A61; A133; A64; A230.

**R12-042** (Pl. 3; A64; A39; 1988; Room ; Unit 53) Handleless Cup; Type 6; FF 3; FW 3d; yellow (10YR7/6); ca. 80% pres., complete profile, mended from frgs., small parts of body and rim missing; H.: 6.3; Diam.max.: 10.2; Diam. Base: 4.3; Diam. Rim: 10.2; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; traces of brush strokes; wet-smoothed; self-slipped; monochrome black coating (10YR2.5/1) on ext.; Base: slightly concave; straight; Body: curving; Rim: straight-slightly incurving.

*Comment:* rel. regularly shaped cup; body slightly warped; color pres. in traces; 2 joining frgs. (not mended) remaining.

*Parallels from Zominthos:* A220; A139; A61; A133; A208; A230.

**R12-043** (Pl. 3; A230; A4; 1988; Room 12; Unit 115) Handleless Cup; Type 6; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 85% pres., complete profile, parts of body and rim restored; H.: 4.1-4.3; Diam.max.: 9.4; Diam. Base: 5.2; Diam. Rim: 9.4; Th.: 0.7.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; low raised; Body: slightly curving; Rim: slightly inverted.

*Comment:* body warped; rim slightly warped; irregularities on surfaces; unusually large incl. for FF; color pres. in faint traces only.

*Parallels from Zominthos:* A220; A139; A61; A133; A208; A64.

#### Type 7

**R12-044** (Pl. 4; A83; C2.06; 1988; Room 12; Unit 70) Handleless Cup; Type 7; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 85% pres., complete profile, mended from frgs., parts of body restored; H.: 5.0; Diam.max.: 7.7; Diam. Base: 3.5; Diam. Rim: 7.7; Th.: 0.3-0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: uneven; high raised; Body: straight-slightly curving; Rim: straight.

*Comment:* body and rim warped; slight irregularities on surfaces; self-slip and color well pres.

*Parallels from Zominthos:* A72; A242; A98; A131.

**R12-045** (Pl. 4; A72; C3; 1988; Room 12; Unit ?) Handleless Cup; Type 7; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 95% pres., complete profile, mended from frgs., partly restored; H.: 4.7; Diam.max.: 9.4; Diam. Base: 3.5-3.7; Diam. Rim: 8.4-8.7; Th.: 0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; straight-high raised; Body: slightly curving; Rim: straight.

*Comment:* body and rim warped; slight irregularities on surfaces; self-slip and color rel. well pres.

*Parallels from Zominthos:* A83; A242; A98; A131.

**R12-046** (Pl. 4; A242; C1; 1988; Room 12; Unit ?) Handleless Cup; Type 7; FF 2; FW 2d; reddish yellow (7.5YR7/8); ca. 95% pres., complete profile, mended from frgs., small parts of rim restored; H.: 3.9-4.4; Diam.max.: 9.0; Diam. Base: 4.0; Diam. Rim: 8.2-8.7; Th.: 0.4.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: concave; straight-high raised; Body: slightly curving; Rim: straight.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; irregularities on surfaces; color pres. in sparse traces only.

*Parallels from Zominthos:* A83; A72; A98; A131.

**R12-047** (Pl. 4; A98; A37; 1988; Room ; Tom. 3; Unit 90) Handleless Cup; Type 7; MC 1; MCW 1d; reddish grey – red (core 2.5YR6/1 near surface and surfaces 2.5YR5/6-5/8 slip 2.5YR5/6-5/8); ca. 60% pres., complete profile, mended from 2 frgs., parts of body and rim missing; H.: 4.1-4.3; Diam.max.: 6.6; Diam. Base: 3.0; Diam. Rim: 6.6; Th.: 0.7.

*Description:* wheel-made; unpronounced rillings on int.; traces of smoothing; smoothed; self-slip (thin); monochrome black coating (2.5YR2.5/1) on int. and ext.; Base: slightly uneven-concave; straight-low raised; Body: slightly curving; Rim: slightly inverted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; irregularities on surfaces; color pres. in sparse traces only.

*Parallels from Zominthos:* A83; A72; A242; A131.

**R12-048** (Pl. 4; A131; C38; 1988; Room 12; Tom. 3; Unit 84) Handleless Cup; Type 7; FF 2; FW 2a; reddish yellow (7.5YR7/6); 100% pres., mended from 3 frgs.; H.: 4.2-4.5; Diam.max.: 7.9; Diam. Base: 3.5; Diam. Rim: 7.9; Th.: 0.5.

*Description:* wheel-made; rillings on int., unpronounced rillings on ext.; traces of smoothing; wet-smoothed; self-slipped; Base: slightly uneven; low raised; Body: slightly curving; Rim: slightly inverted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; low central pimple; self-slip well pres.

*Parallels from Zominthos:* A83; A72; A242; A98.

#### Type 8

**R12-049** (Pl. 4; A42; B1; 1988; Room 12; Unit ?) Handleless Cup; Type 8; FF 3; FW 3b or d; reddish yellow – very pale brown (7.5YR876-10YR8/4); ca. 70% pres., mended from frgs., partly restored; H.: 6.3; Diam.max.: 9.2; Diam. Base: 3.3; Diam. Rim: 9.1; Th.: 0.6.

*Description:* wheel-made; unpronounced spiral-like rillings on int.; traces of smoothing or brush strokes on ext.; smoothed; real slip (10YR8/4); possibly monochrome black coating (10YR2.5/1) on ext. (?); Base: even; high raised; Body: curving; Rim: inverted.

*Comment:* rel. regularly shaped cup; body and rim very slightly warped; central pimple; real slip well pres.; color pres. in very faint traces only (?); few non-joining frgs. remaining.

*Parallels from Zominthos:* -

#### Type 9

**R12-050** (Pl. 4; A210; B2; 1988; Room 12; Unit ?) Handleless Cup; Type 9; FF 1; FW 1d; reddish yellow (5YR6/8); ca. 95% pres., complete profile, mended from frgs., small part of rim restored; H.: 6.3-6.4; Diam.max.: 8.4; Diam. Base: 3.6; Diam. Rim: 8.4; Th.: 0.6.

*Description:* wheel-made; unpronounced rillings on int.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave-uneven; low raised; Body: bell-shaped; Rim: straight-slightly everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slight irregularities on surfaces; color pres. in traces.

*Parallels from Zominthos: A225.*

**R12-051** (Pl. 4; A225; B4; 1988; Room 12; Unit ?) Handleless Cup; Type 9; FF 2; FW 2d; reddish yellow (7.5YR6/8); ca. 95% pres., complete profile, mended from frgs., partly restored; H.: 6.5; Diam.max.: 8.2; Diam. Base: 4.25; Diam. Rim: 8.2; Th.: 0.6.

*Description:* wheel-made; spiral-like rillings on int., rillings on ext.; traces of smoothing; wet-smoothed; self-slip; monochrome black coating (7.5YR2.5/1) on ext., black rim band on int.; Base: slightly concave-uneven; low raised; Body: bell-shaped; Rim: straight-slightly everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; central pimple; slight irregularities on surfaces; color pres. in traces only.

*Parallels from Zominthos: A210.*

#### Type 10 (Miniature Cups)

**R12-052** (Pl. 4; A26; C3.06; 1988; Room 12; Unit 88) Miniature Handleless Cup; Type 10; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 80% pres., complete profile, parts of rim restored; H.: 2.2; Diam.max.: 3.6; Diam. Base: 2.0; Diam. Rim: 3.5; Th.: 0.3-0.4.

*Description:* handmade; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; straight; Body: straight; Rim: straight-slightly inverted.

*Comment:* rel. regularly shaped miniature cup; body and rim slightly warped; slight irregularities on surfaces; few non-joining frgs. remaining; color pres. in sparse traces only.

*Parallels from Zominthos: A44; A38; A47; close to A54 (C18a); A31.1986; A53; A59; A6.1986; A12; A34.*

**R12-053** (Pl. 4; A44; D3; 1988; Room 12; Unit 52) Miniature Handleless Cup; Type 10; FF 3; FW 3d; very pale brown (10YR8/3); 100% pres.; H.: 1.8-2.0; Diam.max.: 3.0; Diam. Base: 1.8; Diam. Rim: 3.0; Th.: 0.3.

*Description:* wheel-made; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (10YR2.5/1) on int. and ext.; Base: slightly concave-uneven; straight; Body: straight-slightly flaring; Rim: slightly inverted.

*Comment:* rel. regularly shaped miniature cup; body and rim slightly warped; slight irregularities on surfaces; color pres. in traces only.

*Parallels from Zominthos:* A26; A38; A47; close to A54 (C18a); A31.1986; A53; A59; A6.1986; A12; A34.

**R12-054** (Pl. 4; A38; A24; 1988; Room 12; Unit ?) Miniature Handleless Cup; Type 10; FF 2; FW 2d; yellowish red (core 7.5YR6/6, surfaces and slip 7.5YR7/6); 100% pres.; H.: 1.9; Diam.max.: 3.2; Diam. Base: 2.0; Diam. Rim: 3.2; Th.: 0.3-0.6.

*Description:* handmade; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on ext.; Base: slightly uneven; straight; Body: straight; Rim: slightly everted.

*Comment:* body and rim warped; color pres. in faint traces only.

*Parallels from Zominthos:* A26; A44; A47; close to A54 (C18a); A31.1986; A53; A59; A6.1986; A12; A34.

**R12-055** (Pl. 4; A47; A25; 1988; Room 12; Unit ?) Miniature Handleless Cup; Type 10; MC 1; MCW 1b; reddish grey (2.5YR6/1); ca. 95% pres., complete profile, parts of base and rim missing; H.: 1.8-2.0; Diam.max.: 3.0; Diam. Base: 2.2; Diam. Rim: 3.0; Th.: 0.3.

*Description:* wheel-made; elliptical striations underneath; traces of smoothing; smoothed; unslipped; Base: slightly uneven; Body: curving; Rim: straight-slightly inverted.

*Comment:* rel. regularly shaped miniature cup; slight irregularities on surfaces; finer “cooking-ware” fabric; surfaces partly worn.

*Parallels from Zominthos:* A26; A44; A38; close to A54 (C18a); A31.1986; A53; A59; A6.1986; A12; A34.

**R12-056** (Pl. 4; close to A54; C18a; 1988; Room 12; Unit 56) Miniature Handleless Cup; Type 10; FF 2; FW 2d; reddish yellow (5YR7/8); ca.66% pres., complete profile, parts of body and rim missing; H.: 1.8; Diam.max.: ?; Diam. Base: 1.8; Diam. Rim: ?; Th.: 0.3-0.4.

*Description:* handmade; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: concave; straight; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped miniature cup; color rel well pres.; found close to A54.

*Parallels from Zominthos:* A26; A44; A38; A47; A31.1986; A53; A59; A6.1986; A12; A34.

**R12-057** (Pl. 4; A53; C7; 1986; Room 12; Unit ?) Miniature Handleless Cup; Type 10; MC 1; MCW 1d; red (2.5YR5/8); 100% pres., tiny part of rim missing; H.: 2.2; Diam.max.: 3.9; Diam. Base: 2.4; Diam. Rim: 3.9; Th.: 0.6.

*Description:* handmade; slight traces of smoothing; smoothed; self-slip (thin); monochrome black coating (2.5YR2.5/1) on int. and ext.; Base: uneven; low raised; Body: slightly flaring; Rim: slightly inverted.

*Comment:* body and rim warped; irregularities on surfaces; color rel. well pres.

*Parallels from Zominthos:* A26; A44; A38; A47; close to A54 (C18a); A31.1986; A59; A6.1986; A12; A34.

**R10-016** (Pl. 4; A31.1986; C8; 1986; Room 10; Unit ?) Miniature Handleless Cup; Type 10; MC 1; MCW 1d; red – light red (core and near surface 2.5YR5/8, surfaces and slip 2.5YR6/8); ca. 60% pres., complete profile, mended from 3 frgs., parts of body and rim restored; H.: 2.8; Diam.max.: 4.4; Diam. Base: 2.4; Diam. Rim: 4.4; Th.: 0.5.

*Description:* handmade; traces of smoothing; smoothed; self-slip (thin); monochrome black coating (2.5YR2.5/1) on int. and ext.; Base: slightly concave-uneven; raised; Body: curving; Rim: incurving.

*Comment:* body and rim warped; irregularities on surfaces and base; uncertain whether hand- or wheel-made; color rel. well pres.

*Parallels from Zominthos:* A26; A44; A38; A47; close to A54 (C18a); A53; A59; A6.1986; A12; A34.

**R10-017** (Pl. 4; A59; A8; 1986; Room 10; Unit ?) Miniature Handleless Cup; Type 10; FF 1; FW 1a; reddish yellow (5YR7/6); 100% pres.; H.: 2.4; Diam.max.: 2.9; Diam. Base: 1.9; Diam. Rim: 2.9; Th.: 0.3.

*Description:* wheel-made; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: slightly concave; straight; Body: slightly flaring; Rim: straight-slightly inverted.

*Comment:* rel. regularly shaped miniature cup; body and rim slightly warped.

*Parallels from Zominthos:* A26; A44; A38; A47; close to A54 (C18a); A31.1986; A53; A6.1986; A12; A34.

**R10-018** (Pl. 4; A6.1986; C50; 1986; Room 10; Unit 2) Miniature Handleless Cup; Type 10; FF 2; FW 2d; reddish yellow (7.5YR6/8); ca. 90% pres., complete profile, mended from 5 frgs., small parts of body and rim missing; H.: 2.2; Diam.max.: 3.4; Diam. Base: 2.4; Diam. Rim: 3.4; Th.: 0.5.

*Description:* wheel-made; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: even; low raised; Body: straight; Rim: straight.

*Comment:* regularly shaped miniature cup; slight irregularities on surfaces; self-slip and color rel. well pres.

*Parallels from Zominthos:* A26; A44; A38; A47; close to A54 (C18a); A31.1986; A53; A59; A12; A34.

**R10-019** (Pl. 4; A12; B21; 1988; Room 10; Unit ?) Miniature Handleless Cup; Type 10; FF 2; FW 2a; reddish yellow (7.5YR7/6); 100% pres., tiny part of rim missing; H.: 2.3; Diam.max.: 3.1; Diam. Base: 2.5; Diam. Rim: 3.1; Th.: 0.5.

*Description:* wheel-made; elliptical striations underneath; coils visible on int.; wet-smoothed; self-slip (thin); Base: slightly concave; straight; Body: straight; Rim: straight.

*Comment:* regularly shaped miniature cup; self-slip well pres.

*Parallels from Zominthos:* A26; A44; A38; A47; close to A54 (C18a); A31.1986; A53; A59; A6.1986; A34.

**R10-020** (Pl. 4; A34; C11; 1986; Room 10; Unit 5) Miniature Handleless Cup; Type 10; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 100% pres., complete profile, mended from frgs., tiny part of rim missing; H.: 3.0; Diam.max.: 5.4; Diam. Base: 2.5; Diam. Rim: 5.3; Th.: 0.3-0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing or brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: curving; Rim: straight.

*Comment:* rel. regularly shaped miniature cup; body and rim slightly warped; coils visible on int.; self-slip and color rel. well pres.

*Parallels from Zominthos:* A26; A44; A38; A47; close to A54 (C18a); A31.1986; A53; A59; A6.1986; A12.

### Lamps/Incense Burners

**R12-058** (Pl. 5; A213; B19; 1988; Room 12; Unit ?) Lamp/Incense Burner; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% pres., mended from frgs.; H.: 3.9; Diam.max.: 9.2; Diam. Base: 3.6; Diam. Rim: 9.2; Diam. Handle: 0.8; Th.: 0.35.

*Description:* wheel-made; rillings on int.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on ext.; Base: slightly concave; low raised; Body: slightly curving; Rim: inverted with lip.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; central pimple; slight irregularities on surfaces; color rel. well pres.; cup used as lamp or incense burner.

*Parallels from Zominthos:* A126; A192; A56.

**R12-059** (Pl. 5; A126; C26; 1988; Room 12; Unit 70) Lamp/Incense Burner; CF 1; CW 1c; light brown-reddish yellow (7.5YR6/4-6/6); ca. 80% pres., complete profile, mended from frgs., parts of rim restored; H.: 3.8-5.8; Diam.max.: ca. 9.5; Diam. Base: 3.8; Diam. Rim: ca. 9.5; Diam. Handle: ca. 1.0; Th.: 0.5-0.7.

*Description:* wheel-made; unpronounced rillings on int.; slight traces of smoothing; smoothed; self-slip (thin); monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; straight; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped cup; rim slightly warped; central pimple; rough surface with protruding grits; int. surface shows traces of fire; color rel. well pres.; several non-joining frgs. remaining; cup used as lamp or incense burner.

*Parallels from Zominthos:* A213; A192; A56.

**R12-060** (Pl. 5; A192; A22; 1988; Room 12; Unit ?) Lamp/Incense Burner; FF 1; FW 1d; red-light red (core 2.5YR5/8, surfaces and slip 5YR6/8); ca. 50% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 5.7; Diam.max.: 11.1; Diam. Base: 3.6; Diam. Rim: 11.1; Diam. Handle: 2.0; Th.: 0.6.

*Description:* wheel-made; traces of smoothing; smoothed; self-slip (thin); monochrome black coating (5YR2.5/1) on int. and ext.; Base: very uneven (does not stand upright); straight; Body: straight; Rim: straight.

*Comment:* very shallow, rel. regularly shaped cup; body and rim slightly warped; irregularities on surfaces; handle with oval section; color rel. well pres.; few non-joining frgs. remaining; cup used as lamp or incense burner.

*Parallels from Zominthos:* A213; A126; A56.

**R11-006** (Pl. 5; A56; A41; 1988; Room 11; Unit 50) Lamp/Incense Burner; FF 2; FW 2c; reddish yellow (7.5YR6/6-6/4); 100% pres., except handle, mended from frgs.; H.: 5.1; Diam.max.: 11.0; Diam. Base: 4.0; Diam. Rim: 11.0; Diam. Handle: ?; Th.: 0.6.

*Description:* wheel-made; rillings on int.; slight traces of smoothing; smoothed; unslipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; low raised; Body: straight-slightly curving; Rim: straight.

*Comment:* regularly shaped cup; color well pres.; clay seems to be heavily burnt due to use as lamp or incense burner; handle lost.

*Parallels from Zominthos:* A213; A126; A192.

### Hemispherical Cups

**R12-061** (Pl. 5; A21; C22; 1988; Room 12; Unit 7) Hemispherical Cup; FF 1; FW 1a; reddish yellow (5YR7/6); ca. 40% pres., restored profile, mended from frgs., parts of body and rim missing; H.: 7.3; Diam.max.: 10.4; Diam. Base: 3.7; Diam. Rim: 10.4; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: slightly uneven; low raised; Body: hemispherical; Rim: everted.

*Comment:* regularly shaped cup; fine-very fine fabric; no traces of decoration; very fragmented.

*Parallels from Zominthos:* A151; A32; A264; A11; A54; A27; A289.

**R12-062** (Pl. 5; A264; B13; 1988; Room 12; Unit ?) Hemispherical Cup; FF 2; FW 2d; reddish yellow (surface 7.5YR7/8 slip 7.5YR7/6); ca. 90% pres., complete profile, mended from frgs., parts of body restored; H.: 6.9; Diam.max.: 11.1; Diam. Base: 4.2; Diam. Rim: 10.9; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing or brush strokes; wet-smoothed; real slip; monochrome black coating (7.5YR2.5/1) on ext.; Base: slightly concave; straight; Body: hemispherical; Rim: straight-slightly everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slip and color pres. in traces only.

*Parallels from Zominthos:* A21; A32; A151; A11; A54; A27; A289.

**R12-063** (Pl. 5; A54; C18; 1988; Room 12; Unit 56) Hemispherical Cup; FF 2; FW 2a; reddish yellow (7.5YR7/6-8/6); ca. 60% pres., complete profile, mended from frgs., parts of body and rim missing; H.: 6.7; Diam.max.: 10.9; Diam. Base: 3.8; Diam. Rim: 10.9; Th.: 0.3.

*Description:* wheel-made; rillings on int. and ext., elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: slightly uneven; low raised; Body: hemispherical; Rim: slightly everted.

*Comment:* rel. regularly shaped cup; central pimple; very faint traces of possible color – uncertain whether painted or not; found with miniature conical cup R12-056.

*Parallels from Zominthos:* A21; A32; A264; A11; A151; A27; A289.

**R12-064** (Pl. 5; A289; C20; 1988; Room 12; Unit 126) Hemispherical Cup; MC 1; MCW 1d; reddish yellow (5YR7/6-8/6); ca. 50% pres., complete profile, mended from frags., partly restored, parts of body and rim missing; H.: 6.4-6.6; Diam.max.: ?; Diam. Base: 4.3; Diam. Rim: ?; Th.: 0.5-0.6.

*Description:* wheel-made; rillings on ext.; traces of smoothing; wet-smoothed; self-slip (thin); monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly uneven; straight-low raised; Body: hemispherical; Rim: straight.

*Comment:* rel. regularly shaped cup; rim slightly warped; self-slip well pres.; color pres. in traces only

*Parallels from Zominthos:* A21; A32; A264; A11; A54; A27; A151.

**R11-007** (Pl. 5; A151; C3.06; 1988; Room 11; Unit ?) Hemispherical Cup; FF 1; FW 1d; reddish yellow (5YR7/6); ca. 50% pres., complete profile, mended from 5 frags., parts of body and rim missing; H.: 5.6; Diam.max.: 9.4; Diam. Base: 3.7; Diam. Rim: 9.1; Th.: 0.4.

*Description:* wheel-made; spiral-like, unpronounced rillings on int.; traces of smoothing and brush strokes; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: even; straight; Body: hemispherical; Rim: everted.

*Comment:* regularly shaped cup; central pimple; slight irregularities on surfaces; self-slip and color well pres.; 1 non-joining frg. remaining.

*Parallels from Zominthos:* A21; A32; A264; A11; A54; A27; A289.

**R10-021** (Pl. 5; A32; B30; 1986; Room 10; Unit 4) Hemispherical Cup; FF 2; FW 2b; reddish yellow (7.5YR6/8); ca. 90% pres., complete profile, mended from frags., partly restored; H.: 6.9-7.0; Diam.max.: 10.6; Diam. Base: 3.9; Diam. Rim: 10.6; Th.: 0.4.

*Description:* wheel-made; rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; real slip (pink 7.5YR8/4); Base: even; raised; Body: hemispherical; high max. Diam.; Rim: everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; low central pimple; slight irregularities on surfaces; very fragmented; slip rel. well pres.

*Parallels from Zominthos:* A21; A151; A264; A11; A54; A27; A289.

**R10-022** (Pl. 5; A11; B5; 1986; Room 10; Unit ?) Hemispherical Cup; FF 1; FW 1d; reddish yellow (5YR6/8); ca. 75% pres., complete profile, mended from frgs., partly restored; H.: 7.2; Diam.max.: 10.3; Diam. Base: 3.3; Diam. Rim: 10.3; Th.: 0.4-0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing ext.; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave-uneven; low raised; Body: hemispherical; Rim: slightly everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; color rel. well pres.

*Parallels from Zominthos:* A21; A32; A264; A151; A54; A27; A289.

**R13-002** (Pl. 5; A27; B35; 1988; Room 13; Unit 40) Hemispherical Cup; FF 2; FW 2b; reddish yellow (7.5YR7/6); ca. 66% pres., restored profile, mended from frgs.; H.: 6.5-7.7; Diam.max.: 10.4; Diam. Base: 3.3; Diam. Rim: 10.4; Th.: 0.4.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing; smoothed; real slip (7.5YR8/6); Base: very slightly concave; low raised; Body: hemispherical; Rim: everted.

*Comment:* regularly shaped cup; central pimple; very fragmented; slip rel. well pres.

*Parallels from Zominthos:* A21; A32; A264; A11; A54; A151; A289.

Bell-shaped Cups

**R12-065** (Pl. 5; A177; B14; 1988; Room 12; Unit ?) Bell-shaped Cup; FF 2; FW 2d; reddish yellow (7.5YR8/6); ca. 95% pres., complete profile, mended from frags., small part of body restored; H.: 5.9; Diam.max.: 8.4; Diam. Base: 3.4; Diam. Rim: 8.4; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing or brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; low raised; Body: bell-shaped; Rim: straight-slightly everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slight irregularities on surfaces; color pres. in sparse traces only.

*Parallels from Zominthos:* A241; A170.

**R12-066** (Pl. 5; A241; A27; 1988; Room 12; Unit ?) Bell-shaped Cup; FF 1-2; FW 1d-2d; reddish yellow (5YR 6/8-7/8); ca. 90% pres., complete profile, mended from frags., part of rim restored; H.: 6.6-7.0; Diam.max.: 9.5; Diam. Base: 3.9; Diam. Rim: 8.9-9.5; Th.: 0.4.

*Description:* wheel-made; rillings on int.; unpronounced rillings on ext.; traces of smoothing and brush strokes; wet-smoothed; self-slip (thin); monochrome dark reddish brown coating (5YR2.5/2) on int. and ext.; Base: concave; low raised; Body: bell-shaped; Rim: slightly everted.

*Comment:* body and rim warped; central pimple; slight irregularities on surfaces; color partly well pres.

*Parallels from Zominthos:* A177; A170.

**R12-067** (Pl. 5; A170; C41; 1988; Room 12; Tom. 1; Unit 83) Bell-shaped Cup w. handle; FF 3; FW 3d; reddish yellow – very pale brown (core and near surface 7.5YR8/6, surfaces 10YR8/4); ca. 90% pres., complete profile, mended from frags., handle and small part of rim missing; H.: 5.2-5.6; Diam.max.: 8.0; Diam. Base: 3.6; Diam. Rim: 8.0; Th.: 0.4.

*Description:* wheel-made; rillings on int.; traces of smoothing; wet-smoothed; real slip; possibly black splashes (7.5YR2.5/1) on int. and ext.; Base: slightly uneven-slightly concave; low raised; Body: bell-shaped; Rim: straight-slightly everted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; irregularities on surfaces; color pres. in sparse traces only.

*Parallels from Zominthos:* A241; A177.

### Rounded Cups

**R12-068** (Pl. 5; A160; A30; 1988; Room 12; Unit ?) Rounded Cup; FF 2; FW 2a; reddish yellow (7.5YR7/6); ca. 100% pres., complete profile; mended from frgs., partly restored; H.: 7.0-7.9; Diam.max.: 11.3; Diam. Base: 4.7; Diam. Rim: 11.0; Th.: 0.5-0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; Base: concave; straight; Body: rounded; Rim: slightly inverted.

*Comment:* body warped; rim slightly warped; slight irregularities on surfaces; self-slip partly worn.

*Parallels from Zominthos:* A312; A176.

**R12-069** (Pl. 5; A312; B11; 1988; Room 12; Unit ?) Rounded Cup; FF 1; FW 1d; reddish yellow (5YR7/6-7/8); ca. 85% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 6.6-6.8; Diam.max.: 11.2; Diam. Base: 3.9; Diam. Rim: 10.6; Th.: 0.4.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on ext.; Base: slightly concave; high raised; Body: rounded; Rim: inverted.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; slight irregularities on surfaces; color pres. in traces only.

*Parallels from Zominthos:* A176; A160.

**R12-070** (Pl. 5; A176; A15; 1988; Room 12; Unit 110) Rounded Cup; FF 1; FW 1d; reddish yellow (core and near surface 5YR7/6, surfaces 7.5YR8/6); ca. 30% pres., complete profile, mended from frgs., large parts of base, body and rim missing; H.: 6.8; Diam.max.: ?; Diam. Base: 4.8; Diam. Rim: ?; Th.: 0.4-0.8.

*Description:* wheel-made; rillings on int. and ext.; traces of brush strokes; smoothed; real slip; monochrome black coating (5YR2.5/1) on int. and ext.; Base: slightly concave; Body: rounded; Rim: inverted.

*Comment:* rel. regularly shaped cup; slight irregularities on surfaces; slip well pres.; color rel. well pres.

*Parallels from Zominthos:* A160; A312.

### Straight-sided Cups

**R12-071** (Pl. 6; A292; C32; 1988; Room 12; Unit 123) Straight-sided Cup w. handle; FF 1; FW 1d; reddish yellow (7.5YR7/6); ca. 60% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 6.8-7.5; Diam.max.: 9.8; Diam. Base: 5.6; Diam. Rim: 9.8; Diam. Handle: 0.4x2.5; Th.: 0.3-0.4.

*Description:* wheel-made; rillings on int.; traces of brush strokes; smoothed; unslipped (?); monochrome black – very dark brown coating (7.5YR2.5/1-2.5/2) on int. and ext.; Base: slightly concave; low raised; Body: straight; Rim: everted; Handle: strap handle.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; fingerprints on ext.; color very well pres.

*Parallels from Zominthos:* A279; A201.

**R12-072** (Pl. 6; A279; A33; 1988; Room 12; Unit 123) Straight-sided Cup w. handle; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 95% pres., handle lost, complete profile, small parts of body restored; H.: 8.3; Diam.max.: 12.0; Diam. Base: 8.8; Diam. Rim: 12.0; Th.: 0.4.

*Description:* wheel-made; rillings on int. and ext.; traces of brush strokes; wet-smoothed; self-slipped; monochrome black – very dark brown coating (7.5YR2.5/1-2.5/2) on int. and ext.; Base: slightly uneven-concave; straight; Body: straight; Rim: slightly everted.

*Comment:* body slightly warped; rim warped; rel. large cup; handle lost but probably strap handle; rillings forming two ribs on ext.; color very well pres.

*Parallels from Zominthos:* A292; A201.

**R15-002** (Pl. 6; A201; A47; 1988; Room 15; Unit 105) Straight-sided Cup w. handle; FF 3; FW 3d or 3a; very pale brown (10YR7/4); 100% pres., mended from frgs.; H.: 6.8; Diam.max.: 9.0; Diam. Base: 4.6; Diam. Rim: 9.0; Diam. Handle: 0.4x1.5; Th.: 0.4.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; possibly black splashes (7.5YR2.5/1) on int. and ext. (?); Base: uneven; low raised; Body: straight; Rim: straight; Handle: strap handle.

*Comment:* rel. regularly shaped cup; body and rim slightly warped; central pimple; slight irregularities on surfaces; rel. thick self-slip; color pres. in faint traces only.

*Parallels from Zominthos:* A292; A279.

### Spouted Cups

**R10-023** (Pl. 6; A37; A12; 1986; Room 10; Unit 5) Spouted Cup; FF 2; FW 2b; reddish yellow (7.5YR6/8-7/6); 100% pres., mended from 2 frgs.; H.: 7.8; Diam.max.: 10.2; Diam. Base: 4.4; Diam. Rim: 8.8; Diam. Handle: 0.6-0.9x2.0; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; real slip (reddish yellow-pink 7.5YR8/4-8/6); Base: concave; low

raised; Body: curving-rounded; Rim: straight; Handle: strap handle w. groove; Spout: bridge-spout, horseshoe-shaped.

*Comment:* rel. regularly shaped cup; rim warped; central pimple; slight irregularities on surfaces; slip well pres.

*Parallels from Zominthos:* -

### Kalathoi

#### Type 1

**R12-073** (Pl. 7; A304; A34; 1988; Room 12; Unit ?) Kalathos; Type 1; MC 1; MCW 1d; reddish yellow (5YR7/6); ca. 85% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 9.3-9.7; Diam.max.: 22.1; Diam. Base: 6.5; Diam. Rim: 22.1; Th.: 0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing or brush strokes; smoothed; self-slip (thin); monochrome black coating (5YR2.5/1) on int. and ext.; Base: concave; straight; Body: flaring; Rim: everted.

*Comment:* Body and rim warped; central pimple; irregularities on surfaces; color pres. in traces only.

*Parallels from Zominthos:* A16; A104; A103; A186i; A57; A3; A2; A1.

**R12-074** (Pl. 7; A104; A29; 1988; Room 12; Unit ?) Kalathos; Type 1; FF 2; FW 2b; reddish yellow-very pale brown (core and near surface 7.5YR7/6, surfaces 10YR7/4); 100% pres., mended from 4 frgs.; H.: 9.1-9.7; Diam.max.: 18.1; Diam. Base: 5.3; Diam. Rim: 17.7-18.1; Th.: 0.5.

*Description:* wheel-made; rillings on int.; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing or brush strokes; smoothed; real slip (very pale brown 10YR8/4); Base: slightly concave; raised; Body: flaring; Rim: everted.

*Comment:* regularly shaped vessel; central pimple; slight irregularities on surfaces; possibly monochrome black coating on ext. but traces of color too faint to be certain.

*Parallels from Zominthos:* A304; A16; A103; A186i; A57; A3; A2; A1.

**R12-075** (Pl. 7; A103; A28; 1988; Room 12; Unit ?) Kalathos; Type 1; FF 1-2; FW 1b-2b; yellowish red-reddish yellow (core 5YR5/6, near surface and surfaces 7.5YR7/6); almost 100% pres., tiny part of rim missing; H.: 8.6-9.1; Diam.max.: 18.5; Diam. Base: 4.8-5.3; Diam. Rim: 18.0-18.5; Th.: 0.7.

*Description:* wheel-made; rillings on int.; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; smoothed; real slip (very pale brown 10YR8/3-8/4); Base: slightly uneven; straight; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; body slightly warped; central pimple; slight irregularities on surfaces; slip well pres.

*Parallels from Zominthos:* A304; A104; A16; A186i; A57; A3; A2; A1.

**R10-024** (Pl. 7; A16; C43; 1988; Room 10; Unit ?) Kalathos; Type 1; MC 2; MCW 2d; reddish yellow (7.5YR7/6); ca. 70% pres., complete profile, mended from frgs., parts of body and rim missing; H.: 10.1-10.6; Diam.max.: 18.5; Diam. Base: 6.8; Diam. Rim: 18.5; Th.: 0.9.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing or brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; straight; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; body slightly warped; central pimple; self-slip and color rel. well pres.

*Parallels from Zominthos:* A304; A104; A103; A186i; A57; A3; A2; A1.

**R10-025** (Pl. 7; A186i; A42; 1986; Room 10; Unit 3) Kalathos; Type 1; FF 1; FW 1b or 1d; reddish yellow (core and near surface 5YR6/6, int. surface 5YR7/6, ext. surface

7.5YR7/6); ca. 90% pres., complete profile, mended from frgs., partly restored; H.: 12.3; Diam.max.: 20.4; Diam. Base: 5.9-6.4; Diam. Rim: 20.4; Th.: 0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; real slip (7.5YR7/6); possibly black rim band (7.5YR2.5/1) on ext. (?); Base: slightly concave; raised; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; central pimple; slight irregularities on surfaces; slip well pres.; color pres. in faint traces only.

*Parallels from Zominthos:* A304; A104; A103; A16; A57; A3; A2; A1.

**R10-026** (Pl. 7; A57; A43; 1986; Room 10; Unit 4) Kalathos; Type 1; FF 1-2; FW 1d-2d; reddish yellow (core and near surface 5YR6/8, surfaces 7.5YR7/6); ca. 80% pres., complete profile, mended from frgs., parts of base and rim restored; H.: 10.7-11.7; Diam.max.: 22.0; Diam. Base: 6.9; Diam. Rim: 22.0; Th.: 0.6.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; rim slightly warped; slight irregularities on surfaces; very fragmented; color pres. in traces only; 1 non-joining frg. remaining.

*Parallels from Zominthos:* A304; A104; A103; A186i; A16; A3; A2; A1.

**R10-027** (Pl. 7; A3; B32; 1986; Room 10; Unit 2) Kalathos; Type 1; FF 1; FW 1d; red-reddish yellow (core and near surface 2.5YR5/8, surfaces 5YR6/8); ca. 70% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 10.3; Diam.max.: 21.2; Diam. Base: 6.3; Diam. Rim: 21.2; Th.: 0.4-0.5.

*Description:* wheel-made; rillings on int. and ext. traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on ext.; Base: concave; raised; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; low central pimple; slight irregularities on surfaces; very fragmented; color pres. in traces only.

*Parallels from Zominthos:* A304; A104; A103; A186i; A57; A16; A2; A1.

**R10-028** (Pl. 7; A2; B28; 1986; Room 10; Unit 2) Kalathos; Type 1; FF 1-3; FW 1b-3b; reddish yellow-yellow (core and near surface 5YR7/6, surfaces 10YR7/6); ca. 70% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 9.6; Diam.max.: 19.1; Diam. Base: 5.9; Diam. Rim: 19.1; Th.: 0.7.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; real slip (10YR7/6); Base: slightly concave; raised; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; central pimple; slight irregularities on surfaces; slip well pres.

*Parallels from Zominthos:* A304; A104; A103; A186i; A57; A3; A16; A1.

**R10-029** (Pl. 7; A1; A46; 1986; Room 10; Unit 1 or 2) Kalathos; Type 1; FF 1-2; FW 1d-2d; reddish yellow (core and near surface 5YR6/6, surfaces 7.5YR7/8); ca. 60% pres., complete profile, mended from frgs., partly restored; H.: 10.8; Diam.max.: 20.2; Diam. Base: 6.0; Diam. Rim: 20.2; Th.: 0.8.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: mostly restored; raised; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; slight irregularities on surfaces; very fragmented; large parts restored; color pres. in sparse traces only.

*Parallels from Zominthos:* A304; A104; A103; A186i; A57; A3; A2; A16.

Type 2

**R12-076** (Pl. 8; A109; A32; 1988; Room 12; Unit ?) Kalathos; Type 2; FF 2; FW 2a; reddish yellow (7.5YR7/8); 100% pres., mended from frgs.; H.: 7.1; Diam.max.: 12.8; Diam. Base: 4.4; Diam. Rim: 12.5-12.8; Th.: 0.5.

*Description:* wheel-made; rillings on int.; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: slightly concave; straight; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; central pimple; slight irregularities on surfaces; possibly black splashes on ext. but traces of color too faint to be certain.

