

## CHAPTER 3 CHRONOLOGICAL CONSIDERATIONS

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### Egyptian Chronology

Egyptian chronology is fairly simple in outline and has a reputation outside the field for its immutable, unchanging, fixed timescale but, as any Egyptologist can tell you (eyes to heaven), this is far from the case. Nonetheless, the various checks and balances enforced by the amalgamation of the variety of evidence available do not allow disagreements, alterations and corrections beyond certain often quite limited parameters.

#### *Internal*

The Egyptians themselves measured calendrical time by the seasons, of which there were three. Each season consisted of four ‘months,’ each of 30 days, for a total of 360 days. A fourth ‘season’ and thirteenth festival ‘month,’ a mere five days in length, was added to complete the full year of 365 days. Although they recognised that this system was slightly inaccurate, as the ‘real’ seasons slipped farther and farther away from the ‘calendrical’ seasons, the Egyptians did not grasp the concept that an extra quarter day each year, or extra day every four years, would correct it.

Initially, in the earliest records, years were named according to a major event, such as “the year of counting all cattle,” and the earliest annals are recorded in this fashion or a variation of it at least until the reign of Pepi II (end of Dynasty VI). By Dynasty XI, time was recorded according to an annual calendar, the ‘year’ date being the regnal year of the monarch.<sup>19</sup> Thus written accounts and other dated inscriptions are noted fully as “Regnal year ‘A,’ month ‘B’ of (season) ‘C,’ day ‘D’ of (king) ‘E,’” or in an abbreviated version of this format. The first day of the regnal year was consistent, a ‘New Year’s Day,’ but until the New Kingdom (when the system changed) the last numbered regnal year of the old monarch and first regnal year of the new ruler both

lay within the same calendrical length of a single year. In this practice lies a problem in correlating the modern with the ancient Egyptian calendar, for ‘two’ years actually were one, in modern terms. Beginning in the New Kingdom, the old pharaoh’s last ‘year’ ended with his death and the new pharaoh’s first year was a full year long. The new regnal year began with the date of his accession, and was distinct from a civil calendar that remained constant. Nonetheless, these ‘regnal years’ are of immense help in calculating the order of events within individual reigns and, occasionally, in correlating the co-regencies of certain monarchs when a single inscription notes their overlapping regnal years.<sup>20</sup>

The dynastic outline and divisions employed in Egyptological literature follow the *Aigyptiaka*, a history of Egypt compiled by the Egyptian priest Manetho at about 300 BC, on the basis of temple and other records. He divided his list of successive kings of Egypt into numbered ‘dynasties,’ sometimes for questionable or unclear reasons, and this system continues to be followed in outline today. However, the details in his text can be quite corrupt, as is to be expected in a compilation created up to nearly three millennia after the fact, in a different language (Greek), preserved today only in later copies by different scribes.<sup>21</sup> Much research and revision by numerous scholars over the past two centuries has attempted to reconcile the *Aigyptiaka* and the archaeological record, employing a variety of documents both contemporary with, and later than, the events they describe. Egyptian chronology has undergone innumerable alterations and corrections, both small and large, as new evidence is recovered and old evidence is reassessed.<sup>22</sup> The corruptions in Manetho’s text have now been long evident.

Events in Egyptian dynastic history from 664 BC are accurate, or ‘absolute,’ according to the modern calendar, but earlier dates are calculated according to our state of knowledge and the individual scholar’s

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<sup>19</sup> See GARDINER 1961:69–71.

<sup>20</sup> Extended discussion of problems and subsequent uncertainties involved in relative and absolute dating in Egypt can be found in MURNANE 1977 and REDFORD 1986.

<sup>21</sup> See WADDELL 1971. The two major and not always consistent versions of Manetho’s text are those of Africanus and

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Eusebius. GARDINER 1961:429–453 is a good, although now outdated, attempt at correlating Manetho with the king-lists in their contemporary and later Egyptian sources.

<sup>22</sup> REDFORD 1986 is an excellent compilation and discussion of original Egyptian source material.

interpretation of the evidence. Dates of individual historical events are fitted within an ‘absolute’ historical sequence resting on a very few anchors in modern terms. These anchors, chiefly data obtained from a small group of dated texts describing astronomical observations, can be translated into dates in the modern calendar and timeline in that the date of the observations can be calculated in modern terms. Even these events cannot be precisely calculated, as the texts themselves do not provide all the information required, but the possibilities obtained from the available information lie within an extremely limited range. All other individual dates are calculated for dynastic history from these few slightly blurred foci. As the most precise ‘anchor’ lies within the Middle Kingdom (the most accurate being from the reign of Senwosret III), Middle Kingdom dates likewise are the most precise for Egyptian history before 664 BC.<sup>23</sup> New Kingdom dates are limited to specific possible dates a quarter century apart for an astronomical observation in the reign of Ramesses II, with the balance heavily tipped in favour of one of the two possibilities, and the other rarely even cited.

Even within this framework, the absolute dates of events prior to 664 BC have been subjected to much revision over the past few decades, especially through much concentrated research in the chronology of the rather confusing Third Intermediate Period (see further below), for any alteration in the chronology of this period directly affects the ‘absolute’ date for any and all earlier events. Such revision and ‘fine-tuning’ of the king-lists, regnal year-lengths of individual kings, historical events and internal chronology still continue. Any ‘absolute’ chronological dates provided must still be seen as approximate and subject to further revision, and indeed the same authors have revised their chronology as new evidence and interpretations of old evidence have become available. To take a single historical event, BREASTED (1908) calculated the end of Dynasty XVIII at 1350 BC and BAINES and MÁLEK (1980) at 1307 BC, whereas

KITCHEN (1996; 2000) considers this event to occur at 1295 or 1291 BC.<sup>24</sup> Future research may lower it a little farther. Other current scholars also estimate different ‘absolute’ dates for this event, according to their interpretation of the known evidence. Researchers in different fields and specialisations follow or have followed several different chronologies of absolute dates, generally named the ‘high’ (early), ‘middle,’ and ‘low’ (later) chronologies. Some variations such as ‘ultra-high,’ ‘medium-high’ and ‘ultra low’ have also been used for more minor dissensions in the scheme. Egyptologists recently and currently researching this question, with very few if any exceptions, follow the ‘low chronology,’ and differ by less than a decade in their absolute dating of events for the Middle Kingdom and following periods.<sup>25</sup>

‘Predynastic’ Egypt is divided into multiple cultural periods, of which only the last few of the sequence are of interest for the purposes of the present study. This sequence is far more refined than described here, but for present purposes the general periods are known as Badarian, Naqada I (or Amratian), Naqada II (or Gerzean) and Naqada III (or Late Gerzean, sometimes Dynasty 0). This last, relatively short, period is one of intense cultural and political development. A single king had unified and ruled the entire land of Egypt by its end, and the Dynastic sequence as enumerated by Manetho began. Throughout the nearly 3000 years of their dynastic history and beyond, the ancient Egyptians themselves viewed their homeland as the ‘Two Lands,’ Upper (or southern) and Lower (northern) Egypt, and this unification event as the beginning of that history and indeed the foundation for it. Scholars have sub-divided this Dynastic period, initially following Manetho’s text and generally according to Egypt’s political stability.

Egyptian history after the unification and before 664 BC is divided into three ‘Kingdoms,’ separated and followed by three ‘Intermediate Periods.’ The Old, Middle and New Kingdoms mark the periods of centralised

<sup>23</sup> The implications of Kate Spence’s recent calculations, based on Old Kingdom pyramid alignments, has yet to be fully appreciated or considered but, if her dates are accepted, it would seem that present calculations of the Old Kingdom dates may be too early by about 75 years. See SPENCE 2000; 2001; BAUVAL 2000; RAWLINS and PICKERING 2001. WARBURTON 2000 is a brave and compelling attempt at synchronising Egyptian, Mesopotamian and various Near Eastern chronologies (see p. 45 for discussion of Spence, but note that his synchronisation of LM II with the reign of Ahmose p. 71 is incorrect).

