

## CHAPTER 4. THE CHRONOLOGY

Developing a chronology of Middle Minoan Mochlos deposits is a difficult task, as it must be integrated with the complicated chronological sequences and developments at other sites both within the Mirabello region and in sites farther afield. The division of the Protopalatial period in Crete is tripartite, a convention owing to Sir Arthur Evans, who established the first pottery chronologies at Knossos (Evans 1906; 1921, 88). This tripartite division was made first and foremost to explain the stratigraphic sequence of Knossos (Andreou 1979, 2) and included three general categories, Early, Middle, and Late Minoan. This relative chronology is based on the appearance, development, and eventual abandonment of certain shapes over time. Alternatively, according to Platon (Platon 1971a), another tripartite division is based on the appearance of Palaces: Prepalatial, Protopalatial, and Neopalatial periods. Over time these have been reconciled to one another and to the broader division of the Bronze Age into Early, Middle, and Late. Both the palatial and pottery chronologies and their internal terminologies have become common parlance among archaeologists in this first century of Minoan culture. While the most instructive chronology here is Evans' Early, Middle, and Late, even this was further subdivided because of transitions within a given period. This research explores what Platon describes as the Protopalatial period, which includes Middle Minoan (MM) IB, MM IIA, and MM IIB. There are several regional differences regarding what shapes and technologies appear within each period, but this reveals dynamic social, cultural, political, and artistic factors. The approximate dates have been put for the Protopalatial period is 1925/1900–1875/1850 BC for the MM IB 1875/1850–1750/1700 for the MM IIA and MM IIB, which are considered as a whole MM IIB period (Manning 2010).

As we already read in the introduction, during the Middle Minoan period, societies have been examined primarily in terms of their local traditions and how they fit into a larger regional schema, as well as how they coalesced with or complicated chronological evaluations of stratified deposits. Considering pottery material especially, we should seek distinctions at the local and regional level to identify the chronological sequence that at the end will lend itself to narrative(s) about the functions—both broad and local—of the societies, in our case Mochlos society.

To understand the chronological gap that Mochlos covers in the Middle Minoan period, we first examine the work that other researchers have contributed to the establishment of chronologies for the Middle Minoan period. These studies become more prominent by the 1970s and 1980s when more and more excavations operated across the island and comparative evaluation thus became possible, using different data to establish the chronologies and sequences among the different regions of Crete. Cadogan (1983, 508–518) divided the chronology of the Middle Minoan period into relative and absolute. In his discussion of Middle Minoan IB–II, he examines the distinction between Knossos and Phaistos—Palatial sites—and areas like Malia and east Crete, which he describes as “provincial.” In this discussion, he connects the styles of the Malia group, the Mirabello area, and Myrtos Pyrgos (Cadogan 1983, 510), and he identifies the distinctions between the areas, but he cannot create the specific distinctions between the Middle Minoan IB and Middle Minoan II, recognizing also that the last period of the Middle Minoan period ended with the destruction of the Palace at Malia (Cadogan 1983, 511). In his relative chronological analysis, he compares Minoan vessels from Crete with ones that have been found in Egypt, the Cyclades, or the Greek mainland, and he establishes chronologies that are followed even today. He suggests the same chronological distinctions for east Crete that Andreou proposed in his analysis of the east Cretan wares (Andreou 1978) and assigns MM IB to 2075/2050–1850/1800 B.C.E and MM IIA and MM IIB to 1850/1800–1650/1625 B.C.E, which is contemporaneous with Pyrgos II and Pyrgos III, respectively (Cadogan 1983, 517). Before Cadogan, Peter Warren also defined a Middle Minoan chronology (Warren,

1980). In his study also uses pottery and tries to identify specific stylistic characteristics in certain regions and certain periods. One of his central propositions is the development of the polychromy in Middle Minoan IA in central and southern Crete and he relates this development to the limited use of white-on-dark in certain sites (Warren 1980, 491–492). In his discussion of Middle Minoan IB pottery, he relates polychromy with the introduction of the fast wheel and new styles such as carinated cups. Warren applies the same idea to east Crete and the deposits underneath House D in Mochlos (Seager 1907), and he located Middle Minoan IA pottery together with carinated cups and a crinkled rim Kantharos dating that deposit in Middle Minoan IB. The same criteria he applied to Vasiliki (Warren 1980, 492). For the Middle Minoan II period, Warren, like Cadogan, did not distinguish between Middle Minoan IIA and Middle Minoan IIB, but they identify this period as MM II, the one with the advanced polychromy that ended with the destruction of the Shrine Building and Quartier Mu at Malia (Warren 1980, 492).

Those two important papers of early scholarship by Warren and Cadogan provide foundational guidance concerning methods for understanding the chronological sequence of the Middle Minoan Period. Both used comparative studies of pottery, but for east Crete, especially for the area of Mirabello they dated mixed deposits as Middle Minoan IB, and they do not provide a distinction between Middle Minoan IIA and Middle Minoan IIB for this area. The assumption that there is no MM IIA/MMIIB distinction has created an opportunity and a challenge for the stratified deposits from Mochlos settlement, firstly because we can use them in comparative studies of pottery and secondly because we can test if there are chronological distinctions in the strata that at the end might explicate aspect of the social and political environment.

Two major works of early scholarship that expressly focused on dating and characterizing Middle Minoan pottery in east Crete is the work of Andreou (1978) and Walberg (1983). Andreou's work examines Middle Minoan pottery groups from Crete, designating specific types to certain chronological moments, by cross-referencing different contexts from different types. He succeeds in parsing out the differences in wares and shapes from region to region, based on the dichotomy between the Palaces and provincial settlements following the Palatial-centric ideas of that time, which are still valuable. The main observation that he makes in his introduction is that the classification of Knossian chronologies does not work for most of the sites (Andreou 1978, 2). He (Andreou 1978, 8) as well as Walberg (1983) divides the pottery material according to the appearance of the Kamares pottery and separates the material into Early Kamares (Middle Minoan IA), Early Kamares (Middle Minoan IB and IIA), Classical Kamares (Middle Minoan IIA, IIB–IIIA) and Post Kamares (Middle IIIA and Middle Minoan IIIB). However, this distinction still reproduces the problem of interrelated and mixed periods as opposed to distinctive ones. Nevertheless, Andreou's work is the division of the material he examined in its regional context and their categorization through affinities of shape, which seem to have a regional relationship (Andreou 1978, 10).

For east Crete, one basic observation is that the Early Minoan III distinctive light-on-dark decoration continues into the later periods, hence it appears in Middle Minoan IB together with polychromy (Andreou 1978, 55). His dissertation examined published deposits in east Crete up to that date, which are the North Trench group from Gournia, Kastri at Palaikastro (Popham 1965), Mochlos, and Vasiliki's deposit underneath Block A (Seager 1907, 278), and Deposit A at Sphoungaras (Hall 1912, 50). As a result, he makes the distinctions of shapes but what is of particular and valuable note is the finding that Early Minoan III–Middle Minoan IA material from east Crete is a particular regional tradition, different from that of Knossos (Andreou 1978, 55). The value of the light-on-dark and dark-on-light North Trench group wares and the geometric decorations, even if they belong to the Late Prepalatial period, suggests a continuous tradition in the preceding period of the Middle Minoan IB.

Andreou identifies the introduction of the wheel as a Middle Minoan IB event (Andreou 1978) in east Crete. By examining the material from Mochlos House D (Seager 1912) and Vasiliki House A (Seager 1907), as well as Myrtos Pyrgos. In all three deposits, he identifies a series of new

shapes together with light-on-dark decoration similar to that of the North Trench group from Gournia, which is dated to MM IA. The new shapes include rounded and conical cups with strap handles instead of rounded ones, shallow bowls with flaring profiles, whole-mouthed jars, and bridge-spouted jars. Other shapes are conical goblets, semi-globular cups, angular cups with a small foot, cups with a rounded profile, and cups with an incurving profile. Light-on-dark continues, but the innovation is the polychromy (Andreou, 79–93). Most of the decorative motifs do not appear in combinations or are combinations of bands or stripes. Rectilinear motifs also exist with dotted lines or cross-hatched triangles (Andreou 1978, 89). Spirals are absent from Middle Minoan IB deposits (Andreou 1978, 89).

One of the basic observations that can be made according to the analysis of Andreou is the absence of carinated cups during the Middle Minoan IB phase, contrary to the Knossos Kouloures example (Andreou 1978). This is one of the characteristics that are helpful when we examine the Middle Minoan IB and Middle Minoan IIA strata from Middle Minoan House 1 and the deposit underneath C.12 (Doudalis 2016) below. The presence of carinated cups both in Middle Minoan IB and Middle Minoan IIA strata in Mochlos enriches our idea about the appearance and date of these vessels when they are found together with either light-on-dark, dark-on-light, or polychromatic vessels. Middle Minoan IB cups, or Middle Minoan IIA cups.

The second period that Andreou discusses is Middle Minoan IIB, which he describes in east Crete as Vasiliki House A–Zakros Group (Andreou 1978, 93). This group seems to be contemporaneous with Quartier Mu, dated to the Middle Minoan IIB. Multiple contemporaneous deposits from this period were studied by Andreou with the most prominent being Palaikastro Square H3 and Zakros Room E below the New Palace period floor together with the deposits NE of Rooms Y and O of building H, the building to the north of the street to the port, and Rooms DII and DIII of the “Oblique Building.” Two burial enclosures outside the Palace at Pezoules Kefalas or Pervolia also contain pottery similar to the deposits mentioned above. Smaller deposits come from a house across the street from House A at Vasiliki, Room X18 at Palaikastro, Palaikastro B40, and House Tomb I at Gournia (Andreou 1978, 93–106). Andreou locates the appearance of the fast wheel to this period (Andreou 1978, 93). The main shapes appearing during this period are the carinated cup, the Vapheio or conical cup with strap handle, the conical goblet, the tumbler, the straight-sided cup with vertical rounded or strap handles (Andreou 1978, 113–114). Other shapes include the shallow round bowl and the bridge-spouted jug, the spouted carinated jug, the oval-mouthed amphora, and the bucket jar with horizontal handles and pulled-rim spouts (Andreou 1978, 108–109). The main decorative motifs are dark or red monochrome and polychrome ware either with bands, festoons, and alternating floral style.

The main problem in Andreou’s distinctions is that in these deposits he combines the Middle Minoan IIA and Middle Minoan IIB into a general Middle Minoan II period in the mentioned deposits. An important weakness to note here is that these deposits were connected stylistically and without regard to stratigraphy, which means that there could be more latent divisions in the analysis of those deposits. These contexts, especially the Mochlos deposits in the early excavations, were not dug according to modern standards, so sometimes we may have mixtures in the material, but Andreou’s basic observations seem to remain correct. The newly excavated material from Mochlos, whose stratigraphic relationships were recorded, may reveal further distinctions between Middle Minoan IIA and B.

In the last part of his dissertation, Andreou examines the pottery sequence in the town of Malia. He mentions the basic distinctions in the Middle Minoan chronology at Malia between Middle Minoan I and Middle Minoan II, when the hieroglyphic script appears, as well as ceramic similarities with Phaistos and Knossos. Those assumptions were also argued by the early scholars (Poursat 1966 and Pelon 1970).

For the earlier period of the Middle Minoan, MM IB, he discusses the south houses at Malia and assumes that there is a predominance of light-on-dark pottery, along with innovations such as

polychromy, similar to “Mochlos House D–Vasiliki House B Group” dated to Middle Minoan IB. It seems that there are stylistic correlations between the sites of the Gulf of Mirabello and Malia during this early period. The repertory of shapes is quite similar, including conical goblets (in Mochlos’ case conical tumblers), tumblers, conical cups, cups with incurving profile with elevated feet, in our case carinated cups with offset bases, angular cups, bowls, and bridge-spouted jugs and jars (Andreou 1978, 128–129). However, at Mochlos, the earlier MM IB shapes sometimes continue into the next period.

