# I. Key Archaeological Issues in the Development of Late Cypriot Chronology

In this Chapter, a number of general issues concerning Late Cypriot chronology will be dealt with. Firstly, a brief history of the attempts to define Late Cypriot Chronology by earlier archaeologists. Secondly, some modification of the definitions given by Åström for the chronological phases. Thirdly, we discuss the relationship between pottery production and the copper industry in Cyprus and refer to the example of the Ulu Burun ship wreck. Fourthly, we shall consider the characteristic nature of the White Slip series and outline aspects of the fabrics and decorations for each phase. In the final section, we present a critique of the 'intra-island barrier' thesis which suggests that the distribution of wares was seriously disrupted by conflicts on the island.

## 1. Brief Archaeological History of the Attempts to Define the Late Cypriot Chronology

Here we shall review briefly how a number of distinguished archaeologists attempted to define the relative (and, in some instances the absolute) dating of the Late Cypriot I period, and indicate some of the problems which arose. In this way, we hope to illuminate some of the main outstanding issues in chronological analysis and its historical implications.

### (a) Gjerstad

The story begins in earnest with the publication of the doctoral dissertation of Einar Gjerstad (1926). When he wrote on the relative and absolute date of the LC period, there were no known Egyptian objects in Cyprus from contexts of LC I date. On the other hand, BR I ware was recorded in Egypt from deposits that were not considered to pre-date the early 18th Dynasty. Gjerstad felt that a link could be established between Cyprus, which had no absolute chronology, and the established dates for Egypt. At this stage, there was other evidence from Cyprus and Egypt for placing the start of the LC I period prior to the 18th Dynasty. Gjerstad thus concluded that he was in a position to determine the absolute date for the start of the LC I (1926, 333). The application of absolute dates for the Late Cypriot period by Gjerstad was based on a (high chronology) 1580 BC, date for the accession of Ahmose. An interesting point here, of great relevance to our Chapter III, is that Gjerstad dated the start of the LC I period (and, therefore WS I) at 20 years before the accession of Ahmose. Gjerstad thus came to a date of 1600 BC for the start of LC I. This was probably because he proposed a gap between the appearance of BR I in Cyprus and its first appearance in Egypt.

A similar view has been suggested by Bietak (Bietak and Hein 2001) whose placement of the first appearance of WS I in Cyprus was 20–30 years before the fall of Avaris (that is to say 10 years before the beginning of the New Kingdom). It should be noted however that both Bietak and Hein stress that there is no evidence of the appearance of WS I *in Egypt* prior to the start of the New Kingdom – a view I entirely agree with. Although Gjerstad's analysis is now outmoded, he did set the important pattern of trying to link Cypriot Late Bronze Age developments with Egyptian New Kingdom chronology.

### (b) Sjöqvist

By 1940, there had been further finds of LC Cypriot wares in Cyprus and abroad. This allowed Erik Sjöqvist to subdivide the LC period into two phases: LC IA and LC IB. In an earlier paper, I (Eriksson 1992, 196) commented on Sjöqvist's work as follows:

> His analysis of the Cypriot evidence was based entirely on tomb material and he cited chambers which had successive burials to illustrate what he regarded as a gradual change from MC III to LC IA [Sjöqvist 1940, 100–8]. The features that set the cut off point from MC III, and defined the LC IA period, were the presence of BR I, White Shaved, BLW-m, RLW-m, Monochrome and WS I wares [*ibid.*, 100–3]. Importantly, Sjöqvist [*ibid.*, 103] intimated that there were stages within his LC IA period, but with the evidence then at hand was unable to follow up this idea. He gave this initial stage of LC IA a fairly long range of 100 years, unlike the following period which he regarded as transitional. The definitive feature of this transitional phase, which he called LC IB, was the appearance of a BR jug, one which Sjöqvist [*ibid.*, 101] regarded as a transitional form that preceded true BR II, which became the characteristic of his LC IIA period. Whilst WS II may have appeared in LC IB, he was not sure and regarded it more as a characteristic of his following LC IIA phase [*ibid.*, 106].

The insights of Sjöqvist dramatically increased our understanding of the Late Cypriot I period –

especially the division into two separate phases. However, some of his observations have been challenged – for example, his attribution of the lower level of Enkomi (French) Tomb 3 to the LC IB period. In this case, it has been argued that a Bucchero jug belongs to the lower level and was not, as Sjöqvist believed, from the upper level. This led him to mistakenly date the upper level to the LC IIA. He believed that the Bucchero jug was a ceramic ware that was not introduced earlier than LC IIA. Had Sjöqvist known that the Bucchero jug is in fact from the lower level, then according to his own scheme, no part of this tomb would be dated prior to the start of his LC IIA. Indeed, the lower part of this tomb (including its Bucchero jug) revealed certain other pottery innovations which Sjöqvist saw as LC IB. He appears to have been mistaken on this point. Schaeffer and Åström regard these wares as inaugurating the following period, LC IIA.

As indicated, Sjöqvist relied substantially on BR I for his analysis. He dated BR I after the start of the 18th Dynasty, with the majority of it dating to the time of Thutmosis III (*ibid.*, 192–2). He refers to a BR I juglet from tomb 27 at Gurob, which had been dated by its excavators to the reign of Amenhotep I. For Sjöqvist (*ibid.*, 193), this was the earliest dated evidence for LC pottery in Egypt. On the basis of the evidence of this juglet (which for him represented an early form) he dated the beginning of LC IA to ca 15 years before the end of the reign of Amenhotep I. Sjöqvist also tried to draw conclusions on absolute chronology from the evidence. Thus, using a 1580 BC date for the commencement of the 18th Dynasty, he gave an absolute date of 1550 BC for the start of LC IA (*ibid.*, 193). This LC IA period was assumed by him to have lasted for a very long time – a range of 100 years until the latter part of the reign of Thutmosis III.

Sjöqvist also considered LC IB to be only a short transitional period (*ibid.*, 193). He tried to establish the final absolute date for LC IB using LH IIIA:1 ware. This style had been dated by Furumark as between 1425–1400 BC. Sjöqvist (*ibid.*, 194) believed it had been introduced into Egypt late in its life. On this basis, and because Sjöqvist and Furumark were using the same absolute chronology for Egypt, 1400BC was determined as the end date for Sjöqvist's LC IB period. However, archaeological evidence that came to light after Sjöqvist's work demonstrated that he had extended what came to be known as the LC IA:2 period for too long a time. Nevertheless, his categories and contribution were invaluable in the archaeological history of the LC period.

### (c) Schaeffer

Writing in 1948, Claude Schaeffer was highly critical of Sjöqvist's division between the LC IA and LC IB periods. Instead, Schaeffer (1948, 377–8) argued for only one LC I period, which incorporated the appearance of BR I, WS I, White Shaved, RLW-m and BiW-m wares. He then proposed an LC II phase which incorporated some of Sjöqvist's LC IB, but which also included the appearance of BR II and WS II. On the question of the absolute date for the start of the LC I period, Schaeffer came to a date that was in between those proposed by Gjerstad and Sjöqvist. I (Eriksson 1992, 199) have described the reasoning here thus:

> As for the absolute dates that Schaeffer established for the start and end of the LC I period, like Gjerstad and Sjöqvist, he used a 1580 BC date for the start of the 18th Dynasty. He accepted Sjöqvist's argument, based on the finds of BR I ware in Egypt, for determining the absolute beginning of the LC I period, but proposed that the ware must have had an earlier start in Cyprus and therefore placed the absolute date for the start of LC I earlier than Sjöqvist's 1550 BC date [Schaeffer 1948, 380]. Thus, Schaeffer arrived at a date of ca 1575 BC for the start of the LC I period, although he often used the more rounded figure of 1600 BC. However, the latter date is only used in the text "pour aider la mémoire", and it should not be used in preference to his 1575 BC date for the start of LC I [*ibid.*, 557]. In determining the end date for his LC I period, Schaeffer felt that the absence of Mycenaean pottery of a style earlier than LH IIIA:1 was significant. He considered this style of pottery to be a feature of his LC II period and established the end date of LC I at 1450 BC or equivalent with the end of the reign of Thutmosis III, which was earlier than Furumark's date of 1425 BC for the beginning of LH IIIA:1 [*ibid.*, 380].

Schaeffer's analysis was effectively a backward step from the ideas of Sjöqvist in that he did away with the important distinction between LC IA and LC IB. He ran together important periods that should be differentiated, such as the role of Thutmosis III on Cyprus during the LC IB period.

### (d) Popham

The huge role played by Popham in outlining the phases of White Slip was discussed in the Introduction. In his pioneering work, Popham (*ibid.*, 289–90) grappled with the issue of where PWS fitted into the sequence of WS. There were three possible explanations; that PWS was: a) a degenerate stage of WS I, perhaps con-

temporary with the introduction of WS II; b) a rustic regional fabric imitating the technique of WS I; or c) the formative stage of WS I. In the end, Popham settled on the view that PWS was definitely a separate type of ware and clearly chronologically prior to WS I. Popham's specific observations will be discussed throughout this book. His descriptions of the distinctive characteristics of the different phases of White Slip ware – especially the styles and decoration – have generally withstood the test of time.

### (e) Dikaios

A significant contribution to the debate was made by Porphyrios Dikaios (1969–71) when he challenged Sjöqvist's view that the LC IA period was much longer than the LC IB. His analysis was based on his observations at Enkomi, where he recognised two LC I levels. In the first LC I level, two phases were proposed by him. Both phases terminated with significant destruction levels. On the basis of his analysis of these destructions, Dikaios concluded that at Enkomi, the LC IA phase covered a shorter period of time than LC IB. Dikaios (1969–71, 479) argued for a shorter duration for LC IA at Enkomi because the stratigraphy demonstrated that the debris from the destruction that marked the end of Level IA lay directly on top of the occupation debris left on the original floors. In contrast, the stratigraphy before the second destruction was revealed to be in a majority of rooms – at least two floors, with some rooms having more floors than this (Dikaios 1969–71, 32–3 Area III Fortress).

The LC IB period, Dikaios argues, thus lasts longer at Enkomi. However, it should be pointed out here that Sjöqvist had reached the mistaken conclusion about the chronological length of LC IB because of the characteristics he used to define LC IB. These characteristics were the presence of BR II, WS II and LH IIIA:1 pottery, as recorded at Enkomi. By presenting a clearer interpretation of the stratigraphy, which should be seen as a model for all excavation reports, Dikaios preferred to use Åström's more specific definitions of the LC I periods. On this basis, Dikaios's conclusions for a shorter duration to LC IA and a longer range to LC IB followed inevitably from the evidence. The matter had to be further clarified, however, when the LC IA period was divided into two phases.

### (f) Daniel and Benson

Interestingly, the subdivision of the LC IA period itself had been proposed as early as 1941. Working on dating the early levels at Episkopi *Bamboula*, Daniel (1941, 267) first put forward the idea. He defined three LC I phases at the site: the LC IA:1 and LC IA:2 periods (which had BR I and WS I), and LC IB (which had BR II). This work by Daniel was not really developed until his work was published by Benson (1969, 1970). Benson further developed the Episkopi *Bamboula* evidence to reinforce the views of Daniel concerning the three periods – LC IA:1, LC IA:2 and LC IB.

