

Literatur

Ägäische Bronzezeit

BETANCOURT 1998

Philip P. Betancourt, *The Chronology of the Aegean Late Bronze Age, Unanswered Questions*. In: MIRIAM S. BALMUTH & ROBERT H. TYKOT (Hrsg.), *Sardinian and Aegean Chronology: Towards the Resolution of Relative and Absolute Dating in the Mediterranean, Proceedings of 'Sardinian Stratigraphy and Mediterranean Chronology', Tufts University, Medford, MA, March 17–19, 1995*. *Studies in Sardinian Archaeology* 5 (Oxford 1998), 291–296.

These pieces of evidence suggest a chronology such as is shown in Fig. 29.3. A major point is the length of LM IB (and the contemporary LH IIA). This period was originally assigned a length of only 50 years by Evans (1921-35: IV, 881). Although it was not well represented in his excavations at Knossos, other sites have shown it is a substantial period with several architectural phases and an enormous volume of ceramics. Its total length is difficult to judge, but it must surely be well over a century. At Pseira, for example, it is represented by several building phases, and it is long enough to incorporate changes in architectural style. The large quantities of LM IB pottery and other objects suggest it is longer than LM IA.

The problem is that the discovery of the absolute dates is not as important as the question of the relative chronology. For historical conclusions, moving an event a hundred years forward or back in time is not as important at our present level of knowledge as understanding its relevance to other events from approximately the same time.

Radiocarbon dating operates the same way in the Central Mediterranean as it does in the Eastern Mediterranean. In comparison with the “late chronology” of the Aegean, radiocarbon dates always suggest an earlier trend. One cannot mix one’s classes of evidence and date Mycenae and Crete based on the traditional chronology of Egyptian synchronisms and the rest of Europe based on the radiocarbon dates, and then draw meaningful conclusions. For parts of Europe and the Mediterranean that are themselves dated by radiocarbon, one must use the “high Aegean chronology” in order to understand the proper historical correlations.

BIETAK 1998

Manfred Bietak, *The Late Cypriot White Slip I Ware as an Obstacle to the High Aegean Chronology*. In: MIRIAM S. BALMUTH & ROBERT H. TYKOT (Hrsg.), *Sardinian and Aegean Chronology: Towards the Resolution of Relative and Absolute Dating in the Mediterranean, Proceedings of 'Sardinian Stratigraphy and Mediterranean Chronology', Tufts University, Medford, MA, March 17–19, 1995*. *Studies in Sardinian Archaeology* 5 (Oxford 1998), 321–321.

Therefore I see little or no chance for the high Aegean chronology to last. No proof has been produced so far that the Thera eruption is responsible for the 1628 BC tree ring anomaly. One kind of proof would be the identification of the origin of

particles of volcanic ash from dated Greenland ice deposits by scientific methods. Another kind would be to probe for volcanic ash in Egyptian stratigraphic deposits. Both possibilities will be exploited in the near future. With the evidence of the appearance of White Slip I-Ware at Tell eI-Dabca from the early 18th Dynasty onwards, I doubt very much that samples from a deposit around 1628 BC would reveal the fingerprints of the volcano of Thera. It will give me great pleasure to have the lines above read in 10 years!

BRONK RAMSEY 2004

Christopher Bronk Ramsey, Sturt W. Manning & Mariagrazia Galimberti, *Dating the volcanic eruption at Thera*. *Radiocarbon* **46** (2004), 325–344.

The eruption of the volcano at Thera (Santorini) in the Aegean Sea undoubtedly had a profound influence on the civilizations of the surrounding region. The date of the eruption has been a subject of much controversy because it must be linked into the established and intricate archaeological phasings of both the prehistoric Aegean and the wider east Mediterranean. Radiocarbon dating of material from the volcanic destruction layer itself can provide some evidence for the date of the eruption, but because of the shape of the calibration curve for the relevant period, the value of such dates relies on there being no biases in the data sets. However, by dating the material from phases earlier and later than the eruption, some of the problems of the calibration data set can be circumvented and the chronology for the region can be resolved with more certainty.

In this paper, we draw together the evidence we have accumulated so far, including new data on the destruction layer itself and for the preceding cultural horizon at Thera, and from associated layers at Miletos in western Turkey. Using Bayesian models to synthesize the data and to identify outliers, we conclude from the most reliable ¹⁴C evidence (and using the INTCAL98 calibration data set) that the eruption of Thera occurred between 1663 and 1599 BC.