The “Malia Town Group” includes the eastern part of Quartier E (Pelon 1970) and Quartier Mu (Poursat 1972, Poursat and Knappett 2005), a sanctuary with three rooms (Poursat 1966), Quartier Θ (Van Effenterre 1976), the Protopalatial Basements (Van Effenterre 1969), and Quarter Γ (Demargne et al. 1953). During MM II, as it is noted (Andreou 1978, 144), the wheel becomes common technology, especially for small vessels, and as a result, east Cretan deposits illustrate new shapes, such as at Vasiliki and Zakros Group. These are carinated cups, hemispherical cups, bridge-spouted carinated jugs, various jug shapes, and the flaring tripod bowls or Kalathoi (Andreou 1978, 144). Shapes that continue from the previous period are conical goblets, tumbler, conical cups, one-handle conical cups or *vapheio* cups, shallow bowls with everted rim, bridge-spouted and cylindrical jars, and oval and round-mouthed amphorae (Andreou 151–155). Dark monochrome, dark-on-white, white-on-dark, and polychrome with new motifs such as spirals also appear.

One of the most important conclusive remarks he makes is that the chronological distinctions are not final, recognizing that more examination in stratified deposits to his chronological sequence to be certified, changed, or enriched. What he concludes is that from the EM III–MM IA to MM IIB, east Crete is distinct from the rest of the island. Thus, Mochlos should be seen in this milieu, having differences—technological, artistic, and chronological—with Knossos and Phaistos. This is also noted by Andreou (Andreou 1978, 171); he states the regionality of Cretan society during the Middle Minoan period, a result not only of physical barriers but also of social and political differences, which were a result of economic factors.

Gisela’s Walberg work on provincial Middle Minoan pottery was essential also and a cornerstone of Middle Minoan chronology. Her main criterion was the distribution of the polychrome ware pottery, which she considered an imitation of the Kamares Palatial ware in different parts of Crete. From the outset, in Walberg’s introductory chapter, she proposes that there are four different stylistic regions, that of east Crete, east-Central Crete, Central Crete, and West Crete (Walberg 1983, 1). This follows the same idea of regionality already introduced by Andreou (1978). However, what contrasts is that Andreou’s wares were connecting stylistically the east Crete region without smaller regional divisions. The question is if we combine both the decorative distinction and the distribution of shapes whether we can extract different geographic entities depicting also different social, cultural, and economic conditions. Walberg uses the terms Pre-Kamares, Early Kamares, Classical Kamares, and Post Kamares, synchronizing Early Kamares with Middle Minoan IB and IIA, and Classical Kamares with Middle Minoan IIA–IIB and IIIA. Middle Minoan IIA seems to share elements both with Middle Minoan IB and Middle Minoan IIB. She recognizes that some regions are stylistically more advanced than others, but she concludes that the phases are contemporaneous in different parts of Crete (Walberg 1983, 3). Walberg (1983, 4–12), describes the different shapes appearing in different periods, as well as the general ceramic morphological characteristics in different phases of the Middle Minoan period. Those we are interested in in terms of chronology are Phase 2 and 3, which are the Early Kamares and the Classical Kamares. The first shape the globular-conical that appears in most of the closed vessels like jars, jugs, and amphoras, either with a narrow neck, or straight-sided, or bridge-spouted, depends on the shape as we have already categorized in their contexts according to Andreou. The effort of Walberg, however, is crucial because she draws on comparanda to make distinctions in the shaping as well as with decoration, and how they appear in the sites. This globular/conical shape appears in MM IA and continues into MM IB/IIA and Middle Minoan IIA/IIB. The globular-conical shape in these periods is wide and convex, in Middle Minoan

IB/IIA less so, in the Middle Minoan IIA/IIB more so (Walberg 1983, 14). Conical is a second shape that does not appear so much in small, closed vessels, it mainly appears in some vessels like pithoi and large closed vessels in all the periods of the Middle Bronze Age. The third shape is globular, semi-globular, biconical, and squat. These shapes are not so common in the centers of Knossos and Phaistos and appear in limited amounts of jugs and jars and the Chamaizi jugs and juglets. The first two (globular and semi-globular) appear in both MM IB/IIA and MM IIA/IIB and the Chamaizi jugs and juglets in MM IIA/MM IIBA third shape is the ovoid which, according to Walberg (1983, 16), is different than the globular conical in the lower maximum diameter which is larger than the ovoid shapes, were also the curve between the lower and the higher part of the vessel is more even. In Middle Minoan IB/IIA the most common shape is the ovoid beak-spouted jug (jug with cutaway spout). In MM IIA/IIB, the ovoid shapes are limited to some necked jars, straight-lipped jugs, and jugs with pinched mouth jugs. The fourth shape is the piriform. This shape appears only in MM IIA/IIB in some types of amphoras and bridge-spouted jars (Walberg 1983, 15–17). Piriform refers to a vessel with an elongated profile with a narrow base and lower body section that widens significantly upward (Walberg 1983, 18). These have been identified in Middle Minoan IB/IIA in some amphorae, bridge-spouted and other jars, and beak-spouted jugs, and pithoi (Walberg 1983, 18).

For the open vessels, some standardized shapes can be observed, and a summary is instructive to locate the vessels of Mochlos in a chronological sequence. Walberg summarizes the first type as conical and cylindrical handleless shapes (Walberg 1983, 18). These seem to have their origins in Early Minoan III with wide bases and convex to conical profile. During the Middle Minoan IB/IIA the use of these vessels becomes more common, some of them preserving a vestigial stem, and they are very deep. During Middle Minoan IIA/IIB the handleless cups gain in use, and they have straight, convex, or concave sides (Walberg 1983, 19). Most of those examples have a wide base. The shape is diverse in profile—from convex-concave or convex—and is sometimes very deep.

Another category is the semi-globular cup, which appears as early as the Early Minoan III–Middle Minoan IA period and continues into Middle Minoan IB/IIA both with and without handles handleless and handled cups with vertical handle. In Middle Minoan IIA/IIB most semi-globular cups come from the Palaces according to Walberg, and the semi-globular cups exist rarely (Walberg 1983, 20).

The last category Walberg discusses is that of the angular cup (Walberg 1983, 20–21). In this category, she summarizes different types within this category, including the carinated cup which is a distinctive shape. In the Middle Minoan IB/IIA period multiple different types appear with the concave upper profile. Sometimes the examples preserve grooves. In the Middle Minoan IIA/IIB period, there are mainly carinated cups with middle carination and concave and straight-sided or concave upper part decorated also with horizontal grooves.

One of the basic problems that Walberg has with the cups is that she does not distinguish Andreou's typology between S cups that are angular and the carinated cups. In Mochlos we can distinguish between the types and the shapes in the Mochlos stratigraphic study. With the stratigraphic excavation of deposits dating to these phases, it is possible to detect differences that inform relative dating and thus contribute to the discussion about the Middle Minoan IIA phase as it unfolds in the Mochlos settlement, a subperiod characterized by technological innovation and societal transition.

In terms of decoration, most of the motifs that appear in the majority of ceramics in the settlements of east Crete are geometric. Other motifs are considered Palatial. Walberg identifies that during her Phase 2 (Middle Minoan IB/IIA), the motifs are contemporaneous between central and east Crete, while in Phase 3 there is a clear distinction between the decorative patterns between east and Central Crete (Walberg, 1983, 36), and the bibliography that supports her observation shows the distribution of motifs across sites. This is integral in identifying a Mochlos chronology because we can distinguish the dating of the decorative motifs as they appear in Mochlos strata. This summary might allow for a better understanding of different workshops, the distribution of technical

knowledge, and specific decorative schemata in distinct regions. We could see some distinctions between motifs like the jugs with fish decoration, which Walberg dates to the Middle Minoan IIA/IIB. The categories she uses for the decorative motifs are prominent for different sites and different periods and from different contexts. She defines thirty-five different categories of decorative patterns, with which are further sub-categories. Walberg considers different stratigraphic contexts and categorizes the different decorative motives within those contexts and their regional milieu.

In early publications, there is a regional categorization of sites, shapes, and decorative motifs according to the chronological phases in which they appear, which demonstrates the underlying belief that each region should be taken as a distinct entity. Thus, for Mochlos, we should see how it relates with sites of the Mirabello area, far east Crete, and with Malia. The task of developing a chronological sequence at Mochlos must look to these regions. Toward that end, we examine the chronological distinctions in these sites separately, and then we related the Mochlos material to them.

## 4.1 Central–East Crete

### I. Malia

One site that preserves Middle Minoan vessels is the Chrysolakkos burial context. In this site, the main Middle Minoan pottery material comes from two rock shelters or *Charniers* (Walberg 1983, 110; Demargne 1945, 1, 13). Walberg writes that the material from those two rock shelters is mixed, including MM IA and MM II material. The material from the first rock shelter (Demargne 1945, PL. XXVII, XXVIII, and XXIX) is mainly attributed to the Middle Minoan IA period, however, mixed with some material that appears in Phase 2 (MM IB–MM IIA) in Walberg (Walberg 1983, 110). The Walberg dating, however, can be challenged by the material from Quartier Mu, especially for the Chamaizi jugs and juglets which are of Middle Minoan IIB date (Walberg's Phase 3), and presents an identical example (Poursat and Knappett 2005, PL.36, 1125) with that of *Charnier 1* (Demargne 1945, PL. XXVII, 8506). The same dating occurs in other sites like Monastiraki Katalimata (Nowicki 2008, Fig.81, KP 599). Again, in Monastiraki-Katalimata it is difficult to even in the recent bibliography to explore the chronological distinction between Middle Minoan IIA and IIB in the Mirabello Gulf. It seems that the first *Charnier* had material that belonged anywhere from Middle Minoan IA to Middle Minoan IIB, making the date rather ambiguous. The same can be said of the pottery of the second *charnier* (Demargne. 1945, PL VIII, PL. IX, PL. XXXI, PL XXII, XXIII). However, pottery from *charnier 2* that is related to the North Trench Group (EM III–MM IA) style also exists, some examples appear in Middle Minoan II. Even though Walberg writes (1983, 111) that this deposit includes vessels dating to the Middle Minoan IA period (Demargne 1945, PL. VIII), most of the material belongs to Phase 3 (MM IIA/IIB/IIIA), for example, the tumblers (Demargne PL. IX. 8658; PL. XXXII. 8658), carinated cups (PL. XXXIII) which have parallels in Quartier Mu (Poursat and Knappett, 2005, PL. 27, 769 and 768), as well as the Chamaizi juglet (Demargne, 1945, 8602), which is similar to one from first *Charnier 1*, distinguishes a terminus ante quem in the Middle Minoan IIB period.

The second deposit from Chrysolakkos comes from North of the tomb (Demargne 1945, PL. XIII, PL. XIV, PL. XV, XVI, PL. XVII, PL. XVIII), seem also to have Protopalatial material. She distinguishes Phases 1 and 2 (MM IA and MM IB/IIA respectively) according to the decorative motifs of the place with some inaccuracies according to the Mochlos material that will be analyzed below. For example, the angular cup appears in PL XVIIIb, dated by Walberg to Phase 1 (MM IA; Walberg, 1983, 111), has been dated in Middle Minoan II (A) in Mochlos, where the example P 12489

(**MOX.535**, carinated cup with offset base) presents the same decoration in white-on-dark and it comes from a context that belongs to this period. Apart from this example most of the other deposits were dated in Phase 2 (Middle Minoan IB–IIA), apart from the vessels PL. XIIIc, PL. XIVf, PL XVf, and PL.XVIa–b, which according to Walberg, belongs to Phase 2 (Middle Minoan IIA–IIB). However, we always have to be careful with those dates because they are dating objects and not the deposits. Sometimes deposits are mixed, but also, they sometimes represent the continuation of shapes and in different sub-periods. For Chryssolakkos in addition Poursat (1993, 603–606), locates a lot of the pottery material to the Middle Minoan II period, like tumblers, ribbed carinated cups, polychrome decoration, and conical cups. However, again there is no distinction between Middle Minoan IIA and the Middle Minoan IIB period.

Apart from the examples we saw above, multiple Middle Minoan vessels come from the different *Maisons* and *Quartiers* in Malia. Their typology and chronological distinctions show perhaps the early chronological phases of these houses but also whether or not they share common material culture with the Mirabello Gulf and mainly Mochlos and in what period(s).

