Objects

Chapter 4 Stone Vessels[76]

In Egypt

The history of Egyptian stone vessel research is minimal and piecemeal, and has only been considered seriously or in any detail over the past two decades.[77] Von Bissing's catalogue (1904–1907) was the first corpus of stone vessels, as one volume of the Cairo Museum collection by object type. It was by no means an exhaustive typology but served for three decades until Petrie's (1937) monograph which remains, more than a half-century later, the only published attempt to survey overall vessel development. It too was by no means exhaustive and a number of forms are not included, but Petrie at least attempted to provide a useful research tool of stylistic and typological dating range for a wide corpus of material. It too has served as the only example of its kind, although some individual site reports did discuss more fully the comparanda of their own particular material, such as at Naga-ed-Dêr (Reisner 1908). The most detailed analysis is by George Reisner, who typed and dated the stone vessels of the Predynastic to Dynasty V from his excavations at Giza and later continued his typology into Dynasties V–VI here and at other sites.[78] Jéquier (1934) also attempted an analysis of Dynasty VI vessels, perhaps as a continuation of Reisner's initial analysis, but limits itself to generalities related to his material from the reign of Pepi II.

Other detailed analysis or compilation was not forthcoming until recently, when two theses investigated the material corpus of certain specified periods. Ali El-Khouli (published 1978) dealt with Predynastic to Dynasty III vessels, while Marguerite Bernard (1966–1967) again considered those of Dynasties V–VI. Unfortunately, no later period has been studied in detail, although Warren (1969:*passim*) has considered more fully those types found on Crete and recent studies have expanded the repertoire. Barbara Aston's thesis (published 1994) considered the geographical sources, geomorphology and petrological terminology of the stone materials used and correlated them with earlier erroneous published identifications, together with providing a general date range summary for common vessel shapes.[79] Christine Lilyquist has considered those between the late Second Intermediate Period and mid-Dynasty XVIII having royal connections (1995) and some Egyptian stone vessels found abroad (1996).

Petrie and Aston, whilst both are problematic in different respects, remain the most useful tools available for many of the vessel types under consideration in the present study, although the more detailed

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[76] After much personal debate, B.G. Aston's (1994) Egyptian material terminology has been employed when possible in the present study and catalogue. Inconsistent terminology and use of similar terms for different stones, in addition to ancient Egyptian terms for these stones, have been employed in earlier literature. These terms are noted by B.G. Aston (1994), from which Concordance XII has been extracted for those relevant to the present study. Warren's (1969) material terminology, often also used in the original publications, has been included for some vessel types and materials, for continuity and cross-referencing with older publications. In many cases, identification has been made for the present study by comparing vessels illustrated by Aston with the relevant vessels or their (published or unpublished) illustrations, found both in colour and in black-and-white.

[77] I do not include here discussion of vessel manufacture, which seems to have begun with Quibell 1909. Most recently, B.G. Aston, Harrell and Shaw 2000:64–65 describe further research, with further references, to which add El-Khouli 1978:789–791 and now Stocks 2003:139–168.

[78] Reisner 1931b:130–178, 178–201 (Dynasties I–V); 1932:36–75 (Dynasties II–VI); Reisner and Smith 1955:90–102 (Dynasties 0–VI)

[79] B.G. Aston (1994) lists multiple examples of good provenance of each vessel shape. References to Egyptian shapes in the present work therefore quote B.G. Aston for convenience. A major flaw in this volume is that her dating of these forms is based on the original excavators' dates, rather than subsequent re-analyses by others (e.g., Seidlmayer 1990). This has been checked where possible by the present author, and the date ranges confirmed or revised. A minor flaw in its usefulness for the present study is her lack of discussion (or even listing) of stone material employed for each vessel type.
B.G. Aston's (1994) terminology and identifications are correlated with traditional terminology in Concordance XII.

studies by Reisner, El-Khouli, Bernard and Lilyquist have been incorporated when relevant.[80] Whilst Petrie's publication is characterised by minimal discussion, it consists of his summarised conclusions based on extensive research and analysis, despite his use of often unprovenanced vessels. Unfortunately, his conclusions are no longer entirely reliable and his illustrations but simple and sometimes inaccurate sketches.[81] It must be said, however, that other comparative material often is no better. Only exhaustive re-analysis, more detailed comparanda and the inevitable investigation and refinement of initial dating conclusions in the light of subsequent discoveries and research would be able to revise his study more than a half-century later.

Additional problems, chiefly the insoluble question of longevity and reuse of 'antiques' and heirlooms prior to interment, discard or breakage, would beset any contemporary attempt.[82] Such necessary detailed re-analysis for those periods and vessel types not considered by Reisner, Bernard, El-Khouli and Lilyquist[83] is beyond the scope of the present study, but Aston's preliminary effort and additional published material and discussion have been incorporated when appropriate. She notes, however, that her catalogue is limited only to the common forms useful for dating (1994:75) and was not intended to be exhaustive or definitive. Additionally but more peripherally, the geologist James Harrell's study of stone materials and their quarries employed for statuary will also add to this data when it is published, since many of the same stones are employed for both vessels and sculpture.[84] Most recently Aston, Harrell and Shaw (2000) have produced an overall discussion of stone materials and their sources, including those employed for vessels.

A broad outline of stone vessel development in Egypt is not attempted here, but the sources quoted above may be consulted. Detailed discussion of vessel types relevant to the present study is found in Appendix A. A very brief general introduction is, however, appropriate.

Although a few crude Badarian (c. mid-5th millennium BC) stone vessels have been recovered, Midant-Reynes[85] has observed that the stone vessels appearing in Naqada I (= Amratian; early 4th millennium BC) are the true origin of a highly sophisticated and technically accomplished industry. The later Predynastic (Naqada II–III = Gerzean) and Early Dynastic (Dynasties I–II) periods are its pinnacle, after which both variety and virtuosity begin to decline throughout the Old Kingdom, and subsequently never regain their previous heights. The use of hard stone, for example, is virtually non-existent after this period. Aston has demonstrated that, whilst many stones are employed only in certain periods, others are found throughout and thus are useless for dating purposes.[86] Typological development sometimes is slow but some details are limited to certain periods and indeed are characteristic of them. Many vessel forms and their details can be paralleled to those in clay, which develop more rapidly and, when the stone vessel follows the clay form, limited dating parameters can be assigned with some degree of confidence.

The plausibility of constructing a detailed and datable development of many stone vessel forms in Egypt is hampered by the re-use of many tombs for secondary burials and the persistence and re-use of the vessels themselves. They survive in good and usable condition far longer than clay vessels as they are less liable to breakage, or at least of being broken during use. They are far more time-consuming to produce, and therefore more expensive, but can be both used and reused long after their manufacture. As examples, a Dynasty XVIII jar inscribed with the name of Hatshepsut and an Early Dynastic bowl both were found in domestic use at Amarna over a century after the queen had died,[87] and two bowls with the names of,

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[80] Note that I concur with B.G. Aston (1994:75–77) in her assessment of El-Khouli's inconsistent typology: (It is) "characterised by a proliferation of variations and subtypes ... and ... details which do have significance for dating are not emphasised."

[81] See also comments by Lilyquist 1996:143 n. 95.

[82] See also discussion in Appendix B.

[83] See also the period typology of Seidlmayer 1990:*passim*; whilst he is most concerned with ceramics, his type groups of stone vessels at different Egyptian sites is useful for stone vessel development in the late Old Kingdom through early Dynasty XII.

[84] Preliminary publications of his research are Harrell 1989; 1990.

[85] Midant-Reynes 2000:179. Note that recent and sometime radical revision of the date ranges and chronological relationships of the various Predynastic cultures, mostly by radio-carbon dating, now renders earlier observations such as Lucas and Harris (1962:421) redundant. See Midant-Reynes 2000:*passim* for current discussion of Predynastic and earlier development, and p. 264 Charts 3–4 for timelines.

[86] B.G. Aston 1994:170 fig. 21 summarises her results. Notice the distinct curtailment of stone materials employed beginning with Dynasty III.

[87] Pendlebury 1932:148, pl. XIX:3; Frankfurt and Pendlebury 1933:39, pl. XXXII:4:left.

respectively, Khafre (Dynasty IV) and Thutmose III (Dynasty XVIII) recovered from the shaft and debris of the Amarna Royal Tomb.[88] Other Early Dynastic vessels also have been found in Dynasty XVIII tombs.[89] These instances are obvious anomalies within their find contexts, recognisable in large measure due either to their extreme antiquity or their 'out-of-context' inscribed text. Vessels of near-contemporary date without inscription – perhaps of one, two or a few generations 'antiquity' – often cannot be recognised, in our present state of knowledge, when found in an otherwise datable context even in Egypt. Surely the jar of Hatshepsut, bowl of Thutmose III and the Old Kingdom bowls are not the only old, 'heirloom' or 'antique' stone vessels found at Amarna, but they are the ones we can recognise immediately as incongruities in their context. Nonetheless, in the vast majority of instances, the vessels can be dated within a dynasty or two, or at least to within a single Egyptian 'Kingdom' or 'Intermediate Period.' Some, especially those with ceramic parallels, can plausibly be considered generally contemporary with their clay cousins, and thus can be limited to within even more narrow parameters when ceramic dates are known.

On Crete

Research on Egyptian stone vessels recovered on Crete also is limited. Although such vessels were recognised in many early excavations, not until Pendlebury's catalogue (1930b) was an attempt made at correlating all known imported vessels. Shortly afterwards Reisner compiled a typology with commentary of some imported vessels (Reisner 1931a), based on his work at Giza (Reisner 1931b) but limited on Crete only to vessels at Knossos published by Evans (*PM*). He also had not consulted Pendlebury (1930b), as this volume is not mentioned in his text, and he did not actually see or handle the vessels himself.

Warren (1969) is the most complete publication of Egyptian stone vessels on Crete and Mainland Greece,[90] listing a large number of previously unpublished vessels and fragments as well as isolating those Minoan vessels 'imitating' Egyptian forms. A model of its type, although now somewhat outdated after more than thirty years, Warren's catalogue essentially is the basis for the present chapter although numerous additions recovered and identified since its publication are included. Warren has identified many of them himself. A data-base of some 5,500 Aegean vessels was created by Andrew Bevan for his thesis,[91] including those on Crete and thus updating Warren's catalogue considerably.

The usefulness of these vases and their contexts for chronology is often negligible, even when a limited datable Egyptian typology is known. Many vessels in context are demonstrably 'antique' in that context. There are a surprising number of similar discrepancies elsewhere in Syro-Palestine and Jordan and on Crete[92] of Predynastic through New Kingdom vessels from demonstrably later MBA–LBA contexts. We cannot describe a context, especially a foreign context, as 'contemporary' with the vessel merely because we lack the specific data to indicate otherwise.[93] Crete is one of many several locations for these 'heirloom' vessels

Nonetheless, the limited range of context dates and the plausible dates of manufacture of virtually all Egyptian vessel types is sufficient not to disturb the balance of relative chronology as presently known. Indeed, as types and in general terms they are a substantial contribution to our understanding of it, but the Egyptian vessels found on Crete cannot aid in any further cross-cultural chronological refine-

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[88] Martin 1974:95–96 #413–414, pl. 55–56:413, 57:414. Note that the Thutmose III-inscribed bowl is of diorite, apparently the only post-Old Kingdom example of a vessel in this material; see B.G. Aston 1994:64 n. 478. A clear instance of re-use is the Predynastic slate palette inscribed with the name of Queen Ty; see Von Bothmer 1969–1970.

[89] Examples include Brunton 1930:pl. XXI:259 and Hayes 1953–1959:I:fig. 15:lower centre (the latter, MMA 16.10.450, was found in a Dynasty XVIII tomb). The tomb of the 'three wives' of Thutmose III, originally published as containing two Early Dynastic bowls (MMA 20.2.22; 20.2.28), has been re-examined by Christine Lilyquist; the circumstances of discovery of the 'tomb contents' as a unit are not as certain or cohesive as Winlock (1948) believed. See now Lilyquist 2003:246 #168–169.

[90] More are listed by Brown (1975), but finds on Crete are excluded. Cline (1994) also has added substantially to the corpus for the Late Bronze Age and also, should his work ever be published, Perikles Kourachanes (see n. 10, above).

[91] Bevan 2001:20 n. 1. The thesis itself does not include the data-base.

[92] *General:* Phillips 1992a:*passim*; *Levant:* Sparks 1998:I:128–130 and *passim*; Palestine: Brandl in Stern 1984:62, 79 n. 68; *Jordan:* Hankey 1974:161–175; *Crete:* Warren 1969:105–106; Pomerance 1973; 1976; 1981. Jacobsson (1994) does not discuss the possibility of Egyptian stone vessels being found in recognisably later contexts on Cyprus, probably because her corpus does not appear to include any; this is a clear anomaly with the rest of the East Mediterranean.

[93] See also Phillips 1992a.

ment. The Minoan vessels produced under the influence of Egyptian imports, on the other hand, do provide a date range for period(s) during which the Minoan artisans (and presumably their clients) were interested in obtaining imported vessels or, in lieu, indigenous vessels with a foreign flair.

Pre-Palatial

The earliest datable context for an imported stone vessel remains unique for several reasons, not the least of which are its date and material. The small obsidian rim fragment found in the early EM IIA level at Knossos **{139}** arguably is an Egyptian import,[94] and as such is significant. The implications for its presence here are many: how did it get here, who brought it, what was its use, and did it come as a vessel or a fragment? Warren notes that the Minoans themselves had only begun to manufacture stone vessels in EM II and employed only soft stones.[95] This fact together with the presence of an obsidian workshop quite nearby,[96] suggests that those who lived and/or worked here may have had sufficient interest to keep the vessel, if entire or even if only the one small fragment survived, probably as an example of what could be done with a material they employed to make other objects. Clearly this was a habitation area of some sophistication and off-island interests, as attested also by the presence of the EH IIA 'sauceboats' found both in the workshop and with the vessel fragment, themselves the earliest known link between Crete and the Greek mainland.[97] This suggests that the Minoans had begun to extend their off-island contacts farther afield not long before, beyond the cultural connections already existing with the Cyclades, for Melian obsidian is known in Minoan contexts as early as Early Neolithic I, and, more elusively, from Anatolia in EM I.[98]

We cannot know how this fragment arrived at Knossos, or who brought it, but the tentative open-sea connections with other cultures at this time are no evidence for direct or immediate contact with Egypt. Whenever or however this fragment arrived at Knossos, it must have taken some time and a number of successive links to achieve.

Other EM II context (and earlier) imports identified at Knossos are problematic, and one group of contexts at least perhaps should be discarded. The five fragments of vessels from housing below the Central Court **{132–134}** and near the South Corridor **{135–136}** are open to question. They are published only in drawings and cannot be located, are of unidentified and not certainly Egyptian material, were stratigraphically mixed and recovered years after their excavation in context boxes which also contained sherds of demonstrably later date, or a combination of these objections. Whilst fragments **{135–136}** certainly are Egyptian and **{133}** may be, the others are unlikely. If their contexts are as stated, they must be imports (from somewhere) and thus would indicate importation to Knossos prior to EM II.[99] Their essentially domestic contexts stand in contrast to the rest of the island. They represent several forms but even the early form of 'cylinder jar' here was not used as a model for the indigenous vessels found elsewhere on the island (see below).

The only imported vessel recorded beyond Knossos is the pyxis in Hagia Triadha tholos A **{23}**, a single example of its type, which proved not to inspire any Minoan artisan.

The vast majority of stone vessels presently under consideration – chiefly Minoan vessels having Egyptian characteristics – are 'cylinder jars' and 'miniature amphorae'[100] found almost exclusively in the Mesara. The continued communal use of the tombs here does not allow for discussion of the chronological development of their contents, but generally the lack of gouged interiors on the Mesara 'miniature amphorae' suggests their appearance here post-dates those from Mochlos and Archanes, which generally have gouged interiors. The relatively large number with interiors undercut suggests a still later date of manufacture. It may be that the vessels were not introduced into the Mesara until EM III or even later from elsewhere on Crete and, to judge from the MM II context finds elsewhere, the 'miniature amphora' at least continued in use into the Proto-Palatial period.

'Cylinder jars,' on the other hand, are more explicitly derived from Egyptian models. Not only are

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[94] As originally published by Warren 1981b, and in contrast to Phillips 1990:327 (written prior to examination of the fragment itself).

[95] Warren 1969:182.

[96] Unfortunately, the excavation is not yet fully published, and no plan of the area at this or any other level is available.

[97] Warren 1972a:398; see also Knossos D.

[98] Cadogan 1983:512.

[99] Note also Reisner's conclusion that these vessels (and others from palace deposits Knossos G and Q) cannot "be dated with safety to the predynastic period or even dynasties I–II" (Reisner 1931a:206).

[100] If indeed they are derivative of the Egyptian form and not locally developed. A local development seems as likely.

some imports recovered on Crete (albeit nowhere near the areas where their Minoan counterparts are found), the locally made vessels also are a more cohesive group. The two particular profiles are recovered in different sites or tholoi, suggesting two separate traditions at work in the Mesara. There are no 'cylinder jars' after MM I. With the exception of the Knossos pieces and the one from Mochlos, all extant examples are tomb finds, but the preponderance of tomb contexts in the EM corpus, especially in the Mesara, is warning against any supposition of almost exclusive funerary use. Stone vessels in EM Crete largely are recovered from funerary contexts, because EM sites largely are tombs and cemeteries; few settlement contexts are known.

Unfortunately, our knowledge of early Cretan funerary customs, and the communal nature of the tombs themselves, permit us only to speculate on the possibilities, although the Minoan derivations themselves *might* provide some insight into their appropriation. The Egyptian vessels are oil and unguent container forms related to the 'seven sacred oils' set; they are often found together. Perhaps the Minoan vessels either were intended to represent, or actually contained a small quantity of, a funerary oil or unguent either for the use of the dead or deposited by the living during the funeral rites. If so, whether the Minoans were following – or even were aware of – the Egyptian practice of pouring a small quantity of different oils during the funerary ritual is highly questionable and probably impossible to answer. Their derivative forms might even indicate importation of this commodity, or at least were intended to imply this to the mourners or in the Afterlife. It should be emphasised that these vessels are very uncommon: the most populous context, Tholos A at Aghia Triadha, contained only two 'cylinder jars' and two 'miniature amphorae' amongst the estimated two hundred burials during centuries of use, i.e., 2% of the interred (at most) were accompanied by an 'egyptianising' stone vessel in this tholos.[101] Most elsewhere are recovered as a single example in their communal and long-used tomb. These are not common forms.

The 'miniature amphora' form further developed separately on Crete, it seems, into what can only be called a 'miniature pithos' with multiple handles, 'rope' decoration and a probably ritual function as it is found in MM II and later cultic contexts, but *not* in tombs. Development from funerary to cultic use is plausible, considering their implied function as oil/unguent containers.

Proto-Palatial

The beginnings of palatial Crete witnessed a substantial increase in Minoan products sent abroad, including the numerous pottery vessels found in Egypt and elsewhere.[102] Tholos tombs declined considerably in use (although some continued to be used throughout the period) and, although there are a substantial number of non-palatial settlement sites, none revealed any imported examples (unless those without find contexts arrived at this time) and very few of them produced derivative stone vessels. This partly is due to the lack of MM II strata on the island as this period is more or less confined to palatial sites, especially Knossos and Phaestos, and the 'earlier' MM I period elsewhere can be generally contemporary with palatial MM II sites. Nonetheless, there were substantial changes and developments in vessel manufacture. It may be that with the introduction of new Minoan vessel forms, the popularity of – or need for – these antiquated types waned. The miniature and thick-walled soft-stone vessels of the Pre-Palatial period decline rapidly in production and use; the vast majority are found only in communal tombs that have continued in use into this period.

In their place, in palatial MM IB–II, new forms were introduced. In particular, increasing confidence in their own ability spurred artisans to create larger and more elaborate stone vessel types to Minoan taste. New stones were mined and imported from beyond the island in their raw state, such as the large lump of spotted obsidian found at Malia.

The anorthosite gneiss shallow carinated bowls **{175; 291–293; 294}** probably arrived at this same time, apparently to be employed in ritual ceremonies at Knossos. Whether they were imported as a more exotic replacement for the Minoan clay pedestal bowl at Knossos, or the bowl profile developed from these finely carved imports cannot be determined, but the clay **{164}** and spotted obsidian **{306}** vessel fragments also recovered there are eloquent testimony to the regard with which the Knossians viewed these elegant vessels. If these bowls indeed were imported for this purpose, then this seems to be a clear case of the Minoans (or, to be more precise, the Knossians) importing a specific vessel type that conformed to exactly what they wanted with a specific purpose in

[101] In addition to the one imported pyxis **{23}**.

[102] E.g., Kemp and Merrillees 1980:*passim*.

mind, but their thinness and consequent liability to breakage during transport soon may have negated importation by ship. The thin-walled carinated clay form does not continue into MM III, possibly because it really did not suit the Neo-Palatial spirit exemplified in the decline of 'egg-shell ware' and other Proto-Palatial ceramic technical feats.

Other possible Proto-Palatial arrivals *may* be represented by the north-west palatial deposits at Knossos that include a variety of individual vessel types, the 'deep open bowl,' 'moustache cup' and 'spheroid jar' **{165–171}**, all Early Dynastic/Old Kingdom in date and only the last not a thin-walled technical *tour-de-force*. Their early Egyptian manufacture cannot argue against this context date, but they may instead have been in Pre-Palatial or even fill contexts deposited early in the Neo-Palatial period (or later).

According to Warren, the handled 'blossom bowl' **{273}** deriving from the spheroid flat-collared Egyptian jar also first appears in an MM IIB context at the end of the period, to continue in far greater quantity into the next.[103] This observation, together with the decline in earlier forms, characterises the Proto-Palatial as a transitional period, and this is not negated by the possible Proto-Palatial context of imported spheroid jars **{165–166; 171}**. The lack of direct use of foreign models for artistic inspiration, at least until the end of this period or the beginning of the next, also implies an internal self-confidence that apparently did not encourage external influences to dominate development, at least in stone vase manufacture at the palaces. It is, nonetheless, the beginning of a new Minoan vision for stone vessel manufacture.

Neo-Palatial

The Neo-Palatial period is characterised by a surprisingly substantial number of imported vessels and new forms, some of which were adopted and produced locally; these are the alabastron and spheroid jar. The rest appear only in one or sometimes two examples, and beyond their role as exotica apparently made no impact on the island (including the 'heart-shaped' jar). The overwhelming and continuing hegemony of Knossos and its immediate environs in the distribution of imported stone vessels is abundantly clear, with only the Phaestos area and, to a lesser extent, Kato Zakro as possible rivals.[104] These vessels rarely extend beyond immediate surroundings of the palaces, except for vessels exported to the Greek Mainland and specifically Mycenae,[105] despite the large number of other well-excavated major Minoan sites where they would have been expected.[106] This implies that the imports arrived at these palatial sites, which in turn implies they also served as distribution centres despite the severely limited extent of that distribution. One might also argue that perhaps they were the distribution centres for the material(s) they contained, rather than the vessels themselves. These may even have been 'repackaged' in other (smaller?) containers for further distribution, which may explain the limited distribution of the vessels themselves.[107] A number of imported vessels were physically converted by Minoan artisans into Minoan vessel types, some also then exported to the Mainland and Thera but apparently not until LM IA.[108] Certainly the converted vessels must have had any contents removed before any artisan began its transformation.

Although this period sees the largest variety of imported stone vessel types, the overwhelming majority are of only two kinds: alabastra of mostly earlier manufacture, and large spheroid flat-collared jars far earlier than their context dates. Unsurprisingly, these two forms also are most commonly found as derivative indigenous vessels, the spheroid jars apparently from early MM III but the alabastra not until LM IB. Their shapes must have been considered either useful or aesthetically pleasing and clearly there were insufficient imports to fulfill that need.

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[103] This discussion is found below. The context, still unpublished, cannot be verified and may be later in date.

[104] The comparatively few finds from Kato Zakro probably relate to the limited publication of its material remains, except for the repeated publication of major pieces. These are among the most important on the island and Kato Zakro, as the island's eastern port, should be considered at least on par with Phaestos/Aghia Triadha if not Knossos itself as a major receiver of imported goods.

[105] See Warren 1969:108 Table 4, 114–115 for lists of Egyptian stone vessels on the Mainland; Sakellarakis 1976:*passim* for some Minoan vessels from Mainland sites. Mainland Greece did not possess an indigenous stone-vessel industry until LH IIIA, and vessels from earlier contexts almost certainly are of Minoan (or other non-Mycenaean) manufacture. See also Warren 1969:187–190. This includes the rock crystal bowl with *regardant* 'duck' head handle from Mycenae **{591}**; see Chapter 14.

[106] E.g., Amnissos, Epano Zakro, Gournia, Juktas, Khania, Kommos, Malia, Myrtos Pyrgos, Nirou Khani, Pseira.

[107] One wonders what happened to Malia at this time. Its *floruit* seems to have been the Proto-Palatial period.

[108] See Appendix B for more detailed discussion of the converted vessels.

Nor, to judge from their distribution pattern, were they easily accessible commodities on Crete. I cannot agree with Warren, who believes that the arrival of the Pre-?/Early Dynastic spheroid flat-collared jars on Crete about the same time as their *floruit* in Egypt is "a more reasonable assumption than the alternative,"[109] namely that they were exported as 'antiquities' or curiosities. Although a number certainly could have arrived prior to the Neo-Palatial period **{165–171}**,[110] the fact that they were employed as models for indigenous vessels *only* at this time is a more than reasonable counter-argument for their contemporaneous arrival on the island. There is nothing against some arriving earlier, together with other vessel shapes and objects discussed above and elsewhere. But one cannot assume that virtually all would survive in continuous use for centuries – and then be discarded, buried or otherwise left in contexts centuries after their arrival, during the only period in which they inspired local versions. Many are in good condition, again suggesting a long dormant interval of non-use.

Egyptian imports of earlier manufacturing date found in the Near East basically fall into three categories: [111]

1) Those imported into the Near East during their period of use in Egypt. These imported vessels overwhelmingly appear in early ritual contexts;[112]
2) Those imported as antiques during the Middle Bronze Age. These are found in domestic, ritual and tomb contexts;[113] and
3) Those 'imported' by the 'Hyksos' during the Second Intermediate Period or sold by tomb robbers, also antiques. Generally, they are found in Late Bronze contexts, although some are known earlier.

Near Eastern local versions of Egyptian vessels were produced during the same periods in which similar imported vessels are found,[114] and Cypriote importation of Egyptian goods also begins and intensifies in the Late Bronze period.[115] Additionally, Egyptian importation and adaptations of Near Eastern, Cypriote and Minoan vessels increased dramatically in early Dynasty XVIII, some examples being jug and amphora forms from the Levant, various 'Base-Ring' vessels from Cyprus,[116] and Minoan rhyta.[117] Tomb illustrations depicting Syrian and 'Keftiu' (*Kftiw*, generally accepted as Minoan) 'tribute-bearers' appear with the introduction of the so-called 'tribute' scenes late in the joint reign of Hatshepsut and Thutmose III (sometime in LM IB), together with some of the products brought with them.[118] Whilst the early depictions may be taken as reasonably accurate portrayals of the foreigners and their goods, within the limitations imposed by Egyptian political propaganda and the tomb artists' observation, later versions of this theme illustrate 'stock' figures of far less historical and cultural value.

On Crete, very few vessels fall into the first category, early imports, and (generally equating the MBA with the Proto-Palatial period only) virtually none in the second. But the third category, which we may equate with the Neo-Palatial period, is the source of the bulk of finds. Some vessels clearly arrived during the 'Hyksos' period of the Second Intermediate Period (Dynasty XV) as the types are quite different from those few recovered in Proto-Palatial contexts and their Minoan contexts are MM III–LM IA, contemporary with the SIP period to very early Dynasty XVIII,[119] but the quantity of material exported from Egypt to Crete at this time is infinitely less than to Palestine, and had infinitely less impact on indigenous production. Importation and influence develops slowly over this period, with an emphasis on LM IA contexts. This point focuses attention on very late

[109] Warren 1969:106. One might note also the ECyp bowl recovered from an LM tomb on Crete and now on display as HNM 4986, as another example of Minoan importation (or at least deposition) of 'heirloom' foreign antiquities.