BRONK RAMSEY 2006

Christopher Bronk Ramsey, Caitlin E. Buck, Sturt W. Manning, Paula Reimer & Hans van der Plicht, *Developments in radiocarbon calibration for archaeology*. *Antiquity* **80** (2006), 783–798.

This update on radiocarbon calibration results from the 19th International Radiocarbon Conference at Oxford in April 2006, and is essential reading for all archaeologists. The way radiocarbon dates and absolute dates relate to each other differs in three periods: back to 12 400 cal BP, radiocarbon dates can be calibrated with tree rings, and the calibration curve in this form should soon extend back to 18 000 cal BP. Between 12 400 and 26 000 cal BP, the calibration curves are based on marine records, and thus are only a best estimate of atmospheric concentrations. Beyond 26 000 cal BP, dates have to be based on comparison (rather than calibration) with a variety of records. Radical variations are thus possible in this period, a highly significant caveat for the dating of middle and lower Paleolithic art, artefacts and animal and human remains.

Keywords: Dating, radiocarbon, calibration, varves, ice-cores, speleothems

DARTMOUTH LECTURES

Jeremy B. Rutter, *Aegean Prehistoric Archaeology*. (Dartmouth College). <<http://www.dartmouth.edu/~prehistory/aegean/>> (2013-04-29).

This site contains information about the prehistoric archaeology of the Aegean. Through a series of lessons and illustrations, it traces the cultural evolution of humanity in the Aegean basin from the era of hunting and gathering (Palaeolithic-Mesolithic) through the early village farming stage (Neolithic) and the formative period of Aegean civilization into the age of the great palatial cultures of Minoan Crete and Mycenaean Greece.

DICKINSON 1994

Oliver Dickinson, *The Aegean Bronze Age*. Cambridge World Archaeology ([Cambridge 1994](#)).

Oliver Dickinson has written a scholarly, accessible and up-to-date introduction to the prehistoric civilisations of Greece. The Aegean Bronze Age, the long period from roughly 3300 to 1000 BC, saw the rise and fall of the Minoan and Mycenaean civilisations. The cultural history of the region emerges through a series of thematic chapters that treat settlement, economy, crafts, exchange and foreign contact (particularly with the civilisations of the Near East), and religion and burial customs. Students and teachers will welcome this book, but it will also provide the ideal companion for serious amateurs and visitors to the Aegean.

FANTUZZI 2007

Tiziano Fantuzzi, *The debate on Aegean high and low chronologies: An overview through Egypt*. [Rivista di Archeologia 31 \(2007\), 53–65](#).

One of the most important problems which affect the reconstruction of the Aegean Late Bronze Age (LBA), and its significance in the Mediterranean world, is the absolute chronology of the Minoan LM I-II periods, and, in turn, the absolute dating of the mature LM I A Thera eruption, and their relationships with the Egyptian and Cypriote relative chronologies. Since the last three decades, the traditional chronology has been challenged by radiocarbon results obtained from a few key sites, which, during the late 1990's seemed to be confirmed by several other dating techniques. In turn, an impressive amount of new data, often supporting the traditional view, has been obtained from the (re)analysis of the Aegean, Cypriote and Egyptian assemblages, which have yielded good evidence for their chronological correlation. As a consequence, the archaeologists face with an impasse, given that none of the two parts involved in the debate can rely upon conclusive arguments, or be confident of the outcome. However, a slightly modified version of the traditional "Low" chronology might be put forward, maintaining both archaeological and radiocarbon evidence. It is interesting to point out that the radiocarbon results, when individually calibrated, do not seem homogeneous enough to justify a shift of some 120 calendar years in the traditional chronology.

FRIEDRICH 2006

Walter L. Friedrich, Bernd Kromer, Michael Friedrich, Jan Heinemeier, Tom Pfeiffer & Sahra Talamo, *Santorini Eruption Radiocarbon Dated to 1627–1600 B.C.* [science 312 \(2006\), 548](#).

GERLOFF 1993

Sabine Gerloff, *Zu Fragen mittelmeerländischer Kontakte und absoluter Chronologie der Frühbronzezeit in Mittel- und Westeuropa*. [Prähistorische Zeitschrift 68 \(1993\), 58–102](#).