The first example of these *Maisons* is Villa A. Judging by the pottery this house has its early construction phase in Middle Minoan I. However, from the observation of the tables of the pottery (Demargne and Gallet de Santerre, 1953, PL. VIII), most of the pottery seems to be dated according to the parallels from Quartier Mu in the Middle Minoan IIB period. Some of these appear in Mochlos in the different strata, showing synchronisms and continuations in different sub-periods. Thus, there are ribbed carinated cups and conical tumblers (PL. VIII, 8507, and 8497) having exact parallels with Quartier Mu (Poursat and Knappett 2005, PL. 27, 725; PL. 36 1125), that are dated in Middle Minoan IIB. The one-handled straight-sided cup (PL. VIII, 8520) has some parallel examples with Quartier Mu (Poursat and Knappett 2005, PL. 38 a), but the best parallel comes from Mochlos, accessioned with P 12386 (**MOX.565**), which comes from the second layer of the deposit underneath C.12, and its chronology will be discussed in that chapter here, but it seems to belong in Middle Minoan IIA.

A third example containing Middle Minoan material is Quartier Γ (Demargne and Gallet de Santerre 1953, 24–39). The excavators mention the existence of Middle Minoan amphorae and Kamares pottery (Demargne and Gallet de Santerre, 1953, 23), but as Walberg (1983, 113), also notices, the material is not stratigraphically identified. The excavators locate the Middle Minoan I chronology as the earlier phase of the Quartier and most of the material is attributed to Middle Minoan III (Demargne and Gallet de Santerre, 1953, 31). The figures XLIXf and XLIXe seem according to Walberg's typology belong in MM IA, with the jar example having a simple rosette decoration (Walberg 1983, 113), while PLIe contains barbotine ware and seems to belong to the Middle Minoan IB–Middle Minoan IIA period. In addition, the so-called Scottish style sherd (Demargne and Gallet de Santerre, 1953, PL.La) belongs to the Middle Minoan II Period, likely at the end of the Middle Minoan IIB, compared to Malian examples from Quartier Mu (Poursat and Knappett 2005, PL.28, 814). Some of the examples are Middle Minoan IIB, such as the oval-mouthed amphora (PL. XIV, 7907), the one-handle conical cups (PL. XIV, 7871, 7866), the pitcher (PL. XIV, 7862), and have exact parallels in Quartier Mu (Poursat and Knappett 2005, PL. 4, 68; PL.29; PL.15, 275; PL.23, 571).

Quartier Z is the fourth example from Malia that revealed information about the Middle Minoan period. The excavators concluded that the Middle Minoan phases of the Protopalatial period that appear in different houses of the Quartier Z are Middle Minoan I and the Middle Minoan II (Deshayes and Dessenés, 1959, 83).

In the lower stratum of Maison E is a small Middle Minoan deposit that is attributed to the Middle Minoan II period with parallels to Palaikastro or Middle Minoan IB Knossos (Pelon 1970, 20). He identifies that the vessels preserve parallel or concentric striations on the underside of the base (Pelon 197, 19), a characteristic that appears in the later phase of the Protopalatial at Mochlos. From the examples that are presented in the plates, we can observe the appearance of ribbed carinated cups (Pelon 1970, PL. X, 3, 4), one-handled conical cups (Pelon 1970, PL. X, 7), and saucers that are

similar to those from Quartier Mu (Poursat and Knappett 2005, PL. 27, 769; PL.30, 976–979; PL.26, 1084), and they are securely dated to Middle Minoan IIB, which is closer to the dates from Palaikastro than Knossos. Similar examples of carinated and one-handled conical cups have been identified in the late Protopalatial deposits Mochlos, including the Deposit Underneath C.7, C.3, and B.2, creating a strong chronological parallel.

A Middle Minoan deposit has also been revealed in the south magazines in the southwest part of the Palace at Malia (Walberg 1983, 117, Par and Van Effenterre 1969, 72). The deposit consisted of saucers similar to those from Maison E and Quartier Mu mentioned above, carinated cups, a bridge-spouted jar, a tumbler, and one-handled conical cups (Par and Van Effenterre, PL. XLVIII). This deposit also can provide chronological parallels with Mochlos and is dated to MM II B.

Quartier Θ has also revealed traces of Protopalatial occupation in one of its three layers of occupation. Some vessels were found that date the Protopalatial layer to MM IIB. The appearance of Chamaizi jugs is prominent (Van Effenterre 1976, PL. XI) which are morphologically similar to those found in Malia's Quartier Mu dated to MM IIB (Knappett and Poursat 2005, PL. 36, 1125–1148). In addition, a series of one-handled conical and carinated cups, a pitcher, and cooking pots in the same context (VanEffenterre 1976, PL. XII, A, B, C, D) also find parallels in Quartier Mu at Malia, as well as with the late strata at Mochlos, showing a clear dating to MM IIB phase. Some other examples, like the semi-globular cup, the beak-spouted jug with petaloid loops, and the oval-mouthed amphora with low concavity (Van Effenterre 1967, PL. XVI), are also dated to the MM IIB period according to the Quartier Mu example (Poursat and Knappett 2005). Quartier Mu is the best-published material of Protopalatial east Crete. It presents a safe date to the MM IIB period, at which point it faced destruction contemporaneous with the first Palace of Knossos and the second destruction of the first Palace of Phaistos (Poursat et al. 1978, 25; Poursat and Knappett 2005), providing a safe date for the ceramic material from this area to the MM IIB and establishing itself as a benchmark, a guide for the material that comes from the Mochlos settlement. Fortunately, Quartier Mu preserves many complete vessels. The material from Quartier Mu is contemporaneous with Andreou's Malia Town Group that date that deposit to MM IIB. It preserves all kinds of vessels, from oval-mouthed ovoid-conical and piriform profile amphorae, different kinds of jars with hole-mouths, different kinds of jugs with cutaway spouts, bridge-spouts, and trefoil-mouths, with globular, pear-shaped, and piriform profiles (Knappett and Poursat 2005).

Arguably, the most important category, emphasized in most of the other deposits from various regions, is the cup. In Quartier Mu (Poursat 1996), the most common cups are the conical tumblers or conical goblets according to Knappett (Poursat and Knappett 2005, 288), the one-handled conical cups, or conical cups with rolled (rounded) or strap-handles, and the ribbed and unribbed carinated, hemispherical (called semi-globular at Mochlos) and straight-sided cups (Knappett and Poursat 2005, 290). The conical tumblers and the one-handled conical cups in the Quartier Mu have a narrow base and a conical to flaring profile, while the carinated cups preserve shallow, regular grooves above the carination (Poursat and Knappett 2005, PL.27, 769). An important element for the chronological purposes of this thesis is the decorative motifs of the one-handled conical cups, including pairs of festoons or pendant arcs on the interior rim and white hatches on the handle. The above characteristics are some chronological diagnostics from Malia that assist in the dating of the Mochlos deposits.

In addition to Quartier Mu, Sector Pi is also helpful (Knappett and Pomadère et al. 2017). During the excavation, the excavators identified two fills in the northern part of the sector, underneath the main Protopalatial phase that was similar in ceramic terms with Quartier Mu. These two secondary contexts were assigned a Middle Minoan IIA date, which represents a rare phase in the general Malian material (Knappett and Pomadère et al. 2017, 485). The material preserves vessels that are made earlier than Quartier Mu, even as some types continue. Various criteria were introduced by the authors (Knappett and Pomadère et al. 2017, 528–529) to define the date of this deposit as Middle Minoan IIA. The basic criterion is the absence of polychrome and early alternating floral style that appears in east Crete during the MM IB (Floyd 1997) and the dominance of monochrome, which according to



Haggis (2012, 194) is an MM IIA characteristic. Other characteristics that differ from the former period are the extensive use of the wheel, the absence of cups with beveled bases and offset carinated cups, and the presence of the bridge-spouted jugs (Knappett and Pomadère et al. 2017, 529). The presence also of the one-handled conical cup with strap handle and carinated cups with irregular grooves shows an earlier date than those of the MM IIB material from Quartier Mu.

## II. Myrtos Pyrgos

The site of Myrtos Pyrgos is located 15 kilometers to the west of Ierapetra has revealed an extensive settlement of the Bronze Age and is also of use in developing a chronological sequence of Mochlos in the Protopalatial period. It is also an old excavation analyzed in reports and not in a full publication, which seems to be now in print. It has been dug by Gerald Cadogan (Cadogan 1978). In his report, the site is divided into six different chronological periods, Pyrgos I–VI (Cadogan 1978, 70). The main periods of interest for the chronology of the Middle Minoan Period in east Crete are Pyrgos II and III. The first is EM III/MM IA and MM IB? and the second MM, old Palace Period–MM IIIA? (Cadogan 1978,70). The dating is still vague, and it falls into generalizations about different periods relating the Middle Minoan IB with the last phase of the Early Bronze Age and the Protopalatial, without a clear distinction between the Middle Minoan IIA and Middle Minoan IIB, which is one of the main problems of the early publications. In his report, Cadogan divides the Protopalatial period into a, b, c, and d, with the last two considered as distinctly Middle Minoan IB in the stratigraphic sequence, because of the appearance of cups made on the wheel at the end of Pyrgos II (1983, 73). The use of the wheel is one of the primary criteria in defining the beginning of the Protopalatial period.

For Pyrgos III, Cadogan observes that the pottery has close similarities with that of Malia but lacks affinities with pottery from farther east in Crete, including Palaikastro (Cadogan 1978,74). This observation has since been upheld by other scholars (Knappett 1999, 2012). This is a crucial observation because it also relates the pottery from Myrtos Pyrgos with that of Gournia, a neighbor to Mochlos, showing a stylistic relationship between south, east-central Crete and the Mirabello Gulf and Malia at least in the last phase of the Protopalatial period. In Figures 13 and 14 (Cadogan 1978) which include vessels like one-handled conical cups and carinated cups with a dark wash, large straight-sided cups, jugs with triple curving stripes or plumes, and oval-mouthed amphorae with linking disks, we can identify exact parallels with Quartier Mu in Malia showing that the chronology of the site in the Pyrgos III phase is the Middle Minoan IIB. For the chronology of the Pyrgos III pottery and its relationship with Malian pottery, Knappett's work (1999, 615–639; 1997, 305–311) indicates these similarities between the two sites in terms of Middle Minoan IIB chronology, based on different kinds of cups and other open and closed vessels. He also relates Malia with sites of the Mirabello region, such as Gournia, Vasiliki, and Pseira, but also with east Crete such as Petras (Knappett 1999, 622), so it seems natural that there is also a connection with Mochlos, but the question is in what period does Mochlos receive influences. The typological similarities from Middle Minoan II (either A or B) Mochlos site will further the interpretation about connections between sites in the region, something that has been hypothesized in a late work by Knappett (Knappett and Ichim 2017, 399). In Figure 11 (Knappett 1999, 629), the straight-sided cups from Myrtos Pyrgos are stylistically the same as the Quartier Mu examples (Poursat and Knappett 2005, PL. 28). The same observation can be made for the ribbed carinated cups of figure 12 (Knappett 1999, 629), which have exact parallels with the Quartier Mu (Poursat and Knappett 2005, PL.27, 769). However, the third example of carinated cup in Figure 3 (Knappett 1999) has a tall rim and deep, irregular grooves that have the only parallels in Mochlos' C.12 Level 2, and it may be dated earlier, belonging to Middle Minoan IIA. In addition, Knappett (1999, 69) mentions another set of vases, the squat beveled cup,

the carinated cup with offset base (similar to P 12489), and a carinated cup with a white band come from Palaikastro (MacGillivray et al. 1992, 134, fig. 6), which are dated earlier in Middle Minoan IB–IIA. Another exact parallel comes from C.12's Level 2 and is cataloged as P 12489, and it seems also to belong to a stratum earlier than Middle Minoan IIB. This offers us the opportunity to explore dating relationships and congruities with other parts of east Crete, mainly with Petras, Palaikastro, and Zakros.