*Parallels from Zominthos:* A49; A66; A51; A50; A48.

**R10-030** (Pl. 8; A49; A10; 1986; Room 10; Unit 1) Kalathos; Type 2; FF 2; FW 2a; reddish yellow (7.5YR7/6); ca. 70% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 7.2; Diam.max.: 12.5; Diam. Base: 4.0; Diam. Rim: 12.5; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: slightly uneven; straight; Body: flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; central pimple; slight irregularities on surfaces; self-slip well pres.

*Parallels from Zominthos:* A109; A66; A51; A50; A48.

**R10-031** (Pl. 8; A66; B31; 1986; Room 10; Unit 4) Kalathos; Type 2; FF 1-2; FW 1a-2a; reddish yellow (core and near surface 5YR6/8 surfaces 7.5YR7/6); ca. 90% pres., complete profile, mended from frgs., part of rim restored; H.: 7.5-7.6; Diam.max.: 12.4; Diam. Base: 4.0; Diam. Rim: 12.4; Th.: 0.4.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) or black splashes on ext.; Base: even; straight; Body: straight-slightly flaring; Rim: straight-slightly everted.

*Comment:* regularly shaped vessel; low central pimple; slight irregularities on surfaces and base; color pres. in sparse traces only.

*Parallels from Zominthos:* A49; A109; A51; A50; A48.

**R10-032** (Pl. 8; A51; A44; 1986; Room 10; Unit 4) Kalathos; Type 2; FF 2; FW 2d; reddish yellow (core and near surface 7.5YR6/8, surfaces 7.5YR7/6); 100% pres., mended from frgs.; H.: 7.2; Diam.max.: 12.9; Diam. Base: 4.2; Diam. Rim: 12.9; Th.: 0.5.

*Description:* wheel-made; rillings on int.; unpronounced rillings on ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (5YR2.5/1) on ext.; Base: even; straight; Body: straight-slightly flaring; Rim: straight-slightly everted.

*Comment:* regularly shaped vessel; central pimple; slight irregularities on surfaces; color pres. in traces only.

*Parallels from Zominthos:* A49; A66; A109; A50; A48.

**R10-033** (Pl. 8; A50; B29; 1986; Room 10; Unit ?) Kalathos; Type 2; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 90% pres., complete profile, mended from frgs., part of rim restored; H.: 6.6; Diam.max.: 11.3; Diam. Base: 3.6; Diam. Rim: 11.3; Th.: 0.4.

*Description:* wheel-made; rillings on int.; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; straight; Body: slightly flaring; Rim: everted.

*Comment:* rel. regularly shaped vessel; rim slightly warped; low central pimple; slight irregularities on surfaces; color pres. in sparse traces only; 2 non-joining frgs. remaining.

*Parallels from Zominthos:* A49; A66; A51; A109; A48.

**R10-034** (Pl. 8; A48; A45; 1986; Room 10; Unit 4) Kalathos; Type 2; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% pres., mended from frgs., small parts of body restored; H.: 6.9-7.1; Diam.max.: 11.4; Diam. Base: 4.0; Diam. Rim: 11.4; Th.: 0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing and brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly uneven; straight; Body: slightly flaring; Rim: straight.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; central pimple; slight irregularities on surfaces; color well pres. on int., only faint traces on ext.

*Parallels from Zominthos:* A49; A66; A51; A50; A109.

#### Bridge-spouted Jars/Jugs

**R10-035** (Pl. 8; A8; B7; 1986; Room 10; Unit ?) Bridge-spouted Jug; FF 2; FW 2b; reddish yellow (core and near surface 5YR7/8, surfaces 7.5YR7/6); ca. 70% pres., complete profile, mended from frgs., parts of body and rim restored, handle restored; H.: 19.5-19.9; Diam.max.: 18.1; Diam. Base: 7.2; Diam. Rim: 13.8; Diam. Handle: rest. 1.4x0.6; Th.: 0.6.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; smoothed; real slip (7.5YR7/6-8/6); Base: concave; low raised; Body: slightly piriform; Rim: everted, collar-like; Handle: solid w. oval section; Spout: horseshoe-shaped section.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped, possibly due to restoration; irregularities on surfaces; slip well pres.; few non-joining frgs. remaining.

*Parallels from Zominthos:* A33; A13.

**R10-036** (Pl. 8; A13; B8; 1986; Room 10; Unit 3) Bridge-spouted Jug; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 75% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 13.1; Diam.max.: 12.6; Diam. Base: 5.3; Diam. Rim: 9.2; Diam. Handle: 1.3x0.8; Th.: 0.3-0.4.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on ext.; black rim band on int.; Base: even; straight; Body: ogival w. high max, Diam.; Rim: collar-like; straight; Handle: solid w. oval section; Spout: horseshoe-shaped section.

*Comment:* regularly shaped vessel; slight irregularities on surfaces and base; very fragmented; sev. non-joining frgs.

*Parallels from Zominthos:* A8; A33.

**R18-001** (Pl. 8; A33; D5; 1989; Room 18; Unit 31) Bridge-spouted Jar; MC 2; MCW 2d; reddish yellow – light yellowish brown (near surface 7.5YR7/6, surfaces 10YR6/4); ca. 90% pres., complete profile, mended from frgs., parts of base and body restored; H.: 27.0; Diam.max.: 21.7; Diam. Base: 8.8; Diam. Rim: 11.5; Diam. Handle: 1.6; Th.: 0.6-0.8.

*Description:* wheel-made; rillings on int.; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slip (thin); black (10YR2.5/1) reed-pattern on shoulder, 3 solid black bands on lower part of vessel; Base: slightly concave; raised; Body: ogival w. high max. Diam.; Rim: inverted w. lip; Handle: 2 horizontal handles, solid w. oval section; Spout: horseshoe-shaped section.

*Comment:* regularly shaped vessel; irregularities on surfaces; color well pres.; sev. non-joining frgs.

*Parallels from Zominthos:* A8; A13.

Beaked Jugs

**R12-077** (Pl. 9; A146; D6; 1988; Room 12; Unit ?) Beaked Jug; MC 2-CF 3; MCW 2a or 2d-CW 3a or 3c; yellowish red – reddish yellow (core and near surface 5YR5/6, surfaces 7.5YR6/8-7/6) ; 100% pres., mended from 2 frgs.; H.: 31.8; Diam.max.: 17.6; Diam. Base: 9.4-9.6; Diam. Rim: - ; Diam. Handle: 1.6x2.5; Th.: 0.4-1.0.

*Description:* wheel-made; traces of smoothing; wet-smoothed; self-slip (thin); possibly black coating on ext. (?); two circular applications at spout (possibly resembling eyes ?); Base: concave; straight; Body: ogival-elongated w. high max. Diam.; Rim: straight; Handle: solid w. oval section; Spout: horseshoe-shaped section.

*Comment:* regularly shaped jug; irregularities on surfaces; very faint traces of possible color on ext. but uncertain whether coated or not.

*Parallels from Zominthos:* A73; A164; A162.

**R12-078** (Pl. 9; A73; B18; 1988; Room 12; Unit ?) Beaked Jug; FF 4; FW 4d; very pale brown (10YR8/3-8/4); ca. 95% pres., complete profile, handle mended; H.: 15.9; Diam.max.: 12.9; Diam. Base: 5.0; Diam. Rim: 3.0; Diam. Handle: 1.1x0.8; Th.: 0.6.

*Description:* wheel-made; traces of smoothing; smoothed; self-slipped; monochrome black coating (10YR2.5/1) at neck, rim and spout; black solid-center spirals on shoulder; 3 black solid bands on lower body; Base: concave; straight-low raised; Body: rel. squat – rounded; Rim: straight; Handle: solid w. oval section; Spout: horseshoe-shaped section.

*Comment:* rel. regularly shaped jug; body slightly warped; slight irregularities on surfaces; very fine fabric; very well smoothed; color well pres.

*Parallels from Zominthos:* A146; A164; A162.

**R12-079** (Pl. 9; A164; D3; 1988; Room 12; Unit 70) Beaked Jug; FF 1; FW 1a or 1d; reddish yellow (5YR6/8); ca. 90% pres., restored profile, partly mended from frgs., partly

restored; H.: 16.1; Diam.max.: 11.5; Diam. Base: 4.5; Diam. Rim: - ; Diam. Handle: 0.8x1.3; Th.: 0.3-0.5.

*Description:* wheel-made; rillings on int.; smoothed; self-slipped on ext.; possibly monochrome black coating or solid black bands on ext. (?); Base: concave; straight; Body: ogival w. high max. Diam.; neck moulding; Rim: - ; Handle: solid w. oval section; Spout: - .

*Comment:* rel. regularly shaped jug; very fragmented; slight irregularities on surfaces; color pres. in faint traces only

*Parallels from Zominthos:* A73; A146; A162.

**R12-080** (Pl. 9; A162; D7; 1988; Room 12; Unit ?) Beaked Jug; FF 2; FW 2d; reddish yellow (5YR7/8); ca. 95% pres., complete profile, mended from frgs., parts of body and spout restored; H.: 21.3; Diam.max.: 15.8; Diam. Base: 6.9; Diam. Rim: - ; Diam. Handle: 1.4x1.9; Th.: 0.3-0.5.

*Description:* wheel-made; traces of smoothing and brush strokes; smoothed; self-slipped (7.5YR8/6); monochrome black coating (5YR2.5/1) at neck, spout and handle; two zones of spirals on shoulder, separated by solid black band; all spirals drawn separately; 4 solid black bands on lower part of body; Base: concave; raised; Body: ogival w. high max. Diam.; Rim: straight; Handle: solid w. oval section; Spout: mostly lost.

*Comment:* regularly shaped jug; slight irregularities on surfaces; color partly well pres., partly worn.

*Parallels from Zominthos:* A73; A164; A146.

**R12-100** (Pl. 10; A121; C2.1.2007, C2.2.2007; 1988; Room 12; Unit ?) Beaked Jug; FF 2; FW 2d; reddish yellow (5YR6/6 – 7.5YR6/6-7/6); ca. 20% pres., no complete profile, mended from 12 frgs., partly restored; H.: 11.5 pres.; Diam.max.: 15.0 pres.; Diam.Base:-; Diam.Rim:-; Diam. Handle:-; Th.: 0.4-0.6.

*Description:* wheel-made; rillings on int.; traces of smoothing or fingers on int.; traces of brush strokes on ext.; wet-smoothed; self-slip on int.; real slip on ext. (10YR7/6); spout,

handle and neck with solid dark coating (5YR2.5/1-2); frieze of tangent solid center spirals on shoulder, irregularly drawn, with thick outer stroke; wavy zigzag band on neck; Base:-; Body: ogival w. high max. Diam.; Rim:-; Handle: solid w. oval section; Spout: horse-shoe shaped but mostly lost.

*Comment:* regularly shaped jug; spout slightly warped; soft surface, chipped in some places; color rel. well preserved, fugitive in area below handle.

*Parallels from Zominthos:* A73; A146; A162; A163; A164.

**R12-101** (Pl. 10; A163; C5.2007; 1988; Room 12; Unit 70) Beaked Jug; FF 2; FW 2a; reddish yellow (5YR7/8-7.5YR7/8); ca. 35% pres.; no complete profile; mended from frgs.; partly restored; handle, spout, parts of body and base missing; H.: 10.0 pres.; Diam.max.: 17.5 pres.; Diam. Base: 6.2; Diam. Rim:-; Diam. Handle:-; Diam. Spout:-; Th.: 0.4-0.7.

*Description:* wheel-made; rillings on int.; wet-smoothed; self-slipped; neck-moulding; Base: straight; Body: ogival w. high max. Diam.; Rim:-; Handle:-; Spout:-.

*Comment:* rel. regularly shaped jug; slight irregularities on surfaces; very fragmented; upper body and neck from same vessel but not joining; surface worn; possibly few traces of dark color on ext.

*Parallels from Zominthos:* A73; A146; A121; A162; A164.

### Ewers

**R12-081** (Pl. 11; A270; D8; 1988; Room 12; Unit ?) Ewer; MC 2; MCW 2d or 2a; yellow (10YR7/6); ca. 75% pres., restored profile, mended from frgs., partly restored; H.: 28.8; Diam.max.: 14.7; Diam. Base: 9.4; Diam. Rim: - ; Diam. Handle: - ; Th.: 0.6-1.1.

*Description:* wheel-made; unpronounced rillings on ext.; traces of smoothing; slightly wet-smoothed; self-slip (thin); probably monochrome black coating (10YR2.5/1) on ext.; Base: concave-slightly uneven; straight; Body: elongated ogival w. high max. Diam.; Rim: restored, probably everted; Handle: restored, probably solid strap-like handle.

*Comment:* rel. regularly shaped ewer; irregularities on surfaces and base; fragmented; traces of color at neck and on lower body.

*Parallels from Zominthos:* A120; A43; A81; A293; A36.

**R12-082** (Pl. 11; A120; D9; 1988; Room 12; Unit ?) Ewer; CF 1; CW 1b; pink (core 7.5YR7/4, near surface and surfaces 7.5YR8/4); ca. 85% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 22.5; Diam.max.: 12.3; Diam. Base: 6.4; Diam. Rim: 6.7; Diam. Handle: 0.9x2.2; Th.: 0.5-0.7.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; slightly wet-smoothed; self-slip (thin); Base: even-slightly concave; Body: elongated ogival w. high max. Diam.; Rim: everted; Handle: strap handle.

*Comment:* body and rim warped; irregularities on surfaces; coarse fabric w. thin self-slip; slip rel. well pres.

*Parallels from Zominthos:* A270; A43; A81; A293; A36.

**R12-083** (Pl. 11; A43; D10; 1988; Room 12; Unit ?) Ewer; FF 2; FW 2b; reddish yellow (7.5YR7/8); ca. 95% pres., complete profile, mended from frgs., parts of body restored; H.: 24.1; Diam.max.: 12.5; Diam. Base: 6.5; Diam. Rim: 6.4-6.8; Diam. Handle: 1.1x1.5; Th.: 0.5-0.8.

*Description:* wheel-made; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped (7.5YR8/4); Base: concave; raised; Body: elongated ogival w. high max. Diam.; Rim: everted; Handle: solid w. oval section.

*Comment:* regularly shaped ewer; slight irregularities on surfaces; very fragmented; very smooth surface.

*Parallels from Zominthos:* A120; A270; A81; A293; A36.

**R12-084** (Pl. 11; A81; D11; 1988; Room 12; Unit ?) Ewer; FF 3; FW 3a; pale yellow (2.5YR8/4); ca. 100% pres., complete profile, mended from frgs., small parts of body restored; H.: 21.6; Diam.max.: 11.8; Diam. Base: 5.2; Diam. Rim: 7.2; Diam. Handle: 0.9x2.1; Th.: 0.5-1.2.

*Description:* wheel-made; rillings on ext.; traces of smoothing; wet-smoothed; self-slipped; Base: slightly concave; raised; Body: elongated ogival w. high max. Diam.; Rim: everted; Handle: strap-like handle.

*Comment:* regularly shaped ewer; rel. small; well smoothed; very slight irregularities on surfaces; very fragmented.

*Parallels from Zominthos:* A120; A43; A270; A293; A36.

**R12-085** (Pl. 11; A293; D12; 1988; Room 12; Unit 126) Ewer; FF 2; FW 2b; reddish yellow (7.5YR7/8); ca. 95% pres., restored profile, mended from frgs., rim and handle restored; H.: 19.8; Diam.max.: 13.3; Diam. Base: 5.6-5.8; Diam. Rim: - ; Diam. Handle: - ; Th.: 0.4-1.4.

*Description:* wheel-made; rillings on ext.; elliptical striations underneath; traces of smoothing and brush strokes; smoothed; real slip (yellow 10YR8/6); Base: concave; raised; Body: ogival w. high max. Diam.; Rim: everted; Handle: restored as strap-like handle.

*Comment:* regularly shaped ewer; slight irregularities on surfaces; slip well pres.

*Parallels from Zominthos:* A120; A43; A81; A270; A36.

**R12-086** (Pl. 11; A273; D13; 1988; Room 12; Unit ?) Ewer; FF 2; FW 2d; reddish yellow (7.5YR6/6); ca. 75% pres., complete profile, mended from frgs., parts of body, rim and handle restored; H.: 32.0; Diam.max.: 19.2; Diam. Base: 9.6; Diam. Rim: 11.2; Diam. Handle: 2.35; Th.: 0.9-1.1.

*Description:* wheel-made; traces of smoothing; wet-smoothed; self-slipped; polychrome painted decoration on ext.; black (7.5YR2.5/1) tortoise shell ripple pattern on shoulder and lower part of body; 4 solid black bands on base and body; black coating on neck and rim; 2

thin, reddish brown (5YR6/8) solid bands on body; Base: concave; raised; Body: ogival w. high max. Diam.; Rim: everted; Handle: restored w. round section.

*Comment:* rel. regularly shaped ewer; slight irregularities on surface; pronounced neck-moulding; additional rivet where handle joins rim; polychrome decoration; color rel. well pres.

*Parallels from Zominthos:* -

**R10-037** (Pl. 12; A36; C48; 1986; Room 10; Unit 4) Ewer; FF 2; FW 2b; reddish yellow (core and near surface 7.5YR7/8, surfaces 7.5YR7/6); ca. 70% pres., no complete profile, mended from frgs., parts of body, rim and handle missing; H.: 20.5; Diam.max.: 13.3; Diam. Base: 5.9; Diam. Rim: - ; Diam. Handle: - ; Th.: 0.4.

*Description:* wheel-made; rillings on int.; unpronounced rillings on ext.; traces of smoothing; smoothed; self-slip on int.; real slip (10YR8/4) on ext.; Base: slightly concave; low raised; Body: ogival w. high max. Diam.; elongated; Rim: lost; Handle: lost.

*Comment:* regularly shaped vessel; upper part lost; sev. unmended frgs. remaining; slip well pres.

*Parallels from Zominthos:* A120; A43; A81; A293; A270.

### Miscellaneous Jugs

**R12-087** (Pl. 12; A45; D14, C6.2007; 1988; Room 12; Unit ?) Jug; FF 3-4; FW 3d-4d or 3a-4a; pink-very pale brown (near surface 5YR7/4, surfaces 10YR7/4); ca. 95% pres., complete profile, mended from frgs., handle restored; H.: 13.3; Diam.max.: 9.4; Diam. Base: 4.8; Diam. Rim: 3.6; Diam. Handle: - ; Th.: 0.2-0.3.

*Description:* wheel-made; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; possibly monochrome black coating (10YR2.5/1) on ext., but too faint to be certain; Base: concave; low raised; Body: rounded w. low max. Diam.; carination at neck; cylindrical-conical neck; Rim: everted; Handle: lost.

*Comment:* regularly shaped jug; slight irregularities on surfaces; slip mostly worn off; color pres. in very faint traces only.

*Parallels from Zominthos:* -

**R10-038** (Pl. 12; no field no.; A49; 1986; Room 10; Unit 2) Jug or Ewer ?; FF 2-3; FW 2a-3a; reddish yellow (core and near surface 7.5YR8/6, surfaces 10YR7/6); ca. 20% pres., no complete profile, mended from frgs., large parts of body missing; rim and handle missing; H.: 4.6-7.6 pres.; Diam.max.: - ; Diam. Base: 4.7; Diam. Rim: - ; Diam. Handle: - ; Th.: 0.4-0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; Base: uneven; raised; Body: ogival w. high max. Diam.; Rim: lost; Handle: lost.

*Comment:* only lower part of vessel pres.; central pimple.

*Parallels from Zominthos:*

**R15-003** (Pl. 12; A23; C47; 1988; Room 15; Unit 35) Jug; FF 1-2; FW 1b-2b; reddish yellow (core and near surface 5YR7/6-6/6, surfaces 7.5YR7/6-7/8); ca. 50% pres., complete profile, mended from frgs., parts of body and rim missing; H.:16.6; Diam.max.: 13.6; Diam. Base. 6.0; Diam. Rim: - ; Diam. Handle: - ; Th.: 0.3-0.5.

*Description:* wheel-made; rillings on int. and ext.; elliptical straitions underneath; traces of smoothing; smoothed; real slip (7.5YR7/8) on int. and ext.; Base: slightly concave; low raised; Body: ogival w. high max. Diam.; Rim: collar-like neck; slightly inverted; Spout: shallow, everted.

*Comment:* regularly shaped jug; central pimple; slight irregularities on surfaces and base; thin walls; heavily fragmented; sev. non-joining frgs. remaining.

*Parallels from Zominthos:* -

**R15-004** (Pl. 12; A28; C44; 1988; Room 15; Unit 35 or 52 ?) Jug; FF 4; FW 4d; light brown (7.5YR6/4-7/4); ca. 75% pres., complete profile, mended from frgs., parts of body and rim missing; H.: 13.9; Diam.max.: 13.0; Diam. Base: 5.8; Diam. Rim: est. 9.5; Diam. Handle: 0.6x2.0; Th.: 0.2.

*Description:* wheel-made; traces of brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: concave; straight; Body: rounded; Rim: straight; Handle: fragmented; attachment to vessel uncertain; solid w. oval section.

*Comment:* regularly shaped jug; very thin walls; very well smoothed; sev. non-joining frgs. remaining, color well pres.

*Parallels from Zominthos:* -

### Bowls

**R12-088** (Pl. 13; A231; C21; 1988; Room 12; Unit 115) Deep Bowl; CF 1; CW 1c; reddish yellow (7.5YR8/6); ca. 40% pres., complete profile, mended from frgs., parts of body and rim missing; H.: 8.5; Diam.max.: - ; Diam. Base: 7.3; Diam. Rim: - ; Th.: 0.5-0.7.

*Description:* wheel-made; rillings on int. and ext.; traces of smoothing; wet-smoothed; self-slip (thin); monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: uneven; straight; Body: straight; Rim: everted w. lip.

*Comment:* rel. regularly shaped bowl; body slightly warped; central pimple; irregularities and protruding grits on surfaces; color rel. well pres.

*Parallels from Zominthos:* -

**R12-089** (Pl. 13; A314; C29; 1988; Room 12; Unit ?) Shallow Bowl; FF 2; FW 2b; reddish yellow (7.5YR7/6); ca. 95% pres., complete profile, mended from frgs., small parts of base and rim restored; H.: 4.1-4.7; Diam.max.: 14.0; Diam. Base: 4.7; Diam. Rim: 14.0; Th.: 0.5-0.6.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; real slip (7.5YR8/4) on int. and ext.; Base: slightly concave; straight; Body: slightly flaring; Rim: everted.

*Comment:* regularly shaped bowl; rim slightly warped; central pimple; slight irregularities on surfaces; circular incisions on int.

*Parallels from Zominthos:* A49.

**R12-090** (Pl. 13; A49; B11; 1988; Room 12; Unit ?) Shallow Bowl; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 95% pres., complete profile, mended from frgs., small parts of body and rim restored; H.: 3.4; Diam.max.: 12.3; Diam. Base: 3.9; Diam. Rim: 12.3; Th.: 0.4.

*Description:* wheel-made; unpronounced rillings on int. and ext.; elliptical striations underneath; traces of smoothing and brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: straight; Rim: straight.

*Comment:* rel. regularly shaped bowl; body and rim slightly warped; central pimple; slight irregularities on surfaces; color well pres.

*Parallels from Zominthos:* A314.

## Tray

**R12-091** (Pl. 13; A39; D15; 1988; Room 12; Unit 28 or 70 ?) Tray; MC 2; MCW 2d; reddish yellow (core 5YR7/6, near surface and surfaces 7.5YR7/6); ca. 70% pres., complete profile, mended from frgs., parts of base, body and rim restored; H.: 4.0-4.2; Diam.max.: 22.5; Diam. Base: 18.5-19.0; Diam. Rim: 22.5; Th.: 0.6-0.9.

*Description:* wheel-made; rillings on int.; traces of smoothing; slightly wet-smoothed; self-slip (thin); monochrome black coating (7.5YR2.5/1) on ext.; Base: slightly concave; straight; Body: straight; Rim: straight.

*Comment:* regularly shaped tray; irregularities and protruding grits on surfaces; fragmented; color well pres.

*Parallels from Zominthos:* -

### Milk Jugs

**R12-092** (Pl. 13; A227; C6; 1988; Room 12; Unit 115) Milk Jug; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 90% pres., complete profile, mended from frgs., partly restored, handle missing; H.: 6.7-7.0; Diam.max.: 5.1; Diam. Base: 3.6; Diam. Rim: 3.9-4.0; Diam. Handle: - ;Th.: 0.5.

*Description:* wheel-made; spiral-like rillings on int.; traces of brush strokes; wet-smoothed; self-slipped (thin); monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: concave; straight; Body: ogival – s-shaped; Rim: everted; Handle: lost.

*Comment:* rel. regularly shaped vessel; color rel. well pres.

*Parallels from Zominthos:* A149; A110; A122; A4.

**R12-093** (Pl. 13; A110; A17; 1988; Room 12; Unit ?) Milk Jug; FF 2; FW 2d; reddish yellow (core 7.5YR7/8, surfaces 7.5YR7/6); ca. 100% pres., tiny part of rim missing; H.: 6.2-6.4; Diam.max.: 4.8; Diam. Base: 3.3; Diam. Rim: 3.8; Th.: 0.4.

*Description:* wheel-made; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; low raised; Body: piriform; Rim: everted.

*Comment:* rel. regularly shaped vessel; rim slightly warped; slight irregularities on surfaces; color pres. in some parts only.

*Parallels from Zominthos:* A149; A227; A122; A4.

**R12-094** (Pl. 13; A122; D16; 1988; Room 12; Unit 70) Milk Jug (?); CF 1; CW 1; grey-weak red (core 2.5YR5/1, near surface and int. surface 2.5YR5/2, ext. surface 2.5YR5/8); ca. 80% pres., rim and upper part of vessel missing, surface badly worn; H.: pres. 5.7; Diam.max.: 4.2; Diam. Base: 2.0; Diam. Rim: - ; Th.: 0.6.

*Description:* possibly wheel-made (?); surface too worn to extract further information; Base: very uneven; Body: piriform; Rim: -.

*Comment:* coarse fabric; surface totally worn off, in places down to core; uncertain whether milk jug or not.

*Parallels from Zominthos:* A149; A110; A227; A4.

**R11-008** (Pl. 13; A149; B23; 1988; Room 11; Unit 83) Milk Jug; FF 2; FW 2d; reddish yellow (7.5YR7/6); 100% pres.; H.: 7.0-7.3; Diam.max.: 5.3; Diam. Base: 3.0; Diam. Rim: 3.4; Th.: 0.4.

*Description:* wheel-made; rillings on ext.; elliptical striations underneath; traces of smoothing or brush strokes; smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on ext. and possibly also on int.; Base: slightly concave; low raised; Body: piriform; Rim: slightly everted.

*Comment:* rel. regularly shaped vessel; body slightly warped; irregularities on surfaces; color pres. in traces only.

*Parallels from Zominthos:* A227; A110; A122; A4.

**R10-039** (Pl. 13; A4; C16; 1986; Room 10; Unit 2) Milk Jug; FF 2; FW 2d; reddish yellow (7.5YR7/6); ca. 95% pres., complete profile, mended from 2 frgs.; H.: 7.3; Diam.max.: 5.3; Diam. Base: 3.5; Diam. Rim: 4.1; Th.: 0.5.

*Description:* wheel-made; unpronounced rillings on ext.; elliptical striations underneath; traces of smoothing; wet-smoothed; self-slipped; black splashes (7.5YR2.5/1) on ext.; Base: slightly concave; high raised; Body: piriform; Rim: everted.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; slight irregularities on surfaces; color rel. well pres.

*Parallels from Zominthos:* A149; A110; A122; A227.

### Lekanis

**R12-095** (Pl. 13; A30; D17; 1988; Room 12; Unit 28) Lekanis (Vessel for industrial use); CF 1; CW 1c; reddish yellow (core 7.5YR6/8, near surface and surfaces 7.5YR7/6); ca. 75% pres., complete profile, mended from frgs., partly restored; H.: 14.3; Diam.max.: ca. 42; Diam. Base: 21.0; Diam. Rim: ca. 42; Diam. Handle: 1.5x1.7; Th.: 0.7-0.9.

*Description:* wheel-made; rillings on int. and ext.; unsmoothed; unslipped; monochrome reddish yellow coating (5YR6/8) on int. and rim; central mushroom-like application of unknown function; Base: slightly uneven; straight; Body: slightly flaring; Rim: everted w. lip; Handle: horizontal handles w. round section; Spout: irregularly u-shaped spout.

*Comment:* Lekanis-like vessel of unknown function; probably for industrial use (dairy products); body and rim warped; irregularities on surface; color rel. well pres.

*Parallels from Zominthos:* A31.

**R12-096** (Pl. 14; A31; D18; 1988; Room 12; Unit 28) ) Lekanis (Vessel for industrial use); CF 1; CW 1c; reddish yellow (core and near surface 5YR6/8, surfaces 7.5YR6/8-7/8); ca. 80% pres., complete profile, mended from frgs., partly restored; H.: 14.7-15.0; Diam.max.: 36.4; Diam. Base: 20.5; Diam. Rim: 36.0-36.4; Diam. Handle: 1.7x1.9; Th.: 0.7-0.9.

*Description:* wheel-made; unpronounced rillings on int.; unsmoothed; unslipped; possibly monochrome black coating (7.5YR2.5/1) on int. and ext.; central mushroom-like application of unknown function; Base: slightly uneven; straight; Body: flaring; Rim: everted w. lip; Handle: horizontal handles w. round section; Spout: irregularly u-shaped spout.

*Comment:* Lekanis-like vessel of unknown function; probably for industrial use (dairy products); body and rim warped; lower central application as A30; fragmented; many non-joining frgs. remaining; color pres. in sparse traces only.

*Parallels from Zominthos:* A30.

**R12-102** (Pl. 14; A117; C3.2007, C3.1.2007; 1988; Room 12; Unit 70) Lekanis; CF 2; CW 3c; reddish yellow (5YR6/8-7/8); ca. 15% pres.; no complete profile; mended from 6 frgs.; H.: 19.5 pres.; Diam.max.: -; Diam. Base: -; Diam. Rim: -; Diam. Handle: 2.5; Th.: 1.1-1.3.

*Description:* wheel-made; wet-smoothed; traces of smoothing on int. and ext.; rillings on int.; real slip (7.5YR8/6) on int. and ext.; painted decoration of black (5YR2.5/1) running spirals w. disc center, pendant semi-circles below rim band, solid black coating on handles; possibly black coating on int. (?); Base: -; Body: rel. straight-slightly curving; Rim: everted w. elaborated rim profile; Handle: horizontal w. solid, oval section.

*Comment:* rel. regularly shaped open vessel; irregularities on surfaces; surfaces chipped in some places; painted decoration rather carelessly done; most of Rim and Body missing; Base completely missing; traces of fingerprints on surfaces.

*Parallels from Zominthos:* -.

**R10-040** (Pl. 14; A54; C45; 1986; Room 10, Unit 4) Lekanis; CF 1; CW 1c; reddish yellow (5YR6/8-7/6); ca. 60% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 12.8-13.4; Diam.max.: 24.9; Diam. Base: 15.0; Diam. Rim: 22.0-24.9; Diam. Handle: 2.2x4.5; Th.: 0.5-0.8.

*Description:* wheel-made; rillings on int.; traces of smoothing; wet-smoothed; self-slip (thin); black splashes (5YR2.5/1) on ext.; Base: slightly uneven-concave; straight; Body: straight; Rim: everted w. lip; Handle: 2 horizontal lugs.

*Comment:* rel. regularly shaped vessel; rim warped; irregularities on surfaces; very fragmented; color pres. in traces only.

*Parallels from Zominthos:* - (A30, A31).

### Pithos

**R12-097** (Pl. 15; A106; D19; 1988; Room 12; Unit ?) Pithos; CF 3; CW 3a; reddish yellow (core and near surface 5YR7/6, surfaces 5YR7/8); only base pres., mended from 3 frags.; H.: pres. 8.0; Diam.max.: 30.5; Diam. Base: 30.0-30.5; Th.: 1.0-2.5.

*Description:* wheel-made; rillings on int.; slightly smoothed on ext; self-slip (thin) on ext.; Base: concave; straight.

*Comment:* only base of pithos pres.; int. of base very uneven (numerous dents); probably in secondary use (regular line of breakage).

*Parallels from Zominthos:* -

### Pyxis

**R12-098** (Pl. 15; A187; A26; 1988; Room 12; Unit 70) Pyxis; MC 1-2; MCW 1d-2d; reddish yellow; only 1 rim frg. pres. (8.6x8.9x1.1); Diam.max.: est. 28.5; Diam. Rim: est. 23.0; Th.: 1.1.

*Description:* wheel-made; slightly smoothed; monochrome black coating (5YR2.5/1) on ext. except rim; carination below rim; Body: straight; Rim: inverted.

*Comment:* only 1 rim frg. pres.

*Parallels from Zominthos:* -

Karpodochos

**R13-002** (Pl. 15; A11; C46; 1988; Room 13; Tom. 2; Unit 21) Karpodochos; CF 1; CW 1d; red (2.5YR5/8); ca. 90% pres., complete profile, mended from frgs., parts of body and rim restored; H.: 16.0-16.8; Diam.max.: 22.8; Diam. Base: 12.9; Diam. Rim: 20.2; Th.: 0.7-1.7.

*Description:* wheel-made; unpronounced rillings on int. and ext.; traces of smoothing; slightly smoothed; unslipped; monochrome black coating (5YR2.5/1) on int. and ext.; Base: high-footed; hollow; Body: straight; carination above foot; Rim: everted w. lip.

*Comment:* rel. regularly shaped vessel; body and rim slightly warped; irregularities and protruding grits on surfaces; “cooking-ware” fabric; color rel. well pres.

*Parallels from Zominthos:* -

Brazier Lid

**R12-099** (Pl. 16; A91; C30; 1988; Room 12; Unit 70) Brazier Lid; MC 1; MCW 1b w. dark coating; red (2.5YR5/8); ca. 75% pres., complete profile, mended from frgs., partly restored; H.: 5.3; Diam.max.: 18.3; Diam. Base: -; Diam. Rim: 18.3; Th.: 0.5-0.6.

*Description:* wheel-made, traces of smoothing; wet-smoothed; self-slip (thin); monochrome black coating (2.5YR2.5/1) on int. and ext.; vessel to be put on top of larger open vessel; large hole in center and 14 small piercings around it; additional ring of clay around central hole, probably remains of interior bulb(?).

*Comment:* slightly warped; slight irregularities on surfaces; vessel has no base and needs to be put on top of other vessel to function.

*Parallels from Zominthos:* -

Open Vessel

**R13-004** (Pl. 16; A34; B34; 1988; Room 13; Unit 49) Open Vessel; FF 2; FW 2d; reddish yellow (7.5YR7/6); only lower part of vessel pres., mended from frgs., large parts of body and rim missing; H.: pres. 5.1-5.4; Diam.max.: pres. 11.7; Diam. Base: 5.7; Diam. Rim: ?; Th.: 0.6.

*Description:* wheel-made; rillings on int.; elliptical striations underneath; traces of smoothing and brush strokes; wet-smoothed; self-slipped; monochrome black coating (7.5YR2.5/1) on int. and ext.; Base: slightly concave; straight; Body: straight (in lower part); Rim: ?

*Comment:* probably Jug or large bowl ?; regularly shaped; massive central pimple; color pres. in traces only.

*Parallels from Zominthos:* -

Rython

**R12-103** (Pl. 16; A55; C1.2007; 1988; Room 12; Unit 70) Conical Rython; FF 2; FW 2d; reddish yellow (5YR7/6); ca. 35% pres.; no complete profile; only lower body pres.; entire upper body and rim missing; handle missing; mended from 9 frgs.; H.: 14.3 pres.; max. Diam.: 8.8 pres.; Diam. Base:-; Diam. Rim:-; Th.: 0.4-0.6.

*Description:* wheel-made; pronounced rillings on int.; wet-smoothed; self-slipped; painted decoration of solid dark bands and tortoise shell ripple pattern (very fine, possibly by use of multiple brush ?) on ext.; conical body (Koehl's Type III CV); bottom pierced by hole of 0.8 Diam.

*Comment:* regularly shaped conical rython; ext. surface chipped in few places; painted decoration rather carelessly executed, esp. the solid bands.

*Parallels from Zominthos:-.*

Potters' Wheel

**R12-104** (Pl. 17; A102; C4.2007, C4.1.2007; 1988; Room 12; Unit 70) Potters' Wheel; CF 2; CW 3a or possibly 3c; reddish yellow on surface (5YR 6/6), red near surface (2.5YR?/?); 100% pres., only few chips missing; complete profile; H.: 7.0; Diam.max.: 44.0; Diam. Socket: 2.7; Depth Socket: 3.4.

*Description:* roughly smoothed; Evely Type 3c Flywheel w. heavy projecting rim; 8 circular ridges underneath; Socket incised w. irregular lines and impressed holes; flat top, slightly raised; pierced in outer area; vertical grooves on upper half of exterior rim; upper half possibly with dark monochrome (5YR2.5/1) coating.

*Comment:* regularly shaped; well preserved; coarse fabric w. protruding grits.

*Parallels from Zominthos:-.*

Appendix: Fragments

The following appendix contains short descriptions of several decorated vessel fragments from Zominthos in order to present the full spectrum of designs encountered at the site. In most cases a definite attribution to a certain vase shape is not possible. The sherds are thus mostly ascribed to open or closed vessels, indicating their exact position whenever recognizable. No exact information on fabrics and wares can here be given since the excavation notebooks were inaccessible at the time when this appendix was written.

**Unit 12, 1988-001** (Pl. 18); Bodysherd; Dim. ca. 13.5cm x 8.0cm x 1.0cm; large, closed vessel, possible jug or jar; painted decoration of running spirals in upper register, s-lines in lower register on exterior; dark monochrome paint; interior left plain.