[110] One would give much to see the other material from these deposits in order to ascertain their date range. Their lack of publication by Evans leaves room for the possibility of later material (and thus a later date) for the deposits. See Knossos Q; also Knossos A.2.

[111] Adapted from Hankey 1974:166.

[112] E.g., in Palestine at 'Ai (Amiran 1970b) and En-Gedi (Ussishkin 1980:21, 24–25).

[113] See Brandl in Stern 1984:62, 79 n. 71.

[114] See Ben Dor 1944–1945; Amiran 1970b; Sparks 1998:*passim*.

[115] Egyptian imports very rarely have been recovered in contexts earlier than the Late Bronze Age on Cyprus, many rather dubious or at least of questionable identification or association. See generally Åström 1972; Åström and Åström 1972; Saltz 1977; most recently the discussion and enumeration by Jacobsson 1994:90, to which add Karageorghis 1995:74.

[116] See Merrillees 1968:*passim*.

[117] See Brovarski *et al.* 1982:152–158; Bell 1983; Koehl 2000.

[118] See Bossert 1937:figs. 536–550; Aldred 1970; Wachsmann 1987.

[119] See, e.g., Hayes 1953–1959:II:48; Phillips 2001.

Second Intermediate Period-early Dynasty XVIII as a major period for their exportation from Egypt. The political and economic conditions of that time, while far less turbulent than the conditions prevailing at the end of the New Kingdom and in the Third Intermediate Period,[120] would still foster a considerable breeding ground for tomb robbery, unlike later in Dynasty XVIII. Undoubtedly the practice was never eradicated even in the most politically stable and controlled reigns. The 'out of context' vessels found in Egypt noted above are recovered in later Dynasty XVIII contexts, and Egyptian vessels in Minoan contexts virtually halt at the end of the dynasty – no vessels can be attributed to Dynasty XIX, nor are they found in any LM IIIB or later contexts *in situ*, other than as fragmentary debris material. Whilst some vessels may (or, more likely, may not) have been part of some form of diplomatic exchange, the presence of both Early Dynastic and more contemporary vessels in the same contexts betrays the likelihood of private rather than 'public' traffic in the goods, at least on the Egyptian end.[121] The fact that the Early Dynastic spheroid flat-collared jar is found in contemporary context only in royal tombs in Egypt strongly suggests illegal removal of those found in later contexts both in and out of Egypt. The one known 'legal' search for the tomb of Osiris at Umm al-Gaʿab by Amenhotep III[122] would be unlikely to result in the shipment of removed artefacts outside the country. Unlike those that arrived in places like Byblos, vessels reasonably contemporary with their Minoan context were never engraved with the names of kings or even private officials, and thus are not likely to have been diplomatic gifts. Indeed, the quantities of stone vessels found in the Levant suggest wholesale direct trade and direct copying of selected Egyptian imports[123] – as does the common and widespread use of selected foreign vessel and object types adopted and 'copied' in Egypt itself.

Our inability to pinpoint direct chronological equations is a hindrance to the strong but as yet unprovable suspicion that many if not all these vessels are in fact probably 'heirlooms' by the time of their interment or deposition on Crete, even if only of one or a few generations.

Final Palatial

With the sole exception of the vessels from Kalyvia,[124] all relevant stone vessels in Final Palatial contexts are found at Knossos or its immediate satellites at Katsamba and Archanes. All are recovered in élite tombs, but for scrap in occupation debris at Knossos itself.[125] Actual domestic contexts are no longer found. The 'Central Shrine' deposit of MM III–LM I ritual vessels (Knossos H) actually is within an ultimately LM II–IIIA1 context, thus indicating direct continuity of their ritual function at Knossos.

It may be noted, however, that white gypsum was introduced as a material for vessel manufacture, and its use probably confined to Knossos, in this period.[126] Its use must be related to an apparently sudden decrease in the availability of imported travertine, chiefly as raw material[127] but perhaps also finished products. Presumably the enterprise in full force during the Neo-Palatial continued to some extent, at

[120] Conditions in the TIP are exemplified in the *Papyrus Abbot* and *Papyrus Amherst*; see Peet 1930. Pomerance (1973; 1976; 1981) strongly advocated the theory that Dynasty XVIII viziers abetted thieves in robbing old tombs and illegally exporting their goods, but this seems rather farfetched and would have occurred at a time of great national pride and prosperity. See also Phillips 1992a.

[121] See also Pomerance 1973:29; 1981:449.

[122] This despite the acknowledged antiquarian interests of Amenhotep III (Aldred 1968:185; Von Bothmer 1969–1970:7) and consequent state involvement in revival of certain political and cultic aspects of the past. The Isopata 'Royal Tomb' (Knossos KK) is the most obvious example of multi-period vessels in a single Minoan context.

[123] Sparks 1998:II:534–535.

[124] Those from the élite Kalyvia cemetery should be considered 'final palatial,' as both Phaestos and Aghia Triadha had been destroyed at the end of Neo-Palatial and no longer functioned in the palatial sense (as did Knossos) in Final Palatial, although they remained well-inhabited and, to judge from the Kalyvia tomb contents, wealthy. It is entirely possible that the imported stone vessels are heirlooms *on Crete* by the time they were interred, since none are reported from either of these two nearby active and still major sites, or from Kommos, in Final Palatial contexts.

[125] See Appendix B, Type III.

[126] Warren 1967b:201; 1969:142, 187.

[127] Virtually all Minoan vessels of travertine are Neo-Palatial in date or context. A few have contexts extending into Final Palatial, but the stone seems to have been very little worked at this time; two examples of conversion from Egyptian imports that must have been reworked in Final Palatial are the Katsamba *Gravidenflasche* **{119}** and Knossos amphora **{144}**. Many vessels are from the palace at Kato Zakro, a site that may have served as a greater import centre than Knossos in LM IB. See Warren 1969:146–156 Table 8 for specific Minoan vessel shapes found in travertine (termed 'Egyptian alabaster,' but see Aston, Harrell and Shaw 2000:59–60, also n. 1, above and Appendix A.1, n. 2).

least at Knossos, for the disparate Isopata (Knossos KK) collection of vessels was interred in Final Palatial, the 'Central Shrine' deposit was enlarged by at least one vessel, and the Katsamba *Gravidenflasche* was converted to a rhyton. The imported high-shouldered jar appears only in tomb contexts at this time, although it was known earlier and appears, in any case, to be considered as a form of 'spheroid jar' in Minoan eyes. The clay alabastron and indigenous spheroid flat-collared jar types, already common earlier at Knossos as well as the rest of the island, also continue into the End Palatial period.

End Palatial and Post-Palatial

The sudden cessation of Minoan stone vessel manufacture with this period is paralleled by an equivalent lack of imported vessels from contemporary contexts. It is, perhaps, also indicative that no stone vessels were recovered amongst the cargo of the Uluburun shipwreck, dated to sometime in the last quarter of the 14th century BC and containing LH IIIA2 clay vessels. Any travertine aboard the ship would have dissolved in water long ago, but the igneous rocks (diorites, granites and porphyries) would have survived. The few pieces found in End Palatial contexts are single instances, not reproduced and again confined only to Knossos. Some probably are 'survivals' of earlier importation.[128]

The only possible connection is the appearance of three anthropomorphic parturient clay vessels at Aghia Triadha, Gournia and Kephala Khondrou in LM IIIA2–B, possibly derived (ultimately) from *Gravidenflaschen* that had not been produced in Egypt since the time of Amenhotep III. It is difficult to decide, given their appearance and their context sites and date range, how concrete a relationship between these two types existed,[129] but it is unlikely that any did.

Commentary

The variety and purposes of vessel types imported onto Crete is extremely limited, as if the consumers themselves were dictating the specific forms they wanted. Whilst this interpretation may or may not have been the case, it is worth emphasising this point by noting the Egyptian vessel forms – all normal accoutrements of Egyptian graves rich enough to contain stone vessels – that are unknown on Crete. A glance through Aston's catalogue of common Egyptian forms reiterates the point. She considers 200 common stone vessel types and sub-types from Predynastic through New Kingdom. Including single exemplars and so being overly generous, only 18, or fewer than 10%, of these 200 forms have been recovered on Crete.[130] It is simpler to list those *not* found on the island:

All Predynastic forms are *not* found.

All Early Dynastic forms, except the spheroid jar and 'deep open bowl' and a few 'miniature' cylinder and other jar forms ('heart-shaped,' 'shoulder jars') are *not* found. Neither are all *tour-de-force* fancy and zoomorphic forms, all 'table wares' (tables, stands, spouted and handled vessels), and all storage vessels (unless the spheroid jar is considered such).

All but an extremely limited variety of Old Kingdom vessels (spheroid and high-shouldered jars), again all 'table wares' except the shallow carinated bowl, and all fancy and zoomorphic forms, are *not* found. A few 'miniature' examples are imported, including the cylinder jar.

All First Intermediate Period vessels are *not* found, except the cylinder jar if some date to this period.

All Middle Kingdom and Second Intermediate Period forms, including all personal ointment containers, open and spouted vessel forms are *not* found, except the three alabastron types and a few flat lids (if they are of this date).

All New Kingdom forms, including all kohl pots and tubes, all deep open container vessels, all closed and handled forms and flasks are *not* found, except some single instances (one amphora, one 'bottle,' one krateriskos, one hydria, one *Gravidenflasche*, some other individual pots).

There are a few exceptions, but virtually all datable contexts are demonstrably at least somewhat later than the date of the imported vessel, and can be considerably later than this. They appear to be either 'heirloom' or 'antique' in context. Some may be contemporary, but need not necessarily be so.

Indeed, there seem to be specific periods of popu-

[128] It is no coincidence that the only apparent (but erroneous) instance of 'egyptianisation' from a stone vessel form, the tall clay alabastron, also ceases with the Final Palatial period.

[129] See Chapter 17.

[130] B.G. Aston 1994:79–88 figs. 8–17. The forms are #1 (ED form), 29 (in miniature), 34–35 (in miniature), 45, 78, 84, 106, 108, 117, 123(?), 142, 145, 146 (as 'baggy alabastron'), 173, 181(?), 182, and 191(?).

larity of the few forms having multiple examples on the island. The Pre-Palatial and early Proto-Palatial period imported the 'cylinder jar' and possibly the 'shouldered jar' ('miniature amphora'). The Proto-Palatial period preferred the shallow carinated bowl. The Neo-Palatial period developed a taste for the alabastron and 'spheroid jar,' whilst the Final Palatial period *appears* to prefer the 'high-shouldered jar' more than the latter.

New Kingdom vessel shapes on Crete are far more varied but appear only as rare and most often unique imports. The majority are associated with toiletry. It is at first sight surprising therefore that the most ubiquitous Egyptian toiletry vessel types have not yet been found on Crete – the kohl pot[131] and kohl tube. One possible explanation is their size. If the toiletry vessels were not the actual import but rather a container for other goods, the kohl pot and tube are unable to carry a sufficient quantity of contents for their size and weight; alabastra, for example, could contain at least three to four times more than kohl pots and be easier to handle over lengthy journeys, if kohl was imported in them.

Another possible explanation is the contents themselves. Alabastra are well known as containers for perfumes, oils and unguents. Kohl pots and tubes contained kohl; hence their tall narrow interior dimensions. If, for example, the Minoans were uninterested in obtaining Egyptian kohl, then naturally its container is unlikely to be imported. Minoan women (and probably men) wore eye make-up, to judge from the heavy black outlines of their eyes and eyebrows,[132] but it may have been produced in sufficient quantity on the island itself. Many perfumes and other scented materials, on the other hand, would have been imported.

This is not sufficient explanation for the majority of vessel types not found on Crete. In the Pre-Palatial period, larger vessels seem not to have been required. The Minoans produced none themselves, and large vessels were made of clay and, perhaps, basketry. In later periods, when large vessels were being produced, the limited range of imported types may simply have been what the Minoans themselves preferred.

[131] Although Pendlebury 1930b:9 #10a mentions an unpublished faience fragment lacking its glaze found at Aghia Triadha, which he identifies as from a kohl pot. This fragment could not be traced and is not included in the present catalogue. It is an additional item in Pendlebury's catalogue, in his own hand, to his personal copy now in the Villa Ariadne library at Knossos.

[132] See Evans, Cameron and Hood 1967:*passim*.

Appendix A Individual Vessel Types

1. Alabastra

Discussion here is limited to forms found, or previously misidentified, amongst the material recovered on Crete, and called 'alabastra' by Warren.[133]

In Egypt

The term 'alabastron' as employed in the present work is a catch-all name for a group of vessel forms, usually but not universally made in travertine.[134] Although sometimes of a nearly uniform texture, travertine most often is 'banded,' exhibiting a series of wavy and/or crinkled lines alternately creamy white and golden yellow to an orangy/ish-brown. Material variation is considerable, from having definitive thin lines to modulating waves. Worked deposits of banded travertine are unknown outside Egypt[135] and it must be assumed that any vessel made of this stone either is an Egyptian product or made of raw material imported from there. Other materials employed for alabastra include serpentine/serpentinite, limestone, breccia, anhydrite, faience, glass, clay and even wood, the last two often painted in imitation of the banded travertine stone.[136]

Alabastra can be quite small (<10 cm.) and large (>50 cm.), but normally range from 20–30 cm. in height. Smaller examples probably were used as ointment or unguent containers. Large pieces also must have contained exotic or precious commodities. The vessels would have been fitted with lids of stone or cloth, the latter tied down with thin rope or string at the neck. The stone lids were flat and covered the entire rim, or were undercut to fit the interior flush with the top of the rim.[137] Occasionally they were undercut below, to fit into the interior but not be flush with the rim.

By definition alabastra are handless and baseless,[138] although a few do possess a raised base, the baggier examples are able to stand upright alone, and some are 'shaved' flat at the bottom. Occasionally, they are further embellished.[139] The alabastron generally is characterised by a rounded bottom, and a flask-like body tapering to a constricted neck and widening rim. The variety of body shapes range from globular flask-like forms **{146}** [140] which in fact should be called 'flasks,' the so-called 'drop-shaped' vases[141] with elongated oval **{218}** to relatively narrow body and distinctly rounded bottom **{286}**, and 'baggy' with flattened base rounding up to a tapering body narrowing towards the rim **{4}**. Rims may be almost upright (quite rare), flaring or everted and

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[133] Warren 1969:112–114 Type 43:H–I. Since its early introduction into Classical typological terminology, the term 'alabastron' also has been employed in archaeological literature for a variety of entirely unrelated vessel types, e.g., Minoan Crete (Warren 1969:4–6 Type 1), Bronze Age Palestine (Ben Dor 1944–1945:109–110) and Saite Egypt (Petrie 1937:14–15, pl. XXXVII). Terms in second millennium BC Egyptological use include 'baggy-shaped,' 'drop-shaped' and 'pear-shaped' vases, 'ovoid flask' and 'globular flask' (describing different shapes), 'cosmetic flask,' as well as the more general term 'alabastron.'

[134] See Warren 1969:124–126; Lucas and Harris 1962:59–61, 391, 406–407. The term 'alabaster' is in fact a misnomer – albeit common in archaeological literature – for travertine. See Harrell 1990, B.G. Aston 1994:42–51 and now BG Aston, Harrell and Shaw 2000:59–60 for discussion of geomorphology and petrographic terminology. Another term sometimes found in the literature is 'calcite,' a misnomer as the stone is not actually employed for Egyptian vessels according to B.G. Aston 1994:42. The petrographic terminology employed by this volume is used throughout the present study, see Concordance XII for other names employed in the literature.

[135] Ben Dor 1944–1945:95, 94–96:*passim*; Hankey 1974:16.

[136] E.g., Brack and Brack 1997:pl. 16.a; Freed 1987:206 #71.

[137] Flat lids are the more common, e.g., Brovarski *et al.* 1982:130 #121; Freed 1987:206 #71. 'Flush' plug lids are exemplified by Lilyquist 1995:95 fig. 66, 102 fig. 86.

[138] Saite period alabastra do possess small lug handles on the shoulder; see Petrie 1937:14–15, pl. XXXVII. Alabastra with a slightly raised base are known, although not common, during late Dynasty XII–XIII and in Dynasty XVIII; see Petrie 1937:pl. XXIX:634; Bourriau 1988:145 #151.a; Brovarski *et al.* 1982:130 #121; Lilyquist 1995:81 fig. 5.

[139] E.g., MMA 21.2.10, with vertical ribbing on the mid- and upper body.

[140] Imported examples from Crete are used here as convenient illustrations of the various profile types. Variants and other forms not represented on Crete are not considered in this study.

[141] A term coined by Petrie (1937:10) and still used for the particularly elongated and baseless form of the type. He employed it as a distinct form.

sometimes with a short cylindrical neck, the last indicating a New Kingdom date.

This vessel type, like the majority of Egyptian stone vessels, has not been subjected to exhaustive typological analysis. The three basic profile types relevant to the present study have quite distinctive histories, and are here provided with type identifications for present purposes.

Type A, 'globular flasks,'[142] have a narrow upright neck, slightly elongated near-globular body and bottom. The rim is thickened on the exterior, with a rounded profile. They appear during the Middle Kingdom, apparently sometime in Dynasty XII, and may have continued into the Second Intermediate Period although this remains unclear.[143] They probably developed from a wider-necked variety having a thin wide flat rim, dated within Dynasties V–VIII (later Old Kingdom),[144] but this too is unclear as no intervening First Intermediate Period-early Middle Kingdom examples are known.

An apparently unrelated Dynasty XVIII handless globular 'flask' form also is known with similar strongly everted rim but now with an angular profile, dating from at least as early as Hatshepsut's reign possibly until sometime before the end of the dynasty. Its relationship to the Type A flask with rounded rim profile again is problematic, as intervening Second Intermediate Period-early Dynasty XVIII examples are unknown.[145] A similar globular form, usually with two handles and wide, strongly everted rim also appears to have developed by mid-Dynasty XVIII, probably in relation to the lentoid two-handled 'pilgrim flask' type popular at the time, and it continues at least through to late Dynasty XVIII.[146] No evidence for direct continuation from the Type A 'flask' alabastron and these two Dynasty XVIII flask types is known.

Type B, 'drop-shaped' or 'drop-vase' alabastra, are baggy in profile with sloping shoulder, maximum diameter in the lower half of the body and a clearly rounded bottom, sometimes almost pointed. The rim flares directly from the shoulder with a rounded profile, and there is no definable neck.[147] Clearly imitating Middle Kingdom clay forms, it developed sometime in Dynasty XII and continued at least until the late Second Intermediate Period and possibly very early into Dynasty XVIII.[148]

A varying number (between two and six, most commonly three) of horizontal grooves sometimes are incised on the outer rim, but this feature apparently is slightly more restricted to mid-Dynasty XII–early Dynasty XVII.[149] It is found only on Type B 'drop-shaped' alabastra.

Type C, 'baggy' alabastra, have a basically conical profile flattening to a flattened bottom, with the maximum diameter low on the body. They also appeared sometime in Dynasty XII,[150] and continued with some stylistic modification at least until late in Dynasty XVIII. One vessel is inscribed with the name of Ramesses II (early Dynasty XIX), but it appears to be a very late or 'heirloom' example; elsewhere the form seems to disappear about the reign of Akhenaten late in Dynasty XVIII.[151] Like the other two alabastron shapes, this form is adopted from clay prototypes. A clear development in body profile can

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[142] These vessels are not normally called 'alabastra' in Egypt, but are included in this section as they are called 'alabastra' by Warren 1969:112 Type 43:H. Note that HM 2736 **{106}** is considered a Type B (not Type A, as Warren) alabastron in the present study.

[143] Petrie 1937:pl. XXIX:626–632; B.G. Aston 1994:141 #142.

[144] B.G. Aston 1994:137–138 #130.

[145] Lilyquist 1995:95 fig. 67.right, 192 fig. 84.

[146] See Sparks 1998:I:110–111; these developed from strong Canaanite influence. These usually are of travertine and are found at, e.g., Abydos (Randall-McIver 1902:pl. XLVIII: photo upper right:lower right) and Riqqeh (Engelbach 1915:pl. XIV:S41); see also Sparks 1998: III:150–151 #1143–1149 for Levantine examples, and Chapter 6.

[147] Petrie 1937:pl. XXIX:655, 658.

[148] These may be survivals, and appear mostly in Nubia, but also at Esna (south of Luxor); see Sparks 1998:I:79. Context groups at Esna and their dating are problematic; see n. 658, above.

[149] Petrie 1937:pl. XXIX:659–660, 656–657; B.G. Aston 1994: 142 #145; Sparks 1998:I:84–85. Bourriau 1988:144–145 #150 notes pottery parallels of this period; stone examples often cannot be dated so closely. A pottery example was recovered in a tomb dated by Seidlmayer 1990:231 fig. 95.BH106 to his Beni Hasan Phase III, roughly the second quarter of Dynasty XII, and a travertine example to his Tell Edfu Phase II (*Ibid.*:51 fig. 17.TE136), about the third quarter of Dynasty XII, after the reign of Senwosret II; for dating of both sites, see *Ibid.*:395 fig. 168. A stone and pottery example were found at Abydos together with an MM II bridge-spouted jar, a context dated by Dorothea Arnold to early Dynasty XVII; see Kemp and Merrillees 1980:117 fig. 38:8, 126 fig. 41:38 for the vessels. A large number also were found at Kerma; see Reisner 1923:57, fig. 159, pl. 38:1.7, 4. Many were accompanied by flat lids. Others have been recovered at multiple sites in Syro-Palestine (Sparkes 1998:III:96–97), to which add Tell Brak in Syria (Oates, Oates and McDonald 1997:108, figs. 139, 229.103).

[150] Early miniature examples apparently are known by the late Old Kingdom, e.g., MMA 11.150.2.D.

[151] See Freed 1987:200 #65; Sparks 1998:I:90–91, although they do continue to be found in post-Amarna tomb contexts, e.g., the tomb of Tutankhamun; see El-Khouli *et al.* 1993:figs. D–E.Class IV. This need not reflect their date of

be noted over time, with the 'baggy' shape becoming more pronounced, although individual vessels cannot be dated precisely. Initially with a somewhat rounded bottom, this becomes ever flatter until it acquires a 'shaved' flat base[152] in some but not all examples, apparently by very early Dynasty XVIII.

The rim presentation, however, more clearly indicates a chronological distinction. Earlier examples, at least until the end of the Second Intermediate Period and some possibly very early into Dynasty XVIII, have no definable neck and a flaring rim rounded at the edges similar to Type B 'drop-vases' or, late in this period, somewhat 'shaved' at the top.[153] Beginning in early Dynasty XVIII, the rim becomes everted and flat, with an angular profile and a diagonal to cylindrical neck that can be separately distinguished from the rim.[154]

The baggy type ranges in form from tall to squat, an excessively squat version of the baggy form having a sloping body and flattened base.[155] It follows the date range and profile development of the taller form but is not found after early Dynasty XVIII, the latest example being from the reign of Amenhotep I.[156]

In reviewing published examples of the form, it appears that the body shape is not an infallible criterion for perceived typological development. All three basic types appear sometime in Dynasty XII, but Type A ('flasks') may or may not continue into the Second Intermediate Period and only Type C ('baggy') continues beyond very early Dynasty XVIII. There does seem, however, to be a systematic development in the rim, useful especially for dating Type C ('baggy') alabastra. Within Dynasty XII and the Second Intermediate Period, Type B ('drop-vase') and C ('baggy') vessels have a rim of variable height but apparently rounded at the top and jutting more or less diagonally without separately definable neck. Type A 'flasks' have a short cylindrical neck, and the rim everts and thickens at the top on the exterior, with a rounded profile.

Dynasty XVIII rims of Type C ('baggy') vessels are more angular in section and have a pronounced eversion and flat top, sometimes to the extreme. Dynasty XVIII globular flasks, that apparently do not relate to Type A 'flasks,' have an excessively wide and generally cylindrical neck, again with an everted angular rim.[157] The neck can be diagonal, but it still everts at the rim, where it appears to have been 'shaved' flat at the top, probably to better accommodate the covering lid. Sometimes the eversion is quite pronounced, and the vessel is given a short cylindrical neck. This too appears to be a chronological development during Dynasty XVIII. Therefore, the everted rim with angular edge is the prevailing characteristic in Dynasty XVIII, and vessels with this feature can be distinguished from the earlier Dynasty XII–very early Dynasty XVIII vessels with diagonal rims having rounded edges but no separately definable neck.

On Crete

Alabastra (in the generic sense encompassing the various forms grouped by Warren) are among the most common imported Egyptian stone vessels found on Crete, with more than forty whole vessels or fragments recorded and others presumably still unpublished.[158] All with definable features are made of travertine and date between sometime in Dynasty XII and (at the latest) very early in Dynasty XVIII. Some, however, can be recognised as more limited in date, in particular the Type A ('flask') alabastra **{91; 146; 210; 259?}** which may or may not continue into the Second Intermediate Period, the Type B ('drop-shaped') alabastra with multiple horizontal grooving on the outer rim **{90; 223}** apparently limited to the late Middle Kingdom-early Dynasty XVII,[159] and the

manufacture: Carter noted that at least one appears to be the older form of the type "renovated" (*idem.*, 14 #24) and the others too could be reused vessels; many reused older items (some inscribed with the names of previous pharaohs) are known from his tomb. The vessel type continues to appear into Dynasty XIX in other materials, e.g., Freed 1987:206 #71. Likely, however, the increasing availability of glass as a material for perfume and unguent vessels in this period led to the decline in their manufacture.

[152] Lilyquist 1995:87 fig. 31 (reign of Amenhotep I).

[153] Petrie 1937:pl. XXIX:634, 648–649, 655. The latest, possibly again survivals, are from contexts dating to the reign of Amenhotep I; see Brunton and Engelbach 1927: pl. XXII.41; Lilyquist 1995:87 fig. 31.

[154] Petrie 1937:pl. XXXIV:869–872; B.G. Aston 1994:154–155 #185. Lilyquist 2003:207–211 figs. 128–134 (see also p. 333) illustrates a contemporaneous collection of Type C alabastra apparently interred before Year 42 of Thutmose III's reign.

[155] Petrie 1937:pl. XXIX:605–607; B.G. Aston 1994:142 #147; see also Lilyquist 1995:86 fig. 17. The one example on Crete is labeled *Type C (squat variant)* below.

[156] Brunton and Engelbach 1927:pl. XXII.41.

[157] E.g., Carter 1916:pl. XXII:12.

[158] See Distribution Map 2.

[159] Petrie 1937:10; Bourriau 1988:144–145 #150, *contra* Warren 1969:2.

shaved bottom of one converted vessel **{148*}**[160] strongly suggests a transitional Second Intermediate Period (–very early Dynasty XVIII?) date, if original to the vessel and not part of its conversion.

Egyptian alabastra are found in Minoan contexts ranging in date between MM IIIB and LM IIIB/C, always concentrated around Knossos. Others are found at Archanes **{47}**,[161] Kato Zakro **{106*; 109; 110}**, Malia **{373*}**, Khania **{131}**, and both Aghia Triadha **{4}** and Kalyvia **{90; 91}**. Five more, all converted into Minoan vessel types, were recovered at Mycenae **{588*; 590*; 593*; 594*; 595*}**.[162] Those in materials other than travertine were recovered at Palaikastro **{434}** and 'Central Crete' **{519*}**, but may or may not be alabastra. Undoubtedly, more have been recovered but lie unrecorded and unpublished in excavation storerooms, probably in fragmentary condition.

The vast majority of these vessels are recovered in Neo-Palatial and Final Palatial contexts, or are without context, with no typological concentration in one or the other period. For the record, their context periods may be listed as follows, although it should not be forgotten that some designated as 'type indeterminate' may in fact not be alabastra.

Neo-Palatial: Type A: **{210; 259?}**; Type B: **{218; 237; 373*}**; Type C: **{4; 106*; 258; 590*}**; Type indeterminate: **{47; 201; 204}**.

Neo-/Final Palatial: Type B: **{199; 223}**; Type C: **{224; 232}**; Type B or C: **{225}**; Type indeterminate: **{195; 203; 225}**.

Final Palatial: Type A: **{146}**; Type C: **{148*; 249; 250; 251; 254}**; Type C squat variant: **{252}**.

Final Palatial/End Palatial: Type A: **{91}**; Type B: **{90}**; type C: **{593*}**; Type indeterminate: **{131?; 200}**.

Final Palatial/Post-Palatial: Type C: **{594*?}**.

End Palatial/Post-Palatial: Type C: **{588*}**; Type indeterminate: **{196}**.