Hier werden einige der längst bekannten frühbronzezeitlichen Kontaktfunde zwischen Mittel- und Westeuropa einerseits und dem Mittelmeerraum andererseits und die damit verbundenen Probleme der absoluten Chronologie einer erneuten

Prüfung unterzogen. Wir können im Gegensatz zu der seit Renfrew (1968) oft vertretenen Auffassung einer Nichtgleichzeitigkeit und autochthonen Entwicklung der betreffenden Fundgüter der Stufen Reinecke Bz A1 und A2 zeigen, daß ihre Zeitstellung – auch unter Berücksichtigung neuester naturwissenschaftlicher Daten – in Mittel- und Westeuropa derjenigen der mittelmeerländischen Hochkulturen zum großen Teil entspricht. Die Gegenstücke der einfachen mitteleuropäischen ‚Zypri-schen‘ Schleifennadeln sowie der Lanzenspitze mit geschlitztem Blatt aus dem Bz A1-Hort von Kyhna in Sachsen gehören in Vorderasien vornehmlich dem spätesten Abschnitt der dortigen Frühbronzezeit (EBA 3) an und werden hier in das letzte Drittel des 3. vorchristlichen Jahrtausends datiert, die Zeit der großen trojanischen Schatzfunde aus Schicht IIg, welche ebenfalls die genannten Formen enthielten. Durch einen Vergleich der kalibrierten C14-Daten dieser Schicht mit solchen der Stufe Reinecke Bz A1 können wir zeigen, daß beide, auch durch archäologische Funde verbundene Komplexe sich zeitlich überlappen. Während die frühesten mitteleuropäischen bronzezeitlichen Ösenringe ebenfalls dieser Stufe zugeordnet werden können, müssen nach heutigem Forschungsstand die vorderasiatischen Vergleichsstücke später angesetzt werden. Sie dürften in etwa mit den mitteleuropäischen ösenringen aus der Zeit der Aunjetitzer Fürstengräber (frühe Phase von Bz A1 bzw. Übergang von Bz A1 zu A2) gleichzeitig sein, die dendrochronologisch in das frühe 2. vorchristliche Jahrtausend datiert werden. Letztere werden als zum Teil zeitgleich mit den Fürstengräbern der frühen Wessexkultur (Wessex 1) und der ihnen verwandten bretonischen Fürstengräber angesehen, die dem Übergang von der Stufe Bz A1 zur Stufe A2 und der Stufe Bz A2 zugeordnet werden. Die hier nicht bestrittenen Kontaktfunde zwischen der Wessexkultur und den mykenischen Schachtgräbern werden mit einem späteren Abschnitt von Wessex 1 und dem Übergang von Wessex 1 zu 2 verbunden. Dieser Zeithorizont ist in Mitteleuropa mit einem Spätabschnitt der Stufe Bz A2 in Verbindung zu bringen, der nach dendrochronologischen Messungen in das ausgehende 17. und das 16. vorchristliche Jahrhundert gehört und somit auch mit den neuesten Daten für die Schachtgräber in Einklang zu bringen ist. Am Schluß unserer Darstellung versuchen wir zu zeigen, daß die reichen mittel- und westeuropäischen Zinnvorkommen wohl auch weiterhin als einer der auslösenden Faktoren für die Fernbeziehungen der ‚Barbarischen‘ Frühbronzezeit zu den Hochkulturen des östlichen Mittelmeerraumes gelten können. Während diese Kontakte zu Beginn der Bronzezeit (Phase A1) gegen Ende des 3. und zu Beginn des 2. Jahrtausends sich vornehmlich zwischen Mitteleuropa über die Donau in den östlichen Mittelmeerraum erstreckten, kam gegen Ende der Frühbronzezeit (Phase A2/B1), gegen Mitte des 2. Jahrtausends, der Verbindung zwischen dem atlantischen Europa und der Mykenischen Welt über das Mittelmeer eine primäre Bedeutung zu.

Der vorliegende Beitrag ist die schriftliche Fassung eines im Dezember 1991 gehaltenen Habilitationsvortrages am Fachbereich Altertumswissenschaften der Freien Universität Berlin.

HANKEY 1987

Vronwy Hankey, *The chronology of the Aegean Late Bronze Age*. In: PAUL ÅSTRÖM (Hrsg.), *High, Middle or Low? Acts of an International Colloquium on Absolute Chronology Held at the University of Gothenburg 20th – 22nd August 1987*. (Gothenburg 1987), 39–59.

This paper offers further evidence, following Hankey and Warren 1974, for conventional correlations between the Aegean, the Levant and Egypt (Anatolia Is not Included). The latest use of radiocarbon determination of age is briefly discussed. Those who have laboured in the hazardous field of chronology are asked indulgence for statements of the obvious, and some repetition of old information offered here

in the context of the Colloquium on “Absolute chronology, high, middle or low?” Since the absence of written documents makes chronology of the Aegean almost entirely dependent on pottery, it is not easy to operate an overall relative dating system which satisfactorily covers exceptional cultural circumstances.