<sup>24</sup> BREASTED 1908:20, 24; BAINES and MÁLEK 1980:36; KITCHEN 1996:5, 12; 2000:39. SHAW 2000:481 cites 1295 BC for this event.

<sup>25</sup> See, for example, the comparative chart of opinions at the end of the revised (1990) edition of HAYES 1953–1959: II:497–501. These dates have since been revised further; compare, for example, KITCHEN’S dates here and his later (1996; 2000) revisions.

authority of the king. During the First, Second and Third Intermediate Periods that follow each of the three Kingdoms, the instability and loss of this central authority divided Egypt into multiple smaller political units. Even during these Intermediate Periods, when some geographical units could be ruled by foreigners, the concept of the entire land of Egypt as a unification of the ‘Two Lands’ remained unshakable and all-pervasive. Following the Third Intermediate Period, a variety of ‘names’ are employed for the latest dynasties of mostly foreign kings who ruled the (still effectively unified) ‘Two Lands’ of Egypt. The Third Intermediate Period and later are beyond the chronological limitations of the present study, which is concerned only with the period approximately 3000 through 1100 BC or, in Egyptian terms, the Early Dynastic through the New Kingdom.

Manetho’s dynastic divisions usually are based on royal family relationships, although the reason(s) for certain divisions are not always explicable. As research has progressed, some known kings have ‘moved’ to another dynasty or are placed in a different position in the line of succession within their dynasty. The division points between ‘Kingdoms’ and ‘Intermediate Periods’ also have fluctuated in scholarship, and are not universally accepted at the same points in the dynastic chronology. The reader of any volume employing Egyptian historical periods would do well to consult its published chart, in order to ascertain what its author’s terminology encompasses, as the same terms do not always reflect the same time periods or even the same dynasties. Different scholars can mean different lengths of time when they use the same general term. Depending on the author(s) viewpoint, the ‘Late Period’ that follows the Third Intermediate Period can begin in 712 BC with the reign of Shabaka in the middle of Dynasty XXV, in 664 BC with the beginning of Dynasty XXVI, or in 525 BC with the beginning of Dynasty XXVII in different volumes, to cite but a single instance beyond the period with which this study is concerned, as employed in three texts from its bibliography. Each author cited employs a different chronological range for this term, using different political events, and this different range reflects on his or her discussion of the material

presented in the volume consulted even when the actual historical dates quoted are the same.<sup>26</sup> A chart (Fig. 1) outlines the relevant chronological periods of Egyptian history and their divisions as employed in the present study, but some explanation is required for the choices made here.

#### *Early Dynastic (or Archaic) Period (Dynasties I–II)*

Early Egyptologists marked the first two or three dynasties as the ‘Proto-Dynastic’ or ‘Archaic’ period, some considering the Old Kingdom to begin with the first stone pyramid of Djoser (in Dynasty III). The earliest dynasties now are called the ‘Early Dynastic’ or ‘Archaic’ period by different authors, and the division between it and the Old Kingdom now is accepted as the change from Dynasty II to III.

#### *Old Kingdom (Dynasties III–VII/VIII)*

The period constituting the end of the Old Kingdom and the beginning of the First Intermediate Period has undergone reassessment in recent Egyptological literature. Formerly, the division was placed at the end of Dynasty VI, and the First Intermediate Period began with Dynasty VII/VIII.<sup>27</sup> Detailed study of the period, by SEIDLMEYER (1990) amongst others, has shown that Egypt still remained a unified entity during this short period of less than half a century, and it should be considered the terminal end of the Old Kingdom rather than the beginning of the First Intermediate Period. Although not yet universally accepted, this point of division at the end of Dynasty VII/VIII is employed in the present study.

#### *First Intermediate Period (Dynasties IX–X and earlier Dynasty XI)*

The First Intermediate Period consists solely of Dynasties IX–X of Lower and Middle Egypt, and the earlier half of Dynasty XI in southern (Upper) Egypt. The term ‘Herakleopolitan Age’ refers to the First Intermediate Period in Lower and Middle Egypt, under the Dynasty IX–X kings resident at Herakleopolis near the Fayum. These are contemporary with the first four kings of Dynasty XI, who ruled Upper Egypt from Thebes. The border between

<sup>26</sup> The crucial political events used by the different authors in assigning the beginning of the Late Period are the reign of Shabaka, the third king of Dynasty XXV who re-unified the ‘Two Lands’ under a single ruler for the fourth time (BAINES and MÁLEK 1980:37), and the change to Dynasty XXVI (IKRAM and DODSON 1998:11) or to Dynasty XXVII (ANDREWS 1990:203). Shabaka’s reign also marks the end of the Third Intermediate Period, according to Baines and

Málek, whereas the other two texts mark this division at the end of Dynasty XXV.

<sup>27</sup> Dynasty VII/VIII encompasses some 16 kings, who ruled either consecutively or sequentially for short periods of time. A division point between these two dynasties cannot be ascertained, and it is possible that none actually existed. See IKRAM and DODSON 1998:9 for the list of known kings, but note they begin the FIP with these dynasties.