Post-Minoan or without definable context: Type A: **{110}**; Type B: **{109; 286}**; Type C: **{179; 269; 284; 285; 313; 426; 434?; 519?; 531; 595*}**; Type indeterminate: **{198}**.

Even if their contents when imported were the initially valuable commodity, the alabastra also seem to have been highly regarded commodities in their own right as the imports do not filter out beyond the immediate vicinity of the palaces.[163] They range from quite small (<6 cm. height for **{252}**) to excessively large (47 cm. for **{90}**), although the majority are 10–20 cm. The earliest, in context, is found in an MM IIIB level, apparently domestic in nature, of the 'Hogarth's Houses' area **{237}** at Knossos.

Whilst all three types are found on Crete, Type C dominates the repertoire. Of the more than forty recovered, Type A has only four examples **{91: 146; 210; 259?}** and Type B has eight **{109; 199; 218; 237; 286; 373*;** just possibly **259?}**, including the two with horizontal incised rim grooves **{90; 223}**. In contrast, there are 24 examples of Type C **{4; 106*; 110; 179; 224; 232; 249; 250; 251; 254; 258; 269; 285; 295; 313; 531; 588*; 590*; 593*; 594*?; 595*}**, including one 'squat variant' **{252}** and two with a flat base **{148*; 426}**. Eight are insufficiently preserved or published for comment, or perhaps are not alabastra **{47; 131; 203; 204; 196; 198; 195; 200; 201},** whilst one could be either Type B or C **{225}**. Additionally, the two not made of travertine could be typed as Type C **{519*}** and Type C with flat base **{434}**, if they *are* alabastra. None of the Type C vessels with sufficiently preserved rim show the Dynasty XVIII everted profile, strongly suggesting that all alabastra recovered on Crete are not later than very early Dynasty XVIII, whatever their Minoan context date.[164] This in turn would suggest that the Minoans were importing only the early form of Type C vessels, or that this was the only form being offered to them, at a time when the later form was being produced. Dynasty XVIII 'flask'-like vessels with everted rim likewise were not imported onto Crete, but unfashionable Type A ('flask') alabastra are

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[160] Those marked with an asterisk (*) have been converted into Minoan vessel types, mainly rhyta; see Appendix B.

[161] See also **{531}**.

[162] In addition to the converted imported alabastra **{590*; 593*; 595*}**, there are over a dozen unconverted examples at Mycenae and elsewhere. Most are listed in Warren 1969:114 Type 43:I (Mainland). Unconverted alabastra recovered on the Mainland are not considered in this study, although it is possible that some would have passed through Crete before arriving here.

[163] The Archanes example was recovered in a barely-exposed palatial-type building. Although no palace has yet been excavated at Khania, it obviously is a palatial-type site. Kalyvia is regarded as a major necropolis for Final Palatial Phaestos, and Aghia Triadha seems to have been a richer site for imported goods than the architecturally more impressive palace nearby.

[164] This is contrasted with Egyptian imports in to the Levant, where both profiles are found in some quantity; see Sparks 1998:I:86–92 Types 3A–B. Most of those found on the Greek mainland also are of similar date, although at least one **{594}** has crossed over into the early Dynasty XVIII profile.

found in the LM II–IIIA contexts generally contemporary with the manufacture of the other.

Nonetheless, derivative Minoan forms also appeared, or have been proposed. An early form of clay rhyton, shaped like the Type C alabastron with the Minoan addition of the required basal hole, was introduced in MM III and is limited to this period.[165] Its profile does compare with contemporary Second Intermediate Period Egypt Type C ('baggy') alabastra and imported onto Crete, but the only form recovered on Crete in an MM III context is Type B **{237}** in an MM IIIB context. Some of these clay rhyta have a raised cordon around the neck comparable to generally contemporary MB IIC–early LB I Palestinian gypsum alabastra,[166] of which none have been recovered on Crete. Moreover, only two imported alabastra were converted into a rhyton, one also a Type B form **{106*}** and the other Type A ('flask') **{210}**, none a Type C vessel. The profile of **{210}** is too far removed from Type C to consider.[167] Although **{106*}** was recovered in a ritual context at the LM IB Kato Zakro palace, it is conceivable that it had been converted earlier, in MM III or LM IA; its Middle Kingdom date is not against the proposal, but its shape is problematic. Thus, whether the origin of the (Type C) alabastron-shaped rhyton can be attributed, even in part, to imported Egyptian alabastra is questionable and probably to be rejected. Only two other imported alabastra **{219; 258}** can be cited as *possibly* being placed in context by MM III but, although one is Type C, their associated context of MM III–LM I must remain tenuous. The clay 'alabastron-shaped' rhyton may be a short-lived elongated variant of the 'globular' rhyton form that already had appeared by MM IIB.[168] The contexts, when known, of all other imported alabastra are not earlier than LM IA, and the vast majority are LM IB or later.[169]

It was not until LM IB, also, that the Minoan clay 'tall alabastron' appeared, quickly became popular and continued in use through LM IIIA1 on Crete.[170] It may be that their popularity was a general response to the popularity of the imported stone vessels, or the implications that were associated with them. Most Minoan clay alabastra are fine wares with very elaborately painted decoration. Examples are too numerous for individual discussion[171] and the present catalogue includes only four that, by their painted decoration, are particularly obvious copies of the Egyptian stone vessel and its material **{8; 76; 176A; 453}**. These four vessels thus indicate a directly derivative relationship from the imported stone prototype. All four are LM IB in date, early in the development of the clay form, and together they represent the range in scale for the clay vessels, from <10 to >20 cm. in height. The LM IB 'tall alabastron', as introduced, typically has a flat and often slightly concave base, emphasising further the Type C form rather than those of Types A and B. It is a distinctly Minoan vessel type and common only on Crete. Although it does appear on some Cycladic islands and occasionally on the Mainland[172] it is not a Mycenaean or Cycladic form. It becomes less popular during LM IIIA and disappears entirely by the onset of LM IIIB.[173] This follows the later chronological distribution of the imported finds, that quickly taper off after LM IIIA1 and are recovered only as remnant fragments in LM IIIA2 and later.

The shape of the clay vessels generally follows the neck/rim profile of Dynasty XVIII vessels, rather than the earlier variety that actually is imported from Egypt, but this rim/neck type also is a common feature on other contemporary Minoan clay vessels.[174] It thus is interesting that the Dynasty XVIII form of Type C alabastron is not found on the island. Howev-

[165] See Koehl 1981:180 fig. 1 'bulbous alabastron'; Betancourt 1985:105, 108 fig. 80:A, 142 fig. 106; 1990:112 #653, pl. 39:653, fig. 31:653. See also Chapter 10.

[166] E.g., Betancourt 1990:fig. 61:1769. See Sparks 1998:I:81, 89, apparently limited to Jericho and Pella. Apparently on the basis of this raised ridge or cordon, Betancourt (1985:142 fig. 106) asserts that the form develops first a piriform and then elongated handled profile. Such a profile development, from baggy to piriform, is difficult to accept, as the intermediary oval form is found earlier in Crete on other clay vessels, e.g., MM II 'globular' alabastra such as **{236}**, as well as other contemporary and later forms.

[167] The distinct lack of a tall neck on the early 'globular' rhyta strongly suggests that their origin is unrelated to the Type A alabastron; see also discussion in Chapter 10.

[168] See Koehl 1981:180 fig. 1 'globular.'

[169] This does not mean to imply that they could not have been imported earlier, only that they are not recovered in earlier contexts and so cannot be cited in support of earlier importation.

[170] See Betancourt 1985:151, 170; Kanta 1980:278 notes its initial appearance in "LM I."

[171] For some examples, see Warren 1969:171 n. 21.

[172] Ministry 1988:110 #42, *contra* Furumark 1941:40. Mountjoy 1993 does not mention this form.

[173] Kanta 1980:278.

[174] See, e.g., Betancourt 1985:pls. 20–29:*passim*. Some examples (e.g., Betancourt 1985:pl. 28:D; Davaras 1997:128–130 figs. 20, 26) also have a raised collar ridge or cordon; see n. 166, above.

er, the four blatantly derivative clay vessels **{8; 76; 176A; 453}** with painted 'banding' seem to follow the earlier rim profile and the imported vessel form. The meaning of this dichotomy is unclear, as is a compelling reason for the belated introduction and popularity of the clay form itself. It may be, again, that the majority of imports did not actually arrive before LM IB, although clearly some did arrive earlier as they were recovered in MM IIIB and LM IA contexts.

The imported stone vessels and their clay counterparts bear no relation to either indigenous stone vessel form also called 'alabastron,' which are either far earlier or appear slightly later in date.[175] The later type is a quite distinctive large 'squat alabastron' usually with prominent spiral decoration derived from Mycenaean prototypes on the flat everted rim and small definitely Aegean-type handles on the shoulder, neither feature being found on the imported stone and Minoan clay 'tall alabastra.'[176] This 'squat alabastron' form is limited to LM II–IIIA, and is found in both stone and clay.

The Egyptian alabastra on Crete have been found in palatial, domestic, funerary and ritual contexts, and appear to have been employed for different purposes in each. The number found in each context type is skewed by the large quantity found in single locations. The 'Royal Tomb' at Isopata held five substantially complete examples **{249; 250; 251; 252; 254}** and fragments of no less than six came from the Knossos Royal Road excavations **{195; 196; 198; 199; 200; 201}**. Notably but not surprisingly, those found in funerary and ritual contexts tend to be well preserved (if broken), while those from non-palatial 'domestic' contexts normally are found in single small fragments.

1) *Funerary* Those recovered in tombs were interred either as offering containers or as offerings themselves, and probably represent only a better quality or higher status of container **{90-91; 131; 249-252; 254; 258?-259?; 269; 590*; 593*; 594*; 595*}**. Types A-C all are found in funerary contexts, including the one squat variant of Type C. Any contents have long disappeared without trace. Those from Isopata all were recovered in the farthest recesses of the tomb, suggesting that if any ritual were involved as part of a burial ceremony it is unlikely the vessels played any part in it beyond their actual interment. Additionally, since they (unlike the open bowls, found near the tomb entrance) were not removed or replaced by the plunderers, their contents were of little or no interest to them.[177] Although small, they are of stone and therefore of some weight and they, or their contents, were not considered worth removal. It is obvious that, whatever their status as imports or exotica, the vessels themselves were of no interest to the plunderers. Other plundered tombs still revealed alabastra of not inconsiderable size, especially that at Kalyvia **{90}**. The only other non-Knossian tomb context is the questionable alabastron from Khania **{131}**. The only alabastra converted into Minoan vessels that were recovered in funerary contexts are those subsequently exported to Mycenae **{590*; 593*; 594*; 595*}**.

2) *Ritual* Imported Egyptian stone alabastra in ritual contexts are found in shrine 'Treasuries' in the palaces of Knossos **{146; 148*}** and Kato Zakro **{106*; 109; 110}**, a house shrine storeroom at Malia **{373*},** and possibly also at Aghia Triadha **{4}**. The 'Unexplored Mansion' fill material, with one imported alabastron **{210*}**, also is suggestive of yet another ritual collection at Knossos. It can safely be assumed that the 'ritual' nature of these 'Treasury'/storeroom vessels was acquired rather than inherent, and that they were probably chosen for their adaptability to conversion according to Minoan requirements.[178] Again, all three vessel types are represented amongst the finds.

3) *Non-palatial domestic (workshop?)* Imported Egyptian stone alabastra from contexts associated with non-palatial housing mainly are single, usually body, fragments. The sole better-preserved exception is the alabastron from Aghia Triadha **{4}**, if its context indeed was domestic. Most come from the Neo-Palatial to End Palatial levels near the Royal Road **{196; 199–201}** and the Stratigraphical Museum area **{218; 223–225; 232}** at Knossos, the latter also with

[175] Warren 1969:5–6 Type 1:A–B. The earlier, Type 1:A, has an EM III–MM I date range. See also n. 133, above.

[176] See Betancourt 1985:151. Furumark 1941:42 suggests that the Mycenaean clay squat alabastra owe their origin at least partially to the Egyptian form. This has been rejected by some later scholars, (e.g. Betancourt 1985) and propagated by others (e.g. Walberg 1976:40); I follow the former view. In any event, the Minoan examples are too far removed from the Minoan 'tall alabastra' and the one imported 'squat variant' to consider in the present study.

[177] The contents may or may not have still existed at the time of plundering, as the tomb may have been robbed centuries after its contents had been placed there.

[178] See Appendix B.

single fragments of several other vessel types in the same material. Both excavations revealed evidence of manufacturing in the immediate vicinity, but this may or may not be indicative of stone vessel manufacture there. An LM I lime-producing kiln was found in the Stratigraphical Museum excavations (Knossos GG),[179] and an architecturally undefined (in publication) but certain LM IB ivory-carving workshop(s) north of the Royal Road (Knossos AA.1).[180] In each case the specific excavation contexts still await final publication, but the bulk of Stratigraphical Museum finds were across the road from the industrial area and it is worth considering whether the concentrations of these individual vessel fragments represent waste pieces rather than chance recoveries of broken and scattered whole objects. The quantities of calcite or other stone rubbish in the Stratigraphical Museum kiln area, if any, are not stated. The travertine vessels may or may not be directly associated with this area. Many are not in LM I contexts, including the sawn vessel fragment **{219}**. The Royal Road stone vessel contexts are not yet published. The MM IIIB context of the 'Hogarth's Houses' area fragment **{237}** at Knossos, possibly domestic in nature, also remains unpublished, so virtually nothing can be said regarding domestic finds of this vessel type and their contexts.

4) *Palatial workshop* A fourth context category is represented only by the unpublished Archanes fragment **{47}**, as its excavator appears to suggest it may have been amongst the material from a stone vessel workshop on the upper floor of the LM IB Tourkoyeitonia palatial building. Again, context details are unpublished. This is the only alabastron found in a non-ritual palatial context, if the published information has been interpreted correctly.

Alabastra visually similar to Egyptian vessels but made of gypsum also were produced in the Levant from MB IIA, and some travertine alabastra apparently were made in Egypt directly for the Palestinian market. Ben Dor[181] noted two characteristic differences between indigenous Palestinian alabastra and those exported from Egypt: (1) Native Palestinian alabastra normally have a sharp angle at the side to base profile, whilst Egyptian products are more rounded in profile; and (2) Egyptian imports into Palestine have a typically oval horizontal section which is very rarely found in Egypt itself. On the latter observation, he suggested that perhaps the Egyptian vessels were manufactured for the export market, and noted their oval shape is better adapted to long-distance transportation. Whilst these observations have since had their detractors, they do seem to hold true. More recently, Sparks[182] has considered and expanded on these observations and has further identified several features limited to indigenous vessels in certain areas of the Levant but not found in Egypt, including an offset neck, a distinct cordon at the bottom of its neck, and certain types of decorative embellishments on the vessel rim area. None of her observable characteristics are found on the alabastra recovered on Crete, and it can be assumed that recognisably indigenous Palestinian alabastra were not imported onto the island.

As far as can be recognised, therefore, all banded travertine alabastra on Crete are Egyptian, but the fact that raw travertine stone also was imported and employed to manufacture Minoan stone vessels precludes absolute certainty in some cases.[183] Other stone vessels derived from imported Egyptian types most often are identified by the local origin of their raw material. Minoan alabastra in travertine, if these did exist, would fill an otherwise large gap between imports and the Minoan clay alabastra. Unless some of the travertine alabastra in the present catalogue actually are Minoan products employing imported Egyptian travertine, and these cannot be distinguished as Minoan, apparently no indigenous versions of the vessel were produced in a visually similar local Minoan stone such as calcite, with one possible exception. The Mavrio Spelio alabastron **{269}** is made of an unusual strongly opaque white stone having 'veins' rather than 'bands,' possibly a non-travertine stone such as marble or alabaster. If so, it is the only apparently indigenous example of the type attempting to duplicate the off-white colouration as well as the form of the imports.[184] Some body fragments identified as alabastra on the basis of their material have no clear 'alabastron' characteristic,

[179] Burning calcite to produce lime powder for white plaster (Warren 1981a:78).

[180] Evidence includes quantities of ivory and stone waste material, including unfinished pieces and bore cores. See also Appendix B; Knossos AA.

[181] Ben Dor 1944–1945:101.

[182] Sparks 1998:I:86–92 *passim*, especially pp. 88–89.

[183] Warren 1969:125–126; see also Knossos AA–CC.

[184] Note, however, the apparently indigenous calcite alabastron recovered at Akrotiri on Thera, Devetsi 2000:133–134, fig. 7, pl. 36.b. Sparks has no apparent parallels for the horizontal grooving at the top of the body, although a single plain raised cordon is known on the upper body of a gypsum alabastron from Pella; see Sparks 1998:I:240–241, III:110 #875.

and it is possible that some at least actually are the remains of other vessel types, either indigenous or imported. The two closed vessels resembling alabastra **{434; 519*}** in profile are *not* made of travertine or at least a white stone material; neither stone could be identified by Warren (1969) but neither is indigenous to Crete. The first, from Palaikastro, is now identified as a 'granitic diorite' from an Egyptian source, and the latter seems to have been imported from elsewhere than Egypt, probably Cyprus or the northern Levant/south-central Anatolia on the basis of the ophiolite that is a constituent ingredient.

The majority of alabastra clearly must be antiques in context, as they are not later than very early Dynasty XVIII in Egyptian terms but mostly are recovered in Minoan contexts not earlier than LM IB, or at least later LM IA, in date. The only vessels *possibly* but not necessarily contemporary with their Minoan context are:

1) the Type B fragment recovered in the unpublished MM IIIB level in the 'Hogarth's Houses' area of Knossos **{237}**,
2) the Type A/B and C alabastra from the MM III–LM I deposit on Isopata ridge **{258–259}** which nonetheless may have been deposited in LM IB, and
3) the converted Type C alabastron recovered in Shaft Grave V at Mycenae **{590*}**, its LH IB date generally contemporary with the later part of both LM IA on Crete and the late Second Intermediate Period and early Dynasty XVIII in Egypt.

Even by this early period, imported alabastra are found in both 'domestic(?)' and funerary contexts, and were regarded as prestigious enough by at least one élite Minoan (Knossian?) personage to be converted and re-exported to another élite (Mycenaean) personage on the Greek mainland. It is noticable that all these examples in early contexts are Knossian finds, as are nearly all other imported Egyptian stone vessels in MM III–LM IA contexts.[185]

The Dynasty XVIII type of Egyptian Type C alabastra contemporary with later LM IA and afterwards were not imported onto the island, apparently by choice since such vessels were relatively common in Egypt and theoretically could have been imported here.[186] One suggestion may be that all were imported onto Crete early in the Neo-Palatial period, when the earlier neck/rim form was still 'fashionable,' and continued in use on the island during the later LM IA through at least the LM IIIA period. This would, however, raise the question of why, in defiance of clear evidence that contemporary goods and ideas continued to be imported from Dynasty XVIII Egypt, the Minoans no longer imported alabastra during the later LM IA and following,[187] and yet the clay 'tall alabastron' did not develop and become popular until LM IB.

The introduction and popularity of the indigenous clay 'tall alabastron' during LM IB suggests that this is the period during which the majority of imported alabastra arrived on Crete, or at least were accessible to Minoan potters as prototypes for the clay form.[188] The most logical explanation is that the LM IB and later Minoans simply preferred the earlier stone vessel form, that by this time was 'out of fashion' in Egypt. Thus these vessels, like other imported vessel types recovered in quantity, actually are 'heirloom' or 'antiques' either acquired after long use over several generations or from plundering earlier tombs or sites in Egypt (but possibly from or via the Levant[189]). Nonetheless, clay 'tall alabastra' appear to follow the contemporary Egyptian rim profiles not represented amongst the imports, that instead may be the result of contemporary Minoan clay vessel fashion.

This raises the question of why these vessels were exported from Egypt and imported to other cultures, both in the Levant and on Crete.[190] Ben Dor

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[185] See Phillips 2001 for further discussion on this point.

[186] This is in contrast to the Levantine repertoire of imported Egyptian alabastra; see Sparks 1998:I:86–92 Type 3A–B. Both earlier and later rim forms are recovered in some quantity in the Levant, and appear to be imported at a period generally contemporary with their manufacture (to judge from context dates). Additionally, the form was copied and elaborated by Levantine artisans.

[187] That the Dynasty XVIII alabastron was imported into the Levant can be explained by the strong Egyptian presence there after it was conquered by Thutmose III.

[188] The only earlier exceptions are listed above. The vast disproportion between LM IB and earlier (MM III–LM IA) contexts on Crete is recognised here, and these earlier examples are known, but the vessel form does not affect the Minoan artisan until LM IB. Nonetheless, it is possible that the alabastra recovered in post-LM IB contexts also were imported during LM IB or even earlier.

[189] Some also are found in Levantine tombs contemporary with the Second Intermediate Period in Egypt; see Sparks 1998:III:103–109 #824-868 *passim*.

[190] Interestingly, none are reported on Cyprus. As the peak of Egyptian imports onto Cyprus is LCyp IIC2–IIIA1 (Jacobsson 1994:92; see chart p. 4 fig. 1), this can be explained by

(1944–1945:101) suggested the imports to Palestine might have been used as transport containers for perfume,[191] as the neck is constricted and easily adapted to closure with a stopper or by covering the mouth with a cloth and tied with a rope or string. A similar argument may be suggested for those recovered on Crete. Indeed, the 'unfashionable' flaring rim found on those on the island is ideally suited for the latter method of sealing, whilst the Dynasty XVIII form is more suited to the former method. The proposed contents are logical, as the container is designed for some form of pourable liquid, and the profile is ideally suited for gripping about the neck. Also, the scale of some unusually large vessels does suggest 'bulk' transportation containers. Others are quite small, however, and perhaps might be seen as personal possessions that may have been imported for their own sake instead of, or in addition to, their contents. Both neck forms are useful for the same purpose in Egypt, so the Minoan preference for importing only the earlier form cannot be explained in this manner. Virtually no evidence exists for sealing methodology of vessel forms in the Neo-Palatial period, and none for the alabastra.[192]

The alabastra in context on Crete have virtually no cross-cultural chronological value. They do, however, follow the pattern of old, 'heirloom' and 'tomb furniture' Egyptian vessels being imported onto Crete. This in itself is an important point, as alabastra previously had been viewed as a generally contemporary vessel type imported in quantity and therefore having some potential cross-cultural chronological value.

2. Amphorae

In Egypt

Stone amphorae are but one form of many oil or unguent container types, as exemplified in the variety of such vessels found in the tomb of Tutankhamun and some Dynasty XIX pharaohs, but they do not survive beyond this period.[193] The earliest *dated* example, without handles, is from the reign of Amenhotep I, and the handled type first appears some three decades later during the reign of Hatshepsut. Most are produced in travertine, although they occasionally also are found in serpentine.

Some imitate, quite closely, the pottery form that in turn derives from the 'Canaanite commercial jar' or 'Canaanite amphora' type known both in Palestine and Egypt.[194] Its apparent introduction relatively early in Dynasty XVIII can be seen as resulting directly from the Egyptian incursions into Palestine and/or the increased 'internationalism' of artistic and technological innovation at this time. Although rare prior to the reign of Thutmose III, clay amphorae in a variety of types are extremely popular thereafter. Pottery examples often are inscribed with their specific contents either in ink or by incised marks; this usually is wine.

Amphorae in stone are far less common and less varied than those made of clay, but nonetheless several different types can be distinguished. Normally they are smaller in scale than pottery amphorae. The latter could be over a metre tall, whilst stone examples generally range between 20 and 40 cm. in height. Stone vessels can be handless, or have vertical handles either linking neck and shoulder, or on the body alone in the area of its maximum diameter.[195] The majority of vessels have a tall cylindrical neck with exterior thickened to everted rim, a wide medium to high shoulder tapering to a rounded bottom, and two (usually) vertical handles just below the shoulder. All these descriptions are paralleled in clay.

The lower body tapers to terminate in several different bottom shapes. One form terminates in a keeled or rounded bottom, following the standard 'Canaanite

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the dating (= second half of Dynasty XIX). Nonetheless, some stone vessels and other imports are known in Cypriote contexts contemporary with the various phases of Dynasty XVIII, but alabastra are not amongst them.

[191] Other possibilities are unguents and aromatic oils, both essentially the same thing in antiquity as perfume. Perfume was of thick consistency in the ancient world, rather than the watery liquids of today.

[192] Evidence for direct sealings on baskets, large wickerwork vessels and jar-stoppers does exist in the LM III period but no evidence is known for sealing alabastra (Olga Krzyszkowska, personal communication, 05 January 2002).

[193] B.G. Aston 1994:153.

[194] See Chapter 6 for further and more detailed discussion of the clay form. Amiran 1970a:140–142, pl. 43 discusses the Canaanite clay forms, whilst Hope 1989b provides a typology of the Egyptian clay vessels. No clear examples of this form in stone were found on Crete.

[195] Related vessels can have horizontal 'looped' handles either just above their maximum diameter, but these have comparatively short and globular bodies and a ring foot; see B.G. Aston 1994:152#175, who calls them "long-necked flasks." They range in date from the reign of Thutmose III to Dynasty XX, contemporary with the more common clay amphorae of similar shape but having a longer, narrower neck; see Hope 1989c:96–97 Categories 2b–3a, 116–117 figs. 6.3–8, 7.1–2. It is this stone vessel form that, with the addition of a vertical third handle, is found atop the head of the LM IIIC–Sub-Minoan clay femiform parturient vase at Aghia Triadha **{35}**. The stone form also is found in the

amphora' clay type. The other form is intended to stand upright on a flat surface, and this type is produced in two methods, only one of which is paralleled (to some extent) in clay. The first type is shaped as a tenon at the bottom, and this is inserted into a separate low round 'potstand' base having a corresponding mortise at the top.[196] The separate stand normally is made of the same material as the vessel it supports, as a complimentary set. Unlike the separate clay potstands sometimes used to support the clay vessels, however, stone 'potstands' are not hollow throughout but a solid piece intended to support the vessel it holds by the tenon of vessel bottom and 'potstand' mortise.

On the other type, e.g. **{114}**, this 'potstand' actually is integral with the vessel, and thus it is able to stand otherwise unsupported. A thick horizontal raised ridge around the lower body indicates the 'potstand' shape, and effectively marks the junction of lower body and 'pedestal' foot. These self-supporting amphorae of both types generally are not transport containers, as certainly are the round-bottomed clay vessels,[197] despite their common shapes. All stone amphorae appear to be tomb finds, and presumably were employed in the tomb as large-scale containers for the oils or other contents for use by the dead in the 'Afterlife.'

Extremely few 'integral' stone vessels, that suggest the combination of a round-bottomed vessel supported by a potstand, are known before the New Kingdom.[198] Essentially, this is a New Kingdom vessel type, becoming common only from sometime in the reign of Thutmose III.[199]

On Crete

Only two, probably three, imported stone amphorae have been found on Crete.[200] One fragmentary example was found at Knossos **{144}** in the LM II–IIIA 'Room of the Stone Vases' and, beyond its conversion to a Minoan vessel form, did not influence Minoan vessel development.[201] Only the upper body is preserved, so it could have had either a keeled or rounded bottom, or a tenon for attachment to a separate 'potstand' base. Almost certainly, however, its bottom half is incorrectly restored and, although its conversion into a rhyton is assumed, it clearly was converted into a different form than the original as the neck and rim have been deliberately removed. The lower body fragment of a possible second amphora **{287}** also was found at Knossos, without recorded context; it too probably had either a keeled or rounded bottom. The third amphora, intact and having an integral 'potstand' base, was found in an LM IIIA1 tomb context at Katsamba **{114}**, and is inscribed with the name and some titles of Thutmose III.[202]

The form of this last vessel **{114}** at first *appears* to have been imitated in a number of Minoan clay amphorae, complete with a specific feature otherwise virtually unknown in Minoan development but found on New Kingdom Egyptian vessels: the thick raised horizontal ridge around the lower body in imitation of its original duality of round-bottomed amphora and (separate) low potstand. The Minoan vessel usually cited as the earliest to possess this ridge is a small MM IIIB faience spouted ewer (or beaker) found at Knossos in the 'Treasury of the Sanctuary Hall.'[203] However, the double ridge at the base of a goblet **{181}** (*not* an amphora, as Evans had restored it, Fig. 2) apparently is earlier, for it comes from an MM IIIA deposit, as does its more complete but single-ridged parallel (Fig. 3), both at Knossos. Other more-or-less contemporary vessels on Crete having this

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Levant in LB IIA–Iron Age, beginning slightly later but generally contemporary with the type in Egypt; see Sparks 1998:I:147–149; III:188–190 #1440–1456 (she calls them "footed jars").