## 4.2 East Crete

### I. Petras

Most of the material from recent excavations in Petras have revealed rich Protopalatial deposits from the settlement and the cemetery allow chronological distinctions for the general Protopalatial picture in east Crete with correlations to the Mirabello Gulf. Some of the results include explicit aspects of the Protopalatial chronology in the environs of Petras and have been published in two monographs and two collective volumes, which were the results of two conferences (Haggis 2007; 2012, Tsipopoulou 2010, Tsipopoulou 2017a, Tsipopoulou 2017b, Tsipopoulou 2010; Relaki 2016). The Palace at Petras was stratigraphically dated to the beginning of the MM IIA by Tsipopoulou (Tsipopoulou 2002), thus most of the ceramic material studied above deal with MM IIA, and the periods just before and after. The first Protopalatial deposit, which in the local chronology of Petras is called Prepalatial, is the Lakkos deposit. According to Haggis, the Lakkos deposit can be dated to the MM IB and perhaps also to the beginning of the MM IIA (Haggis 2007, 750; 2012, 191). It included a variety of drinking and dining vessels and a few storage vessels. Most of the drinking vessels belong to the general categories of conical cups, tumblers, carinated cups, rounded cups (semi-globular cups in Mochlos' terminology), beveled cups (Angular Cup Type 1 at Mochlos), and S-profile cups (Mochlos' semi-globular cup) (Haggis 2007, 723). Most of the vessels of these types maintain different decorative schemata varying from polychrome, white-on-dark, spatter, rough burnished, monochrome, plain dark-on-light, buff burnished, white-slipped, blob, and dark/red wash (Haggis 2007, 723). Some of these elements that appear in the Lakkos deposit appear in House I.1 and House I.2 in the settlement of Petras (Relaki 2016). Especially in House I.1, Relaki identifies similarities with the Lakkos deposit in terms of shape and decorative motifs, especially from Area  $\Phi$  and the West Courtyard (Relaki 2016, 98–102). She identifies that the date of the two deposits is located between MM IB and MM IIA, with most of the material being of MM IIA date, such as tall rim (i.e. low carinated), ungrooved carinated cups (Relaki, 2016, 101), and straight-sided cups with a concave profile and strap-handle that Walberg dates to MM IIA as well (1976, 28, Fig.30). For the MM IB Relaki identifies alternating floral style which is a distinct decorative motif for the sub-period (Floyd 1997, 314–315) as well as alternating, horizontal, white, and red bands, and spatter decoration in tumblers that date to MM IB (Haggis 2007; Haggis 2012, 193).

The examination of the material from the Ceremonial Area 1 to the east of House Tomb 2 (Tsipopoulou 2017a, 111) has separated the deposits into two phases. Phase 1 is dated in MM IB–MM IIA and Phase 2 is dated in MM IIA–MM IIB (Tsipopoulou 2017a, 116). From the classification of the drinking vessels and the provided figures (Tsipopoulou 2017a, 115–117; Fig.7, Fig.8), we can identify both continuities and shifts in shapes, with some appearing in Mochlos' Protopalatial layers. For example, some vases appear in both phases such as the plates (Tsipopoulou 2017a, Fig.5, Fig. 6), which are the same type as Type 1c flared-rim bowls from Mochlos found in Level 2 of the Deposit Underneath House C.12. From the concentration of the early phase drinking vessels, we can identify

carinated cups with ring or offset bases, beveled or angular or proto-carinated cups, handled and handleless straight-sided cups, tumblers, and one-handled conical cups with strap- and rounded handles (Tsipopoulou 2012, Fig.7). In the late phase, there is a transformation of vessels attributed to the intensive wheel use (Tsipopoulou 2017a, 124), connected with handleless conical cups (Conical Tumbler Type 1b in Mochlos), carinated cups that were either ribbed with regular grooves or without, semi-globular cups with S-profiles, and one-handled conical cups with rounded handles.

The ceramic material from the Hieroglyphic Archive at Petras shows also a clear stratigraphic chronological distinction dated to the MM IIB. This deposit included a variety of vessels, including deep conical cups (Conical Tumbler Type 1b in Mochlos), carinated cups, pitchers, oval-mouthed amphorae, bridge-spouted carinated jugs, and one-handled conical cups with rounded handles (Tsipopoulou and Hallager 2010, 49–68, 135–154). All these shapes seem to have parallels also with Quartier Mu, which is dated to MM IIB. Summarizing, the settlement and the cemetery at Petras include material spanning the entire Protopalatial period and assist in the dating of the Protopalatial Mochlos deposits, both in their commonalities and particularities.

## II. Zakros

The Protopalatial ceramic material from Zakros has not been fully published yet, but some Zakros material was published as primary archaeological reports and conference papers (Platon 1999, Platon and Tsiboukaki 2012) that put the Zakros material in the broader Zakros III horizon. In the first reports, Protopalatial material was identified in House A, by Hogarth (Platon and Tsiboukaki 2017, 356, Platon 1962, 145), in the “Oblique Building” (Platon 1968, 175, 178), the Building “North of the Harbor Road” (Platon 1968, 162–164; 1969, 207; 213–218; 1970, 213; 1973, 158), the Building of the Pottery Deposits (Platon 1970, 222, Table 340,  $\alpha$ ,  $\beta$ ,  $\gamma$ ), the Complex under the east Wing of the Palace (Platon 1970, 247; 1971, 233, Table. 343,  $\alpha$ ), the West Courtyard (Platon 1981, 346), the east (Platon 1977, 424, 430; 1978, 262–267), Buildings H and G (Platon 1971, 259–262), the House of the Ramp (Platon, 1979, 302–307), the Strong Building (Platon 1972, 162), Kalyvomouri (Platon 1975, 371–373), and in Mavro Avlaki (Platon 1962, 167–168). These early reports are very descriptive and refer to the Protopalatial contexts without dating and intensive analysis of the ceramic material. However, the comparative study from Platon and Tsiboukaki (2017), between the Pezoules-Kefala vessels and from different Protopalatial deposits of the settlement, such as the House of the Ramp, the House of the Pottery Deposits, and Buildings G and H, give some information about the chronological distinctions in the Zakros settlement and region. The material from Pezoules consists of a mix of shapes that can be dated from EM III to the MM III period. For the Protopalatial period, the finds consisted of carinated cups with an offset or pronounced ring base, ribbed and unribbed carinated cups with tall and short rims, and one-handled conical cups with vertical, rounded handles (Platon and Tsiboukaki, 2017, Fig.1 and Fig.2). In the so-called House of the Ramp, the vessels were small in size, including conical tumblers, carinated cups with offset bases, and a few tall tumblers, all wheel-made and decorated with the white-on-dark motif or monochrome slip, notably lacking the indicative presence of polychrome, with one single exception of alternating floral style (Platon and Tsiboukaki 2017, 358–359, fig.5, fig. 6).

This deposit probably dates to MM IB/MM IIA, corresponding to the similarities with the vessels from Petras (Tsipopoulou 2017a) and Palaikastro (Knappett and Cunningham 2012, Knappett and Collar 2007). The third deposit, that of Buildings G and H, does not include tall tumblers but does include conical cups (Conical Tumbler Type 1b in Mochlos), carinated cups without grooves, and crinkled rim kantharoi (Platon and Tsiboukaki, 2017, 362) similar to those from Malia (Poursat and Knappett 2005, 73, PL.35) and Myrtos Pyrgos (Cadogan 1978, Fig.12), thus dating the deposit to MM IIB (Platon and Tsiboukaki 2017, 363).

These Zakros deposits show the same chronological distinctions as the Petras and Palaikastro material, at least for the earlier phase, and presents vessels that show similarities to the Mochlos deposits and especially with Level 2 Underneath House C.12 and the Deposits Underneath Houses C.3, House C.7, Ceremonial Complex B.2, Level 1 Underneath House C.12, and Middle Minoan House 1.

### III. Palaikastro

Palaikastro is another site in east Crete that provides information about the Protopalatial dating sequence. Since the first excavations at the beginning of the 20<sup>th</sup> century, multiple Protopalatial deposits have been unearthed. Vessels of the Protopalatial period have been recognized from the first excavation reports, especially those decorated with polychrome near the area of the bone enclosure and House A in the Houses on the Cliff (Bosanquet 1901–1902, 294, 295; 306). In the second report of the Palaikastro excavations, Bosanquet defines the dating of Palaikastro and Zakros into three periods: the Kamares period, the Early Mycenaean period, and the Late Mycenaean period (Bosanquet and Dawkins 1902–1903, 281). This was the first attempt to include vessels of the Protopalatial period in the Kamares period according to their decorative characteristics, connected with the dating of Evans at Knossos—Middle Minoan (Bosanquet and Dawkins, 1902–1903, 295). Most of these vessels were found in Trench G 3 (Bosanquet and Dawkins, 1902–1903, 298). The vessels illustrated from this first excavation (Bosanquet and Dawkins, 1902–1903, Fig. I) have been dated by Andreou to the MM IB period, together with the Mochlos House D–Zakros House A Group, which is negotiable according to the excavation of the Mochlos Protopalatial material.

The third excavation report from Palaikastro (Dawkins 1903–1904, 193) divides the Protopalatial into two sub-periods based on the decorative characteristics of Kamares ware and creates synchronisms between Palaikastro material from the ossuaries and other sites in Crete (Dawkins 1903–1904, 195). In the unpublished objects from the first excavation seasons, Dawkins continues this division of pottery between Early Minoan and connects it with the North Trench Group of Gournia (Dawkins 1923, which belongs to EM III–MM IA, according to later studies, such as Andreou (1978, 57–68). One of the major contributions of this early study is the separation between the simple alternating banded polychrome decoration, which is dated to MM I, and the polychrome alternating floral style of MM II (Bosanquet and Dawkins 1923, 10, 15). However, recent studies date this style in MM IB (Floyd, 1997). In the continuation of the research at Palaikastro, the excavators identified a large amount of Protopalatial sherds in Trench H<sub>3</sub> at Rousolakos that was dated to MM IB (Sackett and Popham 1965, 251). This material was restudied and provided a full chronological sequence (Knappett and Collar 2007), used as a parallel for the Mochlos material. The east façade of Building 6 from the later excavations of the site, revealed Protopalatial material that was dated to MM IIA (MacGillivray, Sackett et al. 1992; 132, 134). This small deposit included tumblers (Conical Tumbler Type 1b at Mochlos), together with Beveled cups (or Angular Cup Type 1 at Mochlos) decorated with white-on-dark and polychrome. Other Middle Minoan spaces have been identified, such as a floor in the trial trench in the corner of the colonnade stoa dated contemporaneously with Knossian MM IIA, because of the presence of bridge-spouted jars and cups (MacGillivray et al. 1998, 238–239), but the vessels are not illustrated and comparanda with the Mochlos deposits cannot be established.

There are two basic studies from Palaikastro that provide information about the chronological sequence of the Protopalatial period in Mochlos. The first involves the re-examination of Block Chi, Block Gamma, Square H<sub>3</sub>, and Trial DD (Knappett and Collar 2007), and the second reconsiders Block M at Palaikastro (Knappett and Cunningham 2012).

Knappett and Collar date the pottery from Room X<sub>1</sub> in MM IA period (Knappett and Collar 2007, 158). It consisted of conical cups (Mochlos' Conical Cup/Squat Conical Tumbler, Type 2), tall tumblers, rounded bowls with polychrome (Mochlos Bowl Type 1b), rounded cups with strap handles (handleless examples are the semi-globular cups Type 1a), carinated cups with offset bases (Carinated Cup Type 5 in Mochlos), straight-sided cups and bridge-spouted jugs (Knappett and Collar 2007, Fig. 5, Fig.6. and Fig.7). They continue their analysis with the lower stratum of Square H<sub>3</sub>, which is distinguished by Room X<sub>1</sub>, because of the presence of the alternating floral style and the use of the wheel in some small vessels such as small tumblers (Knappett and Collar 2007, 170). These two criteria led them to date this deposit to the MM IB period. Most of the wheel-made vessels from this deposit have parallel striations on the underside of the base and very few examples of concentric striations (Knappett and Collar 2007, 171). There is a continuation in the production of tall tumblers, squat tumblers (in this case Conical Cups/Conical Tumblers Type 5 in Mochlos), carinated cups with offset base, beveled cups, and rounded cups decorated with polychrome, white-on-dark motifs, and monochrome slip (Knappett and Collar, Fig. 18, Fig. 20, Fig. 21). With this distinction, Knappett and Collar challenge the dates Dawkins gave for cups in the MM IA (Dawkins 1923, 10-12) and they date his MM IA to the MM IB, thus most of the vessels from the ossuaries belong to MM IB instead of the MM IIA (Knappett and Collar, 2017, 176). Even if Knappett and Collar give a clear classification about what is MM IA and MM IIB, this is not the case about the middle level of H<sub>3</sub>. This middle level included wheel-made cups, such as squat conical tumblers (Conical Cups/Conical Tumbler Type 5), one-handed conical cups with rolled handles (or "rounded handles" as at Mochlos) with offset or ring bases, carinated cups with short rim and high carination, and a tall rim with low carination but all without grooves, and rounded, flared, and ledge-rimmed bowls. The decoration is either monochrome, polychrome or features white festoons on the interior rim (Knappett and Collar 2007, Fig.23, 24). Because this deposit appeared in a fill, the distinction between MM IIA and MM IIB was tenuous, though more firm for the stratigraphic layers inside Block M (Knappett and Cunningham 2012). MM IB according to the authors, is very poorly preserved, but clear MM IIA fills have been discovered underneath Rooms 1, 10, 11, and 12 (Knappett and Cunningham 2012, 114). The material from these contexts includes wheel-made pottery with some distinctive characteristics from the lower levels of H<sub>3</sub>, but also continuations. The material included monochrome conical tumblers (Conical Cup/Conical Tumbler Type 5 in Mochlos), carinated cups with offset bases (Mochlos' Carinated Cups with Offset Base Type 5), beveled cups (Angular Cup Type 1 in Mochlos), ungrooved carinated cups with low carination and tall rim, ribbed carinated cups with middle to low carination and deep irregular grooves (Carinated Cup Type 2b in Mochlos) and flaring tumblers (Tumbler Type 2 in Mochlos). It also included rounded cups (Semi-Globular/Rounded Cups Type 1a in Mochlos) and decorated conical tumblers similar to those of Type 1b in Mochlos (Knappett and Cunningham, Fig. 4.2, Fig.4.6, Fig.4.7, Fig. 4.8 and Fig.4.9). In addition, flared-rim bowls and different types of jars and jugs also appear.