However, while this general division of phases has been accepted, the conclusions Benson drew concerning the Episkopi *Bamboula* evidence have been challenged by Paul Åström. The debate has previously (Eriksson 1992, 207–8) been summed up like so:

> Because of the relatively large percentages of BR I and WS recorded in this deposit [Area C Level A:1, Area E Level A:1, see Table 2], Åström [1972b, 675] preferred to give it a LC IA:2–LC IB date. In the second deposit, we have the "material dating the latest use and collapse of the wall in an early reused tomb"; again there is the occurrence of BR I, WS and Monochrome wares – but each of these represents only 1% of the total sherd count [Benson 1969, 22; Åström 1972b, 675]. Again Åström [*ibid.*, 675)] rejected Benson's dating in favour of a LC IA:2/LC IB range for the deposit because BR I and WS wares were present.
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> [It should be noted that] the deposits to which] Benson [(1970, 40] gave a LC IA:2 date were Area A Level A:1, Area C Levels A:2–4 and Area E Levels A:2–4 [Table 2]. The first of these, Area A Level A:1, was a "pit in edge of excavated area southwest of House VIII, Room 3 and in earth between 9.15 m and bed-rock in corner between House VIII, Rooms 1 and 3" [*id.*, 1969, 5]. The percentages of the pottery wares, of which the most distinctive are BR I and WS wares, are similar to those for the first of his LC IA:1 contexts mentioned above, although it may be noted that the percentage of RP ware has diminished. In the following Level A:2a, WS II appears.
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> The second deposit was assigned a LC IA:2 date by Benson [1969, 18]; it was located in Area C and included the material of the second floor (A:2) and the accumulation upon it (A:3), [Table 2]. In Area E, Levels A:2–4 can be characterised as follows: A:2 consists of the "sherds among the stones of wall 'b' dating the construction of House I"; A:3 is the "accumulation on floor of House I, Room 6"; A:4 is the "accumulation over the (third) floor of House II Room 6" [*ibid.*, 22]. Three sherds of RLW-m, BR and Monochrome wares appear to be associated with the use of the second floor or laying of the

| **EPISKOPI *BAMBOULA*** (after BENSON 1970) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **AREA C LEVEL A:1** | **AREA E LEVEL A:1** | **AREA A LEVEL A:1** | **AREA C LEVEL A:2** | **AREA C LEVEL A:3** | **AREA C LEVEL A:4** | **AREA E LEVEL A:2** | **AREA E LEVEL A:3** | **AREA E LEVEL A:4** |
| RP | 2.84 | 35.0 | 9.6 | 2.37 | 1.59 | | | | 24.8 |
| Plain | 30.0 | 62.0 | 50.0 | 45.0 | 40.0 | 40.0 | 35.0 | 33.3 | 33.0 |
| RoB | 2.84 | | | | | | | | |
| WS I | 26.49 | 1.0 | 5.8 | 14.78 | 14.87 | | 21.7 | 33.3 | 5.0 |
| WS | | | 9.6 | | | | | | |
| BR I | 17.97 | 1.0 | | 11.83 | 13.81 | 25.0 | 16.8 | | |
| BR | | | 13.5 | | | | 7.0 | | 12.4 |
| Mono | 2.84 | 1.0 | | 5.91 | 1.59 | 10.0 | | | |
| Wash | 19.97 | | 17.3 | 20.11 | 27.08 | 25.0 | 21.7 | 33.3 | 17.3 |
| FP'ted | | | | | 1.06 | | | | 5.0 |
| DANIEL | LC IA:1 | | LC IA:2 | | LC IA:1 | | LC IA:2 | | |
| BENSON | LC IA:1 | | LC IA:2 | | | | | | |
| ÅSTRÖM | LC IA:2/LC IB | | LC IB | | | | | | |

Table 2 Percentage of wares in the earliest levels at Episkopi *Bamboula*, and the relative dating of them by Daniel, Benson and Åström

third [*ibid.*, 23]. ÅSTRÖM [1972b, 679] dated these levels to LC IB, but it should be made clear that what Daniel and Benson meant by the term LC IB was in fact equivalent with Åström's LC IIA:1. This is because LC IB was, for both DANIEL and BENSON [1970, 40], characterised by the appearance of WS II and BR II wares.

The debate with Åström was not on the division of the three periods. Rather, it turned on the question of which WS and BR wares should be included in each category. Once this matter is clarified by more careful definition, the disputes can be resolved. For example, those levels dated by Daniel and Benson to LC IB clearly fall under Åström's and our definition of the LC II period since they contain mainstream WS II (see next section). We must also remember that PWS was not identified by Daniel, but since its later definition after his initial work at Episkopi *Bamboula*, it may be worthwhile to re-examine the White Slip material from the site. As one of the criteria for defining LC IA:1, its current absence is significant.

The observations of Daniel and Benson were very valuable in putting forward the three phases. However, there was some considerable confusion in their characterisation of these phases. This was cleared up by ÅSTRÖM (1972b) with his more definite characterisations.

### (g) Åström

The question that most confronted Paul Åström was: if PWS (and PBR) were to be regarded as a Late Cypriot development, how do we restructure the internal division of LC IA to accommodate its various appearances? The solution provided by ÅSTRÖM (1972b, 758) was to take up the suggestion of Benson and divide LC IA itself into two phases, 1 and 2; this was to be in addition to the LC IB period. Åström did this in his 1972 book on the Late Cypriot Period – which was a major work on the culture and chronology of that time. The first of these two phases, LC IA:1, is characterised by Proto White Slip, but also by WP VI, Black Slip IV and V, Proto Monochrome, Monochrome, Proto BR and BiW-m wares. It now included a Historical Period which had previously been regarded as being the end of MC III (ÅSTRÖM 1972b, 758; 1972c, 46–7). Gjerstad, Sjöqvist and Schaeffer had all considered the period before WS I as MC III. Åström had been influenced by the need to accommodate the discovery of PWS. But he wanted to also recognise MERRILLEES's (1968) claim that an end SIP date be given for some LC pottery found in Egypt.

Åström's adoption of the two phases within LC IA is valid and logical. It was further supported following the publication of the excavations at *Toumba tou Skourou* (VERMEULE and WOLSKY 1990). Another reason for Åström's division of the two phases, while not stated, seems to have been the desire to accommodate the results of his excavations at Kalopsidha, which produced large quantities of White Painted wares (Table 3).

These excavations provided ÅSTRÖM (1972b, 675)

| **KALOPSIDHA – Trench 9** (after Åström 1966; *id.*, 1972b) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **LAYER** | **71** | **67B** | **67A** | **69** | **60** | **57C** | **57B** | **57 A** |
| RoB | 7 | 1 | 1 | | | | | |
| BS II | 161 | 18 | 72 | 56 | 17 | 34 | 28 | 37 |
| RP | 5 | 7 | 4? | | | | | 2 |
| WP Bowls | 322 | 13 | 127 | 66 | 13 | 10 | 14 | 16 |
| WP various | 307 | 13 | 22 | 35 | | 58 | 13 | 1 |
| WP PLS | 168 | 8 | 60 | 27 | 13 | 11 | 6 | 6 |
| WP CLS | 884 | 27 | 769 | 1368 | 1492 | 1310 | 886 | 669 |
| WP PL/CL | | 1 | 2 | | | | | |
| Coarse | 5 | 14 | 28 | 14 | + | 17 | 42 | + |
| RS | 665 | 92 | 288 | 130 | 20 | c69 | 30 | 33 |
| RS III | | | | 1 | | | 1 | |
| PWWm | 2 | 4 | 3 | 5 | 2 | 8 | 9 | 3 |
| RSWm | 1 | | | | | | | |
| BLWm | 1 | | | 5 | ca 36 | | 1? | + |
| Monochrome | 17 | 23 | 94 | 203 | 265 | 224 | 321 | 304 |
| BR I | 2 | 2 | ca 13 | 5 | 1 | 18 | 1 | 13 |
| Composite | | 2 | 2 | | | | | |
| Pithos | | 8 | 19 | 525 | 72 | 1051 | 84 | 76 |
| BSRS | | | 1 | | | | | |
| WPWm | | 1 | 2? | 3? | 2 | | 1 | 1 |
| BSWm | | | 1 | 2 | | | | |
| WS I | | | 1 | 1 | 1 | 2 | 1 | 2 |
| BS III | | | 1 | | 2 | | | |
| WP VI | | | | 1 | 1 | 7 | 4 | 5 |
| **DATE** | **MC III–LC IB?** | **LC IA** | **LC IA:2** | **LC IA:2** | **LC IB** | **LC IB** | **LC IB** | **LC IB** |

Table 3 Percentages of wares from Kalopsidha Trench 9

with further reasons for isolating separate phases within LC IA.[23] The significant observation here was that in Trench 9 Layer 71; it was described by him as "an accumulation covering the latter part of MC III, Late Cypriot IA and possibly LC IB." At this layer, Monochrome, BLW-m, BR I and Red Slip wares appear but there was no WS I. LC IA:1 could be defined in terms of the appearance of PWS; but it could also be defined in terms of the absence of WS I. It follows that when WS I does appear in the archaeological record, it signifies the later LC IA:2 period. At the time, Åström acknowledged that the absence of WS I before LC IB may simply have been peculiar to Kalopsidha. However, the absence of WS I is now acknowledged as an important factor in classifying sites to the LC IA:1 period.

In an earlier paper (Eriksson 1992, 207), it was suggested that, given the fact that "some wares used to define LC IA:1 do not appear until after [the appearance of BR I at the site] …would suggest caution in placing too much reliance on Trench 9 at Kalopsidha as a basis for subdividing the LC I period." However, we now believe that Åström was correct in suggesting that Kalopsidha has an important role for the White Slip series. The reasons for my revised view is this: whilst Kalopsidha provides the only stratified evidence to support Åström's scheme, there were a number of tombs at Enkomi, Ayios Iakovos and Pendayia *Mandres* (hereafter Pendayia) that had examples of PWS, as well as WP VI, Black Slip IV, Monochrome and BLW-m wares – but no BR I or WS I (Åström 1972b, 676–7). When added to

[23] See Maguire (1992, 119) for her comments on the 'usefulness' of Trench 9.

the Kalopsidha case, these additional tombs effectively establish beyond doubt the need for the division into LC IA:1 and LC IA:2.

Thus, on the basis of the sequence at Kalopsidha and the other tomb evidence, Åström used the first appearances of WS I and BR I wares (*ibid.*, 758) as the determining features of his second phase – the LC IA:2 period. In support of his thesis, he cited tombs at Akhera *Paradisi* (hereafter Akhera), Enkomi, *Nitovikla* and *Stephania*, which all had BR I and WS I fabrics that characterises his LC IA:2 period (*ibid.*, 678–9).

After dividing the LC IA into two phases, Åström now faced another issue: How does LC IA:2 differ from the next phase, LC IB? After all, Sjöqvist's definition of LC IB was no longer relevant. Instead, Åström chose to focus on the appearance of LH I/LM IA, RLW-m and White Shaved wares in determining this period (Åström 1972b, 681). Åström believed that he could again use tomb evidence in defining this period (*ibid.*, 680–1). However, several of his tomb examples are not as useful as Åström believed. For example, Milia Tomb 11 had an extended period of use and thus covers a number of phases. Similarly, Enkomi (Cypriot) Tomb 10 (III), which Åström dated to LC IB, contains significant samples of WS II ware. In fact, because of the presence of this mainstream WS II ware, this later use of Level IB should be dated instead to Åström's LC IIA:1, as should the later period of use of Enkomi (Cypriot) Tomb 10 (III).

In his account, Åström gives a longer range to the chronology of LC IB; in absolute terms, he dates it from 1525/1500–1425/1415 BC. In this LC IB period, we have the continuation of Monochrome, BR I and WS I wares (*ibid.*, 765f). The end date for this LC IB period was established by Åström (*ibid.*, 759) on the basis of the LH IIIA:1 sherd from Level IB/IIA at Enkomi. Dikaios dated this level at transitional LC IB/LC IIA, but it should more correctly be classified as the beginning of LC II. The same applies to the final floor level of Level IB at Enkomi, which also produced BR II and WS II. The matter is clearer for Åström because he used the appearance of WS II to define his LC IIA period. Interestingly, it was the LH IIIA:1 sherd that was considered by Åström to have appeared at the very transition of IB/LC IIA level, which gave Åström (*ibid.*, 759) the absolute date of 1425/1415BC. This thus became the date for the beginning of LH IIIA:1 ware and for the end of LC IB. Thus, LH IIIA:1 ware is considered an additional characteristic of the beginning of Åström's LC IIA:1 period – along with the presence of BR II and WS II wares, which give this LC period its definition.

Åström's division of the chronological periods was proved to be the most important and long lasting. We shall discuss his definitions in the next section. His chronological phases are adopted in this monograph – although we shall be seeking to refine and elaborate on some of his definitions.

### (h) Merrillees

R. Merrillees (1977) provided some important archaeological evidence which indicated that PWS must have developed significantly before the end of the SIP Period in Egypt. But determining an exact date for its first appearances has proved to be a very elusive exercise. Thus, the end date for LC IA:1 was determined by Merrillees (1977, 42–3) by placing it prior to the end of the SIP based on archaeological evidence, but his estimation of its beginning was only supposition. This was done by taking the absolute range of 375 years for the four phases of LC IB, IIA, IIB and IIC and then assuming that each lasted approximately 75/100 years (*ibid.*, 43). By then assuming a similar 75/100 year time range for LC IA, Merrillees counted back from his absolute end date established for the period and thus estimated its absolute starting date. As he was using a high Egyptian chronology which begins the 18th Dynasty in Egypt at ca 1575 BC, he placed the start of LC IA at ca 1650/1625 BC, now 1650 BC (*id.*, 2002, 6). Leaving aside the debate about the absolute dates, we consider this to be an arbitrary process by Merrillees. There is no reason why each period should be assumed to fit into the 75 and 100 year intervals. Rather, we shall be relying, wherever possible, on more definitive occurrences to define each of the periods. At the moment, we need more information on the development of PWS before we can say when the LC IA:1 period definitely began.