196 E.g., Petrie 1937:pl. XXXIV:878–879; also TBM 37.250E.

197 Pottery jars on separate pottery stands are long and well known along the Nile Valley for the storage of water and wine; see Bourriau 1981:70–71 #131–134, 135:a–c as examples. The stone form seems to be at least partly a development from this vessel type.

198 An early example is the small kohl pot in Randall-MacIver and Mace 1902:pl. XLIII:lower right, Tomb 88, of SIP date. Petrie (1937:8–9, pl. XXVII:527) has a questionable Dynasty VI example, and an Early Dynastic cup (or bowl) and stand combination also is known (*Ibid.*:5, pl. XIV:143; see also Brovarski *et al.* 1982:119 #105). Stone examples found in the Levant also date no earlier than LB IB or more certainly LB IIA (broadly the 14th c. BC) in context; Sparks 1998:I:143, 151–152; III:179–181 #1375–1384 (separate), 193–194 #1469–1478 (integral).

199 A four-handled pithoid jar with an integral stand dated to the joint reign of Hatshepsut and Thutmose III (i.e., Years 7–22) has recently been published by Lilyquist (2002).

200 See Distribution Map 3.

201 See Appendix B.

202 Additionally, one imported alabastron seems to have been converted into an amphora by Minoan artisans at some point in the Neo-Palatial period; see **{373}**.

203 Evans *PM* II.2:824–826, fig. 540, 541:b; see also Foster 1979:61, 62 fig. 2. The silver Byblite ewer of slightly earlier date with which Evans and later scholars have compared this vessel notably does not possess the raised ridge at the lower body/base join; see Evans *PM* II.2:fig. 541:a; Hood 1978:154, fig. 146. On its context, see Hood and Taylor 1981:15 #67.

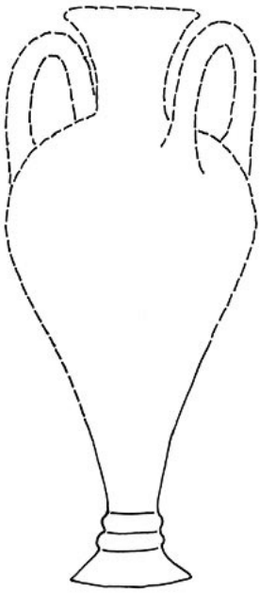

Fig. 2 Evans's reconstruction of **{181}** (Evans *PM* III:402 fig. 267.c = IV.2:779 fig. 759.c)

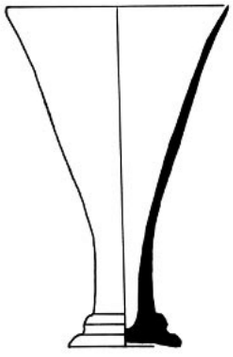

Fig. 3 Goblet with quatrefoil rim (restored), clay, H: 14 cm, from MacGillivray's MM IIB–IIIA Group E, West Polychrome Deposit at Knossos. (MacGillivray 1997:pl. 21.605)

basal ridge are clay bridge-spouted jars with pedestal base and pitharakia at Phaestos and at Kamilari.[204] Cucuzza[205] associates this ridge with vessel manufacture, appearing when the hollow foot is worked separately and not appearing when it is not. Technically, this is incorrect, for the basal ridge of the junction can be smoothed over and removed, if desired, by the potter during a final production stage. Thus, its presence on the finished vessel was a conscious decision of the potter. The basal ridge on the pseudo-amphora **{489}**, for example, is a feature rather clumsily added by the potter after the vessel was finished.

The earliest recognisable examples of the amphora with basal ridge were recovered at three sites, Malia, Kamilari and possibly Knossos. The excavator dated all those from the tomb at Kamilari **{93–97}** to MM III on stylistic grounds. All are coarse and roughly decorated in wash but, with the exception of a variety in handle arrangements and wider, shorter neck, all are reasonably similar in profile to the inscribed import **{114}**.[206] However, they are slightly concave underfoot, probably an early feature not found later, nor found on Egyptian forms. The variety of handle positions, body and basal profiles and scale suggests a possible developmental sequence rather than contemporaneity within the group, a point correctly emphasised by Cucuzza in distinguishing his Type 2 (**{93; 95}**, "LM IA–B," but earlier than his Type 1 vessels) and his Type 3 (**{94; 96–97}**, "MM III"), to which he has assigned all five vessels. Presumably they were interred as storage containers for the use of the (communally buried) deceased, perhaps with contents now lost. Similar in both date and form is another Type 2 example recovered in a tomb at Poros **{489}**, without external wash but found together with another vessel lacking the ridge and covered with a white wash, both not later than LM IA in date.

Another of similar coarseness, all-over red wash and probable MM III date was found in the palace at Malia **{369}** in a vaguely cultic context. Cucuzza assigns this to his Type 2 on the basis of its hollow underfoot, although this is largely restored. One possible example not discussed by Cucuzza apparently was recovered in a domestic storage context dated MM IIIA in Knossos House A, **{288}**; it should be placed in his Type 3 as its base is slightly concave underfoot, thus confirming the early date of this type.[207]

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[204] Levi 1976–1981:I.1:pl. 202:d–f, 203:f–h, 204:a, e–g. It also is found on LM IA strainer jars from Akrotiri; see Marinatos 1968–1976:VI:pl. 77:b, 78:a:centre, Col. pl. 10:lower right pair. Nonetheless, it is a rare feature.

[205] Cucuzza 2000:103; compare descriptions of his Types 2 and 4.

[206] Note that MM III is approximately contemporary with the latter part of Dynasty XIII, Dynasty XIV, the earlier part of Dynasty XV, and Dynasty XVI. Thus, the imported amphora is more than a century and a half later in date of manufacture than the end of MM III.

[207] **{288}** should be of similar date to the MM IIIA goblet **{181}** already discussed above, to judge from its similar and unusual "vermillion" painted surface. Its identification as an amphora may be questioned due to its quite sagging lower body, although this is a feature of the other MM III vessels to a lesser degree.

It seems to be a combination of these two forms that developed in LM I, both at Knossos **{173}** and Phaestos **{445–446}** and its satellite, Aghia Triadha **{13–15; 20–22}** but, apparently, nowhere else on the island except the MM III–LM IA example at Poros **{489}**.[208] The LM I variety is quite tall, thin and elongated (35–40 cm. in height) with the characteristic basal ridge, to which has been added a second at the junction of the neck and shoulder, and an incurved base decorated with a thin horizontal groove. The level of the collar ridge has risen to a proportionately greater height, suggesting the taller form of potstand rather than the low variety. The handles consistently are tall coil loops and the neck is 'pulley-shaped' with widely flaring rim. Those from Phaestos are barely highlighted with painted decoration, but the others remain undecorated or haphazardly covered with paint, as preserved.

These vessels are in fact far removed in function and profile from the Egyptian form, if indeed the origin can be traced to Egypt at all.[209] Although similarities remain, the Minoan potter has produced a vessel quite distinct and clearly intended for a different purpose than both the Egyptian and early Kamilari/Malia examples. When found in pairs, they are of much the same height and shape, but one of the pair is hollow throughout, essentially an elaborate undulating tube with handles **{14; 446;** also **15; 21; 173}**, while the other is not **{13; 22?; 445}**; possibly also the Poros example **{489}** and its potential companion (of different scale), and one of the two amphorae Evans says he found together with **{173}**, but which cannot now be located. Although the Phaestos pair **{445–446}** are recovered in a shrine context, the others are from habitation areas without definable – but not overtly religious – contexts. The hollow 'amphorae' cannot be identified as rhyta, as the basal 'hole' is almost double the standard rhyton diameter of about 5–6 mm. Additionally, three examples (two from Aghia Triadha, one from Phaestos) were found with associated lids, an illogical additional element for a rhyton. Nonetheless, at least two related pairs have been found together in the same context; the combination clearly was intentional, and related to their unknown, and presumably cultic, function.

The question of derivation seems clear visually; however a chronological problem must be raised. If the earliest examples on Crete date to MM III, at Kamilari **{94–97}** and Malia **{369}**, and the type does not appear in any quantity in Egypt until the reign of Thutmose III, it seems initially that either these two dates are more or less contemporary, or the details of the form must have developed earlier on Crete than in Egypt. Neither possibility seems feasible, as other correlations in general do not allow so late a dating as early/mid Dynasty XVIII for MM IIIA, and the form does have the occasional earlier precedent in Egypt but not Crete.[210] Although it is always possible that the Cretan form *might* have derived from the extremely rare earlier, probably smaller and handless, Egyptian examples of the form, this is a very far reach. The raised basal ridge suggesting the pseudo-potstand would have been added to the usual Minoan profile *without* popular Egyptian precedent, as the combined vessel form is virtually unknown prior to early Dynasty XVIII in Egypt. Minoan potstands, unlike those from Egypt, never were of the low variety indicated by the low level of the raised ridge on these amphorae.[211] Therefore, although the *idea* of combining the round-bottomed vessel type and low potstand in a single vessel at least must have originated in Egypt, as indicated by the rare stone bowl of Early Dynastic date[212] and the repeated appearance of multi-component vessels throughout the Dynastic period, the clay amphorae from Crete cannot be considered as having derived from the Egyptian type. If anything, the Minoans combined the 'Egyptian' storage jar and separate potstand into a single vessel themselves, and then also independently added the handle types seen on the early examples from Kamilari, Malia and Knossos, over a century before the Egyptians even considered it. By the time the Egyptians produced the com-

[208] What appears to be another example is exhibited in the KM, case 9, from excavations in Khania. It is noted there to be unpublished, and is not included in the present catalogue. This is *not* the amphora published by Tzedakis 1973–1974:pl. 686.ε and described by Cucuzza 2000:103 as a variant of his Type 2 amphorae (without basal ridge).

[209] The early examples bear stronger visual and functional associations, although they predate the form in Egypt; see n. 206, above.

[210] See nn. 196 and 198, above. Note that this ceramic profile also is unknown in Palestine and the Near East, e.g., Amiran 1970a:*passim*.

[211] See Betancourt *et al.* 1983. Low potstands in Egypt are not discussed there but see also Hayes 1953–1959:II:79 fig. 42:left; Bourriau 1981:71 #135:b–c; 1988:79 #54. They are known from as early as the Old Kingdom, and are found in pottery, faience and stone.

[212] See n. 198, above.

bination of amphora and low potstand as a single large storage vessel, the Minoans no longer were employing it for storage but as a cultic vessel type of entirely different proportions and purpose. Comparison of the pair of 'amphorae' from Phaestos **{445–446}** and the inscribed import from Katsamba **{114}** illustrates the point; they are generally contemporary in date.

The amphora-type form was created in stone only once on Crete, by conversion of an Egyptian alabastron **{373}**, dated by context to MM IIIB–LM IB.[213] Not surprisingly, it was found in a shrine context. The converted form illustrates the same basic features as the 'true' clay vessel versions, namely tall piriform body, concave base with ridge at top and bottom, tall neck, wide flaring rim and handles on the shoulder. It is different in that the handles undoubtedly were not the tall looped variety, a third handle or spout was attached and the body surface had incised decoration, but its relationship is clear.

Thus, chiefly due to chronological grounds, the clay form on Crete was not derived from the stone (and clay) form in Egypt. Although their original function on Crete was, as later in Egypt, for storage, contemporary 'amphorae' (and hollow 'pseudo-amphorae') on Crete are an entirely separate phenomenon from their Egyptian counterparts.

3. 'Miniature Amphorae'[214]

In Egypt

The details of different Minoan imitative vessels (as identified by Warren 1969:Type 28) actually derive from a variety of different shouldered jar types in the Old Kingdom and First Intermediate Period. Only those relevant to the Minoan form are discussed here.

The most common Egyptian 'miniature amphora' (to use Warren's term) is, in general, the smallest Egyptian shouldered jar type. This has a projecting everted or at least thickened rim, flat base and characteristic high shoulder developed in the Early Dynastic period and continuing into the Second Intermediate Period.[215] All are handless, and in general range from miniature (<6 cm.) to very large (60 cm.) scale, although most do not exceed 20 cm. in height.

The most common rim form is everted with a cylindrical or near-cylindrical neck, ranging in date between Dynasties V–XII.[216] With few and only occasional exceptions (limestone, diorite, serpentine and schist), the material used is either travertine or calcite. The somewhat angular shoulder profile characteristic of these Old Kingdom jars was supplemented by a more rounded version introduced in Dynasty VI. This later type then becomes far more common, although both continue into the Middle Kingdom. Nonetheless, individual vessels cannot be dated with any confidence except by context, although B.G. Aston notes characteristic Old Kingdom ('wide, thin rim and wide, sharp shoulder') with tall neck and Middle Kingdom ('small [under 15 cm], with short neck') variations to the norm. As these are typological developments, the First Intermediate Period vessels are median between the two extremes. Miniature examples almost universally (and the occasional larger jar) are but model or dummy vessels, with a mere summary cavity, and could not have been used as containers; the vessel's exterior profile was the important feature and not its practical capability.[217] The larger vessels were capable of being sealed, and were used for storage.

'Concave collared' vessels generally range between Dynasty IV and sometime during the First Intermediate Period,[218] having a variety of shouldered body forms from slender to medium, a generally wide mouth and strongly sloping shoulder. The bottom ranges from pointed to tapering rounded to flat with narrow diameter,[219] but this does not seem to be a developmental feature. There appears in fact to be

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[213] See Appendix B, Type Ia.

[214] Warren 1969:71–72 Type 28. The term is not employed in Egyptological literature, where the vessel is usually termed the 'shouldered jar.'

[215] See Reisner 1931b:135–176:*passim* Type V; Petrie 1937:8, pl. XXV; Ward 1971:105 fig. 19; El-Khouli 1978:II: 774–775 Class III:C, J, III:pl. 67:1630–1632, 72–74:*passim*.

[216] B.G. Aston 1994:138–139 #132–135.

[217] See Bernard 1966–1967:pl. VII–IX; D'Auria, Lacovara and Roehrig 1988:77–78 #7 fig. 39. This observation seems most applicable to the Old Kingdom examples. First Intermediate Period and Middle Kingdom miniature vessels, when their interior profile is known, are hollowed out further; see Petrie 1937:pl. XXVIII:584–593; Ward 1971:105 fig. 19:9–15.

[218] The development and decline of this vessel type from early Dynasty VI into the First Intermediate Period is indicated at Qau-Matmar by Seidlmayer 1990:195–196 figs. 81–82 Type ST-E variants and, for the period dating, 395 fig. 168.

[219] Petrie 1937:pl. XXVII #518–532; Bernard 1966–1967: pls. XV–XVII #274–322; B.G. Aston 1994:135–136 #123–125.

little typological development, for all variants seem characteristic of the entire period range. They derive from clay vessel forms, probably from the appearance of those sealed by a cloth covering the mouth and tied with a rope around the neck. A further and interesting variant, with an integral stand, appears limited to Dynasty IV–VI.[220]

A further shouldered jar form, limited in date to the First Intermediate Period and early Middle Kingdom and no more than 10 cm in height, is characterised by a wide flat-collared (thickened on the exterior but without eversion) rim and sloping shoulder of generally similar diameter.[221] Both slender and squat variants are found, both usually having a vertical (drilled) interior cavity but occasionally undercut at the shoulder; the squat variety can have a rounded bottom. A further variety of similar scale and date, also is known with thickened (but not everted) exterior rim and pointed bottom.[222]

An uncommon stone vessel form, derived from and more commonly found in clay, is known as the *ḥs* (hes) jar after its hieroglyph (W 14). It has an elegant and very slender body, with flaring base, high rounded shoulder, and often a narrow but tall flaring neck and rim. It is a ritual vessel employed (amongst other functions) in purification ceremonies. Early (late Old-early Middle Kingdom) examples, however, exhibit only a constricted neck and rounded rim.[223] These normally are found in travertine, limestone, calcite and other white stones, due to their cleansing function. Sometimes the basal ring of an integral stand is indicated. Both full-scale and model (miniature) forms have been found.

On Crete

Warren isolated only two Minoan vessel types in the Pre- and Proto-Palatial periods derived from Egyptian forms. One is a particular form of miniature cylindrical jar having an everted rim and base[224] and the other, deriving from the Egyptian miniature shouldered jar, he calls the 'miniature amphora.' Of the two, only one is represented by imported examples: no Egyptian 'miniature amphora' import is found on Crete.[225] Yet it is this form which appears to be the earlier of the two arrivals. The vessel in the most closely dated earliest context at Tholos E at Archanes, **{60}**, recovered in its lower EM IIA(?) stratum. Two others came from the rich lower EM IIA (or possibly early EM IIB) deposit of Tomb Complex I–III at Mochlos **{400–401}**, and another is from a less well-dated EM II–III tomb nearby **{403}**. The vessel **{307}** found in an otherwise unpublished stratified habitation context identified as EM II by Seager at Mochlos, is problematic and likely to be later in date and intrusive (if the context *is* EM II).

The vessels excavated at Mochlos, all of locally available chlorite or steatite, are simple forms with vertical interior profiles and thick outer profiles and bases, clearly representing the early stages of technical knowledge consistent with their context date. Those vessels from the cemetery are but roughly and simply made; one **{401}**, from the EM IIA/early B deposit and very similar to the Archanes vessel **{60}**, merely is left with rough gouges on its interior surface, an initial attempt to increase its capacity. All this suggests that the cemetery finds are token funerary offerings only. The two from this deposit are quite different in appearance, and seem to derive from different types – if, indeed, imported models were used. One **{400}** boasts a pair of horizontal lug handles, a feature no Egyptian vessel of this type possessed. In contrast to the tomb finds, the town example **{399}** is elaborated with raised horizontal banding, high surface polish, drilled handles and even an engraved sign on the base; the handle holes have obvious wear and pressure marks that suggest lifetime use.

None of the vessels in the *earliest* contexts at Archanes and Mochlos seem to imitate Egyptian forms directly, and none exhibit characteristic Old Kingdom details insofar as these can be isolated from later developments in Egypt. There are, for example,

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[220] Petrie 1937:pl. XXVII:527; Bernard 1966–1967:pl. XI:191–199(–203), pl. XVIII:336–354; B.G. Aston 1994:136 #126. See D'Auria, Lacovara and Roehrig 1988:78 fig. 41 for a model example from a Dynasty IV tomb, and Metropolitan Museum 1999:492–493 #214.A.9, .B.3, .B.8 for Dynasty V–VI examples.

[221] Petrie 1937: pl. XXVIII:584–595; B.G. Aston 1994:140–141 #139–140.

[222] Petrie 1937:pl. XXVII:533–535; B.G. Aston 1994:141 #141.

[223] Hayes 1953–1959:II:119 fig. 72:third from left; Bernard 1966–1967:pl. XI:195; Schoske 1990:69 #21, 86 #42a. Middle Kingdom examples are in Petrie 1937:pl. XXIX: 644–645. Not included in B.G. Aston 1994. Clay examples are in represented in Bernard 1966–1967:pl. XXXVIII: 804–806; the first has a flaring rim.

[224] See Appendix A.8, below, and Warren 1969:75–76 Type 30:D.

[225] See Distribution Map 4. The Minoan manufacture of all known vessels of this type is evidenced by their material, locally available and locally employed on other vessel types.

no jars with a 'concave collared' or elongated neck and everted rim,[226] just a short, barely visible, constricted one. Nor do these appear to be amongst the earliest indigenous stone vessel forms on Crete,[227] but rather seem to represent the next stage of development when indigenous forms were being developed by Minoan artisans.

A few vessels can be recognised from late deposits, namely from Palaikastro **{432}** (MM I–III) and probably Kamilari **{100}** (site in use MM IB–LM IIIA2), and the domestic/cultic contexts at Kommos **{325}** (MM II), Malia **{376; 385?}** (MM II) and Phaestos **{454}** (MM II–III). This seems to indicate a shift for these vessels from funerary to cultic use by the Proto-Palatial period, although admittedly this may be misleading, as the majority of Pre-Palatial contexts are funerary. Their appearance seems to have stabilised by this time, for this late group presents a fairly uniform shape in grey/white dolomitic marble or limestone (with the exception of the problematic Phaestos example). Only that from the sanctuary at Malia **{385?}** is elaborately decorated, with multiple handles and rope-pattern incised lines — more a 'miniature pithos' than 'miniature amphora.[228]

One was recovered in a clearly 'survival' LM IIIA tomb context at Kalyvia **{86}**, whilst another **{506}** *may* have been at Pyrgos (Khanli Kastelli). Others, including one each from Aghia Triadha **{34}** and Pseira **{498}**, and others only from 'Crete' **{534; 536}** have no known context whatsoever.

Not found in Egypt but present on some Minoan jars are handles, either horizontal or, more rarely, vertical. This appears to be an ex-Mesara trait, as all handled vessels except **{467}** from Platanos were recovered beyond this region. One **{400}** from the EM IIA(?) Mochlos tomb II deposit boasted two horizontal handles, indicating this feature was an early Minoan innovation. The majority, however, are on those from late contexts. The occasional vessel **{86; 432; 466–467; 470}** has incised decoration on the rim, shoulder, body or handle (and **{399}** on the base), but none are the same and it must be assumed that such decoration was at the whim of the artisan.

The majority of vessels are from funerary contexts, chiefly in the Mesara (Aghia Triadha **{24–25}**, Marathokephalo **{394}**, and Platanos **{461–467; 470–473}**), but also those from Mochlos **{400–401; 403}**, and single examples from Archanes **{60}**, Palaikastro **{432}** and possibly another from Pseira **{498}**.[229] More specifically, apart from those contexts at Archanes and Mochlos Tomb II, they are from communal tombs in use for centuries and in the main unstratified, and thus cannot be dated more precisely than within EM II/III–MM I/II, and sometimes later. The EM III period on Crete is particularly difficult to isolate stratigraphically. Except for those in early contexts, Platanos **{472}** and Marathokephalo **{394}**, these vessels are of dolomitic limestone/marble or similar light stone, again local materials. Many but not all are similarly rough with cursory interior hollows, although some boast thick grooves and others are incised (one or two elaborately) on the exterior surface. Note that the one certain later tomb example, not earlier than MM I at Palaikastro **{432}**,[230] maintains the almost cylindrical interior profile despite the elaboration of handles; so does the decorated example from Platanos **{467}**, where the interior bowl descends only halfway through the body. This is not universally true, for several are thin-walled and well-formed. Nonetheless, it suggests the vessels may have been created expressly as funerary offerings. The differences probably also are chronological, where the thicker-walled vessels are early, tentative excursions into the art of their manufacture, and the more technically accomplished pieces later in date, but this is of no practical use in wide-ranging tomb contexts. All are small, ranging in height from 4.5–8.5 cm. The wide range of forms recovered at Platanos itself is an indication that a single source of inspiration is unlikely, and it is likely that the Platanos vessels span the majority of use of both tholoi there.

Warren's identification of these vessels as 'imitations' of the Egyptian type is more positive than the

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[226] Note later examples of the 'concave collared' neck **{399}** and **{461}**.

[227] Warren 1969:*passim*, Types 23:A, 31:A, 33:A–B and F, and 37:A.

[228] A later, similar 'miniature pithos' having 12 handles was found in the storage room of a 'strong building' annexe to the Kato Zakro palace (Fraser 1970:29, fig. 56), also a faience example from Shaft Grave II at Mycenae and clay examples from both Crete and the Mainland (Furumark 1941:45, fig. 12:32, 589 #32; Foster 1979:121–122 fig. 85). Note Foster 1979:122 n. 286, referring to jar **{506}**. All generally are in generally contemporary LM/LH I contexts. The Kato Zakro vessel is not included in the present study, but may represent a development of the form from **{385}**.

[229] The last probably is from the cemetery, but just possibly is a town find. One other outside the Mesara is from a questionable LM I survival context, collected at Pyrgos (Khanli Kastelli) **{506}**.

[230] The interior profile of the other likely late example recovered in a tomb, from Kamilari **{100}**, is not recorded.

evidence suggests. The collection as a whole is not altogether homogenous, some bearing little resemblance in profile to the Egyptian 'models.' Many have handles, some are much more squat in appearance and several have incised shoulder decoration of various unrelated but indigenous designs. The vessel type is a simple profile, and could well have developed locally; it really requires no external 'inspiration.' It seems to have done just this, if the presentation of the earliest examples at Mochlos and Archanes is any indication. The lack of imported examples is no argument either way, but the negative evidence is an additional incentive to reject their identification as 'imitations.' Their quite small size is explained by the EM propensity for small- and 'miniature'-scale vessels; the very few somewhat larger Minoan forms are simple thick-walled shapes such as cups.

Nonetheless, a variety of possible Egyptian types may at least have contributed to the final Minoan results. None of the Minoan vessels have the high neck indicative of Old Kingdom shouldered jars, but many do have the constricted neck and short slightly flaring rim of the First Intermediate Period and Middle Kingdom profile generally contemporary with the Minoan contexts in which they were found. Those with a wider neck probably do not predate the First Intermediate Period when this form flourished in Egypt. More specifically, two vessels with an Egyptian-style 'concave collar' neck but otherwise dissimilar in detail, material and general profile, are known from Mochlos **{399}** and Platanos **{461}**; it is possible that both were influenced by the foreign type which has a greater range from as early as Dynasty IV.[231] It is highly unlikely, however, that the vessel from 'Crete' now in the Mitsotakis collection **{535}** directly relates to any Egyptian form.

Thus, the 'egyptianising' details found on these Minoan vessels suggest that, if anything and with the possible exception of the 'concave collared' vessels, their prototypes should not pre-date the First Intermediate Period. Whilst this already is of little help in providing a more circumscribed date for the Minoan vessels, its usefulness is negated by the probability that they were an entirely indigenous development.

4. Bowls, Deep Open Forms[232]

In Egypt

Deep open bowls are characteristic Egyptian forms in all periods, varying only in profile. The term is non-specific, but is limited in the present work to medium/thin-walled bowls with height at least half the diameter, and with rim diameter exceeding maximum body diameter.[233] Such bowls generally range in height from about 7 to 20 cm., sometimes more. They appear only rarely at the end of the Predynastic period, and are derived from pottery forms, but they quickly become common in the Early Dynastic period and early Old Kingdom. They are less common thereafter, although they are consistently present at least into the New Kingdom.[234] Early Dynastic forms have great variety: bases are raised, keeled, flat and rounded, body profiles are convex, concave and straight, and rims incurved, straight, flaring and carinated. Later forms exhibit a much more limited typology.[235] Various mottled hard stones are employed, mainly but not exclusively diorite varieties, but softer stones such as travertine and limestone also are found. Individual bowls often can be dated only through context, although the popular trend in open bowl forms in general seems to be a development from deeper to shallower profiles.

On Crete

Six imported fragmentary bowls are from Knossos,[236] apparently of exclusively domestic use. They all are

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[231] Three other vessels, said to be from Mochlos **{408; 410–411}** but all without context, also exhibit a 'concave collar' neck. Two are in 'calcite,' otherwise not attested for this form at Mochlos. It may be that this is a form popular at Mochlos.

[232] Warren 1969:110 Type 43:C. One example **{292}** has been re-catalogued in the present work from Warren's Type 43:E4, despite its lack of raised base and slightly later date of manufacture. It may be a later development of the Early Dynastic form with raised base. Another **{533}** also has been included here as its description and date are more appropriate despite the recurved rim.

[233] See Petrie 1920:35, pl. XLI:146–148; 1937:6–7, pls. XVI–XXIII:*passim*; Reisner 1931b:137–138:*passim* Types IX–XI; Bernard 1966–1967:pl. XXV:*passim*, XXVII:486–488; El-Khouli 1978:II:778–780 Class VIII–XV:*passim*, III:pls. 86–102:*passim*; B.G. Aston 1994:107–111 #42–49, 114 #54, 115 #60, 128 #103.

[234] See, e.g., Engelbach and Gunn 1923:pl. XLVIII:103; Brunton and Engelbach 1927:pl. XXII:30; XXVIII:24

[235] This is highlighted by Petrie's (1937) typology, devoting five plates to Predynastic and Dynasty I bowls, one to Dynasty II–III, and another to Dynasty III–XVIII. Whilst many of his illustrations are of shallow forms, nonetheless, a decline in stone bowl manufacture after the end of the Early Dynastic is evident. B.G. Aston (1994) too indicates few stone bowls following this period.