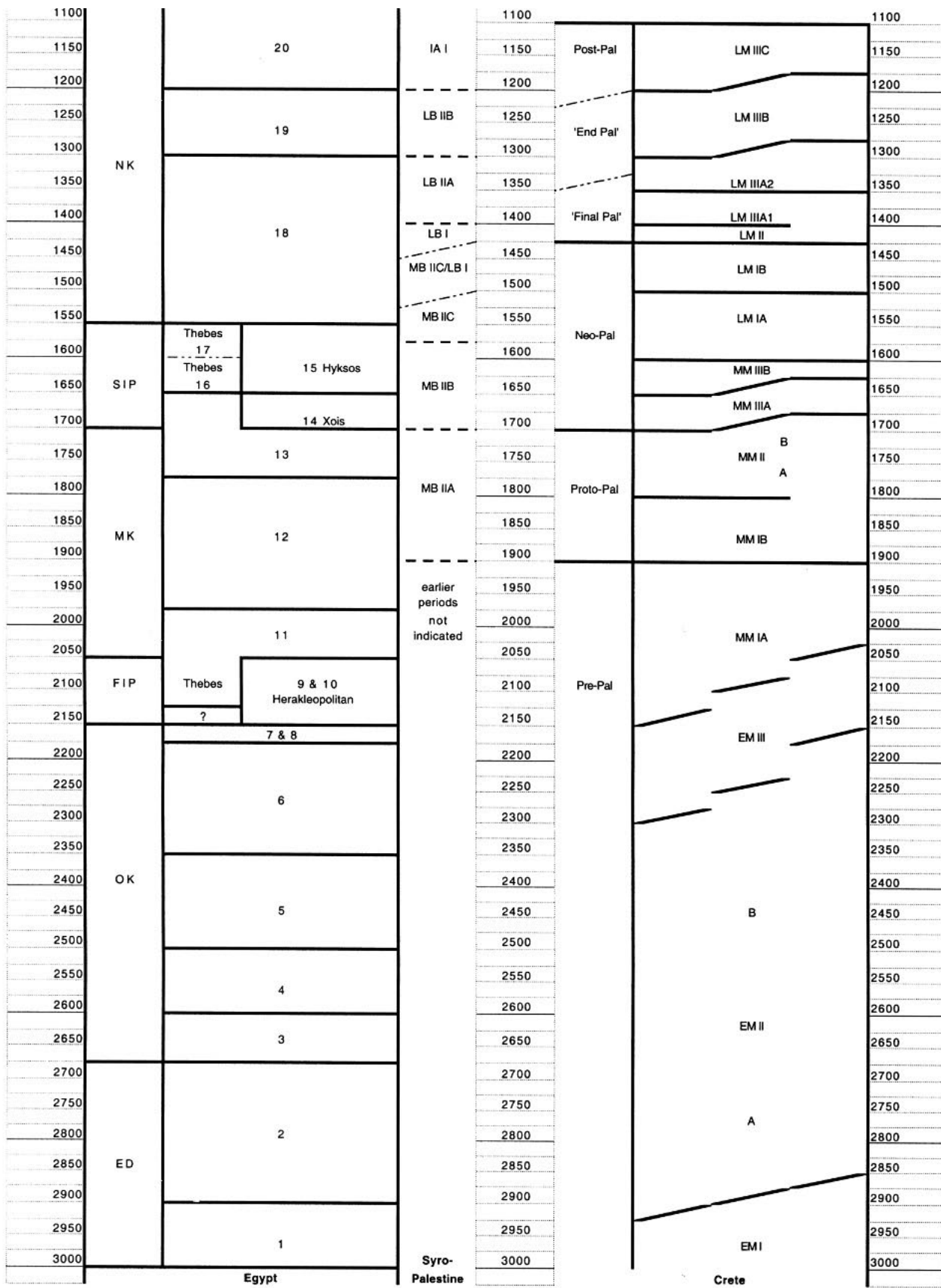


Fig. 1 Chronological chart



the two ‘kingdoms’ fluctuated considerably throughout the period, but is generally placed not far south of Assiut in Middle Egypt. The end of the First Intermediate Period and beginning of the Middle Kingdom is considered to be the point at which Egypt was re-unified by the fifth Dynasty XI king, Mentuhotep II (Nebhepetra),<sup>28</sup> who ‘conquered’ the north in or about his Regnal Year 20. Thus the First Intermediate Period ends, technically, in his Year 20, when the ‘Two Lands’ were ruled by a single king. Often, however, the Middle Kingdom is accepted as beginning with Mentuhotep II’s reign.

The material of this period with which the present study is concerned cannot be distinguished as Herakleopolitan or Theban in origin, although clear ceramic distinctions are recognised,<sup>29</sup> and I have chosen to record dates encompassing both concurrent dynasties.

*Middle Kingdom (later Dynasty XI through mid-Dynasty XIII)*

Previous scholars have placed the date of the end of the Middle Kingdom at different historical points, the most common being the end of Dynasty XII and the end of Dynasty XIII, but also at other dates within the latter. I take the end of the Middle Kingdom to coincide with the beginning of the Delta-based Dynasty XIV, well into Dynasty XIII when king Merneferria Aya fled southwards from Lisht and clearly Egypt again was divided under the rule of at least two co-existing dynasts. Merneferria Aya is the last of seven kings that constitute the V<sup>th</sup> of Kitchen’s ten king ‘groups’ of Dynasty XIII, whom he estimates as ruling between 97 years after the beginning and 53 years before its end. Thus the first two-thirds of Dynasty XIII are still within the Middle Kingdom and the last third within the Second Intermediate Period.<sup>30</sup> The Second Intermediate Period therefore would begin about two-thirds

through Dynasty XIII, on this basis. Whilst not yet universally accepted, this division point is now becoming standard in Egyptological research.

*Second Intermediate Period (later Dynasty XIII to Dynasty XVII)*

This period has undergone radical reassessment over the past decade, with intense study of the individual dynasties within it.<sup>31</sup> The kings of Dynasty XIV are now recognised as the Delta-based predecessors of Dynasty XV, and those of Dynasty XVI as the Theban-based predecessors of Dynasty XVII. As now understood, Dynasty XIV was based at Xoïs in the Delta and was contemporary with the last third of Dynasty XIII, whose kings were based in Upper Egypt at Thebes after Merneferria Aya had fled Lisht. The Second Intermediate Period, in the north, thus constitutes the two successive Dynasties XIV and XV. Dynasty XV ruled from Avaris (Tell el-Dab<sup>a</sup>) in the eastern Delta. Its rulers generally are known as the ‘Hyksos’ kings, and their dynasty as the ‘Hyksos’ period. Both Dynasties XIV and XV are foreign (non-Egyptian) rulers, immigrants from the Levant; the name ‘Hyksos’ is hellenised from the Egyptian *ḥꜥꜣw-ḥꜣswt*, ‘rulers of foreign lands,’ whose rule over part of the ‘Two Lands’ was an indignity never forgotten by the ancient Egyptians. At the same time, the indigenous Egyptian kings of later Dynasty XIII and its two successor Dynasties XVI and XVII ruled Upper Egypt from Thebes.<sup>32</sup> Again, the border shifts throughout the period, but for the most part it is located just north of Assiut far upriver of the Delta apex, so that Middle as well as Lower Egypt was ruled by the ‘Hyksos’ dynasts, just as the Herakleopolitan kings had ruled this region in the First Intermediate Period. Nonetheless, it is clear from the material remains that Middle Egypt remained *culturally* Egyptian, unlike the Delta region where Canaanite cultural influence was overwhelming, especially at

<sup>28</sup> The Egyptian kings did not use regnal numbers. Modern scholars have added the numbers, as in regnal lists elsewhere, to differentiate between kings having the same ‘nomen,’ e.g., Amenhotep II and Amenhotep III. As the chronological ordering of certain dynasties became increasingly clear, the regnal number sometimes needed to be reattributed or the names renumbered. The Mentuhotep kings of Dynasty XI are one example; the king Mentuhotep having the ‘prenomen’ of Nebhepetra is the ruler who united the ‘Two Lands’ and founded the Middle Kingdom. He is numbered Mentuhotep I in older literature, until an earlier Mentuhotep (the founder of Dynasty XI) was isolated and the numbering was adjusted.

<sup>29</sup> See SEIDLMEYER 1990 for these distinctions.

<sup>30</sup> KITCHEN 1996:7. This general timeframe is generally accepted, although not all agree with Kitchen in his details.

<sup>31</sup> Dynasties XIV and XVI are most affected. Previously, Dynasty XIV had been thought to rule from Thebes contemporary with Dynasty XIII or XV, and the kings of Dynasty XVI were considered to be minor Hyksos kings also contemporary with Dynasty XV.

<sup>32</sup> This description follows the recent re-interpretation of the Second Intermediate Period by RYHOLT 1997, as modified in light of the archaeological evidence discussed by BENTON, ALLEN and ALLEN 1999.

Avaris itself. The first few years of Dynasty XVIII still remain, technically, in the Second Intermediate Period, as its founder Ahmose did not unite the ‘Two Lands’ until well into his reign at a disputed point cited variously between Regnal Year 11 and 22, when he conquered Avaris and subdued the ‘Hyksos’ rulers.

As with First Intermediate Period material, a cultural distinction of the specific material discussed in the present study often cannot be made between northern and southern kingdoms, although clear ceramic and other material differences can be recognised within Egypt itself. Unless a distinction is apparent (e.g., for {163}), dates cited in the present study encompass all concurrent possibilities.

#### *New Kingdom (Dynasties XVIII–XX)*

Despite the actual re-unification of Egypt sometime during the second decade of Ahmose’s reign, the entire Dynasty XVIII usually is considered to lie within the New Kingdom, together with its successor Dynasties XIX–XX. This is the period of the ‘Empire,’ when Egypt not only regained internal control of the ‘Two Lands’ but also conquered much of the Near East and Nubia during the first half of Dynasty XVIII. Thutmose I reached as far as Kurgus, north of the 5<sup>th</sup> Cataract in Nubia, and Thutmose III penetrated as far as the Euphrates river in Mesopotamia. This empire subsequently began to shrink after the reign of Ramesses II about mid-Dynasty XIX and for the rest of the New Kingdom period, when Egypt rather steadily retreated from continuous attacks on several fronts. The Third Intermediate Period begins with Dynasty XXI, when the land again was divided between north (ruled by the Dynasty XXI pharaohs at Tanis) and south (ruled by the priests of Amun at Thebes, who are not included in the dynastic lists). The border was more or less set just north of El-Hiba. The chronological limit (1100 B.C.) of the present study is reached shortly before the end of both Dynasty XX and the New Kingdom (c. 1075 BC).

#### *Cultural Chronology*

‘Cultural chronology,’ as opposed to the historical or political chronology discussed immediately above, refers to the dating and typological development of excavated cultural material such as ceramics. Petrie’s introduction of ‘sequence dating’ for the material he excavated at Hu (Diospolis Parva),<sup>33</sup> essentially also

introduced the concept of dating Egyptian cultural material by typological development. When applied to the historical periods, cultural material – including groups of objects such as those found together in individual graves and tombs – could be relatively dated *as groups*, as well as their individual types and their relative positions within the historical sequence could be ascertained. In Egypt, this usually meant that material would be dated by specific dynasty or ruler, or within a certain span of dynasties or rulers, or within a kingdom or intermediate period, depending on the rate of typological development for the material concerned.