**Unit 70, 1988-001** (Pl. 18); Bodysherd; Dim. ca. 11.0cm x 6.0cm x 1.0cm; large closed vessel; incised decoration of L-curving lines and irregular small impressions on exterior; only fragment with this kind of decoration within the entire assemblage.

**Unit 70, 1988-002** (Pl. 18); Bodysherd; Dim. ca. 7.2cm x 5.6cm x 0.6cm; closed vessel, possibly jug or jar; painted decoration of solid dark, monochrome bands and trickles on exterior; interior left plain.

**Unit 70, 1988-003** (Pl. 18); Bodysherd; Dim. ca. 4.2cm x 3.8cm x 0.4cm; closed vessel (?); dark monochrome coating on exterior with plastic dents (ca. 1.0cm x 1.0cm) that may imitate a conglomerate pattern, thin incised lines below; interior left plain; must belong to same vessel as Unit 115, 1988-002.

**Unit 70, 1988-004** (Pl. 18); Bodysherd; Dim. ca. 6.5cm x 9.0cm x 0.9cm; storage jar or pithos (?); very straight profile; decorated with monochrome dark trickle pattern on exterior; interior left plain.

**Unit 70, 1988-005** (Pl. 18); Bodysherd; Dim. ca. 6.5cm x 4.6cm x 0.4-0.5cm; closed vessel, possibly jug or jar; curving profile; decorated with solid dark monochrome band on exterior; interior left plain.

**Unit 70, 1988-006** (Pl. 18); Bodysherd; Dim. ca. 5.2cm x 3.4cm x 0.5cm; slightly curving profile; closed vessel, possibly small jug or jar; decorated with frieze of running spirals with solid center; interior left plain.

**Unit 70, 1988-007** (Pl. 18); Bodysherd; Dim. ca. 5.1cm x 5.4cm x 0.7cm; slightly curving profile; closed vessel (?), storage jar (?); decorated with dark, monochrome trickle pattern on exterior; interior left plain.

**Unit 70, 1988-008** (Pl. 19); Rimfragment (two joining frags.); Dim. ca. 7.5cm x 7.0cm x 0.5-0.6cm; open vessel, possibly bowl (?); straight – slightly curving profile; decorated with short incised lines along rim and painted dark, monochrome object (possibly resembling a sun disc or an eye) on exterior.

**Unit 70, 1988-009** (Pl. 19); Bodysherd; Dim. ca. 4.5cm x 4.0cm x 0.5cm; closed vessel; possibly jug or jar; decorated with solid dark, monochrome bands and possibly trickle pattern or loops on exterior; interior left plain.

**Unit 70, 1988-010** (Pl. 19); Rimfragment; Dim. ca. 6.3cm x 3.0cm x 0.4-0.5cm; open vessel, possibly bowl with everted rim; rounded profile; decorated with solid dark, monochrome band below rim on exterior, dark, monochrome coating on interior.

**Unit 70, 1988-011** (Pl. 19); Rimfragment; Dim. ca. 1.9cm x 1.4cm x 0.4cm; open vessel, hemispherical cup (?); slightly everted rim; decorated with thin solid dark band along rim and reed pattern on exterior; interior left plain; may belong to same vessel as Unit 70, 1988-012.

**Unit 70, 1988-012** (Pl. 19); Rimfragment; Dim. ca. 3.4cm x 2.4cm x 0.4cm; open vessel, hemispherical cup (?); slightly everted rim; decorated with thin solid dark band along rim and reed pattern on exterior; interior left plain; may belong to same vessel as Unit 70, 1988-011.

**Unit 70, 1988-013** (Pl. 19); Bodysherd; Dim. ca. 1.5cm x 1.7cm x 0.4cm; open vessel (?), possibly cup (?); very rounded profile; decorated with dark spiral on exterior; interior left plain; may belong to same vessel as Unit 70, 1988-014.

**Unit 70, 1988-014** (Pl. 19); Bodysherd; Dim. ca. 1.9cm x 1.5cm x 0.4cm; open vessel (?), possibly cup (?); very rounded profile; decorated with dark spiral on exterior; interior left plain; may belong to same vessel as Unit 70, 1988-013.

**Unit 70, 1988-015** (Pl. 19); Rimfragment; Dim. ca. 1.9cm x 2.0cm x 0.4cm; open vessel, possibly hemispherical cup; slightly rounded profile; slightly inverted rim; decorated with dark parallel lines (shell ripple pattern ?) on exterior; interior left plain.

**Unit 70, 1988-016** (Pl. 19); Rimfragment; Dim. ca. 2.3cm x 1.8cm x 0.6cm; open vessel, possibly bowl with everted rim; straight profile; decorated with solid dark monochrome band along rim on exterior; interior left plain.

**Unit 70, 1988-017** (Pl. 19); Bodysherd; Dim. ca. 2.9cm x 2.0cm x 0.3-0.4cm; open vessel, possibly cup (?); slightly rounded profile; decorated with dark loop (?) on exterior; interior covered with monochrome dark coating.

**Unit 70, 1988-018** (Pl. 19); Bodysherd; Dim. ca. 3.0cm x 3.2cm x 0.4cm; closed vessel (?), possibly small jug or jar (?); rel. straight profile; decorated with two parallel solid dark bands above register with reed pattern on exterior; interior left plain.

**Unit 70, 1988-019** (Pl. 19); Bodysherd; Dim. ca. 5.5cm x 3.2cm x 0.4cm; closed vessel, possibly jug or jar; slightly rounded profile; decorated with dark spiral on exterior; interior left plain.

**Unit 70, 1988-020** (Pl. 20); Rimfragment; Dim. ca. 5.2cm x 4.3cm x 0.4cm; probably hemispherical cup; slightly rounded profile; decorated with thin solid dark bands along rim and reed pattern on exterior; interior left plain; may belong to same vessel as Unit 70, 1988-011 and -012.

**Unit 76, 1988-001** (Pl. 20); Bodysherd; Dim. ca. 4.0cm x 5.9cm x 0.6cm; closed vessel (?), possibly jug or jar; slightly rounded profile; decorated with dark spirals (very probably with interconnected crocus flowers as on Unit 76, 1988-003) on exterior; interior left plain; may belong to same vessel as Unit 76, 1988-003.

**Unit 76, 1988-002** (Pl. 20); Rimfragment; Dim. ca. 7.3cm x 6.0cm x 0.4cm; hemispherical cup/in-and-out bowl with straight rim; decorated with tortoise shell ripple pattern on exterior and parallel solid dark bands on interior.

**Unit 76, 1988-003** (Pl. 20); Bodysherd; Dim. ca. 7.2cm x 10.2cm x 0.5-0.6cm; closed vessel, possibly jug or jar (?); slightly rounded profile; decorated with dark spirals with interconnected crocus flowers on exterior; interior left plain; may belong to Unit 76, 1988-001.

**Unit 115, 1988-001** (Pl. 20); Bodysherd; Dim. ca. 3.4cm x 3.9cm x 0.4cm; closed vessel (?), possibly small jug or jar; slightly rounded profile; decorated with frieze of running spirals of frescoe type on exterior; interior left plain.

**Unit 115, 1988-002** (Pl. 20); Bodysherd; Dim. ca. 5.5cm x 5.5cm x 0.4-0.5cm; closed vessel (?); straight profile; dark monochrome coating on exterior with plastic dents (ca. 1.0cm x 1.0cm) that may imitate a conglomerate pattern, thin incised lines below; interior left plain; must belong to same vessel as Unit 70, 1988-003.

**Unit 115, 1988-003** (Pl. 20); Bodysherd; Dim. ca. 2.0cm x 2.8cm x 0.3-0.4cm; closed vessel (?); rel. straight profile; decorated with s-lines above crescent shaped spots and solid bands on exterior; interior left plain.



## Chapter IV: Chronology

*“Archaeology today rightly emphasizes the primary importance of the formulation of hypotheses or models to explain long term processes, stable states, advances in complexity and discontinuities in past societies.”<sup>781</sup>*

Although expressed already almost 20 years ago by Warren and Hankey, this formulation of archaeology’s goals and scientific meaning still has lost nothing of its importance and topicality. Today, more than ever, interest in questions on the “way of ancient life” has taken the place of the admiration of magnificent artifacts of prehistoric cultures on both a scientific, and a public level. It is one of archaeology’s main challenges to provide answers to these questions. The achievement of the mentioned tasks is necessarily linked to reliable chronological information in order to synchronize the archaeological finds with socio-political, cultural, and historical data, which may then ultimately lead to the reconstruction of a greater picture of past societies and their development.<sup>782</sup>

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<sup>781</sup> Warren, Hankey 1989, 1.

<sup>782</sup> „Die wichtigste Voraussetzung zum geschichtlichen Verständnis der Alten Ägäis ist die Einordnung der sichtbaren Überreste und der erschließbaren Ereignisse in ein zeitlich kohärentes System.“ Schäfer 1998, 53.

Natural Sciences have been of paramount importance for the establishment of absolute dates in modern archaeology, but the development of relative sequences still largely depends upon pottery as “the archaeologist’s most important tool.”<sup>783</sup> The sheer abundance of Minoan ceramic material and its tendency towards chronologically determined alterations promote pottery as the basis for all relative sequences in the Aegean Bronze Age.<sup>784</sup> Thus, the following paragraphs have been dedicated to the study of several questions concerning the Relative Chronology of Late Minoan Crete and the role pottery played in its *design*. After a short introduction to the Minoan Relative Chronology and the chronological significance of pottery in general, the ceramic assemblage from Zominthos will be put into context and its chronological importance will be analyzed. The date of the final destruction of the Zominthian “Central Building” and its possible relations to wider destruction horizons and historical events, such as the Santorini eruption will be discussed afterwards. Finally few aspects of Absolute Chronology shall be considered, however, the lack of absolute dates from Zominthos does not allow more than few suggestive assumptions to be expressed. In conclusion a combined model of chronological aspects will be proposed, incorporating socio-historical, archaeological and regional data from several sites on Crete.

#### **IV.1 The Relative Chronology of Late Minoan Crete**

A “Relative Chronology” always seeks to create sequential periods of time in order to better understand developments and changes within a specific framework, for example a certain geographic region, regardless of absolute dates and the individual length of such periods. For prehistory, pottery, with its decorative as well as formative styles in particular, has proven to be the most reliable indicator for the passage of time, based on stratigraphy and stylistic analysis, as stated above. “Time” itself and the comprehension of time in archaeological research have mostly, but unjustifiably, been limited to the single, linear aspect of chronological ordering. Only recently, based on earlier theoretical approaches towards the understanding of time, has this view been challenged and attention has been drawn towards the multiple facets of time. But still “chronology represents a very particular view of time, as

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<sup>783</sup> Driessen, MacDonald 1997, 15.

<sup>784</sup> “The relative chronology of the Aegean BA must be based very largely on the evidence of pottery sequences, themselves based on a combination of stratigraphical evidence and stylistic analysis.” Dickinson 1994, 12.

a linear sequence.”<sup>785</sup> A view that oversimplifies and neglects important variables when reasons for, and results of change, that usually marks chronological phases, are observed and interpreted. “Consequently, it is argued that archaeological explanations of change should alter their focus from change per se to the rate of change - and even the changing rate of change.”<sup>786</sup> Such relevant aspects of time ought to be considered when chronological matters are discussed and especially when chronological schemes and sequences proposed. As Piggott pointed out: “Any enquiry into the past which does not reckon with the dimension of time is obviously nonsense.”<sup>787</sup> It is the chronologist’s task to consider these dimensions and integrate them into the construction of chronologies. I will refrain from taking these theoretical concerns any further at this point but I do think that it is important to recognize that time is more than a straight vector along which artifacts can be aligned, and that such concerns can contribute to a better understanding of archaeological remains and their historical interpretation. But let us now return to Crete and the Relative Chronology of the Minoan period.

The Cretan Relative Chronology is ultimately bound to Sir Arthur Evans and his discoveries at Knossos. The results of his excavations on the Kephala Hill south of Candia, modern day Iraklio, led to the first systematic organization of “Minoan” artifacts. Together with Mackenzie, his pottery specialist, Evans shaped the well-known tripartite chronological scheme that separated an Early, Middle, and Late Minoan Period, each one in itself subdivided in three phases, and firstly published only three years after the beginning of his excavations.<sup>788</sup> Working at the beginning of the 20<sup>th</sup> century, Evans and the interpretation of his finds were certainly influenced by various external circumstances and developments, but also by his “character and personal history”.<sup>789</sup> A fact that is also clearly mirrored by his chronological sequence. To him, the “triple division” was “in its very essence logical and scientific”, being based on the evolutionist theory of “rise, maturity and decay”, as well as the correlation with the Egyptian chronological sequence of the Old, Middle and New Kingdom (Table 7).<sup>790</sup> The discoveries of Schliemann at Troy, Myceane and Tiryns and his reference to Homer may also have inspired Evans in creating his picture of the “Minoan” civilization, introducing the “priest-king” or a “throne room”, all securely anchored in Greek mythology

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<sup>785</sup> Lucas 2005, 27.

<sup>786</sup> *Ibid.*, 17.

<sup>787</sup> Piggott 1959, 51.

<sup>788</sup> Mackenzie 1903; PM I, 25ff; see also Mirié 1979, 14-17.

<sup>789</sup> Fitton 1995, 117.

<sup>790</sup> PM I, 25; Schäfer 1998, 56-57.

and exhibited in the monumental opus “The Palace of Minos at Knossos”. But the terminology of Evans, as well as his chronological scheme created a number of problems that still occupy Aegean archaeologists today.

Before considering some of the major difficulties of Evans’ chronological sequence, it must be stated that he and Mackenzie did a remarkably good job in differentiating and ordering the pottery styles they encountered at Knossos, especially when taking into account what was then known about Cretan prehistory.<sup>791</sup> This is not the place to repeat the wide criticism of Evans’ chronology but some aspects of his methodology ought to be addressed in order to explain the need for a revised relative chronology for Minoan Crete. Evans himself stressed that his “classification of the Minoan culture into nine successive Periods does not rest merely on theoretical deductions as to the evolution and succession of types” but “rests on a mass of stratigraphical evidence”.<sup>792</sup> However, this stratigraphical evidence, best illustrated by the section in the West court, has been proven to be too schematic to produce secure results.<sup>793</sup> The calculations of Evans for the length of his periods as represented by geological strata were based on the assumption that the thickness of these strata correlated directly to a continuous amount of time passing by. But „Ein geologischer Ablauf, besonders die Akkumulation von Sedimenten (...), ist kein kontinuierlicher, stets gleich ablaufender Vorgang, der sich mit einer einfachen Gliederung (...) nachvollziehen läßt. [A geological process, especially the accumulation of sediments (...), is no continuous, ever similar event, that can be captured by a simple outline]“.<sup>794</sup> Thus the thickness of sediment layers does not automatically imply a certain length of time. Nevertheless, the impact of Evans’ sequence remained immense for a long period of archaeological research.<sup>795</sup> A second major problem in the scheme proposed by Evans is the equation of decorative pottery styles with periods of time (see below Chapter IV.2). “Stilistische Unterschiede bedeuten aber nicht sogleich auch chronologische Differenzen [Stylistic differences do not automatically mean chronological differences as well]”.<sup>796</sup> This is especially true, knowing that Evans’ deposits used to identify

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<sup>791</sup> Driessen, MacDonald 1997, 16; Brown 1983, 18-19.

<sup>792</sup> PM I, 28.

<sup>793</sup> Ibid., fig. 4.

<sup>794</sup> Schoch 1995, 51. Schoch presented a rough account of Minoan Chronology and some of the most important scholars dealing with the topic including Evans, Pendlebury, Matz, Schachermeyer, Marinatos and Platon however, he restricted himself to a wide criticism of their work without proposing new methods or ways of chronological research. [My translation].

<sup>795</sup> “The relative chronology of Late Minoan pottery was – and still is – primarily based on the stratification at Knossos”. Furumark 1941a, 78.

<sup>796</sup> Niemeier 1980, 6.

different styles (and therefore periods) were highly selective and often problematic.<sup>797</sup> His nomenclature for these styles from Early Minoan I to Late Minoan III remains to be used today and its understanding has been inevitable for the decipherment of archaeological literature dealing with Cretan prehistoric pottery ever since.<sup>798</sup> But as the archaeological investigation of Minoan Crete proceeded and many more sites were unearthed, it became clear that the relative sequence of pottery styles at Knossos was far too static and schematic as to be compatible with actual historic events, such as destructions, not just in different geographic areas on the island, but even at Knossos itself.<sup>799</sup> Several modifications and additions to Evans' scheme have been introduced over the more recent past but the labels and terms for the periods proposed by Evans continued to be employed, often for the sake of comprehensibility and a lack of alternatives.<sup>800</sup> The realization that Evans' chronological periods based on pottery styles did not correlate to the various destruction horizons at the palace of Knossos caused Platon to criticize this scheme: "L'inconvénient de ce système chronologique consistait dans le fait qu'il était basé exclusivement sur l'évolution de la céramique, donc les styles avaient servi pour départager les différentes périodes ou les phases d'après les grandes catastrophes qu'avaient nécessairement suivies les reconstructions des villes et des palais. Il est vrai toutefois que bien souvent le changement d'un style était l'indice d'une catastrophe, néanmoins un tel critère ne saurait être appliqué avec une rigueur absolue, compte tenu que, même après un grand bouleversement, le même style a pu substituer, et que, d'autre part, le style a pu changer sans l'intervention d'une catastrophe."<sup>801</sup> In conclusion he proposed a different chronological framework based on the architectural phases of the palaces, marked by widespread destruction evidence. Platon established four broad periods of Minoan prehistory: a "Prepalatial" period, a "Protopalatial" period (Old Palace period), a "Neopalatial" period (New Palace period), and a "Postpalatial" period, the last three periods again subdivided into three phases (Table 8).<sup>802</sup> Leaving the development of

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<sup>797</sup> Driessen, MacDonald 1997, 16.

<sup>798</sup> Schäfer 1998, 59.

<sup>799</sup> "The real break between the Middle and the Late Bronze Age exemplified by the earthquake at Knossos actually comes within the borders of what has always been called M.M.IIIb. No doubt if the original excavators had been gifted with prophetic knowledge of what they were going to find, they would have labeled the post-seismic M.M.IIIb pottery L.M. Ia." Pendlebury 1939, 180.

<sup>800</sup> Momigliano 2007, Table 0.1 lists the major modifications by various authors over the last 50 years; „Die kanonische, oft kritisierte Dreiteilung der Bronzezeit in frühe, mittlere und späte Perioden wird man nicht ohne triftige Gründe aufgeben, besonders dann nicht, wenn man nichts Besseres an ihre Stelle zu setzen weiß.[The canonical, often criticized tripartite division of the Bronze Age into an early, middle and late period will not be abandoned without serious reasons, especially if nothing better can be put in its place]" Buchholz 1987, 16.

<sup>801</sup> Platon 1956a, 510.

<sup>802</sup> Ibid., 512; Schoch 1995, 118: „Platon hat klar erkannt, daß die Hauptzäsuren, die Evans mittels der Keramikabfolge gesetzt hat, nicht den historischen Wandlungen des Untergangs der älteren und jüngeren Paläste

pottery styles aside, he created a wider frame for Cretan prehistory that resembled socio-historic events as turning points rather than changes in pottery ornamentation. This scheme was later also refined, adding a “Final Palatial” period between the “Neopalatial” and the “Postpalatial” periods.<sup>803</sup> However, it must be stated that this system only related to the Middle Minoan and beginning of Late Minoan periods, and was further linked with the assumption of several successive earthquake destructions on Crete, which may of course have been of different absolute date and affected different regions of the island.<sup>804</sup>

Nevertheless, this, admittedly rather broad, outline may serve as a suitable frame for a combination of both systems: the analysis of pottery styles and the recognition of archaeologically visible historic events, in order to create local sequences that visualize the connection of chronological periods and stylistic developments. A further step may then try to correlate individual site sequences on a wider regional scale and possibly throughout the entire island of Crete and beyond. A pioneering study trying to synchronize a wide geographic region has been presented by Parzinger, focusing on the Neolithic and Early Bronze Age periods.<sup>805</sup> He relied mainly on local horizons, based on intra-site stratigraphy to correlate the early cultures of eastern and south-eastern Europe, covering an area including the Aegean and Anatolia.<sup>806</sup> Such an enterprise must consider several aspects, especially those concerning the development of particular regional styles, the character of contexts and deposits, and influences on the archaeological record (see below Chapter IV.2). The scope of this work is too limited to produce a chart incorporating all prehistoric periods in all major Cretan sites (including their local sequence of constructions and destructions) but I will try to exemplarily illustrate the Knossian Relative sequence in a table that combines the chronological periods of socio-political continuity (Prepalatial, Protopalatial, Neopalatial, Final Palatial and Postpalatial), with feasible destruction horizons, decorative pottery styles, and deposits of each period (see Table 9).<sup>807</sup> This table intentionally omits arbitrary divisions of pottery styles since “It is impossible in practice to decide the exact point where one period ends and another

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zusammenfallen.[Platon has clearly recognized that the main caesures which Evans had established by the pottery sequence did not coincide with the historical changes of the end of the Old and New Palaces.]“

<sup>803</sup> Schäfer 1998, 59.

<sup>804</sup> Hood 1999, 382.

<sup>805</sup> Parzinger 1993.

<sup>806</sup> For Crete see *ibid.*, 184-189, Beilage 4.

<sup>807</sup> The deposits are taken from Momigliano 2007, the general Knossian sequence of destructions is taken from Driessen, MacDonald 1997, 17; see also Niemeier 1994, 74; Hatzaki put together a useful chart of the Neopalatial through Postpalatial periods in Knossos to which I largely refer with the Table presented in this work. See Hatzaki 2007, Table 5.4.

begins;”.<sup>808</sup> Looking at this chart one must keep in mind that no complete stratigraphic sequence of successive deposits at Knossos exists and that the cited pottery groups were unearthed in different parts of the palace and settlement of Knossos.<sup>809</sup> Thus, although highly probable, it represents merely a patchwork-sequence of the complicated history of the Knossos palace and town, without the claim of completeness or final correctness. (Much the same is true for the other important Minoan sites under discussion in the following paragraph.)

The idea of combining socio-historic periods, architectural phases and stratigraphic data with pottery styles in order to create local sequences is not new and has been employed at various sites on Crete, including Knossos, Phaistos and Malia. However, these studies were often restricted to certain periods, for example the Neolithic at Knossos. J.D.E. Evans distinguished ten strata in Area AC in the Central Court, covering the entire Neolithic period from EN (Early Neolithic) to LN (Late Neolithic).<sup>810</sup> He simply numbered the encountered strata from I to X, creating a useful system of terminology that referred to different horizons as “Knossos I/II” (LN) – “Knossos X” (EN), providing a fine subdivision for Arthur Evans’ and Duncan Mackenzie’s long Neolithic period.<sup>811</sup> For an example covering the Protopalatial Period, we can turn our attention to Phaistos where Levi proposed three main phases of the Old Palace Period (*I fase a, I fase b, II fase, III fase*).<sup>812</sup> These constructional phases were later restudied by Fiandra who also tried to correlate these architectural pieces of evidence with Levi’s original phases and Evans’ chronology based on pottery styles.<sup>813</sup> Levi’s last protopalatial phase, the “III fase protopalaziale”, has been shown to follow the destruction of the Old Palace and should thus better be referred to as the first Neopalatial phase at Phaistos.<sup>814</sup> Fiandra assigned two constructional phases to Levi’s “1 fase” (MM Ib and MM IIa), a third to “II fase” (MM IIb) following an earthquake destruction, and a fourth in “III fase” after a fire destruction (MM IIb –MM IIIa).<sup>815</sup> This correlation itself is also very schematic but attests the attempt to synchronize the chronological schemes of two major Minoan sites and shows that decorative styles need not coincide with architectural phases.

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<sup>808</sup> Hood 1999, 381.

<sup>809</sup> Niemeier 1994, 71-72.

<sup>810</sup> Evans 1964, 132-240.

<sup>811</sup> *Ibid.*, fig. 4.

<sup>812</sup> Levi, 1976.

<sup>813</sup> Fiandra 1961-1962, 125.

<sup>814</sup> Niemeier 1994, 71; Carinci 1989, 73-80.

<sup>815</sup> Fiandra 1961-1962, 125.

Another Minoan palatial site, Malia on the northern shore of central Crete, offers more information on both the Protopalatial as well as the Neopalatial periods. However, a single complete stratigraphic sequence does not exist at this site either.<sup>816</sup> The general socio-historic frame for Malia is also characterized by the division of an “*époque néolithique, prépalatiale, protopalatiale et néopalatiale*”. The subdivision of the Neopalatial period comprises three phases called “Phase II”, “Phase IIIA” and “Phase IIIB” based on the excavation results from Quartier E.<sup>817</sup> “Phase II” being contemporary with Evans’ MM III – LM IA, “Phase IIIA” with mature LM IA, and “Phase IIIB” with LM IB and LM II. New studies by Van de Moortel and Darcque carried out in the “Abords Nord-Est” have shown the existence of three architectural subphases in the Neopalatial period in combination with four ceramic styles.<sup>818</sup> The first two architectural phases both belong to the period when Early LM IA pottery was in use, postdating Pelon’s “Phase II”.<sup>819</sup> A third architectural modification was carried out in “very Late LM IA or Early LM IB” after a destruction in late LM IA and thus after Pelon’s “Phase IIIA”. The “very Late LM IA” pottery seems to belong to a post-Theran LM IA horizon.<sup>820</sup> A weakness of Van de Moortel’s and Darcque’s study certainly lies in the fact that they relied mostly on finds from fills and only few floor deposits.<sup>821</sup> The picture of the Protopalatial and Neopalatial relative sequences at Malia emerging from these new studies is as follows: The Old Palace was erected in the EM III – MM I transitional period and destroyed after MM IIB, a destruction horizon well attested in several Cretan sites. The New Palace was built immediately afterwards at the beginning of MM III. This building then underwent at least one more constructional phase in Early LM IA before it was again destroyed in mature or late LM IA. The final building phase of the palace followed after this catastrophe and it later came to a definite end in late LM IB.<sup>822</sup> Pelon finally suggested a LM II “reoccupation” of the “interieur des ruines du palais minoen”.<sup>823</sup> This situation is well comparable to that of other palatial centers, again proving that “architectural and ceramic phases do not necessarily coincide.”<sup>824</sup>

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<sup>816</sup> Van de Moortel, Darcque 2006, 177.

<sup>817</sup> Pelon 1970.

<sup>818</sup> See also Baurain, Darcque 1993, 671-675.

<sup>819</sup> Van de Moortel, Darcque 2006, 181.

<sup>820</sup> For the post-Theran LM IA pottery see also Warren 1999, 894.

<sup>821</sup> Van de Moortel, Darcque 2006, 185.

<sup>822</sup> Pelon 2005, 185-197; Van de Moortel, Darcque 2006, 177-188.

<sup>823</sup> Pelon 2006, 151.

<sup>824</sup> Van de Moortel, Darcque 2006, 185.

These selected examples may illustrate the complexity of local relative sequences and the limited value of pottery styles to define them. Instead of relying on decorative schemes, a combination of more than just pottery and its stylistic development must be employed to synchronize and correlate different sites within a broader frame of chronological periods and along certain detectable horizons. An extremely important fact to be kept in mind at all times is the lack of complete relative sequences at a single site which means that we are always looking at a combination of different sequences from different areas of an archaeological site. These areas are sometimes very small, trenches of few meters length only, and cannot explain events that may have affected entire settlements or even single buildings.<sup>825</sup> This is especially true for small-scale excavations within a very limited area of a larger site. However, it would be extremely unhelpful to disregard such results since they resemble one of the few pieces of information for us to reconstruct historic events and developments.

The lack of a wide chronological correlation of Cretan sites is certainly one of the main desiderata in Aegean Prehistory and can probably only be answered by carefully studied individual stratigraphies from large scale excavations, combined with a meticulous analysis of pottery development. The various authors of the KPH have collected a great number of contemporary deposits for each Knossian pottery group which can surely be regarded as an excellent basis for a revised relative chronological sequence stretching beyond the area of Knossos, correlating all geographic regions of Crete. However, until such a detailed chart of island-wide synchronisms exists, it may be advisable to refer to wider chronological periods rather than to sub-phases of decorative pottery styles when matters of dating and correlating different sites are concerned. In this respect, several aspects of pottery, its stylistic development, and important contextual questions come into play which will shortly be discussed in the following paragraph.

## **IV.2 The Chronological Significance of Pottery and How to Date Pottery Assemblages**

Before turning to the ceramic material itself, it is necessary to analyze a number of questions concerning the validity and limitations of chronological results that are based on pottery

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<sup>825</sup> “The extent of each destructive episode is not certain and is likely to have varied from house to house, floor to floor and room to room.” Driessen, MacDonald 1997, 17.

studies. These combine questions of a more general “Quellenkritik” and very specific aspects of contexts, find circumstances, and preservation as well as archaeological tradition, meaning not a tradition of methods and research, but the influences of post-depositional character.<sup>826</sup> So what is the chronological significance of pottery and how are we to date pottery finds?

I will start by shortly commenting on contextual questions, meaning the circumstances under which pottery assemblages were deposited and later found, and what implications can be retrieved from them. A central question when chronological information is sought concerns the nature of the deposit. As archaeologists we are usually dealing with either primary or secondary deposits, the latter being of only limited chronological value since they may often contain mixed material from several periods, or are frequently disturbed by later building activities or sometimes illicit excavations. Thus, only the primary deposits ought to be used when chronological questions are discussed. A relatively old but still appropriate definition of such a primary deposit was proposed by Oskar Montelius in 1903, forming a key argument in his typological method. A *primary deposit*, or a “geschlossener Fund”, is thus a deposit of things which have been discovered under circumstances that allow the assumption that all contents had been deposited at the same time, without later disturbances.<sup>827</sup> This does obviously only prove that these things had been deposited at the same time, which does not mean that they all have the same age. Some may be considerably older than others and just be deposited together, however, in most cases the contents of a primary deposit appears to consist of objects that are relatively contemporaneous. Exceptions to that rule exist of course and the question of the life-span of things, or in our case pottery, will be of interest again a little further below. The tradition of archaeological deposits and finds, meaning the archaeological record, depends on several factors including all aspects of preservation, post-depositional interferences, and the value and possibility of recycling an artifact.<sup>828</sup> Accordingly, what we perceive then as archaeological finds may either be the result of an intentional or accidental deposition, and there may well be a difference between the original, systemic context and the archaeological one.<sup>829</sup> This has also a possible chronological implication since we cannot automatically assume that what we see is a solidified portrait of

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<sup>826</sup> For a short explanation of what is meant by “Quellenkritik” see Eggers 2004, 256-257.

<sup>827</sup> Montelius 1903; “Ein Fund in dieser Meinung kann als die Summe von denjenigen Gegenständen angesehen werden, welche unter solchen Verhältnissen gefunden worden sind, daß sie als ganz gleichzeitig niedergelegt betrachtet werden müssen.“; Eggers 2004, 91.

<sup>828</sup> Sommer 1991, 55.

<sup>829</sup> Lucas 2005, fig. 2.1.

prehistoric reality.<sup>830</sup> Probably the best and chronologically most reliable situations producing primary deposits are those of destruction horizons, most desirably on a wide scale, sealing the complete contents of buildings and rooms, so well illustrated by the settlements of Akrotiri on Thera and later at Pompeii in Italy.

Closely connected to the question of primary deposits in general and the ceramic contents of sealed destruction horizons in particular, is another main factor of determining a local relative sequence: *stratigraphy*.

Vertical stratigraphy is based on the assumption that distinguishable strata or layers mark the passage of time, the upper stratum being younger than the one below. Ideally such strata ought to be undisturbed, sealed, and easily distinguishable from the neighboring strata. In reality this is hardly ever the case. But let us stick to this premise for these theoretical explanations. Consequently, the pottery within a stratum resembles this particular chronological position, the material from a higher stratum being younger than the material from a lower one. Actually, vertical stratigraphy also works without the existence of pottery or archaeological finds in general, as it was developed as a method in palaeolithic excavations in France in the 19<sup>th</sup> century.<sup>831</sup> However, pottery or other finds from sealed strata do possess significant chronological value since they resemble the material that was in use at the time of their deposition. As already stated above, no complete stratigraphic sequence exists for most (if not all) major Cretan sites and what we usually see is a patchwork-sequence from several small areas from within a single site. This, unfortunately, leaves a lot of room for uncertainties and is an important problem when trying to correlate different sites chronologically. Thus the establishment of intra-site stratigraphic sequences must be the first step in creating a basis for wider regional synchronizations.<sup>832</sup> These site-specific sequences will naturally vary from one another to a certain degree but this is where pottery comes into play and may help to correlate and synchronize local strata with those of other sites.

So what makes pottery the most important class of material culture when chronological matters are concerned? “In view of the fact that potsherds occur in great abundance and exhibit many variables, it is not surprising that they should afford a primary means for setting

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<sup>830</sup> Sommer 1991, 62; see also Binford 1981, 195-208.

<sup>831</sup> See Eggers 2004, 54-73.

<sup>832</sup> For a well-illustrated intra-site stratigraphy see for example Korfmann's studies at Troy, distinguishing ten periods from Troy I to Troy X. Korfmann 2001, figs. 366-368, 372.

up a relative chronology”.<sup>833</sup> However, rather than dealing with sherds and fragments, one should always rely on complete vessels in order to achieve the best results possible. Over the many years of archaeological pottery studies the medium of ceramics has proven to be the most indicative artifact for the passage of time. This encompasses aspects of technical, morphological and stylistic nature. The development and change of these aspects is assumed to happen gradually and fluently, however, one may have to differentiate between these very different factors of pottery production. Changes in technical production procedures are hardly explicable by a gradual development but are usually triggered off by some invention or acquaintance of new knowledge, possibly by trial and error, and thus over a certain, limited period of time. Morphological changes may occur due to a gradual development of certain vessel-shapes but may equally reflect changes in function or new requirements caused by altered considerations of utility or pleasure of form.<sup>834</sup> The stylistic modifications of ornamentation and decoration, however, seem to be the result of a fluent development. This becomes clearly visible when comparing the styles of Neopalatial Cretan pottery which often exhibit a clear continuation of motifs and decorative schemes. Since change in technical procedures occurs relatively rarely, compared to alterations in shape and style, especially the latter two aspects of ceramic development have long been used for the establishment of chronological sequences. And although the general validity of the chronological data obtained from pottery studies is accepted and well established, some problems must be considered and kept in mind in order to refine and further elaborate these pieces of information. Some concern the body of evidence, in this case the pottery, itself, others relate to the subjective criticism of the archaeologist, and still others are caused by the endorsed nomenclature and definitions used in the classification of pottery.

The first problem addressed here is one of terminology. Like in any other chronological period, the pottery of the time under consideration here is characterized by certain decorative styles, motifs and elements. Such styles must not be confused with chronological periods. A style is not the same as a period. Styles exist within a period of time and do neither start nor end abruptly, but usually overlap each other in time, sometimes for their entire duration. For example “Late Minoan IA as a style continues with little change until the end of the Late Minoan IB period”.<sup>835</sup> At least this is true for the so called “Standard Tradition” which enhances motifs and elements of the LM IA style, but coincides chronologically with the LM

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<sup>833</sup> Shepard 1985, 341-342.

<sup>834</sup> *Ibid.*, 344.

<sup>835</sup> Driessen, MacDonald 1997, 15.

IB style, so that “in most cases the development is so subtle the style cannot be distinguished from that of the earlier pottery”.<sup>836</sup> So, as Hood noted, the arbitrary divisions separating archaeological periods cannot be based on pottery styles alone.<sup>837</sup> And consequently, one must acknowledge “the difference in character between the boundaries separating reigns of kings and dynasties as known from written sources, and those dividing archaeological periods defined in terms of variations that can be distinguished in pottery and other aspects of material culture.”<sup>838</sup> The conventional use of the term “style” as descriptive of a “period of time” would not be too problematic if one accepted and kept in mind that “styles” cannot as easily be put in relative chronological rows or schemata as often done.<sup>839</sup> However, “To maintain that it does not matter whether we call a deposit, for example, MM IIIB or early LM IA is perhaps naïve, for whether one likes it or not, these labels have acquired a primarily chronological significance,...”.<sup>840</sup> Therefore, instead of using phrases like “a vessel dates to LM IA”, a term more suitable would probably be something like “a vessel is decorated in the LM IA style”. This does imply a chronological position on the one hand, but leaves enough room to recognize and respect the insufficiencies of stylistic pottery analysis concerning the definition of a “date” on the other hand. Apart from the central terminological problem of distinguishing “style” and “period”, other, minor difficulties concern for example the nomenclature of vessel types. This becomes important when so called “type fossils”, for example the ogival cup for LM IB, are sometimes hardly distinguishable from others, like the hemispherical cup for LM IA. These definitions and terms are mostly subject to the archaeologist working on the material and so far no common nomenclature for Minoan pottery seems to have been agreed upon. But the problem of subjectivity of single researches lies at hand and does not require further commentation at this point.

Another aspect concerning the value of pottery styles for relative chronology is the duration or life-span of ceramic vessels and their decoration. We simply do not know how long a vessel was used and the length of time during which a pot functioned is merely based on estimations and guesswork, “da größere Vasen zwei oder mehr Generationen leicht

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<sup>836</sup> Betancourt 1985, 137.

<sup>837</sup> Hood 1999, 381-382.

<sup>838</sup> *Ibid.*, 381.

<sup>839</sup> See also Girella 2007, 253: “As long as ceramic styles are equated with ceramic periods, the frustrating debate on MM III will continue to be misunderstood. Ceramic styles may continue for some time, but ceramic periods are identified by a restricted number of shapes and decorations that constitute the type fossils. Thus we can find MM IIIB as a style in the LM IA period, and vessels stylistically datable to MM IIIB that possibly were produced in LM IA”.