[236] See Distribution Map 5.

made in hard mottled stones, including hornblende diorite, andesite porphyry, anorthosite gneiss, and possibly also diorite gneiss. A variety of rims and bases are represented, and all appear to be of medium scale. The only example more or less in context **{135}** has an EM II(B?)–MM IA(–B?) date, if association with early material is correct, but others are from the apparently early 'deposit' north-west of the palace site **{167–169}**. The obsidian rim fragment of a very thin deep open vessel, probably but not certainly a 'deep open bowl' type, is in a clear early EM IIA context **{139}** at Knossos and probably represents a seventh example (albeit of a different sort). The remaining fragments **{289–290}** have no recorded context at Knossos.

Thus the extremely fragmentary evidence suggests these are Pre- or possibly early Proto-Palatial imports, to be associated with the other stone vessel imports from problematic early contexts **{132–134; 136}**. However, at least one **{289}** *may* have been reworked and, if so, probably in the Neo-Palatial period, thus extending the possible date range considerably. The problematic 'north-west palace deposit' also may include later vessels, so is not necessarily 'early' in date.[237] The andesite prophyry vessel from which the rather crude amulet at Myrtos Pyrgos **{416}** is made probably was of the 'deep open bowl' variety. If so, it at least may have been imported at a later date, contemporary to being reworked into an amulet.

The material is fine and very well polished, and the bowls could only have been imported for their own sake as they would never have been employed as transport containers. This seems to be a similar situation to the 'shallow carinated bowls' imported to Knossos during the Proto-Palatial period.[238] Their similar open shape and thinness suggests they may have arrived at about the same time, and for similar purposes, as the 'shallow carinated bowls.' Vessels imported in the Neo-Palatial period characteristically are sturdier, closed forms.

The recorded context dates, if indeed that early,[239] generally are contemporary with the derivative miniature vessels from Mochlos and the Mesara tombs, but they still appear to be later than their date of manufacture. Nonetheless, these bowls made no impact on the island,[240] not least because their distibution is limited to Knossos. They can be seen as status items in use prior to construction of the first palace (at least **{135}** and **{139}**), since contemporary Minoan stone vessels remain comparatively crude, and these imports must have been held in no little regard whenever their employment. Furthermore, some vessels also *may* have been employed during the Proto-Palatial period, if the 'north-west palace deposits' are associated with filling prior to construction of the MM III walls. Additionally, it appears that some may have been reworked by Neo-Palatial artisans, at Myrtos Pyrgos and also possibly at Knossos.[241]

Thus, they are of extremely limited value for any cross-cultural chronological studies, although they do appear to indicate a longevity of use little seen for other imported types.

Two further deep open bowls of travertine and much larger scale were recovered in the 'Royal Tomb' at Isopata **{242–243}**. Their articulated rims appear to be unknown in the Old Kingdom, and they have been identified as Dynasty XVIII in date. These too were not imitated by the Minoans, although at least one **{242}** appears to have been converted into another, probably closed, vessel.

5. Bowls, Shallow Carinated[242]

In Egypt

The shallow carinated bowl is known from Dynasty IV to V/VI, disappearing before the end of the Old Kingdom.[243] All examples are made of anorthosite gneiss, one of the few stones able to sustain the extreme thinness of profile, whilst thicker vessels can be made of travertine. The diameter ranges between 10 and 30 cm., most being higher in this range. Both taller and shallow types, although usually with a rounded bottom, also are found with a flat base. The form imitates the thinness of pottery, where the form also is known.[244] Both stone and clay vessels seem to

[237] See comments in Knossos R.
[238] See Appendix A.5, below.
[239] See Knossos Q–R.
[240] Open bowl forms are common throughout the island (Warren 1969:76–80 Types 31–32) but none appear to be derived from any of these vessels.
[241] None have been recovered on the Greek Mainland, suggesting any Neo-Palatial use was extremely limited.
[242] Warren 1969:75 Type 30:C, 111 Type 43:E.
[243] Quibell 1898:4, pl. II:3:centre, III:2:centre; Bernard 1966–1967:89, pl. XXII:430, XXIII:432. See also Reisner 1931b:178 Type 4-XI b (5); B.G. Aston 1994:133 #112.
[244] See Kelley 1976:pl. 10.1.34, 11.1.44, 12.3.6, 12.4.4., 14.3.upper left.

have developed as a variant of earlier bowl forms having a more 'recurved' than carinated rim,[245] of greater height, thicker wall profile and comparatively smaller height : diameter ratio, which first appear in Dynasty III and also continue into Dynasty VI. A late variant of the form exaggerates the rim to project beyond the carinated shoulder;[246] these too sometimes are found with a flat base.[247] The deeper forms and the late variety with projecting rim also sometimes are found with an integral spout.[248]

No contents have been reported for any bowls found, but they must have been used as serving dishes or possibly for containers, probably for food. They have been recovered only as tomb furniture, but some are inscribed with the name of the owner[249] and may have been used during his lifetime.

On Crete

These beautifully polished vessels are known only from domestic contexts at Knossos.[250] Both the imported form **{175; 291–294}** and its apparent derivations in stone **{172}** and possibly clay **{164}** appear to be limited only to the palace itself except for bowl fragment **{213}** from the 'Unexplored Mansion,' according to its context box.[251] Exceedingly thin, none are intact, and each survives only as a single individual fragment. They must have been very highly prized, as the Minoan stone bowls also were carved in beautiful stones, one imported, and the clay bowl likewise carefully made. The few recorded contexts provide only an MM IIA–improbable early MM III? date range for both imports and local products. All mostly are of approximately equal scale, about 16–20 cm. in diameter, in contrast to the majority of vessel types under consideration, although **{291}** is smaller at 10–10.5 cm. in diameter.

Evans identified two Minoan vessel fragments as 'imitations' of the Egyptian imported bowl, one in stone **{172}** and the other in clay **{164}**. The stone fragment is made of what Evans called "liparite," an imported white-spotted obsidian from the Dodecanese

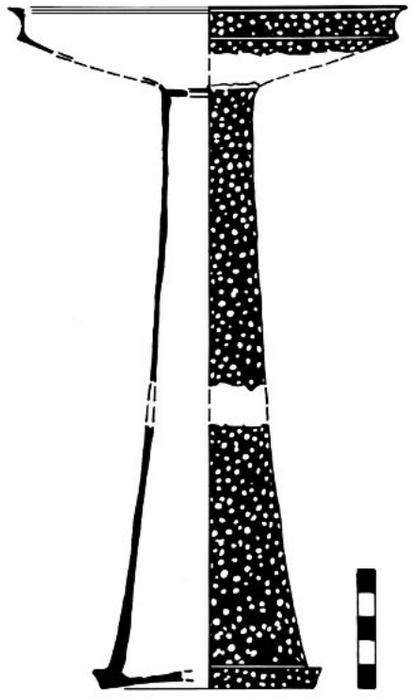

Fig. 4 Pedestal bowl, clay, H (restored): c. 29 cm, from Malia, MM II, painted black with white spots (Pelon and Stürmer 1989:105 fig. 8)

whose colouration is the exact opposite of the black-spotted anorthosite gneiss. Its scale and profile, more recurved than carinated, is similar to both imported rim fragments and one in the Ashmolean Museum that had been excavated in Egypt, and Evans saw it as an imitation of them. He restored both imports and imitation with a rounded bottom, as is the intact Ashmolean Museum bowl. Nonetheless, the only surviving base fragment **{292}** is flat, and it is equally or even more likely that the imported vessels had a flat rather than rounded base. Their preserved profiles are insufficiently shallow to argue against this proposal. The quartz crystal bowl **{213}**, not cited by Evans, also survives only as a rim fragment.

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[245] See Petrie 1937:pl. XXIII:385–386; El-Khouli 1978:III: pl. 89:2516; B.G. Aston 1994:132 #111. See also Brunton 1927:pl. XVIII:6, XXII:Group 429:lower centre. **{289}** may be of this type.

[246] B.G. Aston 1994:134 #117; see also Bernard 1966–1967: pls. XXIII:433, 437, XXIV:441–442, XXIX:544.

[247] See Petrie 1937:7; Kelley 1976:pls. 10.1.34, 11.1.44, 12.3.6, 12.4.4, 14.3:upper left; Bourriau 1981:52–53 #87.

[248] E.g., Petrie 1937:pl. XXIV:408; Bernard 1966–1967:pl. XXIX:544.

[249] E.g. the lector-priest Idy (BM 4695); see Warren 1969:P408.

[250] See Distribution Map 6. One fragmentary example also was recovered in Palace G at Ebla, together with other vessels in the same anorthosite gneiss stone; see Bevan 2001:I:149, II:363 fig. 5.15, with further references. The palace is dated to late EB III, about the first half of Dynasty VI in Egyptian terms, and late EM IIB/early EM III in Minoan terms.

[251] It has no known context, but the 'Mansion' is a distance from the palace limits.

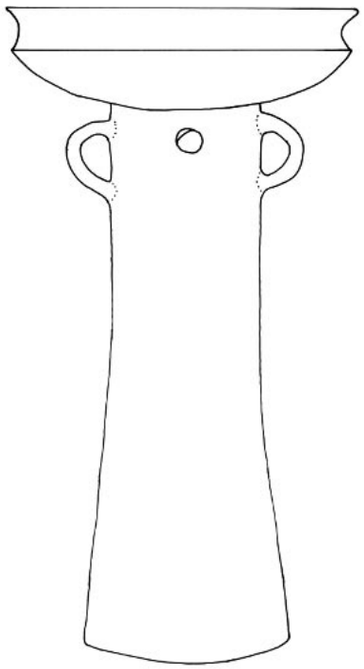

Fig. 5 Tall tubular stand, mottled serpentine, H: 26.3 cm, from Knossos NFC (Warren 1969:102, P 584) with Minoan shallow carinated bowl **{172}**, black obsidian with white spots ('liparite'), at same scale

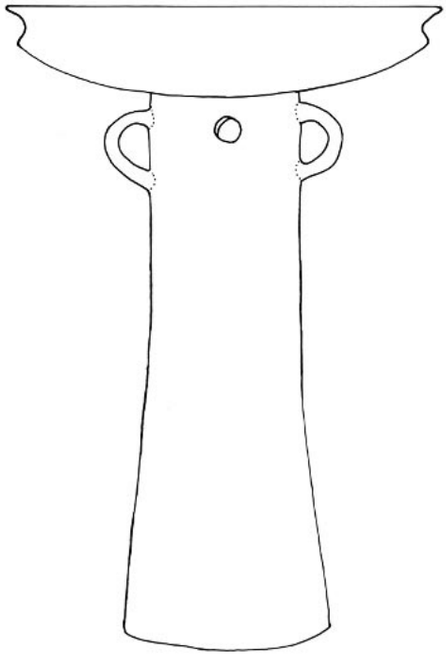

Fig. 6 Tall tubular stand, mottled serpentine, H: 26.3 cm, from Knossos NFC (Warren 1969:102, P 584) with imported Egyptian shallow carinated bowl **{175}**, anorthosite gneiss, at same scale

The clay rim fragment **{164}** is black-painted with white spots around the exterior carination and horizontal white bands below and on the interior. Evans saw this as imitative of "liparite" (white-spotted obsidian), of which a large block was recovered in an MM I stonemaker's atelier at Malia, and he considered both the spotted obsidian and clay bowls[252] were produced in imitation of the imported finds. This seems rather complicated, the clay bowl being an imitation of a Minoan stone imitation of an imported stone vessel type. The situation actually may be simpler.

A small number of fine 'pedestal bowls,' apparently of ritual function, recently have been reconstituted from sherds recovered from several different excavation areas at Malia, and further fragments have been identified from Knossos, Phaestos and Palaikastro, now including bowl **{164}**. The type ranges from MM IB to MM II in date, essentially limited to the Proto-Palatial period.[253] At least one (Fig. 4) is painted black and entirely covered on the exterior with white spotted decoration similar to **{164}** at Knossos. Whilst their painted decoration varies considerably, the bowl portion of these vessels is remarkably similar in profile to the imported carinated bowls. Presuming this is not coincidence, they should be related in some manner.

The Egyptian bowls themselves date to the later Old Kingdom, so they could have been imported at any time after this period and theoretically well before MM IB/II. It is difficult to decide between importation of the Egyptian bowls because they resembled the bowl portion of the pedestalled bowls, or that profile reproducing the already-imported Egyptian vessel; either scenario is possible although the latter is more

[252] Other clay vessels include jugs and bridge-spouted jars, in addition to cups and other fine types. See Schiering 1960:23–24, fig. 13 for some other examples and further references. MacGillivray 1998:*passim* presents a considerable number of such white-spotted vessels, not all of which he associates with the particular 'White-spotted Style' he dates between sometime in MM IIB through MM IIIA (pp. 64–65). He does not include **{164}** amongst vessels in this style, and dates its context to MM IIA.

[253] Pelon and Stürmer 1989. Oddly enough, they did not include the clay bowl **{164}**, which was later identified as a pedestalled bowl by MacGillivray 1998. Neither they nor MacGillivray mention the Egyptian carinated bowls or their possible relationship to the pedestalled bowls.

plausible. If the latter, the pedestalled bowls probably owe their origin as much to development within the fashion for angular 'egg-shell ware'[254] as to possible derivation from the Egyptian bowl form.

Clay bowls on separate tall stands are well-known in Egypt from at least the Old Kingdom.[255] There is no evidence for the carinated stone bowls being used for this purpose in Egypt, although separate tall stone stands for flat stone 'tables' also are well-known there as well as integral 'dished-top' tables.[256] It may be that the imported bowls were employed for use atop separate (Minoan) tall stands and that the spotted obsidian bowl was fashioned for this same purpose. This practice apparently occurred only at Knossos, Malia and possibly the other palaces using only clay pedestal bowls integral with the stand. Thus, in this instance at least, a possible rationale for Minoan (or probably only Knossian) importation of a specific stone vessel form may be suggested. Both integral pedestal bowls and non-integral clay stands and bowls are known in MM III at various sites, but the carinated bowl profile is not found at that time.[257] A unique mottled white and dark green serpentine stand, with two small handles and spout hole near the top and slight depression on the top, recovered without context at Knossos, is suggestive in this regard: it could have been made to hold one of the Egyptian carinated bowls.[258] Compare Fig. 4, the pedestal bowl from Malia, with Figs. 5–6, the serpentine stand with an imported **{175}** and Minoan **{172}** shallow carinated bowl, all to generally same scale.

No specific cross-cultural chronological implications can be inferred from these few vessels. Nonetheless, the date of importation and Minoan use of these Egyptian bowls now can be suggested as only within MM IB–II, limited to the Proto-Palatial period, rather than the later dating implied by their associated MM II–III contexts.[259] Likewise, also, Warren's dating of the serpentine stand should be emended from 'Neo-Palatial' to 'Proto-Palatial.'

Two unrelated bowls having a similar carinated profile should be mentioned here.

One **{412}** is an anomaly in that it is taller and narrower in diameter, and has an open spout at the rim. Apparently recovered at Mochlos, and of a local dolomitic marble perhaps in imitation of anorthosite gneiss, its museum case labels it as 'EM II–III' in date together with other stone vessels from the same source in their collection. Despite appearances, it seems probable that it has little, if anything, to do with Egyptian models.

Fragments of a carinated bowl (or bowls) in faience, probably also imported but just possibly of local origin, were found in a Knossos tomb **{268 (A–B)}** in a context not earlier than LM IA (mature).[260] This faience form develops not from the Dynasty IV–VI stone bowls but is a characteristic Dynasty XVIII faience bowl type, and is unrelated both in date and context to those under discussion here. It is, however, related to New Kingdom metal bowls.[261]

6. Jars, Squat and High-shouldered with Small Undercut Collar[262]

In Egypt

The high-shouldered vessel with small undercut collar is found in a variety of shapes and sizes ranging from large tall to small squat jars, characteristically

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[254] See Walberg 1976:36. She suggests this form may have developed from the depressed semi-globular cup or possibly originated in metal forms. Its dating would correspond to her 'Classical Kamares' phase.

[255] Betancourt *et al.* 1983:32–33, fig. 1. See also Amiran 1970a:47–8, pl. 35–37, pl. 10:6–7; Oren 1997:266 fig. 8.1 for similar Canaanite forms.

[256] Bernard 1966–1967:79, pl. V:72; El-Khouli 1978:III:pl. XXVIII; Reisner 1931b:176 fig. 44:36–37; 1932:198 fig. 20; B.G. Aston 1994:127 #96–98, 133 #114–116.

[257] This is Form 59, Shape 232.1 in Walberg 1976; see fig. 31. Note that other bowl profiles are found, however, and are included in the list of comparanda provided by Pelon and Stürmer 1989:108 n. 18. See also Gesell 1976; Betancourt 1990:fig. 57, 58:1586.

[258] Warren 1969:102 Type 42.B, P584 (HM 2103).

[259] This date range may also be suggested for the 'deep open bowl' form, as it too is a thin-walled open bowl form limited only to Knossos, unlike the other vessel types imported to Crete. Many, in fact, are recovered in the same loose 'north-west corner of palace' contexts as some of the carinated bowl fragments; see Knossos Q.

[260] Evans *PM* I:179 gives its date as MM II and notes "both the form and decoration survive into MM III," suggesting other examples exist. However, the angular profile is common in this period and his other possible examples may have been more general parallels.
The vessel is mentioned here only as its profile is similar. It almost certainly is of late SIP or New Kingdom date, as several having similar spiral decoration on the exterior rim also are known, e.g. Petrie 1906b:pl. 146:9–10, 12–14.

[261] See Petrie 1937:pl. XL:35, Hayes 1953–1959:II:206 fig. 201; Brovarski *et al.* 1982:121–122 #108. Stone examples also are known, e.g., Lilyquist 2003:219 figs. 146–147, dated to the reign of Thutmose III.

[262] Warren 1969:110–111 Type 43:D. As with the spheroid flat-collared jars (see Appendix A.7, below), even the lowest, most squat high-shouldered examples more properly

having a flat unarticulated base, high shoulder and constricted mouth with small undercut collar-rim.[263] All are handless. The body wall tends to be rather thick, but the interior is strongly undercut.[264] A range of materials were employed, from hard stones such as breccia and hornblende diorites to softer types such as travertine, limestone and alabaster.

Two basic types of collar rim can be recognised, the first visibly separated and raised beyond the body profile.[265] The second merely has a wide groove separating the rim and body, and the rim itself tapers inward as if otherwise still part of the shoulder.[266] The collar-rim is an indication that the vessel was used for storage, for it could be covered and sealed easily. Stone lids apparently were not employed (or at least none have been associated), but rather the jar must have been covered with a cloth of some kind and then tied with a string or rope which fitted into the collar groove. There is no chronological distinction or development between these two rim forms. A number of jars have a separately carved rim which fitted and attached to the body, or were made in two halves joined together.

Nor is any chronological distinction or development apparent in general vessel scale, although tall jars appear earlier, at the very end of the Predynastic period (Naqada III). Large (as tall as 75 cm. in height) jars are more common in the Early Dynastic period (Dynasties I–II), while smaller and more squat jars are more common thereafter, but both are known throughout the Early Dynastic and Old Kingdom, and neither appears to survive beyond Dynasty VI.[267] Individual vessels cannot be dated except by context.

On Crete

Three imported jars are known on Crete, one from an 'MM IIIB–LM IA transitional' 'votive deposit' at Katsamba **{118}**, one from an LM II–IIIA1 tomb at Isopata **{247}** and the last from an LM IIIA1 tomb at Katsamba **{117}**.[268] All three are different, one **{117}** with a flat-collared rim, another **{118}** with a nearly upright rim and no collar undercut, and the rim of the Isopata jar **{247}** indicated only by a wide groove on the shoulder. The 'early' jar from Katsamba **{117}** was found with a Minoan lid, which may have been made to fit it.

A fourth jar, from an LM II? tomb at Archanes **{49}**, differs significantly from the others, in that it is larger and has a nearly open aperture, slightly raised base and insignificant collar undercut. It better resembles a 'spheroid jar' type.

Their restricted context date range and type probably are coincidental, all but one being from Final Palatial contexts, but do present difficulties in stressing their closer visual similarity to the Minoan vessels derived from the Early Dynastic spheroid flat-collared jars.[269] A few possibly closer derivations might be suggested in the fragments from Poros **{486}** and Knossos **{214; 228–229}**, two with a solid roll handle tapering to the ends, which also appear to be at least partly derived from the 'blossom-bowl' and earlier Minoan traditions. These are found in MM III–LM IB contexts and, like the alabastra fragments discussed above,[270] *may* have been scrap material. However, their contexts would allow only the 'early' Katsamba vessel **{118}** to be a visual inspiration, unless the others were around for a time before their interment, and it is likely these were more strongly influenced by Minoan 'blossom bowls' than Egyptian imports.

The only intact surviving derivative Minoan high-shouldered jar is one without context from Praisos **{494}**. It is influenced either by the high-shouldered type under discussion here or the 'spheroid jar' form, but is unique in its slightly concave lower body profile exhibited by neither possible prototype. Also thick-walled, its rim strongly resembles the smaller vessel without collar undercut from Katsamba **{118}**.

It seems reasonable to suggest that the Egyptian 'high-shouldered jars' were imported for the same reason(s) and for the same ultimate purpose(s) as the 'spheroid jars.' These purposes appear to include use as containers and ultimately for funerary deposition, as well as the basis for conversion to Minoan jar

should not be considered 'bowls,' and are termed 'jars' in the present study.

[263] Petrie 1937:8, pl. XXIV–XXV:411–499; Reisner 1931b: 145–176:*passim* Type V. See also El-Khouli 1978:II: 775–776 Class III:J–O, III:pl. 72–82 for the profile variety; squat jar forms are Class III:N–O, pl. 79–82; B.G. Aston 1994:122 #82; 123 #84–86, 130 #106–107.

[264] B.G. Aston 1994:123 #86, 130 #107.

[265] Petrie 1937:pls. XXV:455–464; XXVI:478–499; B.G. Aston 1994:123 #84–85, 130 #107.

[266] Petrie 1937:pls. XXIV:411–448; XXV:465–468; B.G. Aston 1994:123 #86, 130 #106.

[267] At Qau-Matmar, this jar form is represented only in the earliest of Seidlmayer's periods; see Seidlmayer 1990:195 fig. 81.Type ST-G and, for dating, 395 fig. 168.

[268] See Distribution Map 7.

[269] See Appendix A.7, below.

[270] See Appendix A.1, above.

forms. They exhibit the same general qualities of thick wall, high shoulder undercut on the interior, flat-collared rim and flat base, capable of being sealed by a cloth, although the imported 'high-shouldered' type in general is smaller than the 'spheroid jar.' Some of the imported vessels classified as 'spheroid jars' also are handless, and we may never know why they were imported or for what they were intended, but the Minoans apparently were not as typologically conscious as are modern researchers. The imported vessels were chosen for specific characteristics, which the 'high-shouldered' and 'spheroid' jars both possessed. The Minoans, unlike the Egyptians, nonetheless adapted these vessels to be covered by a stone lid (e.g., **{117}**), suggesting that at least some were directly employed as containers in their tomb context.

Nonetheless, these vessels can offer little for cross-cultural chronological purposes. All are Old Kingdom vessels recovered as 'antiques' in Late Minoan contexts, and this clearly is insufficient to date the contexts of any further material recovered in the future.

7. Jars, Squat Spheroid Flat-collared with (and without) Roll Handles[271]

In Egypt

The flat-collared variety of jar should not be considered a bowl, a term implying an open shape with wide mouth and non-storage function. Rather they should be considered as squat jars. The jar is an excessively thick-walled closed shape with wide flat collar and either a flat or rounded bottom, and may or may not have two horizontal roll handles on the shoulder. It is normally quite large, some 15–20 cm. in height and up to 30 cm. in diameter, although some are half that size and a few can be up to 35 cm. or more in height and 60 cm. in diameter. Painted pottery vessels of similar profile, especially common during the Predynastic period, are the direct inspiration of the stone jar. After stone vessels were produced, clay jars often imitated the appearance of the stones used, although they were not as thick-walled.[272] Although generally described as 'spheroid,' this term reflects more their initial rounded profile, for later vessels boast a high shoulder and tapering lower body. The materials used include andesite porphyry, breccia, anorthosite gneiss, hornblende diorite, basalt, travertine, limestone and serpentine.[273] Stone examples are associated almost exclusively with royal tombs at Naqada and Abydos and the state centre of Hierakonpolis, and by Dynasty I had acquired an unknown ceremonial function.[274] They often were excessively heavy due to the thickness of the body wall, which must have been a requirement of their specific function. Associated lids are unknown.

The early vessel profile develops initially as a low and baggy rounded form with a sloping shoulder and flaring sharp-edged rim, perforated horizontal roll handles on the shoulder just above a maximum diameter low on the body; and a rounded bottom, generally following the clay vessel profile. Height : diameter ratio varies considerably, as does scale.[275] Few are further embellished, but some sport vertical ribbing or fluting from the upper shoulder down and then often also on the handles, sometimes with a horizontal termination band on the upper shoulder. The shoulder gradually rises to a distinguishable high-shouldered profile, with handles at or just above the maximum diameter, a thicker body profile and rim, and sometimes a flat or even low raised base by Dynasty I. This form seems to die out sometime in Dynasty II.[276]

Dynasty I seems to be a period of transition, during which some early features decline and new features develop. The latter include a thicker, flattened rim that further undercuts the interior cavity and restricts the aperture, superseding the sharp flaring rim. The shoulder is increasingly emphasised, and the bottom is as often flattened as rounded. The type continues to develop through Dynasty II, and by Dynasty III the relative body height is increased,

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[271] Warren 1969:74–75 Type 30:A, 108–110 Type 43:A. Warren's terminology uses the term 'bowl' instead.

[272] For the larger vessels, see Quibell 1900:11, pl. XXXVI: upper, XXXVII:bottom; Adams 1974:50 #272.

[273] This jar type intergrades strongly with the 'heart-shaped' and 'high-shouldered' jar forms discussed elsewhere in this study; see Appendix A.6, above and A.9, below.

[274] Reisner 1931b:164. See El-Khouli 1978:II:218 #1515, 221 #1533–1535, III:pls. 59:1515, 60:1533–1535; B.G. Aston 1994:91 #1–2 (list).

[275] See Petrie 1920:35, pl. XXXVII; Reisner 1931b:133–136:*passim* Type III; El-Khouli 1978:II:772–773 Class II: H–I, III:pl. 59–62; B.G. Aston 1994:91 #1–2. The transition from sharp-edged to thicker and flattened rim and increasing emphasis on the collar are seen especially in El-Khouli's range of profiles.

[276] That found in a Dendera tomb dating to later Dynasty VI (Seidlmayer 1990:115 fig. 41.lower right; see p. 395 fig. 168 for dating) likely is an antiquity or heirloom.

the shoulder is raised higher still and the rim characteristically is a wide flattened and slightly undercut collar, more often with handles unperforated.[277] This form continues into Dynasty V, the handles of the latest examples characteristically remaining unperforated. The very few further embellished with similar vertical ribbing or fluting appear limited to Dynasty I, as are a very limited number with raised (ring) base.

A handless variety with a similar profile also developed in Dynasty I, including the high shoulder and collar not (or little) undercut on the exterior.[278] As with the handled vessels, definitive characteristics are the excessively thick wall and flat collared rim. Both flattened and rounded bottoms are found. This handless variant seems not to have continued beyond Dynasty IV. A very limited number of jars with no undercut below the exterior rim also are known, and seem to date to Dynasty I.

Characteristically, then, the evenly spheroid profile and sharp flaring rim are typical of the Predynastic period (Naqada II–III) and Dynasties I–II, whilst the more shouldered variety with flattened collar having an undercut interior profile is prevalent in the Early Dynastic and earlier part of the Old Kingdom (Dynasties I–IV). Perforated handles are found from Naqada II to Dynasty IV. The handless variant also seems limited to Dynasty I–IV, whilst unperforated handles, although found earlier, are more typical of Dynasties III–V. Flat-bottomed profiles are not found before Dynasty I, but those with a raised base seem to be restricted to the late Predynastic and Dynasty I.[279] The exterior collar undercutting seems to diminish with time. The very limited number of examples with vertical fluting or ribbing are limited to Dynasty I. Undoubtedly, exceptions to all these statements probably could be found, but the vessels recovered on Crete are dated in Egyptian terms on this basis in the present study.