HÖFLMAYER 2009

Felix Höflmayer, *Aegean-Egyptian synchronisms and radiocarbon chronology*. In: DAVID A. WARBURTON (Hrsg.), *Time’s Up! Dating the Minoan eruption of Santorini, Acts of the Minoan Eruption Chronology Workshop, Sandbjerg November 2007*. Monographs of the Danish Institute at Athens 10 (Århus 2009), 187–195.

Based on Aegean material found in Egypt and vice versa, Aegean relative chronological phases can be synchronized with the Egyptian historical chronology. As has been shown above, Minoan and Mycenaean pottery turns up in Egypt in the same sequence as in the Aegean. It can be assumed that these imports are not heirlooms as it would be hard to think that all these goods were exported with more or less the same time-lag of one or two generations after they were in use in the Aegean. On the other hand, it is known that stone vessels were in use for several generations and that these objects might even have been traded as antiques. The case of the re-worked stone vessel from shaft grave V shows that one cannot assume a short interval between production in Egypt and deposition in Mycenae, thus creating an argument for an end date of LM IA well after 1550 or 1524 (beginning of the New Kingdom).

Nonetheless, radiocarbon evidence cannot be put aside in chronological discussion. The work in this field by Sturt Manning, Walter Friedrich and others has stimulated critical reviews of the conventional chronology. Nevertheless the conclusions based on the evidence put forward above make an eruption date in the second half of the 17th century virtually impossible. Neither is an end-date of around 1500 for the LM IB-period likely, whereas the end of LM II and the dates for LH IIIA2 seem compatible with current understanding of archaeology and history of the Eastern Mediterranean.

Today it is still not possible to achieve a consensus regarding the absolute chronology of the early Late Bronze Age. Archaeology and natural sciences still come down to different results. Future work in both fields may shed more light on areas still not so well understood. We still lack sound archaeological arguments for synchronizing MM III with the Egyptian chronology and likewise recent radiocarbon dates for Aegean Middle Bronze periods are insufficient as well. However, such work might be useful in order to establish the point in time where the difference between archaeological interpretation and radiocarbon dating starts and perhaps to finally solve the debate around the absolute date of the Aegean Late Bronze Age.

HÖFLMAYER 2012

Felix Höflmayer, *The Date of the Minoan Santorini Eruption: Quantifying the “Offset”*, *Proceedings of the 6th International Radiocarbon and Archaeology Symposium*. *Radiocarbon* 54 (2012), 435–448.

Despite many recent attempts to settle the dispute concerning the absolute date of the Minoan Santorini eruption, there are still differences between some archaeologists and scientists on the absolute dates and the reliability of radiocarbon dating. The recent publication of over 200 new ¹⁴C dates for dynastic Egypt rules out a major flaw in the historical chronology of Egypt and proves the reliability of ¹⁴C dating in the Nile Valley. Therefore, the student of Aegean archaeology and eastern Mediterranean interconnections is still confronted with an archaeologically

based conventional, or “low,” chronology and a 14C-backed “high” chronology. New 14C determinations from different sites of the Aegean support the high chronology for the Late Minoan (LM) IA, while recent re-evaluation of LM IB determinations are slightly higher but more or less in agreement with archaeological estimations. The present contribution reviews archaeological and scientific data for the LM IA period and argues that a reduced (≈ 30 to 50 yr) offset between archaeological and 14C dates for the Minoan Santorini eruption may be possible, thus offering new perspectives for potential solutions for this problem.

KARLSRUHE 2011

BADISCHES LANDESMUSEUM KARLSRUHE (Hrsg.), *Kykladen – Lebenswelten einer frühgriechischen Kultur*. (Karlsruhe 2011).

KNAPPETT 2011

Carl Knappett, Ray Rivers & Tim Evans, *The Thera eruption and Minoan palatial collapse: new interpretations gained from modelling the maritime network*. *Antiquity* **85** (2011), 1008–1023.

What was the effect on Late Minoan civilisation of the catastrophic destruction of Akrotiri on Thera (Santorini) by volcanic eruption? Not much, according to the evidence for continuing prosperity on Crete. But the authors mobilise their ingenious mathematical model (published in *Antiquity* 82: 1009-1024), this time to show that the effects of removing a major port of call could have impacted after an interval, as increased costs of transport gradually led to ever fewer routes and eventual economic collapse.

Keywords: Aegean, Minoan, Crete, Thera, Santorini, Akrotiri, Bronze Age, maritime communications, network analysis

KUNIHOLM 1996

Peter Ian Kuniholm, Bernd Kromer, Sturt W. Manning, Maryanne Newton, Christine E. Latini & Mary Jaye Bruce, *Anatolian tree rings and the absolute chronology of the eastern Mediterranean, 2220-718 BC*. *nature* **381** (1996), 780–783.