<sup>840</sup> Momigliano 2007, 5.

überdauern können [since larger vessels may easily survive two or more generations].”<sup>841</sup> Although pottery, unlike metal or stone vessels, has a limited material value and tends to be readily discarded, it does not seem improbable that single vases may be used over a long period of time, presupposed they remained intact.<sup>842</sup> The same may also be true for vessel forms and shapes in general. This uncertain life-span of vases may often lead to “out-of-time” contexts, meaning that seemingly older objects are found in younger contexts, creating further problems for chronology.<sup>843</sup> The assumption that pottery has only a very limited life-span because the vessels are easily breakable certainly has some truth to it, however, just because objects are breakable does not mean that they cannot be kept and used for a much longer period of time as expected. Such older “survivals” or “heirlooms” are usually represented by very few or even single vessels and thus do not pose too much of a problem when their contexts yields enough other datable material. But if only a very limited number of objects has been found, these older pieces may indeed blur the researcher’s vision to a certain extent. Seemingly older or ancient traits of objects, in our case mainly vases, may concern both form and decoration, the latter being even more problematic than the first. The styles of decorative elements, motifs and schemes vary not only chronologically but also geographically which can lead to great confusion when trying to synchronize different sites from different regions.

The regional diversity of pottery styles had already been recognized by Furumark but has only been sufficiently acknowledged over the last decades. “Pottery specialists working on the Greek mainland and in the Aegean tend to view Minoan pottery chronology as a monolithic sequence pretty much equivalent with Knossian pottery chronology. In reality, the landscape of Minoan pottery production is far more complex.”<sup>844</sup> The most prominent example of this regional diversity in Neopalatial pottery certainly is the decorative development of East Crete.<sup>845</sup> This rich and detailed style enhances motifs in both l-o-d and d-o-l at a time when the old light-on-dark style had already gone out of use in Central Crete. “At Zakro, for instance, we find a reluctance to abandon the old technique and vases of excellent fabric occur there in both light-on-dark and dark-on-light depicting the same motives and evidently of contemporary manufacture”.<sup>846</sup> The reed or plant style of Central Crete, however, is extremely

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<sup>841</sup> Marinatos 1987, 286.

<sup>842</sup> Shepard mentions the example of glaze paint vessels in a Rio Grande pueblo that was used for some 250 years. Shepard 1985, 347.

<sup>843</sup> Pomerance 1984, 9.

<sup>844</sup> Van de Moortel 2007, 201.

<sup>845</sup> Warren, Hankey 1989, 75-78.

<sup>846</sup> Popham 1967, 339.

rare in the East. Thus, an immediate correlation of deposits from Central and East Crete is very difficult. Fortunately, sites like Malia and Gournia link both regions geographically and allow synchronizations to a certain degree. When places like Zominthos are concerned, located remotely in the mountains and relatively far away from the closest palatial center, one ought to keep in mind whether or not this geographic position may affect the development of decorative pottery styles as well, although we should probably not expect a very long delay before new trends also reached the outskirts and hinterland of the larger administrative centers.<sup>847</sup> However, the mountains of Crete and their inhabitants have always been very conservative and traditional, proudly preserving their cultural as well as material heritage. This diversity further strengthens the argument that ceramic evolution by itself can never explain historic events and changes.<sup>848</sup>

Keeping these considerations in mind one needs to decide how to establish a date for the material under study. This decision can be based upon several factors and approaches. The first and usually most reliable of which depends on the principle of stratigraphy as just mentioned above. This accepts the notion that the ceramic vessels of sealed deposits represent a *terminus ad quem* for the deposition of the material and thus for the stratum in which it is found, a *terminus ante quem* for all lower strata, and a *terminus post quem* for all strata above this level. However, a clear-cut stratigraphy is frequently lacking and the stylistic developments of pottery need not coincide with stratigraphic data all the time. Additionally, this approach offers very limited information for single-phase sites such as Zominthos. Such sites require a different methodological approach to date the encountered material. There are basically two alternatives to establish a relative date for the material of these deposits:

The first one tries to define dates for each vessel according to stylistic features and developments and accepts that the seemingly youngest vase presents the final date for all finds from the deposit under study. For example: a deposit yields 20 vessels, one of which exhibits Marine Style decoration, six are decorated in the Standard Tradition and 13 are undecorated. Consequently the deposit needs to be dated to a phase when LM IB style pottery was in use. Although this approach is theoretically correct, it is hampered by the problems of stylistic developments and the chronological implications obtained from them, especially when unequivocal pieces are missing, such as Marine Style pottery in our example. This is

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<sup>847</sup> Walberg 1981, 6; Schoch 1995, 25.

<sup>848</sup> "it [relative chronology] describes artefact developments which may or may not coincide with major social developments or discontinuities, but it does not express or summarize explanation of any such fundamental social or economic changes." Warren, Hankey 1989, 1.

also well illustrated by the Acropolis Houses at Knossos: “The Acropolis Houses deposits A to E are sequential, but the majority of potentially useful features runs right through them, coated, ribbed/ridged cups, Vapheio (or Keftiu) single-ribbed cups (rare), everted rim bowls with dipped or coated rim and tortoiseshell ripple decoration.”<sup>849</sup> Although taken out of its context, this quote nicely describes the fundamental problems of dating deposits according to selected features regardless of the character of the entire assemblage. The second alternative, however, does not only regard single pieces but takes the contents of a deposit as a whole into account. This way, the overall appearance of an assemblage defines the date of its deposition rather than single vases. This is of course only applicable when definite chronological markers are absent and the chronological character of the assemblage is by no means clear, as is quite often the case. Additionally, this approach eliminates the influence of possibly intrusive elements or “heirlooms” by focusing on more general features and statistics. For the material from Zominthos this latter approach has been chosen to establish the date of the destruction of the “Central Building” (see below Chapter IV.3).

Having determined the relative dates of local deposits, the next logical step in order to set up a wider regional chronological sequence is the establishment of contemporaneity with different archaeological sites and their deposits.<sup>850</sup> Stratigraphy may be of help for this task as well, if common, and apparently contemporaneous events, such as large destruction horizons, are detectable in different sites of a wider region. “When such sequences are repeated in whole or in part across a number of sites within a region, it is possible to build up broad regional sequences through the technique of cross-dating.”<sup>851</sup> For the Neopalatial period on Crete, such events may be the destruction of the Old Palaces at the beginning of the period, and the destruction of the New Palaces at its end. Another widespread horizon is that of severe destructions in a mature stage of LM IA that most probably relates to the VDL at Akrotiri on Thera. But we will return to that when the final destruction of the “Central Building” at Zominthos is discussed (see Chapters IV.3.2 and IV.3.3). Returning to pottery, the establishment of contemporaneity is based on the comparison of vessels from different sites. This approach accepts that a “general similarity of certain traits in pottery of different regions, a similarity that is construed as indicating spread of styles or techniques from a common source” exists and is clearly recognizable.<sup>852</sup> I have already pointed out the problem of

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<sup>849</sup> *Ibid.*, 59-60.

<sup>850</sup> Shepard 1985, 347-348.

<sup>851</sup> Sinopoli 1991, 74.

<sup>852</sup> Shepard 1985, 347.

regional diversity of pottery production but large production centers such as Knossos for example evidently influenced the production of wider regions and can often be correlated to that of other Cretan areas as well. Of special interest are imports from one site deposited in another regional context, implying a chronological overlap or even contemporaneity between both deposits. However, such imports, especially of exotic or luxurious character, may sometimes appear to be rather misleading for chronological purposes since they could well be kept for a long period of time due to their specific character. Pottery, however, especially of utilitarian character, is not necessarily a premium candidate for such luxury items during the Aegean Bronze Age, and the sometimes large numbers of imported pots in individual Cretan sites clearly mirror its rather functional meaning.<sup>853</sup> Thus imported vessels can be of great value for the establishment of contemporaneity of different sites. So obviously, the attempt to create a pan-Cretan relative chronology must inevitably be based upon regional or even local sequences, evidenced by both stratigraphy and stylistic pottery analysis as described above.

### **IV.3 Putting Zominthos into Context**

The following sub-chapters will attempt to determine the chronological position of the “Central Building” at Zominthos in the Cretan relative sequence. Since Zominthos appears to have been a single-phase site during the Neopalatial period (a second occupational phase is attested for LM III), stratigraphy is of limited value for the establishment of local chronological dates, and thus I will rely mostly on the analysis of the diagnostic elements of the pottery and the comparison of the finds with those of other Cretan Neopalatial sites.<sup>854</sup> The general chronological frame for the material from Zominthos is the Neopalatial period. The term is deduced from the most prominent architectural structures of the time, the palaces, but also implies a historical institution and political organization. Although being aware of the continuing discussion on the political landscape on Crete during the period in question, the scope of this work is too limited to further comment on this well-known problem. It will

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<sup>853</sup> Pottery is of course a multi-dimensional medium with a number of facettes, but I strictly refer to the chronological dimension of imported pottery at this point, leaving aside economic and socio-cultural aspects of material culture and questions of ethnicity, colonialism and so on. For the inter-regional exchange of pottery in the Aegean and its discussion see for example Sherratt 1999.

<sup>854</sup> An earlier structure beneath the ruins of the LM building is attested by a sounding in Room 13, however its date has not yet been established. See Sakellarakis, Panagiotopoulos 2006, 55, note 25.

suffice to say at this point that I do favor the theory of a Knossian hegemonial kingship during the Neopalatial period on Crete.<sup>855</sup>

Returning to the pottery, the very broad limits of the material from Zominthos are characterized by two important factors. The first one being the complete absence of light-on-dark decorated pottery, the second one the complete absence of pottery decorated in the Special Palatial Tradition Style.

This fact can leave little doubt on the general attribution of the material to an advanced stage of the Neopalatial period when light-on-dark painted pottery had already gone out of use in north-central Crete. But what is the exact chronological position of the Zominthian material and to what wider horizon can it be related? Which decorative pottery styles are present in the assemblage and what date does the holistic analysis of the vessels suggest? Before trying to answer these questions I will shortly summarize the character of the Zomintian context and underline the possible importance of the material for Minoan relative chronology.

#### IV.3.1 Why is Zominthos important?

The ceramic assemblage found in the area of the pottery workshop in Zominthos can be of paramount chronological importance due to a number of reasons. First, the excellent state of preservation of the entire building, including the workshop area in the NW-annex, is almost unparalleled in Crete and offers valuable information on both architectural features of such a workshop and pottery production procedures.<sup>856</sup> The “Central Building” seems to have been destroyed at one seismic event, the destruction horizon sealing the complete contents of the workshop. This includes the finished products, the vases, as well as an array of tools. The thick destruction layer containing the finds remained undisturbed until the beginning of the archaeological investigations at the site during the 1980s (apart from some small illicit excavations in the center of the building). Thus the ceramic material under study comes from a sealed deposit *par excellence* and what we see may be regarded as an unbiased glance through time, not unlike the situation at Akrotiri on Thera. Additionally, the pottery probably belongs to the final production series of the local potter, defining a very exact point of time.

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<sup>855</sup> For alternative opinions and a thorough discussion of both approaches see Driessen, Schoep, Laffineur 2002, especially the contributions of J. Driessen, I. Schoep, P. Warren and P.P. Betancourt.

<sup>856</sup> Sakellarakis, Panagiotopoulos 2006, 70.

Since all different vessel shapes were uncovered in the same destruction deposit, it is legitimate to assume that they were all common, and in use at the time of the catastrophe. Therefore the array of shapes and decorations at Zominthos represents a chronologically fixed point for the types of pottery here discovered. This fixed point of time may be of great use for other Minoan sites with comparable material and may eventually contribute to a refined relative chronological sequence for Central Crete or even larger areas of the island. To sum up the aspects just mentioned:

1. Zominthos is a single-phase site during the Neopalatial period.
2. The pottery workshop is excellently preserved, including its contents.
3. The material under study comes from an undisturbed, sealed destruction horizon covering probably the entire site.
4. The pottery seems to belong to the final production series of the local potter and offers thus a very definite chronological *fixpoint*.
5. All vessels were in use at the same time.

Although these factors ought to facilitate an exact dating, the material from Zominthos is naturally not completely free from problems. So far only a small area of the “Central Building”, limited to the northern and north-western parts, has been excavated. Thus, it cannot be automatically taken for granted that we are observing a representative ceramic assemblage, neither can be excluded that additional ceramic material may alter the assumptions and conclusions uttered in this work. The fact that most of the vessels under consideration were found in the pottery atelier suggests a rather precise date of their manufacture on the one hand, while on the other hand the composition of this assortment of vases, or production series, may well depend on very particular odds, such as the will of the potter, a specific order of needed vases, or local preferences of certain shapes. Seemingly older pieces from the workshop may have served as models or patterns and were possibly not produced at the same time as the other vessels. The uncertain life-span of specific shapes and styles may also obscure our picture. Whether or not the remote geographic location of the Zominthian workshop and regional or even local diversity in pottery production also affected the character of the assemblage must remain open as well.<sup>857</sup>

However, since archaeology is by its very nature laden with uncertainties and imperfection, we are usually dealing with questions of probability when trying to reconstruct past events

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<sup>857</sup> Traunmüller forthcoming.

and developments. Therefore, and from what is known from Zominthos so far, the chronologically relevant aspects (1.–5.) mentioned above must be regarded as valid and correct. This assumption forms the basis for the following investigations of the pottery and the conclusions drawn from it.

Keeping these aspects in mind I will start by analyzing the motifs of the painted decoration before turning to the development and comparison of certain shapes in order to define the date of the Zominthan pottery assemblage. I have already introduced and described the single motifs and shapes along with several comparanda from other sites (see Chapters III.2 and III.1) and will now consider their chronological value. To establish the date of the final destruction of the “Central Building” and thus the deposition of the pottery, the character and elements of the entire assemblage as a whole will be analyzed and compared to other Cretan sites and their deposits.

#### **IV.3.2 The Final Destruction of the “Central Building” at Zominthos**

Establishing the precise date of the destruction of the “Central Building” at Zominthos is one of the main goals of this work. Due to the circumstances at the site, meaning the excellent state of preservation, the virtually untouched remains of the settlement, and the character of the material from the workshop, it should be possible to reach very exact and reliable chronological results from the analysis of the pottery assemblage.

This ceramic assemblage from the pottery workshop at Zominthos is characterized by several general features. Starting with the painted decoration, the observer notices immediately that the range of decorative elements is, just as the range of vessel shapes, rather limited. Of the 161 recorded complete or almost complete vessels, only a small minority, ca. 10%, exhibit painted decoration at all. The vast majority, more than 60%, is coated with a monochrome dark reddish brown to black paint, usually on both the interior and exterior, or on the exterior only. The remaining material is left plain with a buff surface (Table 6). These numbers closely resemble the situation encountered at the kiln at Kommos, where ca. 2/3 of the vases show a dark monochrome coating.<sup>858</sup> But this kind of surface treatment does not necessarily have

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<sup>858</sup> Van de Moortel 2001, 66, 97, fig.46. The amount of 2/3 of the entire assemblage refers to the combination of conical cups (especially types P and Q) and other vessel shapes.

chronological implications since it also occurs on later cups, for example from Mochlos.<sup>859</sup> Unfortunately the preservation of the paint on the Zominthian vessels is often poor and not all vases can be assigned to one of the above categories with absolute certainty. Nevertheless, the overall picture and percentage does not seem to be affected or obscured by this. The painted decoration is carried out exclusively in the dark-on-light technique. Not a single piece with light-on-dark decoration has so far been discovered at Zominthos. As already laid out, the decoration includes a variety of spirals, tortoise shell ripple pattern, reed or grass pattern, trickle pattern, splashes and solid bands among few other motifs (see Chapter III.2). All of the applied decorative elements can securely be attributed to the LM IA style or the so called “Standard Tradition” contemporary with LM IB style pottery. However, no typical LM IB “Special Palatial Tradition” pottery has yet been found. Re-regarding the comparanda listed above for each decorated piece from Zominthos, it becomes quite clear that the stylistic analysis of the pottery offers little more than a very broad chronological date for the assemblage. In fact had all the decorated pieces been found by themselves and out of context, they would probably have been dated within a range from MM III to LM IB for stylistic reasons, covering almost the entire Neopalatial period on Crete. But since they come from the same undisturbed horizon we must assume that they were all in use at the time of the destruction of the “Central Building”. However, regarding the overall character of the decorated vases, it also becomes clear that the best parallels for the vessels from Zominthos come from contexts that have convincingly been dated to a period of the advanced and mature phases of the LM IA style. The most significant decorative motifs seem to be the solid-center spirals and the reed pattern varieties. This does not exclude the survival of seemingly older MM III elements, like tortoise shell ripple pattern, within the same deposits since the styles of MM III may well have overlapped the new LM I schemes of decoration. However, the existence of numerous later features and the overall appearance of the deposit clearly point towards a date when the LM IA style was in full bloom.

Much of what has been said for the painted decoration and its limitations concerning chronology also seems to apply to the development of certain vessel shapes. Changes in older traditional shapes occurred, new shapes were invented while others went out of use and disappeared from the archaeological record. The question is in what way and to what extent such morphological alterations may help to establish relative dates and sequences. The vessel shapes in the Zominthian assemblage are also rather limited and represent typical Neopalatial

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<sup>859</sup> Barnard, Brogan 2003, figs. 4-5.

vase forms. The vast majority consists of various cup-shapes, others are kalathoi, jugs, and a number of other, more specialized shapes. Most were made of fine fabrics and only relatively few fragments in the deposit belonged to coarse-ware storage and cooking vessels.

The most common of all Minoan vessel shapes, the handleless cup, has often been discussed also concerning its value as a chronological marker (see also Chapter III.1). Several intra-site typologies have been proposed, the most comprehensive of which certainly is that by Aleydis van de Moortel for the cups from the western Mesara plain, especially those found at Kommos for the MM II through LM IB periods.<sup>860</sup> She stressed the chronological significance of conical cups and tried to develop her “conical cup typology as a dating tool”.<sup>861</sup> For MM III van de Moortel distinguished nine types of conical cups (Types A, B, C, D, E, F, J, L, M, N, V) which “differ from those of the preceding and following phases by their larger sizes, thicker walls and poorly raised bases” and were often made of medium-coarse fabric.<sup>862</sup> The Type A cup, low and with convex or ogival profile and truly everted, thick rim was proposed as the type fossil of MM III. This cup type has close similarities with Type 4 handleless cups from Zominthos. The Early LM IA stage had seven types of cups (B, D, E, J, P, V, W) that “in general [...] are smaller and lighter than those of MM III, and fine fabrics become the rule.”<sup>863</sup> Advanced LM IA in Kommos was then characterized by nine types (C, D, E, F, I, J, N, P, V) and Final LM IA by ten types (C, D, E, F, H, I, J, P, Q, V). As can easily be seen, most types overlap several periods and appear to be distinguished by “subtle morphological changes” only.<sup>864</sup> Nevertheless, van de Moortel argued that sufficient changes and evidence existed for the establishment of these chronologically significant types. However, the classification does not seem to be entirely convincing and little more than rather general features can be ascertained. A classification as such is always a highly subjective enterprise and it is quite probable that a second researcher studying the material from Kommos would have reached at least slightly different results. This is of course also true for the typology proposed for the Zominthian material in this book. Accepting the chronologically broad, site-specific development of handleless cups at Kommos, one still has to be extremely cautious when trying to correlate cups from other sites with these types. This becomes especially

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<sup>860</sup> Van de Moortel 1997, 32-81; another typology based on MM III material mainly from Phaistos has recently been put forward by Girella. See Girella 2007, fig. 5.

<sup>861</sup> Van de Moortel 1997, 32.

<sup>862</sup> *Ibid.*, 38.

<sup>863</sup> *Ibid.*, 50.

<sup>864</sup> *Ibid.*, 33; “Most LM IA conical cup types continue in LM IB but with sufficient changes to allow for their correct dating.” 70.

apparent regarding the character, both morphological and functional, of such cups. These cups were produced by the hundreds of thousands in Minoan Crete and present the archetype of a multi-purpose vessel. Its general form is the easiest possible vase-shape and was certainly the first kind of pot formed by potters' apprentices. Thus local differences in the general shape are inevitable since many different people produced the same kind of cups throughout the entire island. The supposed inferior quality of MM III cups to those of the preceding and following periods may also be explicable by other factors than just chronological difference.<sup>865</sup> The large variety in shape, size, quality, fabric and decoration of these cups may thus not necessarily have chronological reasons but might also be related to the skill of a potter, the amount of time spent on the production of such a vessel, or even its expected function. The collection of handleless cups from Zominthos clearly shows a wide variety that does not seem to have chronological implications since all cups were found in the same destruction deposit. Consequently, I find it difficult to accept more than a limited chronological value of handleless cups due to rather general changes in the development of the vessel shape. At least this is true for the local assemblage at Zominthos.

If the handleless cups are indeed of relatively modest chronological value, other vase shapes may or may not be of greater significance. I will refrain from discussing every vessel shape in detail again and simply demonstrate whether or not some forms do allow the establishment of more precise dates than the handleless cups. The semiglobular, or hemispherical cups are a shape typical for the entire Neopalatial period starting in MM III with a peak in popularity in LM IA. Especially the type of cup with straight sides and rim (for example R12-062) seems to be typical for the LM IA style.<sup>866</sup> These are then followed by the ogival variant so characteristic for the LM IB pottery.<sup>867</sup> However, a clear-cut morphological differentiation between the two is often hardly possible and depends strongly on the eye of the beholder.<sup>868</sup> The large straight-sided cups with monochrome dark coating from Zominthos can best be compared to MM IIIA examples of this shape, for example from Knossos.<sup>869</sup> Still, they were also found in the sealed deposit of Room 12 together with vessels that clearly belong to a later phase. Other well comparable pieces were found outside Crete in Akrotiri and ascribed to the phase MM IIIA.<sup>870</sup> These Minoan imports do however exhibit white dots on the monochrome

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<sup>865</sup> Girella 2007, 241.

<sup>866</sup> C. MacDonald, pers. comm..

<sup>867</sup> See for example Barnard, Brogan 2003, figs. 4-5.

<sup>868</sup> See also Warren 1999, 898; Hatzaki 2007, 178.

<sup>869</sup> Catling et al. 1979, figs. 16, 18.

<sup>870</sup> Knappett, Nikolakopoulou 2008, fig. 6, nos. 11, 12.

coating unlike the ones from Zominthos. The Kalathos or flaring bowl, both in its tall and small variety seems to be a typical LM IA shape. All taller shapes, including beaked jugs and jars, follow the general trend towards tall, elongated shapes usually with a high maximum diameter. A development beginning in MM III pottery, and existing throughout the Neopalatial period as a whole. Rather specialized shapes, such as the brazier lid for example, are of no great help either. The example from Zominthos compares well to a number of vessels from other places that cover a chronological span from MM III to LM IB and in single cases even LM II.<sup>871</sup> However, these very late comparanda (LM II) come from unstratified contexts, tombs, and possibly secondary deposits and may therefore be omitted from the chronological range under consideration here. The conical rython from Zominthos clearly belongs to the most common type of LM IA, as does the type of potters' wheel. The so called "milk jugs", which also occur at Zominthos, have been regarded as a type fossil of LM IA by Popham, but it is clear that the shape also existed already in MM III and continued later in LM IB.<sup>872</sup>

Taken all the characteristics of the decoration, array of shapes and aspects of fabrics and surface treatment into account, it becomes rather certain that the assemblage from Zominthos is best comparable to those deposits that have been claimed to be contemporaneous with the Knossian Gypsadhes Well Upper Deposit Group.

This group of primary and secondary deposits combines 19 assemblages from the palace and town at Knossos and five more from cemeteries nearby.<sup>873</sup> The deposits from the palace are the 4<sup>th</sup> Magazine-2<sup>nd</sup> cist, the Temple Repositories, although the date of this deposit is still not undisputed, the East-West stairs of the Domestic Quarter, the North-West Angle of the South-East Insula, the deposit east of the South-East Lustral Basin, the South-West area of the palace and the South-West Basement. The town of Knossos yielded LM IA deposits in the House of the Frescoes, the RRN, the make-up of the North platform and the foundation deposit in the Pillar Hall, several deposits from the South corridor and the South platform, all in the MUM, the lower and upper LM IA deposits in the SEX, the KS 178 Group deposit no. 6, the eponymous Gypsadhes Well Upper Deposit, the Hogarth's Houses construction and destruction deposits, and a deposit from the harbor town of Poros-Katsambas.<sup>874</sup> The

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<sup>871</sup> See 102-103 ,Brazier Lid/Fire Box/Incense Burner'.

<sup>872</sup> See Popham 1984, 163; Mountjoy 2003, 76; Hatzaki 2007, 178.

<sup>873</sup> Hatzaki 2007, 172-175.

<sup>874</sup> Ibid.

cemeteries at Mavro Spelio, the Temple Tomb and at Poros-Katsambas offer additional evidence for this ceramic phase, although mostly from mixed or secondary deposits.

The pottery of the entire group is characterized by several specific features that mostly apply to the Zominthian assemblage as well.<sup>875</sup> Elaborate decorative schemes are increasingly used, such as reed pattern and retorted spirals. The light-on-dark decoration is basically absent from this group at Knossos and is also totally obsolete at Zominthos, while dark-on-light decorated vessels are usually of a high quality. Both monochrome and plain wares exist at Knossos and Zominthos, however the large amount of dark monochrome vessels at Zominthos is rather unusual and may be due to a local tradition. However, this finds a good parallel in the material from the kiln at Kommos, a deposit that is also presumed to be contemporaneous with this group. Also, the general array of shapes is more or less identical at both sites, Knossos and Zominthos. The LM IA handleless cups from Knossos show “that here is considerable variation in size and quality of manufacture”, a statement that holds also true for the material from Zominthos.<sup>876</sup> Thus, the deposition of the Zominthian material is most likely to be contemporaneous with this group.

In trying to correlate Zominthos with other Cretan sites in order to establish wider regional chronological connections, I will largely follow the selection of sites already proposed by Hatzaki in the KPH, but refer mostly to sites that have been mentioned as findspots of comparanda to the Zominthian vessels.<sup>877</sup>

Very little comparable material from West Crete has so far been published. The excavations at Khania yielded several LM I deposits but few pottery has been illustrated.<sup>878</sup> The material from the “primo edificio” at Nerokourou has some common features with the assemblage from Zominthos such as a relatively large percentage of monochrome coated cups but appears to be more at home in the LM IB style.<sup>879</sup> However, the fragments of a jug that have been dated to LM IB and compared to vessels from Gournia and Palaikastro could also be ascribed to the LM IA style, especially since the piece from Palaikastro exhibits added white paint, a trait that is rather typical for LM IA style pottery.<sup>880</sup> The general character of the assemblage

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<sup>875</sup> Ibid., 175-181.

<sup>876</sup> Ibid., 178.

<sup>877</sup> Ibid., Table 5.8.

<sup>878</sup> See for example Hallager, Tzedakis 1987, 13-18.

<sup>879</sup> Kanta, Rocchetti 1989; A. Kanta pers. comm.

<sup>880</sup> Sackett, Popham 1970, 218, fig. 11, NP 60.

from Nerokourou actually shows a number of similarities with Central Cretan LM IA pottery and could possibly belong to that ceramic phase as well.

North-Central Crete with the predominant center at Knossos naturally offers the most and best parallels for the Zominthian pottery. The group of Knossian deposits just described (Gypsadhes Well Upper Deposit Group) clearly shows the close relation of the material from both sites.<sup>881</sup> Nevertheless, other deposits offer good parallels for some vases from Zominthos as well, the best example probably being the straight-sided cups from the Acropolis Houses Deposit B.<sup>882</sup> The South House also provided some examples that were stylistically well comparable to single pieces from Zominthos, although most finds from it were unstratified. Other sites in this region also yielded deposits that seem to be contemporary with the Knossian and Zominthian assemblages. One of these sites is Amnisos on the north coast. The “Villa of the Lilies” was finally destroyed by a seismic event at the end of LM IA, most probably the same event that is so well attested throughout the entire island.<sup>883</sup> Unfortunately relatively few vessels have been published but the LM IA style is securely attested. An earlier phase of the building had been erected sometime between MM IIIA and MM IIIB and destroyed at the end of MM IIIB which correlates perfectly with another wide-spread destruction horizon on Crete.<sup>884</sup> Another deposit of LM IA style pottery was unearthed in Archanes-Phourni, Building 4. Among some other finds an assortment of handleless cups has been published that seems to belong to the LM IA style.<sup>885</sup> The excavator also mentioned more LM I pottery fragments, however without commenting on a subdivision of the style in LM IA and LM IB.<sup>886</sup> A little further south of Archanes lies the site of Vathypetro where a “rural villa” of the Neopalatial period was unearthed by Marinatos in the middle of the 20<sup>th</sup> century.<sup>887</sup> The photographs published in 1950 and 1952 clearly show a variety of LM IA vases, including handleless cups, hemispherical and straight sided cups, and kalathoi with spiral, reed and ripple pattern decoration.<sup>888</sup> These shapes and motifs are all well attested at Zominthos too.

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<sup>881</sup> For each deposit see Hatzaki 2007 with references.

<sup>882</sup> Catling et al. 1979, figs. 18, 19.

<sup>883</sup> Schäfer (ed.) 1992, 148-149; pls. 41, no. 3; 42, no. 2; 66-68.

<sup>884</sup> *Ibid.*, 148.

<sup>885</sup> Sakellarakis 1973, pl. 154.

<sup>886</sup> *Ibid.*, 212.

<sup>887</sup> See also Cadogan 1992.

<sup>888</sup> Marinatos 1950, figs. 7, 10, 11; Marinatos 1952, figs. 8, 11-15.

The South-Central part of Crete during the Minoan period has been dominated by the important archaeological sites in the western Mesara plain, namely Phaistos, Aghia Triada and Kommos. While Aghia Triada gained its importance rather late compared to the other two sites, from LM IB onwards, Phaistos and Kommos both show similarities with Zominthos in their material culture and especially pottery. While the palace at Phaistos yielded almost no evidence of the LM IA phase, the excavation in the town area in the immediate vicinity did turn up several vessels of the pottery style in question. A deposit of LM IA vessels was unearthed underneath a floor of geometric date in trench CC, including hemispherical cups with spiral, reed and again tortoise shell ripple pattern decoration.<sup>889</sup> Far more examples of the pottery under consideration here were found at the harbor site of Phaistos: Kommos on the western shore of the Mesara plain. As already mentioned, the Late Minoan kiln and kiln dump deposits at Kommos seem to correlate very precisely to the deposit at Zominthos. The kiln was built in LM IA within the “South Stoa” of the civic building T south of the so called “Central Court”.<sup>890</sup> The date of the kiln’s operation has been assigned to “parts of the advanced and final stages of LM IA at Kommos, roughly corresponding to the end of the “Transitional MM IIIB/LM IA” stage and part of the mature LM IA stage elsewhere on Crete. Viewed in a broader context, production at the kiln appears to have ended either not long before, or at about the same time as, the volcanic eruption of Thera.”<sup>891</sup> This places the deposit in the same chronological horizon as the Gypsadhes Well Upper Deposit Group at Knossos although some connections to the preceding KS 178 Group seem to exist as well (which is not surprising due to the evolving character of pottery styles). The strong relation to the Zominthian assemblage in terms of vessel shapes and surface treatment has already been stated above.<sup>892</sup> The southern area of the Kommos site produced a large number of pottery groups also assignable to the advanced stages of the Neopalatial period including an early phase of LM IB (groups 15-40).<sup>893</sup> Several of these groups are mixed deposits and the stylistic division of the subphases of LM IA and early LM IB appear to be rather subtle. Therefore I presume that these groups may either still be contemporary with the Gypsadhes Well Upper Deposit Group at Knossos, and thus with the Thera eruption before the end of LM IA, or the LM IA style continued for a longer period together with the younger LM IB style at the site. The correlation of Kommos and the Mesara in general with the north-central Cretan sites is

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<sup>889</sup> Levi 1976, 471, fig. 720.

<sup>890</sup> Shaw 2001, figs. 1-2.

<sup>891</sup> Shaw, Van de Moortel, Day, Kilikoglou 2001, 135.

<sup>892</sup> See Van de Moortel 2001.

<sup>893</sup> Rutter 2006, 413-477.

still somewhat problematic as illustrated for example by the construction of the Siphakis House at Seli which is placed in LM IA by Hatzaki in the KPH, while Shaw placed it in LM IB early.<sup>894</sup> The settlement on the Hilltop and the Central Hillside at Kommos also yielded some deposits of Neopalatial date which have been published by Watrous.<sup>895</sup> However, LM IA “is least represented in the excavations at Kommos” and only one small deposit was “pure LM IA” (Deposit 1).<sup>896</sup> The new material from the southern area now adds more LM IA vessels to this scarce amount of pottery. Staying in the Mesara, another site is of interest concerning the period of time under consideration: Seli. Two houses, the Volakakis and the Siphakis Houses were unearthed at the site in the vicinity of Phaistos.<sup>897</sup> The first building, the “Volakakis House” seems to have been destroyed and abandoned in an advanced stage of LM IA, while the second house, the “Siphakis House” was then constructed. The “Siphakis House” was destroyed at the end of LM IB. Thus the destruction deposit of the first building fits well into the horizon of catastrophes feasible throughout the island to which also Zominthos seems to belong. The pottery shapes and decorations from Seli do not contradict this conclusion at all. On the contrary, several elements of the assemblage compare rather well with that of the “Central Building” at Zominthos, for example the spirals on the bowl mentioned above (see Chapter III.2).

Moving further East from Knossos along the northern coast, House E at Malia offers more material that can be compared to the pottery from Zominthos. The vases of level IIIA at the site (mostly from “couche 6”) strongly resemble the LM IA style of Knossos and other main Minoan settlements of the time. Cup shapes dominate the deposit and the spiral and floral motifs are the most common decorative designs.<sup>898</sup> The following phase IIIB also has some similarities with the Zominthian assemblage but generally appears to be a little later due to marked differences in shapes and decoration.<sup>899</sup> This stage is characterized rather by the LM IB style in Knossian terms.

Many more sites have been identified in east Crete, a lot of them with LM I levels. Beginning in the Mirabello area, some pieces from Gournia have been quoted above in order to illustrate connections of the central-Cretan pottery with the ceramics of this region. Gournia is also of

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<sup>894</sup> Hatzaki 2007, fig. 5.8; Shaw 2006, Table 5.1.

<sup>895</sup> Watrous 1992; see also Shaw 1992, figs. 18.4-18.5.

<sup>896</sup> *Ibid.*, 111; Pl. 1.

<sup>897</sup> La Rosa, Cucuzza 2001.

<sup>898</sup> Pelon 1970, 77-95; pls. XIV.4-5; XV; XVI.1-3; XX.1-5; XLI.8-11.

<sup>899</sup> *Ibid.*, 96, 111-114.

special interest when trying to link Akrotiri on Thera with Crete.<sup>900</sup> The pottery of the “Town Style”, especially of the early and advanced stages, clearly represents the LM IA style of central Crete.<sup>901</sup> The deposits which yielded most of the LM IA material are House Cm, room 58 and House D, room 29 on the east slope of Gournia.<sup>902</sup> The pottery of Gournia exhibits a popularity of added white paint and floral motifs so typical of the east Cretan styles. These rather local and regional traits can only partly be observed in the Zominthian assemblage where no added white paint has yet been encountered. Floral motifs, however, do occur. For example there is a fragment with spirals with interlinked crocuses, which finds a good parallel in Gournia (see Chapter III.2). Hatzaki lists two deposits from Kato Syme but only few pieces have been illustrated and they do not provide good parallels with Zominthos.<sup>903</sup> Thus, these deposits are merely listed here for the sake of completeness. The settlement at Mochlos also yielded some, but few, LM IA pottery compared to the large amounts of LM IB style vases. Some diagnostic pieces were found in House C1 beneath a layer of Theran ash and tephra, probably from the “Minoan Eruption”.<sup>904</sup> The comparison with the vessels from Zominthos has shown that there is a marked difference between both assemblages, most probably due to regional variations in shapes and decoration. However, few examples from the LM IB style pottery from Mochlos do somehow compare to single pieces from Zominthos, for example a conical cup with trickle pattern, but this may merely serve to demonstrate that this kind of decoration continued into the LM IB style as well.<sup>905</sup> A built tomb west of the settlement at Myrtos Pyrgos contained 1069 LM I vessels that seem to belong to the latest burials in the tomb during the Pyrgos IV period.<sup>906</sup> The cups illustrated by Cadogan clearly belong to the LM IA style. On the east coast, the extensive settlement at Palaikastro also yielded much evidence for the LM IA period. Some rather typical assemblages have been published by Knappett and Cunningham, re-discussing an earlier publication by Bernini.<sup>907</sup> The excavations at the site have shown that the previously hardly definable MM IIIB period had also been brought to an end by a major seismic event, just as seen by many sites in the central part of the island. A deposit in Building 2, Room 2, belongs to a stage after this event and has

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<sup>900</sup> See especially Niemeier 1980.

<sup>901</sup> Boyd-Hawes et al. 1908, 39-44; pls. VII, nos. 25-41; VI, no. 35; VIII, no. 19; colour pls. F, G.

<sup>902</sup> Ibid.; see also Hatzaki 2007, table 5.8.

<sup>903</sup> Lembessi 1973, pls. 197B-γ; 195; 198B-γ; 199-201.

<sup>904</sup> Soles, Davaras 1992, 434-438; fig. 14; pl. 100c-d; I have to thank T. Brogan and K. Barnard for letting me take a look at the LM IA pottery from Mochlos in the magazines of the INSTAP Study Center at Pachyammos and for their kind hospitality during my stay.

<sup>905</sup> Barnard, Brogan 2003, fig. 1, IB.15.

<sup>906</sup> Cadogan 1972, 630, pl. 589b; Hankey 1986, 135-137.