The later MM IIB strata show different vessel shapes that are similar to the middle levels of H<sub>3</sub>. The deposits that were dated to this period were located underneath Room 10, Room 12, the Main Street, in Room 45, and Room 48. These deposits contained conical tumblers (Conical Tumbler Type 1b in Mochlos), hemispherical cups (Semi-Globular Cup Type 2b in Mochlos), one-handed straight-sided cups (Straight-Sided Cup Type 2), ungrooved, short-rimmed carinated cups (Carinated Cup Type 4a in Mochlos), ribbed carinated cups with regular, shallow grooves (Carinated Cup Type 2a in Mochlos), together with flaring bowls without legs (Bowls Type 2a, 2b in Mochlos), tripod flaring bowls (Bowl Type 3 in Mochlos), ribbed bridge-spouted carinated jugs (Jug Type 5a in Mochlos), oval-mouthed amphorae and basins (Knappett and Cunningham 2012, Fig 4.13, Fig 4.14, Fig 4.17).

These two strata give a clear distinction of chronological periods between MM IB and MM IIB and correspond to some extent in the Mochlos chronological distinctions, as it will be discussed in the Mochlos chronological sequence.

### 4.3 Lasithi and The Mirabello Region

The case of the Mirabello region is quite different according to the exploration of the Protopalatial dating system, since not so many modern publications have been made for the Protopalatial pottery from the different sites. The first attempt to date the Protopalatial period in this region occurred at the beginning of the 20<sup>th</sup> century, with the excavation of sites like Vrokastro (Hall 1914), Gournia (Boyd-Hawes et al. 1908), Mochlos, Pseira, and Vasiliki (Seager 1905; 1907; 1909; 1912), which provided the material for establishing a chronology for the Middle Minoan period.

#### I. Vrokastro

In Vrokastro, Hall identifies Protopalatial sherds and vases especially in Room 36 (1914, 90), where she discovered a straight-sided cup with strap-handle (similar to straight-sided cup Type 2 in Mochlos, which has a vertical rounded handle), a semi-globular cup with a vertical strap-handle (Semi-Globular Type 2b at Mochlos) and a Chamaizi juglet (Hall 1914, Fig.66, Fig.67), but mistakenly identifies them as MM I. According to parallels at Quartier Mu, they likely belong to MM IIB. Part of the material from the settlement was examined by Hayden (2003, 20-23), and she identified vessels like bridge-spouted jugs, narrow-necked globular jars (similar rim and neck section to Pithoid Jars Type 4c in Mochlos), straight-sided cups with the concave lower wall, and semi-globular cups similar to those dated by Hall in MM I period, but now dated by Hayden to MM IIB (Hayden 2003, Fig. 1–4).

#### II. Gournia

The settlement at Gournia has been excavated since the beginning of the 20<sup>th</sup> century, first by Harriet Boyd-Hawes, and the most important finds from this town were published in a collective volume about Gournia and other sites of the Isthmus of Ierapetra (Boyd-Hawes et al. 1908). In this book, Boyd accepts the chronology developed by Evans (1906), related to the Egyptian Dynastic chronological system (Boyd-Hawes et al. 1908, 2). She locates the Early Gournia period (1900–1700 B.C.), which is nowadays the date of the Protopalatial period (Manning, 2010), and the Town Period she assigns to 1700–1500 B.C. (Boyd-Hawes et al. 1908, 21). In the pottery analysis from the early Gournia excavations, there is no clear identification of the Middle Minoan periods (Boyd-Hawes et al. PL.2, 9–12, PL.5, 1–31), and the material published included mainly vessels with parallels with Quartier Mu and other sites from east Crete, such as one-handled conical cups (Types 1a and 1b in Mochlos), ribbed carinated cups (Type 2a in Mochlos), jugs with cutaway spout with conical and piriform profile (Jugs Type 1a and Type 1c respectively in Mochlos), oval-mouthed amphorae (Type 1a in Mochlos) and lids with and without handles (Type 1a and 1b in Mochlos). Thus, the largest contribution of this early scholarship was the division of pottery between Middle Minoan and Late Minoan. In this effort, the material from the North Trench at Gournia is dated at the end of the EM period and the beginning of the MM Period (EM III–MM IA) (Boyd-Hawes et al. 1908). This same chronological interpretation is accepted by Andreou (1978, 57–69), but the new examination of this area and its preliminary results (Watrous et al. 2015, 418–419) shows that the deposition of the North Trench Group ended at the MM IB period. Monochrome bowls and cups that also present bands (Watrous 2015, Fig.17) present similarities with the low levels of House 1 in Mochlos, evidence for the appearance of MM IB in this site.

Several vessels that have been excavated from the settlement of Gournia belonged to the collection of the university museum of the University of Pennsylvania, and it was published by Betancourt and Silverman (1991; Silverman 1978), wherein there is a clear chronological distinction of vessels in the different periods of the Protopalatial, but again without distinguishing between MM IIA and MM IIB. An important observation that they made in this publication is that the ribbed carinated cup form started appearing in the MM II period (Betancourt and Silverman 1991, 25)

A more detailed chronological division comes from the survey in the area of Gournia (Watrous et al. 2012; Haggis 2012, 135–154). In his analysis, he could not differentiate between the MM IB and MM IIA. However, he creates some valuable chronological distinctions, which also can help date the material from the early excavations. He identifies that the carinated cups with tall rim and low carination are dated to the MM IB–IIA period, as well as one-handed conical cups with dark monochrome slip, some oval-mouthed amphorae, and hole-mouthed jars (Haggis 2012, 148–149). For the MM IIB–III, he identifies straight-sided or Vapheio cups both with and without, horizontal grooves (Straight-Sided Cup Type 4a in Mochlos), tall flaring conical cups (Conical Tumblers Type 1b in Mochlos), semi-globular cups, and ledge-rimmed bowls (Haggis, 2012, 151). Taken together, the material from Gournia provides several valuable parallels for the Mochlos deposits.

### III. Vasiliki

Vasiliki is another site in the Mirabello area that provides comparanda that can help identify ceramic sequences in the Mirabello region. The excavations started at the beginning of the 20<sup>th</sup> century by Richard Seager, where he identified sherds similar to the North Trench, that date to just before the Middle Minoan period, according to the Knossian chronological sequence (Seager 1905, 218, PL.26). In the next reports, he identifies the existence of two Middle Minoan Houses, House A, and B, that belong to the same chronological horizon as the early deposits from Palaikastro (Seager 1907, 114). The material of these two houses have been also divided into two different groups by Andreou, classified as Mochlos House D–Vasiliki House B Group, and Vasiliki House A–Zakros group; the first is dated to MM IB and the second to the MM IIA–IIB (Andreou 1978, 70–92, 93–119). The correspondence of the Vasiliki-House A-Zakros Group with material from Malia (Poursat and Knappett, 2005), Petras (Haggis 2007; Tsipopoulou 2017a), and Palaikastro (Knappett and Cunningham 2012; Knappett and Collar 2007), shows a mixed dating in this group, between MM IIA and MM IIB.

### IV. Trapeza Cave

Our knowledge of early chronology for the Mirabello region was benefited by Pendlebury and Money Couatts' discovery of the Trapeza Cave in the Lasithi plain (Pendlebury and Money-Coutts 1939, 5–131). Multiple Protopalatial types have been identified related mainly with the Knossos and Palaikastro Protopalatial phases for their chronology (Pendlebury and Money-Coutts 1939, 59–63). Even if the classification seems to be accurate according to the sites analyzed above, they assign to MM I the wheel-made ribbed and non-ribbed carinated cups (Carinated Cup Type 2a and Type 2b in Mochlos), cups with flaring sides (Conical Tumbler Type 1b in Mochlos), as well as one-handed conical cups with white festoons on rim interior. Those shapes nowadays are dated to the end of the Protopalatial period (MM IIB) and can provide parallels for the later strata in Mochlos.

## VI. Pseira

Pseira excavations have been conducted in the 1990s and they revealed a settlement that consisted of more than sixty buildings by the Late Bronze Age (Betancourt 2009, 3). It has been published in multiple volumes, separated into the different buildings and the occupational strata. The Middle Minoan strata were identified below different houses, most of them Neopalatial in date. This site follows the same pattern as appears in Mochlos and others—the Middle Minoan occupational spaces have been overbuilt by succeeding Neopalatial towns.

Important contexts have been revealed particularly from Block AF located at the southern end of the Katsouni Peninsula (Betancourt et al. 2009, 5) and the study of pottery belonged to Cheryl R. Floyd. The most important deposit for our purposes here comes from Area AF 3C that revealed a room dated to Middle Minoan II (Betancourt et al. 2009, 6). From their published statistical tables (Floyd 2009, 173–175) we can identify that the Middle Minoan pottery percentages dated to the Middle Minoan IB–IIB period are dominant. However, the material is very fragmentary, coming from a floor packing in Room AF 3C, a Middle Minoan II floor level, a Middle Minoan II collapse over this floor, in Space AF 3D, and two Middle Minoan II strata in Space AF 3E and AF 2. The pottery from these deposits is extremely fragmentary but includes shapes that belong to certain periods and can be used as comparanda with the Mochlos material. One of the problems in the Pseira catalog is that the author sometimes cannot distinguish among periods within the Protopalatial (Middle Minoan IB, IIA or IIB) something that the present work may help to clarify in the future.

The floor deposit located underneath Room AF 3C included one sherd from a shallow bowl with a flaring rim, which is dated generally in the Middle Minoan I–II period. From the MM II floor level, the diagnostic sherds of a semi-globular cup and a scored basin or beehive (Floyd 2009, 41), are also dated to MM I–II, creating a problem of distinguishing between the sub-periods of the Protopalatial. This however is the case for the Mochlos material, in which some types appear in multiple periods, so the identifications in the different sub-periods have to be assigned concerning other vessels in the context. From the MM II Floor and the collapse of Space AF 3D comes a straight-sided cup with alternating floral style, dated to MM IB–MM II and a carinated cup dated to MM II (Floyd 2009, 43). The alternating floral style appears at Mochlos in the Deposit Underneath House C.3 (P 826; **MOX.6**) and the carinated cup type appear in every Middle Minoan deposit of Mochlos, especially to the homogeneous Deposits Underneath B.2, C.7, C.3, and the later strata of the MM II house, and in the Level 1 and Level 2 of the Middle Minoan room Underneath House C.12. From Pseira's Space AF 3E a one-handled conical cup with an ovoid handle is dated to the MM IB–MM II period. These examples in Mochlos appear exclusively in the Level 2 Underneath C.12, while in other deposits they bear a rounded handle, and their morphology is similar to the deep conical cups with rounded handles from Malia. From Space AF 2 a small amount of fragmentary pottery comes from the Middle Minoan II stratum. A conical cup with a band at the rim and monochrome interior, dated to MM II–III but accompanied by a note that it could appear from MM IA and continue through the whole duration of the Protopalatial period (Floyd 2009, 45). In its decoration it is similar with examples coming from a mixed deposit from the Protopalatial House 1, for example, P 10789 (**MOX.277**) and P 12988, which however preserve a flat, inverted rim. This rim distinction, together with the observation that they are not wheel-made, may date them to Middle Minoan I, possibly IB. A second and final example from this space is a complete carinated cup with dark metallic slip and strap-handle dated to the MM IIB period (Floyd 1999, 45). It finds a parallel in Mochlos' C.12 Level 2 (P 12393), which also has a tall rim with the maximum diameter at the carination. The carination however is sharper and the upper wall more concave as it rises to a more distinct, everted rim. This shape does not appear in the lower deposits of the Protopalatial house, neither does it appear in the homogenous Deposits Underneath Houses C.3, B.2, and C.7, so its date should be somewhere in the middle, possibly Middle Minoan IIA.