Excellent preservation of wood and charcoal at archaeological sites in Anatolia has allowed the Aegean Dendrochronology Project to build absolute and floating tree-ring sequences. One such floating dendrochronology of 1,503 years includes samples relating to known rulers, sites and cultures of the ancient eastern Mediterranean. If this chronology could be dated precisely, many long-standing questions might be resolved. Here we report 18 high-precision 14C determinations which, when wiggle-matched to the radiocarbon calibration curve, provide a date within narrow limits. Inside this range, we can suggest the probable absolute dating of the dendrochronology because of a remarkable growth anomaly in the seventeenth century BC, for which we propose a correlation with major growth anomalies at 1628/1627 BC in the absolutely dated dendrochronologies of Europe and the United States. Many archaeological sites from several cultures in the eastern Mediterranean can now be dated with fine precision. This chronology has important implications for Old World archaeology and prehistory.

MCNEAL 1972

R. A. McNeal, *The Greeks in history and prehistory*. *Antiquity* **46** (1972), 19–28.

Professor R. A. McNeal, of the Department of Classics, University of California, Riverside, apologizes that his article is ‘largely negative since the message is a

prohibition'. We think that it needs no apology and that his plea to scholars to unscramble the confusion that has arisen from unwarranted muddling of different kinds of evidence in the interpretation of Greek history and prehistory might well upset some received theories and bring a welcome breath of fresh air into the thinking of some of us. Professor McNeal prefaces his words with those of Goethe: 'Das Höchste wäre zu begreifen, daß alles Faktische schon Theorie ist.' (The most important thing to understand is that everything factual is already theory.)

MANNING 2001

Sturt W. Manning, Bernd Kromer, Peter Ian Kuniholm, Maryanne W. Newton, *Anatolian Tree Rings and a New Chronology for the East Mediterranean Bronze-Iron Ages.* [science 294 \(2001\), 2532.](#)

We report an extensive program of high-precision radiocarbon dating to establish the best date for a floating 1599-year Anatolian tree ring chronology that spans the later third millennium B.C. through the earlier first millennium B.C. This chronology is directly associated with a number of key sites and ancient personages. A previously suggested dating is withdrawn and is replaced by a robust new date fix 22 (14 or -7) years earlier. These new radiocarbon wiggle-matched dates offer a unique independent resource for establishing the precise chronology of the ancient Near East and Aegean and help resolve, among others, a long-standing debate in favor of the so-called Middle Mesopotamian chronology.

MANNING 2002

Sturt W. Manning, Christopher Bronk Ramsey, Christos Doumas, Toula Marketou, Gerald Cadogan & Charlotte L. Pearson, *New evidence for an early date for the Aegean Late Bronze Age and Thera eruption.* [Antiquity 76 \(2002\), 733–744.](#)

The authors report on radiocarbon data derived from carefully selected organic material from Late Minoan IA and IB contexts. The results suggest that the accepted chronology of the period should be revised by 100 years and that the eruption of Thera/Santorini most likely occurred c. 1650–1620 BC.

Keywords: radiocarbon, Late Bronze Age, Thera, Late Minoan, chronology

MANNING 2006

Sturt W. Manning, Christopher Bronk Ramsey, Walter Kutschera, Thomas Higham, Bernd Kromer, Peter Steier & Eva M. Wild, *Chronology for the Aegean Late Bronze Age 1700–1400 B.C.* [science 312 \(2006\), 565–569.](#)

s312-0565-Supplement.pdf

Radiocarbon (carbon-14) data from the Aegean Bronze Age 1700–1400 B.C. show that the Santorini (Thera) eruption must have occurred in the late 17th century B.C. By using carbon-14 dates from the surrounding region, cultural phases, and Bayesian statistical analysis, we established a chronology for the initial Aegean Late Bronze Age cultural phases (Late Minoan IA, IB, and II). This chronology contrasts with conventional archaeological dates and cultural synthesis: stretching out the Late Minoan IA, IB, and II phases by ≈ 100 years and requiring reassessment of standard interpretations of associations between the Egyptian and Near Eastern historical dates and phases and those in the Aegean and Cyprus in the mid-second millennium B.C.

PEARSON 2005

Charlotte Pearson, Sturt W. Manning, Max Coleman & Kym Jarvis, *Can tree-ring chemistry reveal absolute dates for past volcanic eruptions?* *Journal of Archaeological Science* **32** (2005), 1265–1274.