<sup>907</sup> Knappett, Cunningham 2003; Bernini 1995.

been ascribed to the LM IA phase.<sup>908</sup> This deposit consisted mainly of conical cups but also yielded some decorated pieces that allow an attribution to that stage.<sup>909</sup> However, the same deposit had previously been ascribed to the MM IIIB style by Bernini, which illustrates the difficulties in differentiating the two stages stylistically.<sup>910</sup> Generally, both stages, MM IIIB and LM IA at Palaikastro show good comparanda for the material from Zominthos, a fact that does not facilitate an exact dating of that assemblage. I would like to follow Knappett and Cunningham's interpretation here, but need to remark that their date was mainly established by an analysis of the conical cups, a vessel type that is not unproblematic when dating purposes are concerned. A destruction horizon possibly associable with earthquakes related to the Theran eruption was also encountered at Priniatikos Pyrgos, a settlement on the northern shore of east Crete.<sup>911</sup> The pottery from this horizon compares well the just mentioned Palaikastro deposits underneath the widespread LM IB destruction of the site, and the pits at Zakros (see below) further to the east. The assemblage from Pyrgos contains a number of cups with floral decoration in both d-o-l and l-o-d and some tortoise shell ripple as well. The shapes and decoration fit well within the array of LM IA pottery in eastern Crete also including the continuation of l-o-d schemes.<sup>912</sup> The same is also true for the pottery from the Zakros pits.<sup>913</sup> More material from Zakros was discovered in and around the palace, that all hints at a major destruction of the site when LM IA pottery was in use. The vessels from the pits probably belong to the debris of an older structure underneath the palace which was itself destroyed at the end of LM IB.<sup>914</sup> But again, the east Cretan LM IA style does not deliver the best comparisons to the Zominthian material, especially concerning the painted decoration, but still proves to be rather contemporaneous. It is due to the nature of the fluent development of pottery styles and the coexistence of "Standard Tradition" and "Special Palatial Tradition" pottery that many more comparisons could still be drawn to the Zominthian assemblage, even with deposits that rather clearly postdate our material, but I will end this overview of selected depositions throughout the island at this point, presuming that the point I tried to make has become clear.

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<sup>908</sup> Knappett, Cunningham 2003, 169-173.

<sup>909</sup> *Ibid.*, figs.41-45.

<sup>910</sup> Bernini 1995, 56, Table 1.

<sup>911</sup> Betancourt 1978, 381.

<sup>912</sup> *Ibid.*, figs. 1-2.

<sup>913</sup> Hogarth 1901; Hogarth 1902; Dawkins 1903, figs. 1-19.

<sup>914</sup> Platon 1999, 679.

All of the deposits from across the island mentioned here share the common aspect that they all are more or less contemporary and “probably the result of earthquake destructions chronologically close to the LM IA eruption of Thera.”<sup>915</sup> Their correlation is mainly based on the comparison of the pottery assemblages and the shapes and decorative schemes within them. All this may allow the assumption that the catastrophic volcanic event that destroyed Akrotiri on Thera also significantly affected Crete and many of the Minoan sites during a period of time when the LM IA pottery styles were widely used and produced, presenting a well definable point of time in the prehistory of the island.

### **IV.3.3 Zominthos and Akrotiri on Thera - A Contemporary Earthquake Destruction? - Evidence from the Aegean.**

This subchapter seeks to enlarge the picture just described for Crete and expand our vision throughout the Aegean, focusing especially on the assumed contemporaneity of the VDL at Akrotiri on Thera with the destruction of the Zominthian “Central Building”. This is not meant to be a direct comparison of the ceramic assemblage from Akrotiri with that of Zominthos, but merely the LM IA ceramic horizon of Crete as a whole. Other Aegean contexts with LM IA pottery presented here come from Aghia Irini on Keos, Kastri on Kythera and Trianda on Rhodes. These deposits may prove the widespread effects of the Santorini eruption throughout the region and the destructions associated with it.

One of the largest assemblages of LM IA pottery discovered at a single site was found outside Crete, at the settlement of Akrotiri on Thera.<sup>916</sup> Unfortunately, only relatively few pottery deposits have been properly published as the works at the site and on the material still continue. The West House pottery groups are the exception since the building is the only house in which systematic stratigraphic research had been carried out.<sup>917</sup> These closed groups of pottery were stratigraphically and stylistically distinguishable and associated with different phases of the building. The group mostly considered here is Group A, the pottery from the first and ground floors of the West House. The deposit contained ca. 1000 complete or nearly complete vases and many more fragments. Only ca. 10% of the vessels were imported, mostly

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<sup>915</sup> Hatzaki 2007, 183.

<sup>916</sup> Marinatos 1968-1976.

<sup>917</sup> Marthari 1990, 57.

from Crete, and all of LM IA style.<sup>918</sup> The group provides good parallels for several central and east Cretan sites such as Knossos or Gournia. For example, a “little spiral painter” Vapheio cup from the West House is very similar to a cup from the Gypsadhes Well Upper Deposit at Knossos.<sup>919</sup> Other well comparable Knossian deposits are the later deposits of the MUM, and the East-West staircase of the Domestic Quarter of the palace. The close relation of several vessels to those of Gournia has already been highlighted by Niemeier who even suggests that some of the imports at Akrotiri had been produced by a recognizable Gournia workshop.<sup>920</sup> These comparisons provide reliable evidence for the mature LM IA style of the pottery under consideration which is clearly associated with the VDL at Akrotiri. Furthermore, the earlier pottery of MM IIIB/early LM IA style from the same site is associated with the SDL and thus probably contemporaneous and possibly causally connected to the destructions that affected Crete during this very period.<sup>921</sup> In conclusion, one can state that none of the imported and local pottery is decorated in a style later than LM IA and that the settlement of Akrotiri was destroyed and abandoned during the mature stage of this style. The comparison with Cretan deposits has shown that the Gypsadhes Well Upper Deposit Group and contemporary deposits throughout the island are at least of roughly the same date, if not even exactly the same date, as the West House Pottery Group A which is associated with the final, volcanic destruction of Akrotiri.

Kastri on Kythera yielded several deposits with pottery assignable to the Neopalatial period. The depositions most comparable to the horizon of the Zominthian assemblage are deposits ζ, η, and in parts also deposit θ.<sup>922</sup> No clear division between MM IIIB and LM IA style pottery was detectable in deposit ζ and it was thus ascribed to the MM IIIB-LM IA stage. This attribution would better compare to the KS 178 Group at Knossos but the existence of pure LM IA types, especially in the top layers of the deposition, points towards an advanced phase of ceramic development. The next deposit, deposit η, is “purely LM IA” apart from a few MM IIIB sherds, with spirals being the most popular decorative element.<sup>923</sup> Most vessels were locally produced and only few Cretan imports were identified. Deposit θ is the smallest deposit of the ones here quoted and is also mostly LM IA in style and was partly overlain by a LM IB pebble floor. Some intrusive MM IIIB and LM IB fragments were found however. All

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<sup>918</sup> Ibid., 61.

<sup>919</sup> Hatzaki 2007, 183; Marthari 1990, 61, fig. 4b.

<sup>920</sup> Niemeier 1980, 63, figs. 34-37.

<sup>921</sup> Marthari 1990, Table 1.

<sup>922</sup> Coldstream, Huxley 1972, 104-123, pls. 25-31, figs. 39-41; Hatzaki 2007, 184.

<sup>923</sup> Ibid., 115.

three deposits were rubbish dumps, the latter two representing a mature stage of local LM IA style pottery. Some of the tombs near the settlement also contained some LM I material that may be compared to the Zominthian assemblage. However, the chronological value of these finds from the tombs is rather limited. The mixed character of most deposits from Kythera in the Neopalatial period nicely exemplifies the difficulties of establishing a clear-cut stylistic division of chronological phases based on the pottery alone.

Moving east towards the Dodecanese, Trianda on Rhodes yielded Neopalatial pottery in strata sealed by Theran tephra.<sup>924</sup> The pottery included painted decoration with reeds (very rare on Rhodes, Kythera, Melos and Kos), spirals and foliate scrolls. Hatzaki mentioned that the reed pattern was absent at Trianda but Marketou illustrated a fragment from Markos's plot that does show this decorative scheme.<sup>925</sup> The tephra fall ended a rebuilding activity at the site after the second of two earthquakes in LM IA, and it divides LM IA and LM IB strata from one another.<sup>926</sup> There is no mention of a post-eruption LM IA phase at this site, unlike many others in the Aegean and on Crete.

Another important site in the Aegean, Aghia Irini on Kea, also provides us with comparanda for the material from Zominthos, mainly from House A. Room 18 yielded "a homogeneous deposit of Period VI apart from one intrusive LM IB sherd. This is one of the largest and most important deposits of LM IA/LH I pottery on the site."<sup>927</sup> Distinctive traces of burning and large fallen stones characterized Room 18 during its excavation. Period VI, characterized by LM IA pottery, saw a major building program being carried out in the area of House A. During the same period serious damage affected at least parts of the building, including Room 18 and sealing the LM IA deposit.<sup>928</sup> Whether this destruction is associated with the Theran eruption is uncertain but the chronological proximity is obvious. The pottery from the deposit "includes a good deal of decorated pottery, both imported and local, but the range of decorative schemes is very limited, comprising not much more than ripple and spiral patterns,

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<sup>924</sup> Marketou 1990, figs. 17, 18.

<sup>925</sup> Hatzaki 2007, 184.

<sup>926</sup> Marketou 1990, 100; see also Marketou et al. 2006, 53. Here Marketou mentions the reorganization in LB I/LM IB short after a devastating earthquake, parallel to the seismic destruction at Akrotiri, and the tephra fall. What is probably meant, however, is the volcanic destruction at Akrotiri, I would imagine.

<sup>927</sup> Cummer, Schofield 1984, 25.

<sup>928</sup> *Ibid.*, 32.

which occur on several shapes.”<sup>929</sup> The repertoire is thus better comparable to the Knossian LM IA style than to the more elaborate and rich east Cretan LM IA.

Returning to Akrotiri on Thera and its relation to Zominthos in central Crete, it can be stated that the sites yielded a pottery assemblage of a very similar character. The material from both settlements can be linked by both, single pieces, for example the jug R12-100 (see above Chapter IV.2), and the connection via other deposits from different central and east Cretan sites such as Knossos and Gournia of the same chronological period. Other Aegean deposits probably belong to the same horizon of destructions all attributable to the volcanic eruption and associated earthquake events. I have already stressed the importance of local pottery characteristics and developments but in trying to define a wider synchronization of different sites on Crete and in the Aegean the general similarities of the deposits here described hint at a common, contemporary point in time at which the assemblages under discussion were deposited. This point of time, in my opinion, is the Theran volcanic eruption. The following chapter shortly comments on the absolute date of this eruption and on how this date was established.

#### IV.4 Aspects of Absolute Chronology

This chapter does by no means seek to re-discuss or better continue to discuss the absolute date of the Santorini eruption and its establishment. It merely attempts to add the aspect of absolute chronology to the Zominthian assemblage and to comment on the long-lasting and still flourishing debate on the exact date of the volcanic event that provided a *window through time* into the Bronze Age by destroying the settlement of Akrotiri and sealing it with layers of ashes.

No samples for absolute dating procedures have been taken from Zominthos which naturally shortens this chapter considerably, since I will have to restrict myself to referring to data received from other sites, mainly Akrotiri itself, and a more general summary of the problems of absolute chronology.

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<sup>929</sup> Ibid., 142, pls. 62-65.

The main dispute in Aegean Bronze Age absolute chronology is best illustrated by the widespread use of two different chronological systems: a conventional low chronology, based on archaeological synchronisms, and a high chronology based on modern scientific analyses which divide scholars into two factions. Although these chronology systems largely coincide, especially in the earlier and later periods of the Bronze Age, they differ considerably from each other during the second millennium BC, and thus at a very sensitive point of time: the eruption of the Thera volcano that buried the settlement at Akrotiri.<sup>930</sup> While the conventional date lies at about 1520 BC, the new, radiocarbon-based scientific date is placed somewhere in the second half of the 17<sup>th</sup> century BC and thus about 100 years earlier.<sup>931</sup>

Both parties have significant arguments to support their chronological system which led to a discussion that has been debated for more than 30 years and amounted in a vast corpus of scientific literature.<sup>932</sup> In fact, the large number of books and articles on the topic seems to repeatedly demand general assessments and summaries before new aspects and pieces of evidence are introduced to the discussion.<sup>933</sup> It would clearly lead to far away from the topic of this work to comprehensively summarize the current state of research at this point once again, and I will therefore restrict myself to some very brief comments on the matter.

The supporters of the traditional, low chronology, Peter Warren and Manfred Bietak being two of their most prominent members, base their assumptions on archaeological synchronisms of imports and exports of Aegean origin in east Mediterranean contexts, especially in relation to Egypt and its written sources on its chronology.<sup>934</sup> For the mid second millennium BC, however, they rely entirely on artifacts: “(1) foreign objects of reasonably secure date found in archaeologically sound Aegean contexts, and (2) Aegean objects whose relative date in an Aegean sequence is reasonably secure, found as imports in foreign contexts whose date does not depend entirely on a relative cultural sequence. Egypt, with an indispensable dynastic framework, is the heart of the matter, for it supplies both datable contexts for Aegean objects,

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<sup>930</sup> Warren, Hankey 1989, 127: “The radiocarbon dating evidence for Aegean chronology after about 2000 BC is for the most part less precise than dates obtainable from Egyptian correlations.”

<sup>931</sup> “The ‘high chronology’ allows an eruption of Thera in the second half of the 17<sup>th</sup> century, as suggested by the scientific investigations; the ‘low chronology’ rejects this possibility.” Betancourt 1990a, 20.

<sup>932</sup> Wiener 2007, 40-41; Some of the most important works are Åström (ed.) 1987, Betancourt 1987, Hankey 1987, Manning 1988; Warren, Hankey 1989, Hardy, Renfrew (eds.) 1990, Manning 1999, Bietak (ed.) 2000, Bietak (ed.) 2003 and Bietak, Czerny (eds.) 2007.

<sup>933</sup> See for example Manning 1999, 7-46, Bietak, Höflmayer 2007, Wiener 2007, Manning 2007.

<sup>934</sup> “...the historical chronologies of ancient Egypt and early Mesopotamia have provided a scale-of-reference for dating cultural sequences in the Levant and Aegean worlds.” Kitchen 2000, 39.

and datable objects in the Aegean”.<sup>935</sup> This quote clearly demonstrates the methodology of the traditional chronology and of establishing archaeological synchronisms. And although being generally acceptable, this system has a number of weaknesses that need to be considered. (1) The reliance on Egyptian chronology needs to be reconsidered cautiously since the validity of the Egyptian absolute chronology is still not undisputed among Egyptologists themselves, let alone archaeologists, especially also for the mid 2<sup>nd</sup> millennium BC.<sup>936</sup> (2) The establishment of archaeological synchronisms relies mainly on artifacts and their *interpretation*. Imported Aegean pottery in a datable Egyptian tomb for example is usually dated by stylistic analysis which is always somewhat problematic as extensively discussed in Chapter IV.2. Egyptian scarabs or stone vessels in Cretan contexts on the other hand, for example such as the famous Khyan lid from Knossos, are clearly very special items and may often be heirlooms and thus much older than the context in which they were found.<sup>937</sup> This general example is of course rather simplistic but may serve to illustrate the basic difficulties of this method. (3) Keeping these problems in mind, the low chronology has another intriguing aspect to it: a very short duration of the LM IB pottery phase of only roughly 50 years.<sup>938</sup> This contrasts sharply to the huge amounts of finds and multi-phased architectural remains from this period, which ought to demand a much longer duration for LM IB.<sup>939</sup> Nevertheless, some arguments do speak out for the traditional, low chronology. These pieces of evidence come mainly from the Egyptian site at Tell el-Dab’a and include Theran pumice and Cypriote White Slip I pottery.<sup>940</sup> This type of pottery is said not to appear before 1540/1530 BC outside of Cyprus but fragments of such a vessel were claimed to have been found by a French excavation in 1870 below the tephra of the eruption.<sup>941</sup> Unfortunately these fragments are lost today, the find circumstances are rather obscure, and after all, a single vase is not a very strong piece of evidence to base an entire chronological system on. But still, the existence of this kind of pottery in presumably late phases of the building at Tell el-Dab’a and elsewhere does indeed question the correctness of the high chronology for the Aegean and does favor a low chronology instead.<sup>942</sup>

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<sup>935</sup> Warren, Hankey 1989, 119; Furumark 1941, 421-423.

<sup>936</sup> See Kitchen 2000; Manning 1999, 367-413; v. Beckerath 1997; Kitchen 1987; Helck 1987.

<sup>937</sup> See for example Manning 1990, 31-32.

<sup>938</sup> Warren, Hankey 1989., Table 3.1.

<sup>939</sup> The participants of the 2007 LM IB Pottery Conference held at the Danish Institute at Athens broadly agreed upon a longer duration of the period, possibly establishing a LM IC phase. Unfortunately the papers of the conference had not been published before the end of this work and could thus not be integrated properly.

<sup>940</sup> Wiener 2001, 197; Bietak, Hein 2001.

<sup>941</sup> Wiener 2001, 198-199.

<sup>942</sup> See also Bietak 2003; Merrillees 2001.

Other archaeological correlations may also support a low chronology, however, the problems of these synchronisms have already been outlined above.<sup>943</sup>

The opposing faction of scientists favoring a high chronology for the Aegean Bronze Age relies mainly on radiocarbon data, although other scientific methods had been employed as well, such as the study of Greenland ice cores or dendrochronological samples.<sup>944</sup> However, the ambiguity of the latter two methods has led to a major reference to radiocarbon dates.<sup>945</sup> Several dates for the Minoan eruption had been proposed throughout the years of continuous research, and it has become rather convincing that the eruption must have taken place at some time between 1627 and 1600 BC.<sup>946</sup> A date in the second half of the 17<sup>th</sup> century has long been supported by a number of scholars, including Manning, Betancourt and Niemeier, and has lately become widely accepted, although the discussion on the exact date of the eruption is still ongoing. Although acknowledging that “this chronology contrasts with conventional archaeological dates and cultural synthesis” it has repeatedly been shown that most of the archaeological evidence is interpretable in a way that may suit the high chronology as well.<sup>947</sup> Other archaeological evidence from the eastern Mediterranean directly supports a high chronology such as finds from Tel Kabri, Israel.<sup>948</sup> The knowledge that the archaeological evidence is subject to interpretation requests meticulous caution when trying to extract chronological information from it. The recent radiocarbon data gathered from short lived samples, and especially from an olive branch discovered in the Thera tephra, are very unambiguous compared to the archaeological material. Friedrich, Manning and others have been able to show that a date between 1627 and 1600 BC for the eruption lies within a  $2\sigma$  probability (95% confidence) based on the latest radiocarbon dating techniques and samples.<sup>949</sup> In addition to the positive evidence for a late 17<sup>th</sup> century eruption, a date around 1520 BC, as supported by the low chronology, does not even fit in a  $3\sigma$  (99.7%) confidence range of radiocarbon dates.<sup>950</sup> The high chronology also has the advantage that it allows a longer period of time for the LM IB pottery phase which is in better accordance to the large amount of archaeological and architectural material from this period than the low chronology.

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<sup>943</sup> For a collection of archaeological synchronisms for the LM I period see Warren, Hankey 1989, 138-144.

<sup>944</sup> See for example Kuniholm 1990 with references; Baillie 1990; Pyle 1990; Friedrich et al. 1990; Betancourt 1998; Manning 1999; Manning, Ramsey 2003; Hammer et al. 2003.

<sup>945</sup> Manning 2007; Friedrich et al. 2006; Manning et al. 2006.

<sup>946</sup> See especially Friedrich et al. 2006.

<sup>947</sup> Manning et al. 2006, 565; Manning 1999.

<sup>948</sup> Niemeier 1990.

<sup>949</sup> Friedrich et al. 2006; Manning et al. 2006.

<sup>950</sup> Friedrich et al. 2006, 548.

I am myself a believer in the high chronology as may have become obvious over the last few pages. Not because I consider technology infallible, but simply due to the, in my opinion, overwhelming positive evidence for a late 17<sup>th</sup> century date. Additionally, the human interpretation of archaeological finds and extraction of chronological data from them based on stylistic analysis does not appear to be more flawless than the regular decay of <sup>14</sup>C atoms to me. The data produced by new scientific dating technologies, especially radiocarbon dating, naturally was a hard pill to swallow for the supporters of the traditional, low chronology, since it implied that what had been regarded as valid and correct until then now, appeared to be erroneous, at least to a certain degree. But this remains presumably easier acceptable than a complete failure of the radiocarbon dating method. And taking a closer look at both chronologies, it becomes apparent that the difference between them may just not be as significant as assumed at first sight. Actually the difference between the lowest acceptable <sup>14</sup>C date at around 1600 BC and the higher traditional dates of 1550 BC are not that far apart, keeping in mind that we are always dealing with probabilities and uncertainties since archaeology is no exact science. Indeed, a 50 year difference from absolute radiocarbon dates, based solely on archaeological synchronisms seems already more than one could expect regarding the ambiguity of the finds, and illustrates the extraordinary skills of the scholars whose results had so far been employed for absolute chronology throughout the Aegean.

Returning to Zominthos and assuming that the “Central Building” of the settlement had been destroyed by a seismic event related to the Santorini eruption, an absolute date for this destruction most probably lies within the above mentioned time span of 1623-1600 BC. It would be very interesting and desirable to take samples from the destruction horizon at the site and test this hypothesis by way of radiocarbon dating.



## Chapter V: Conclusions

*“Archaeology is cultural history or it is nothing.”<sup>951</sup>*

This study is essentially a study of artefacts. And although “Artefacts *tell us nothing about the past* in themselves”, I have here uttered a number of suggestions and conclusions drawn from a category of material culture, namely pottery.<sup>952</sup> Not only because I am convinced that the analysis of material culture does indeed give us information on prehistoric events and conditions, but also because I feel that it is archaeology’s very task to enrich ancient objects with meaning and, in a way, history.

This final chapter of the present study is dedicated to a short summary of the information gathered throughout the detailed analysis of the pottery assemblage from Zominthos. The data obtained from the material and the site itself may contribute to the answers to several questions of technological and chronological aspects of Minoan pottery, as well as socio-political and cultural questions concerning the entire island of Crete, which shall be reviewed in the next paragraphs.

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<sup>951</sup> Morris 2000, 3.

<sup>952</sup> Johnson 1999, 12; see also Knappett 2002, 167.

The principal aim and concern of this study have been the descriptive and illustrated presentation of the Neopalatial clay vessels found in the pottery workshop at the “rural villa” at Zominthos, Crete. Although several preliminary reports have already been published, only few pieces of information on the ceramic material from the site had as yet been put forward.<sup>953</sup> However, the assemblage from the pottery workshop at Zominthos is in more than one way significant and important. The vessels represent the ceramic material from an undisturbed, single-phase, and wide-spread destruction horizon that marks the final destruction of the “Central Building” at the site. As already stated above, the chronological significance of this assemblage is based upon an almost ideal taphonomic situation and thus its importance for the Minoan relative sequence can hardly be overestimated. Since we are dealing with one and the same context, the destruction level, all the vases encountered within this debris must have been used at the same moment in time, no matter whether they may appear to be older or younger in style. During the examination of this material, its shapes and decoration, and its context, further questions concerning the chronological position of the vases in detail, and the Minoan relative sequence in general, arose. The dating of the vessels, which appeared to be rather indubious and unproblematic at first, turned into a confusing and challenging task that seemed at least partly incompatible with the traditional relative chronology of Minoan Crete. But I shall return to this further below.

Besides chronology, the analysis of the assemblage also provided valuable information on technological processes, especially in combination with the context of the pottery workshop with its installations and set of finds. In order to better understand this context with all its facets, and to recognize similar sites in the archaeological record, a survey of Neopalatial pottery workshops on Crete and the observation of traditional potting techniques at a modern workshop at Margarithes were conducted. Such comparisons proved to be very enlightening, especially since the ceramic material itself can only provide limited data on manufactural stages and technological know-how on behalf of the potter.

I have so far only shortly commented on the role of the “villa” in the socio-political landscape of Neopalatial Crete and I shall refrain from going into further detail at this point. Nevertheless, it appears reasonable and necessary to firstly contemplate the geographic and political location of Zominthos as a site in order to completely understand the material under

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<sup>953</sup> Sakellarakis, Panagiotopoulos 2006, 62, 49 note 5.

study. The geographical remoteness may after all also affect the appearance of the locally produced ceramic vessels.

Thus, before reconsidering the ceramic assemblage, the site of its production ought to be shortly revisited. As I have already argued, the geographically remote location of Zominthos almost 1200m above sea level up in the Psiloritis Mountains was by no means as culturally isolated as possibly assumed. Situated at the crossing of two ancient roads that connected the mountainous areas of the Psiloritis and the Idean Cave with Knossos and the north-central Cretan plains, the “Central Building” of Zominthos formed the core of a settlement that must have been well integrated in the Minoan administrative system and infrastructure of the Late Bronze Age. The term “rural villa” probably best describes the character and function of the Zominthian “Central Building”. It appears highly likely that the building represents a subordinate administrative center of the Knossian palace, erected to politically control and economically exploit the mountainous hinterland.<sup>954</sup> The place of the settlement on a highland plateau with sufficient sources of water and pasture land could not have been chosen better. Zominthos on the one hand offered all the resources needed to provide a permanent population with water, food and goods such as pottery, which made it largely independent from regular deliveries from the palace, and on the other hand served as a political and economic satellite that exercised palatial control in the area. These functions were the very core of the “villa”-system that seems to have been set up by the palace during the LM I period in order to reach every part of the island.<sup>955</sup> The short duration of this system, being mostly a Neopalatial feature, coincides with the rise and fall of the new palaces although some “villas” appear to have already been established before that period.<sup>956</sup> After the end of the LM IB phase, the “villas” seem to have been completely abandoned and no adequate substitute for the exercise of political control has as yet been identified.<sup>957</sup>

The “Central Building” at Zominthos is the largest “rural villa” so far unearthed in Crete. Although only partly excavated, the ground floor alone consisted of ca. 40 rooms and a second storey certainly had existed. The size and the incorporation of palatial architectural features indicate the socio-political importance of the building its precise function however

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<sup>954</sup> See also Schoep 2001, 87-102.

<sup>955</sup> See Hägg 1997 for a detailed discussion of the phenomenon.

<sup>956</sup> Traces of an older building have also been discovered underneath the Neopalatial building at Zominthos. See Sakellarakis, Panagiotopoulos 2006, 55, note 25.

<sup>957</sup> „Furthermore, the fact that the rural villas represent a primarily if not exclusively Neopalatial phenomenon suggests that their inter-regional dispersal responded not only to a geographical but also to a socio-political necessity.“ Ibid., 63.

has to remain subject to interpretation of course. One of the main tasks seems to have been the production of wool as a resource of the important Minoan textile industry. Wood and secondary products such as skins, meat or dairy products may have been other items collected at and exported from Zominthos. The excavation of further rooms and areas of the “Central Building” will certainly shed more light on that matter.

The establishment of a pottery workshop in an annex to the “Central Building” ought to be viewed in relation to the subsistence of the settlement at Zominthos. The local production of everyday goods such as pottery must have been preferable to the dependence on imports of vessels from other sites. Pottery workshops are quite often associated with so called “rural villas”. Nerokourou, Vathypetro and Zou are just some examples that seem to enhance the same functional layout as the building at Zominthos. It appears rather probable to me that in these cases, the workshops were mostly concerned with the production of vessels for the local consumption of each community in order to ensure the provision of items for everyday use and demand. The limited size and simple layout of the workshop in Room 12 at Zominthos might support this assumption since production on a larger scale appears rather improbable in this area. Although an open-air part of the workshop is very likely to have existed, no traces survived in the archaeological record which makes it impossible to draw any conclusions on the definite size of the atelier. The identification of the workshop at Zominthos must be regarded as certain. The combination of the finds, the architectural features in Room 12, the built basin and benches, as well as the traces of wooden installations make it very clear that pottery was manufactured in this part of the annex. Whether or not Rooms 10-11 also belonged to the workshop is uncertain, however the close proximity and architectural connection to Room 12 make it very probable. The remains of a kiln had been discovered north of the annex.

The character of the assemblage itself may also point towards this interpretation. The quality of the vessels and their decoration portray some expertise, however cannot compete with the best pieces of LM IA style vases for example from Knossos. Much the same seems to be true for the assemblages from other “villas”. Many of the vessels seem to have stood on wooden shelves in Room 12 and had been stacked into each other, probably in order to save space during the storage in the workshop. The array of shapes and decorative designs within the Zominthian assemblage is rather limited. The simple handleless cup is the most common shape, and with 84 pieces it represents more than 50% of the entire assemblage. In

combination with other cup shapes and jugs and jars, the vessels associated with drinking reach even 75% (120 pieces). The ratio of cups and jugs or jars lies around ten to one. These numbers do broadly recall the results from the analysis of the kiln pottery from Kommos which may indicate that the assemblage from Zominthos was indeed a closed series of production.<sup>958</sup> It is tempting to suppose that these proportions relate to drinking and feasting events that seem to have played a major role in Minoan cultural and ritual life, however, the multi-functionality of cups and pouring vessels allows no explicit statements at this point.<sup>959</sup> The remaining vessels belong to very different types and shapes, all represented by single or very few examples only. Although fine fabrics clearly dominate the assemblage, medium-coarse and coarse pastes also occur. According to the record from Kommos, fine and medium-coarse vases had been fired together, however the coarse pithoi fragments found in the kiln were probably used as “fire supporters”.<sup>960</sup> It may thus be questionable if the coarse vessels from Zominthos had been fired together with finer vases. Nevertheless, the number of complete vessels from the workshop at Zominthos (160) here recorded could possibly have been fired at once, depending of course on the size of the kiln.<sup>961</sup>

While the shapes and technological aspects of the material from Zominthos support the assumption that we are seeing the final production series of the local potter, and thus a contemporary set of vessels, the decorative schemes and designs on the vases would question this possibility to some degree had they not been found within the same context. Although their general chronological frame is characterized by the absence of l-o-d pottery as well as a lack of Special Palatial Tradition Style vases, the decorative elements are not as uniform as one might think. They incorporate designs that are common in MM III styles as well as the LM IB Standard Tradition and comparable examples from many different sites have been mentioned above (see Chapter III.2). But since these elements occurred in one and the same undisturbed, sealed destruction deposit, we must accept that the decoration of the vases is not as chronologically indicative as previously assumed, especially if we are in fact dealing with one series of production at Zominthos. This does not mean that pottery lost its value as the most important chronological tool of the archaeologist but I am reluctant to accept that ancient vessels can be dated with very accurate precision rather than distinguished in wider

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<sup>958</sup> Van de Moortel 2001, 43.

<sup>959</sup> See Borgna 2004, 262-263; Rupp, Tsipopoulou 1999, 734-738 with references; Wright 1996, 287-309; Hamilakis 2000, 55-63.

<sup>960</sup> Van de Moortel 2001, 83-84.

<sup>961</sup> At Kommos 209 vases have been mentioned as coming from the interior of the kiln. *Ibid.*, 43.

chronological margins. This will be considered again further below. The decorative motifs include trickle pattern, tortoise shell ripple pattern and mostly a variety of different spirals. Other motifs occur less frequently and generally fit well into the repertoire of the Neopalatial period. The significance of regional or even local workshop traditions found growing acknowledgement in recent studies and helps to overcome difficulties of synchronizations between geographically distinct areas. A typical feature of the Zominthian assemblage is the large amount of dark coated vessels. This somewhat conservative trait as well as the tortoise shell ripple pattern decoration may be explained by such a local tradition rather than by chronological arguments.<sup>962</sup>

The crucial question is whether or not we are seeing a representative assemblage or production series of a Neopalatial rural potter. Does the material from the pottery workshop reflect a typical output or does it resemble a single series of vases, possibly produced as a special order or to meet a sudden demand? This question cannot be answered with certainty. Judging from the material itself, the response is ambiguous. Shapes and decoration vary in detail and may indicate a longer period of production at Zominthos from MM IIIB to LM IB which contrasts the assumption of a “fresh” series of unused pottery. However, the assemblage from Zominthos must be treated as an entity that did comprise vessels that were used, or ready to be used, at the same moment in time: the moment when the “Central Building” was destroyed and abandoned. When this destruction occurred can be supposed with some certainty.

I have argued that the final destruction of the “Central Building” can be correlated with a widespread series of catastrophes on Crete during the final stages of the period when LM IA pottery was in use (see Chapter IV.3.2). These destructions have elsewhere convincingly been related to the volcanic destruction level at Akrotiri on Thera caused by the so called “Minoan eruption”. Respectively, the pottery assemblage from Zominthos needs to be dated to that very period since it was recovered from a single sealed destruction horizon. This context proves that all the vases had been in use at this time, although some appear stylistically older than others. These differences in style are probably a product of regional or local traditions rather than a sign of chronological diversity. And even if there is a chronological difference between some of the vessels, it merely tells us that even such everyday items had a lifespan of several years, possibly even decades. However, most features of the assemblage point towards

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<sup>962</sup> Once again the kiln and the kiln dump pottery from Kommos show similar features. Here, a relatively solid amount of l-o-d decorated vases (27%) accompanies dark monochrome coated vessels (40%). *Ibid.*, 97, fig. 46.

a contemporaneity of the vessels under study. Consequently, in order to retrieve reliable chronological information from pottery finds, we must concentrate on the analysis of primary deposits, and take into account that regional traditions and local variations in style may blur and even alter our perception considerably. Single vases, especially those found out of context, are of very limited value for chronological considerations indeed and should always, if possible, be viewed within their assemblage. Since several decorative elements have been shown to exist throughout various pottery phases, the date of a ceramic assemblage ought to be established by judging the general characteristics of the group of vases, instead of specific designs or shapes. The example of the Zominthian assemblage nicely illustrates this problem. If the vessels had not been found within one closed context, they would most probably have been dated to at least two, if not three different phases for stylistic reasons (MM IIIB – LM IB). Only the general character of the assemblage (for example the absence of l-o-d decoration and Special Palatial Tradition pottery) and the identification of local or possibly regional traits (a large amount of the probably rather conservative feature of dark monochrome coatings) made it possible to ascribe the vases to an advanced stage of the LM IA pottery style by means of comparing it with other Cretan sites. The single-phase Zominthian assemblage and the context in which it was found do thus represent a very specific and exact point in the relative sequence of Minoan Crete during the Neopalatial period.

In my opinion, the best, if not the only way to construct a pan-Cretan relative chronology, is the establishment of local, site-specific relative sequences that can later be synchronized in order to receive a greater picture. These local sequences must be based upon sealed, primary contexts and ought to be attested by more than just few small trenches or spaces within a site.

The system recently established and published for Neopalatial Knossos by Hatzaki makes the desirable effort to combine groups of comparable deposits with historic events and presents such a local relative sequence.<sup>963</sup> Nevertheless, the proposed sequence still reflects what might be called a “patchwork-sequence” since no complete stratigraphy has as yet been published for Knossos. This is not supposed to lessen the accomplishment by Hatzaki but must simply be kept in mind when referring to the Knossian sequence. She created three groups for the MM IIIB through LM IB phases (KS 178 Group, Gypsadhes Well Upper Deposit Group, and the SEX North House Group) at Knossos and synchronized each of them with contemporary deposits from Crete and the Aegean. The analysis of the Knossian sites of

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<sup>963</sup> Hatzaki 2007, 158, Table 5.4.

the Gypsadhes Well Upper Deposit Group (LM IA) and their contemporary deposits from other sites clearly produced the best parallels to the ceramic assemblage from Zominthos, although some features could also be compared with the KS 178 Group (MM IIIB) or the SEX North House Group (LM IB).<sup>964</sup> Parallels from outside the island of Crete can be found in Akrotiri on Thera, Kastri on Kythera, in Aghia Irini on Kea and elsewhere. To sum it all up, the final destruction of the “Central Building” at Zominthos happened when LM IA pottery was in full bloom, at an advanced stage of the Neopalatial period, probably contemporary with numerous destructions at other Cretan sites directly related to the Santorini eruption. Undisputedly, the most important fixpoint in Aegean Bronze Age chronology is this volcanic eruption on Thera. Unfortunately no consensus on the exact point of time of the eruption has yet been achieved, however the scientific data from calibrated 14C samples clearly suggest a date around 1623-1600 BC. Although some scholars still strongly argue against these data, I personally believe in the relative correctness of these dates. The similarities between the imported Minoan pottery in Akrotiri, the deposits at Knossos and at other sites and the vases from Zominthos make it possible to suppose once more that the final destruction of the “Central Building” took place at the same time as the eruption on Thera.

This study of the ceramic material from the Neopalatial site at Zominthos in central Crete needs to be regarded as an integral part of the large-scale project that is dedicated to the wholesome exploration of the settlement. It is mandatory to take all environmental, cultural, socio-political, technological and chronological aspects of life into account to fully grasp what has been formulated as the ultimate goal of the Zominthos-project: the reconstruction of a Minoan landscape. With this analysis of the pottery I tried to contribute to this task and furthermore to address questions concerning the relative chronology of Neopalatial Crete as well as the political and social organization within a centralized palatial administration.

On the one hand, the presentation of the ceramic assemblage may also serve as a reference for forthcoming pottery studies and help to establish dates for comparable deposits still to be unearthed. On the other hand it can possibly contribute to the ongoing discussions on Minoan pottery and its developments and chronology.

*“Das unserem Blick entzogene Ineinander und Miteinander, das untrennbar Verflochtene, versuchen wir zu entflechten, indem wir es zu einem Nacheinander und Übereinander ordnen,*

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<sup>964</sup> Ibid., 183, Table 5.8.