Increasingly focused recent research into the typologies of cultural materials has shown that the cultural sequence does not always follow the dynastic sequence, and that geographical limitations also can be made for certain types of material objects. Pottery studies, in particular, have shown that the cultural sequence in Upper Egypt can differ markedly from that in Lower Egypt (e.g., SEIDLMEYER 1990), sometimes in direct opposition to the political situation, as mentioned above for the Second Intermediate Period. Fabric studies have been able to determine limited regions along the Nile’s length where individual vessels are made. Study of individual vessel form development has provided Egyptologists with specific limited periods when these vessels are produced, which therefore can now be seen as ‘antiques’ of only a generation or two amongst an excavated group of later forms, as well as the ability to trace the movement of ceramic material within Egypt itself.

#### *External*

Externally, Egyptian chronology largely is, and has been, the basis for providing an internal chronology in modern calendrical terms for other cultures and civilisations relative to Egypt, usually by recovery of Egyptian goods in context with indigenous material or *vice-versa*. This could, of course, only go so far in providing precise relations and measurement of time for these cultures relative to Egypt and, through this means, approximate dates in modern calendrical terms. The chronology of few civilisations could be calculated independently until the introduction of radiocarbon dating some 50 years ago, and often this still was not as precise as Egyptian historical dating.

Some of these civilisations also produced a similarly precise measurable system of dating in their

<sup>33</sup> PETRIE 1901b:4–12.

own terms, most notably in Mesopotamia where king-lists and their regnal years also are recorded in some detail. As in Egypt, certain periods are more precise than others, but *lacunae* and problems in interpretation in modern calendrical terms still can be found. Egyptian and Mesopotamian dynastic dating systems in large measure can be correlated when the kings of both regions or their vassals are recorded as contemporary figures in ancient documents such as the Amarna tablets,<sup>34</sup> although these are not always universally agreed upon. Egyptian dates relative to modern dating generally are agreed to follow the 'low chronology,' whilst Assyrian dates generally follow a 'high' chronology that often is incompatible. The chronology of related Near Eastern and Mediterranean cultural regions usually follows one or the other, depending on the research interests and orientation of the scholar, and the civilisation involved. The Aegean civilisations, including Minoan, traditionally have been correlated with Egypt. Individual and interrelated chronologies relative to Egyptian dating have been extensively reconsidered and often revised over the past decade or so, due in no small measure to the excavations at Tell el-Dab'a where Canaanite and Egyptian material are found together in stratified contexts, as well as relative *cultural* dating (as opposed to *historical* dating) of the Egyptian material on current Egyptian excavations. Nonetheless, the chronological development of the Near East still remains hotly contested.

## On Crete

### *Internal*

Sir Arthur Evans initially outlined the internal cultural development of Minoan Crete<sup>35</sup> during the first years of his excavations at its major site, Knossos, at the beginning of the 20<sup>th</sup> century. Evans based his system on the changing styles of pottery decoration he encountered as he excavated the palace. He immediately was aware that he was dealing with the Bronze Age, and divided it into three periods, Early, Middle and Late Minoan (EM, MM and LM). This chronology was further subdivided into three periods each (thus LM I, II and III), and even further into phases labeled A, B and sometimes C (thus LM IIIA, B and C).<sup>36</sup> Subsequent refinements to his system fur-

ther distinguished earlier and later sub-phases (thus LM IIIA1 and IIIA2), early and late subdivisions of some sub-phases such as LM IIIA2,<sup>37</sup> and short-lived intermediary subdivisions such as 'MM IIIB-LM IA transitional' have now been isolated. Some subdivisions relate not to individual vessels, but refer to material as a whole within a specific excavation context or level relative to those around it.

Evans's system, based on ceramic stylistic development, remains in use today. However, scholarship in the intervening years has shown that, while his system works perfectly well at Knossos, ceramic development on the rest of the island does not entirely correspond. Several ceramic phases prominent at Knossos and other palaces occur only rarely, or not at all, at non-palatial sites, leaving a 'blank' in the chronological record of their existence under Evans's scheme. Regional variation also has become apparent under closer scrutiny, indicating that certain stylistic features and preferences developed in one part of the island but not another, and that vessel dating as well as origin can be determined as much by the clay fabric as the decoration. It also was realised that the various parts of the island did not enter the same ceramic phase at the same time, some having a 'time-lag.' As examples, an 'EM III' site in eastern Crete can be contemporaneous with MM IA as well as EM III at Knossos, the MM II phase seems virtually confined to the palatial sites of Knossos, Phaestos and Malia and their immediate vicinities, and the MM IB ceramic style still existed in eastern Crete when MM IIIA pottery was being produced at Knossos.<sup>38</sup> Such regional studies have been a prominent feature of recent research, as have fabric analyses and identification of their sources, and the origin of certain inclusions. 'Evans's system' is based on observed stylistic changes through time and, although it is used to denote chronological periods in the literature, should not be used with abandon to indicate contemporaneity between two or more sites especially if they are at a distance from each other. The system denotes ceramic styles, not periods of time, but remains in use as a convenient chronological marker in the literature.

Evans's system also does not relate directly to major cultural phases of development; it indicates only development of ceramic styles and these do not correspond to changes in social, political and economic circumstances. Nikolaos Platon later intro-

<sup>34</sup> See MORAN 1992, with further bibliography.

<sup>35</sup> I.e., Crete during the Bronze Age.

<sup>36</sup> See EVANS *PM:passim*.

<sup>37</sup> See BETANCOURT 1985:*passim*.

<sup>38</sup> For a more detailed discussion of this problem for the EM and MM periods, see CADOGAN 1983.

duced a second chronological system, dividing the Bronze Age into four phases according to major architectural developments (especially of the palaces, mostly Knossos) that also correspond to major cultural phases on the island.<sup>39</sup> Different scholars have referred to some phases using a variety of terms. Whilst architecturally, culturally, socially and economically more meaningful, Platon's palatial system inevitably is far less refined, and both his and Evans's systems now are cited interchangeably in the literature, according to necessity.<sup>40</sup> Again, research is ongoing and increasingly precise terminology is found in the literature. Both systems will be employed in the present study.

#### *Pre-Palatial (EM I–MM IA)*

'Pre-Palatial' (or 'Pre-Palace') corresponds to the period following the Neolithic on Crete and prior to construction of the first palaces on the island, and includes the entire EM period. The ceramic change between MM IA and MM IB usually is taken as the point of division with the next, Proto-Palatial, period.

#### *Proto-Palatial (MM IB–II)*

'Proto-Palatial' (or 'First Palace') begins when the first or early palaces were constructed, isolated as late in MM IA or very early MM IB under Evans' system. The destruction of the early palaces by earthquake and subsequent construction of the later palaces separates the Proto-Palatial and its subsequent period, 'Neo-Palatial' (or 'Second Palace'). The division between Evans' MM II and MM III ceramic styles is considered to mark this change, when the palaces recognised at Knossos and Phaestos were destroyed. The existence of a definable 'old palace' at Malia remains somewhat problematic, but several excavated elite structures may represent a collection of physically separated palatial 'blocks' (in lieu of a

single building), that also were destroyed at the end of MM IIB. However, the few exposed areas of the structure below the LM IB palace at Kato Zakro do not indicate its destruction at the end of MM IIB, but rather a series of smaller destructions during or at the end of MM IIA, and that this 'Proto-Palatial' building continued on in use until its destruction at the end of LM IA, well into the succeeding Neo-Palatial period. The 'old' palace at Petras follows a similar history, continuing in use until LM IB, when its 'new' palace also was constructed. Thus, the 'old palaces' to which this period refers are not all entirely contemporary and the destructions actually *defining* the end of the period are largely limited to central Crete. The division between MM IIB and III for the Proto- and Neo-Palatial periods is used over the entire island, although the actual architectural division is not attested in eastern Crete.