Among Merrillees' major contributions on Cyprus have been his claims that LC IA began in the SIP and his (Merrillees 1971) intra-island thesis. Both of these issues are extensively discussed in this book. Merrillees argument on the synchronism between LC IA:1 and the last part of the SIP found support at the site of Tell el-Dabᶜa when fragments of a PWS bowl were discovered in a burial (see Chapter II.5, which was assigned to Level D/2, or the final phase of Hyksos occupation at the site. Merrillees (1974b, 77; 1975, 87; 1977, 42–3; 2002) seized this evidence to support the commencement of LC IA before the end of the Hyksos kingdom – and on this I now agree. However, as already mentioned, he fails to present an

effective argument for any exact starting point for this period (*id.*, 2002). Nevertheless, this and other evidence also supports the view that PWS appeared before the end of the Hyksos Kingdom in Egypt and therefore provides a synchronism between LC IA:1 Cyprus with the Hyksos, as outlined in our Introduction, and further developed in Chapter VII.1.

### (i) Bietak

The work of Manfred Bietak in Egypt at Tell el-Dabᶜa with its stratigraphical record of finds has been crucial in identifying the duration of the PWS period and the beginning of WS I. Bietak (Bietak and Hein 2001, 172) identified the start of WS I in Cyprus as occurring not 'before ca. 1550 BC', which is 20 years before the fall of Avaris to the pharaoh Ahmose if we accept a date not earlier than year 11 for the conquest of Avaris. A date for the conquest closer to year 22 of Ahmose is considered more likely (Bietak 1996, 81). The 1550 BC date allows WS I to appear for a brief time in Cyprus, 9–10 years, before the beginning of the New Kingdom. However, Bietak and Hein (2001) seem to have established conclusively that WS I is not found *in Egypt* until after the start of the 18th Dynasty.[24] His work on LM I, as a result of the discovery at ᶜEzbet Helmi of Minoan style wall painting fragments, was also highly significant determining the chronological correlation between the Cypriot, Egyptian and Minoan civilisations. This matter is discussed in detail in Chapter III. Bietak's comparative chronological work has been invaluable in placing the WS wares in the appropriate historical contexts.

### (j) Manning

In recent times, especially with the publication of his 1999 book dealing with the Thera explosion, Sturt Manning has challenged much of the relative chronology relating Cyprus, Egypt and Aegean. This challenge will be considered in detail in the second part of Chapter III. He has actively developed the 'intra-island barrier' thesis originally proposed by Merrillees (see Chapters I.5 and III.8).

## 2. Refining Åström's Definitions of the Late Cypriot Periods

For the purposes of this monograph, we rely *primarily* on Åström's (1972b) definitions of late Cypriot periods. However, some refinement is required – especially in linking these phases to developments in Egypt. We shall now list each phase of the late Cypriot, refer to the original Åström criteria, explain the reason for further modification and then give a revised definition. These latter are not intended to be inconsistent with Åström's general conclusions, but rather intended to be more specific. In this exercise, we have placed greater reliance on Egyptian chronology than Åström does. This is not merely because it is more precise, but also because we now have greater evidence of the extensive links between Cyprus and Egypt during the Late Bronze Age.

As we saw in the Introduction, not all the Late Cypriot periods were part of the Late Bronze Age Cyprus. For example, the LC III periods go beyond the Bronze Age. From Åström's definition we have identified seven key Late Cypriot periods which together constitute the whole historical era, known as Late Bronze Age Cyprus. Each of these Historical Periods is numbered and identified with its corresponding Late Cypriot phase(s).

The formal definition of the first three phases is put forward by Åström relying on Cypriot wares. The remaining phases are defined by Åström in terms of the appearance of Mycenaean pottery. We do not dispute the definition of the phases; however, when we convert them into Historical Periods, we wish to add to each one a direct reference to the simultaneous events occurring in Egypt, that is the reigns of particular pharaohs. This allows us to define the last three periods with more precision. Although Cypriot wares were exported throughout the Eastern Mediterranean, they did not play a defining role in relation to the last four periods; other than the general premise that the appearance of WS II and BR II define LC IIA (a synchronism that is challenged in some areas). Nevertheless they were significant historical developments during this time which impacted on Cyprus' relations with Egypt, the Levant, Mycenaean Greece, Anatolia and other neighbouring societies. Most importantly there is substantial evidence that Cyprus was independent throughout this time.

### Late Cypriot IA:1 (Historical Period 1)

*Åström's Definition*: this period "witnesses the appearance of White Painted VI, Monochrome, Proto White Slip, Proto Base-ring, etc., (Åström 1972b, 758, 700). Åström (*ibid.*, 757) accepted that many of these were being recorded in late MB II con-

[24] See also Aston (fc).

texts on the mainland and in accordance with Merrillees (1968) in late SIP contexts in Egypt. Thus, this phase is dated before the commencement of the 18th Dynasty/Late Bronze Age in the Levant.

*Reason for Modification:* As already indicated in the Introduction, Proto White Slip may have lasted for a considerable period of time. Its appearance has been divided into two phases; which is explained in detail in Chapter II. For our purposes here, we should note that Phase 1 includes formative examples of PWS, which seem to draw heavily on preceding White Painted motifs. It is short-lived, if not entirely contemporaneous with 'mature' PWS. Phase 2 is the 'mature' PWS with all its characteristic features evident. There is also then a style of pottery which, at one point, I considered to be transitional from PWS to WS I. However it is best separated from PWS (as discussed with Celia Bergoffen in 1998), but the question of its links with WS II early now, in my opinion, require that we do not designate it as WS I 'early' as this may prove to be misleading (see Chapter III). It is here termed WS I 'RL' (Rope Lattice) and is dated to the beginning of the next period, LC IA:2.

*Revised definition of LC IA:1:* This period begins with the first appearance of PWS ware in Cyprus (see Chapter II). Other wares mentioned in Åström's definition are seen as relevant. On this definition, LC IA:1 ends with the start of LC IA:2, which is specifically defined in terms of the first appearance of WS I. The period of LC IA:1 takes place prior to the 18th Dynasty in Egypt, as also envisaged by Åström (*ibid.*, 762) – that is, during the last part of the Second Intermediate Period.

During this time, Cyprus played an intermediary role between the Minoans and the Hyksos, as outlined by Betancourt (1997, 431):

> The role of Cyprus as an intermediary trader deserves serious attention. Geographically, it lay between the two powers being considered here. Cypriote goods are more common in both the Aegean and in the East at this period than either group's products are at the other's sites. It is normal for sites in the East with a few Aegean ties to have much closer links with Cyprus, and the same Cypriote presence is found in the Aegean.

He (*ibid.*, 430) believes "The evidence can be explained if one assumes that both the Minoan culture of Crete and whatever is meant by a still-undefined "Hyksos culture" of Syro-Palestine began expanding their economic bases in the mid to latter parts of the Middle Bronze Age."

### Late Cypriot IA:2 (Historical Period 2)

*Åström's Definition:* "when Base-ring I and White Slip I first appear" (Åström 1972b, 758).

*Reason for Modification:* We wish to rely entirely on the first appearance of WS I as the defining characteristic of this period. We do not include BR I here. The reason is that a number of recent archaeological discoveries have led to the argument that some Base-ring I occurs quite significantly before the New Kingdom; sometimes together with PWS ware (Ayia Irini); and then there is also the interesting evidence of Kalopsidha (Table 3). It thus seems possible, but not clear, that some BR I occurred before WS I. Since PWS, which is the defining characteristic of LC IA:1, occurred before WS I, I wish to drop any reliance on the first appearance of Base-ring I, as one of the defining characteristics of LC IA:2 and rely exclusively on the first appearance of WS I as the defining characteristic. In relation to Base-ring I itself, more archaeological research is required before we can become more definitive.[25] (See also discussion in Chapter V.2 –V.3.

We should note here that the use of the first appearance of WS I as the defining characteristic of this period has also come under pressure, because of the discovery of WS I in 'early' contexts at Tell el-ᶜAjjul. Celia Bergoffen (1989; 2001a; 2002) put the argument forward most forcefully. This matter is discussed extensively in Chapter III. My conclusion there is that we can accommodate the major thrust of Bergoffen's arguments and still retain the first appearance of WS I as the defining characteristic of the LC IA:2 period. It means, however, that in relative terms, this ware would be defined as having its first appearance in Cyprus about 20–30 years prior to the conquest of Avaris/ Tell el-Dabᶜa by Ahmose. This is also consistent with Manfred Bietak's conclusions on the issue (see Chapter III.1).

*Revised Definition of LC IA:2:* The first appearance of WS I in Cyprus signifies the beginning of this period. It extends from approximately 20–30 years before the conquest of Avaris by Ahmose to the start of LC IB, which was the beginning of the reign of Thutmosis III (including the Hatshepsut phase). It thus covered the period when the pharaohs Ahmose,

[25] The interpretation of the date of the Base-ring I juglet from Kom Rabiᶜa, Memphis will be of importance here.

Amenhotep I, Thutmosis I and Thutmosis II ruled Egypt. Bietak (1997, 124) argues that these early 18th Dynasty pharaohs had extensive links with the Minoan civilization, as revealed at Tell el-Dabᶜa:

> It is feasible that Ahmose probably sought an alliance with the Minoans, the most formidable seapower in his time, in order to have protection from, as well as access to, the sea … Is it possible that, following the expulsion of the Hyksos, Egypt was in danger of reconquest by another power on behalf of its former overlords? This might explain why Ahmose needed a base in the northeastern Delta, and why he pursued the Hyksos to their strongholds in southern Canaan. Yet it is difficult to explain the presence of Minoan paintings in the Egyptian citadel of Avaris, which, much more than merely indicating the beautification of a palace, display themes that are related to Minoan ideology, status, and religion.

It seems that again Cyprus played an important role as an intermediary during this time, exporting and receiving goods from both lands.

### Late Cypriot IB (Historical Period 3)

*Åström's Definition:* The LC IB period begins with the first appearance of Late/Minoan Mycenaean IA wares in Cyprus and the first appearance of RLW-m ware. This was also the period when many more BR I and WS I wares appear in overseas contexts, (Åström 1972b, 758–9). Åström (*ibid*., 760) also considered that this view was confirmed by the WS I 'RL' bowl found on Thera.

*Reason for Modification:* While this is a genuine and important period, the definition was the least convincing of those given by Åström. Our current evidence suggests that LM IA started earlier than LC IB; in fact, LM IA is better correlated from near the end of LC IA:1 through LC IA:2. Consequently, LC IB is better associated with LM IB. This then puts the Thera eruption back into the LC IA:2 period. In relation to RLW-m, it is still an excellent marker of this LC IB period. Whilst the interpretation of the evidence (Eriksson 1993) shows that the first appearance of RLW-m ware may have been before the reign of Thutmosis III, the majority of RLW-m appeared in Egypt during this reign.

Åström refers to this period as the one in which BR I and WS I occur extensively in foreign contexts and we agree. We know that in Egypt, there is a very big increase in BR I wares during the reign of Thutmosis III. Indeed during his reign, Cypriot wares in general reached a peak. There is also independent evidence of the increased political and economic links between Egypt and Cyprus during this reign (see Chapter VII.3).

Given these facts, it is better to define this period more specifically within the Egyptian context. Clearly a new era of much stronger relations between Cyprus and Egypt began with the rise of Thutmosis III and extended for most of his reign. The exact reasons for this are still to be determined, but the beginning of his reign is a major specific historical point and provides a starting point for the LC IB period. Åström's view was that LC IB extended beyond the reign of Thutmosis III and into that of his successor, Amenhotep II. In Egypt, Aston (2003, 145–7) defines a Hatshepsut–Thutmosis III ceramic phase. Although we do not deal with absolute dates, in Åström's (1972b, 762) scheme the reign of Thutmosis III ends at 1436 BC, where LC IB ends ca 1425/1415 BC.

