

General introduction

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As MacGillivray notes in his contribution to this volume, it was long assumed that the Minoan eruption of Santorini was somehow related to events visible in Egypt during the reign of Hatshepsut and Thutmose III. At one time, it was assumed that the Theban tomb paintings demonstrated the end of the Minoan and the dawn of the Mycenaean era. At that time, the reign of Hatshepsut and Thutmose III was assigned to a period beginning just before the end of the 16th century BC, and in the naïve approach of that distant era, it was assumed that one could simply reckon Aegean dates based on the calendar year dates known from Egypt. In this fashion, one could actually render Aegean Prehistory historical and simultaneously date it. Dating the Minoan eruption of Santorini was a piece of cake which required no deep penetrative thought. It was a mere matter of recognizing the context of the relations, and then trying to develop from there.

However, in the meantime, it has also long since become clear that there were several breaks in the Aegean chronology: the destruction of Thera put an end to LM IA there – but not necessarily on Crete, and on Crete the end of LM IB came later. Thus, the earlier amalgamation of the Thera eruption with the arrival of the Mycenaeans required some alteration. Contributions in this volume by Betancourt, Brogan and Soles provide exactly the evidence required, showing the impact of the eruption on Crete, and also the continuity – possibly with Thera input – of LM IA after the eruption.

At the same time that additional archaeological detail has been added to the Aegean sequence, Egyptian chronology has likewise undergone some refinements. Initially, Egyptian chronology was basically calculated by taking some rough estimates of what might be considered to be reasonable, and

combining these with some rather simplistic assumptions about what could be deduced from the texts mentioning astronomical events. The result was a tendency to assume that chronology was a matter of speculation, with the consequence that certain chronological systems were viewed as reasonably acceptable and thus widely employed. Given more scrutiny, it gradually became clear that most chronological systems used in Egyptology had to be adjusted downwards, as the data could no longer support earlier dates. Thus the reign of Hatshepsut and Thutmose III has been shifted down a couple of decades, and in a contribution to this volume by Krauss (and the editor), the beginning of that reign is shifted down by another decade, beginning in 1468 BC.

In the last decade there has been considerable movement in the chronology of Western Asia, with debates covering several different possible chronologies, most of them tending to be lower than those generally used in textbooks and museums; Hunger covers some of this ground here in this volume, but the issue remains to be resolved. However, it must be stressed that for the most part, those working on texts and using astronomical methods rarely rely on archaeological stratigraphy and typology. Thus, it is important to note that when using the rough limits of the Egyptian chronology, the archaeology of the Levantine sites generally implies that one of the lower Mesopotamian chronologies is the only reasonable solution. Under the circumstances, it is highly significant that the textual, dendrochronological and astronomical evidence tends to exclude any of the ‘higher’ chronologies, *i.e.*, the ‘High’ or widely used ‘Middle’ chronology. Although Hunger does not actually commit himself on this level, it is clear from his – completely dispassionate objec-

tive – reading that only one of the lower propositions is compatible with the textual and astronomical evidence. Furthermore, however, I note that together the archaeological, dendrochronological and astronomical evidence seems to favour a chronology lower than that generally cited in textbooks or used in museums.

Thus, there is a general tendency for the historical chronologies of Egypt and Mesopotamia to fall to dates which are later than those widely discussed in the literature, and far from those used when the Minoan eruption of Santorini was originally linked to Hatshepsut. Given the difficulties of reconciling all of the archaeological and historical data to a date in the middle of the 15th century – based on the current understanding of Egyptian chronology – Aegean archaeologists and Egyptologists have tended to try to align the evidence in favour of a date for the Minoan eruption of Santorini in the 16th century, as argued by Foster *et al.*, Warren and Höflmayer in their quite different contributions to this volume. This approach depends upon aligning evidence from a number of sites, and in his contribution Höflmayer stresses that the data from the eastern Mediterranean and Egypt is compatible with such a chronology.