#### *Neo-Palatial (MM III–LM IB)*

As its name implies, this is the period of the 'new' or 'second' palaces.<sup>41</sup> Those at Knossos, Phaestos and Malia and Archanes were rebuilt in MM III. The 'old palace' structures farther east at Kato Zakro and Petras continued in use until the 'new' palaces were constructed there in LM IB. Almost all these palaces and the villas on Crete were destroyed at the end of LM IB, probably by earthquake. Only Knossos survived and continued to function as a palatial building.

Concentrated research and investigation, especially into the relative dating of the Thera eruption, have provided a series of terms to indicate more refined ceramic phases within this period, not so much for individual vessels but for series of excavated contexts and their contents as individual *collections* of material. This is particularly true of LM IA, although other periods also are affected. Terms such

<sup>39</sup> PLATON 1956.

<sup>40</sup> Even more recently, Doro Levi has introduced yet another chronological system for the MM period, based upon the correlation of ceramic finds and their strata at Phaestos. But this has proved even less adaptable to other sites than has Evans's system and, with the exception of some Italian publications and mentions elsewhere, is not generally employed in the literature. The Italians themselves have for some years used Evans' terminology. This phasing and its correlation to Evans's system is discussed by BETANCOURT 1985:66–67.

<sup>41</sup> Initially, Platon's Neo-Palatial period continued until the destruction of Knossos, and this was the timespan employed for my thesis. It became obvious in the course of

researching my thesis that this period needed to be subdivided if it was to remain culturally meaningful, as a clear change in Minoan importation and use of Egyptian material goods and iconography could be recognised following the destruction of virtually every major site on the island except Knossos at the end of LM IB. These inherent changes were acknowledged there by sub-dividing the period into two phases at this point. I called them 'Neo-Palatial I' (MM III–LM IB) and 'Neo-Palatial II' (LM II–IIIA1/early A2) in my thesis (PHILLIPS 1991:I:17–18.). This need for subdivision also seems to have been come into independent use by others at about the same time, although not cause and effect, and now is in common use, albeit with variant terminology; this is discussed below.



as LM IA ‘early,’ ‘mature,’ and ‘late’ refer more to context than vessel. A separate ‘period’ with the rather unwieldy but definitive designation of ‘MM IIIB–LM IA transitional’ also has come into use after its initial introduction by POPHAM in 1984.<sup>42</sup> In some but not all references, ‘MM IIIB–LM IA transitional’ and LM IA ‘early’ generally are different terms referring to the actual transition point and earlier part of LM IA, whilst LM IA ‘mature’ and ‘late’ effectively mean the latter part of the period. Mention sometimes also is made of ‘terminal’ LM IA, at its very end, often to distinguish the LM IA material dated to the period following the eruption of Thera ‘late in, but not the end of, LM IA.’

*Final Palatial (LM II–early LM IIIA2[?]).*

Although also subjected to similar conflagration in places at the end of LM IB, Knossos continued to exist and function as a palatial site during LM II and later, when strong cultural influence from the Hellenic culture of Mainland Greece was introduced and progressively strengthened, including the Linear B administrative system as already employed on the Mainland. However, the ‘standard’ interpretation of this period as Minoan Crete under the rule of the Mycenaeans who based themselves at the one remaining palace (Knossos) currently is under dispute. Detailed research of many ‘Mainland’ features previously cited as evidence for Mycenaean invasion and rule is beginning to conclude instead that an overwhelming *veneer* of Mycenaean influence overlying a still recognisable Minoan core is indicated. An example of this veneer is the introduction of the tholoi, shaft-graves and chamber-tombs of Mainland origin and type, whilst the larnax (a Minoan feature extremely rare on the Mainland) continues to be used for burial of the body itself within the tomb.<sup>43</sup> This is Minoan adoption and interpretation of Mycenaean cultural sensibility, when Minoan ‘sensibility’ was overwhelmed by outside influence.<sup>44</sup> In fact, a variety of ‘Mycenaean’ elements can be recognised in several Neo-Palatial graves at Poros,<sup>45</sup> indicating

that this ‘mycenaeanising’ veneer already had appeared *before* the Final Palatial period and its Mainland-style burials.

Some scholars call this period ‘Mono-Palatial,’ since only Knossos apparently functioned as a palace, whilst others refer to the ‘Final Palatial’ or ‘Third Palace’ period.<sup>46</sup> Its terminal date remains highly controversial, and is discussed in some detail below. The dates given above are employed in the present study, as is the term ‘Final Palatial’ for this period.

*The problem of the ‘Post-Palatial’  
(later LM IIIA2[?]-IIIC)*

The chronological point at which to distinguish ‘Final Palatial’ and Platon’s fourth period, ‘Post-Palatial,’ is fraught with difficulty. As the name implies, this period follows the destruction of the palaces, specifically the destruction of the Knossos palace, but the date of this ‘final’ destruction at Knossos still remains highly controversial. The date that was generally accepted for many years was at “the very beginning of LM III A2,” as concluded by Boardman based on the date of the Knossos tablets and shown by Popham<sup>47</sup> on the basis of the pottery in destruction contexts at Knossos. Palmer (in the same volume) had disputed this date on alternative grounds, although his argument gained fewer advocates until it was re-introduced by Hallager over a decade later. Hallager’s interpretation placed the palace destruction within or at the end of LM IIIB, on the basis of comparison of the Linear B tablets at Knossos (having virtually insoluble problematic contexts) and Khania (recovered in clear LM IIIB contexts).<sup>48</sup> Thus he marks the end of the ‘palatial’ period as the final use of its administrative system, as evidenced by use of the tablets, and argues this was the point when the Knossos palace was destroyed. What may be termed a ‘middle view,’ at late in or at the end of LM IIIA2, was first suggested by Hood,<sup>49</sup> who subsequently modified this to a slightly later date “late in LM IIIA2 or in LM IIIB.”<sup>50</sup> Dickinson reiterated Hood’s earlier opinion, mostly on the

<sup>42</sup> WARREN 1999 outlines this intricate definition of LM IA phasing, with further references. MANNING 1999:xi–xiv illustrates vessels some of these isolated sub-phases, as well as ‘mature–late LM IB vessels.’

<sup>43</sup> DICKINSON 1994:230, 231. A particularly good example of the combination is Tholos A at Archanes (see Archanes H).

<sup>44</sup> One might compare this phenomenon, in outline, to the reversal of dominant European influence in 19<sup>th</sup> c. America, to 20<sup>th</sup> c. American influence in Europe.

<sup>45</sup> See DIMPOULOU 1999, esp. p. 29 and n. 20.

<sup>46</sup> I called this the ‘Neo-Palatial II’ period in my thesis; see n. 41 above.

<sup>47</sup> BOARDMAN 1963; POPHAM 1970a:85.

<sup>48</sup> PALMER 1963; HALLAGER 1977.

<sup>49</sup> HOOD 1971:149–150.

<sup>50</sup> HOOD, in MOMIGLIANO and HOOD 1994:128.

grounds of the change in the importance and influence of Knossos on the rest of the island and its continued links with the Near East throughout the entire LM IIIA period.<sup>51</sup> The debate continues to rage, and this is not the place to argue the opposing evidence for each side. The literature to date is extensive and deals mostly with the unity of the tablet archives, and the political changes evident at Knossos and sites elsewhere on the island. As evidenced in excavation, the palace, or at least parts of it, were destroyed or damaged by earthquakes at various times throughout the Neo-Palatial period, and other palaces too were affected – not all at the same time. Subsequently, there is evidence of destruction in the Knossos palace early in LM IIIA2, and a further more comprehensive destruction there sometime late in LM IIIA2, which suggests a series of small destructions and repairs rather than a single comprehensive event. In respect of Hallager's argument, it seems the better option for the present study to work with the dating evidence (such as it is) at Knossos as the relevant material either is recovered at and in sites under discussion far more often than with Khania. Very few of the sites under discussion are found in the western half of the island, except Khania itself. The contexts at Khania are dated not later than LM IIIB, and all here might be considered 'palatial' in Hallager's terms.