Discussion of the significance of volcanically induced impacts on human history, the natural environment, and climate through the Holocene, has frequently stalled because of controversy concerning certain key volcanic eruptions and their precise relationships with the archaeological/environmental record. A major stumbling block in such debates is a failure to obtain precise and accurate dates for many of these key volcanic events. Most existing dates currently float against archaeological, historical, environmental, and climate data. A potential means to resolution lies with tree rings: these can be dated precisely by dendrochronology, are available from a wide range of loci around the world, and can record global climatic influences. It has been suggested that certain growth anomalies in dendrochronological sequences could offer “proxy” absolutely dated records of major, climatically effective, volcanic eruptions. However, this assertion has been widely disputed given the lack of a direct, positive, causal connection. The hypothesis that the required connection may be chemically encoded in individual annual growth rings from dated sequences is explored here both via review of existing literature on dendrochemical techniques, and by LA-ICP-MS chemical analysis of two tree ring sequences. It is concluded that dendrochemistry provides a promising means by which absolute dates may one day be attributed to key volcanic eruptions of pre-modern times.

Keywords: Dendrochronology; Dendrochemistry; Tree-rings; Dating volcanic eruptions; LA-ICP-MS

RAHMSTORF 2010

Lorenz Rahmstorf, *Die Nutzung von Booten und Schiffen in der bronzezeitlichen Ägäis und die Fernkontakte der Frühbronzezeit*. In: HARALD MELLER & FRANÇOIS BERTEMES (Hrsg.), *Der Griff nach den Sternen, Internationales Symposium in Halle (Saale) 16.–21. Februar 2005*. Tagungen des Landesmuseums für Vorgeschichte Halle 5/II (Halle 2010), 675–697.

A basic problem concerning the interpretation of the Nebra Sky Disc is the question as to whether Egyptian and Near Eastern influences must be taken into consideration. This arises particularly with regard to the meaning of boats and ships in attempts to explain the cosmology of early cultures.

In this contribution will be initially examined, which role boats and ships had in the Aegean, whereby it is established that in the Aegean – the link between the early advanced civilizations and Central Europe – no directly comparable ideas of a sun barge reveal themselves. Boats, however, played a prominent role also in religious ideas.

The significance of long-distance contacts in the Early Bronze Age is then examined also with regard to the role of seafaring. It is emphasized which changes had an effect on the Aegean under Near Eastern influence in the Early Bronze Age and integrated this territory as the westernmost fringe of the Near Eastern socioeconomic system. The trade of metals, e.g. of tin, serves as a key to the understanding of the farreaching, indirect contacts in the area between the Aegean and Western India. On the other hand the extent of contacts between the Aegean and Central Europe in pre-Mycenaean times was of considerably smaller scale, and this is primarily due to the different socioeconomic prerequisites.

Ein grundlegendes Problem bei der Deutung der Himmelscheibe von Nebra ist die Frage, ob ägyptische und vorderasiatische Einflüsse für ihre Herstellung in Betracht gezogen werden müssen. Dies ergibt sich besonders in Hinblick auf die Bedeutung von Booten und Schiffen in kosmologischen Erklärungsversuchen früher Kulturen.

In diesem Beitrag wird zunächst untersucht, welche Rolle Boote und Schiffe in die Ägäis besaßen, wobei festgestellt wird, dass sich in der Ägäis – dem Bindeglied zwischen den frühen Hochkulturen und Mitteleuropa – direkt vergleichbare Vorstellungen einer Sonnenbarke nicht erschließen. Jedoch spielten Boote auch in religiösen Vorstellungen eine prominente Rolle.

Anschließend wird die Bedeutung der Fernkontakte in der Frühbronzezeit auch im Hinblick auf die Rolle der Seefahrt betrachtet. Es wird betont, welche Veränderungen unter nahöstlichem Einfluss in der Frühbronzezeit auf die Ägäis wirkten und diesen Raum als westlichsten Ausläufer in das vorderasiatische sozioökonomische System integrierten. Der Handel von Metall, etwa von Zinn, dient als Schlüssel zum Verständnis der weitreichenden, indirekten Kontakte im Großraum zwischen Ägäis und Westindien. Der Umfang der Kontakte zwischen Ägäis und Mitteleuropa war dagegen in vormykenischer Zeit von wesentlich geringerem Umfang. Dies ist vor allem auf die unterschiedlichen sozioökonomischen Grundvoraussetzungen zurückzuführen.