On Crete

Imported examples are found chiefly at the palatial sites,[280] especially at and around Knossos with eight or nine complete or fragmentary jars **{133; 143; 165–166; 171?; 194; 230; 235; 241?}**, and one in a tomb at the Knossian satellite of Katsamba **{115}**. One more (if imported) is found farther afield, in a tomb at Angeliana **{45?}**. Two were found at Kato Zakro **{104–105}** palace. They are extremely limited elsewhere, only at Myrtos Pyrgos **{415}** as a single scrap fragment and at Syme **{507}**. They are recovered in funerary, religious, palatial and occupation contexts. Therefore they seem also not to have been dispersed beyond the immediate vicinity of the palaces themselves, although probably the Minoans put them to a variety of different uses. Almost all those few imports from ritual contexts have been converted into Minoan vessels.[281] One from Knossos **{171}** is 'enormous,' although fragmentary. Unrelated large thick jar rim and body fragments found at Knossos **{222; 234}** suggest the possibility that some fragments identified as these squat jars may be of the taller form instead.

Three further jars[282] were recovered on the Mainland at Mycenae **{586–587}** and Pylos **{596}**. They had been converted into Minoan vessel forms, and were recovered not in tombs but in the debris of both palatial and élite habitation contexts. Thus their purpose on the Mainland appears to differ from Cretan use.

The vast majority of these imported vessels are recovered without context at Knossos, but those having a datable context can be useful. For the record, their context periods may be listed as follows.

Pre-Palatial (?) (some LM sherds included in context box): Knossos **{133–134}**.

Pre-Palatial or Proto-Palatial: Knossos **{171}**.

Neo-Palatial: Kato Zakro **{104–105}**; Knossos **{194}**; Myrtos Pyrgos **{415}**.

Neo-Palatial–End Palatial: Knossos **{143}**.

Final Palatial: Katsamba **{115}**; Knossos **{241}**.

Final Palatial/Post Palatial: Knossos **{230}**.

End Palatial: Pylos **{596}**; perhaps Angeliana **{45?}**.

Without datable context: Knossos **{165–167; 235; 295}**; Syme **{507}**; Mycenae **{586–587}**.

The vast majority of imports with features indicated have the high shoulder, flat base and not-undercut collar indicative more of the later, Early Dynastic and Old Kingdom, type rather than the Predynastic rounded or oval profile and deeply undercut

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[277] See Petrie 1937:pl. XV:168; Bernard 1996–1997:pl. XIII:232; El-Khouli 1978:II:777–778 Class VI–VII, III:pl. 84–85; B.G. Aston 1994:131 #108.

[278] See El-Khouli 1978:II:778–779 Class VIII–IX, III:pl. 86–89:2340, 2364–2366, 2436m 2352–2536.

[279] See El-Khouli 1978:III:pls. 58–59:1472–1539 *passim*.

[280] See Distribution Map 8.

[281] See Appendix B.

[282] Possibly to be considered 'high-shouldered jars' instead; see Appendix A.6, above.

rim. Unfeatured fragments may be Predynastic but no vessel can be assigned only to that period, and they more likely are not.

Minoan vessels influenced by these imports, however, are scattered throughout the island, with examples at Gournes **{74}**, Kamilari **{99}**, Palaikastro **{430}**, Pinies **{457}**, Tsoutsouros **{515}**, and multiple examples at Katsamba **{120–122}**, Knossos **{134; 177; 267; 273–274; 295–298; 299–301}**, Aghia Triadha **{5–7; 16–17}** and perhaps just the island itself **{536A?}**. That from Angeliana **{45}** may also be Minoan work. Their local origin is indicated by two major characteristics: locally available stone and smaller scale. The material mostly is gabbro, but basalt(?) and (Cretan?) diorite are represented, as well as a few of the softer dolomitic marble and limestone, together with the lapis lacedaemonius and antico rosso(?) imported onto Crete. Measurable imports are no smaller than >11 cm. **{143}** and frequently larger in height whilst, with a single (and unusual) exception **{7}**, the Minoan vessels consistently are within 6–9 cm. in height.

They also and unsurprisingly are more varied in presentation. Many do not possess the excessively wide undercut flat-topped collar of the Egyptian original but instead merely a thickened angular rim not very undercut, characteristic of later developments in the Egyptian form. Minoan touches have been added, in the multiple rows of horizontal shoulder fluting **{5; 16–17; 74; 273; 536A}**, rims with either radiating **{5; 16–17}** or concentric grooves **{7}**. Handles are either unperforated **{5–6; 16–17; 74; 273; 457; 515}** or perforated **{122; 430}**, and those of three vessels **{16–17; 273}** are vertically ribbed. Most have a raised base **{5–7; 16–17; 74; 99; 121–122; 267; 273; 298; 301; 430; 457}**, whilst the remainder are flat **{45; 120}**; none have a rounded bottom. Three exhibit a large hole through the upper shoulder **{177; 267; 299}** and one has been drilled several times on the shoulder **{7}**, the latter presumably for the attachment of three equidistant vertical handles.

Clearly, although certain features of the Egyptian 'spheroid jar' were adopted by the Minoan artisan, most prominently a thicker flatter collar, thicker section and generally high shoulder, the vessels having some relationship to the imports were intended for several several different purposes on Crete. Almost all preserved bases are raised, to varying degrees, a feature rarely encountered in Egypt. The horizontal shoulder fluting and rim grooving are not found in Egypt at all, and the handle ribbing is quite rare there. The taller Minoan examples are similar in profile to tall jars and especially to bridge-spouted jars, and indeed the two spout-holes probably were intended for this purpose, despite the lack of handles on the one complete example.[283] The three-handled vase **{7}** may have had a function similar to others having three stone handles.[284] Other vessels have a high rounded shoulder with horizontally-fluting, and may simply be a variation of a Minoan type but with added roll handle drawn from Egyptian imports, a suggestion proposed here to account for the presence of both features on the apparently earliest datable example **{273}**.

This Minoan vessel type, the 'blossom bowl,'[285] appeared in MM III. It is made of a relatively soft stone (usually serpentine or steatite) with a thick section, high shoulder, and no collar, flat base and rather small interior capacity. Classically, it is incised as a stylised six- or eight-petalled flower on the exterior, hence the name. Other incised designs also appear with this same general profile, either with a horizontally fluted shoulder or diagonally spiralled body ribs.[286] A very few are left undecorated, and are known as 'bird's nest bowls.' All appear to be developments of the earlier, smaller (and sometimes decorated) Pre-Palatial 'bird's nest bowl' type.[287] All the Neo-Palatial bowls are the same basic shape and size, but the various designs presumably indicate either different functions or different inherent meanings for the Neo-Palatial Minoans. They are found throughout the island.

Some of these 'blossom bowl' types are hybridised with the imported spheroid and high-shouldered jar form to produce the vessels under consideration here, as the majority of these vessels appear strongly related in profile to, and should be at least partly derived from, them. Only the plain and horizontally fluted vessels are affected; those with petalled and spiral decoration are not. Warren[288] notes that the 'egyptianis-

[283] It may be an unfinished piece.

[284] E.g., Warren 1969:P322, 324 ('pithoi'); Sakellarakis 1976:pl. I.b, II.7; **{373}**.

[285] Warren 1969:14–17 Type 5.

[286] Warren 1969:26–27 Type 9:A–B. One example of Type A (horizontally fluted on the shoulder) is recorded in an unpublished Proto-Palatial context at Knossos.

[287] Warren 1969:7–11 Type 3; see p. 9 for discussion of the MM III–LM I vessels of larger scale.

[288] Warren 1969:74.

ing' vessels are carved in hard stones and sometimes also reproduce the internal base ring, both features characteristic of Egyptian jars including one from Knossos **{168}**. It should be noted, however, that these vessels almost inevitably have a raised base, a feature not found either on known Egyptian imports[289] nor any variety of the 'blossom bowl' type. The rim usually is thick and 'blunted' at the top, suggesting a flat collar, and many have (usually unperforated) horizontal roll handles. These 'egyptianising' features must have been included either for practical or aesthetic reasons not considered necessary for the other forms. The raised base and flattened rim collar together are suggestive of perceived definite purpose(s), possibly not unrelated in origin to the bridge-spouted jar, the only other vessel type with similar date and profile. Thus, these vessels clearly do not *directly* copy the Egyptian form, but have employed and adapted it together with other indigenous forms for Minoan purposes.

The Minoan vessels are recovered in both occupation and funerary, and possibly also palatial, contexts. This too is unsurprising, especially if their intended purposes were multiple. Occupation finds chiefly come from the residential area of Aghia Triadha **{5–7; 16–17}**, but also Palaikastro **{430}** but none were found in any definable situation. Tomb finds **{45?; 74; 99; 267; 273–274}** presumably were used as containers for some funerary offering goods. The one **{134?}** recovered in the Knossos box *may* be palatial or occupational, although both its specific origin and context date must remain questionable. Contexts, when known, range in date from MM IIB(?) through LM IIIC, but their date of manufacture probably extended no later than LM IB or perhaps LM IIIA1.

The vast majority of these derivative vessels are recovered in Neo-Palatial or later contexts or are without context, at a variety of major but non-palatial sites. For the record, their context periods may be listed as follows.

Neo-Palatial: Aghia Triadha **{5–7}**; Kamilari **{99}**; Knossos **{273–274}**; Poros **{486}**.

Final Palatial: Archanes **{61}**.

Final Palatial–End Palatial: Kalyvia **{85}**.

Final Palatial–Post-Palatial: Knossos **{267}**.

End Palatial: Gournes **{74}**.; perhaps Angeliana **{45?}**;

Without datable context: Aghia Triadha **{16–17}**; Katsamba **{120–122}**; Knossos **{177; 296–301}**; Palaikastro **{430}**; Pinies **{457}**; Praisos **{494}**; Tsoutsouros **{515}**, perhaps Crete **{536A?}**.

The Egyptian jars generally range in date between late Predynastic (Naqada II) and Dynasty V, and thus clearly are much earlier than the Neo-Palatial period during which they influenced Minoan vessel production. Some may have earlier contexts, apparently only at Knossos, but these contexts are inadequately recorded or ambiguous, and a Neo-Palatial connection cannot be wholly excluded. Thus it seems that, even if some few vessels or vessel fragments arrived at Knossos prior to Neo-Palatial, they had little if any impact until this period.

Thus these vessels are of some assistance in refining cross-cultural relative chronology. By their predominance within a limited dating range, the relative scale of their importation, popular use and influence on Crete most likely lies within Neo-Palatial (MM III–LM I), probably extending into Final Palatial. Their use *may* have continued into the End Palatial period but, apart from those recovered on the Mainland, no context can be dated as late as LM IIIB and then only as occupation debris. It may be that, since the related but smaller-scale 'high shouldered bowls'[290] appear to be mostly limited in context date to within Final Palatial, Minoan taste gravitated over time towards smaller scale vessels.

A tall variety of the 'spheroid jar' is represented by two vessels from Archanes **{61}** and Kalyvia **{85}**. Warren (1969) had placed them within the 'heart-shaped jar' type. Their origin and relationship is discussed in that section.[291]

8. Jars, Cylindrical with Everted Rim and Base[292]

In Egypt

The cylindrical jar having both rim and base everted is a developed variety of the earlier form having only an everted rim that first appeared within the Predynastic period.[293] Usually but not universally travertine or gypsum was the stone employed. The profile

[289] The raised base is known on indigenous Egyptian bowls of this type, but is not represented on imports to Crete with the possible exception of jar **{104}**, if this feature is not a Minoan alteration.

[290] See Appendix A.6, above.

[291] See Appendix A.11, below.

[292] Warren 1969:75–76 Type 30:D, 111 Type 43:F.

[293] Petrie 1937:3–5, pl. VI–XII; Bernard 1966–1967:79. B.G. Aston 1994:99–105, reassessing Petrie 1937:pl. XIII, specifically investigated detailed dating markers of this vessel type. She calls the form 'cylinder beaker.' Although the form with its open aperture does more resemble a

usually is not strictly cylindrical but almost always is either convex or concave to various degrees, although convex profiles are limited to not later than Dynasty I and cylindrical profiles are known. Jars have been found from rather large (>22 cm.) to 'miniature' (<6 cm.) scale; the latter tend to be 'dummy' or 'model' vessels with very small cavity for placement in the grave or tomb. A gradual development can be noted, as the convex exterior profile characteristic of the Naqada-Dynasty I period becomes more angular and then concave until the base splays and eventually (in Dynasty V) can be almost the same diameter as the rim.[294] By Dynasty VI the everted base is surprisingly prominent both in large and smaller scale,[295] a feature continuing throughout the First Intermediate Period and early Middle Kingdom.[296] Contemporaneous exaggerated squat and elongated examples both are frequent enough for comment. B.G. Aston also notes a characteristic thinning of the projecting rim into the Old Kingdom, which continues into the Middle Kingdom when the projection itself shortens. Within the First Intermediate Period, the exaggerated features generally are reduced and by the Middle Kingdom the everted base is rare. The vessel, with splayed but not everted base, continues into the New Kingdom with little variation, still being found especially in tombs. The change from body to everted base sometimes is indicated.[297] The entire development follows a logical progression and, although there is much leeway for individual vessels, a date range with a few dynasties generally is possible.

The cylindrical jar (with everted rim, splayed base and a fitted lid sealed with cloth and a string tie) appears as two hieroglyphic signs (W 1–2) in the Old Kingdom, as ideogrammes or logogrammes for 'unguent,' 'ointment' and 'jar.' It frequently is depicted as the container for some but not all the 'Seven Sacred Oils,' although actual sets of these oil containers normally consist only of the 'cylinder jar' type.[298] Actual vessels, some still sealed with cloth and string, are found in tombs. Although most often recovered in tombs, the vessel was not solely for funerary use.[299] Its employment as a container for unguents/ointments is secure.

On Crete

The earliest imported Egyptian form 'imitated' by the Minoans was a particular type of cylindrical jar with everted rim and base. Only two definitely imported stone examples are known on the island, both from Knossos **{136; 311}**.[300] Both are travertine, larger in scale than their Minoan derivations,[301] and date from Dynasty V–FIP. One came from a domestic context and the other may also have done so. A third example **{132}**, now not located, also seems to be from a Knossos domestic context, not later than EM II. If a genuine import, it should date not later than Dynasty IV[302] and is smaller in scale than the other two examples at Knossos. A base fragment, it seems to be much earlier than the others as it has no basal eversion or splaying. Unfortunately, therefore, all known imported examples cannot be employed for any cross-cultural correlation. It was, however, the basis for several derivative Minoan vessels.

All the known Minoan examples of this form were recovered in tomb contexts, at Mochlos **{406–407}** and in the western Mesara tholoi at Aghia Triadha **{26–27**, **31–33**, **36?}**, Kamilari **{98}**, Marathokephalo **{393}**, Platanos **{460**, **480}**, and Porti **{492}**. Thus in general they cannot be dated more closely than late

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beaker than a jar, the term 'beaker' implies a drinking function rather than its accepted function as a container, and the present study continues to employ the term 'jar' for this reason.

[294] See Petrie 1937:pl. XI; Ward 1971:99–100:figs. 16–17. Concave forms are found in the Predynastic periods and throughout the Old Kingdom, but the convex form seems to disappear by Dynasty II.

[295] See Bernard 1966–1967:80, pl. III:40, 46, IV:55, 64 for inscribed royal examples.

[296] See, for example, the progression of this vessel type at Qau-Matmar through Seidlmayer's various periods, ranging from early Dynasty VI through early Dynasty XII (Seidlmayer 1990:195–198 figs. 81–84.Types ST-B1 through B5; for dating, see *Ibid*.395 fig. 168).

[297] E.g., MMA 27.3.407–412, 25.3.44–49. See also Hayes 1953–1959:II:fig. 47:top; Schoske 1990:60 #5, B.G. Aston 1994:104 #34.

[298] See Schoske 1990:12 fig. 9; Hayes 1953–1959:I:117, 242–245.

[299] See Hayes 1953–1959:I:127, fig. 77:right.

[300] See Distribution Map 9. The suggested third example **{132}** not only cannot be located but most certainly did not possess an everted base. Although its type is found in Egypt, it is likely a local product. It is just possible that **{226}** is a fourth example; it is from an LM II context at Knossos but is more likely to have been the rim of a flat lid and is taken as such in the catalogue. An example in faience **{396}** from Maronia Siteas, of similar profile to **{132}**, may be another. See also **{585}** found at Akrotiri on Thera.

[301] Jar **{311}** is about 10 cm. in height, and fragment **{136}** would have been about the same. Both are larger than the indigenous vessels, which are 3.5–4.5 cm. in height.

[302] Following B.G. Aston 1994:99 fig. 20.

EM II–MM I/II within the confines of their context date, although a more precise delineation is possible in certain cases. The vast majority of pottery in the Porti tholos are MM IA types, suggesting the most likely date of interment for its one stone jar; its contents nonetheless range between EM II and MM IIB, making an MM IA interment uncertain. The Kamilari tholos was constructed in MM IB, suggesting the stone vessel found within should date no earlier and therefore is the only example definitively to exclude a Pre-Palatial context date. Aghia Triadha Tholos B apparently lacks MM IB pottery, suggesting it was not in use at that time and the stone vessels should not be of that date, although material both earlier (EM III–MM IA) and later (MM IIA–IIIA) was recovered. Essentially, then, these vessels should be considered a Pre-Palatial form, extending briefly into the Proto-Palatial period.

All are of local materials, chiefly dolomitic limestone or dolomitic marble but also chlorite **{98}**[303] and (possibly in imitation of the imports) local calcite. With the exception of the Mochlos jars most are, comparatively speaking, thick-walled and chunky with curving rather than angular profiles and more 'thickened' than 'everted' rims and bases. Unlike the indigenous 'miniature amphorae,' they rarely exhibit a cursorily hollowed interior cavity. None exhibit roughly gouged out interiors, even the one vessel made of chlorite, suggesting a greater interest in the functionality of the vessel, and they are more likely to have been functional vessels rather than token burial offering. While their original inspiration is obvious, it is disconcerting to realise that none have been found anywhere near the area of Knossos, whilst no import has been found near either Mochlos or the Mesara.

A number of patterns can be discerned for these vessels, as those recovered in the same contexts tend to exhibit similar qualities. Only two examples, for example, have been found beyond the Mesara, both at Mochlos, and these two are quite different from the rest. Although both Minoan due to their local material, they are finely and thinly carved, and indeed seem to directly copy finely-made Egyptian originals. They surely can be dated later than EM II, although the date range of their Egyptian model would allow at least an EM IIB manufacture date.

Also interesting is the apparent archaism of the convex-sided vases at Aghia Triadha Tholos A **{26–27}**, Kamilari **{98}**, Marathokephalo **{393}** and Platanos **{460; 480}**, here called 'Type A.' This stands in contrast to the concave vessels from Aghia Triadha Tholos B **{31–33}**, Porti **{492}**, and Mochlos **{406–407}**, as well as the one vessel said to be from Aghia Triadha **{36}**. Compare, also, the distinction between concave and convex in the two tholos groups at Aghia Triadha, **{26–27}** from Tholos A and **{31–33}** from Tholos B. The Type A jar is characterised by being short and squat in height : diameter ratio, whilst the Type B jar in contrast are comparatively tall and narrow. This belies their actual comparative scale, for Type A jars range between 4.1 and 5.4cm, whilst Type B jars are distinctly smaller, ranging between 3.45 and 4.2cm. Thus they may represent distinct workshop sub-groups within the Mesara, suggesting models having different profiles or perhaps some differential influence of indigenous Minoan vessel forms. The available contextual evidence cannot ascertain whether a different date of manufacture may be the cause; certainly the Type A Kamilari vessel must be of late date, unless it is reused from an earlier interment elsewhere.

Of the Type B vessels, those from Mochlos **{406–407}** are more finely made and have a more exaggerated eversion of both rim and base than those from the Mesara, and may represent again a third 'Type C.' The contexts of both continue through into LM I, so again a chronological distinction cannot be determined.

The Minoan examples therefore appear to be derived from two basic forms of the Egyptian vessel, one having a convex body profile (Type A) and the other a concave one (Type B). Both, however, tend to imitate the late Old Kingdom–FIP exaggerated rim and base profiles rather than earlier or later types, paralleling the few (but reasonably contemporary) imported examples. Certainly there is a definite tendency to emphasise the basal eversion most prominent at that time but, with the exception of the Mochlos pieces, the jars are comparatively too crude for definitive statement. Perhaps their Egyptian model was the miniature 'model/dummy' form of the type which itself tended to be comparatively crudely carved but, since no imports have been recovered either in the Mesara or Mochlos regions, comment is difficult.

These jars appear to be 'egyptianised' variants hybridised with several different vessel forms all gen-

[303] The rim fragment suggested to be Warren's Type 30(:D) from an LM IB context in Pseira town **{497}** probably is not this vessel type.

erally contemporary in the Mesara and at Mochlos. These may include Warren's EM III–MM I/II Type 8:D bowls 'with carinated or curved profile and everted rim, tall in proportion to diameter,'[304] EM III–MM I Type 20:A jars 'with incurved or flaring sides with height about equal to diameter,'[305] EM II–III Type 29:A 'miniature goblets,'[306] and EM III–MM I Type 36:B 'small open pot usually with everted bases.'[307] The extreme rarity of the 'egyptianising' details of everted rim and base on miniature jars of this general form within these tombs should be emphasised. Only two were recovered amongst the estimated two hundred burials in Tholos A at Aghia Triadha and most are found as a single example in their communal tomb, in use for centuries, in only a very few of all known Mesara tholoi. Thus they may have been the conceit of only a few individuals (either artisans or owners) during the Pre-Palatial period.

With the rise of the palatial system, use of the cylindrical vessel form essentially died out on Crete by the MM IB period (roughly 1925/1900–1875/1800), when communal burial practice had declined in popularity, even though the Egyptian form continued – and continued to develop – in Egypt, even well into the New Kingdom. For unknown reasons, the Minoans had no more use for it, and no Minoan vessel form presents itself as its replacement except, perhaps, Warren's Type 20A ('jar with incurved or flaring sides, tumbler with height about equal to diameter'), which developed in EM III (roughly 2300/2150–2160/2000) and apparently continued beyond MM IB.

Their cross-cultural chronological value seems to be nil, but their very presence indicates an interest in adapting foreign features in the Pre-Palatial Mesara, probably amongst a very few élite members of the communal tholoi. We have no means of ascertaining whether this was a short- or long-lived fashion, but seems to have attracted at least two variations of the vessel type, at least one of which was no longer produced in Egypt at the time. However, the distinction may not have originated in Egypt but in Crete itself. The two types may have been at minimum the products of two different artisans or workshops, and clearly are separated by site or, in the case of Aghia Triadha, tholos.

One other imported cylinder jar was recovered, in a late LM IA context at Akrotiri on Thera **{585}**; see discussion in Appendix B.

9. Jars, 'Heart-shaped'[308]

In Egypt

The 'heart-shaped' jar is one form of the Predynastic-Early Dynastic stone jar/bowl with similar basic features but a variety of relative proportions. The particular identification is dependant on the ratio of height to diameter. They probably served several differing functions, and range from miniature to quite large scale. Jars characteristically have an articulated rim and two small perforated horizontal handles on the shoulder. The profile may be 'barrel-shaped' or with a distinct shoulder and, while the majority have either a raised or flat base, some merely are rounded to a flat bottom.[309] Materials vary but, with few exceptions, are of hard stones such as andesite porphyry, breccia and basalt. Jars range in height from 6–30 cm. They are most often found in tombs, but probably also were used by the living. None are inscribed but most are quite well made.

The 'barrel-shaped' profile is a typical Predynastic form, ranging in date from the Naqada II period to Dynasty I. The rim is sharp-edged and the base flat, and it has two perforated horizontal handles on the lower shoulder.[310] A higher 'shouldered' form develops by late Naqada II, otherwise with similar features.[311] Both forms develop a more rounded and sometimes flat-collared rim in Dynasty I, but only the 'shouldered' type continues beyond that date into Dynasty IV, with the later characteristic rounded rim profile.[312]

Basically, development is distinuished by a

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[304] Warren 1969:21–24; in particular for Type A jars.

[305] Warren 1969:44–45; in particular for Type B jars. No examples from Mochlos are listed.

[306] Warren 1969:72–73; in particular for **{33}**, **{393}**, possibly **{480}**.

[307] Warren 1969:91–93.

[308] Warren 1969:75 Type 30:B, 110 Type 43:B. Petrie 1920:35 calls them 'shouldered jars,' El-Khouli 1978:I:187 'jars (with) perforated handles,' and B.G. Aston 1994:92, 121 '(tall) shouldered jar with tubular handles.'

[309] See Petrie 1920:pl. XXV, XXVIII–XXIX; El-Khouli 1978: II:771–772 Class II:D–F, III:pl. 54–57:*passim*, esp. pl. 55.

[310] B.G. Aston 1994:92 #4. A related form with similar features but a footed base occurs earlier, in Naqada I, but extends only into Naqada II; see B.G. Aston 1994:95 #12–13.

[311] B.G. Aston 1994:29–92 #5.

[312] B.G. Aston 1994:121–122 #78–79. Medium and squat versions of the 'shouldered' form also develop, the latter not very distinguishable from the 'spheroid jar' and the 'shouldered' form with the 'shouldered jar;' see B.G. Aston 1994: 121–122 #80–81 and Appendix A.6 and A.7, above.

change in the rim from sharp to rounded (and even flat-collared) over Dynasty I, and the predominance of the 'shouldered' rather than the 'barrel-shaped' form after this period. This pattern follows the changing profile of spheroid flat-collared jars having similar handles and 'miniature amphorae' described above, with which these jars integrate,[313] and reflects the trend in stone vessel profiles generally.

On Crete

These jars were apparently distinguished by Warren from 'miniature amphorae' on two basic criteria: they generally are taller (over 8 cm.) in height and appear in contexts of much later, Neo-Palatial and Final Palatial, date (LM IB–IIIA).[314] There are few examples either of Egyptian or his apparently 'egyptianising' Minoan vessels, and a relationship is made more difficult by a distinct lack of similarity between his listed imports and their 'imitations.'[315] Basically his type-group seems to have been a 'catch-all,' although the one Egyptian import **{428}** undoubtedly is as stated and of Early Dynastic date.[316] None of his 'imitations' **{85; 429;** now also **61}** seem related to it, including that from the same context, and they should not be considered as a distinguishable Minoan type. If they are derived from the imported 'heart-shaped jar,' they are far removed from their source of inspiration. The main criterion for grouping these vessels together is their generally tall (not squat) appearance, and their generally similar (8–10 cm.) height.

This having been said, it is difficult to place these vessels within the Minoan repertoire. Jars **{61}** and **{85}** are best seen as variant derivatives of the Egyptian spheroid jar with horizontal lug handles,[317] based on the tall variety of the form. No imported tall spheroid jar has been recovered on Crete, however. They may be late versions of the type since they are both from tomb contexts not earlier than LM IIIA, and are slightly taller in height (c. 10 cm.) to the 'squat' derivatives.[318]

Jar **{429}** on the other hand, is quite different from, and entirely unrelated to, the 'heart-shaped jar' type and also seems unrelated to any Minoan forms; it is described here as a 'shouldered jar.'[319] It is, however, of the same general scale as the others. Apart from the lack of handles, it boasts an upright and not-undercut collar with unusual squared flat-topped rim that otherwise is found on Crete only on a few Minoan jugs.[320] It is a Minoan product in a local material possibly but not necessarily chosen to resemble the imported stone.

This one imported 'heart-shaped' and two tall 'spheroid' jars provide no hint of any cross-cultural chronological value, except adding to the repertoire of Early Dynastic vessels in Late Minoan contexts. Together with their incorrectly attributed 'derivations,' this is a disparate 'group' that seems to fragment into several different types: 1) the unique 'heart-shaped jar' import in a Neo-Palatial context, with no cultural influence on the island,[321] 2) the indigenous handless 'shouldered jar' with squared, not undercut flat rim, in the same Neo-Palatial context, and 3) the two similar tall 'spheroid jars' with flat collar rim, horizontal handles and raised base in LM III contexts.