However, for more than two decades there have been debates due to propositions that the date of the Minoan eruption of Santorini actually lay in the middle of the 17th century – rather than the 16th – based upon geological, radiocarbon and dendrochronological evidence. By 1990, Colin Renfrew suggested that the issue would eventually be resolved with a date ‘within 20 years of 1620 BC’.¹ The initial propositions based on the ice cores seemed to imply a date in the middle of the 17th century, and thus beyond the upper range of Lord Renfrew’s proposition. In this volume, Muscheler suggests that an inexplicable anomaly in the ice core data must be taken into account when considering the final date based on the ice cores. Although that data cannot be explained, the anomaly suggests that the ice core data can be used to support a date some two decades below the widely discussed date *c.* 1650 BC

In this context, the discovery by Walter Friedrich and Tom Pfeiffer of an olive branch which

was in the actual debris of the eruption represented a remarkable bit of luck, as discussed by Friedrich & Heinemeier in the next chapter. Not only could the date be extracted from a radiocarbon sample, but from a sample that was actually stratigraphically and geologically linked to the eruption of Thera itself. The series of rings available meant that the proposed date could be reduced to the extraordinarily limited range of 1613 ± 13 BC meant that one was coming closer to settling the chronology.

Thus, Lord Renfrew’s suggestion could be further refined to the last three decades of the 17th century. However, the significance goes far beyond Thera. It is true that the tephra itself is hardly present beyond that region immediately around Santorini, and the pottery in Crete merely offers information of local interest. What is crucial is that Cretan, Cypriot and Levantine wares can be related both to the tephra in Santorini and to other archaeological sites, and thus a date for Santorini could be relevant well beyond the Aegean. Yet the stratigraphy of any other sites with which it might be compared must be reliable if these sites are to be related to the Minoan eruption of Santorini, and the proposed 17th century date. At this point, the argument becomes a two-edged dagger, for the archaeological material can be interpreted as throwing doubt on the ¹⁴C date or as implying that other sites should be dated according to the ¹⁴C date of 1600–1627 BC.

In their separate contributions to this volume, Sørensen, Fischer and Merrillees argue that the archaeological data from the Eastern Mediterranean is entirely compatible with a date not far from 1600 BC, although Merrillees probably expresses the common opinion that few archaeologists would be truly open to any much earlier date. As noted, Muscheler’s argument supports exactly such an adjustment of the ice core data which had been used to argue the earlier date. In his contributions to this volume, Manning argues that an earlier date is also entirely compatible with the archaeological evidence for the latter part of the period, after the eruption, *i.e.*, the LM I and LM II, and not only the earlier part.

¹ Renfrew, in Hardy & Renfrew 1990, 242.

Needless to say, this effectively counters Höflmayer's arguments for the same period – yet these are based on the quite different evidence of the Tell el-Dab^{ca} excavations. In his arguments, Warren is likewise drawing on the archaeological evidence from Tell el-Dab^{ca}, and in this volume Wiener broadens that to a wider criticism of ¹⁴C evidence in general. The dates from Tell el-Dab^{ca} are at least theoretically closely linked to a chronological framework involving both Egypt itself and Mesopotamia, via the Levantine Middle Bronze Age which allows Alalakh to be linked to the Mesopotamian Old Babylonian period. In this fashion, one has several different chronological frameworks which should all be closely interwoven, and yet each standing upon a different base.

Under the circumstances, it follows that there is plenty of room for argument. However, there should also be room for agreement upon the givens, and thus the workshop of which the results are presented here. We begin with the new evidence, and then proceed to the detailed descriptions of the history of Santorini from a geological standpoint by McBirney and McCoy, before going on to the various arguments from archaeology and physics. From there we move to the archaeological evidence from the Aegean and the Levant, and the debate.

Fortunately, Walter Friedrich and Annette Højen Sørensen have prepared the chart which forms the endpapers of this volume, and readers are invited to take a look at that, and sharpen their pencils...