*Revised Definition:* The LC IB period begins with the start of the co-regency of Thutmosis III (with Hatshepsut) and extends throughout his long reign – for about 55 years. It then extends into the reign of Amenhotep II. The extraordinary achievements of Thutmosis III are discussed in Chapter VII.3. During this time he conquered most of the Syro/Palestinian region or made them into subservient kingdoms of Egypt. Cyprus had good links with Egypt at this time and was able to extend this trade and influence throughout the whole Levant, especially at Ugarit and Tell el-ᶜAjjul. It is to this period that most, but not all, of the RLW-m and BR I which are found in Egypt have been ascribed. We also know now that it is LM IB pottery that is best associated with this period in Cypriot prehistory, and not LM IA pottery, which is best associated with LC IA:2 and begins with LC IA:1. We follow Åström (*ibid*., 762) in ending this period halfway through the reign of Thutmosis III's successor, Amenhotep II. A significant event occurred at the end of this period: Madduwatta attempted an invasion of Cyprus (see Chapter VII.3.d).

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[26] We note Bergoffen's (2001b, 35, figs. 1A–B) observation that BR II was recorded in Tell el-ᶜAjjul Tomb 369 dated to MB IIC–LB IA. Also compare this tomb group with Tell Heboua Stratum II (Oren 2001, 141, fig. 12) which also has WS I 'FWL' and 'FL'.

### Late Cypriot IIA:1–2 (Historical Period 4)

*Åström's Definition*: There are two of Åström's phases incorporated into this historical period – LC IIA:1 and LC IIA:2. The first is defined by the appearance of White Slip II and Base-ring II[26] and seen as simultaneous with Mycenaean IIIA:1 (LH IIIA:1). The second phase is distinguished from the previous one by the introduction of a new style in Mycenaean pottery – "Mycenaean IIIA2a is more or less contemporary with Late Cypriote IIA:2" (Åström 1972b, 760).

*Reason for Modification*: In the definition of the phases, we generally follow Åström here. However, from a historical point of view, these two phases are added to create one Historical Period 4 – so as not to divide the important reign of Amenhotep III. There may have been a period of overlap between WS I and the developing WS II form (see Chapter IV). The first appearance of early WS II is thus, as Åström believed, the best starting point for this period. At this stage, we have no reason to believe that BR II was other than more or less simultaneous with WS II in its development.[27] Åström relies substantially on the claim that this starting point was identical to the first appearances of Mycenaean LH IIIA:1 in Cyprus. It appears that there was a rough chronological synchronism here. However, we also wish to emphasize the equivalent periods within Egyptian chronology of this LC IIA:1 period – that is, the second half of the reign of Amenhotep II and continuing until the first part of the long reign of Amenhotep III. The next Mycenaean style, LH IIIA:2a, which defines LC IIA:2, occurred during the second part of the reign of Amenhotep III.

*Revised Definition:* This period is seen as the combination of two of Åström's phases. The first phase is LC IIA:1, which is defined as beginning with the first appearances of the fully developed WS II, and with the first appearance of LH IIIA:1. In Egyptian chronology, it is seen as extending from the second half of the reign of Amenhotep II into the long reign of Amenhotep III. The LC IIA:2 phase, which also belongs to this historical period, takes in the remainder of the reign of Amenhotep III, and ends with the move to Tell el-Amarna with Akhenaton. This second phase of Historical Period 4 coincides with LH IIIA:2a Mycenaean pottery in Cyprus.

The reign of Amenhotep III was especially significant, because it is the first part of the so-called Amarna Age during which the rise of the new monotheistic religion of the Aten began. The achievements of Amenhotep III were extraordinary, but it was also during this period that the Hittites began their campaigns in north Syria and encouraged the local kingdoms to move away from Egyptian control.

### Late Cypriot IIB (Historical Period 5)

*Åström's Definition:* This period is defined by Åström (1972b, 760) as contemporary with Mycenaean IIIA:2b. It is typified by the finds from Amarna which give us a specific correlation with Egypt. The foreign pottery at Amarna included LH IIIA:2b, possibly LH IIIB:1, WS II normal (typically 'LLHC' and 'LLDR') and BR II.

*Reasons for Modification:* We accept Åström's criterion. However, we wish to emphasize the point that in Egyptian chronology this period coincides with the reign of Akhenaton. We should also note that during this period, there was a big increase in the production of WS II normal ware and the distribution extended to the far regions of the Mediterranean.

*Revised Definition:* This period begins at the start of the reign of Akhenaton in Egypt and includes the short period of the reign of Smenkhkare. It ends just before the start of the reign of Tutankhamen. The evidence from Akhenaton's capital at Amarna is still the best evidence to support Åström's claim that this period is simultaneous with Mycenaean IIIA:2b, although we may note the observation that some LH IIIB:1 pottery was also found at the site (Hankey 1973; Warren and Hankey 1989, 149–52). However, these pieces are generally ascribed to the time after Akhenaton's rule.

The reign of Akhenaton is discussed extensively in Chapter VII.5. We should note that this period also covered a major part of the reign of Suppiluliuma I, the Hittite king who conquered much of Syria from the Egyptians. During this time, the pharaoh Akhenaton was largely preoccupied with an obsessive attempt to implement the new monotheistic religion of the Aten – an attempted religious revolution which created enormous political conflict with the priests of the previous Egyptian god Amon Re.

During this time we see a transformation in the

[27] See Aston (fc) for evidence that BR II appears at ᶜEzbet Helmi in Stratum c, dated to late in the reign of Thutmosis III or early Amenhotep II. He cites Bergoffen (2003, 405) in support!

distribution of RLW-m ware with greater emphasis on Anatolia and a reduction of their distribution in Egypt. The evidence is that Cyprus was now subjected to many more pressures and/or involved in greater trading links with Mycenaeans and Hittites; this does not mean however that its links with Egypt were cut. On the contrary, friendship with Egypt was maintained – as evidenced by the Amarna letters from the king of Alashiya to the pharaoh.

### Late Cypriot IIC:1 First Part (Historical Period 6)

*Åström's Definition:* Åström (1972b, 760) made a broad correlation between LH IIIB:1–2 with LC IIC:1–2. When Åström was writing his chronology, Hankey (1973) had only recently presented her evidence that LH IIIB ware occurred at Amarna, and it was not known then what the full implications of this would be. The best evidence that Åström (*ibid.*, 761) had at hand was that LH IIIB occurred at Beth Shan prior to a destruction attributed to Seti I, thus he was cautious about a starting date and settled for a point midway between the end of Akhenaton and the beginning of Seti I, ca 1320 BC. However, we now accept that LH IIIB:1 began shortly after the reign of Akhenaton (Warren and Hankey 1989, 149–52). The real floruit of LH IIIB:1 is therefore assigned from the start of the reign of Tutankhamun to somewhere in the long reign of Rameses II. Thus, Åström's (*ibid.*, 762) dates for LC IIC:1 (ca 1320–1250 BC) and LC IIC:2 (ca 1250–1190 BC) are in need of some revision (see Table 1A).

*Reasons for Modification:* There is a further problem here in that LH IIIB:1 is not often differentiated from LH IIIB:2 (especially in Cyprus). Furthermore, there seems to be no exact 'first appearance' point in the 13th century BC for LH IIIB:2 in Cyprus and the Levant. Even at Mycenae and other sites in the Argolid, whilst the division between LH IIIB:1 and IIIB:2 is observed, the historical point of the changeover has not been clearly delineated (see Chapter VI.7.c). Whilst the two wares are recorded in Enkomi Level IIB, we do not yet have a point of differentiation. Åström in absolute chronology terms begins the LC IIC:2 at ca 1250 BC – which is midway in the long reign of Rameses II (1279–1213 BC). It is not clear why this cut off point is given; however, if we assume that LH IIIB:2 arose at some point during the reign of Rameses II, this means that the LC IIC:1 period would need to extend from the last pharaohs of the 18th Dynasty into the first pharaohs of the 19th Dynasty to the middle of the reign of Rameses II. This is not very helpful or illuminating from a historical point of view.

We believe therefore that LH IIC:1 needs to be divided into two parts. The first part, as in Åström, begins with LH IIIB:1 pottery – which we now confirm was at least as early as the start of the reign of Tutankhamun in Egypt. This part of LC IIC:1 covers the period of time from the reign of Tutankhamun to the end of the 18th Dynasty. In Egypt Aston (2003, 147–52) recognises the period from Amenhotep III to the end of 18th Dynasty as a distinct ceramic horizon. The second part of LC IIC:1 with its continuing tradition of LH IIIB:1 starts Historical Period 7 with the commencement of the 19th Dynasty in Egypt. We have separated out the phases within Cyprus on the basis of the Mycenaean and local developments. It was a period of enormous turmoil in Egypt during which we saw vicious internal political intrigues over the succession to the pharaohs' throne. At the same time, there was a further increase in the power of the Hittite Empire of Anatolia and its influence throughout the Levant. Cyprus itself was seriously challenged in its independence during this period 7 (see Chapter VII.7).

*Revised Definition:* This period begins with the reign of Tutankhamen and extends to the end of the reign of Horemheb – the end of the 18th Dynasty. It was a period of enormous turmoil in Egypt during which we saw an increase in the power of the Hittite Empire of Anatolia. It was also a time when the Hittites increased their involvement in Cyprus – as did the Mycenaeans (see Chapter VII.6). As indicated it covers the first part of LC IIC:1, as identified through the first part of LH IIIB:1 decorated ware.

### Late Cypriot IIC:1 Second Part and IIC:2 (Historical Period 7)

*Åström's Definition:* As mentioned above Åström (1972b, 760) made a broad correlation between LH IIIB:1–2 with LC IIC:1–2. Without giving specific evidence, he placed the division between these phases at mid point in the 13th century BC, somewhere in the reign of Rameses II. Therefore he considered LC IIC:2 as more or less contemporary with LH IIIB:2.

*Reasons for Modification:* For reasons explained under Period 6, we define this period by reference to Egyptian chronology. It spans from the beginning of the 19th Dynasty, through the long reign of Rameses II, down to the early 20th Dynasty reign of Rameses III, no later than his year 8 (ca 1176 BC) It includes the second part of LH IIIB:1 to all of LH IIIB:2; it thus encompasses the whole of the reign of Rameses II. This period then continues to the end of LCIIC:2, which we believe probably occurred before Year 8 of Rameses III, with the great Sea Peoples' battle.

Aston (2003, 152–55) also recognizes a general Rameses I to Mereneptah ceramic horizon in Egypt. There are significant historical developments between Cyprus and the Hittite empire – as is shown by reference to certain written documents which suggest that Suppiluliuma II attempted an invasion of Cyprus (see Chapter VII.7).

*Revised Definition:* This Period 7 covers a coherent and unified phase in Egyptian chronology, even though the links between Cyprus and Egypt have by this stage been substantially weakened. It includes the last part of LC IIC:1 and LC IIC:2. In the latter part of this period White Slip II late ware has virtually disappeared from Egypt – but is still represented in the Levant. However, it has become a degenerate form. There are also significant conflicts between Cyprus and the Hittite empire – as is shown by reference to certain key documents (see Chapter VII.7).

### 3. White Slip in Relation to the Production and Distribution of Copper

In this book, one important aim was to achieve a timeline of development for the White Slip, which would make it an even more useful tool for chronological analysis (Table 1B). In many ways, this is still a work in progress for archaeology. In particular, more work needs to be done on isolating production areas and the growth and demise of these centres over the four hundred years of White Slip production. We agree with Knapp and Cherry's (1994, vii) that the following issues are of concern here:

> …demographic and settlement-pattern shifts in relation to pottery or copper production and exchange; diachronic changes in the orientation of Cypriot trade (from the Levant to the Aegean, and beyond) in relation to the bulk exchange of metals, or to the trade in pottery (as prestige or utilitarian items); the presumed increase in centralised, élite-controlled production through time; and spatial aspects of metallurgical production and exchange.

#### (a) The relationship between pottery production and the copper industry

In our search for more information here, we need to continually keep in mind the economic and technological interrelationship between White Slip pottery and the production and distribution of copper. We have referred in the Introduction to the key central role which copper production had for the economy of Cyprus throughout most of the Late Bronze Age. Indeed Cyprus became renowned for copper in antiquity. The very word 'copper' comes from the Roman name for the metal *Cyprium aes* (literally 'copper of Cyprus'). The importance of copper in 12th century BC Enkomi is shown by the representation of a horned 'god' (Dikaios 1969–71, pls. 139–44) and the horned warrior/god standing on an oxhide shaped ingot (Sandars 1978, 176, pl. VIII). We also have the material evidence for copper working all over the island and at the different sites – see most recently Knapp's (nd) work at Politiko *Phorades*.