Nonetheless, one must take a stand on this issue in order to deal with the material of the present study in chronological groups. It seems reasonable to do so on the basis of the contexts of the material under discussion and how they group themselves as pottery-dated contexts. In this respect, multi-period ceramic contexts as individual units seem to formulate together in one of several pottery-dated groupings: 1) LM II–IIIA1; 2) LM II–IIIA; 3) LM IIIA1–2; 4) LM IIIA2–B (or B early) and, least helpfully, 5) LM IIIA–B. Thus it seems reasonable, in the midst of continued controversy and lack of adequate agreement on the point of chronological division between 'Final Palatial' and 'Post-Palatial,' to formulate a simple working methodology for the present study. This is outlined as follows:

Was Knossos palace finally destroyed by a single seismic event, or a series of them? Did Knossos continue to function in the palatial sense, even if the

palace building itself had been 'destroyed' by a series of earthquakes over a period of time? It seems reasonable to assume that such an administrative system as the one implied by the Linear B tablets would not disappear overnight, and detailed study of the texts complicates rather than simplifies the polar options.<sup>52</sup> We might consider, as has been done, that the earlier part of the 'Post-Palatial' period continued to maintain a system that had been in existence for some time, although Knossian centrality was not maintained and a series of smaller or alternate administrative units developed at various centres, most obviously at Khania. It seems reasonable to assume also that a context spanning LM II–IIIA would better be associated with a 'Final Palatial' than 'post-Palatial' designation, since the majority of its time-span falls into Final Palatial as agreed by both sides of the argument, but one that includes material of LM IIIA2–B date would be better considered post-Palatial. Thus, Groups 1–2 above would fall under the former, and Groups 3–5 the latter, heading.

*'End Palatial' (later LM IIIA2[?]-late/end IIIB)*

As mentioned above, some scholars accept a date later than early LM IIIA2 for the end of the Final Palatial period, late in or at the end of LM IIIB, since some evidence of palatial economic and political structure continued to function after the final destruction of Knossos (if Hallager's period parameters are not employed) or the last evidence of the palatial economic structure continued before the palace finally was destroyed (if his parameters are employed). A clear example of this continued function is the presence of clay tablets inscribed in Linear B at Khania and elsewhere, including Knossos, during this period. The evidence of a continued use and clear social hierarchy implied by the Building 'P' ship-sheds at Kommos and the tombs at Kalyvia and Lilia, and elsewhere, throughout LM IIIA without a break, does suggest some cultural, social and economic continuity throughout this period, even if they are not palatial sites and the Knossos palace may or may not have been a bureaucratic and administrative centre. The question of the 'final destruction of Knossos' and of the palatial period cannot be answered to everyone's satisfaction at this time and will not be addressed in the present study, but it

<sup>51</sup> DICKINSON 1994:21–22. His conclusions here are slightly undermined by his fig. 1.2, that implies the Third Palace period continues throughout LM IIIB.

<sup>52</sup> See, for example, the summary of OLIVIER 1994:165–170.

seems sensible to isolate this problematic period as a separate unit. Thus it may be distinguished from both earlier and later pottery-dated periods, when all scholars agree that the island was under overall palatial (Knossian) administration and after this system had collapsed.

Thus, for present purposes, this later LM IIIA2–late/end IIIB period is considered to be questionably either ‘Final Palatial’ or ‘Post-Palatial,’ and I will refer to it as ‘End Palatial’ as a compromise term. If and when a consensus is reached, future scholars will be able to integrate this ‘period’ with the earlier or later period discussion.

#### *Post-Palatial (late/end LM IIIB–IIIC)*

This reserves use of the term ‘Post-Palatial’ in the present study to encompass only the latest Minoan cultural period (late/end LM IIIB–C), during which scholars agree that even Knossos had ceased to function, physically and administratively, in the palatial sense. This period is one of decline, part of more widespread general social, economic and political decline that encompasses all civilisations of the entire Mediterranean region.

Platon’s period system is used here to embrace overall stages of cultural development as a skeletal framework for discussion and commentary. Each of these ‘palatial’ periods carries within it an inherent internal development, and Evans’s system is used to distinguish more closely this chronological progression within, whilst still bearing in mind that contexts or sites having the same ceramic date need not be absolutely contemporary. Ceramic styles do not change overnight, and precise individual years cannot – and should not – be ascribed to their beginning and their end in ceramically-based period chronology. All dates quoted in ceramic terms in the present study, and indeed any other study, must be understood as approximate. Nonetheless, their elasticity into both directions will only extend so far.

It is the date of the context as a whole that is important in ceramically dating individual contexts. All material found in a single context should not be considered exactly contemporary with each other, a consideration recent research increasingly has realised. Contexts, and all material in them, should not be dated on the basis of sherds alone, although the *latest* sherds in the context will provide the possibly latest date of deposition (in certain circumstances, both an earlier and a later date is possible as surrounding contexts also need to be considered). Recent studies of, especially, contexts in the MM III–LM I range already have made this point

clear, as research continues to shrink the parameters of relative context dating both intra- and inter-site. The *bulk* of the context material, and its condition, also provides the ‘most likely’ association with an individual otherwise undatable or imported object in a context.

#### *External*

Two different chronologies have been developed over the years for the areas immediately surrounding the Aegean, by scholars uninterested in the Aegean but in their own circumscribed geographical area and cultural focus. The first is based on historical records, in Egypt, Mesopotamia, and related cultures such as the Aegean. This may be termed the ‘Mediterranean sequence,’ including the traditional Aegean period dates that have been correlated to Egypt since most of the relevant cross-cultural material either is Egyptian found in the Aegean or Aegean material recovered in Egypt, or found elsewhere under circumstances that enable a cross-chronology with a third culture. Minoan absolute chronology, like that of most other Mediterranean cultures, has long been dependent on correlation with Egypt. Essentially, it is our framework for measuring their time in our terms; we have no knowledge of how the Minoans measured their own time. The most reliable source for both absolute and relative dating has long been the historical documentation available in its most workable form in Egypt. Nonetheless, although Egyptian chronology is the best available to us, it remains as yet an imperfect system. The problems encountered in applying Egyptian historical documents within Egypt itself are enormous and often insoluble to a specific date in the present state of our knowledge. Thus the question of historically dating the reigns of many pharaohs is subject to differing interpretation and consequent uncertainty, although often within clearly definable limitations, as described above.

The application of those variant dates to other cultures known only through material remains arranged in internal sequential development, by employing the few objects that can be correlated to Egyptian historical chronology, obviously is subject to even further uncertainty. When a foreign object is found *in situ* amongst objects of the local culture, it first must be placed within the cultural sequence of development for that particular object type in its own culture, and so must the developmental stage of the accompanying artefacts in the host culture be ascertained. Then these two sequence points can be assumed contemporaneous, subject to further confirmation. This assumption is not always correct, for

the foreign object may be an heirloom or stray find (and therefore pre-date the context), object and context may be at the beginning and end of their respective developmental phases (thus skewing the correlation), or the object may be intrusive (and therefore post-date the context). Additionally, the correlation is limited only to the particular context itself, especially when the possibility of developmental diffusion or ‘lag’ of either host or intrusive culture is considered. Thus, by the time all the ‘ands, ifs and buts’ are taken into consideration, the certainty of contemporaneity has been diluted to the extent that only probability or even only possibility remains.

It is only when a number of similar correlations are found that a pattern, and therefore more probability, emerges. A datable chronology for the non-historical culture in our terms can be postulated and, with the omnipresent recognition of never-ending future improvement, refined. Other non-historical cultures also can be related not only to the host culture but also others including the datable one, and eventually an interweaving of related cultures is developed as a chronological chart or table. But the frailty of such a chart in its details should always be remembered, and a shift – or disagreement – in the dating of but one point in the chart has repercussions extending far beyond itself. While not entirely a ‘house of cards,’ the differing interpretations and conclusions by various scholars employing identical basic data is illustration enough of the fluidity of its foundation as presently known. Nonetheless, even the most widely divergent opinions inevitably lie within definable relative parameters, beyond which dates are accepted as unlikely or demonstrably incorrect.