*an dessen Spitze wir uns selber setzen. Wir verständigen uns über Idole und Ausschnitte, erklären sie zur Wirklichkeit, schaffen Abfolgen und Hierarchien, verzerren Raum und Zeit.“*

F. Schätzing „Der Schwarm“



## **Abbreviations**

### Periodicals

|           |  |
|-----------|--|
| AA        | Archäologischer Anzeiger   |
| AAA       | Athens Annals of Archaeology   |
| AJA       | American Journal of Archaeology  |
| AR        | Archaeological Reports   |
| ArchDelt  | Archaiologikon Deltion   |
| ArchEphem | Archaiologiki Ephemeris  |
| ASAtene   | Annuario della Scuola archaeological di Atene e delle Missioni italiani in Oriente |
| BAR       | British Archaeological Reports   |
| BCH       | Bulletin de correspondance hellénique  |
| BICS      | Bulletin of the Institute of Classical Studies                                     |

*Abbreviations*

|           |  |
|-----------|--|
| BSA       | Annual of the British School at Athens           |
| JDI       | Jahrbuch des Deutschen Archäologischen Instituts |
| JHS       | Journal of Hellenic Studies                      |
| JMA       | Journal of Mediterranean Archaeology             |
| KretChron | Kritika Chronika                                 |
| SIMA      | Studies in Mediterranean Archaeology             |
| SMEA      | Studi micenei ed egeo-anatolici                  |
| TUAS      | Temple University Aegean Symposium               |

Abbreviations used in the text

|         |  |
|---------|--|
| EM      | Early Minoan   |
| MM      | Middle Minoan  |
| LM      | Late Minoan  |
| BA      | Bronze Age   |
| MUM     | Minoan Unexplored Mansion  |
| RRN     | Royal Road North   |
| SEX     | Stratigraphical Museum Extension Site  |
| PM I-IV | Evans, A. 1921-1935, The Palace of Minos I-IV, London.   |
| KPH     | Momigliano, N. (ed.) 2007, Knossos Pottery Handbook. Neolithic and Bronze Age (Minoan), Sherborne. |
| CMS     | Corpus der Minoischen und Mykenischen Siegel   |
| Suppl.  | Supplement   |

*Abbreviations*

|       |                |
|-------|----------------|
| FM    | Furumark Motif |
| Dim.  | Dimensions     |
| Int.  | Interior       |
| Ext.  | Exterior       |
| Pres. | Preserved      |
| Diam. | Diameter       |
| Max.  | Maximum        |
| Min.  | Minimum        |
| d-o-l | Dark-on-Light  |
| l-o-d | Light-on-Dark  |



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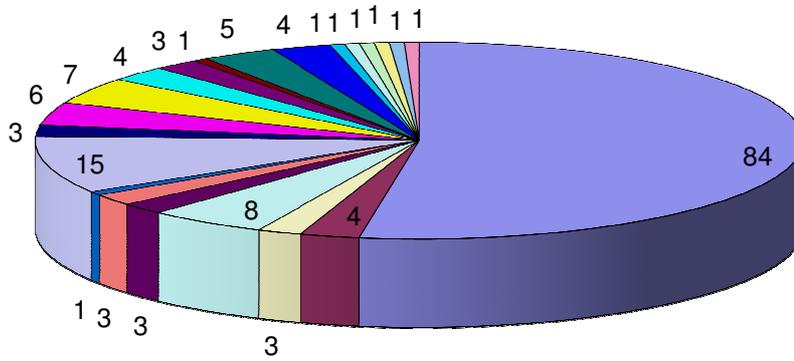
**Table 8:** Platon's Relative Sequence at Kato Zakros

**Table 9:** Knossian Relative Sequence incorporating relevant deposits and pottery styles and the relative chronological position of Zominthos in relation to Knossos

| <b>Vessel Shape</b>      | <b>Room 12</b> | <b>Room 11</b> | <b>Room 10</b> | <b>Other Rooms</b> |
|--------------------------|----------------|----------------|----------------|--------------------|
| Handleless cups          | 57             | 5              | 20             | 2                  |
| Hemispherical cups       | 4              | 1              | 2              | 1                  |
| Bell-shaped cups         | 3              | 0              | 0              | 0                  |
| Rounded cups             | 3              | 0              | 0              | 0                  |
| Straight-sided cups      | 2              | 0              | 0              | 1                  |
| Spouted cups             | 0              | 0              | 0              | 1                  |
| Kalathoi                 | 4              | 0              | 11             | 0                  |
| Bridge-spouted Jugs/Jars | 0              | 0              | 2              | 1                  |
| Beaked Jugs              | 6              | 0              | 0              | 0                  |
| Ewers                    | 5              | 0              | 1              | 0                  |
| Misc. Jugs               | 1              | 0              | 1              | 2                  |
| Bowls                    | 3              | 0              | 0              | 0                  |
| Trays                    | 1              | 0              | 0              | 0                  |
| Milk Jugs                | 3              | 1              | 1              | 0                  |
| Lekanes                  | 3              | 0              | 1              | 0                  |
| Pithoi                   | 1              | 0              | 0              | 0                  |
| Pyxides                  | 1              | 0              | 0              | 0                  |
| Karpodochos              | 0              | 0              | 0              | 1                  |
| Brazier lid              | 1              | 0              | 0              | 0                  |
| Open Vessel              | 0              | 0              | 0              | 1                  |
| Lamps                    | 3              | 1              | 0              | 0                  |
| Rython                   | 1              | 0              | 0              | 0                  |
| Potter's Wheel           | 1              | 0              | 0              | 0                  |

Table 1: Vessels from the area of the pottery workshop

## Shapes



- handleless cups
- incense burners
- bellshaped cups
- hemispherical cups
- rounded cups
- straight-sided cups
- spouted cups
- kalathoi
- bridge-spouted jars/jugs
- beaked jugs
- ewers
- misc. jugs
- bowls
- tray
- milk jugs
- lekanis
- pithos
- brazier lid
- karpodochos
- open vessel
- pyxis?
- conical rython

Table 2: Vessel Shapes

## Handleless Cup Types

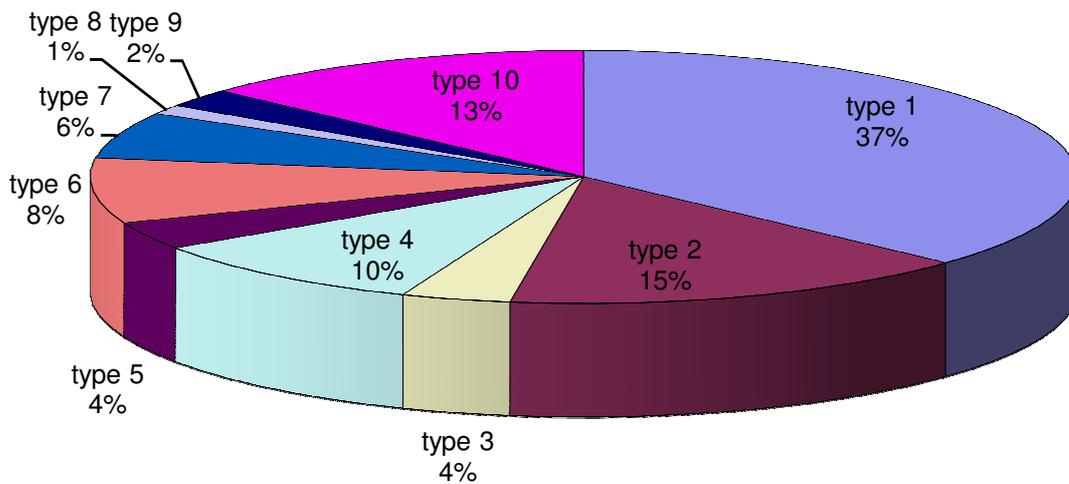


Table 3: Handleless Cup Types

| <b>Motif</b>                         | <b>Cat.No.</b>   | <b>Total</b> |
|--------------------------------------|--|--------------|
| <b>Spirals</b>                       | R12-078; R12-080; R12-100; R12-102; Unit 12, 1988-001; Unit 70, 1988-006; Unit 70, 1988-013; Unit 70, 1988-014; Unit 70, 1988-019; Unit 76, 1988-001; Unit 76, 1988-003; Unit 115, 1988-001  | 12           |
| <b>Grass-/Reed Pattern</b>           | R18-001; Unit 70, 1988-011; Unit 70, 1988-012; Unit 70, 1988-018; Unit 70, 1988-020  | 5            |
| <b>Trickle Pattern</b>               | R12-026; R12-040; Unit 70, 1988-002; Unit 70, 1988-004; Unit 70, 1988-007  | 5            |
| <b>Tortoise Shell Ripple Pattern</b> | R12-086; R12-103; Unit 70, 1988-015; Unit 76, 1988-002   | 4            |
| <b>Solid Bands</b>                   | R10-025; R18-001; R12-078; R12-080; R12-086; R12-100; R12-103; Unit 12, 1988-001; Unit 70, 1988-002; Unit 70, 1988-005; Unit 70, 1988-009; Unit 70, 1988-010; Unit 70, 1988-011; Unit 70, 1988-012; Unit 70, 1988-016; Unit 70, 1988-018; Unit 70, 1988-020; Unit 76, 1988-002 | 18           |
| <b>Splashes</b>                      | R12-025; R12-033; R12-063; R12-066; R10-040  | 5            |
| <b>S-Lines (Curved Stripes)</b>      | Unit 12, 1988-001; Unit 115, 1988-003  | 2            |
| <b>Pictorial (?)</b>                 | Unit 70, 1988-008  | 1            |
| <b>Insecure</b>                      | Unit 70, 1988-009; Unit 70, 1988-017   | 2            |
| <b>Incision/plastic decoration</b>   | Unit 70, 1988-001; Unit 70, 1988-003; Unit 115, 1988-002   | 3            |

Table 4: Decorative schemes identified at Zominthos

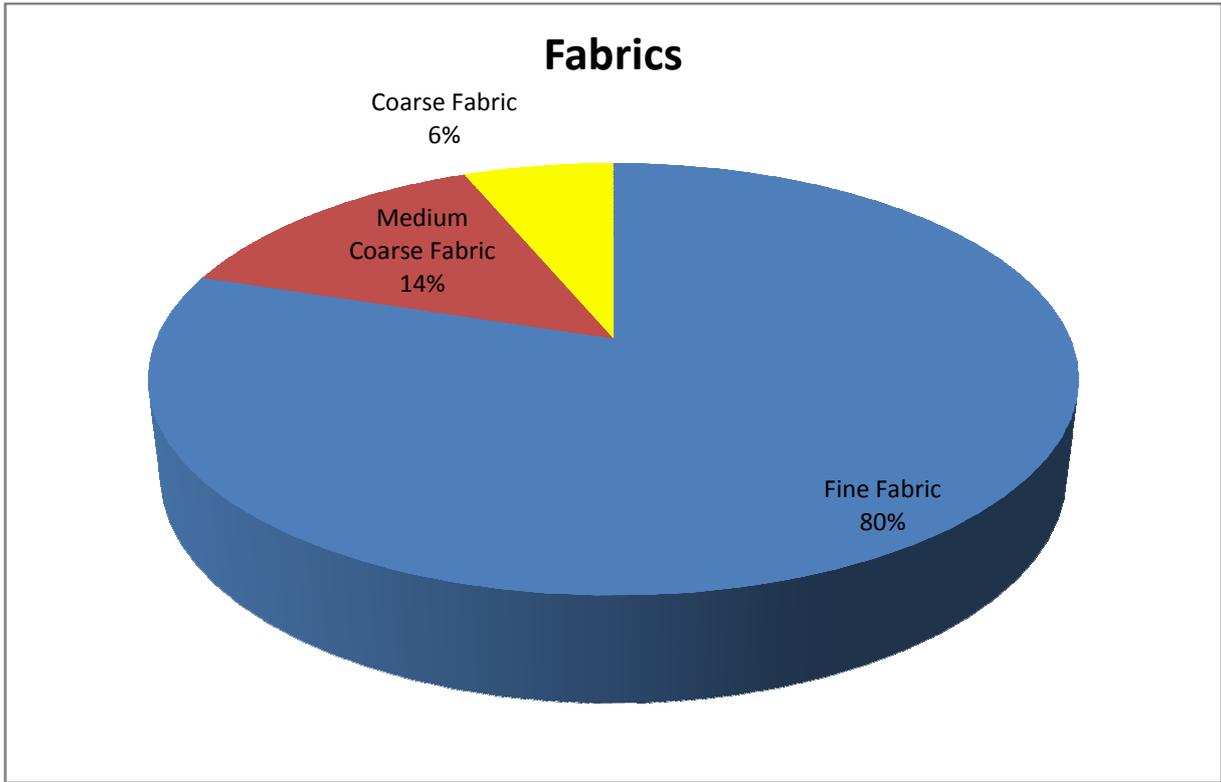


Table 5: Fabrics

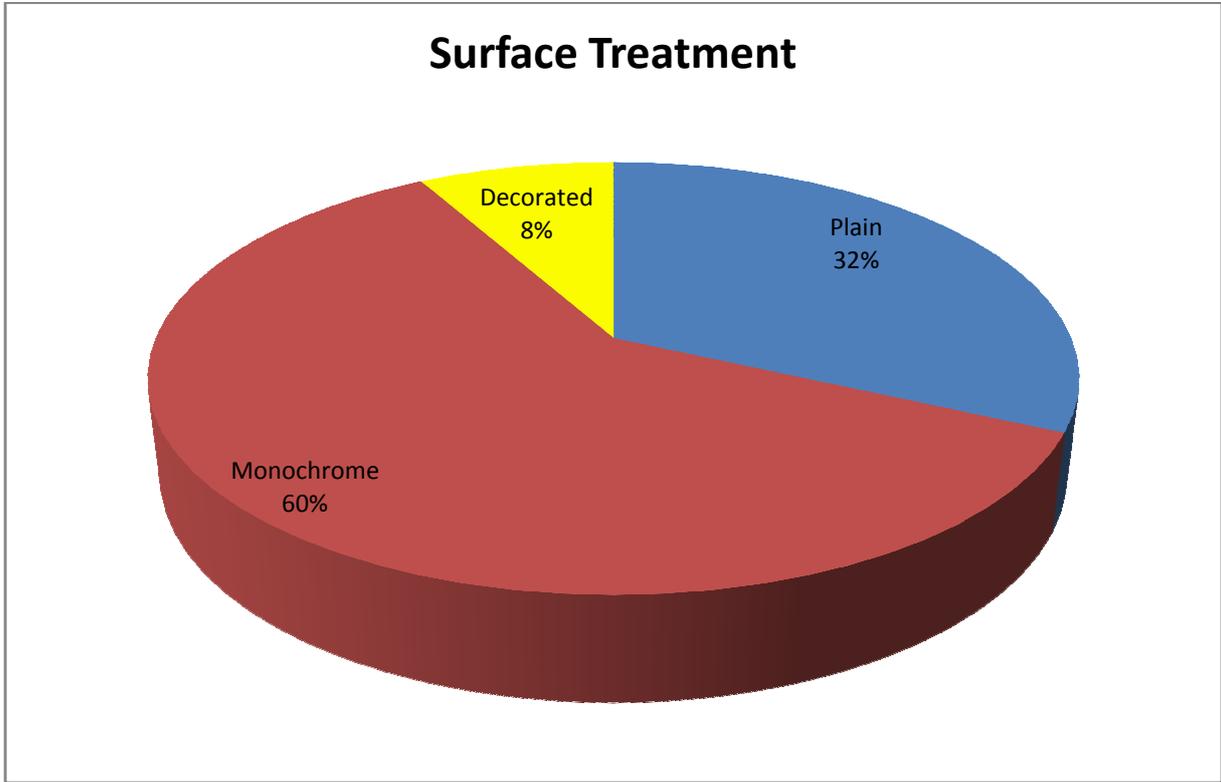


Table 6: Surface Treatment

| Bronze Age | Period        | Pottery Style |
|------------|---------------|---------------|
|            |               | LM IIIC       |
|            |               | LM IIIB       |
|            | Late Minoan   | LM IIIA       |
|            |               | LM II         |
|            |               | LM IB         |
|            |               | LM IA         |
|            | <hr/>         |               |
|            |               | MM IIIB       |
|            |               | MM IIIA       |
|            | Middle Minoan | MM IIB        |
|            |               | MM IIA        |
|            |               | MM IB         |
|            |               | MM IA         |
|            | <hr/>         |               |
|            |               | EM III        |
|            | Early Minoan  | EM II         |
|            |               | EM I          |

Table 7: Evans' and Mackenzie's pottery sequence for Knossos (after Momigliano 2007, Table 0.1).

| Bronze Age  | Period                      | Sub-Period        |
|-------------|-----------------------------|-------------------|
|             |                             | Postpalatial III  |
|             | Postpalatial                | Postpalatial II   |
|             |                             | Postpalatial I    |
|             | <hr/>                       |                   |
|             |                             | Neopalatial III   |
|             | Neopalatial (New Palaces)   | Neopalatial II    |
|             |                             | Neopalatial I     |
|             | <hr/>                       |                   |
|             |                             | Protopalatial III |
|             | Protopalatial (Old Palaces) | Protopalatial II  |
|             |                             | Protopalatial I   |
|             | <hr/>                       |                   |
| Prepalatial | Prepalatial                 |                   |

Table 8: Platon's sequence for Zakros (after Platon 1956, 512).

| Socio-historic period | Destruction events at Knossos            | Pottery styles    | Knossos Deposits  | Zominthos                                      |
|-----------------------|--|-------------------|---|--|
| <b>Postpalatial</b>   |  | LM IIIB - LM IIIC | SEX Southern Half Group (LM IIIC);<br>MUM North Plattform Group (LM IIIB Late);<br>Makritikhos 'Kitchen' Group (LM IIIB Early)  |  |
| <b>Final Palatial</b> | Destruction in LM IIIA2                  | LM II - LM IIIA2  | MUM Pits 8, 10-11 Group (LM IIIA2);<br>Long Corridor Cist Group (LM IIIA1);<br>MUM South Sector Group (LM II)   |  |
| <b>Neopalatial</b>    | Partial destruction                      | LM IB             | SEX North House Group (LM IB)   |  |
|                       | Earthquake destruction<br>(VDL Akrotiri) | LM IA mature      | Gypsades Well (Upper Deposit) Group (LM IA)   | Ceramic<br>Assemblage from<br>Pottery workshop |
|                       | Earthquake destruction<br>(SDL Akrotiri) | MM IIIB - LM IA   | KS 178 Group (MM IIIB)  |  |
|                       | Construction New Palaces                 | MM IIIA - MM IIIB |   |  |
| <b>Protopalatial</b>  | Destruction Old Palaces                  | MM IIIA           | West and South Polychrome Deposits Group (MM IIIA)  |  |
|                       |  | MM IIB            | Trial KV Group (MM IIB)   |  |
|                       |  | MM IIA            | Royal Pottery Stores Group (MM IIA)   |  |
|                       | Construction Old Palaces                 | MM IB             | Early Chamber beneath the West Court Group (MM IB)  |  |
| <b>Prepalatial</b>    |  | EM I - MM IA      | House C/RRS Fill Group (MM IA)<br>Upper East Well Group (EM III Late)<br>SFH Foundation Trench Group (EM III Early)<br>South Front Group (EM IIB)<br>North-East Magazines Group (EM IIA Late)<br>West Court House Group (EM II Early)<br>EM I Well Group (EM I) |  |

Table 9: Relative chronological pottery sequence of Knossos and the chronological position of the material from Zominthos.



# **Plates**

**List of Plates:**

**Plate 1:** Handleless Cups Type 1

**Plate 2:** Handleless Cups Type 2 and Type 3

**Plate 3:** Handleless Cups Type 4, 5, and 6

**Plate 4:** Handleless Cups Type 7, 8, 9, and 10

**Plate 5:** Hemispherical Cups, Bell-shaped Cups, and Rounded Cups

**Plate 6:** Straight-sided Cups, and Spouted Cup

**Plate 7:** Kalathoi Type 1

**Plate 8:** Kalathoi Type 2, and Bridge-spouted Jugs/Jars

**Plate 9:** Beaked Jugs

**Plate 10:** Beaked Jugs

**Plate 11:** Ewers

**Plate 12:** Ewers, and misc. Jugs

**Plate 13:** Bowls, Tray, Milk Jugs, and Lekanis

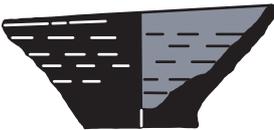
**Plate 14:** Lekanes

**Plate 15:** Pithos, Pyxis, and Karpodochos

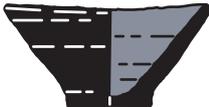
**Plate 16:** Brazier Lid, Open Vessel, and Conical Rython

**Plate 17:** Potters' Wheel

**Plate 18-20:** Decorated Fragments



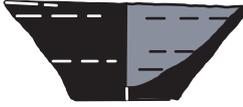
R12-001



R12-002



R12-003



R12-004



R12-005



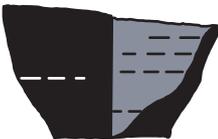
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R12-007



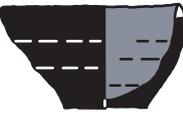
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R12-009



R12-010



R12-011



R12-012



R12-013



R12-014



R12-015



R11-001



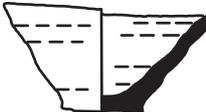
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R10-001



R10-002



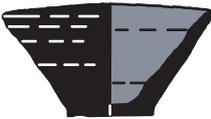
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R10-004



R10-005



R10-006



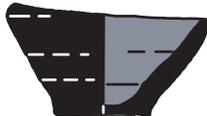
R10-007



R10-008



R10-009



R10-010



R10-011



R10-012



R10-013



R13-001

Handleless cups Type 1





R12-016



R12-017



R12-018



R12-019



R12-020



R12-021



R12-022



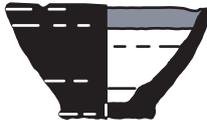
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R11-003



R11-004



R11-005



R10-014



R15-001

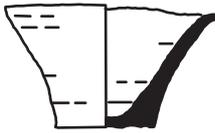
Handleless cups Type 2



R12-024

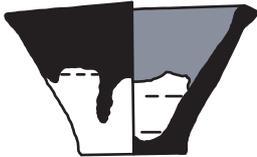


R12-025



R10-015

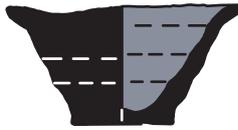
Handleless cups Type 3



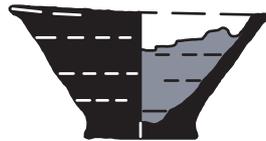
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R12-027



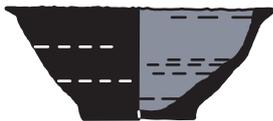
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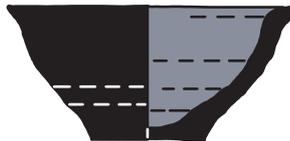
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R12-030



R12-031

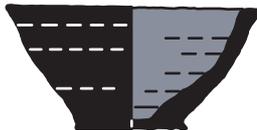


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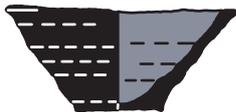


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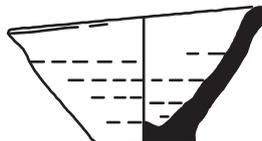
Handleless cups Type 4



R12-034



R12-035

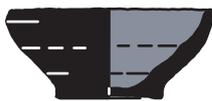


R12-036

Handleless cups Type 5



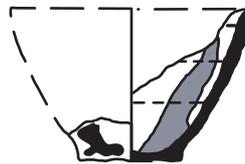
R12-037



R12-038



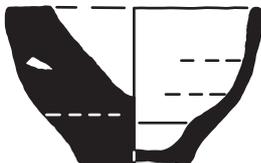
R12-039



R12-040



R12-041



R12-042

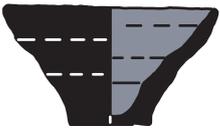


R12-043

Handleless cups Type 6



R12-044



R12-045



R12-046

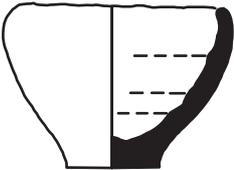


R12-047



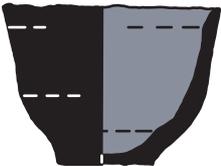
R12-048

Handleless cups Type 7

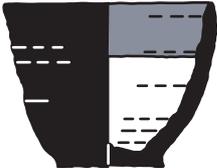


R12-049

Handleless cup Type 8



R12-050



R12-051

Handleless cups Type 9



R12-052



R12-053



R12-054



R12-055



R12-056



R12-057



R10-016



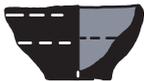
R10-017



R10-018



R10-019



R10-020

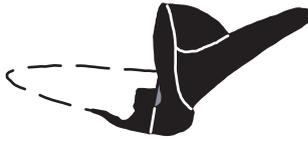
Handleless cups Type 10



R12-058



R12-059

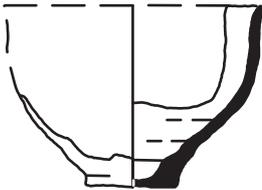


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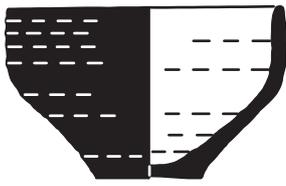


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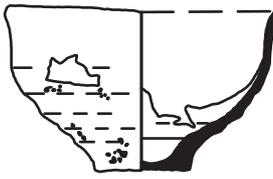
Lamps / Incense Burners



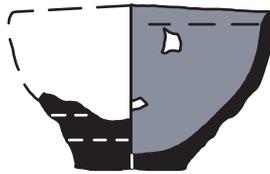
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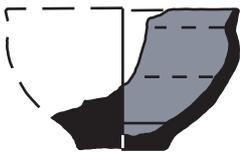
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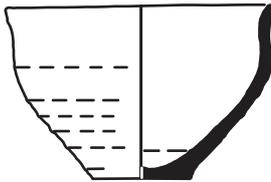
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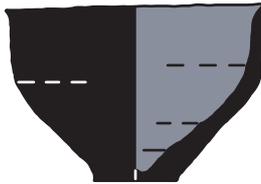
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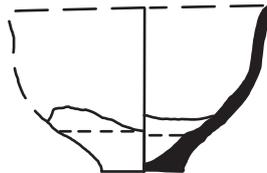
R11-007



R10-21

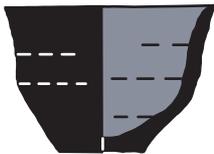


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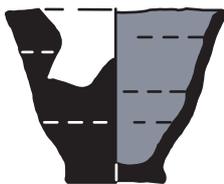


R13-002

Hemispherical cups



R12-065

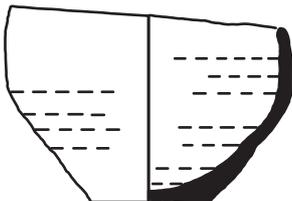


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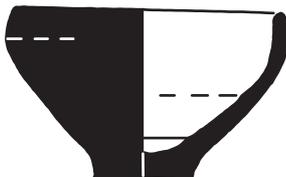


R12-067

Bell-shaped cups



R12-068



R12-069

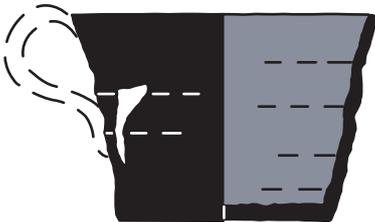


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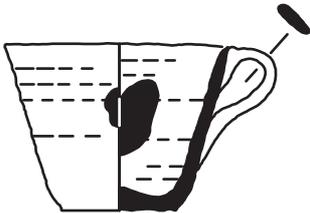
Rounded cups



R12-071

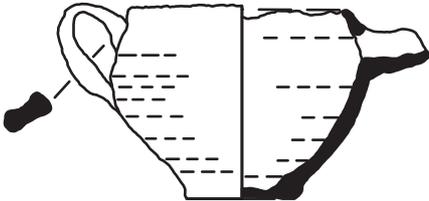


R12-072



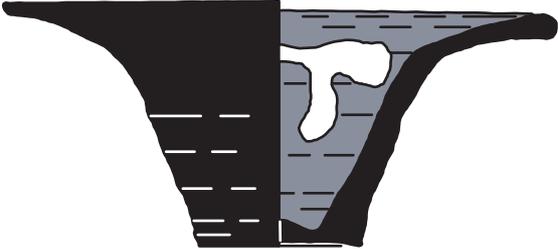
R15-002

Straight-sided cups

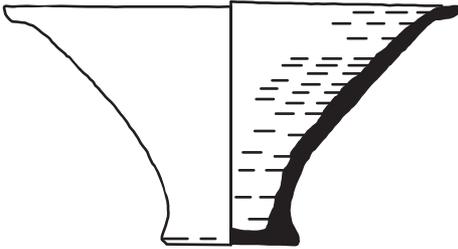


R10-023

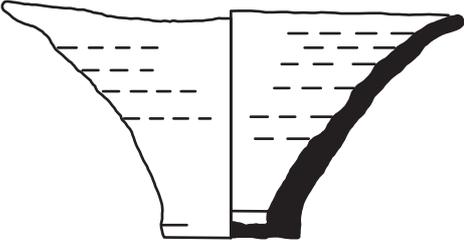
Spouted cup



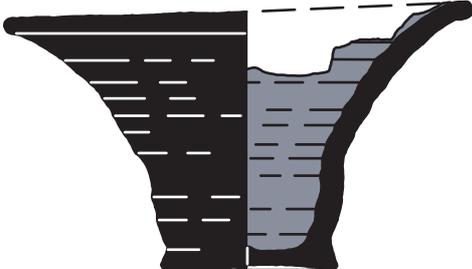
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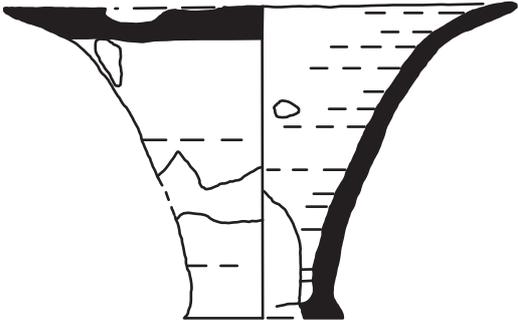
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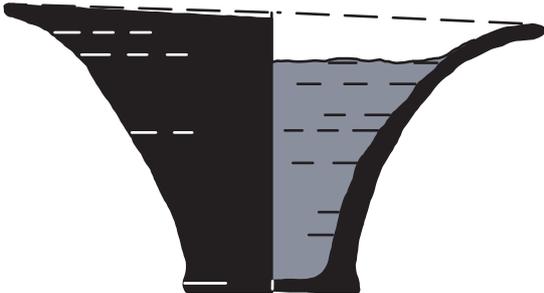
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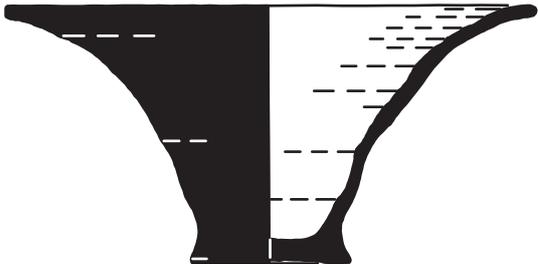
R10-024



R10-025



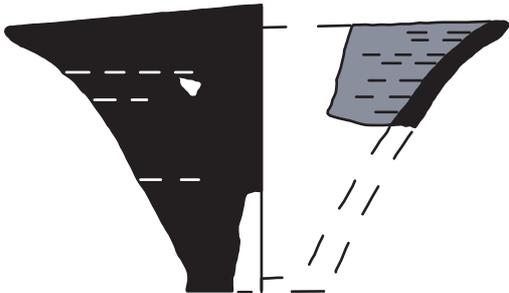
R10-029



R10-027

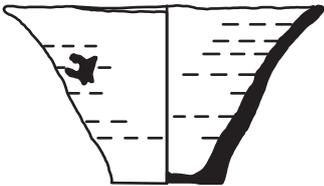


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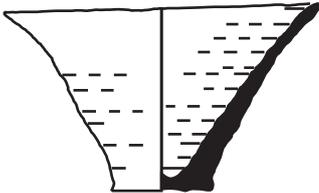


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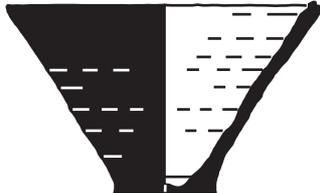
Kalathoi Type 1



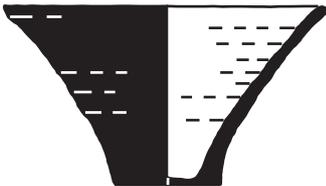
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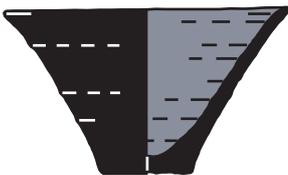
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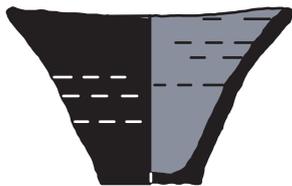
R10-031



R10-032

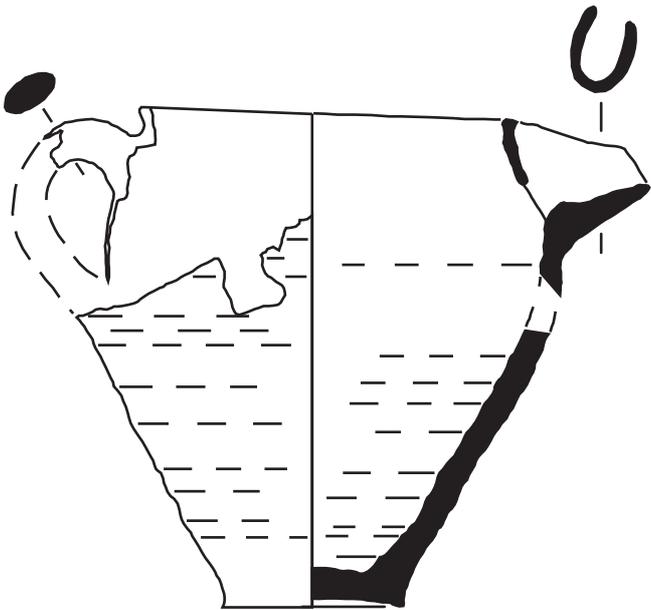


R10-033

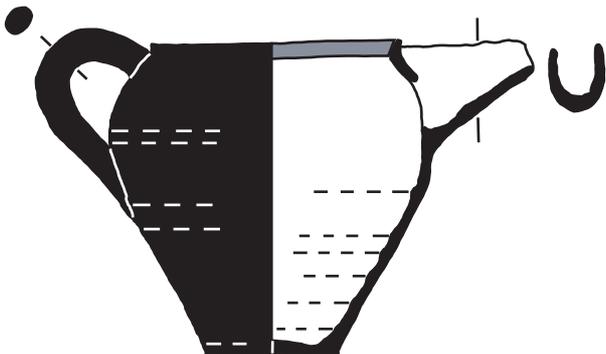


R10-034

Kalathoi Type 2



R10-035

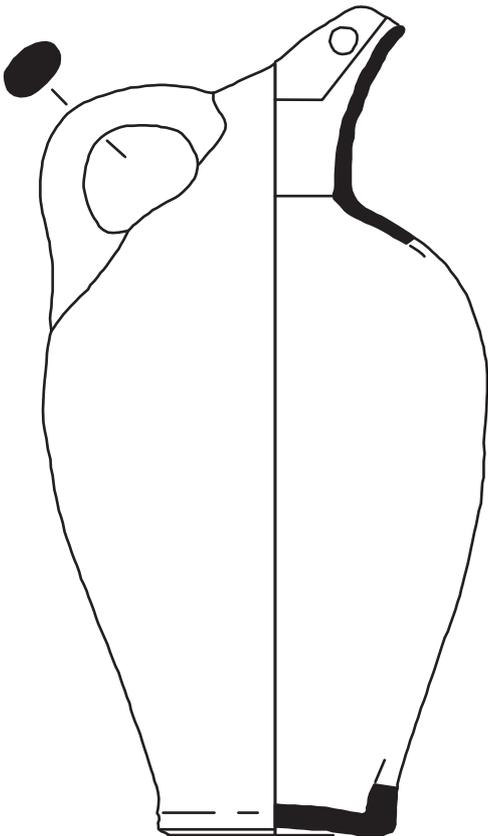


R10-036



R18-001

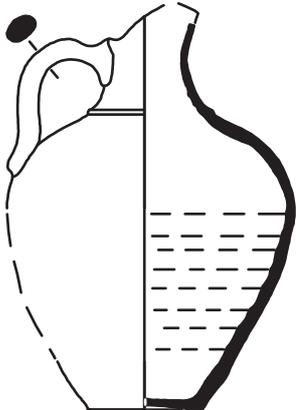
Bridge-spouted Jugs/Jars



R12-077



R12-078



R12-079

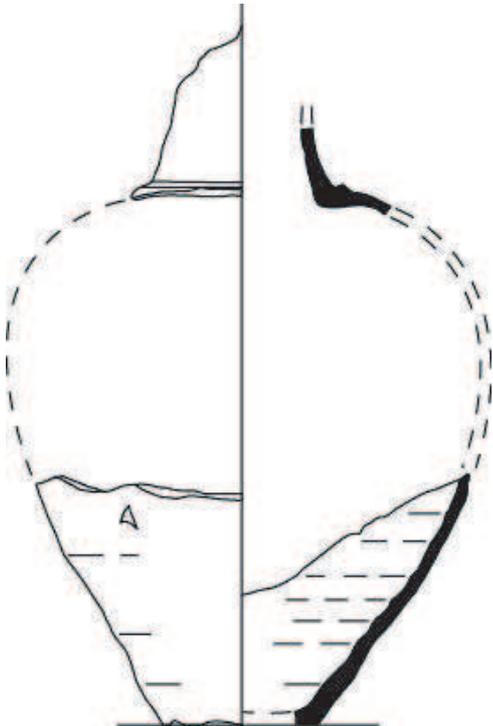
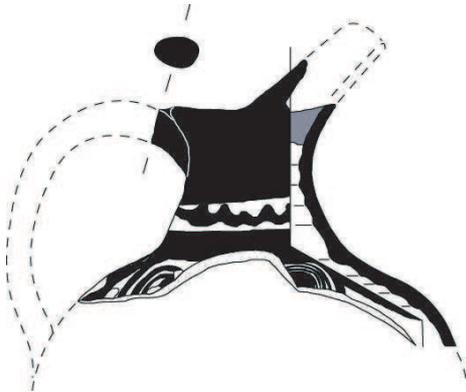