In addition, one larger-scale 'heart-shaped jar' was imported to Crete, converted into a rhyton, then exported to Mycenae and finally interred there in CT 55, a wide-ranging LH IIB–III chamber tomb burial **{592}**. Its appearance, if nothing else, underlines the probable importation of the Palaikastro vessel in the Neo-Palatial period.

10. Lids

In Egypt

Typological development in stone vessel lids has been little considered and can be little discerned throughout the Predynastic and Dynastic periods. They are not discussed by Bernard (1965–1966) and merely as peripheral associates to vessels by El-Khouli (1978) and Petrie (1937), whilst B.G. Aston isolates only a single, decorated type of Dynasty XIX–XX.[322] Nonetheless, lids regularly accompany certain vessel forms, including cylinder jars, alabastra, vari-

[313] See Appendix A.3 and A.7, above.

[314] Another (NAM 2919) was found in Mycenae Chamber Tomb 55, dated generally to LH II–III period. See Warren 1969:114 Type 43:B (Mainland).

[315] Warren 1969:110 Type 43:B *contra* 75 Type 30:B.

[316] The other two examples he lists **{302; 519}** are rejected in the present work for reasons discussed in the catalogue.

[317] See Appendix A.7, above.

[318] Warren 1969:74–75 Type 30:A. Compare, for example, this jar with Minoan spheroid jars **{6}** and **{457}**.

[319] To be distinguished from the 'miniature amphorae' of Appendix A.3 by its larger scale, flat-topped rim and late context. Note that the 'spheroid jar' from Syme **{507}** also has a similar flat-topped but not undercut rim.

[320] E.g., Warren 1969:P273, D161.

[321] See Distribution Map 10.

[322] El-Khouli 1978:III:pl. 69.1651 illustrates a single Dynasty III jar with domed lid. B.G. Aston 1994:158 #198, but see also pp. 138 #133, 142 #146, 143–144 #154–155 for lids accompanying certain forms.

ous shouldered jars and kohl pots, and other closed forms intended for storage or in order to prevent dehydration of their contents.

Lids can be found in a wide variety of stones, as they normally are made in the same stone as the vessel they are intended to cover, and are made to fit its mouth. Travertine is especially common, but various diorites, breccias, limestone, anorthosite gneiss, serpentine, and others also are found.

The usual stone lid form is handless, either a flat disc or with a slightly to sometimes quite high domed profile. The flat lid is far more common than the domed lid in the New Kingdom. The underside can be flat, or much more commonly inset below to fit the vessel mouth. B.G. Aston's one cited distinct type, a domed form inset below, is distinguished only because it has incised decoration on top. Both underside types seem to have been in use from the Old Kingdom but the fitted inset most likely is a development of the flat disc shape, and is far more common at least from Dynasty IV.[323]

Stone lids are not commonly recovered in excavation with their intended vessel, but the few so found do indicate some correlation. Cylinder jars and alabastra mostly have flat lids whilst those associated with amphorae and other shouldered closed forms tend to be domed, but both are known for all three vessel types and also are associated with kohl pots.[324] Nonetheless, the repertoire of vessels with stone lids seems to be limited almost entirely to these forms.

The only other typological distinction between the two profiles appears to be at the lid edge. Flat disc lids usually are squared off with a slight curve to minimise the sharp edges, whether inset underside or not, probably to better grip it separately from the vessel mouth. Early examples of the domed form continue as a distinct taper directly to the lower edge, ending in a pointed profile, whilst later examples are rounded like the disc forms. This change seems to occur in the Middle Kingdom, and by its end the sharp edged profile has died out.

Several elaborate vessel forms have separate lids that are intended to be viewed as a unit with the vessel itself. These mainly are 'food-cases' in the form of trussed birds, meat parts, cakes, and other delicacies,[325] intended presumably to convey the identity of the contents.

Another form of lid seems to have been introduced in Dynasty XVIII, by the reign of Thutmose II, chiefly for vessels having a flat everted rim of varying but extended diameter. These fit directly over the aperture and are designed to be 'flush' with the rim itself. They often are associated with alabastra and other toilet vessels, but also are found with other forms, not all with a wide rim.[326] The upper profile is entirely flat, and underside flat in the centre and diagonal at the pointed upper edge.

The lids of vessels with overtly religous and funerary use often are elaborated. The use of human-headed lids for sets of canopic jars began in the late First Intermediate Period or early Middle Kingdom, and became increasingly common. The beginning of the New Kingdom saw a further development, where the four deities who protected the viscera inside were carved as the lid of each vessel. Both continued throughout Dynasty XVIII, but the earlier form had disappeared by the Ramesside period.[327] An elaborate

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[323] Reisner 1931b:175 fig. 43:2 and Reisner and Smith 1955: figs. 41, 137:1012, 142:644, 1033, pl. 45:e show both are in use by Dynasty IV. See also Metropolitan Museum 1999: 448–449 #179–180 for disc forms with flat and inset underside associated with cylinder jars, both dating to Pepi I (Dynasty VI).

[324] *Flat topped lids: alabastra:* Lilyquist 1995:120 fig. 155; *cylinder jars:* Petrie 1937:pl. XII:134, 136–138; Metropolitan Museum 1999:448–449 #179–180; *amphorae:* Brovarski *et al.* 1982:127–128 #116; Lilyquist 1995:103 figs. 88–89, 121 fig. 156; *closed shouldered forms:* Brovarski *et al.* 1982:130 #121; *kohl pots:* Petrie 1937:pl. XXX:691, 708, 710, 713, 723, 725, 731, 735; Bourriau 1988:143–144 #146, 148.b; Lilyquist 1995:113 fig. 133; *jars and jugs:* Lilyquist 1995:121 fig. 147; *krateriskoi:* Lilyquist 1995:115 figs 139, 141; 121 fig. 158; *other forms:* D'Auria, Lacovara and Roehrig 1988:139 #78; B.G. Aston 1994:144 #154; Lilyquist 1995:82 fig. 9, 115 figs. 139–140.
Domed lids: alabastra: Petrie 1937:pl. XXIX:656; B.G. Aston 1994:142 #146; *cylinder jars:* Petrie 1937:pl. XII:117, 119–120, 122, 126; Seidlmayer 1990:121 fig. 46.lower right; *amphorae:* B.G. Aston 1944:138 #133; Seidlmayer 1990:177 fig. 77:ST-F1; *shouldered closed forms:* El-Khouli 1978:III:pl. 69:1650; D'Auria, Lacovara and Roehrig 1988:90 #10; Siedlmeyer 1990:116 fig. 42.lower right, 117 fig. 43.lower right, 178 fig. 78:ST-J4; *kohl pots:* Petrie 1937:pls. XXIX:667–668, XXX:688, 690, 699, 701, 705, 733, 736; Seidlmayer 1990:121 fig. 46.lower right; B.G. Aston 1994:148 #166; *other forms:* B.G. Aston 1994: 145 #155; Lilyquist 1995:101 fig. 82.left.

[325] D'Auria, Lacovara and Roehrig 1988:93–94 #16.

[326] See El-Khouli *et al.* 1993:figs. D–H:19, 22, 24, 27, 30–31, 33, 39–40, 51; Lilyquist 1995:figs. 8–9, 66, 84–86, 155:left. Some of the Tutankhamun lids probably were not intended for the vessel with which they were found.

[327] Dodson and Ikram 1998:278, 284; see also D'Auria, Lacovara and Roehrig 1988:125 #54, 190–191 #137.

'upside-down cup'-shaped lid is specific to the *ḥs*-jar,[328] following the clay form, but similar lids also can appear with related ritual vessels associated with water.[329] During the reign of Amenhotep III, the otherwise standard domed lids of at least two separate sets of four funerary but non-canopic vases included other zoomorphic figures, of unknown significance, virtually as lid handles.[330]

'Swivel-lids' also are found, which swing out horizontally from the vessel aperture. These are the usual flat disc type but with a projecting lug at opposite sides. Both lugs were holed, and the lid tied to the vessel by means of a string or rope threaded through a hole on a similar lug near or at the vessel rim. Such containers usually were shallow forms such as pyxides and small zoomorphic forms, the latter in different shapes to fit the container.[331] This method seems to have developed in the early New Kingdom from its initial use on similar vessels in organic materials such as wood and ivory, the most common being pyxides and shallow zoomorphic vessels including both swimming and floating duck containers.[332]

On Crete

A number of lid fragments have been recovered on Crete, almost exclusively at Knossos.[333] These have been found only in the Stratigraphical Museum excavations in single fragments **{221; 226–227; 231}**. One complete example comes from the palace at Knossos **{163}**, inscribed with the name of the Hyksos king Khyan. The only other complete lid was recovered in a Poros tomb **{490}**, and likely is Levantine rather than Egyptian. All are disc lids, both flat **{221; 231}** and inset **{163; 226–227; 490}** on the underside, but apparently only one of the domed variety **{205}**. Most are of travertine, but at least two **{211; 231}** are of anorthosite gneiss. The gneiss material suggests a Dynasty I–IV date, but the others are far more wide-ranging. Additionally, one and possibly two Egyptian squat jars **{45?; 117}** at Angeliana and Katsamba were provided with a Minoan loop-handled and knob-handled lid (respectively), presumably on Crete;[334] these need not originally have had an Egyptian lid. The Minoans seem not to have used the original lid; they must have preferred their own, quite different and handled types.[335]

One container vessel from Katsamba **{116}** must originally have had a swivel-type lid (now missing) but, to judge from the drill holes on its rim lugs, its means of attachment is different from the usual Egyptian arrangement. No associated lid was recovered with it, but presumably it would have been of travertine like the container. Many other vessels may or may not have been imported with an associated lid but, if so, they had been separated and the lid was not recovered.

The lack of inclination to copy the flat, handless stone lids typical of Egypt suggests that the Minoans did not employ the Egyptian method of sealing the lid to the vessel by use of a cloth cover and tied string. Rather, the Minoans continued to employ loop- and knob-handled lids they had used from the earliest period. Warren or others do not discuss the Minoan method of sealing the lid and vessel together, if any was employed, and it may be that permanent or lengthy sealing was uncommon for stone vessels. A better word than 'lid' might be 'cover.'

Whether any implications can be inferred from their chronological dispersal probably is immaterial with such as small collection as these, but none are recovered earlier than the Neo-Palatial period. Half of the known lids in fact are of this context date **{221; 227; 490}**. The Katsamba lid **{116}** was interred in Final Palatial, as was **{226}** at Knossos. One further **{231}** is described as "late LM III" in deposition, and the inscribed lid **{163}** unfortunately has a wide-ranging context, as does **{205}** as published.

It can be noted, at least, that Egyptian vessel lids were imported together with Egyptian vessels during the Neo-Palatial, when the majority of imported vessels were deposited and the majority of 'egyptianising' Minoan vessels were produced. No associated lid for the most common stone vessel imports, the alabastra, have been reported. That the Minoan stone vessel artisans did not reproduce the lid form strongly suggests the imported lids largely arrived on the island as covers for the (stone) containers of imported goods, and then mostly were discarded or used for purposes other than lids.

11. Other Vessel Types

A wide variety of other individual imports, without visual cultural impact on the island, remain limited

[328] Petrie 1937:pl. XXIX:644–645.
[329] Hayes 1953–1959:I:325 fig. 214.
[330] Hayes 1953–1959:II:277 fig. 169.
[331] Hayes 1953–1959:II:268 fig. 162.
[332] See Chapter 14.
[333] See Distribution Map 11.
[334] See Appendix B.
[335] Warren 1969:68–71 Type 27. One 'miniature amphora' apparently also had an accompanying lid **{86}**.

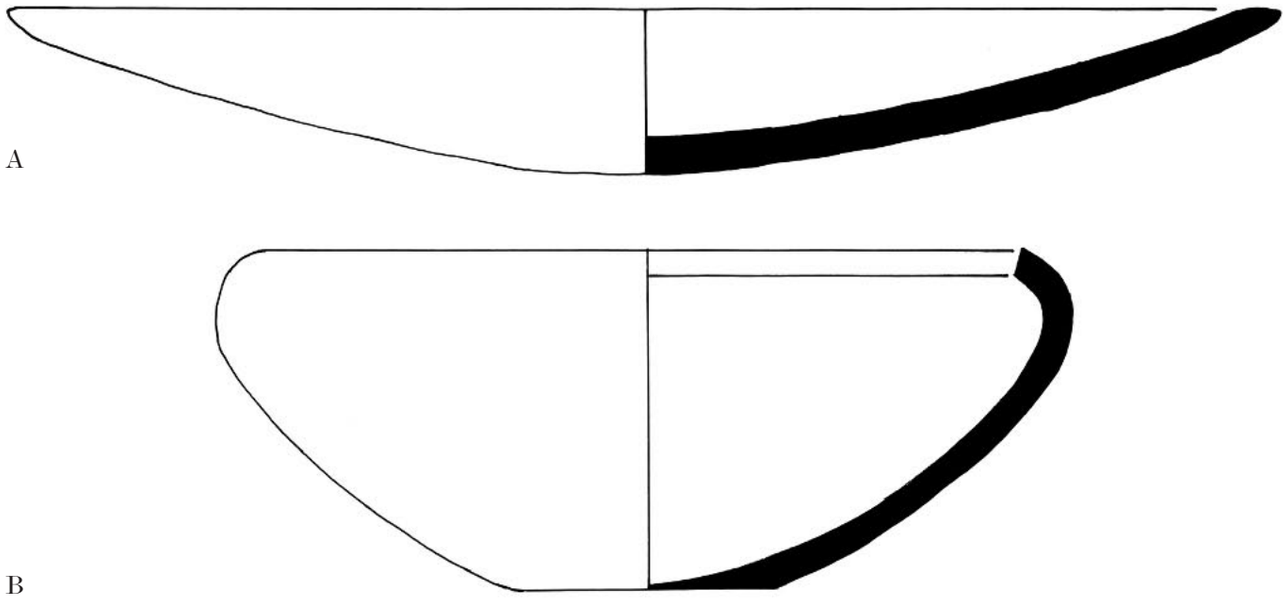

Fig. 7 A: Bowl, shallow with straight body profile, travertine, Dia.: 27 cm, from Abydos tomb Y, Egyptian, Dynasty I (Petrie 1901a:pl. XVIII:249; see also El-Khouli 1978:II:612 #4770). One of Warren's comparisons for **{140};** B: Bowl with recurved rim, material uncertain H: 7 cm, from Sedment tomb 559, Egyptian, Dynasty II (Petrie and Brunton 1924a:pl. IV.64; see also El-Khouli 1978:II:518 #3955). Pendlebury's comparison for **{533}**

in distribution almost exclusively to Knossos.[336] These include other assorted fragments from the Stratigraphical Museum excavations **{220; 234}**, the 'South House' **{178}** and Evans's unprovenanced context boxes **{304}**. Other individual vessels were converted by Minoan craftsmen, and are discussed together there.[337]

The following includes only individual vessels not discussed elsewhere, in order to group them together for discussion. Those, such as the zoomorphic pot in the form of an ape **{19}** and all vessels converted into Minoan forms, are not included here even if they are unique forms.

Pre-Palatial

A small number of unique vessel forms were recovered in Pre-Palatial contexts. These are limited to the obsidian open vessel rim **{139}** in the early EM IIA level of the Royal Road excavations at Knossos, the siltstone vessel **{140}** in the EM III level of Platon's sounding north-west of Knossos palace (see Fig. 7A), and the pyxis **{23}** in Tholos A at Aghia Triadha, unless those found in the north-west fill of the palace area (Knossos Q) are considered to have been deposited before construction of the first palace.[338] If so, the 'moustache cup' **{170}** would be an additional early unique import.

Pendlebury's missing bowl fragment **{533}** also may have been an early arrival on the island, although it is entirely without provenance and could well have arrived later; his stated comparison is shown as Fig. 7B. One other individual import without context that, by virtue of its Egyptian date, could have been imported in the Pre-Palatial period, is the small bowl found on Kythera **{584}**, although a Neo-Palatial importation date is preferred.

Proto-Palatial

No unique vessel forms were deposited during the Proto-Palatial period.

Neo-Palatial

Surprisingly few unique imports are recovered in contexts of this date, which had no apparent effect on Minoan artisans or are not discussed elsewhere in the present study. The two reported finds are both from

[336] See Distribution Map 12.
[337] See Appendix B.
[338] No published indication associates Platon's sounding with Evans's fill north-west of the palace.

the Stratigraphical Museum excavations at Knossos, and include only a bowl or jar **{222}** and a closed vessel **{233}**, for which the contexts extend into the Final Palatial period. The Predynastic or Early Dynastic kernos from the 'Temple Tomb' **{279}** also *could* have been imported at this time or during the Final Palatial period, as also could the anorthosite gneiss vessels from the Little Palace **{209}** and 'Unexplored Mansion' **{212}**.

It seems, therefore, that stone vessels imported or at least deposited during this period mostly were of types preferred and employed by the Minoans for specific purposes, and that the odd 'one-off' imports were kept to a minimum. Alternatively, 'one-off' shapes and fragments have not been identified in excavations and published in their reports. It is indicative that those reported almost all are from Warren's excavations.

Final Palatial

Some at least of the vessels recovered in Final Palatial contexts are likely to have been in use in Neo-Palatial, as proposed by Warren. These include the unique vessels found in the Isopata 'Royal Tomb' **{243?, 248, 253, 255}** and the Stratigraphical Museum excavations **{219; 222?; 233?}**, as well as those mentioned in 'Neo-Palatial' above.

One container with means for attachment to a non-extant lid **{116}** was found together with the Thutmose III amphora at Katsamba **{114}**, a site arguably linked to Knossos by the wealth and quantity of its imported finds and its geographical proximity.

End and Post-Palatial

No unique vessels are reported from End or Post-Palatial contexts, with the exception of the unusual neck fragment recovered in the 'House of Shields' excavations at Mycenae **{589}** with drill holes at the break. Nonetheless, it is questionable whether this is an Egyptian import.

Commentary

Several of these unique imports and their 'egyptianising' counterparts are associated with toiletry, definitely including the Katsamba container **{116}** and the Isopata *krateriskos* **{255}** and pot **{253}**, and possibly the Isopata jug **{248}** and lid fragments from the Stratigraphical Museum excavations **{221; 227; 231}**. The *Gravidenflasche* **{119}**, zoomorphic pot in the form of an ape **{19}**, and possibly the swan-bowl exported to Mycenae **{591}**[339] may be added, as may also some unique unprovenanced Knossos finds and probably some alabastra (especially the smaller examples), in addition to the glass vessels from Kalyvia **{89; 92}**, Karteros **{101}**, and also likely Kommos **{335}** and Zapher Papoura **{264}**.[340] Whilst some imports clearly must have been brought for their own sake, these at least *may* have arrived or been produced merely as containers for the real imported goods, now long vanished.

Nonetheless, they are of limited value for cross-chronological purposes, except to provide a *terminus ante quem* for the context date on Crete, when the vessel's date range can be established in Egypt. Unfortunately, either the context or the object, or both, cannot be dated so closely as to provide any further insights.

[339] For discussion of the *Gravidenflasche*, see Chapter 17; for the zoomorphic pot, see Chapter 13; for the swan-bowl (a Minoan product, not an import), see Chapter 14.

[340] One **{92}** parallels the stone krateriskos from Isopata **{255}**, although with handles. See Chapter 5.

Appendix B Minoisation of Egyptian Vessels[341]

One particular aspect of the importation of Egyptian stone vessels to Crete is the presence of a surprising number of recognisably genuine imported vessels physically converted by Minoan craftsmen into equally recognisable Minoan forms. Stone vessels were not the only type of import to undergo this process[342] but they are, numerically, the most commonly recognised. Peter Warren (1969:*passim*) initially isolated the phenomenon, which was not recognised by Pendlebury (1930b), although some altered imports are included in his catalogue without further comment. Warren noted those vessels altered to Minoan forms, and others since recognised have expanded his initial catalogue.[343]

The phenomenon is, so far as I am able to discern, unique to the Aegean and more specifically to Crete.[344] A number of converted vessels subsequently were imported to mainland Greece, especially to Mycenae.[345] The Mainland also received a substantial number of unaltered Egyptian imports and a variety of Minoan stone vessels, prior to the development of an indigenous Mycenaean industry. Warren (1969:107) estimated more than half the known Egyptian imports on the Mainland arrived there via Crete, and his enumerated lists indicate the total number of imported Egyptian vessels, relative to Crete, is substantial. Some also are known at Akrotiri on Thera.[346]

The present total of altered Egyptian vessels is 34, of which 27 are certain and the remainder probable to varying degrees.[347] The quantity is sufficient to suggest a preliminary typology and study of the phenomenon. Basic typological, chronological and utilisation patterns can now be recognised, suggesting the Minoans intended specific purposes for at least some different types of original and converted vessels. Three basic types of conversion immediately are apparent.

Type I alters both the form and function of the imported vessel. Often locally produced and separately-made attachments are added to complete the newly altered vessel form. Holes are drilled through the body in appropriate places to facilitate attachments. A variety of Egyptian vessels are employed, and result in a similar variety of Minoan forms, mostly closed shapes. The vast majority of recognised examples belong to this type, of which two particularly common conversions are separately sub-typed in the present study.

Sub-type Ia begins with a single imported form, the Type C Egyptian alabastron. The resulting Minoan vessels all are closed shapes, including rhyta, ewers, a jar and an amphora. The vessel is turned upside down. Its rim is removed or reduced considerably and neck plugged, usually with a separate flat piece of the same or similar material cut to fit the reduced mouth and held in place with small bronze pins. Sometimes this insert is the piece removed from the base, then re-cut to fit. A large hole is cut through the original bottom to form the new mouth. The resulting vessel has a basically piriform body and flat base. Almost universally, a neck and rim separately made of similar material is inserted into the hole, separately made handles are attached to the new shoulder and neck/rim **{373}**. Sometimes a separately made spout **{590}** also is added, depending on the intended result. Further holes are drilled or cut into the vessel to accommodate them. Sometimes gold or

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[341] Earlier versions of this appendix were presented at the 'Recent Research on the International Trade of the Late Bronze Age in the Mediterranean' colloquium, American Schools of Oriental Research Annual Meeting at Anaheim, November 1989, and at the American Research Center in Egypt Annual Meeting at Berkeley, April 1990.

[342] See also Chapter 7, its Appendix and Annexe. There also is evidence for the reuse of beads (see Chapters 8–9) and, by analogy to finds from other Aegean sites, conversion of ostrich eggshells to rhyta (see Chapter 10).

[343] He has continued his investigations into this topic, most recently assessing the alteration methodologies of each vessel; see Warren 1997.

[344] The phenomenon is not found in the Levant, according to Rachael Sparks (personal communication, 13 September 2000), nor Cyprus, nor Egypt.

[345] The alterations could not have been Mycenaean work; the resulting vessels clearly are Minoan. Mainland Greece did not possess an indigenous stone-vessel industry until LH IIIA, a period later than the context dates of many of the vessels presently under discussion found there.

[346] Warren 1979:*passim*; Devetsi 2000:*passim*.

[347] See Distribution Map 13, and Annexe (below) for the specific vessels identified.

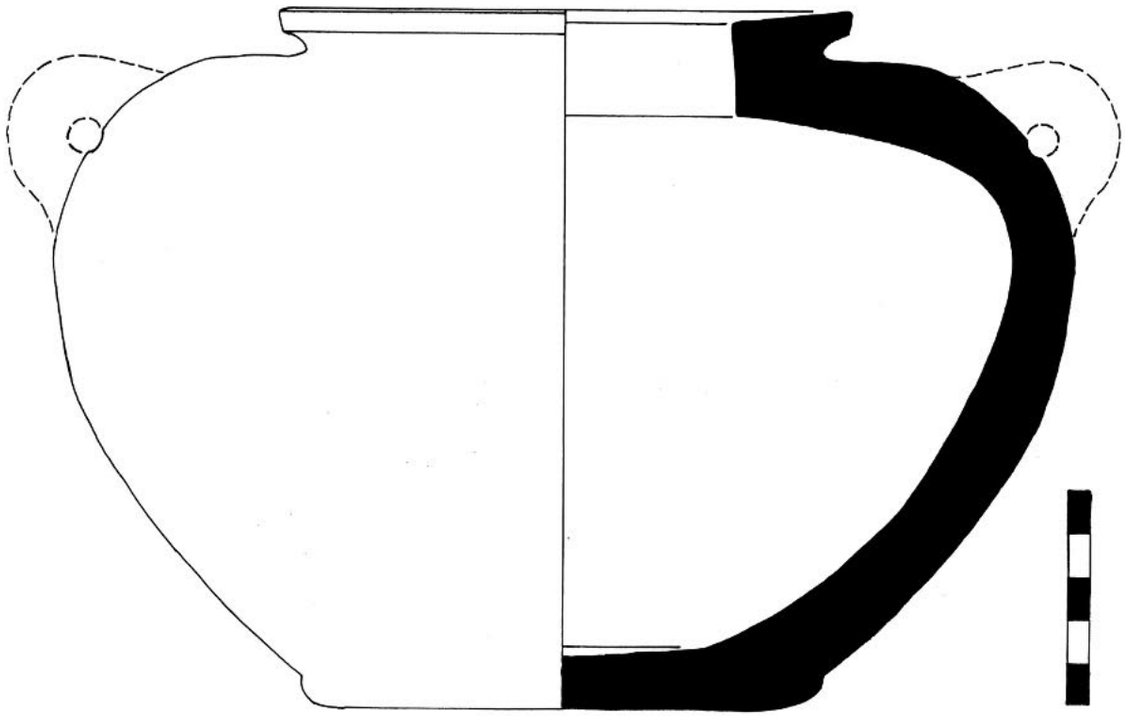

Fig. 8 Reconstruction of original profile of bowl **{104}**

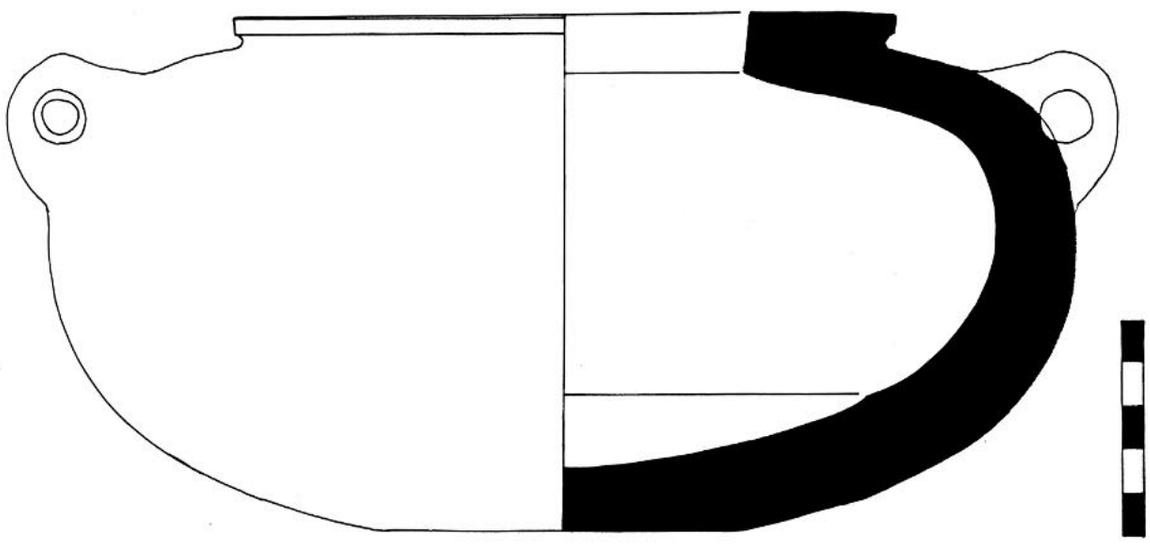

Fig. 9 Reconstruction of original profile of bowl **{105}**

other metal trim is added around the rim and base (**{590}** and possibly others). All additions are attached by means of metal (bronze) pins, still preserved on **{590}** and **{593}**. The single Type A alabastron converted into a rhyton **{210}**, from Knossos, merely had a hole drilled slightly off-centre at the bottom, like those of Sub-type 1b.

Two alabastra were converted by different means, without being turned upside down. One **{594}** appears only to have been provided with added rim decoration and what may have been a handle. The other **{588}** is more difficult to interpret, but its rim was removed and apparently again a handle added. Its base too seems to have been removed. Both should be considered Type II conversions.