Multiple different deposits have also been revealed in the settlement that mixed Late and Middle Minoan pottery. The dating of these sherds may assist us in dating some of the Mochlos vessels, and perhaps a tentative date for the whole deposits can be ventured by comparison. From Area BE, the straight-sided cup (Betancourt 1999, BE 1, 52) is similar to the Angular/Beveled cups from Mochlos, Petras, and Palaikastro. In Pseira and in some of the instances from Palaikastro (Knappett and Collar 2007, Fig 18, 96), the straight-sided cup endures throughout the whole period from Middle Minoan IB to Middle Minoan IIB. A second shape that, according to Betancourt (1999, Fig. 7, B2), is a rounded cup, appears in some of the Mochlos strata and is decorated with white-on-dark or polychrome slip (semi-globular cup Type 1a). It seems that in east Crete this shape appears in Middle Minoan IA with straighter sides (Knappett and Collar 2007, Fig.6 18, 160) but as we see in Pseira, it continues through the Middle Minoan II and Middle Minoan IIB, which is the case for Mochlos and Monastiraki-Katalimata (Nowicki 2008, Fig. 68, KP 474).

The one-handed deep conical cup with high strap handle that appears in Pseira (Betancourt 1999, Fig. 7, BE 3), is not often found with that kind of handle in the Mochlos deposits, but it appears in two examples from Malia that are dated in Middle Minoan IIB (Poursat and Knappett 2005, PL. 29, 961, 970). In Mochlos and other sites like Monastiraki-Katalimata, all the examples preserve rounded handles during this period. In C.12's Level 2, we identified a large number of conical cups with strap handles, however, the handle is longer and is attached either on the middle or close to the lower exterior wall, and they seem to be dated earlier than the Middle Minoan IIB examples, possibly to the Middle Minoan IIA.

The non-grooved carinated cup from Pseira (Betancourt 1999, Fig.7 BE 4) is a common example from Malia and also appears at Mochlos in the later Protopalatial strata, but also in Levels 1 and 2 of C.12. The variation and the appearance of the different sub-types in the different strata can help differentiate chronological distinctions within particular sub-periods of the Protopalatial.

## VII. Monastiraki-Katalimmata

This site was excavated recently. It is located on the Cha Gorge and is rightfully considered a defensible site (Nowicki 2008, 2). The Middle Minoan II phase has been recognized by the excavator and was found in three separate contexts—firstly mixed with later occupational vessels, mainly with LM IIIC material; secondly as part of the remains of the Middle Minoan floors in different rooms; and thirdly as part of a dump that was discarded to the eastern part, beyond Building C (Nowicki 2008, 46). The material that was mixed with the later phases of occupation and that of the floor remnants is very fragmentary, while the dump contains better-preserved vessels. The author does not distinguish between Middle Minoan IIA and IIB but refers to it as a general Middle Minoan II period. This statement is natural since up to the date of that publication, the division of the Middle Minoan II period was exceptionally difficult. There was to that point, not a clear deposit dated stratigraphically in Middle Minoan IIA.

This is one of the gaps that we will try to fill with the analysis and the dating of the Mochlos stratigraphic material. However, the material from Monastiraki Kataliimmata represents a short period and is markedly homogenous, representing a variety of vessels made from coarse and fine wares including jars, jugs, cooking dishes, cooking pots, bowls, and different kinds of cups. The most well-preserved vessels are the cups, a situation that is reflected at Mochlos as well, where Mochlos cups are the most important pieces to make the chronological distinctions.

The one-handed straight-sided cups with a conical profile according to Nowicki are similar to the one-handed conical cups that appear in Mochlos Deposits Underneath House C.3, C.7, B.2, the Level 1 Underneath C.12, the floor from area 1 of Middle Minoan house. They also show parallels with Quartier Mu at Malia (Poursat and Knappett 2005). The same can be identified with the conical

or flaring tumblers that at Monastiraki-Katalimata are called straight-sided cups. Those have parallels with Malian Quartier Mu and Θ creating a chronological and cultural link in the similarity between the three sites. However, minor differences that appear in the comparisons between the shapes, like the lower attachments of the handles, or the slight concavity that appears on the low wall above the base, have to do with the technological knowledge and unique working habits of the potters at various sites.

The carinated cups from Monastiraki-Katalimata are quite limited in the catalog of the site with just one ribbed example (Nowicki 2008, KP 498), while there are six non-ribbed carinated cups, most of them preserving middle to high carination with convex low to middle wall exterior and concave middle to high wall rising to an everted rim. KP 529 and KP 532 are tall-rimmed carinated cups, seeming to belong to MM IIA since they are similar to examples appearing in Level 2 of C.12. The near absence of ribbed carinated cups from Monastiraki deposits is interesting because it shows differences in the production, distribution, and consumption strategies between the sites of Mochlos and Monastiraki-Katalimata as far as can be shown between the contemporaneous deposits between the two sites.

### 4.4 The Chronological Sequence at Mochlos

Mochlos' chronological sequence and relative chronology can be defined by observing morphological characteristics relative to stratigraphic information and inter-site comparisons. The Mochlos stratigraphic sequence (**Fig. 4**) is presented together with the dating that is consisted of three phases as it could be seen by the analysis of the data and the parallels that appear in the catalog, as well as the analysis of the data from different sites that produced Protopalatial material from east Crete and Knossos, which, along with Malia, is a major center in Central Crete during this period. Stratigraphically, the nature of the deposits varies from fills, the upper storey collapses, and floors (**Fig. 5, Fig. 6**). Different deposits are homogeneous in types but also differ from other strata in their sequence. For ease of presentation, the homogenous deposits are unified and discussed in comparison with material from other sites and their relative chronologies to identify the distinctions in the sub-periods of the Protopalatial at Mochlos. Thus, Mochlos is distinguished in three phases that are in accordance with the Knossian dating system, as has been established by MacGillivray (1998), Momigliano (2007), and MacDonald and Knappett (2007). Thus, Mochlos I is contemporaneous with MM IB, Mochlos II to MM IIA, and Mochlos III in MM IIB. With this phasing paradigm, I do not argue that the Mochlos data reflect the exact circumstances or strategies of production and consumption as other sites in the respective period, but similarities and differences can and do appear, evidencing local and regional processes in the Protopalatial sub-periods, and on a broader scale illustrating inter-site relationships that enrich our understanding of socio-cultural connections.

**Figure 4:** Stratigraphic Sequence of Selected Protopalatial Sites in Crete

| Chronology   | Mochlos  | Palaikastro   | Petras                          | Zakros   | Vasiliki | Vrokastro                     | Gournia      | Monastiraki | Myrtos Pyrgos | Malia              |
|--------------|--|---|---------------------------------|--|----------|-------------------------------|--------------|-------------|---------------|--------------------|
| MM IIB       | Mochlos I: Deposits Underneath C.3, C.7, B.2, C.12 (Level 1), House 1 (Area 1; Room 4) | Block M: Room 10a (context 10a1, Foundation Deposit), Room 10b (drain, 10b.2 above drain, 10b.1 inside drain), Room 12a (contexts 1-5), Main Street (context 45.2), Room 48 (context 48.1), Room 50 | The Hieroglyphic Archive        | Buildings G and H  | House A  | First phase of the settlement |              | Building C  | Pyrgos III    | Malia, Quartier Mu |
|              |  | H3 (middle layer)   | Ceremonial Area 1 (late phase)  |  |          |                               |              |             |               |                    |
| MM IIA       | Mochlos II: Deposits Underneath C.12 (Level 2)   | Block M: Fills underneath Room 1a, 1b, 10a, 11a, 12b, 13, 18  | Ceremonial Area 1 (early phase) | Pezoules Kefali House of the Ramp, "House of the Pottery Deposits" | House B  |                               |              |             |               | Malia, Sector Pi   |
| MM IB        | Mochlos III: Deposits Underneath C.12 (Level 3), Lower strata of House 1               | H3 (lower level), G3  | House 1.1                       | Lakkos Deposit   |          |                               |              |             |               |                    |
| EM III/MM IA |  | Room X1   |                                 |  |          |                               | North Trench |             |               |                    |

**Figure 5:** Chronology of Mochlos Deposit

| <b>Phase</b>                         | <b>Deposit underneath House C.12</b>                                    | <b>Deposit underneath House C.3</b>             | <b>Deposit underneath House C.7</b> | <b>Deposit underneath House C.7</b>                    | <b>Deposit underneath House C. 7</b>  | <b>Deposit underneath B.2</b>              | <b>Deposit underneath Ceremonial complex B.2</b> |
|--------------------------------------|---|---|-------------------------------------|--|---------------------------------------|--|--|
| <b>Mochlos III (MM IIB)</b>          | Level 1: D2 2823, 2824.1  | Deposit 1: E3 5905, 5930: Upper storey collapse | Deposit 2: E3 4334, 4335: Floor     | Deposit 3: E3 42/5245, 42/5246: Floor / Votive deposit | Deposit 4: E3 31/3204 - 31/3224: Fill | Deposit 5: E3 5471: Floor / Votive deposit | Deposit 6: E3 5521 Bin                           |
| <b>Mochlos II (MM IIA)</b>           | Level 2: D2 2824.2, 2825, 1803, 2826.1: Floor and upper storey collapse |   |                                     |  |                                       |  |  |
| <b>Mochlos I (Late MM IA- MM IB)</b> | Level 3: D2 2826.2: Fill  |   |                                     |  |                                       |  |  |

**Figure 6:** House 1 Deposits and Chronological Sequence

| Middle Minoan House 1               |   |   |   |  |                     |
|-------------------------------------|---|---|---|--|---------------------|
| Phases                              | Room 1  | Room 2                                      | Room 3                                      | Room 4   | Area 1              |
| <b>Mochlos III (MM IIB)</b>         | Layer1: D2 1802.1-4<br>Upper storey collapse, |   |   | Layer 1: D2 1804.1-3:<br>Upper storey collapse | D2 811, 1810: Floor |
|                                     | Layer 2: D2 1802.5: Floor                     | Layer 2: D2 1803.2-3,<br>1812.1-3: Fill     | Layer 2: D2 1803.4,<br>1813.4: Fill         | Layer 2: D2 1804.4 Floor                       |                     |
| <b>Mochlos I (Late MM IA-MM IB)</b> | Layer 3:D2 1802.6: Fill<br>above bedrock      | Layer 3: D2 1812.4-7:<br>Fill above bedrock | Layer 3: D2 1813.5-6:<br>Fill above bedrock | Layer.3: D2 1804.7-9: Fill<br>above bedrock    |                     |

## I. Mochlos I (MM IB)

Five small deposits preserve material that can be dated to the Middle Minoan IB period and all are fills above the bedrock. Four of the deposits appear in the fill above the bedrock below Middle Minoan IIB floors of rooms in House 1 and Level 3 of House C.12. One problem we faced in the analysis of the data is that a lot of the material that is dated in the earlier period of the Protopalatial has been mixed with the later material on the floors of Room 1, Room 2, and 3 of House 1, thus a selection of vessels from these mixed layers will assist to understand the MM IB vessel typologies and differences from the sub-periods of the Protopalatial. To understand this early Mochlos phase we should follow the criteria and the parallels that have been developed in the Mirabello region through extensive bibliography. The major works that addressed the MM IB pottery in east Crete and the Mirabello region are the analysis of the Petras Lakkos deposit (Haggis 2007 and 2012), the analysis of the Middle Minoan pottery from the Gournia survey (Haggis 2012), the analysis of the varied deposits of Andreou (1979), and the fundamental works by Betancourt and Silverman concerning light- and white-on-dark pottery from Gournia and other sites in the Mirabello region (Betancourt 1977; 1983, Betancourt and Silverman 1991, Silverman 1978).