R12-080

Beaked Jugs

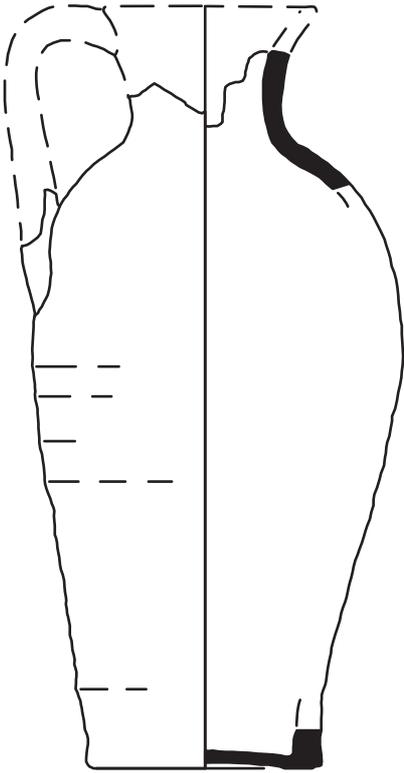


R12-100

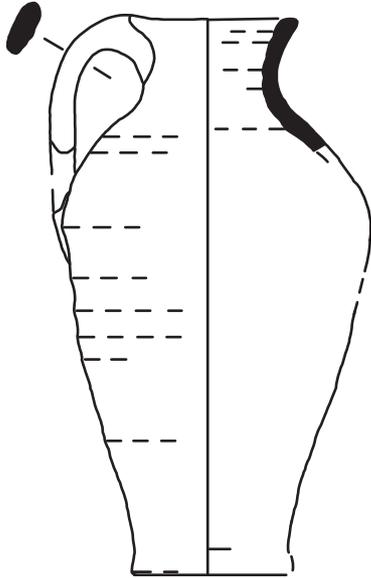


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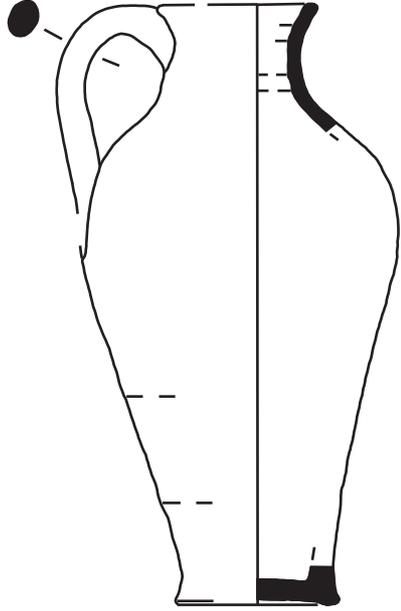
Beaked Jugs



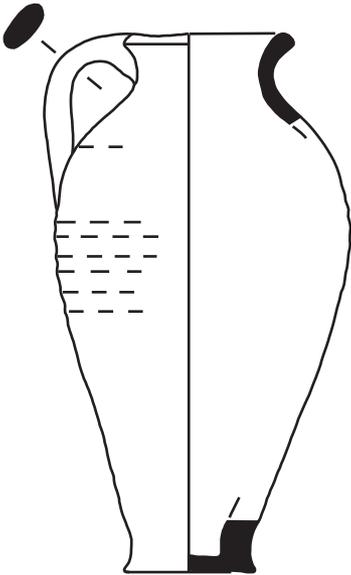
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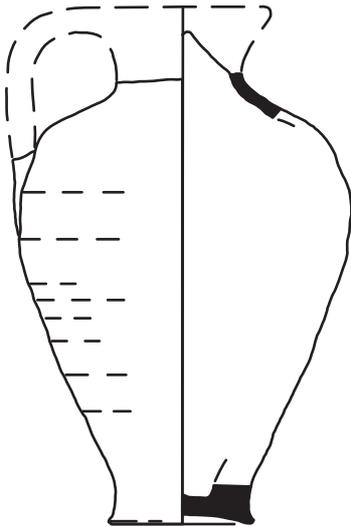
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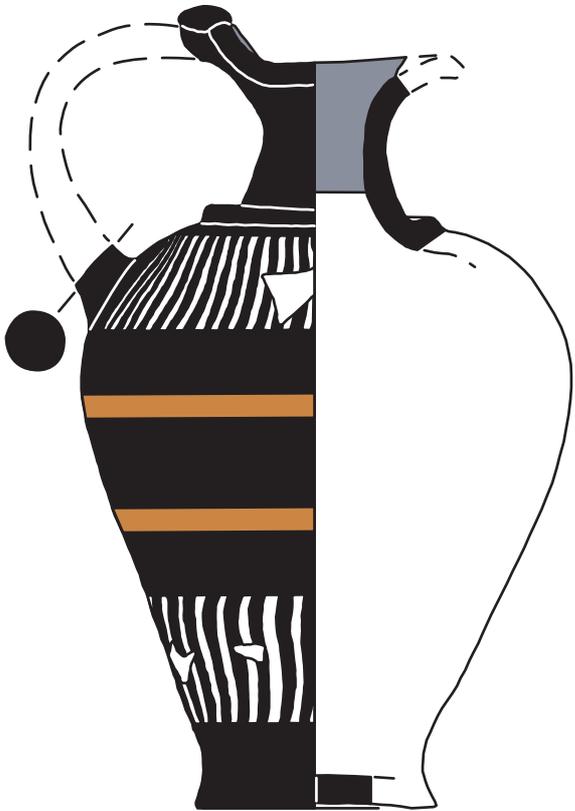
R12-083



R12-084

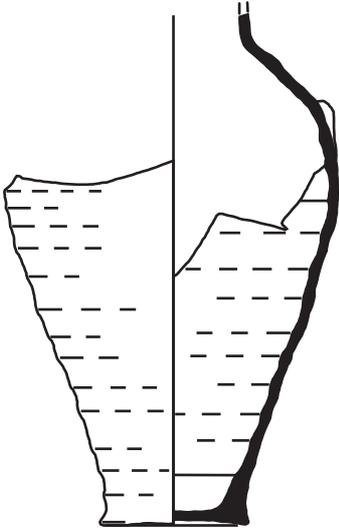


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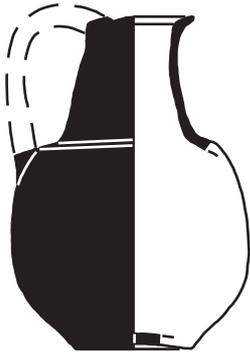
R12-086

Ewers

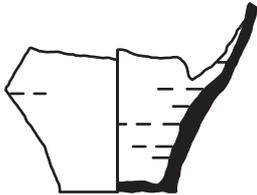


R10-037

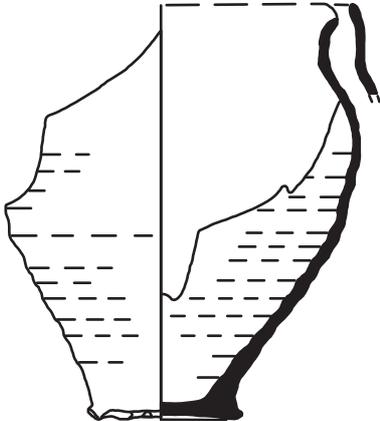
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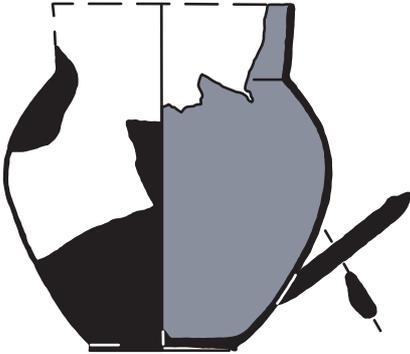
R12-087



R10-038

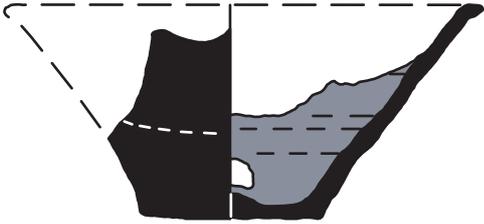


R15-003

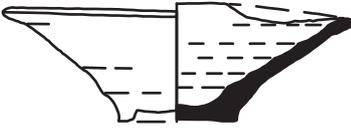


R15-004

Misc. Jugs



R12-088



R12-089



R12-090

Bowls

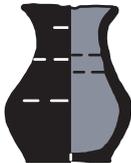


R12-091

Tray



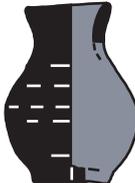
R12-092



R12-093



R12-094

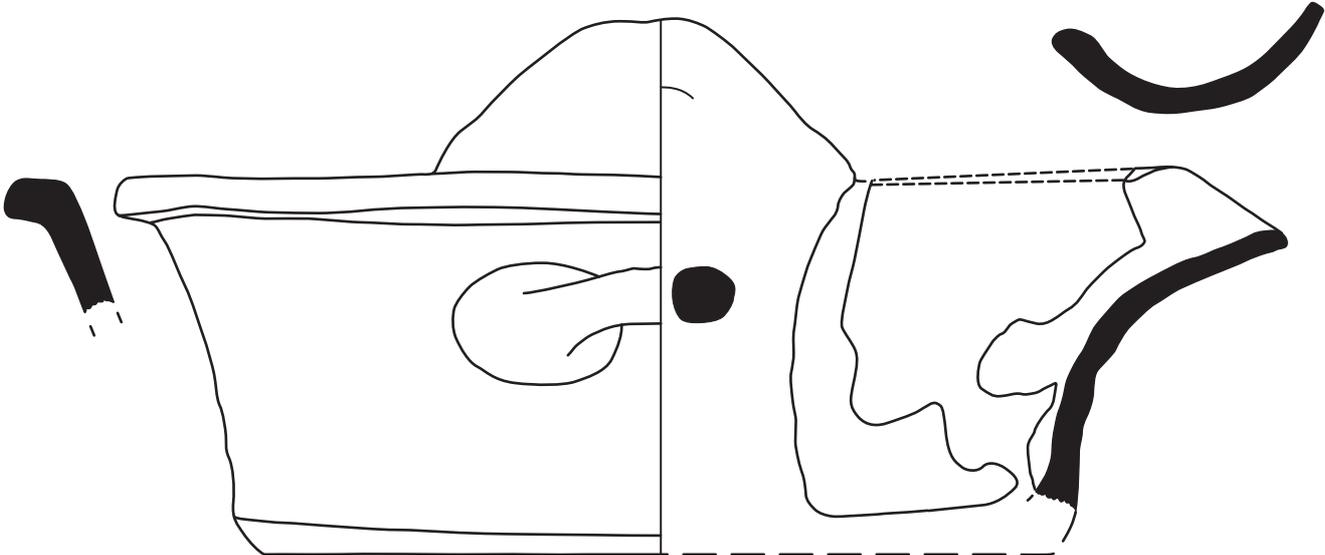


R11-008

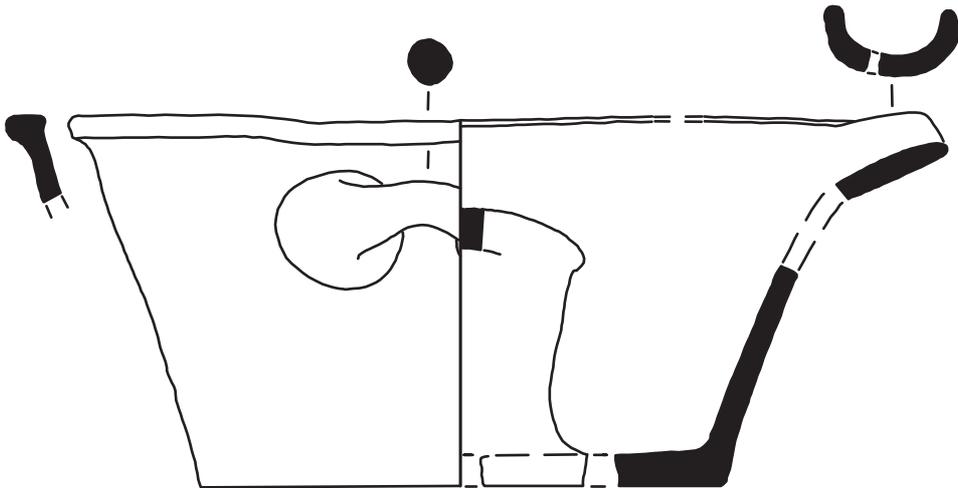


R10-039

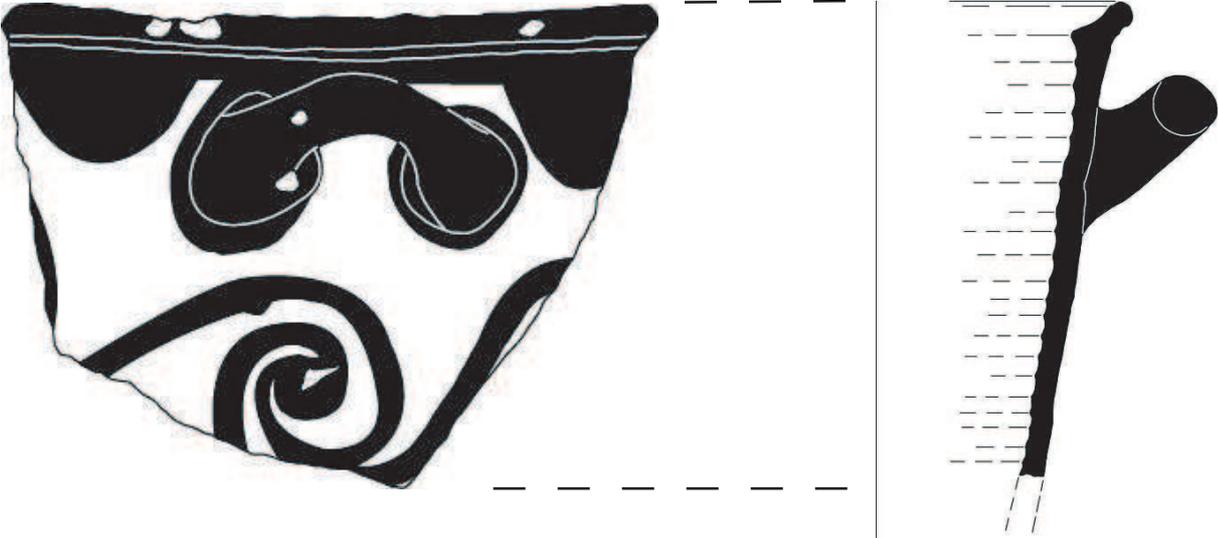
Milk Jugs



R12-095



R12-096

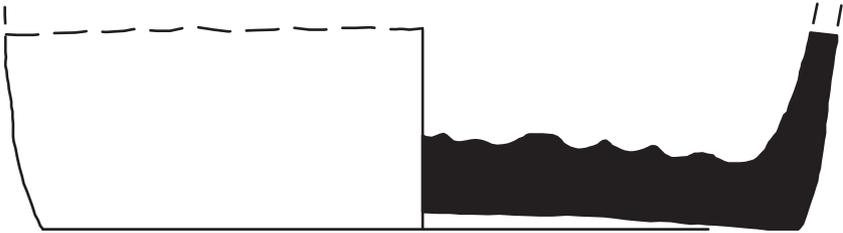


R12-102



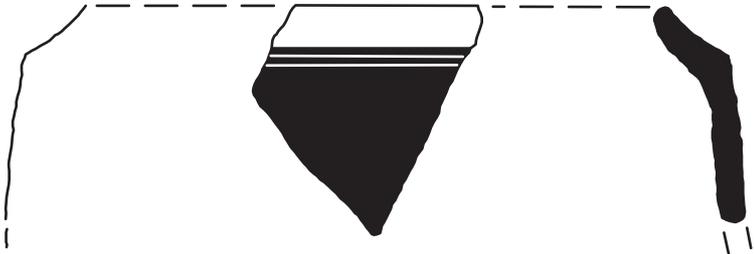
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Lekanes



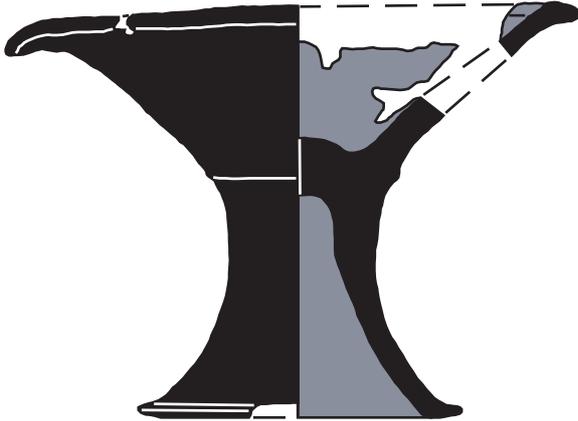
R12-097

Pithos



R12-098

Pyxis



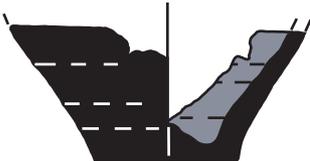
R13-002

Karpodochos



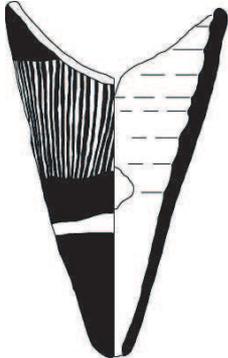
R12-099

Brazier Lid



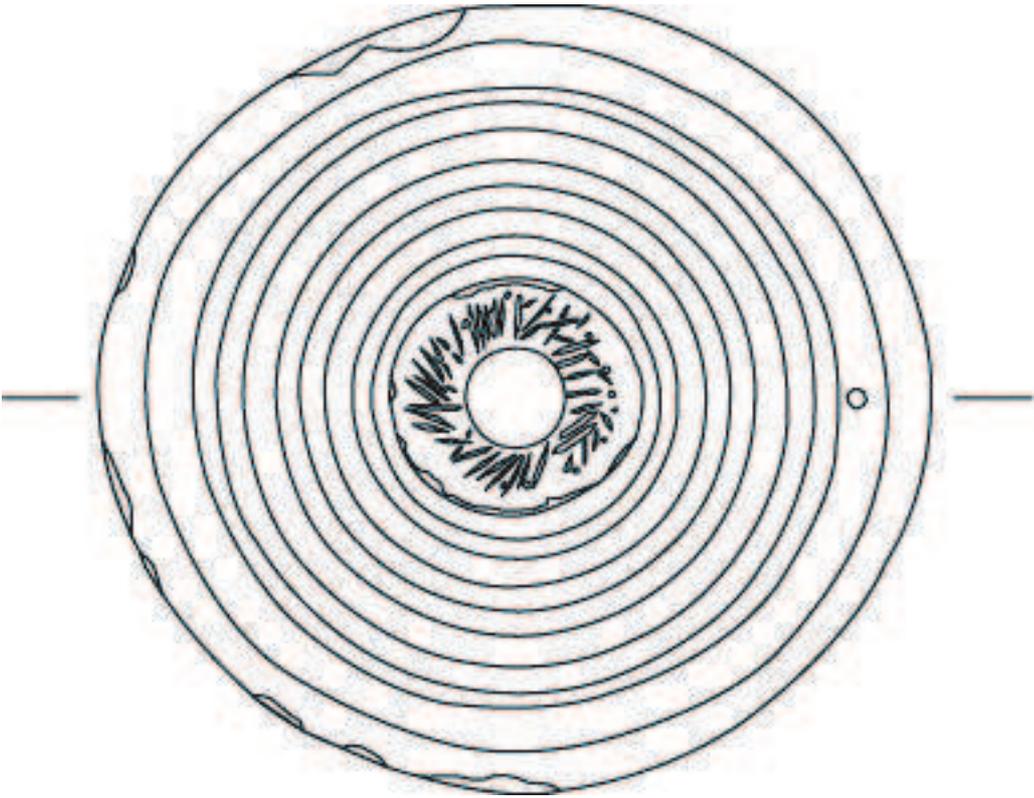
R13-004

Open Vessel



R12-103

Conical Rython



Diam. max.: ca. 44.0cm

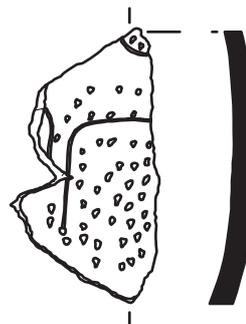


R12-104

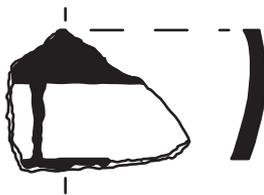
Potters' Wheel



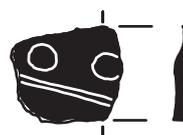
1:1  
Unit 12, 1988-001



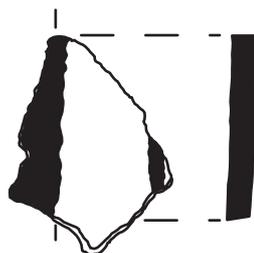
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Unit 70, 1988-001



Unit 70, 1988-002



Unit 70, 1988-003



Unit 70, 1988-004



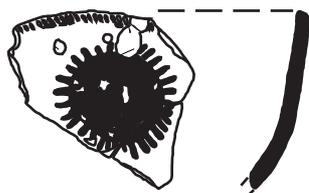
Unit 70, 1988-005



Unit 70, 1988-006



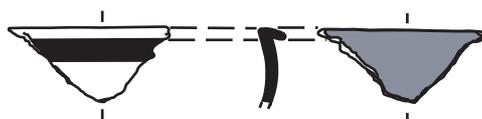
Unit 70, 1988-007



Unit 70, 1988-008



Unit 70, 1988-009



Unit 70, 1988-010



Unit 70, 1988-011



Unit 70, 1988-012



Unit 70, 1988-013



Unit 70, 1988-014



Unit 70, 1988-015



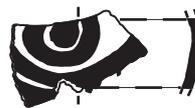
Unit 70, 1988-016



Unit 70, 1988-017



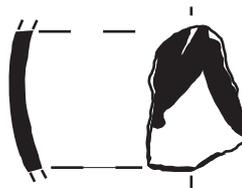
Unit 70, 1988-018



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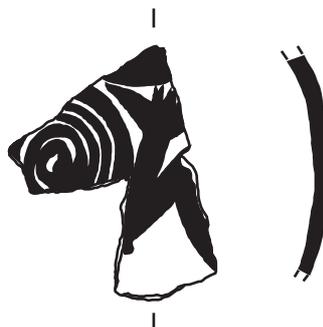
Unit 70, 1988-020



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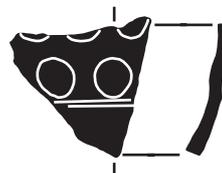
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Figure 1

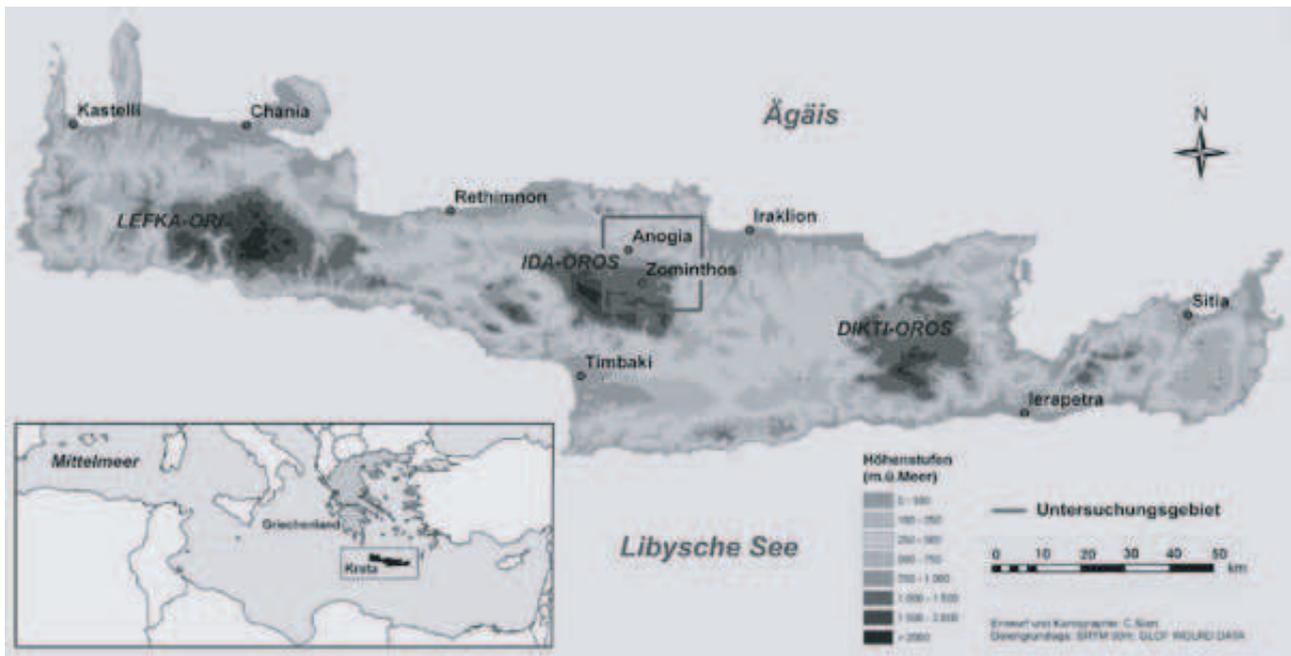


Figure 2



Figure 3



Figure 4

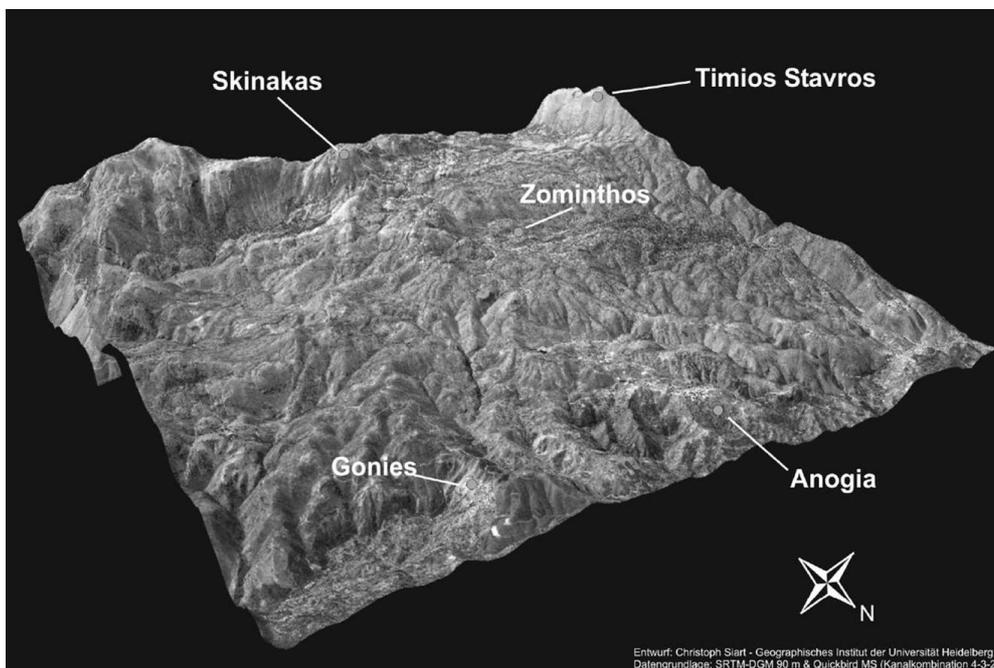


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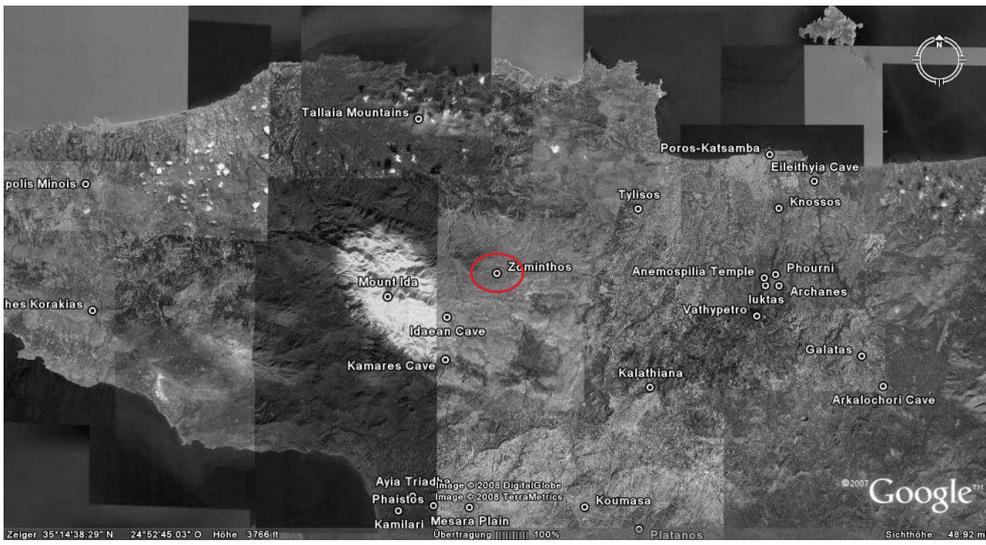


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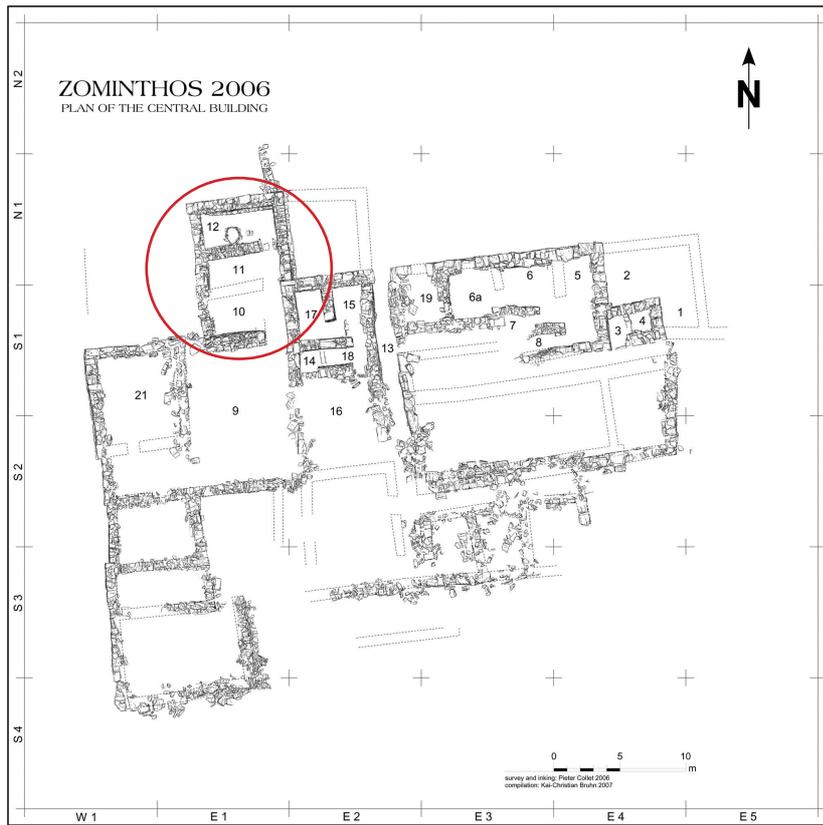


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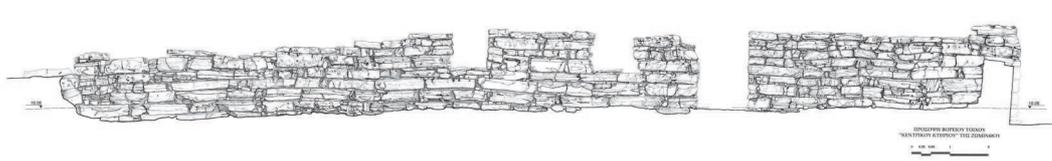


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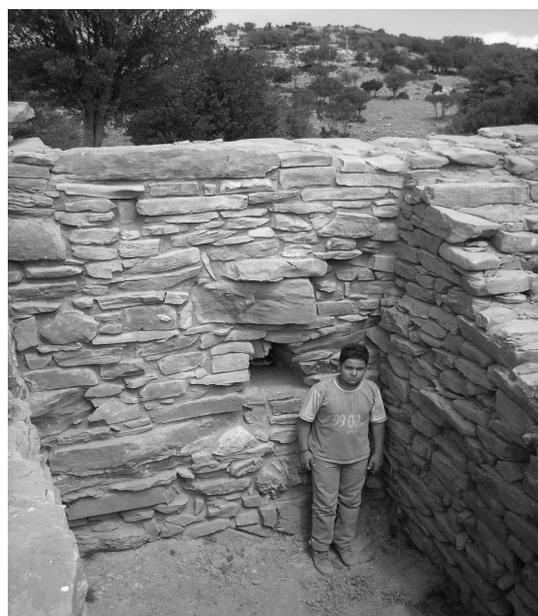


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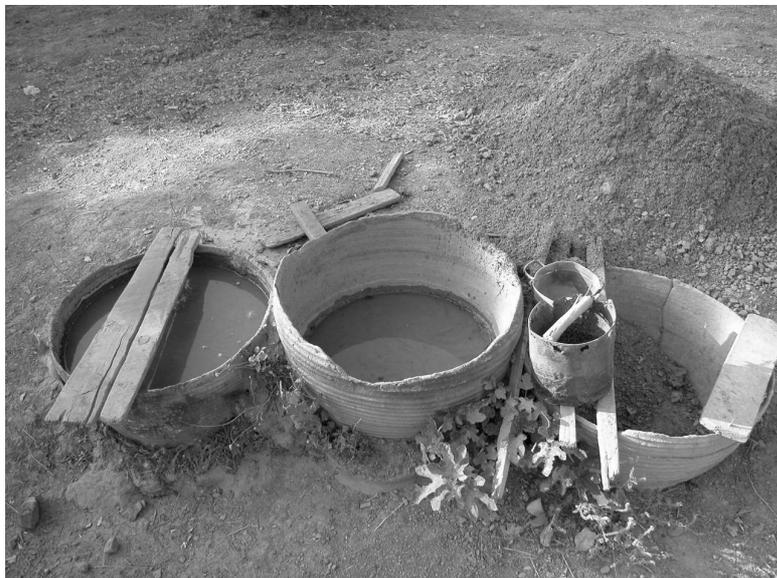


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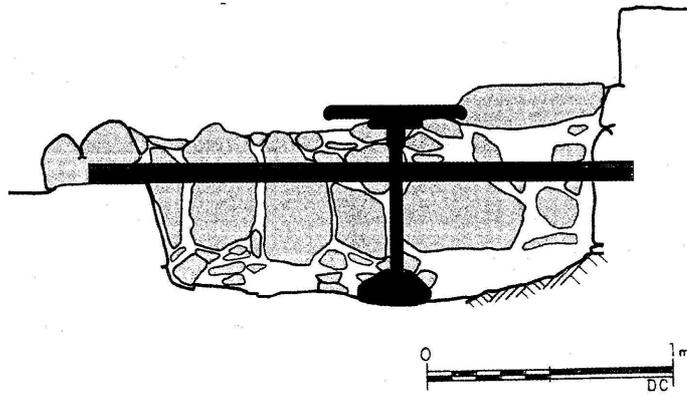