It is likely that the development of pottery production in Cyprus, including WS I, was intertwined with the advancement in technology that arose as a result of the major industry – the copper trade.[28] The problem of deciphering the exact interrelationship is highlighted by Knapp and Cherry (1994, 160) so:

> …the intensified production of Troodos copper ores early in the Pro BA (MC III) may have been associated with the introduction and development of White Slip pottery. This notion has yet to find support in the excavations at Sanidha *Moutti tou Ayiou Serkhou* in the southern Troodos foothills, where all material indicates a production center focused on pottery alone (Todd 1990; 1993; Todd *et al.*, 1991, 1992).

The technological processes involved in the copper processing system may have led to the development or adoption of new techniques, which themselves may have been applied to the White Slip development. Knapp and Cherry (1994, 164) state: "In turn, intensified metallurgical production may have promoted innovation in the production of White Slip pottery, whose clays were most almost certainly derived from the cupriferous zone of the southern Troodos (Courtois 1977)."

Knapp and Cherry (1994, 33) raise issues on the importance of fundamental changes in metal technology and their affect on pottery production. However, we should keep in mind, as Peltenburg (1996, 36) has stated, that:

> Technological innovation in society normally operates in a climate of adaptation and change which may be visible in other aspects of the archaeological record. It rarely takes place as an independent invention, and is usually explained in terms of the transfer of techniques, unchanged, imposition, or adaptation.

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[28] In relation to the major technological step from PBR to BR ware see Vaughan (1991, 124–6; *id.*, 1994) and Herscher (2001, 19).

The suggestion put forward by Courtois (1970) that the material used to make White Slip was similar to clay beds being quarried in modern times in the vicinity of Kellaki, located in the foothills of the Troodos mountains not far from Sanidha, was tested by NAA. This study (Gomez *et al.*, 1995; Gomez and Doherty 2000, 110) took samples of White Slip from Sanidha, Maroni *Tsarroukas* and Aredhiou *Koladhes* and demonstrated that there was "an unequivocal compositional match between the ancient pottery and an extant clay source." In a later petrographic study (Gomez and Doherty 2000) on the slip, it was suggested that the raw material for it "did not crop out at the surface, but became available as a by-product of sub-surface ore extraction" (*ibid.*, 115). Petrographic analyses by Williams and Oren (unpublished) of PWS and WS I sherds have also stressed the link between mining of copper in the northern area of the Troodos and the manufacture of these wares.[29]

The copper smelting processes arose first; but were transferred to the ceramic processes. As observed by Knapp and Cherry (1995, 9):

> NAA has already established the distinctive character of WS pottery (Artzy *et al.*, 1981). Extensive survey at Sanidha *Moutti tou Ayiou Serkou* has revealed a dense scatter of several thousand White Slip (WS) 2 sherds, together with further suggestions of ceramic production such as wasters, debris, and unslipped sherds; this might be a key piece of evidence indicating some association between WS wares and the exploitation of metal resources in the southern Troodos mountains. Yet it is clear that the metallurgical production on the northern and northwestern slopes of the Troodos preceded the development of WS wares by several centuries (Knapp 1990c: 159–61).

It is unlikely that the pottery of Cyprus would have developed to such a sophisticated level – without the technological developments made necessary by the copper industry.

### (b) The Ulu Burun shipwreck and the evidence of copper production

Karageorghis (1995, 76) remarks on the critical value of copper exports from the island: "…Cyprus exported large quantities of copper, as attested by the recently excavated shipwreck of Ulu Burun, near the SW coast of Anatolia, where 355 oxhide ingots, weighing 10 tons of copper, have been found." However, the excavations at Ulu Burun, where the wreck of the Bronze Age ship was discovered, did not only produce copper. There was also a vast collection of artefacts drawn from all over the eastern Mediterranean. Here the interrelationships between copper and Cypriot pottery in the distribution process is demonstrated. The cargo of this vessel demonstrates amply the nature of international relations that existed in that region of the east Mediterranean during the LBA.

The vessel was almost fully laden and the ballast of the ship was made up by hundreds of copper ingots moulded in the oxhide shape, a shape that is definitely associated with Cyprus. Apart from the copper ingots, there were also ingots of lead and glass and many examples of scrap metal. Also in the cargo there were hundreds of storage amphorae, which contained wine and/or resins such as terebinth or pistachio. These resins were used in for many purposes – but were quite important in relation to wine making during the LB era; the antibacterial qualities of the resins prevented the wines from turning to vinegar (McGovern 1997).

Amongst the scarabs, one had the name of Nefertiti, Queen of Egypt and wife to Akhenaton. This effectively dates the wreck to no earlier than the Amarna period. By this time, Cyprus was playing a pivotal role in the links between Egypt and the Mycenaean civilization (see Chapter VII.5). A more specific chronology is given by Cemal Pulak on the Ulu Burun page of the Institute of Nautical Archaeology web site:

> What, if anything, does the Ulu Burun material tell us about Eastern Mediterranean relative and absolute chronologies? The ceramics, jewelry, and wood provide invaluable evidence. J. Rutter, who is studying the Mycenaean pottery from Uluburun for publication, notes the chronological homogeneity of the assemblage and dates it to the LH IIIA:2 period. … [Rutter] further notes that none of the Ulu Burun vessels appears to have any morphological or decorative features that require a LH IIIB:l dating. Since the pottery on the shipwreck shows the developed characteristics of LH IIIA:2, but not of LH IIIB:l, it must predate the transition between the two styles that occurred toward the end of the brief occupation of Amarna (assuming that the Mycenaean pottery from the wreck is rep-

[29] I would like to thank Eliezer Oren for allowing me to read this manuscript.

resentative of its time and was not a collection consisting exclusively of heirlooms).[30]

This link is supported by the evidence of the smaller ceramic vessels on the wreck. Many of them originated from Cyprus. Most importantly from our point of view, of the ceramic vessels, there were at least nine WS II mostly 'LL' bowls (see Cline 1994, 186–8, nos. 461–2, 466–8, 470, 473–4, 479).[31] The key point is that there were also many vessels of Mycenaean LH IIIA:2b (according to Jeremy Rutter), from the homeland of the suspected destination of the doomed voyage of this ship. As Pulak (*ibid*.,) notes:

> If the scarab, the collection of Mycenaean pottery from the wreck, and the absolute sinking date are addressed in concert, they bear important implications for Aegean chronology. The evidence indicates a relative date for the sinking of the Uluburun ship very near the end of LH IIIA:2 and within a few years, or at most decades, after the death of Akhenaten. The shipwreck thus provides a very valuable synchronism between the pottery sequence and the kings list. The evidence supports moving the date of the LH IIIB:l pottery at Amarna forward from Akhenaten's time to nearer the end of the l8th Dynasty. [But see discussion below Chapter VI.7 on this].

This discovery not only confirms the central importance of Cypriot copper, but also illustrates the key role of the trade in ceramics between Cyprus, Egypt, the Levant and the Mycenaean city-states at this time, which were the suspected destination of this ship's cargo of copper and produce.

## 4. On the Distinctive Nature and Decoration of the White Slip Wares

When considering the distinctive nature of a ceramic such as White Slip, we can focus on the clay used to create the fabric for manufacture, the slip and the decoration. We shall briefly discuss each of these below. However, it should be noted that in this study, the discussion of fabric does not play a significant role. This is not because the author underestimates the values of the resultant evidence, but simply because such a work is a separate research project in itself. When further data is collated, the localization of fabrics to specific sites/workshops will assist us in understanding the finer mechanics of cultural interaction within Cyprus and abroad.

Suffice to say that the main distinguishing features of White Slip ware used in this book here are the decorative schemas. As Kromholz (1978, 9) notes: "Without definition, the terms WS I and WS II first appear in the first volume of the Swedish Cyprus Expedition (SCE I). … The first attempt at a formal definition [of these terms] was published by Sjöqvist (1940), who attempted to distinguish the two wares on the basis of both fabric and decoration." As Popham (1972a, 432) stated: "Being a decorated ware it is readily divisible into styles and phases of development." It is these features which allow the main divisions, for example, between PWS, WS I and WS II to be established. It has been, however, noted that, on a general level, the detectable changes which relate to these main typological divisions of White Slip are also observed in analyses of fabric, slip and pigment (see Aloupi, Perdikatsis and Lekka 2001). Thus, it is the fact that WS is a decorated ware, divisible into recognisable groupings that makes it such a useful tool for the archaeologist; and which provides a tool for working on a scheme of cultural interaction through a period of nearly 400 years.

In fact, even those who undertake fabric analyses use the definitive nature of the typological categories with their distinct decorations as the original basis for preliminary classification. For example, Gomez and Doherty (2000, 109) write: "Two principal, highly standardised, stylistic groups of White Slip (WS) ware have been recognised…" Here we agree completely with archaeologists like Benson (1961, 65), who in his analysis of the evolution of WS I focused attention on "rim decoration as the key factor." It is an extremely important guide to the study of the chronology and first appearances of the White Slip wares (Fig. 12).

### 4.a Clays in WS manufacture

It is thus the physical appearance of the White Slip wares, and in particular the decorative schema, that has been used to recognise the various subgroups, which we discuss in detail in the next three chapters. Nevertheless the analysis of the clays is also important. This is because, notwithstanding the distinctive

[30] http://ina.tamu.edu.

[31] When George Bass showed me some of the then recovered WS in 1989 in the Bodrum Museum, I immediately thought they were 13th century BC. The absence of LH IIIB ware from the wreck is, therefore, interesting for chronology.

characteristics of the fabric, subgroups are known to exist (Artzy *et. al.*, 1981, 45). We should keep in mind that the evidence is of a random nature, especially because of the lack of any White Slip pottery production and kiln sites – as distinct from identified geological zones which provide the raw material. Hence, our ability to trace travelled routes of production and interchange is limited.

A number of important observations about the clays in WS ware have been made by Artzy *et al.*, (1981, 45): "The unique, basaltic-based clays [unique to the Troodos] of the White Slip Group are quite different from those used to produce other Cypriot wares."

Gittlen (1977, 370) has made the following comment on the use of clays in the WS production process:

> The clay of these handmade bowls was well fired and had turned a red-buff to black colour at the surface. A white slip, applied by dipping the vessel, covers the entire surface area of each bowl. On top of the slip, a painted motif, applied by a l-tip brush, decorates the exterior surface of each bowl. This paint had turned an orange-brown or brown colour during the firing of the vessel.

Specifically on WS I, Gittlen (1977, 371) makes the observation that:

> Their clays, which contain whitish inclusions, are fired to a grey colour at the core but reach brown, red or grey colour at the surface. A white or pearly white slip, sometimes burnished, covers the WS I bowls. The exterior of the bowls contains a delicate painted decoration applied over the slip. Although either brown or red paint was used to decorate most of the WS I bowls, … a few of the bowls found in Palestine exhibit a bichrome decoration.

### 4.b The character of WS Fabrics

As indicated, in this book, we do not focus on the recognition of the fabrics, but rather use the decorative system of the White Slip wares to give us insight into the interrelationships and functions at many levels. However, we should note that the work of Aloupi, Perdikatsis and Lekka (2001, 18–21) on a group of pottery largely from the south coast area resulted in the identification of three fabrics, Types A–B were used primarily in WS I production, while a third, Type C, was introduced during WS II production.[32]

In general the following can be said of the fabrics used in White Slip ware:

*Proto White Slip:* The clay of PWS has fine white and black grits which characterize White Slip ware in general; but it can be said that the fabric of PWS is somewhat more gritty than the later styles. Any section that reveals the firing indicates that it generally reached a brick red to near black colour. This also is a feature of WS I, but there we also have clays that are fired to the typical blue grey core to near white (see also Popham 1972a, 433). We should also note Artzy's (2001, 114) observation about the 'poor quality' of the PWS from Episkopi *Phaneromeni* which "seemed to have crumbled because of its own weight."