In Betancourt's work (1977, 351–353), there is the sense that there is a continuation of light-on-dark and dark-on-light in all the phases of Protopalatial, considering decorative motives such as plumes and linked discs. He hypothesizes that there is no synchronicity between eastern Crete and Knossos, some periods lasting longer in east Crete according to the prolonged appearance of certain characteristics and the decorative motifs (Betancourt 1977, 351, ILL.1). However, his dating of some deposits is made through the decorative motifs and not so much based on morphological (and thus technological) distinctions, correlating them with the Knossian system of chronology. He states that MM IB in east Crete is contemporary with the MM II at Knossos, and he dates some of the deposits, such as the House A to the MM IB (Betancourt 1977, 346), a chronology that Andreou adopted and perpetuated (1979, 67). Even though the date of this study is quite early, and more are continuously understood through the excavation of more Protopalatial material, which was studied more recently, it states one main observation that is quite important and that is that the east Cretan tradition stylistically differs from the Knossos Protopalatial deposits, at least regarding the beginning of the Protopalatial.

Andreou (1979, 70) noticed that the Early Protopalatial or MM IB in east Crete develops slower than in the western part, thus our chronological analysis accounts for regionalities. In the EM III–MMIA, the strong Mirabello east Cretan tradition observed through the light-on-dark pottery from the North Trench, resulted in the intrusion of some vessels from that group in the Mochlos House D–Vasiliki House A that is dated in the MM IB (Andreou 1978, 67). The first criterion that Andreou applies is the introduction of the wheel, which seems to appear in evidence in some of the vessels of the Mochlos MM IB examples. One important characteristic that appears in Mochlos House D is the strap handle on the conical cups and flared-rim bowls with bands on the rim (Andreou 1978, 75). He also identifies other vessels as conical and semi-globular cups with strap handles and angular cups with strap handles (Andreou 1978,76). Carinated cups with offset bases and rounded-semi-globular cups also appear demonstrating continuations into the later periods. Haggis in addition to the material discovered in the Gournia survey (Haggis 2012), adds other shapes such as carinated cups with tall rim and low carination and tumblers (Haggis 2012, 148), as well as closed vessels with offset bases, possibly jugs.

In the newly excavated material from Rooms 1, 2, and 3 of House 1 and Level 3 Underneath House C.12, multiple vessels similar to those of Andreou's Mochlos House D and Vasiliki House A group, and from the Gournia survey and Pseira have been identified, as well as some vessels that come from east Crete and sites such as Palaikastro (Knappett and Collar 2007; Dawkins, 1902–1903; 1904–1905; Bosanquet and Dawkins 1923) and Petras (Haggis 2007).

In Mochlos deposits we can identify some of the main characteristics, that were discussed in the diagnostics of the MM IB period in east Crete. Most of the material comes from the second layer of Room 2 and Room 3 and the third layers of the same rooms. Even if the second layers of Room 2 and Room 3 stratigraphically are in the same elevations as the later floor of the Area 1, and they include also material contemporaneous with it, the presence of earlier vessels shows a mixture of these two periods in these rooms. However, the shapes and decorations correspond to those of Mirabello and east Crete, showing aspects of production, distribution, and consumption patterns, and possibly social behaviors during the Middle Minoan IB period.

The second layer underneath Room 2 presents a series of vessels that possibly belong to the Middle Minoan IB period. One basic type that appears often in strata of this period is the cup with the offset base, Type 1 (for example P 12997 (**MOX.326**), P 13072 (**MOX.325**), P 13096 (**MOX.327**), P 13052 (**MOX.289**) and P 13051 (**MOX.291**)), which possibly applies to the carinated cups with offset bases. However, the preservation of these vessels in the Mochlos deposits is poor, and for that reason that they are classified separately. They are either decorated with dark-on-light or light-on-dark linear motifs on the exterior and monochrome slip on the interior, or they are decorated with dark slip on both the interior and exterior. A second type that shows an early date and that may be a continuation from the MM IA to the MM IB is the conical cup/squat conical tumbler. This shape is decorated with a dark band on the rim interior and exterior or a dark exterior rim band on a buff burnished surface. Examples of this type include P 12989 (**MOX.275**), P 13034 (**MOX.276**), P 10789 (**MOX.277**), P 13036 (**MOX.278**), P 12860 (**MOX.290**), and P 13073 (**MOX.284**). These examples of conical cup/squat conical tumbler are dated in the MM IA from Haggis (2012, Fig.11) and the type has a conical profile and straight rim, and are decorated with dark interior/exterior rim band or dark slip on the exterior and a dark interior rim band on a buff burnished surface. These examples appear also in Andreou's Mochlos House D–Vasiliki House A Group, which is dated to MM IB (Andreou 1979, Fig 11, 2,3) and in Palaikastro in the MM IA pottery assemblage from Room X<sub>1</sub>, described as a squat tumbler. It seems that this shape appears at the beginning of the Middle Minoan I period, but continues into the MM IB. The examples from Room 2 seem to be dated to the latter because they present some differences in shape and decoration. Most of the instances maintain everted almost flared rim, instead of straight the straight profile that appears in the MM IA examples. In addition, the decoration in these examples, apart from bands on the rim interior and exterior, also preserves a band on the rim and high exterior wall and dark monochrome on the interior. The monochrome interior seems to be an MM IB innovation for the Mochlos assemblages, as it does not appear in earlier levels. Another important characteristic is the presence of flared rim shallow bowls with a band on the rim interior and exterior on the buff burnished surface (P 13009 (**MOX.295**), P 12998 (**MOX.294**)). This according to Andreou appears in the Mochlos House D–Vasiliki House A group (Andreou 1978, 72). However, the presence of bowls with light-on-dark on the interior (P13006 (**MOX.329**)) shows that at least in Mochlos the decoration on the entire interior surface starts in MM IB and is more prominent in the bowl examples of the next sub-period (MM IIA). Concerning closed vessels, hole-mouthed jars appear in both MM IA and MM IB according to Haggis (2012, Fig.14, 183; Fig.22, 317), but the preservation of hole-mouth jars with light-on-dark North Trench motifs (**MOX.261**; **MOX.314**) shows that there is a continuation between MM IA and MM IB. The appearance of jugs with offset bases decorated with linear motifs, possibly plumes, shows an MM IB date according to Haggis (Haggis 2012, Fig.21, B306, B307, B308, and B310) and Betancourt and Silverman (Betancourt and Silverman 1991, Fig.6, 386, 390).

A third criterion that can be identified in these low stratigraphic layers is sherds with red and white alternating bands, which according to Relaki and Haggis and are dated to the MM IB (Haggis 2012, 193; Relaki 2017, 102). A unique vessel is the P 10774 (**MOX.286**) which is a semi-globular or rounded cup that is decorated with rectilinear red and white polychrome decoration (Walberg 1983, PL.53, 31(i)36, 31(i)37, 31(i)38) that dates to Walberg's Phase 1 (MM IA) and Phase 2 (MM IB/IIA), but the example from Mochlos shows MM IB date.

In conclusion, the lower strata of Rooms 2 and 3 and Level 2 Underneath C.12, have elements of affinity with east Crete but continue in the regional dating of the Mirabello pottery tradition. New characteristics that date these strata in MM IB, separating them from the MM IA North Trench Group is the presence of vessels with offset bases that are decorated with light-on-dark linear motifs, similar to the North Trench Group, but they are wheel-made. The second criterion is the appearance of slipped surfaces on the interior surface of open vessels, something that does not appear in the North Trench that is dated in EM III–MM IA (Andreou 1978, Fig.10). The appearance of semi-globular cups with polychrome decoration and carinated cups with low carination, with dark slip on the interior and almost straight upper body section that have parallels with other sites in east Crete (Haggis 2007; Knappett and Collar 2007), suggesting a MM IB date despite the fragmentary state of the pottery.

## II. Mochlos II (MM IIA)

Since we already analyzed the MM IB deposits from the low levels of House 1 and Level 3 from C.12, we will examine the intermediate period between MM IB and MM IIB, which is the MM IIA. This period is not pronounced in east Crete, as several scholars (Andreou 1979, Brogan and Koh, 2010, Nowicki, 2008, Haggis 2012) were not able to divide it into two sub-periods but referred to it as a general MM II. On the contrary, Knossos sequences allow such a division of Protopalatial pottery into MM IB, MM IIA, and MM IIB (MacGillivray 1998, 98; MacDonald and Knappett 2007; MacGillivray 2007). However, newly studied material like Block M in Palaikastro (Knappett and Cunningham, 2012), Malia (Knappett and Pomadère et al. 2017), and in Petras (Relaki 2016), have provided fresh opportunities for the study of the Middle Minoan IIA in east Crete. As discussed already, most of the published material from the Mirabello region is defined by various authors as MM II, and through our identification in this chronological section has been characterized as MM IIB through the cautious comparison and identification of similarities with the Malian material, especially with Quartier Mu, which is firmly dated in the MM IIB period (Knappett and Poursat 2005). Thus, the material that belongs to Level 2 Underneath C.12 reveals material that belongs to this period, and it creates a narrative and precedent for studying or restudying the material from other sites of the Mirabello Gulf.

The earlier published material from Mochlos came from House D (Andreou 1979, 71–73, Seager 1909). While it is now not available for study, it seems to have included light-on-dark, but on vessel-shapes that correspond to a later phase, such as tumblers, squat conical tumblers, one-handled conical cups, carinated cups with offset bases, semi-globular/rounded cups, flared-rim bowls and jugs with cutaway spouts, decorated with triple plumes. Their existence together with vessels that find parallels in the North Trench Group shows a date of MM IB for this deposit.

Level 2, however, shows a different picture, with parallels found in two fills from Espace 25 of Sector Pi in Malia (Knappett and Pomadère et al. 2017), Petras (Relaki 2016), Knossos deposits C, D and E (MacDonald and Knappett 2007), Groups B, D, F, H and J in the Early SW House I of the West Court, the West Magazine 2 of the Palace's West Wing, and the Early Olive Press as well as with Royal Pottery stores at the east Wing (MacGillivray, 1998, 98) and also parallels with Palaikastro's Block M deposit, Context Ib.2 (Knappett and Cunningham 2012), and the lower and middle layer from Trench H<sub>3</sub> (Knappett and Collar 2007), which are all dated to MM IIA, apart from the layers from the Trench H<sub>3</sub> that preserves MM IB and MM II which does not show a clear distinction between MM IIA and MM IIB. Knappett (Knappett and Pomadère et al. 2017, 5) presents the criteria he used for dating this deposit in the MM IIA, which we summarized in the chronological section of Malia. Mochlos presents similarities, but also some differences, that perhaps have to do with the local perceptions in the production, distribution, and consumption of pottery shapes and it



will be discussed in the micro-, meso-, and macro-scale behavior of the settlement in the different sub-periods of the Protopalatial.

By examining these criteria and applying them to the Mochlos typological and descriptive system, many important observations can be made concerning the chronology of this deposit. If we combine the first two criteria, which are the lack of polychromy and the monochromatic character, we could observe that this happens in the Mochlos vessels of the MM IIA. From the statistical tables of the drinking and serving vessels, we notice that the highest percentages of the most common used cups, such as one-handed conical cups (Type 1a and 2b), carinated cups (Type 2b), conical cup/conical tumbler (Type 5) and other tumblers, such as Type 1a, and Type 3, show a clear preference in a dark or red slip, buff or lustrous/metallic slip on the interior and the exterior surface or just on the interior surface, or in smaller percentages are undecorated. Only a single semi-globular cup (P 12535, Type 1a) is decorated with polychrome on the interior, but it is an exception. Additionally, the third criterion, which is the prevalence of the wheel also appears in the Mochlos examples, which show rilling marks on all surfaces and the underside of the base. Many of the pouring and storage vessels show at least wheel-fashioning combined with the coil technique as suggested by Knappett for Knossos material (Knappett, 1999; 2004).