The advantages of dating Minoan culture relative to the historical sequence in Egypt was soon recognised by Evans and other even earlier excavators, once the potential of relative dating was seen. Evans was fortunate in being able almost immediately to correlate his strata at Knossos to Egyptian history, for in his first season alone he recovered a large num-

ber of reasonably stratified Egyptian imports and, additionally, ceramics with decoration recognisably contemporary to the ‘Aegean’ pottery found by Petrie at Kahun and elsewhere.<sup>53</sup> The latter is especially important, as the town of Kahun was dated in Evans’s day to the reign of Senwosret II (Dynasty XII), although it is now recognised as being much less restricted in time.<sup>54</sup>

Unfortunately, a large number of pseudo-imports and pseudo-influences were erroneously ‘recognised’ by many early scholars, especially for the early periods of Minoan development. Evans, for example, saw Egyptian parallels and prototypes for much of his early material, and firmly believed that the earliest (Neolithic) inhabitants were immigrants from the Delta or Libya who had fled when the Two Lands were united under Menes.<sup>55</sup> Others who ascribed to this theory or saw direct Egyptian relations with earliest Minoan culture included Newberry,<sup>56</sup> Petrie,<sup>57</sup> Steindorff,<sup>58</sup> Hall<sup>59</sup> and Xanthoudides.<sup>60</sup> The few dissenters included Peet<sup>61</sup> and von Bissing.<sup>62</sup> As late as 1930, Pendlebury believed “the Predynastic people of Egypt may have entered the Mesara and brought their culture to the south [of Crete],” but by 1939 had raised the invasion date to the EM period.<sup>63</sup> However, as individual features of early Minoan culture were studied more closely, it increasingly became clear that many ‘imports’ were indigenous and many ‘influences’ superficial or non-existent. Over the past century, the supposed Egyptian ‘imports’ and prototypes for certain early architectural features, burial tholoi, figurines, weaponry, ceramic forms and decoration, amulets, seals, stone vessels and technological innovations have been shown to be indigenous or to originate elsewhere.<sup>64</sup> These now-recognised erroneous identifications are not discussed in the present study.

Minoan relative chronology has been developed systematically and with increasing precision over the past century to the point where, unless some new and startling correlation is found, it is unlikely that any significant further relative refinement will appear.

<sup>53</sup> For discussions of the Minoan and Mycenaean material recovered by Petrie and its importance for Aegean studies, see PHILLIPS 1997; 2006.

<sup>54</sup> PETRIE 1891:9–10, pl. I. See KEMP and MERRILLEES 1980:102 for problems with Petrie’s limited dating.

<sup>55</sup> EVANS 1925; *PM* II.1:22–59.

<sup>56</sup> NEWBERRY 1905:58–61; 1906; 1908.

<sup>57</sup> PETRIE 1901a:46–47; 1903:38; see also EVANS 1903–1904:23.

<sup>58</sup> See HALL 1914a:113, 206.

<sup>59</sup> HALL 1914a:110–113.

<sup>60</sup> XANTHOUIDES 1924:126–130.

<sup>61</sup> PEET 1910–1911:253–256.

<sup>62</sup> VON BISSING 1914:226.

<sup>63</sup> PENDLEBURY 1930b:5; 1939:277, 279.

<sup>64</sup> See WARD 1963:27–34; BRANIGAN 1970c; 1973; YULE 1981:*passim*; 1983:360–367, amongst others.



Kemp and Merrillees have studied in depth the contexts of other Egyptian sites at which Minoan pottery has been found,<sup>65</sup> further developed and refined by Dorothea Arnold. She has shown, for example, that Tomb 326 at Harageh is dated to mid-Dynasty XII, prior to the reign of Amenemhat III, and the contexts of other Minoan material there date within the period of Amenemhat IV to the beginning of Dynasty XIII.<sup>66</sup> Thus Tomb 326 is chronologically distinguished from the other Harageh contexts, in Egyptian terms. Her conclusions are, to date, the most precise Egyptian correlation for Minoan-Egyptian relative dating at this period, other than the Kamares ware vessels at Tell el-Dab<sup>ca</sup>.

The discovery in the 1950s of the potential of radiocarbon dating as a tool for the *independent* dating of material, contexts and sites not otherwise datable through relative means to a 'historic' sequence, revolutionised the study of 'prehistoric' cultures worldwide, including the Bronze Age and earlier periods in Europe north of the Aegean. These dates have now been applied to most regions of Europe, and have been generally accepted by specialists in its various regional cultures. Based on these dates, a similar relative sequence has been built up, taking into account the interconnecting relations of surrounding cultures. Refinement of radiocarbon dating techniques, development of corrections for recognised distortions, and calibration adjustment of the results have increasingly improved confidence in this method of dating and its results but also widened calendrical date ranges. The resulting dates using these dating methodologies also diverge from those of relative dating methodologies in the Mediterranean, and indeed over 30 years ago Lord Renfrew coined the term 'Fault Line' to

emphasise this very point.<sup>67</sup> Essentially, employment of the radiocarbon dating methodology to sites in the Aegean has modified the internal sequence here to fit this 'European' radio-carbon-based sequence rather than the traditional 'Mediterranean' sequence, and it would appear to be a logical outgrowth of the increasing interest in European/Aegean Bronze Age interconnections over the past thirty years or so. As much of its evidence is based on data and methodology employed farther north, it is not all that surprising that the 'new' radiocarbon-based chronology best fits with this northern sequence. The 'Fault Line' has simply moved farther south for its adherents, and the past two decades or so has seen major disagreements between those who stay with the traditional 'relative' dating and those who prefer to rely on the 'scientific' methods of radiocarbon and other science-based means. As with the dates employed in Egyptological publications, the reader is urged to consider the stance of the author, as well as the date of volume's publication, as both circumstances colour the contents and conclusions of its text.<sup>68</sup>

As a result of this conflict in acceptable dating methodologies, there remains significant disagreement on the absolute chronology of Minoan Crete. The bibliography of this topic is far too extensive to list and continues to grow almost daily, but BETANCOURT and WEINSTEIN (1976), CADOGAN (1983), WARREN and HANKEY (1989), HARDY and RENFREW (1990) and, more recently, ZIELINSKI and GERMANI (1998a; 1998b), and MANNING (1998; 1999)<sup>69</sup> are some major excursions into the question, amongst many others. WARREN and HANKEY (1989) attempted to correlate all the available cross-cultural evidence in detail, whilst Manning (amongst others) argues

<sup>65</sup> KEMP and MERRILLEES 1980:*passim*, with further references. More recent finds include sherds from Karnak (JACQUET-GORDON 1991:29), Memphis-Kom Rabi'a (BOURRIAU and ERIKSSON 1997) and Tell el-Dab<sup>ca</sup> (BIETAK 1985:330 fig. 7; WALBERG 1991; 1992a; 1998; MACGILLIVRAY 1995). Sherds from Mersa Matruh initially stated to be Minoan (WHITE 1985:10) are now thought to be Mycenaean (WHITE 2002:1–2; note that their 'preferred' high cross-chronological dating is inconsistent with evidence elsewhere, the most immediately apparent being their correlation of LH IIIB with the Amarna period, see their p. 5 chart). Also from Tell el-Dab<sup>ca</sup> are a large number of fragmentary frescoes in Minoanising style and of Minoan technique, in the debris associated with the palatial fortress platform in area H/I constructed early in Dynasty XVIII, and others associated with the palatial compounds in areas H/II and H/III. The bibliography of these frescoes is far too extensive to list here; see BIETAK 1995:68–80; CLINE 1998; BIETAK 2000, all with further references.

<sup>66</sup> "The Egyptian Context of the Foreign Pottery from Harageh," a lecture given at Colloquium V of the International Group for the Study of Egyptian Pottery, Berkeley, 30 April 1990. Arnold dated the context of the Minoan material from Abydos to at least a century later, tentatively to the beginning of Dynasty XVII. Her analysis is based on developmental changes in specific Egyptian pottery vessel types. I am grateful to Dr. Arnold for allowing me to mention her research here, and confirming (February 2002) that her opinion is unchanged.