*White Slip I:* Like PWS, the clay of WS I is tempered with a considerable amount of fine white and black grits. It is a well known fact that the firing of WS I was technically proficient, producing a highly fired, durable product. The sections often show colouring of a homogeneous brick red colour; although sometimes firing caused a rusty red to near black outcome. As Popham (*ibid.*, 437) explains, there are cases where the fabric section shows a white colour. Knapp and Cherry (1994, 48) note the work of others who have determined that WS I "fabric is similar to that of Pre BA Red Polished ware (Jones 1986a: 527, Artzy 1985b, 98; cf. Todd 1990:56), albeit with a thick white slip, like Proto WS ware. While the clays of WS 2 are very similar compositionally to those of WS 1, a change in the chemical profile of the slip appears to be indicated by NAA data…"

*White Slip II:* As Popham (1972a, 447) noted about the fabric of WS II: "there is a growing tendency for it [the clay] to become coarser with a great grit content." WS II was described by Gomez and Doherty (2000, 109) as employing "…a hard and impermeable fabric that is dominated by fine to coarse (0.125–1mm) sand sized inclusions and varies from light grey (Munsell 2.5YR 6/0) to reddish brown (2.5YR 4/4), depending on the firing conditions." In the final phase of WS, WS II Late, the clay is even more coarse (see Popham *ibid.*, 447). Vessels of this last group are very distinctive and Dikaios (1969–71, pls. 63:14, 16, 26–28; 68:13; 76:30; 193:21) even gave them the name White Slip III. A major production centre for WS II ware is certainly located at Sanidha, despite the fact that the kilns could not be located (see Todd and Pilides 2001, 38).

[32] Contrary to the report, no PWS ware was analysed in this study (see Table 9 here).

It is also appropriate here to make some comments on the slip and paint used in the main styles of White Slip:

*Proto White Slip:* For a general discussion see Popham (*ibid.*, 433, 436): The decorative schema was usually applied in one colour (orange to red) to the thin to thickly applied white to pinkish-white slip (BM 84 12-10 72 – PWS 'RL' Framed Festoon). Popham (1962, 280; 1972a, 432–3) noted, in some instances, the friable nature of this slip. An examination of the PWS from Pendayia and Episkopi *Phaneromeni* indicated a group of material in which (unlike some other forms of PWS, WS I and II), the slip was friable and flaked away; and the painted decoration is fugitive. Popham (*ibid.*,) also observed the feature of pebble burnishing the interior (presumably so as to make them more impermeable and leaving the exterior matt).[33] The designs are applied with thicker lines on PWS ware (approx. 4 mm wide). These can range from an orange red to red brown (e.g., BM C241 PWS 'RL') to dark brown (e.g., BM 84 12-10 72).

*White Slip I:* Decorative motifs are applied in a monochrome or bichrome. See Aloupi, Perdikatsis and Lekka (2001) for an explanation of the chemical composition of the two colours of red (iron) and brown (manganese) (e.g. BM C 224 WS I 'FWL'). See also comments by Bergoffen (in: *ibid.*, 25) on the thicker application of paint to get a 'bichrome' effect. This was also achieved as a result of the firing process (e.g., BM C 225 – WS I 'FWL'; BM C 226 – WS I 'FL') where the design is dark brown, compared to the lower body where it is more red. The design is applied to a 'fine smooth white slip tinged buff, frequently burnished' according to Popham (1972a, 437). This is most obvious when handling the ware. As we note below, the application of the design is generally more intricate and carefully applied, but not always – as in the case of a tankard where the lines of the intricate design are applied very hesitantly (BM C252 – WS I bichrome 'LBD' with Chequerboard, Johnson 1986, pl. 42.209).

*White Slip I late:* Typically this ware has an orange to red-brown matt paint applied to a pale pinky white to white slip.

*White Slip I–II:* This was characterised by monochrome brown to black decoration on white, sometimes to light grey, slip.

*White Slip IIA:* This was characterised by monochrome matt brown/black to black decoration on white chalky, sometimes slightly pinky, slip.

*White Slip II:* This type had a monochrome paint application. The slip can vary from white (BM C245 WS II 'LL') to dark grey. The colour of the paint applied for the decorative motifs ranges from dark brown to black. The lines are again much thicker than the preceding WS I phase. On the difference between WS I and WS II, Bergoffen 2005, 50 says: "Recent analyses [Aloupi, Perdikatsis and Lekka 2001] have shown that some WS II was made of fabrics and slips more commonly associated with White Slip I but painted in the manganese-based [brown-

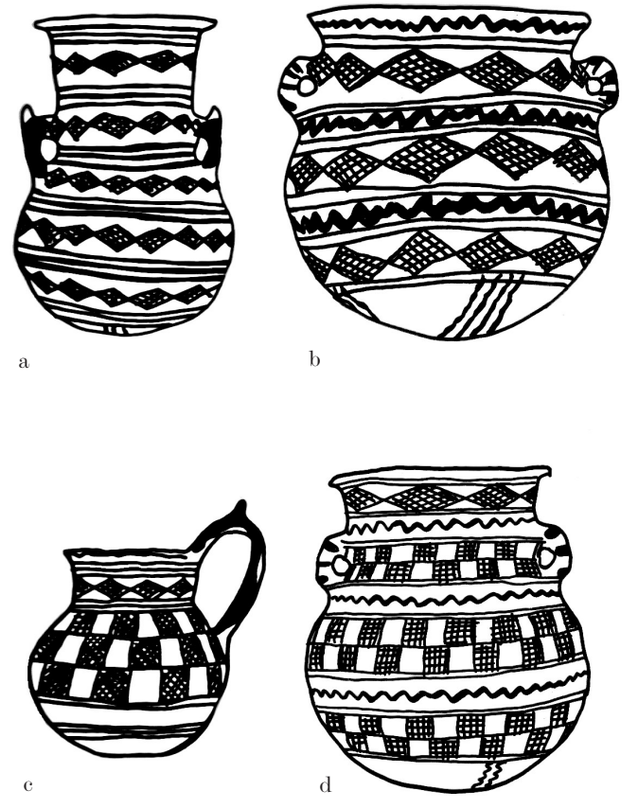


Fig. 3 White Painted ware as the ancestor of Proto White Slip. a) WP III amphoriskos from Tomb 48, Dhenia (after Nicolaou and Nicolaou 1988, pl. VII.7). H. 19.0 cms; b) WP V amphora from near Boghaz, Cyprus (after Webb 1997, 90, no. 407, pl. 28:407). H. 12.4 cms; c) WP III–V jug from Tomb 48 Dhenia (after Nicolaou and Nicolaou 1988, pl. VII.13). H. 15.0 cms; d) PWS amphora from near Boghaz, Cyprus (after Webb 1997, no. 408, pl. 28:408). H. 17.0 cms

[33] Use-wear on the interior of many of the bowls examined in this study leaves no doubt about their service in a functional way. See Dugay (1994; 1996) for the importance of making such observations during the examination of pottery.

black] color typical of WS II instead of the iron-based [red] color used for WS I."

### 4.c The key role of decorative motifs in analysis

As we have mentioned, decorative motifs play the key role in differentiating between PWS, WS I and WS II. As Gittlen (1977, 369) puts it: "Decorative motif is emphasized in the analysis because it is the main classifactory datum."

Initially Sjöqvist (1940, 46) followed earlier opinion which interpreted the decorative motifs characteristic of WS as derivative of stitching on leather bowls. However, we agree with Popham (1972a), Gittlen (1977, 372), Knapp and Cherry (1995, 48) and others. They have all seen in the original WS designs, as Kromholz (1978, 9) also puts it, a "…continuity of the styles with the decorative schemes of Middle Cypriote White painted ware" (Fig. 3). However, on the PWS the "syntax of the decoration of the bowls is a considerable innovation from Middle Cypriot design particularly on its emphasis of horizontal bands with pendant lines" (Popham 1963, 285). This may reflect changing village 'fashion' trends, the adoption of different embroidery designs on cloth. Berggren (1993, 9 with references) is not the first to make an observation about "… how much … embroidery patterns seem to have inspired … pottery ornaments." She (*ibid.*) rightly questions the significance of any symbolic link between the two media of embroidery and pottery on the basis that "… all prehistoric images are not only images but symbols." It would seem that the general continuity of the iconography that was incised or painted on pottery vessels throughout the Bronze Age in Cyprus serves to emphasize the continuity of the symbols that defined the culture, tradition and (possibly) religion of the society. This observation becomes even more significant when we detect new developments and cultural interchange as the Bronze Age progressed. In general, we would stress the strong basis which underpinned the broader society of Late Bronze Age Cyprus and the retention of its cultural identity.

The following general observations can be made about the decorative motifs used on the various styles of WS ware.

*Proto White Slip:* The use of a thick lines (ca 4mm) in simple, less detailed compositions characterise this ware. The decoration is monochrome and one of the main motifs is the 'Rope Lattice'; usually four parallel lines with a row of oblique (usually \\\\\ when the 'RL' motif is placed horizontally around the rim) cross lines. This motif can be placed horizontally or vertically. The 'Rope Lattice' is the main rim motif of this ware. However, we also have 'Parallel Line' style or 'Wavy Line' motifs around the rim. A motif that Popham (1972a, 433) identified as 'festoon pattern' consists of a wavy line adjacent to a straight line. This is a very Middle Cypriot motif, which is also characteristic of PWS. Other significant motifs here are the lozenges with two lines of cross-hatching which appear in horizontal or vertical arrangement. The motif of the opposing vertical wavy lines which are framed by a pair or pairs of open circles (Popham's *ibid.*, 433. fig. 47:6, 'eyes and nose' motif, Fig. 31a) is typical. The motif goes through a number of metamorphoses as WS ware develops. However, the use of open circles can no longer be confined to PWS. For more information on PWS decorative motifs see Popham (1962; 1972a, 436).

*White Slip I:* As Popham (1972a, 440) observed, the decoration was "generally executed in a fine and neat style…" The potters took great care in applying their designs. He (*ibid.*,) identified five main 'frieze motifs'; or what we have here called rim motifs (see Chapter III.1 for more details; Fig. 12). Briefly we should note that the 'Rope Lattice' still has (as Popham *ibid.*, describes it) four main strokes but differs in being much smaller and neater with thin cross strokes at a far less oblique angle." As for the appearance of open circles as a means of distinguishing PWS from WS I (see Popham 1972a, 436), this no longer seems viable. This motif is found on WS I 'Rope Lattice' Group vessels found at Enkomi, Palaepaphos *Teratsoudhia* and *Toumba tou Skourou*. It emphasizes the closeness of the two wares, and the location of the 'Rope Lattice' Group as a style linking PWS with later developments. Popham's 'eyes and nose' decoration of Proto White Slip carries on in a new form in keeping with the general stylistic changes of WS I that set it apart from PWS (Fig. 31b). Sometimes this motif, particularly on bowls of the 'Rope Lattice' Group terminates with a line of pendant row or double row of cross hatched lozenges. Popham (*ibid.*,) noted that "Bowls in the dotted row style ['FDR'] appear never to have this complex frontal decoration, but are content with pendent pairs of parallel lines."

We can trace stylistic development in the long life of WS I (spanning Historical Periods 2–3). We have referred to the 'Rope Lattice' Group at the beginning. At the other end of the scale, we agree with Popham's observation (*ibid.*, 441, figs. 46g:5 top row, 51:1–2) that "A stylistic late feature seems to be the

disintegration of the lozenge frieze and pendant rows of lozenges of criss-cross design or into cross hatching." This is our "Framed X-Hatching' Group (or Popham's 'frieze motif' vi). Likewise, we concur with his (*ibid.*, 443) observation that: "The tree-like fringed representation of the frontal ornament [*ibid.*, fig. 82:5; Fig. 31c] ... together with the filling ornament of circles and semicircles [*ibid.*, figs. 50:1, 82:4–6] are obviously characteristic of a local style… Their continuation, however, on vases with White Slip II features suggests that they may themselves be late products." We also see WS I 'FWL' as a late development in LC IB. The dotted rim usually associated with WS II is already appearing on WS I (see eg., Fig. 26b; Quilici 1990, no. 89, figs. 90–91). See discussion in Chapter III.12.