Keywords: Aegean, West Asia, Early Bronze Age, sun barge, tin trade, Ägäis, Westasien, Frühbronzezeit, Sonnenbarke, Zinnhandel

RUTTER 1993

Jeremy B. Rutter, *Review of Aegean Prehistory II: The Prepalatial Bronze Age of the Southern and Central Greek Mainland*. [American Journal of Archaeology](#) **97** (1993), 745–797.

This review of a modest slice of mainland Greek prehistory is designed for twin audiences and has twin goals. On the one hand, it is targeted at archaeologists, ancient historians, Classicists, and others who, though they take an interest in Aegean prehistory and may even have some familiarity with it, hardly consider themselves specialists in this subdiscipline of Old World archaeology. For this audience, the purpose of what follows is to provide an outline, with helpful but by no means exhaustive references, to the principal discoveries made, questions addressed, and novel research strategies employed in the archaeology of roughly the first three-quarters of the Bronze Age on the southern and central Greek mainland. At the same time, this review is addressed to specialist Aegean prehistorians, not with the aim of making them aware of discoveries or intellectual currents about which they may be ignorant, but rather with the intent of encouraging them, through a consideration of the current state of our field, to take whatever future action they may feel is appropriate to improve upon the present state of our knowledge.

The spatial coverage undertaken for this review includes those portions of the Greek mainland south of a roughly east-west line connecting the mouth of the Spercheios River with the southeast corner of the Gulf of Arta (see below, fig. 3). Epirus, Thessaly, Macedonia, and Thrace are thus omitted from consideration, but Akarnania, Aetolia, the southern half of Eurytania, and the Ionian islands from Lefkas south are included. Also included, aside from the entire Peloponnese and the central Greek nomos of Attica, Boiotia, Phocis, Locris, and the southern half of Phthiotis, are the islands of the Saronic Gulf (most notably Aegina and Salamis), islands located just off the southeastern coast of the Argolid (such as Hydra and Spetses), and islands off the southwest coast of the Cape Malea peninsula (Elaphonisos and Kythera), but the large island of Euboea, since it was covered thoroughly in last year's review, is not considered here.

The period of time surveyed encompasses the entire Early and Middle Bronze Ages (EBA and MBA, respectively), known throughout the area in question as the Early Helladic (EH) and Middle Helladic (MH) periods, as well as the earlier part of the Late Bronze Age (LBA), variously termed the Late Helladic (LH) or Mycenaean period. The terminal date for my chronological coverage is provided by the construction, at some point during the LH IIB or LH IIIA1 periods in the 15th century B.C., of the first Mycenaean architectural complexes generally recognized by the term “palaces” as the administrative seats of centralized kingdoms.

SHELMERDINE 2008

CYNTHIA W. SHELMERDINE (Hrsg.), *The Cambridge Companion to the Aegean Bronze Age*. Cambridge Companions Online ([Cambridge 2008](#)). DOI:10.1017/CCOL9780521814447.

This book is a comprehensive, up-to-date survey of the Aegean Bronze Age, from its beginnings to the period following the collapse of the Mycenaean palace system. In essays by leading authorities commissioned especially for this volume, it covers the history and the material culture of Crete, Greece, and the Aegean Islands from ca. 3000 to 1100 bce, as well as topics such as trade, religions, and economic administration. Intended as a reliable, readable introduction for university students, it will also be useful to scholars in related fields within and outside classics. The contents of this book are arranged chronologically and geographically, facilitating comparison between the different cultures. Within this framework, the cultures of the Aegean Bronze Age are assessed thematically and combine both material culture and social history.

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WARREN 1989

Peter Warren & Vronwy Hanky, *Aegean Bronze Age chronology*. (Bedminster 1989).

WIENER 2001

Malcolm H. Wiener, *The White Slip I of Tell el-Dab'a and Thera: Critical Challenge for the Aegean Long Chronology*. In: VASSOS KARAGEORGHIS (Hrsg.), *The White Slip Ware of Late Bronze Age Cyprus, Proceedings of an International Conference in Honour of Malcolm Wiener, Nicosia 29th–30th October 1998*. Denkschriften der Gesamtakademie 20 ([Wien 2001](#)), 195–202.