Sub-type Ib, instead of beginning with one particular form, employs a variety of disparate Egyptian vessels with the intention of producing a single distinctive Minoan type, the rhyton. Most often the original Egyptian shape is retained, with only the addition of the characteristic drilled hole through the base to mark the alteration. The variety of such imported vessels includes the alabastron, hydria-jar, bottle, *Gravidenflasche*, spheroid jar, 'cylinder jar,' 'heart-shaped jar' and amphora or storage jar.

Occasionally the vessel itself is altered to suit Minoan requirements, as for example the removal of the tall cylindrical neck of amphora **{144}**, effectively not only creating a rhyton[348] but one in keeping with, but not directly producing, an indigenous form. Not enough of the rim is preserved to exclude the possibility of an added pulley neck for this new rhyton, but neither is there evidence for it. A slightly different vessel of similar shape, the bottle (see Fig. 10), also was employed for this conversion type. Only one example **{145}** has been recovered, this probably intended to be converted into a closed vessel shape such as those produced from the alabastron. A similar use of bronze-pin plugging and neck removal is employed but, because it already is piriform in shape, it was not necessary to reverse the original vessel. It is possible, although unlikely, that a similar use was made of the large two-handled amphora **{144}**.

Spheroid jar **{105}** is an extraordinary case of alteration in itself, but the inclusion of a basal hole through not only the vessel bottom but also its separate ring-stand speaks of thoroughly well-realised intention and artistic capability.

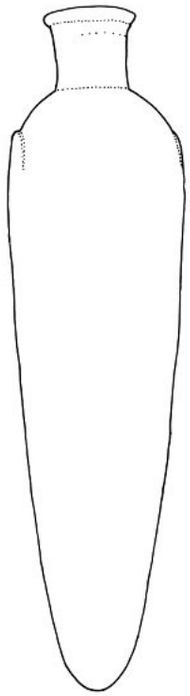

Fig. 10 'Bottle,' travertine, H: 19.1 cm, Egyptian, Dynasty XVIII–XIX (Brovarski *et al.* 1982:131–132 #126)

Conversion of one vessel, later exported to Thera **{585}** where it was found in apparent secondary use as a 'paint pot,' seems to have been aborted. The basal hole is incompletely drilled, although its correct diameter and correct off-centre position clearly indicate the original intention of creating a rhyton. The same appears to have been the case with **{592}**, although here a smaller probably initial drilling is a complete drilling through the base although the wider drilling is not; this hole too is off-centre.

Two vessels **{119; 144}** seem not to have been produced in Egypt before the reign of Amenhotep II, and therefore would not have been imported onto Crete and then converted into rhyta until after LM IB, in LM II–IIIA1. These two thus extend the period in which vessels were physically altered by Minoan artisans into the Final Palatial period, in contexts also of this period. A surprising number of other converted imports have been recovered in contexts at Knossos datable to LM II–IIIA1, and also may have been converted by Minoan artisans, but this late dating cannot be demonstrated. Nonetheless, these two

[348] No surviving evidence for the characteristic hole at the bottom of this vessel exists, and conversion to a rhyton is assumed. Nonetheless, removal of the neck is clear.

vessels demonstrate that the practice did not terminate with the end of Neo-Palatial, at least at Knossos where the palace continued to function.

The remaining *Type I* conversions are each different but most are, or may have incorporated, bowls and jars of different types. The intended results are not always clear and some alterations are difficult to explain. Bowl **{243}**, for example, has had its base removed and two holes having distinctly different diameters drilled through its lower body opposite each other. The alterations are remarkably like those of alabastra converted to closed jars and ewers, in which the large hole would be for a spout, the two small holes opposite for attachment of a handle and the basal hole for the neck. But comparison fades with the lack of alteration to the bowl rim and exterior base suitably angular or flanged for addition of a neck and lower body. One might argue, without conviction, that it is an incomplete or abandoned conversion to an ewer.

A similar problem exists for a probable alabastron or jar **{519}**, on which the rim and base articulations are later alterations to the vessel body, and the bottom removed to produce a completely hollow shape. Its purpose is unknown, and indeed even its proper position. Spheroid jar fragment **{596}** must have had a spout, judging from the large drilled hole on the remaining fragment; perhaps a bridge-spouted jar was intended.[349] Closed vessel neck **{589}** is not certainly Egyptian, but may be another vessel fragment converted into a spouted vessel form, if it had not instead been reduced to scrap. The footed bowl **{147}** is problematic, but may have merely been reduced by removal of its upper body.

The famous Early Dynastic jars from Kato Zakro **{104–105}**,[350] are perhaps two of the most elaborate extant examples of deliberate conversions known. The separate spout of one **{104}** has been hollowed out on the surface for inlay (now missing) of a presumably white material in imitation of the conglomerate appearance of the original andesite porphyry stone. The original handles also were removed in favour of the looped variety, probably of bronze, favoured by the Minoans (see Fig. 8 for a reconstruction of the jar's original appearance). They now are missing but indicated by drill holes, and the technique is paralleled in its companion jar. The rim fluting of the other **{105}** should be Minoan work, but almost certainly the body and handle fluting also (see Fig. 9 for a reconstruction of the jar's original appearance).[351] Another jar **{586}**, converted to a necked jar or possibly an ewer by the addition of a neck (now missing), was enhanced with an incised rope motif on the rim edge.

Also interesting is the abandoned drill hole on the shoulder of an 'egyptianising' spheroid bowl **{267}**, recovered in a tomb. It may be that the artisan may have intended to convert a Minoan-made vessel deriving from an Egyptian type, into another Minoan form, possibly in imitation of the Egyptian imports converted into Minoan vessel forms.

Four or five further separate attachments suggest they may have been made by Minoan artisans for attachment to non-surviving imported vessels, in the manner of the Kato Zakro spout **{104}**: the spout and handle fragments **{305; 306}** by the presence of angular inlay hollows, the spouts of banded tufa and breccia **{280; 307}** by their material visually similar to the stone of imported vessels, and all by comparison with the Kato Zakro jar spout **{104}**.

Type II alterations affected only the external appearance of the imported vessel, not its form or function. This type seems confined almost entirely to the spheroid and high-shouldered jars, effectively the same vessel type. Incised fluting was carved onto the broad rim surface of one fragment **{587}**. This same fluting is found on the everted rim of closed vessel **{178}**, that probably also is Minoan work. A more elaborate decoration was added to alabastron **{594}**, but essentially it appears not to have been otherwise altered although a small bronze pin is lodged in a small drill hole near the rim edge.

Another alabastron **{588}** is more difficult to interpret but appears to best fit within Type II also. It does not appear to have been turned upside-down but generally retains its original profile barring loss of its neck/rim. Two closely spaced drill holes near the rim suggest the addition of a handle, *not* used for pins to hold a 'new' base, due both to their proximity to each other, and their angle.

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[349] In this it parallels two jars imitative of the type **{267; 299}** in addition to the bridge-spouted jar converted from an Egyptian jar **{104}**. There may also have been a spout(?) hole in the missing fragment **{133}**, as illustrated by Evans (*PM* II.1:fig. 7:a2). If so, it would be of Neo-Palatial date.

[350] Jar **{105}** is a converted rhyton, Sub-type Ib.

[351] Handle and body fluting is almost unknown in Egypt at the time the jar was made, but the few existing examples cannot entirely rule out the possibility of original fluting.

Two other jars, again spheroid and high-shouldered types **{45}**; **{117}** are not in themselves altered, but a Minoan lid apparently was made or used with it to create a closed container.[352]

The last example **{241}** was altered by the addition of (probably) bronze loop handles, as the holes for their attachment remain. This piece also illustrates yet another alteration, for the holes on one side were plugged with a similar stone at a later date. Thus a second alteration seems to have returned it to its original handless state. Its unique profile, neither Egyptian nor Minoan, suggests it might also have been re-carved, not necessarily by a Minoan artisan.

Type III alterations perhaps are the most interesting.[353] These consist of broken fragments having evidence of deliberate destruction, and objects made from such vessel fragments, which may be considered 'recycling' of otherwise unusable broken pieces. Evidence of deliberate destruction includes saw and drill marks not part of the original vessel. A large thick-walled vessel fragment **{219}** in an LM II context was sawn along almost its entire length before being separated from its mate by forcible snapping. Two fragments of what must have been the same spheroid jar **{194}** in an LM IA context both again have been sawn and snapped. Additionally, they bear evidence of having been drilled not only through the section but also along its edge, in one case along the interior wall surface. The two pieces cannot be fitted together, but this may be due to the loss of material during the sawing process; it is difficult to tell. Both fragments at least were found in proximity to industrial/workshop areas, albeit of a different period to the sawn pieces. A third example, a closed vessel fragment **{278}** from an unstated context also is sawn. The last **{589}** is not certainly Egyptian, but may be another vessel fragment reduced to scrap like **{194}**, if it was not converted into a spouted vessel form. Since it has not been sawn also, it is difficult to judge.

The amulet from Myrtos Pyrgos **{416}** clearly was fashioned from a bowl fragment, probably of the deep open type known so far only from Knossos.[354] The original curve of the vessel is unmistakable. A second probably re-used piece may be the miniature bowl **{37}**, perhaps re-carved from a fragment of porphyritic rock or a thick-walled spheroid jar. Its size presents no technological difficulties of carving from a fragment smaller than either fragment of **{194}**.[355] On this basis also, and if its stone is Egyptian, the same may be argued for the miniature tubular 'jar' **{481}** from Platanos. One might argue that spheroid jar fragment **{415}** may also have been intended to have been carved since it was found with amulet **{416}**.

The closed vessel rim from the 'South House' at Knossos **{178}**, already a Type II conversion, seems to have undergone a second conversion probably after the vessel had been broken and no longer functioned as such. The neck has been smoothed at its broken end, perhaps to create a potstand. Its use as a smoother or other tool is negated by the evenness of the smoothing on the interior and exterior edge. It is the only piece where a secondary conversion seems to have been made.

Many other fragmentary pieces without direct evidence of reuse are known, and some at least may have been so intended, especially some other thick-walled fragments.[356] They (and possibly also the smaller fragments) may have been already broken vessel scrap, fragments held as 'raw material' workshop stock intended for reuse or alteration and lacking only the physical evidence for it, or its waste remains.[357] The two saw marks noted by Evely on the Knossos handle fragment **{305}** suggest it too may have been discarded as scrap material; it may never have been finished as no means of attachment is evident. The two Myrtos Pyrgos pieces[358] were in a ritual context and possibly to be seen as offerings. As true imported fragments, they may have been considered valuable for their own sake, possibly with perceived 'magical' or 'amuletic' properties in an area nowhere near a (known) palatial centre.

The majority of these vessels were recovered within datable contexts, limited to the Neo-Palatial and Final Palatial periods and almost all LM I or LM II–IIIA and (on the Mainland) LH IB. The date of manufacture for the Minoan vessels in the Knossos 'Cen-

[352] This presumes that the Angeliana vessel **{45}** *is* in fact an import.

[353] This type was not recognised by Warren (1969), who also did not discuss any pattern to vessel conversions.

[354] Warren 1969:110 Type 43:C. This practice also is known in the Dilmun culture; see Ciarla 1990, with further references. Unfinished beads made from 'alabaster' (travertine) vessel fragments have been recovered at Kerma in Nubia; see Lacovara 1991:118, 127 fig. 8.

[355] However, the one miniature late MK steatite jar of similar profile serves to remind us that this may have been an Egyptian miniature vessel.

[356] The Knossos oversize jar fragment **{171}** is an obvious case.

[357] These are further discussed elsewhere; see Chapter 4 and its Appendix A and also Knossos BB and GG.

[358] The only examples from a non-palatial site.

tral Treasury' seems to be MM III–LM I, despite this context dating.[359] Those vessels of somewhat later contexts are confined to Knossos (Knossos KK and TT) not later than LM IIIA1, and a few Mainland exports **{591; 596}** found in LH IIIB domestic fill contexts at Mycenae and Pylos that most likely are surviving remnants of earlier importation. Chronologically, the practice of stone vessel conversion therefore can be limited almost entirely to the Neo-Palatial period, in Egyptian terms essentially within the late Second Intermediate period and first half of Dynasty XVIII. The earliest clearly datable such vessel in context context is the bridge-spouted jar **{590}** from Shaft Grave V, in Minoan terms dated to the later LM IA period, and the sawn fragments in LM IA Royal Road **{194}**.

The contexts – and specifically context limitations – are indicative. All were found at palatial sites and their immediate outliers Katsamba and Aghia Triadha. Only Myrtos Pyrgos is not within the palatial sphere. Their specific contexts are of three kinds. The well-preserved vessels – virtually every example of Types I and II – were found either in shrine 'treasuries' of Neo-Palatial date or arguably 'royal' (or at least very high-status, to judge from their other contents and architecture) Final Palatial Knossian tombs. Many conversions therefore must have been intended expressly for ritual use, in particular the Type Ib vessels converted into rhyta. One group **{144–145; 147}** was found together with other rhyta in the Central Treasury (Room of the Stone Vases) at Knossos, and three others **{404–406}** from the Shrine Treasury at Kato Zakro with other imports. Those from burial contexts may have been employed in funerary rites before their interment, especially the Knossos hydria/rhyton **{281}**.

What may have been the purpose of their conversion? Minoan artisans were eminently capable of using the numerous local and imported fine stones for carving vessels. They were acknowledged masters of the craft by the Neo-Palatial period, as exemplified by some of the Kato Zakro 'Treasury' finds. Indeed, eloquent testimony to their ability is the level of sophistication shown in the conversions themselves. It is notable that the converted vessels did not *replace* Minoan products but were often unique additions. No two conversions are alike. Converted vessels from ritual contexts cannot be equated to Minoan forms but instead retain – probably intentionally – a recognisable foreignness, including all rhyta and the alabastron/amphora **{373}**.

The handles of amphora/rhyton **{144}**, for example, could easily have been removed entirely to directly imitate Minoan rhyta of similar profile.[360] Even jar/bridge-spouted jar **{104}** is excessively low for its new 'type.' Other, wholly Minoan, clay rhyta are recognisable as such only by the presence of the basal hole, without which they would be classed as cups or other common domestic vessels.[361] The form apparently was unimportant; sacral character was acquired by intended function – hence the requisite drill-hole at the base.

Notably it is the *exported* conversions that are most directly Minoan forms, jars and ewers. The vast majority of exported converted vessels were recovered from 'wealthy' or 'royal' tombs, such as Grave Circle A at Mycenae.[362] Not one has been found in a ritual context on the Mainland. Context dates indicate that some at least definitely were interred before the Mycenaean stone vessel industry began; they clearly came from Crete. The 'pourable' converted vessels may have been employed ritually in a funerary ceremony possibly as libation containers used in preference of clay jugs or similar vessels, and then interred with the dead. So also may have been hydria/rhyton **{281}**, also a 'pourable' vessel shape.

The limited distribution of these vessels itself attests to their conversion within probably palatial workshops or under palatial patronage. Those few not actually from a palatial site were found at one strongly associated with it. Stone vessel workshops have been identified at Knossos, Malia and Kato Zakro within the palace precincts, and others in the immediate environs of the Knossos and Kato Zakro palaces.[363] Vessels exported to the Mainland almost

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[359] See Warren 1969:84; Knossos B. However, this material is more likely to be not earlier than LM IA; see Phillips 2001: *passim* on the basis of contextually limited comparanda.

[360] Compare with Warren 1969:84 Type 34:B2, a universally handless type.

[361] E.g., cat's head rhyton **{431}**. However, stone rhyta are of specific, and recognisable, shapes. See Warren 1969:84–90 Type 34; Koehl 1981:*passim*.

[362] In direct contrast to Neo-Palatial Crete, where virtually no burials are known, contemporary (LH I–II) Mainland material as a whole is almost entirely limited to burial contexts. The directly opposed limited context distributions in this period may not reflect actual practice. However, burial, habitation and cultic contexts all are known from Final Palatial Cretan and LH IIIA Mainland sites.

[363] Evely 1979:I:277–278 (Proto-Palatial), 283–285 (Neo-Palatial) and 291–292 (Final Palatial). See also Warren 1969:157–158 and, for confirmation of the 'Lapidary's

certainly also were converted at the palatial workshops, and if so must have been transported under the auspices and probable tight control of those who ruled there, possibly even as plunder in Final Palatial. Their ultimate destination in Mycenaean 'royal' (and, later, élite) tombs also suggests direct contact between the two highest-ranking parties concerned.

It should be noted that this too is the pattern for *un*converted Egyptian imports both on Crete and re-exported to the Mainland. Their contexts on the Mainland, either in rich graves or the few in palatial domestic contexts, speak more of direct contact at the élite level than anything else. Their occasional presence in what must be wealthy private houses immediately surrounding the palaces, at Malia and at Mycenae, suggests private enterprise or intermediaries, possibly diplomatic in nature. It obviously was a well-organised, specialised and limited network with, if one includes the initial importation of these vessels onto the island, extensive contacts. It may even have been part of a larger network that imported raw stone from the Peloponnese (*lapis lacedaemonius*, *antico rosso*) in exchange for finished vessels, even of the same materials, to the overlords of the area.[364]

At the end of LM IB, the palaces on Crete were destroyed. Knossos alone was re-occupied to any great extent. Not surprisingly, converted vessels from post-LM IB contexts are found only at Knossos, but now in 'royal' or 'wealthy' tombs following the Mainland pattern of funereal, not ritual, significance. Two converted vessels were recovered from the 'Royal Tomb' at Isopata together with another ten imported Egyptian vessels, and others were found, in tombs at Katsamba and Knossos. Only those from the 'Central Treasury,' already sanctified by long cultic use in the adjoining shrine, remain in ritual context.

We may note, however, the distinct probability that some vessels were imported and converted during this Final Palatial period. Their Egyptian dates of manufacture strongly suggest that they could not have been converted in LM IB, as they seem not to have been produced in Egypt prior to the reign of Amenhotep II.[365] This suggests that some at least of the other converted vessels recovered in the 'Central Treasury' area, and those found in other LM II–IIIA contexts elsewhere, may also have been imported (and not necessarily converted) in Final Palatial.

A Practical Note on Adhesives

The care with which the vessels were manufactured, the surprising exactitude of their added portions and, in the case of converted vessels, the deliberate choice of similar hard and beautiful stones to match the original (even to use of imitative added inlay work, such as on bridge-spouted jar **{104}**), attest to the perceived importance of the converted vessels in the artisan's mind or that of his patron. The manufacture of 'multi-component vessels,' made of separate pieces then joined together to complete the whole, was not an exclusive prerogative of Minoan craftsmen. Examples from contexts as early as the beginning of the Dynastic period are known in Egypt and Palestine,[366] and are well made. They appear to have been found in both ritual and funerary contexts, but rarely if ever in the domestic scene. Early Minoan pyxides sometimes also are made of separate pieces intended to fit together,[367] but the complete lack of similarity to Egyptian types suggests no relationship and apparently the technique is limited on EM Crete to these few examples.

Many vessels – Minoan, Palestinian and Egyptian – simply had one part set atop the other in a flat join at mid-body. A technical improvement, employed in Egypt and Palestine, introduced a flange on each of the two parts of the join so that they fit snugly without shifting, usually at the neck/shoulder junction. This feature was introduced in Egypt by Dynasty I only for 'high-shouldered jars,'[368] but it also appeared on Type A alabastra and kohl pots by the later Dynasty XII.[369] Evely noted the flange used on Neo-Palatial Minoan vessels also increased watertightness.[370]

Workshop' not producing vessels, Younger 1979. Those near but not within the palaces need not necessarily be segregated as 'non-palatial' workshops. Bore cores of local material also have been reported from Gournia, Katsaba, Mochlos and Myrtos Pyrgos, among others (Evely 1979:I:285).

[364] See Warren 1969:187 n. 4.

[365] See **{119; 144}**.

[366] Petrie 1937:pl. XXVI:480–481; Amiran 1970b:170–173. See also Von Bissing 1904–1907:II:II–III; MMA 12.181.157.

[367] Warren 1969:80–84 Type 33.

[368] El-Khouli 1978:III:pls. 80:2043, 81:2119–2121, 2134–2137, 2139, 2181–2185; Petrie 1937:pl. XXVI:496, 505. See Appendix A.6 for the vessel type. Flangeless mid-body joins continued in use; see Petrie 1937:pl. XXIX:627, 629, 632.

[369] Petrie 1937:pls. XXIX.626, 629, 665, XXX.723. See Appendix A.1 for the alabastra.

[370] Evely 1979:I:289.

The two separate parts must have been glued together in some fashion, a subject mentioned by Lucas and Harris (1962:2–3, 7) and more casually by Amiran (1970b:171).[371] The former note the use of two different adhesives still detectable on stone vessels, chiefly for repairs and as sealants for lids. Adhesive was used to secure metal bolts to Khafre's granite sarcophagus, so one assumes it was strong. Beeswax and resin are cited, and Kemp and Merrillees (1980:127–128) add the use of 'plaster' on Middle Kingdom kohl pots, which may be resin mixed with powdered limestone or gypsum. Bakry (1962:17) also notes the use of plaster for repairing broken bowls during Dynasty I.[372] Hepper (1990:21) notes the broken lid of Tutankhamun's stone sarcophagus was repaired with a black gum-resin mixed with lime and sand.[373] Sakellarakis (1990:297) mentions the use of a heated resin and sulphur mixture as an adhesive in the ivory workshop in the 'Room of the Artists' at Mycenae. Any of these may have been the substance employed by Minoan artisans but, so far as I am aware, no analysis has been attempted if, indeed, any survived on stone vessels in the Aegean to be tested.

The added bronze and gold rim of bridge-spouted jar **{590}** and pin in alabastron **{145}** are now held in place with an adhesive that undoubtedly is the work of modern restorers. The remaining pins at the base of less well-preserved ewer **{593}** are loose in their holes.[374] The base of bridge-spouted jar **{590}**, however, has no such holes, neither on the vessel body or its plug, and could have been held together by use of a (hypothetical) metal banding, although no other evidence for any banding is preserved. Nonetheless, some form of adhesive must have been employed, despite the normally well-polished surfaces at the appropriate places.[375] Additionally, these and all the other vessels I have examined show no visual remains of any form of adhesive, although it clearly is visible on vessels found in Egypt. We can only assume that it has disappeared through time in the Aegean, as the majority of indigenous Minoan 'multi-component' vases as well as the converted Egyptian vessels would be completely impractical otherwise.[376]

All converted vessels are of closed types, most of them best suited to holding liquid rather than dry contents. Although their separate pieces are remarkably well-cut to fit together snugly, unless the join was sealed securely together the resulting vessel would be unable to hold any liquid contents, which would quickly run out, especially through the base. The adhesive, if such it was, would have had to be very strong to sustain the weight not only of the vessel but also its contents. Amphora **{373}** in particular would be unable to retain its heavy solid base especially if held by the handles, and indeed even moving it would be a problem. Other problematic vessels include jar/bridge-spouted jar **{104}**, the Mycenae bridge-spouted jar **{590}** and ewer **{593}**, and several purely Minoan vessels such as the 'Harvester Vase,' of which only the upper half survives. Minoan multi-component vessels are of certain or probable ritual use, and thus their actual function may not have been practical but nonetheless sheer logic suggests they were firmly glued.

An exception is rhyton **{105}**. One could easily see the vessel in use as a rhyton, carried perhaps by the two bronze handles, but the practicality of its use with the base (clearly intended to be employed with it) is questionable. One first would have to align the two holes and then maintain the alignment – thereby making the handles useless as they could not be held at the same time as the base-ring unless it adhered to the bottom of the jar. Although the original spheroid jar was extensively converted with a clear result in mind, as a finished unit it essentially must have been intended more for display than practical use unless it had been attached with an adhesive.

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[371] It is not discussed by Warren (1969), Evely (1979), Sparks (1998), B.G. Aston, Harrell and Shaw (2000), or Newman and Serpico (2000). The last discusses in detail the various adhesives and binders in ancient Egypt, but for stone vessels and other objects only in relation to their coloured infill and surface paint, not attachment of like material.

[372] Moorey 1994:pl. V.B illustrates a 3rd millennium BC bowl from Kish (Iraq), repaired at the bottom with a stone 'patch' held in place with lead rivets. It still would have needed some infill material to seal the gaps in order to be a useful vessel again.

[373] Hepper 1990:21. The sample there was tested by H.J. Plenderleith. Hepper suggests the resin was mastic, and notes (p. 26) that this bush is common in the "maquis type of Mediterranean vegetation," specifically on the island of Chios. It was identified on the Uluburun shipwreck, so also would have been accessible to the Minoans; see Mills and White 1989.

[374] This use of joining pins is not limited to converted vessels; see, e.g., Warren 1969:86–87:HM 2699.

[375] One would have thought the immediately adjacent areas would have been slightly roughened to better affix the glue, but they are not.

[376] E.g., the slim chalices with separate base, the rock crystal rhyton from Kato Zakro and others with separate neck, the ewer from Knossos (Warren 1969:36–37 Type 15, P249, 480–481; Platon 1970:14 fig., 139 figs. upper right and left).

Annexe Converted Stone Vessels

Type	cat.#	provenance	context	original	converted
I	104	Kato Zakro	LM IB	spheroid jar	bridge-spouted jar
	145	Knossos	LM II/IIIA1	bottle	closed vessel
	147?	Knossos	LM II/IIIA1	closed vessel	footed bowl
	242	Isopata	LM II–IIIA1	bowl	?
	280	Knossos	NFC	spout	for ewer or bsj?
	305+	Knossos	NFC	handle	vessel with handles
	306	Knossos	NFC	spout	for bsj?
	307	Knossos	NFC	spout	for bsj?
	519	Central Crete	NFC	alabastron or other	jar?
	586	Mycenae	NFC	high shoulder jar	ewer or jar?
	589+	Mycenae	NFC (net *LH IIIB)	closed vessel	spouted vessel?
	596	Pylos	*trans LH IIIB2–C	spheroid jar	bowl?
	Also a Minoan vessel:				
	267	Knossos	MM II–LM I	spheroid jar	bridge-spouted jar?
Ia	106+	Kato Zakro	LM IB	alabastron	rhyton
	148+	Knossos	LM II–/IIA1	alabastron	rhyton?
	210+	Knossos	LM IA(–II?)	alabastron	rhyton
	373	Malia	LM IB	alabastron	jar or amphora
	590	Mycenae	*LH IB	alabastron	vase
	593	Mycenae	*LH II–IIIB	alabastron	ewer
	595	Mycenae	NFC (*LH II–III)	alabastron	jar?
Ib	105	Kato Zakro	LM IB	spheroid jar	rhyton
	106+	Kato Zakro	LM IB	alabastron	rhyton
	119	Katsamba	NFC (net LM II)	*Gravidenflasche*	rhyton
	144	Knossos	LM II/IIIA1	storage jar/amphora	rhyton?
	148+	Knossos	LM II/IIIA1	alabastron	rhyton
	210+	Knossos	LM IA(-II?)	alabastron	rhyton
	281	Knossos	LM II–IIIA1 trans	hydria/jar	rhyton
	585	Thera	late LM IA	cylinder jar	(abortive) rhyton
	592	Mycenae	*LH II–III	jar	(abortive) rhyton
II	45	Angeliana	LM IIIA?–B	spheroid jar	jar w/lid
	117	Katsamba	LM II–IIIA1	high shoulder jar	jar w/lid
	178+	Knossos	NFC	closed vessel	closed vessel?
	241	Isopata	LM II–IIIA1	spheroid jar?	bowl w/handles
	587	Mycenae	*LH IIIB(1?)	spheroid jar	jar
	588	Mycenae	*LH IIIB (middle)	alabastron	closed vessel
	594	Mycenae	*LH IIA–IIIC (late)	alabastron	closed vessel
III	37?	Aghia Triadha	NFC	spheroid jar?	miniature bowl
	178+	Knossos	NFC	closed vessel fr.	potstand?
	194	Knossos	LM IA	spheroid jar?	raw material
	219	Knossos	LM II	large closed vessel	raw material
	278	Gypsades	not stated	closed vessel	raw material
	305+	Knossos	NFC	handle	raw material
	416	Myrtos Pyrgos	LM IB	deep open bowl?	amulet
	481?	Platanos	LM I?	vessel?	'tube jar'
	589+	Mycenae	NFC (net *LH IIIB)	closed vessel	scrap/raw material

* this is a Late *Helladic* period date, which does not entirely correspond to Late Minoan period dates
+ duplication – fits into both sub-types
? possible but uncertain attribution as a 'conversion'
net (not earlier than)