The fourth and the fifth criterion are the absence of beveled and carinated cups with offset bases that appear in the other MM IB strata, such as the Lakkos deposit in Petras (Haggis 2007). However, the appearance of this type of carinated cup (Type 5) in Level 2 of C.12 shows a clear continuation from the former period. This type of carinated cup was not absent from the Mochlos MM IB deposit, House D, as identified by Andreou (1979, Fig. 11, 22,23,24), but it seems to continue, not only in this layer of Mochlos, but also in Palaikastro in Block M, Context Ib (Knappett and Cunningham 2012, Fig. 4.2, 22, 23, 24), and the pottery from Trench H<sub>3</sub>, which presents this shape in its lower level that is dated to MM IB (Knappett and Collar 2007, Fig. 18, 97, 98) and in the middle layer, which is dated to the general MM II period (Knappett and Collar 2007, 111). In addition, of the pottery from Gournia this shape is also dated within MM IB–MM IIA (Betancourt and Silverman 1991, PL.6, 408), as in Zakros (Platon and Tsiboukaki 2007, Fig.1, a, b) That means that these early types of vessels in east Crete continues from the MM IB to the MM IIA, which corroborates the evidence at Mochlos.

The sixth criterion in Knappett's distinction (Knappett and Pomadère et al. 2017, 528–529) is the presence of bridge-spouted carinated jugs and a ring kernos, which are not present in the MM IIA deposit. In addition, Knappett proposes some vessels that may be MM IB are of MM IIA, such as the one-handed conical cups made from fine buff clays with strap handles and the carinated cups with irregular grooves that continue into the MM IIB period. In the Mochlos deposit Underneath House C.12, the one-handed conical cup Type 2b occupies a respectable percentage of the deposit, and it has parallels with Deposit D from Knossos, Petras (Tsipopoulou 2017aa; Fig.7, v), and Sector Pi in Malia (MacDonald and Knappett 2007, Fig.3.20, 395–400; Knappett and Pomadère et al. 2017, Fig. 27, Fig. 30). The irregularly-grooved carinated cup seems to be an example that appears in Central-east Crete and the southeast since the only parallels with the Mochlos examples come from Sector Pi (Knappett and Pomadère et al. 2017, Fig.21) and, as Knappett mentions, from the Ossuary 2 in Myrtos Pyrgos (Knappett and Pomadère et al. 2017,530). Even though the grooved type appears in the MM IB in Knossos, for example in Group A (MacGillivray 1998, PL.3, 95–97) with symmetric grooves on the upper part above the carination, in east Crete it seems to appear in the form of carinated cups with irregular grooves in MM IIA. This type of carinated cup (Type 2c) in Mochlos preserves a slip on the edge on the underside of the base creating a disk on its perimeter. That is a characteristic that according to Haggis is a technological peculiarity that appears only in the MM IB–MM IIA (Haggis 2012, 148). Other carinated cup types like Type 4c have parallels at Petras and Knossos (Relaki 2016, Fig.27, EMP 80, 82; MacGillivray 2007, Fig. 4.16, 1), but also in the Mirabello area (Betancourt et al. 2009, Fig.1, Pl. 14, AF 20). This type also applies to the criterion of Haggis—that

the cups with low carination and the tall rim decorated with dark monochrome on the interior and exterior surfaces are also examples belonging to MM IB–MM IIA (Haggis 2012, 148).

Apart from these vessels, there are others from Level 2 underneath the southwestern room of House C.12 that present parallels with the examples from other MM IIA deposits. Another significant vessel that is decorated with monochrome slip is tumbler Type 5, here described as conical cup/conical tumbler, which is the continuation of the conical cup/squat conical tumbler that appears in the MM IB layers and has been described as a separate shape in the Mochlos Protopalatial typology. In east Crete Type 5 has parallels that start from MM IB but are elaborate in decoration (Knappett and Collar 2007, Fig. 18, 93). From the serving vessels, the flared rim bowl is also quite important in the dating of these deposits. Type 2b examples have been found in the MM IIA in Palaikastro (Knappett and Cunningham, 2012, Fig 4.4, 70–71) and the Type 2c, which has similar a profile section with some of the saucers that come from Knossos MM IIA deposits (MacDonald and Knappett 2007, Fig. 3.15, 266) and Petras (Relaki 2016, Fig.29, 248). The most important parallels come from the cemetery of Petras, where they have been described as plates (Tsipopoulou 2012, 121; Tsipopoulou 2017aa, 114–115). Those are dated to both the MM IB and MM IIA phase, coming from the cemetery and its ceremonial areas (Tsipopoulou 2012, Fig.4; 2017, Fig. 5, Fig.6). The early examples of Petras are decorated with light-on-dark and dark-on-light, and that is the diagnostic characteristic of their date. This type also started appearing in Mochlos in the MM IB in Mochlos and Knossos according to Andreou (1978, Fig.1,12; Fig.3,8; Fig.12, 16). Type 2c, examples, however, seem to belong to the Middle Minoan IIA period and follow the criterion of the monochromy that is applied to the Middle Minoan II criteria.

In the closed vessel examples, Type 1a jugs with the cutaway spout, which is either monochrome or is decorated triple plumes, seem to appear in every period and have shape parallels with all the Middle Minoan IIA deposits, and are contemporaneous with the deposit underneath C.12 (Knappett and Cunningham, 2012, Fig. 4.3, 56; Andreou, 1978, Fig.13 Fig.16; Relaki 2016, Fig.23, EMP 129– PM 121; Betancourt 1977, Fig. 1.). The Type 3 oval-mouthed amphora (P 12716) seems to have parallels with Sector Pi in Malia and at Palaikastro (Knappett, Pomadère, et al, 2017, fig. 43–44; Knappett and Cunningham 2012, Fig. 4.3, 59).

This brief presentation of specific Mochlos shapes collected from Level 2 Underneath House C.12 shows that this stratum appears to accommodate most of the criteria as established by Knappett regarding the MM IIA period (Knappett and Pomadère et. al, 2017, 529). Thus, Mochlos MM IIA, being the only stratified deposit that presents this chronological sequence, creates a set of comparanda and a new picture for use in the study and re-study of the deposits of the general MM II period in the Mirabello region.

### III. Mochlos III (MM IIB)

Most of the strata from the Mochlos deposits seem to be dated to this period of occupation with shapes that seem to be dated only to this period but also with shapes that continue from the preceding period. The deposits that are dated to this period are found underneath Neopalatial House C.3, the deposits underneath C.7, those underneath B.2, and from House 1, the material from Area 1 as well as some of the material from the upper layers of Rooms 1, 2, 3, and 4. In these layers, we can see vessels that bear a striking similarity with Quartier Mu examples from Malia and other sites in the Mirabello Gulf and east Crete, all of which have been relatively securely dated to MM IIB. However, continuations and developments can be observed naturally if we take into account the possibility that the same workshops were active in the same area, especially throughout the MM IIA and MM IIB periods.

The material from Mochlos' deposits is related to the sites of Malia, Myrto Pyrgos, and sites of the Mirabello region, such as Pseira, Gournia, and Monastiraki Katalimata, especially in the drinking, pouring, and storage vessel sets. The dating of cooking vessels is difficult to distinguish because they, especially the trays and the cooking dishes, do not show much change in terms of profile shape from the MM to the LM period (Barnard and Brogan, Fig. 49 and Fig.50).

There are three popular drinking shapes in the Mochlos deposits: tumblers, carinated cups, and one-handled conical cups. Type 1a, 2, and 3 tumblers appear in very small percentages in the MM IIA deposits and together with Type 1b appearing in all the contexts mentioned above, and especially those of underneath House C.3, House C.7, Ceremonial Complex B.2, Room 4, the Level 1 below the southwest room underneath House C.12 and Area 1 of House 1. No material from Mochlos from this period was identified by Andreou, during this period, but the tumblers that appear in the form of Type 1a and Type 1b are similar to those of the Town Group (Andreou 1978, PL.30) and Quartier Mu at Malia (Poursat and Knappett 2005, PL.30, 1036, 1041), Monastiraki-Katalimata (Nowicki 2008, Fig.68, KP 478; 2001, Fig. 5, 15), which are dated in MM II in the case of Andreou, but MM IIB in the case of Quartier Mu, which also dates the Town group at the same sup-period of the Protopalatial. These kinds of tumblers appear frequently in the Mochlos deposits and are a good indicator for their chronological assignment to MM IIB. A second vessel that appears in most stratigraphic deposits listed above is carinated cup Type 2a, which is the grooved type with middle-to-high carination and shallow regular grooves. This type of carinated cup must not appear in the MM IIB examples in the east, especially in Palaikastro, or in Knossos in the west during this period of the Protopalatial. Most of the parallels of this type come from Malia (Knappett and Poursat 2005, PL.27, 769; Andreou 1979, Fig. 19, 15), but also appear in Monastiraki-Katalimata (Nowicki, 2001, fig. 5, 13), and from the survey in the Gournia area (Haggis 2012; Fig.20, 275) and the settlement of Gournia (Betancourt and Silverman, PL.7, 412). The third most common cup type that appears in the Mochlos deposits is the one-handled conical cup. Type 1a and 1b have distinct MM IIB parallels from Malia, Quartier Mu (Poursat and Knappett 2005, 970, PL.29, 965, 979; Andreou 1978, Fig. 18, 8), Pseira (Betancourt 1999, PL.8, BE 3), Monastiraki-Katalimata (Nowicki 2008, Fig.65, KP 440, KP 439, KP 442; Fig. 66, 449; Fig. 67, KP 455; 2001, PL. 1, 1a and 1c, Fig.3, 2), Petras (Tsipopoulou 2012, Fig.8, a,b,c,d,e,g) and Vrokastro (Hayden 2003, Fig.2, 12). These three types of cups appear to be the descendants of MM IIA types. The carinated cup Type 2a in the Mochlos MM IIB strata, has a short rim, middle-to-high carination, shallow regular grooves, and a vertical rounded handle. They are decorated with dark metallic slip on the interior, exterior, and on the underside of the base, while Type 2b is an earlier example with its deep irregular grooves and vertical strap handle. The decoration is a dark buff slip on the interior and exterior and the perimeter of the underside of the base. In some cases, however, the carinated cup Type 2a seems also to be decorated with a band or arcs of white-on-dark.

In addition, the conical tumblers Type 1a and 1b, which are the dominant tumbler shapes in all the MM IIB data, seem to be different from Type 5. Type 1a has a straight, low wall that turns conical, and rises to a slightly everted rim, while Type 5 has an immediately conical profile and the body and rim diameter is larger than the later examples. There is also a clear distinction in the decorative patterns between these two types. The MM IIA conical cup/conical tumbler type 5 is mainly decorated with dark monochrome buff slip on the interior and exterior, while the MM IIB conical tumblers, preserve either dark monochrome metallic slip on the interior and the exterior surfaces, or white-on-dark motifs, like festoons and hanging arcs. In addition, the one-handled conical cups of this period, have the same section as the conical tumblers, and they have a vertical rounded handle, while the MM IIA Type 2b version has a vertical strap handle and immediate conical profile. According to the decorative schemata, there is also a difference between the two dates. Type 2b and Type 1a start appearing in MM IIA (though the latter is rarer) in a very limited number of examples, have dark or red monochrome slip on the interior and the exterior or only on the interior surface is

## The Chronology

the rule. In MM IIB, most of the examples are undecorated or decorated with white stripes or white festoons on the interior rim and white hatches on the handle.

Using the evidence and the morphological evolution of the drinking wares during the two subperiods of MM II, we can identify that Mochlos provides a clear chronological sequence between the different periods of the Protopalatial. In terms of chronology, we used the chronological system that was developed in Knossos (Evans 1906, MacGillivray 1998; 2007, MacDonald and Knappett 2007), dividing the Protopalatial period in MM IB, MM IIA, and MM IIB. This dating distinction was followed in east Cretan Sites like Palaikastro and Petras (Knappett and Cunningham 2012; Knappett and Collar 2007; Haggis 2007; 2012, Tsipopoulou 2016) as well as in the Mirabello region (Haggis 2012; Floyd, Betancourt and Silverman 1991; Betancourt 1983; 1977;2009, Floyd 1997; 1998, Nowicki 2001; 2008).