*White Slip I–II/White Slip II Early:* Whilst Popham separates WS I–II from WS II early on the basis of fabric; the painted designs are very close. On vessels of these two wares we see the link between the 'Rope Lattice' of WS I and the 'Ladder Lattice' of WS II (Fig. 28). The motif is now a true 'LL'; but the arrangement of the motifs is based on the same arrangement that we normally find on vessels of the 'RL' Group. There must surely be an overlap between these styles. The style of WS I–II/WS II early is less 'inspiring' than WS I and the painter(s) seem to be working to a set formula, something which becomes even more obvious in WS II. Popham (1972a, 444, figs. 50:3–8, 83:2–5) felt that individual painters could be identified. In the future, a more hands on study will certainly lead to such conclusions. One of the main differences between WS I–II and WS II early was considered by Popham to be the use of either a wavy line or row of dots around the rim, above the main rim motif (Fig. 29) The former being seen as a link to WS I; the latter becoming a feature of WS II.

*White Slip IIA:* This ware is very distinctive. It takes up the 'Framed Lozenge' and 'Framed Wavy Line' motifs of WS I. However, the designs are applied with a thicker brush and become more streamlined, even to the point where they are seen to be: "The ultimate degeneration of the rim design", as Benson (1961, 66) described it. One of the other distinctive motifs of this ware is the last gasp of the 'eyes and nose' motif of PWS – that is the so-called 'palm-tree' or 'pine-tree' (Fig. 31d). Popham (1972a, 446) was right in seeing this as a specific regional style; although we note the wider distribution recorded for it now.

*White Slip II:* The early stage of WS II defined by Popham is really more akin to WS I–II and so we shall consider it so (see *ibid.*, fig. 53 note the 'LLFL' on the krater from Arpera – fig. 53:4). What Popham felt set it apart from WS I–II was the feature of a dotted rim, considered to be more typical of WS II. However, as we have mentioned above, dotted rims are already appearing on WS I late vessels; and dotted rims can also be found on some WS I–II (*ibid.*, fig. 50:3). This observation is similar to the fact that wavy line of WS I and WS I–II can also feature on some of Popham's early WS II. Stratigraphic evidence will be required to sort this one out. The general impression is that this style is close to the 'Rope Lattice' Group of WS I and so it is better to treat is as a general WS I–II or WS II early group, rather than separating them.

The era of WS II Normal was described by Popham (1972a, 456) as "a period of great production." It is characterised by the distinctive 'Ladder Lattice Hooked Chain', a degeneration of the earlier 'RLFL' of WS I, and of 'LLFL' of WS I–II. The other main rim motif is the 'Ladder Lattice Dotted Row', which is perhaps the further simplification of the preceding design. The most common motif is the 'Ladder Lattice' which derives from the PWS and WS I 'RL', and later from the WS I–II 'LL' (Fig. 28). This is how Kromholz (1978, 5) describes the WS II decorative motifs:

> The typical White Slip II decoration consists of linear geometric patterns painted in a dark brown to black colour on a light ground ranging from pinkish or greenish beige to stark white. The red-and-black bichrome decoration frequently found in the White Slip I style does not occur. The most common patterns comprise one or two horizontal lattice bands below the rim, pendant from which are other lattice bands spaced around the body of the bowl. The vertical bands normally occur with other major elements, such as vertical ladders or bands of framed hatched lozenges, and minor elements such as small diamonds or columns of dotted lines.

The wavy line around the rim of earlier WS is now more-or-less completely replaced by the 'dotted rim', a feature that really emerges in the WS I–II style. By the end of this style, even the 'dotted rim' disappears. As Popham (*ibid.*, 454) observed: "The rather neat earlier painting [of what we define as WS I–II] becomes a somewhat crude and slap-dash version, the result of the multiple brush and mass production. This also affects the subsidiary decoration…"

WS II Late: We know we have come a long way (nearly 350 years) from the first phase of the WS ware – PWS – when we look at the ware that we know as WS II Late (see Popham 1972a, figs. 57, 86),

or Dikaios's White Slip III. The 'Ladder Lattice' and Parallel Line' style have survived, but we now have "a debased form of the earlier ladder pattern and parallel line styles of decoration" (Popham *ibid.*, 456). Not only can the decoration be described as 'debased'; the same applies to the general appearance of the vessels and application of the slip. No longer can we describe this final stage of WS II as 'obscure'; with the evidence from the LC IIC:2 occupation of sites like Pyla *Kokkinokremos* (never to be reoccupied), Enkomi, Sinda and Maa *Palaeokastro*, we see the reason for the degeneration in some of the political events which were shaping this final stage of the Late Bronze Age in Cyprus (or LC IIC:2). This time was also the end of WS ware production (see Chapter VII.7.c.

## 5. Critique of the 'Intra-island Barrier' Thesis

To what extent was the development of the White Slip wares purely a regional phenomenon in Cyprus? One thesis argued by Manning (1999; *id.*, 2002 with Sewell and Herscher) is that the early development of WS was entirely regional and that specific parts of the island were the source of each of the different ceramic styles which we use to define the Late Cypriot period. This general thesis follows that proposed by Merrillees (1971). He claimed that the eastern part of the island continued to use a Middle Cypriot tradition of ceramics, while Proto Base-ring, Monochrome and Proto White Slip allegedly emerged in the general area of the northwest and center of the island. Muhly (1985, 23) sums up the thesis thus:

> In 1971 Merrillees presented a complex and persuasive interpretation of the regional issues involved in the beginning of the Late Bronze Age in Cyprus as seen against its historical background. Merrillees saw the presence of Tell el-Yahudiya and Bichrome Wheelmade wares in Cyprus as imports, marking the foreign relations of the island, with the former coming from Egypt, the latter, from the Levant. Merrillees saw the ceramic innovations that would come to be the characteristic pottery of the Cypriot Late Bronze Age – the Monochrome, Base-ring and White Slip wares as developments that originated in the [north] western part of the island, an area in contact with Syria and Palestine but not with Egypt during the LC IA period. White Painted wares remained characteristic of the east, a part of the island in touch with Egypt as well as with the Levant. The evidence from Tell ed-Dabᶜa seemed to confirm these observations.

The basic premise of Merrillees' argument – that TeY and BiW-m wares were imports to Cyprus; and that the former originated from Egypt, and the latter, from the Levant – is now known to be not entirely correct. Firstly, TeY ware was manufactured in both Egypt and the Levant; and secondly BiW-m ware was made in Cyprus, as well as in the Levant. Artzy, Asaro and Perlman (1973) in fact really challenged conventional thinking, when they concluded that Cypriot BiW-m ware was manufactured in eastern Cyprus and should be regarded as a development variant of the Middle Cypriot White painted wares.

Of course, Merrillees (1971) was also writing before the discovery of TeY in the excavations at *Toumba tou Skourou* was known. He was thus able to develop his thesis on the cultural isolation of eastern Cyprus. It was quite logical to assert that TeY ware was "almost wholly confined to the eastern Mesaoria and the south-eastern coastal region", and that it was "therefore to be closely associated, commercially at least, with the eastern cultural region", (Merrillees 1971, 73). However, as Muhly (1985, 23) pointed out: "The evidence from *Toumba tou Skourou* indicates that the Globular type of Tell el-Yahudiya juglet was being imitated locally at the beginning of the Cypriot Late Bronze Age. This argues for close relations between Egypt and northwestern Cyprus during LC IA, contrary to the reconstruction proposed by R. Merrillees."

More recent observations have further reinforced our view of the close relations between northwestern Cyprus and Egypt. However, as was to be expected, the interrelationships are far more complicated and we are not able to make generalized statements along the lines of: 'the population of the northwest were in touch with the Levant while eastern Cyprus had greater links with Egypt.'

Earlier Gjerstad (1926) defined the Middle Cypriot White Painted series into five groupings and identified regional areas of distribution. This was supported by Frankel's (1974) work, although, as we noted earlier, he saw within this period a degree of unification and communication which he attributed to the exploitation of the copper ores.

It is important to identify what the debate is about here: we accept that there were some regional conflict during the LC IA:1–2 period in Cyprus. We also accept that there are some 'fortress' sites dateable to the MC III/LC IA:1 periods. To develop the 'intra-island barrier' thesis, we need to move to the next step of suggesting there were hostilities between Cypriots and some blockage of the movement of goods, throughout the island. The security blockages are the basis for the idea of an 'intra-island barrier' between the northwest and the east of the island.

Manning, Sewell and Herscher (2002, 100), following Merrillees (1985), maintain that the barrier thesis is enhanced by some later finds which extend the western area of influence right up to the Larnaca area, with the south coast as the link between the western and eastern spheres of influence. Given the authors' extensive knowledge of the southern part of the island, where they have all been involved with the ongoing excavations at Maroni, their material adds considerable evidence to our further understanding of the island wide dynamics which were operating at the beginning of the LC period. No one would now deny that we are dealing with a situation of '… a complex regional mosaic, which any description necessarily oversimplifies.'[34] There is no problem, if by 'regionalism' we mean that there were different centres of production of the ceramic industry and that these were parts of Cypriot culture, as it developed from the Middle Bronze Age into the Late Bronze Age. However, it is one thesis to maintain that there were separate centres of production of specific wares, and quite another to prove that there were barriers which prevented the island wide distribution of the products.

It is this latter 'fact' that Manning, Sewell and Herscher (2002, 99) need to establish for their thesis to be have any force. In seeking to do so, they adopt an observation put forward by J.R.B. Stewart (1974, 63) that the finds from the cemetery of *Stephania* suggest that 'the MC to LC transition … was quite abrupt, whereas in the east of the island the MC wares had a considerable survival.'[35] However, a vital question here is: how representative are the finds from this cemetery of an uninterrupted flow of cultural development in this northwestern part of the island as a whole? Without having excavated the settlement, we should not assume that the fourteen tombs excavated by Hennessy (1963) are representative of the uninterrupted use of the cemetery by the village occupants through the Middle to Late Bronze Age.

An examination of the ceramic results of the settlement of Myrtou *Pigadhes* (Taylor 1950) in the same vicinity (northwest) should alert us to this problem. The bulk of the ceramics from the early levels is primarily made up of wares that first appear in the Middle Cypriot period, a situation not dissimilar to that shown by Dikaios (1969–71, pls. 53–5) at Enkomi. Nearby *Stephania* is also not really a good example for Manning to cite. It is true that at *Stephania* there are tombs that belong to the MC III period and we also have tombs with PBR shapes in BR I fabric. However, it is when we examine the record of White Slip ware there that the fallacy of the argument is exposed. Despite claiming that there is no PWS in the tombs at *Stephania* (but see Fig. 4d–f), there is at least one sherd (see Chapter II.2.d, Fig. 6) and a current examination of the sherds from the tombs is also likely to produce more examples here.[36] How is this possible on Manning's thesis, given the proximity of *Stephania* to *Toumba tou Skourou*? After all, it is from *Toumba tou Skourou* that the 'bulk of available evidence comes' to establish his thesis, (Manning, Sewell and Herscher 2002, 100). It would appear that the so-called Northwest thesis is increasingly seen to apply only to *Toumba tou Skourou* and not to all the other northwest centres. Could it be that we have wrongly generalised from only one site?

The problem for Manning is further magnified by the finds from the Italian expedition to Ayia Irini, also in the northwest. They found only one example of his 'early-style WS I' or WS I 'RL' (Fig. 17), which plays a key role in his analysis of *Toumba tou Skourou* (see Chapter III.10.iv). Also, they only found one piece of PWS (see Chapter II.3.d). Thus, whilst there is a Middle Cypriot III component at Ayia Irini and *Stephania* , there is then a 'jump' to the so-called mature WS I. At neither of these sites is PWS nor WS I 'RL' style represented in the quantities that they are recorded at *Toumba tou Skourou*. The latter site covers the development through from MC III (Tomb V) down to LC II. It bridges what we see in the tombs at nearby Pendayia – and farther into the foothills of the northern Troodos at Akhera, Akaki etc. This group is distinguished by their largely PWS assemblage, whereas the tombs at Ayia Irini and *Stephania* are characterised by their WS I assemblage. How could it be that the two centres of Ayia Irini and *Toumba tou Skourou* – so close to each other in the northwest – could have such different outcomes? The picture painted by Manning that the northwest as a whole developed PWS and 'early-style WS I' (here WS I 'RL') in a regional

[34] Manning, Sewell and Herscher 2002, 100.

[35] Merrillees (1971), a student of Stewart, has strongly advocated this interpretation of the *Stephania* tombs.

[36] A re-examination by the author of the *Stephania* sherds, as well as the preparation for publication of the unpublished Tomb 2 material, is underway.

contrast with the east – appears very strained. Indeed, if it were not for the results from the 1971–73 excavations at *Toumba tou Skourou*, we would still be wondering where to find any significant examples of PWS ware, as one travels north of Pendayia. So, rather than reinforcing Stewart's posthumously published remark about the abrupt transition at *Stephania*, we should perhaps be moving further away from it. Had Stewart seen the results of nearby *Toumba tou Skourou*, he might have done the same.