In order to accommodate a 1628 BC date for the WS I bowl in the Volcanic Destruction Level at Thera, the Aegean Long Chronology would still require: (1) the deposit of the stratified PWS bowl from a Dab'a D/2 tomb (together with the other nine examples of PWS from that stratum) near the beginning of the time period encompassed by stratum D/2; (2) the production of the PWS bowl fifty years prior to the date of its deposition in Egypt, together with all of the PWS and WS I fragments found in D/2 and C respectively (unless they are survivals from earlier strata in which no such examples, but large numbers of MB Cypriote wares, were found); (3) the arrival of one of the earliest pieces of WS I at Thera not long before the eruption (notwithstanding some evidence that the bowl in question was

repaired in antiquity, as noted by Merrillees, this volume); and (4) the existence of significant chronological overlap between PWS/WSI and White Painted V at least, if not the Pendent Line and Cross Line Styles of White Painted III/IV as well, notwithstanding the fact that such an overlap is not observable at any site in Cyprus, the eastern Mediterranean or the Nile Delta, and goes against the evidence at Toumba tou Skourou, Tell el-Ajjul and Tell el-Dab'a (Eriksson, this volume; Oren, this volume; Bergoffen, this volume; Bietak and Hein, this volume). Each of these four propositions is individually unlikely, and the chance of all of them obtaining is slim indeed. The White Slip pottery from Tell el-Dabca and Thera accordingly presents a most critical challenge to the proposed 1628 BC date for the eruption of Thera and to the Aegean Long Chronology.

WIENER 2003

Malcolm H. Wiener, *Time Out: The Current Impasse in Bronze Age Archaeological Dating*. In: KAREN POLINGER FOSTER & ROBERT LAFFINEUR (Hrsg.), *METRON: Measuring the Aegean Bronze Age, Proceedings of the 9th International Aegean Conference New Haven, Yale University, 18–21 April 2002*. *Aegaeum* 24 ([Liège 2003](#)), 363–399.

This paper attempts to survey and critique both the current state of dating by Egyptian and Babylonian/Assyrian historical and astronomical chronologies and the current state of science-based dating by radiocarbon measurements, tree rings and ice cores. The discussion will focus on the ongoing controversy concerning the date of the eruption of the volcano on Thera (Santorini). Proponents of the Egypto-archaeologically based Aegean Short Chronology place the event between 1560 and 1480 B.C. (at the outermost limits, with some preferring a date before 1530). Leading advocates of the Aegean Long Chronology now place the eruption between 1650 and 1643 B.C., in place of their previous advocacy of 1628 B.C. The 1650–43 B.C. range results from the area of overlap between the Manning et al. dendro-radiocarbon date range for the anomaly in the Porsuk section of the Anatolian floating tree-ring sequence of 1650 +4/-7 B.C. and the Hammer et al. ice-core date of 1645±4 B.C. (1645 +4 = 1649 B.C., with a year of leeway to 1650 B.C. to allow for the possibility of an eruption in the year prior to the year of the putative arrival of its ejected glass shards in the Greenland ice).

This paper thus addresses both the chronology of prehistory and the prehistory of chronology. The interrelated chronologies of Egypt, the Levant, Anatolia and the Aegean are considered against the background of emerging scientific methods of dating and the efforts of prehistorians trained in art history, classics, ancient history and/or anthropology to assess the contributions and limitations of scientific methods of dating and to incorporate appropriately the data provided. Of course interdisciplinary research requires informed communication between disciplines.

WILD 2010

E. M. Wild, W. Gauß, G. Forstenpointner, M. Lindblom, R. Smetana, P. Steier, U. Thanheiser & F. Weninger, *¹⁴C dating of the Early to Late Bronze Age stratigraphic sequence of Aegina Kolonna, Greece*. *Nuclear Instruments and Methods in Physics Research B* **268** (2010), 1013–1021.

Aegina Kolonna, located in the center of the Saronic Gulf in the Aegean Mediterranean (Greece), is one of the major archaeological sites of the Aegean Bronze Age with a continuous stratigraphic settlement sequence from the Late Neolithic to the Late Bronze Age. Due to its position next to the maritime cross roads between

central mainland Greece, the northeast Peloponnese, the Cyclades and Crete, the island played an important role in the trade between these regions. In the course of new excavations, which focused on the exploration of the Early, Middle and Late Bronze Age at Kolonna, several short lived samples from different settlement phases have been ^{14}C -dated with the AMS method at the VERA laboratory. Bayesian sequencing of the ^{14}C data according to the stratigraphic position of the samples in the profile was performed to enable estimates of the transition time between the cultural phases. The Aegina Kolonna ^{14}C sequence is one of the longest existing so far for the Aegean Bronze Age, and therefore of major importance for the absolute Bronze Age chronology in this region. Preliminary results indicate that the Middle Helladic period seems to have started earlier and lasted longer than traditionally assumed. Further, at the present stage of our investigation we can give also a very tentative time frame for the Santorini volcanic eruption which seems to be in agreement with the science derived VDL date.

Keywords: Radiocarbon dating | Aegina | Aegean Bronze Age | Bayesian sequencing