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Figure 17

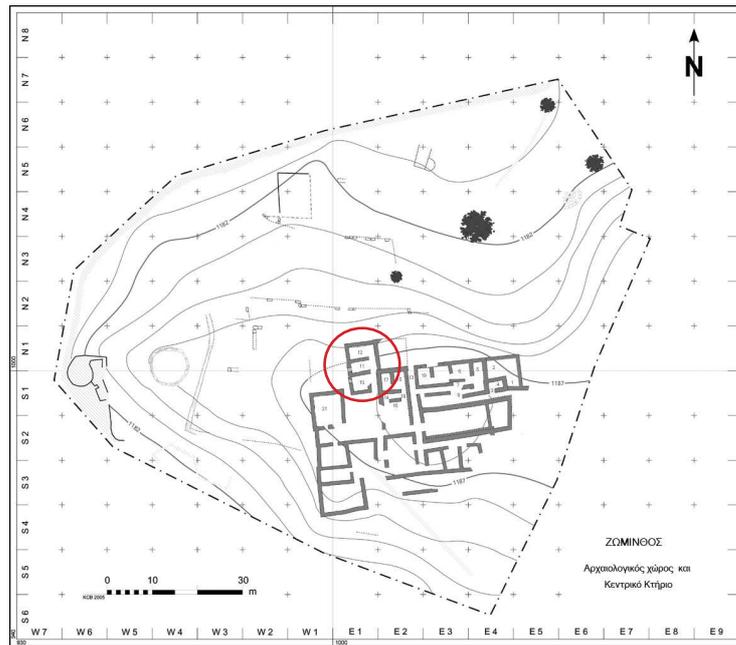


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Figure 19



Figure 20



Figure 21

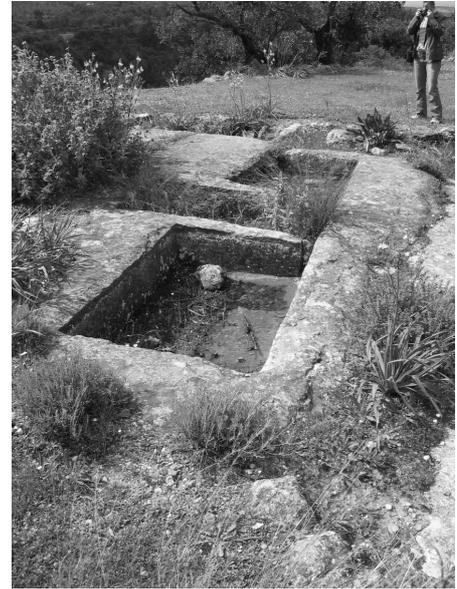


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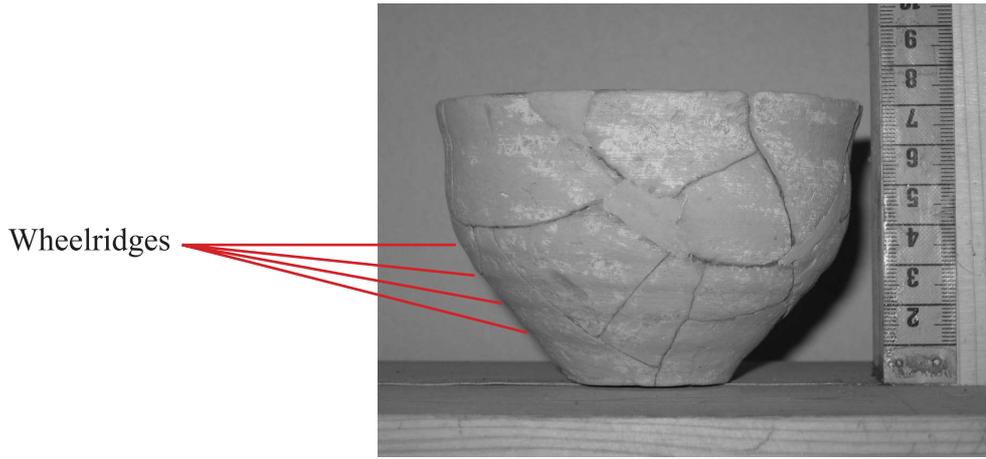


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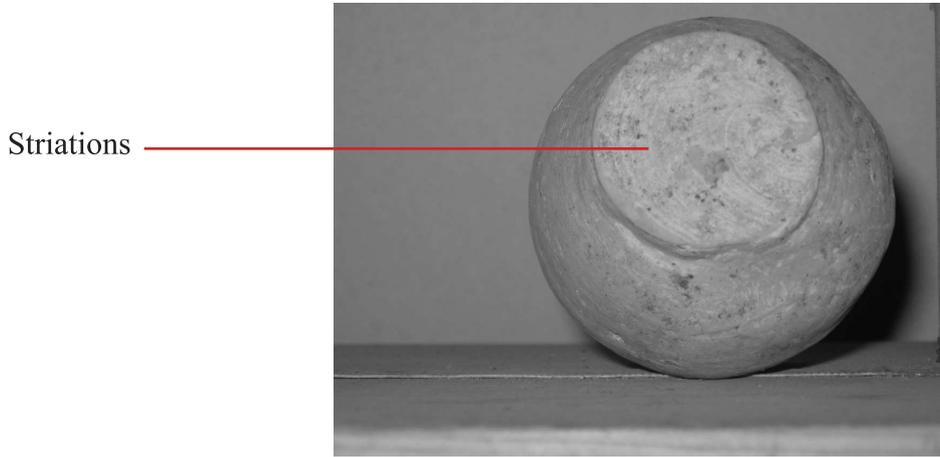


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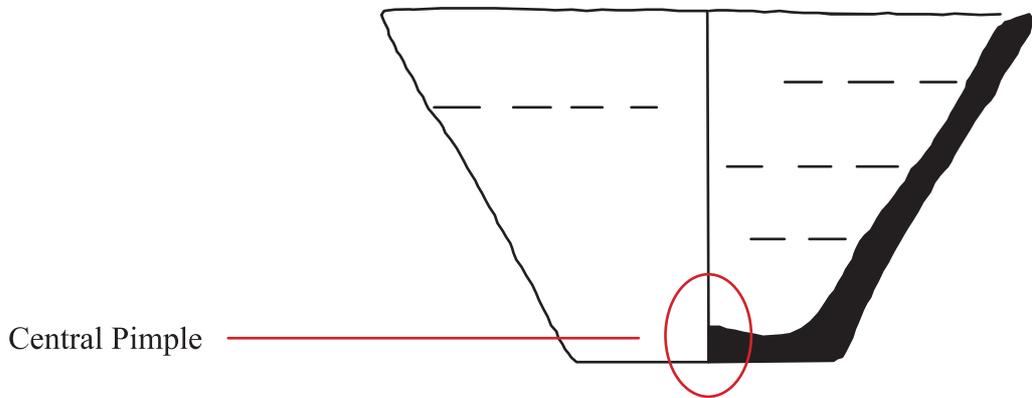


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Figure 28



Figure 29



Figure 30



Figure 31



Figure 32



Figure 33



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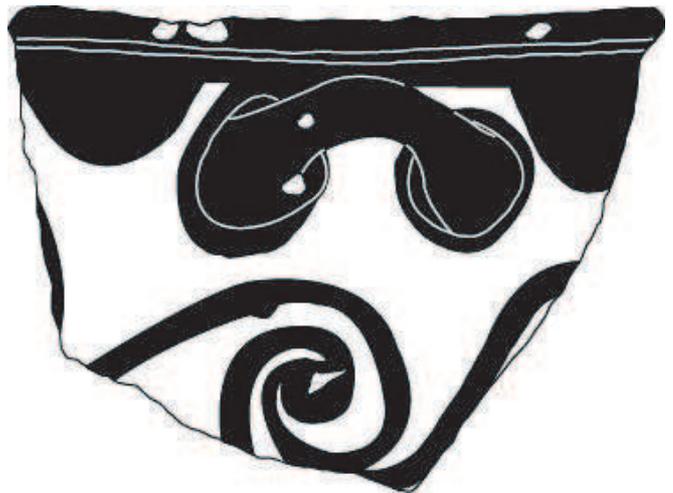


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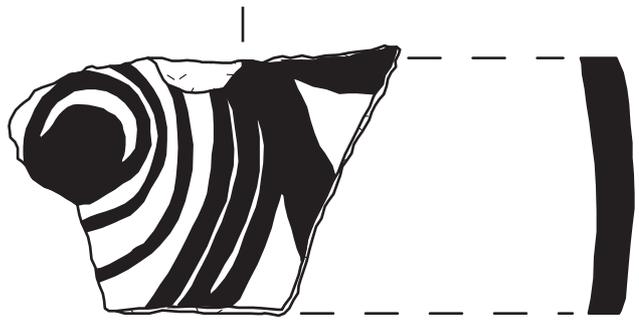


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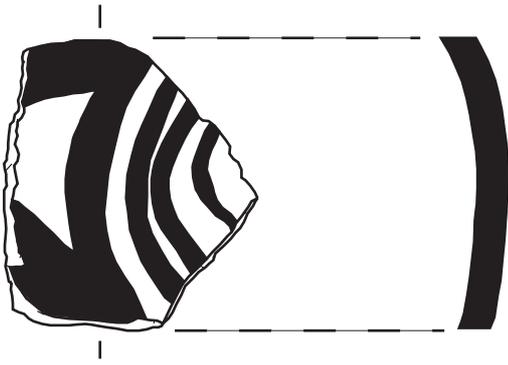


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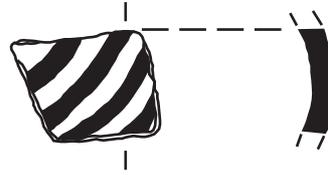


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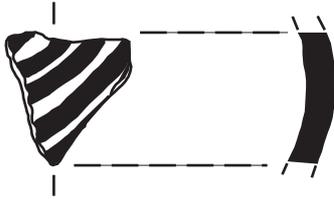


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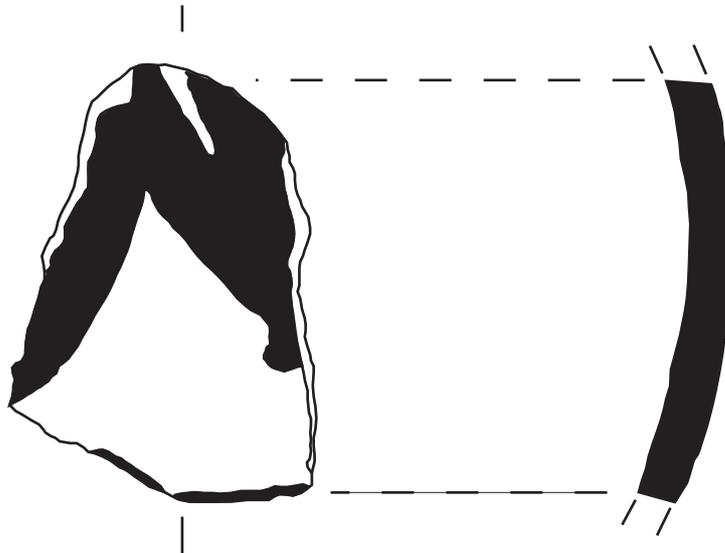


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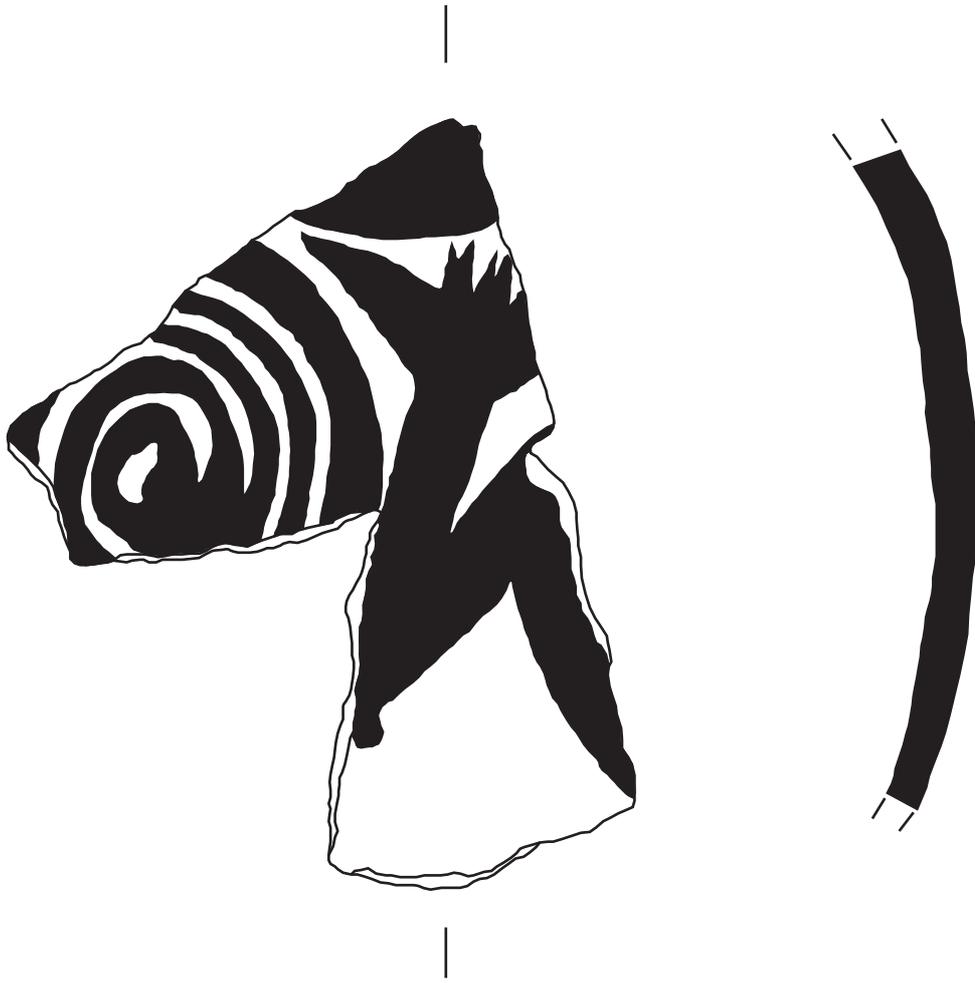


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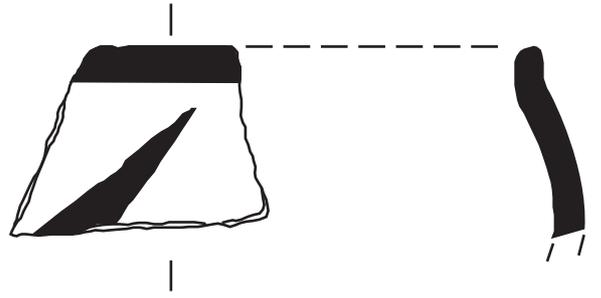


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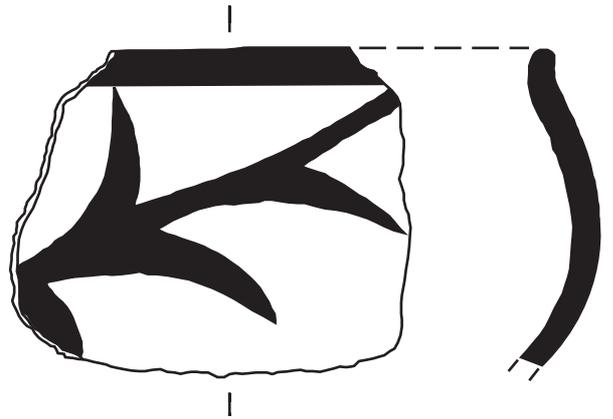


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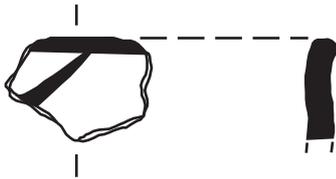


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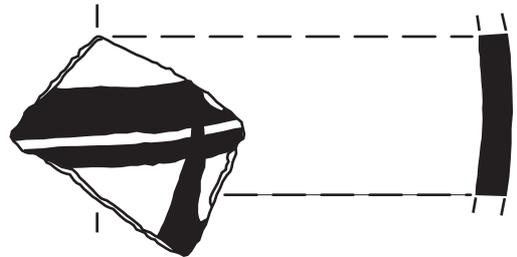


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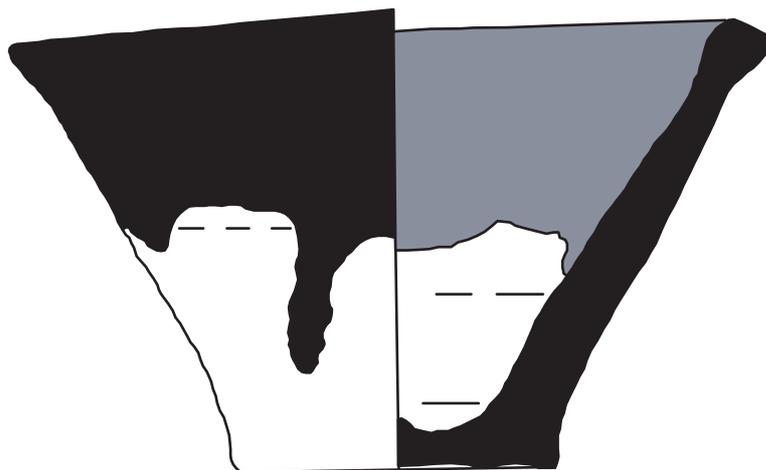


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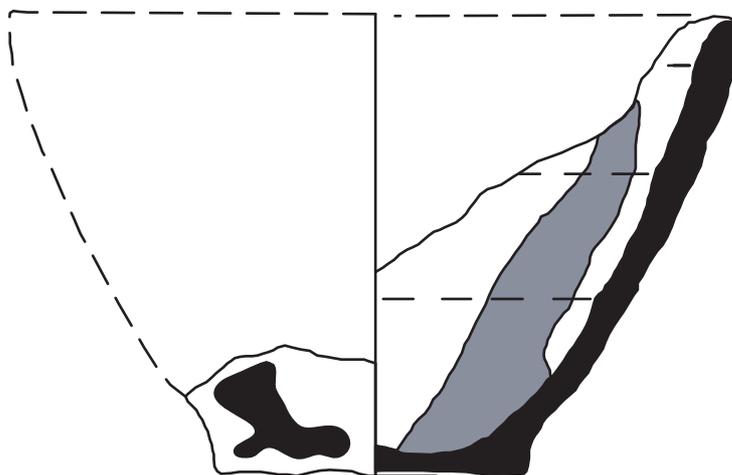


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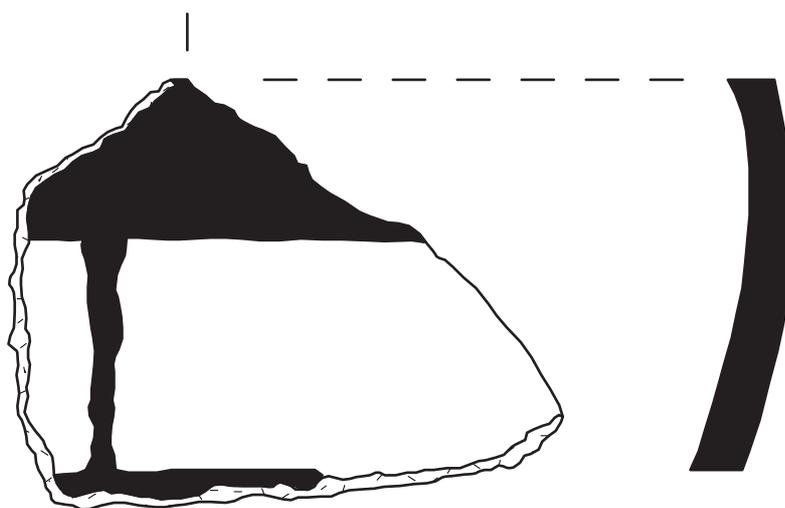


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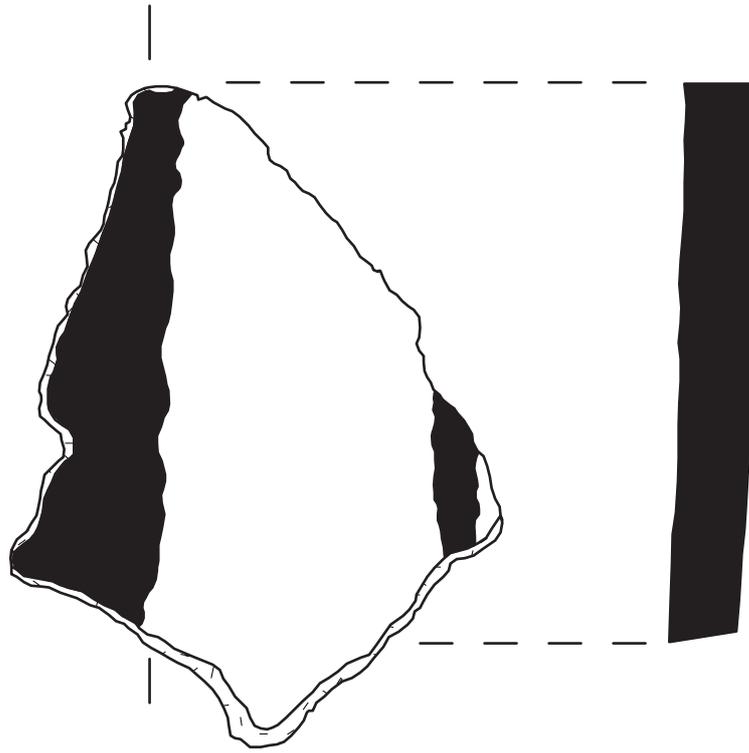


Figure 54: Unit 70, 1988-004 (1:1)

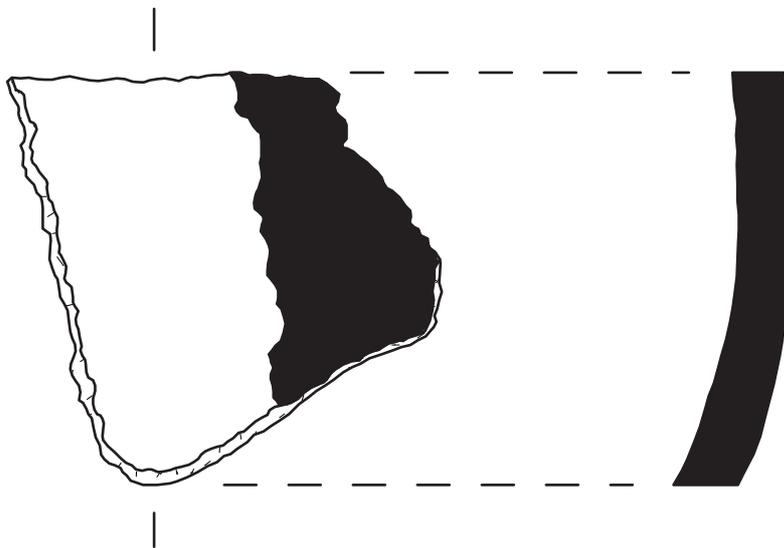


Figure 55: Unit 70, 1988-007 (1:1)

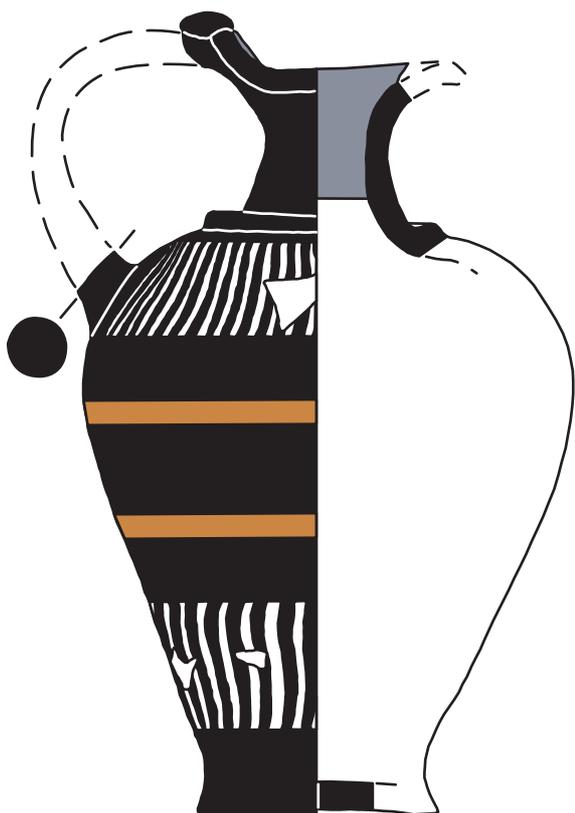


Figure 56: R12-086 (1:3)

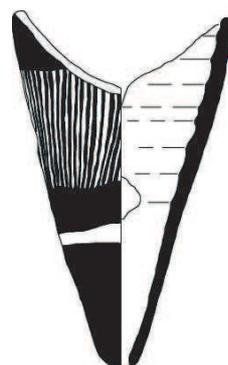


Figure 57: R12-103 (1:3)

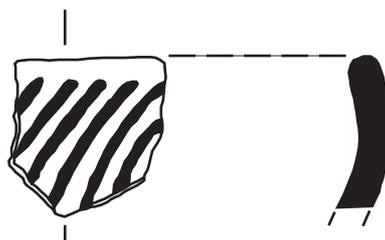


Figure 58: Unit 70, 1988-015 (1:1)

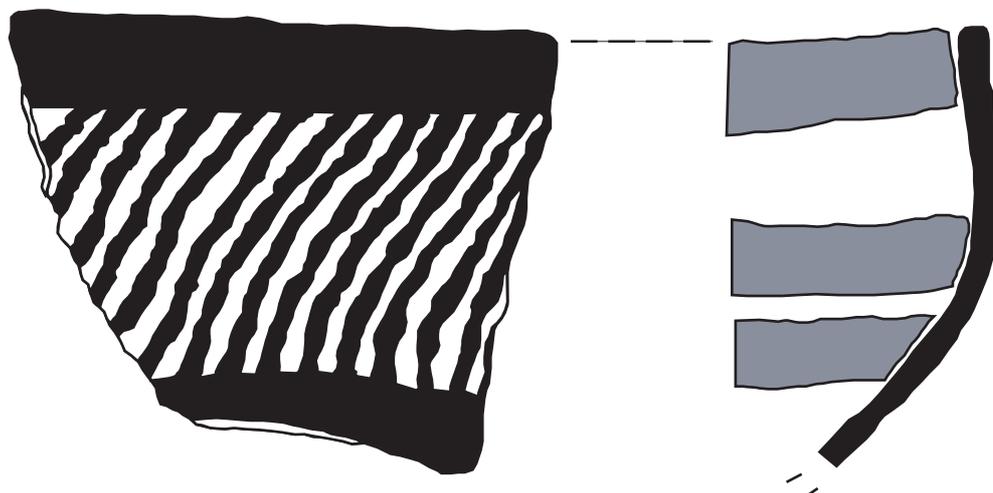


Figure 59: Unit 76, 1988-002 (1:1)

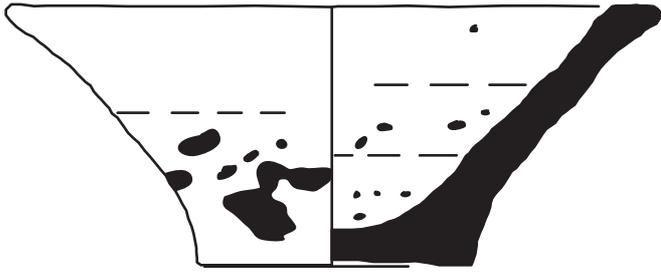


Figure 60: R12-025 (1:1)

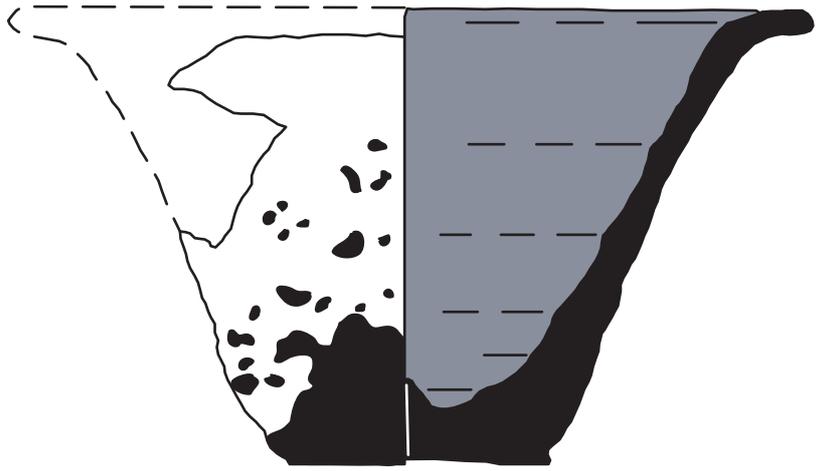


Figure 61: R12-033 (1:1)

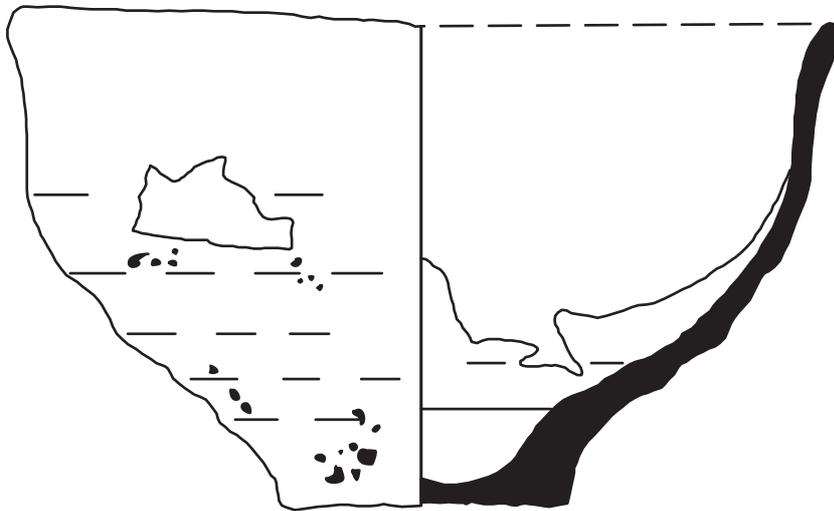


Figure 62: R12-063 (1:1)



Figure 63: R12-067 (1:1)

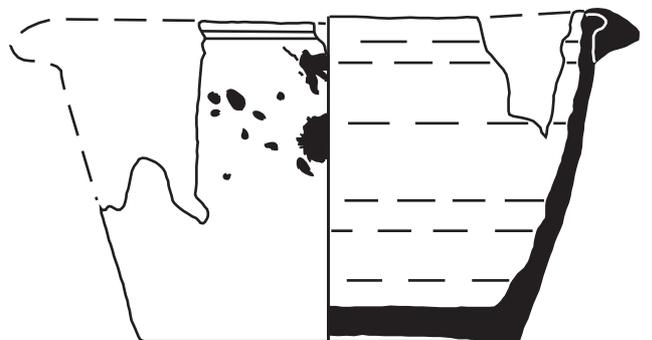


Figure 64: R10-040 (1:3)

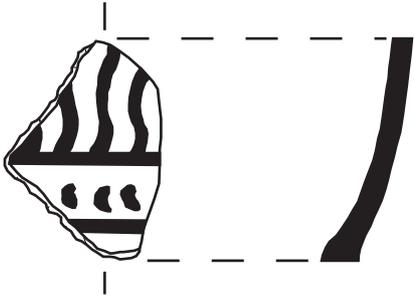


Figure 65: Unit 115, 1988-003 (1:1)

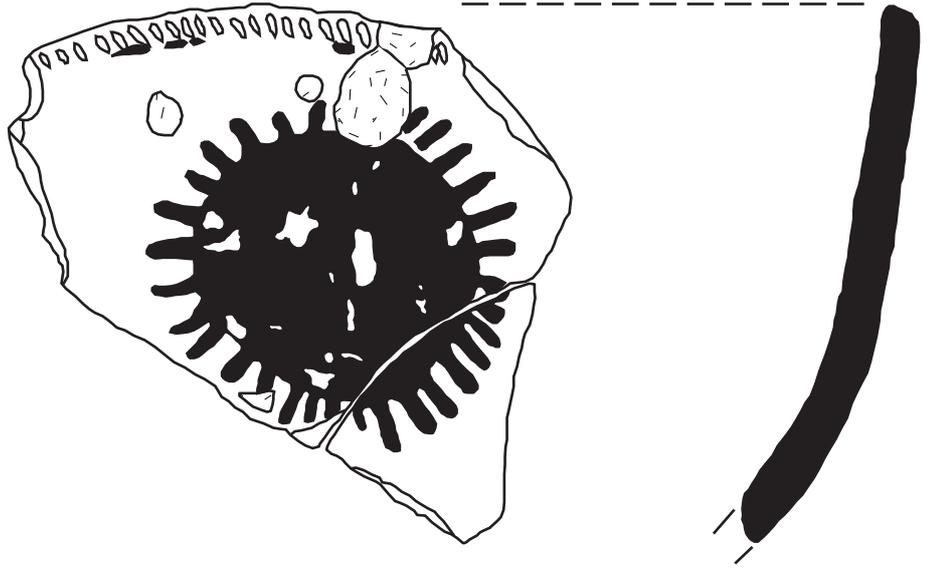


Figure 66: Unit 70, 1988-008 (1:1)

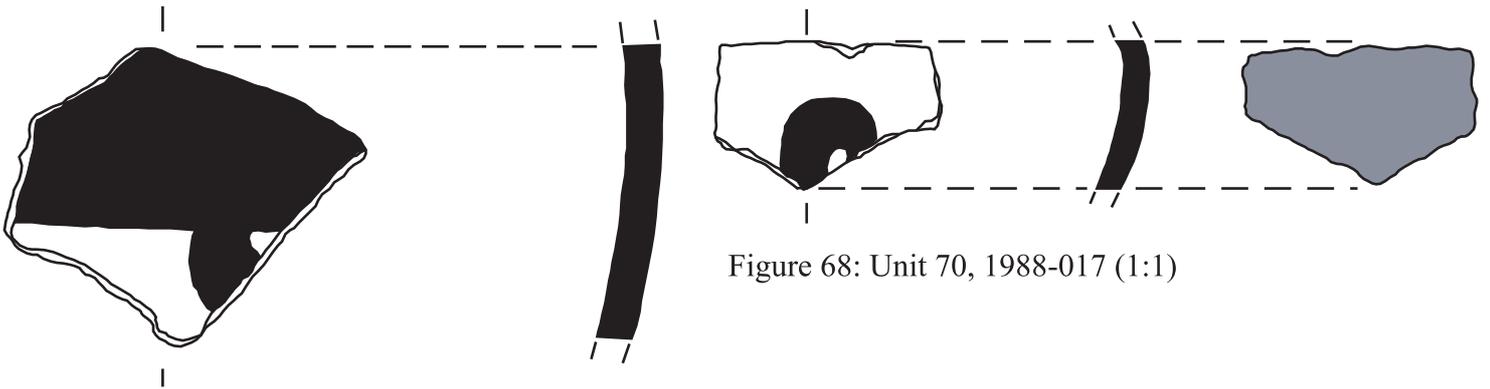


Figure 67: Unit 70, 1988-009 (1:1)

Figure 68: Unit 70, 1988-017 (1:1)

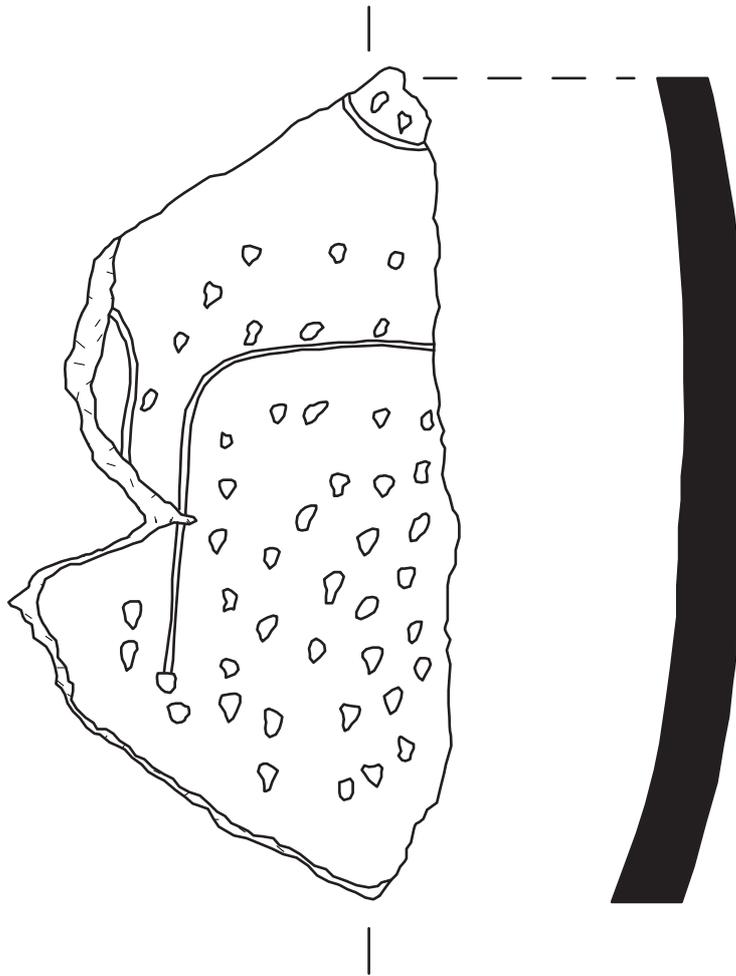


Figure 69: Unit 70, 1988-001 (1:1)

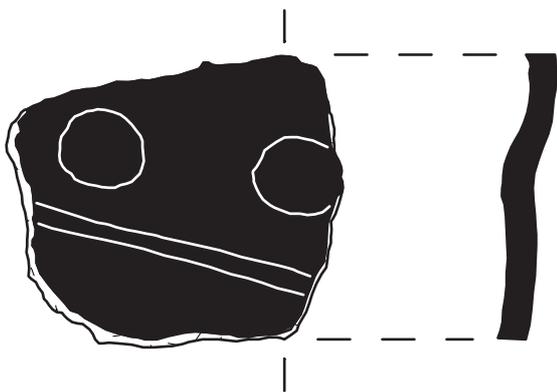


Figure 70: Unit 70, 1988-003 (1:1)

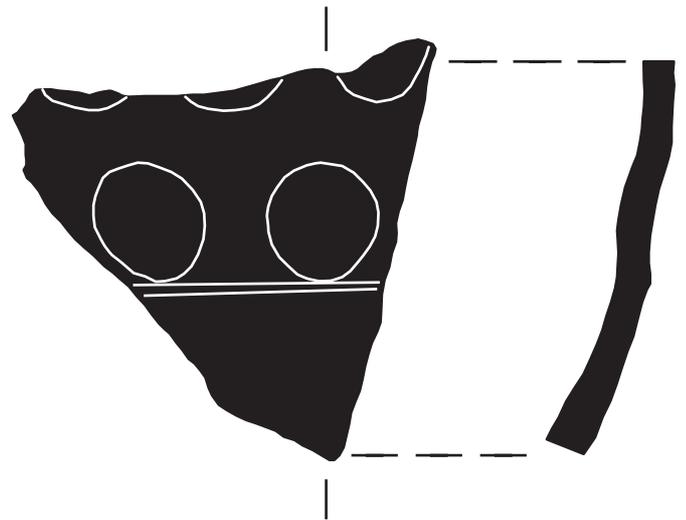


Figure 71: Unit 115, 1988-002 (1:1)