We can see why Merrillees (1971) adopted the position he did on the separation of the northwest and the east. He saw the LC IA as a formative stage, with LC IB being the period when we get 'a homogenous LC culture … found all over the island'.[37] In the more modern version from Manning, Sewell and Herscher (2002), we have the claim that the ceramics which define the LC IA – that is PWS/WS I and PBR/BR I – are products that all find their origin in the northwest of the island and were slowly adopted elsewhere (after a gap of between 40 to 100 years).[38] They then draw the speculative conclusion that there was an almost absolute socio-cultural intra-island separation between these two areas during the LC IA period.

### 5.a The international implications of the 'intra-island barrier' thesis

Manning adopts this 'intra-island barrier' thesis because he wishes to support a specific claim in relation to the date of the volcanic eruption on Thera in the Aegean. Much has been written about this event, the basic facts of which are as follows: In the first part of the LBA, the volcanic island of Thera erupted with such a magnitude that up to ten metres of ash and volcanic debris were deposited across the island, covering all human occupation. Excavation of one of these settlements at Akrotiri has shown that the inhabitants were able to evacuate their homes before the final eruption. The actual date of this eruption has been an issue of archaeological debate for more than a century. Archaeological data has focused on the testimony of the ceramics and other artefacts. On the other hand, physical scientists (especially geologists) have approached the issue from a number of different angles, including ice core analysis, dendrochronology and carbon-14 data.

The problem is that the different methods have given us a broad range of possible dates for the eruption – from about 1645 BC to 1467 BC. For example, recently there has been evidence from ice core drills in Greenland which showed traces of volcanic dust from a huge event about 1645 BC, once thought to be Thera (Hammer *et al.*, 1987, 2003; Manning, Sewell and Herscher 2002). The question is: are these from Thera? Or are they from an alternative volcanic event – in Alaska?[39]

Manning (1999, with references) seeks to approach this issue from both perspectives and has consistently argued for a 17th century BC date for the Thera eruption. Our main interest is in his archaeological arguments, because they relate to a WS bowl found 'in a house of the prehistoric settlement at Akrotiri', (Gjerstad 1926, 333). Essentially Manning's thesis is that the Cypriot bowl was of the so-called 'early-style WS I' [here defined as WS I 'RL'] (see Chapter III.5.a). Using the 'intra-island barrier' thesis, Manning seeks to demonstrate a link with the LC IA phase in the northwest of Cyprus, where this style is presumed to be exclusively located at this time. It is then argued that the near absence of this style in the east of Cyprus explains why there is a temporal gap at the Egyptian Delta between the appearance of PWS in Stratum D/2 at Tell el-Dabᶜa until the arrival of the presumed later style of WS I 'FLMet' in a New Kingdom level at ᶜEzbet Helmi (Fig. 21).

Manning thus postulates that there were several decades during which 'early-style WS I' (or WS I 'RL') was produced in the northwest of Cyprus and that it did not reach the east of the island, which continued to trade with Tell el-Dabᶜa (but not Ajjul?). He claims, it was only decades later when the 'mature' or 'classic' WS I arises (as typified by rim motifs such as 'FWL' etc), and when the alleged barrier between the northwest and the east of the island had broken down, that we then have this 'mature' WS I (as typified by the ᶜEzbet Helmi WS I 'FLMet' spouted bowl) appearing in the Egyptian Delta area.

Manning further proposed another interpretation which saw the connections of Tell el-Dabᶜa's during

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[37] Manning (*et al.*, 2002, 100), see also Merrillees 1971.

[38] The distance from *Toumba tou Skourou* to Enkomi is about three day's walk – it seems illogical to propose that WS I 'RL' when it reaches Enkomi, Hala Sultan Tekke or for that matter Palaepaphos *Teratsoudhia* did not do so within a horizon not too far removed in time from its production. If we say it is much later because of 'intra-island' barriers – how could WP III–IV PLS arrive at *Toumba tou Skourou*?

[39] This was discussed at the SCIEM 2000 conference held in Vienna in 2003. Publication forthcoming. See also Pearce *et al.*, 2004.

| THERA | LEVANT | CYPRUS Northwest | EGYPT Tell el-Dabʿa | CYPRUS East |
|---|---|---|---|---|
| | | | **Late SIP Period** MC Cypriot pottery typical of eastern Cyprus found from Strata G to D/2 (WP III–IV ends in D/3) | **MC III /LC IA:1** MC III /LC IA:1 fabrics typical of eastern Cyprus dominate. Note particularly WP III–IV which is not found at Tell el-Dabʿa after Stratum D/3 |
| | | **LC IA:1** Appearance of fabrics we use to define LC IA:1 in the northwest, i.e., PWS, BR, etc. | **End SIP** PWS first recorded in Stratum D/2 (Fig. 11) Clear ceramic break between Cypriot assemblage at Tell el-Dabʿa cf ʿEzbet Helmi | |
| **Late Cycladic IA** WS I 'RL' (Fig. 13a) **Pre 1645 BC** | **MB IIC** WS I 'RL' in Palace 1 at Tell el-ʿAjjul (Fig. 13b) Strong links with northwest Cyprus | **LC IA:2** Introduction of WS I 'RL' style (or Manning's 'early-style' WS I) | **Late SIP/Early NK** Three sherds of WS I 'RL', one in an early 18th Dynasty context | **LC IA:2 'Intra-island barrier' thesis.** MC eastern tradition continue and PWS, WS I 'RL' do not arrive until following LC IB |
| **1628/1645 BC – Eruption of Thera at end of Late Cycladic IA** | | | | |
| | **LB IA** Appearance of 'mature' WS I etc amid local cultural assemblage | **LC IB** Homogeneous culture over island. 'Mature' WS I spreads to eastern part of island | **Early New Kingdom** 'Mature' WS I appears in early New Kingdom at ʿEzbet Helmi (Fig. 21) | **LC IB** Homogeneous culture. 'Mature' WS I and WS I 'RL' arrive in eastern part of island eg., Enkomi Level IB |

Table 4 Construction of Relative Chronology based on the 'intra-island barrier' thesis (after Manning, Sewell and Herscher 2002)

the Hyksos period with Cyprus as centered on the east of the island, specifically in the Kalopsidha/ Enkomi area. Meanwhile he claims that Tell el-ʿAjjul in Canaan at the same time also had its Cypriot links (most likely related to the procurement of copper) with the northwest of the island, as typified by strong connections with the site of *Toumba tou Skourou*.

Manning's staggered chronology looks something like this when appended to a 1628 BC date for the eruption of Thera (see Table 4).

Manning believes that this general account explains why, in the Delta, there are hardly any of the ceramics which define the LC IA in the northwest of the island, but many styles considered synonymous with the MC III into LC IA:1 ceramic tradition of eastern Cyprus – (that is, similar to those found at sites like Enkomi and, particularly, at Kalopsidha (see Table 3), and predominantly in tomb assemblages). An example of these latter types is referred to by Knapp and Cherry (1995, 159 with further references); as clay analysis has definitively demonstrated that the "White Painted and Bichrome wares form a major 'Eastern Cypriot' group."

Manning (2001, 83) and Manning, Sewell and Herscher (2002, 104–5) further argue for the position that the LC IA population of eastern Cyprus through the main site of Enkomi had 'material linkages with Egypt and some of the Levant' and that 'the majority of contemporary Egyptian and Levantine imports [to Cyprus] are found at sites in the east to south east'. They cite as supportive evidence the material as set out in Table 5, (*ibid.*, 105, nos. 20–21).

However, the details of this table show that there are serious problems with this analysis; it does not seem to support Manning's (2001, 83) claim that the northwest area of Cyprus has many fewer Egyptian and Levantine imports. Firstly, this evidence is incomplete, since it does not refer to the Egyptian razors found in Cyprus (see Chapter VI.5). Of course, they appear to date around the time of Thutmosis III in Egypt, so that would explain their absence from his analysis. However, their presence is critical in providing a general terminus post quem for the dating of their Cypriot contexts. This may not seem relevant to *Toumba tou Skourou* Tomb I Chamber 1; however the type also occurs in Tomb I

| East to southeast Cyprus | Egyptian/Levantine artefact | Western Cyprus |
|---|---|---|
| Enkomi<br>Milia | Tell el Yahudiyeh/el Lisht ware | *Toumba tou Skourou* |
| Enkomi<br>Phlamoudhi *Vounari* Enkomi | Chocolate on White ware | ∞ Myrtou *Pigadhes* (Fig. 43) |
| Palaepaphos *Teratsoudhia* (Fig. 39) (in northwest cultural zone -Manning, Sewell and Herscher 2002, 100) | Egyptian stone vase with Ahmose cartouche (Fig. 39) | |
| | Carved ivory plaques | *Toumba tou Skourou* (Fig. 42b) |
| | ∞ Egyptian New Kingdom razor types (cf Fig. 40) | ∞ *Toumba tou Skourou*<br>∞ Ayia Irini |
| ∞ Enkomi | ∞ Ostrich eggs | ∞ *Toumba tou Skourou* |
| | ∞ Scarab | ∞ Pendayia |

Table 5 Evidence used by Manning, Sewell and Herscher, (2002, 105, ns 20–21) to support claim that the majority of Egyptian and Levantine imports to MC III/LC IA:1 Cyprus are found at sites in the east to south east of the island (∞ = my additions)

Chamber 3.[40] Another problem is that the only decorative WS I style in this chamber is of the 'Framed Wavy Line' style (Table 8). Furthermore, reference is made to the bone plaques in Chamber 1 of this tomb and the implication is that they too belong with the 'earlier' array of material in that Chamber, that is WS I 'Rope Lattice' style (Fig. 42b). However, similar plaques are also in Chamber 3,[41] and thus, like the razors should be associated with WS I 'FWL', with the 'mechak' razors in Egypt during the 18th Dynasty and, more specifically with the Thutmosis III period.

A second argument here is that since there are Egyptian and Levantine artefacts found at *Toumba tou Skourou* in the northwest, this appears to contradict Manning's claim that the Egyptian Delta was essentially only trading with Enkomi in the east of Cyprus. Thirdly, Manning's account leaves us totally confused as to his real position on the relationship between the Levant and the two sides of Cyprus at this time. In fact, the evidence appears to be that both the east and the west had links with parts of the Levant from MC III (Tell el-Yahudiyeh),[42] through LC IA (bone plaques), until LC IB (Egyptian razors).

Manning, Sewell and Herscher (*ibid.*,) need to have their 'early-style' WS I (herein described as WS I 'Rope Lattice' style) arriving in Palace I at Tell el-ᶜAjjul from the northwest to develop his argument; yet he claims at the same time that the majority of contemporary Egyptian and Levantine imports to Cyprus are found at sites in the east to southeast. How can this be? If the east to south east is receiving goods from Egypt and the Levant – why would the ceramics of the northwest be in the majority at Tell el-ᶜAjjul? In fact, if one examines the evidence put forward by Manning, Sewell and Herscher (*ibid.*; see Table 5 above), it actually shows that the type of Egyptian and Levantine exports are equally represented in the northwest and the east/southeast and one should seek to correlate these areas on this basis.

The real problem that must be confronted here is: Why is it that the WS I 'RL', as found at Thera, is so well represented in Palace I at Tell el-ᶜAjjul (see Bergoffen 2001a, 153, fig. 6); yet there are just three sherds of this style at Tell el-Dabᶜa? Manning relies on his 'intra-island barrier' thesis for a solution. We have already alluded to some problems in his account. As we shall see in Chapter III.8, even if there is something in the idea of regional production of WS I, much more is needed to establish Manning's thesis that the gap in time from the appearance of the Thera bowl to the arrival of so-called 'mature' WS I in Egypt was as long as he claims, or that it can be attributed to the alleged intra–island problems and alleged barrier limitations in Cyprus. In Chapter III, we shall present what we believe is a more viable explanation of these events. We shall also further discuss Manning's 'intra-island barrier' thesis in relation to the WS I 'RL' bowl from Thera.

[40] Vermeule and Wolsky 1990, 241, T. I. 367.
[41] *Ibid.*, 240, T. I. 358, 381, pls. 117–8.
[42] See also Merrillees 1971, 74.