<sup>67</sup> RENFREW 1970:290, 291 fig. 4 = 1979:350, fig. 4.

<sup>68</sup> A good example is DIETZ (1991), who correlated the Minoan and Mycenaean chronologies using the 1649 BC for the Thera eruption, then considered its 'scientific' date.

<sup>69</sup> Each includes an extensive and useful bibliography on the subject. MANNING (1999) also provides an historical summary of scholarly opinion to that date.

absolute dating from, chiefly, radiocarbon, ice-core and dendrochronological evidence. Their divergent conclusions speak volumes for the present inconsistency in the literature and the problems encountered in attempting to define an absolute chronology. Controversy still rages, and both ‘sides’ have revised their opinion and resulting dates several times over the past twenty years as further data have emerged. If nothing else, the controversy has forced us all to *thoroughly* reassess the evidence on which our chronologies have been based and developed, in the light of current evidence and research rather than continuing to simply quote earlier references and opinions. One need only compare chronological charts recently and currently published by adherents of *both* methodologies against those published in the 1960s and 1970s that follow the then-uncontested ‘relative’ dating, to see just how much this controversy has not only divided the academic community but also has revised the conclusions of scholars who, some thirty years on, continue to adhere to the ‘relative’ chronology.<sup>70</sup>

A word should be said concerning the recent and still ongoing debate over the absolute date of the eruption of the volcanic island of Thera that stands as the point around which adherents of both chronologies revolve their arguments. This eruption, a key date for both relative and absolute chronology, was discussed extensively at the ‘Thera and the Aegean World III’ conference in September 1989. The final consensus of the participants was that the eruption occurred late in, but not the end of, LM IA.<sup>71</sup> Part of the controversy surrounded earlier opinion that the eruption caused or precipitated the LM IB palace destructions on Crete, the dating of which could not be reconciled with the ceramic evidence for the date of the eruption. This late LM IA ceramically-dated opinion is no longer challenged, but the controversy now is where to place the date of this eruption (and so also late but not terminal LM IA) within its historical context and on an absolute calendar. The 17<sup>th</sup> c. BC date, that has been variously calculated as 1649, 1628, then 1645 and 1650, and most recently (at time of writing) to between 1663 and 1599 BC, as further data have accumulated, is, to my mind, impossible to correlate with

the Egyptian chronological evidence and, I believe, difficult for internal Minoan chronology to absorb.<sup>72</sup> Shifting the date of this event, agreed to be late but not terminal LM IA in ceramic terms, nearly a century earlier than the date developed relative to Egyptian and other chronologies, affects not only the date and length of LM IA but also the several other ceramically-dated periods either side of it. Those periods earlier than LM IA would need to be shortened as well as backdated, whilst those later would need to be backdated and lengthened, to fill in the gaps created either side of the event. The same pottery style (LH IIIA2) is current both at Amarna during the reign of Akhenaten (c. 1352–1335) and its abandonment three years after his death, and the time of the Uluburun shipwreck (sometime in the last quarter of the 14<sup>th</sup> century BC), indicating near-contemporaneity of these two events. The end of Hyksos rule and of the Second Intermediate Period is no more than 197–220 years earlier than Akhenaten’s death, a figure obtained by calculating the total number of regnal years for the Dynasty XVIII kings backwards from Akhenaten, thus no earlier than about 1555 BC at the most. Although several ‘absolute’ dates can be calculated for the end of Hyksos rule in Egypt on this basis, none can stretch to as early as the current latest possible ‘scientific’ 1599 BC dating of the eruption. There is, at minimum, nearly half a century difference. Any equation of a 17<sup>th</sup> c. BC *Thera* eruption and the end of Hyksos (Dynasty XV) rule in northern Egypt is impossible on the evidence of Egyptian regnal year counts, based on contemporary Egyptian documentation. I find a 17<sup>th</sup> century dating for late LM IA difficult to accept, when we have several cross-cultural and cross-referenced correlations of MM II–III and later Dynasty XII–XIII artefacts and stratified levels.<sup>73</sup> Thus, my stance follows correlations with the historical chronology argument and the ‘relative’ sequence. The controversy may be resolved in future, and the basic data presented in the present study can be reconsidered at that time if necessary.

The emphasis on *context* cannot be over-stressed. If nothing else, a context with a good terminal date

<sup>70</sup> E.g., WARREN 1969:3 Table 1 *v.* in MARANGOU 1992:26 fig.; HOOD 1978:15 *v.* 1999:pl. LXXX. Note dates both absolute and relative to Egyptian chronology, especially for the MM III–LM period range.

<sup>71</sup> WARREN and HANKEY 1989:214 p. 3; HARDY and RENFREW 1990.

<sup>72</sup> *Something* happened at that time, that left its imprint in the tree-rings and ice cores at this date, but the correlation between the records of this event and the Thera explosion has not yet been made.

<sup>73</sup> See a partial list in Chapter 19.

provides a *terminus ante quem* for the specific artefact found in it. The artefact can be no later in date than its (closed) context. Likewise, a good date or date range of manufacture for the artefact type in its home culture provides a good *terminus post quem* for the particular artefact in its context beyond that culture. The context cannot be earlier than the artefact. When both well-dated artefact and well-dated context are found together, the combination potentially provides a limited overlap and therefore a good correspondence of both chronological systems for the particular situation. An example of this is the gold cornflower bead from Tholos A at Archanes {58}.

There is a large gap between *provenance* on the island, in a region, at a site or within a limited area of the site *vs.* in a *context* together with other material with which it can be directly associated and in relation to other recorded contexts and their associated material. These two terms often are used interchangeably, but should be distinguished. A surface find at a known site or site area of limited date does not necessarily mean that the surface find also is of this same date, although of course it is possible. It has a provenance, but it does not have a context. An example of this, where the artefact and site area do (more or less) correspond in date, is the MM IB?–II cat figurine or appliqué and MM IB–III scaraboid {383–384} from the surface of the Quartier Θ site at Malia. Other examples, when correlation of object and (apparent) context has been assumed incorrectly, are the scarabs from Aghios Onouphrios {38–42 (–44?)} and Aspri Petra {66}, the gem from Kalo Chorio {79}, and the late Dynasty XII–mid-Dynasty XIII scarab from Nipidhitos {418}.<sup>74</sup>

The accompanying chronological chart (Fig. 1) is certainly not the last word on the subject, but does consider the latest material evidence including the contents of the present study, and should be consult-

ed as a guide. Minoan internal dating remains most precisely calculated through ceramic typology, and under this system specific *absolute* dates cannot be assigned to any context or object, only a range of dates within which the object or context is known to have been made and used. The chart is marked in blocks of a quarter century, and the dividing line should be understood as the nearest median for the actual division. Egyptian dates can be more precise, but the chart marks these divisions also to the nearest quarter-century.<sup>75</sup> The variety of opinions regarding absolute dates especially should be borne in mind, as a final consensus remains elusive. For the purposes of the present study, absolute dates are not all that important, but the relative correlations between Crete and Egypt are very important. Once these are established, an absolute chronology can be argued with more precision, at least within the more closely datable Egyptian chronology and regnal history. The data found in the present catalogue may be of some future assistance in investigating chronological problems, in much the same manner as PENDLEBURY'S (1930b) pioneering catalogue first brought the cross-cultural evidence together in a single volume. The present study investigates only the relationship of Egyptian material on the island of Crete and thus is far more limited in perspective than both *Aigyptiaca* and WARREN and HANKEY (1989), but the past decade of research has allowed some of the relevant evidence to be brought much more sharply into focus and to be more definitive. We can only hope that the artefacts as well as their *contexts* will be fully published in detail in the near future, and that future discoveries will be published and thus made available for future refinement of cross-cultural data. A study such as this is dependent on full publication and co-operation, and I am extremely grateful to those whose generosity with published and unpublished information has made this study as complete as possible.

<sup>74</sup> See further details of these finds and their provenances in the individual catalogue entries.

<sup>75</sup> More detailed and specific Egyptian dates can be consulted in the various references cited above.