FRAMING SOME ASPECTS OF THE EARLY IRON AGE 'CHRONOLOGICAL MESS': AEGEAN SYNCHRONISMS WITH THE WEST AND THEIR SIGNIFICANCE FOR THE GREEK GEOMETRIC SERIES

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ABSTRACT

The absolute chronology provided by the typology of the Greek Geometric pottery is a cornerstone in dating sites not only in Greece, but also in the central/western Mediterranean. In the past decade, the absolute dating of this ceramic series has come under scrutiny in the context of the wider debate on the chronology of the Early Iron Age Mediterranean. To a large extent this stems from the ever-increasing use of the radiocarbon method, which has had a clear impact on the revisionist debate over the Iron Age chronology of Israel. The latter provides the anchors for the dating of the Geometric pottery and thus, it is crucial for early Greek chronology. In recent years, radiocarbon series from Iberian contexts of Geometric pottery began to emerge. This paper discusses the latest evidence and developments regarding the dating of the Geometric pottery from these contexts and their implications for pre-Archaic Aegean chronology. This is especially warranted given the increasing number of voices from the West that call for substantially higher dates for the Middle and Late phases of the Geometric series, engendering an alarming two-tier use of this ceramic

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style as a chronological marker between the eastern and the western Mediterranean.

RESUMO

A cronologia absoluta proporcionada pela tipologia da cerâmica geométrica grega é um pilar na datação de sítios não só na Grécia, mas também no Mediterrâneo central/ocidental. Na última década, a datação absoluta desta série cerâmica tem sido analisada no contexto de um debate mais alargado sobre a cronologia do Mediterrâneo na Idade do Ferro Inicial. Em grande medida, isto deriva do crescente uso do método radiocarbónico, que teve impacto no debate revisionista sobre a cronologia sidérica de Israel. Esta última fornece as âncoras para a datação da cerâmica geométrica e, por conseguinte, é crucial para a cronologia grega antiga. Em anos recentes, a série radiocarbónica de contextos de cerâmica geométrica da Península Ibérica começou a emergir. Este artigo discute as evidências e desenvolvimentos mais recentes concernentes à datação da cerâmica geométrica destes contextos e as suas implicações para a cronologia pré-arcaica do Egeu. Isto é particularmente necessário dado o número crescente de vozes do Ocidente que defendem datas substancialmente mais altas para as fases intermédia e tardia da série geométrica, gerando um alarmante uso bipartido deste estilo cerâmico como marcador cronológico entre o Mediterrâneo oriental e o ocidental.

INTRODUCTION

The tight chrono-typology of the Greek Geometric pottery, as developed in the remarkable and meticulous work of Nicholas Coldstream (1968),[1] has been a cornerstone in dating sites of the early first millennium BC, not only in the Greek world, but also across the central and western Mediterranean. In recent years, nevertheless, its absolute dates have come

[1] A revised 2nd edition of this comprehensive study and development of neat typology was published in 2008 (Coldstream 2008).

under scrutiny, as an offshoot of the multifaceted debate regarding the fragmentation of the Mediterranean chronology into regional, and incompatible dating systems. The discrepancies in the results of different dating methods (radiochronology, dendrochronology and conventional chrono-typological schemes) created substantial 'time gaps' in cross-dating sites, for example when both conventional and radiometric dating systems were employed (Nijboer 2005).[2]

Greek archaeology of the early first millennium BC is not immune to this debate, as its absolute, ceramic-derived dates were anchored on contexts in the Near East and Egypt. The chronologies of the Protogeometric and Geometric series were first established by Desborough (1952) in the 1950s and Coldstream in the 1960s respectively.[3] The latter depended on synchronisms with Israel, some of which have now been discredited as unreliable. By extension, the increasing dissent over the High/traditional and Low Chronology of Israel,[4] which remains so far unresolved despite a recent tendency towards a compromise,[5] has a critical effect on the Greek chronology *ca.* between the 11th/10th c. and the end of the 8th c. BC. These are all issues that have been discussed from the perspective of Aegean chronology, and specifically for the Protogeometric series, which has moved a long way since Desborough's *Protogeometric Pottery* was published in 1952. With various excavations across Greece, most notably at Lefkandi, the pottery, but also the settlements, the burial customs and other classes of evidence for the Protogeometric Period have been defined (Lemos 2002).[6] Aegean archaeology still depends on synchronisms with the Near East,

[2] A state of affairs that Nijboer (2005) poignantly called a "chronological mess" in his article "The Iron Age in the Mediterranean: a chronological mess or *Trade before the Flag*, Part II". The title of the present article is a reference to this.

[3]Desborough's (1952) seminal work provided the basis for the further study of the Protogeometric pottery.

[4] The Low Chronology lowers the Iron Age I–IIA transition to 920 BC from around 1000 BC, based on similarities of assemblages assigned different dates at similar sites. The bibliography is extensive and systematically enriched by new publications furnishing new radiometric data. Indicatively for the Low Chronology in the Levant, see e.g. Finkelstein and Piasetzky (2003a); Finkelstein (1996).

[5] For the latest reconstructions of a Low Iron Age chronology in the Levant, see Finkelstein and Piasetzky (2009); Sharon et al. (2007).

[6] Lemos (2002) provides the most comprehensive, expert treatment on the Protogeometric period. For recent debates on the regional developments of the Submycenaean and Protogeometric ceramic styles, see e.g. Lis (2009); Papadopoulos et al (2011).

Egypt and Italy for definite conclusions on chronological considerations.[7] Regarding the Geometric style, calls for revising its assigned dates, especially for its late phase,[8] have been left open to further discussion.

Recent excavations in the Iberian Peninsula are causing this very crucial issue to resurface, albeit for the first time, from the far western end of the Mediterranean. Greek Geometric pottery has been appearing in recent years at sites in south Iberia, providing a potential source of synchronisms for the dating of Greek Geometric pottery. In the nascent stages of Phoenician archaeology in the Iberian Peninsula, Greek imports were used to date the newly-found sites and provided a yardstick for building the local chronologies of Red Slip pottery. Currently, the significance of the conventional chrono-typologies for dating purposes has been minimised if not outright rejected, in favour of the (often) incompatible dates produced by the radiometric system. One of the implicating factors must be the relatively limited amount of easily-dated imports within the time-frame under review, *i.e.* up to the end of the 8th c. BC.[9] The others have to be sought in the lack of credibility that the conventional chrono-typologies appear to warrant *vis-à-vis* the radiometric dating, at least from the western Mediterranean perspective. Yet the radiocarbon dating method is far from providing a *deus ex machina* solution to our chronological woes. Apart from issues related to sampling methods, many of the weaknesses of the radiocarbon are inbuilt, e.g. the regional and chronological variations in atmospheric ^{14}C production and oceanic ^{14}C absorption, carbon reservoir exchange differences between terrestrial and marine environments and the different results obtained on different types of material (short/medium/long-life samples). The number of different measuring techniques and the calibration and computational analyses that have been developed to address these weaknesses and provide

[7] For one of the latest summary treatments from the Aegean perspective, see Kourou (2008). Regarding the absolute chronology of the Late Bronze Age/Iron Age transition in the Aegean, there has been the attempt to present site-specific and region-specific Aegean synchronisms with Italy and the Urnfield phases in Switzerland, see Weninger and Jung (2009).

[8] See e.g. Morris (1998).

[9] Greek imports increase exponentially in the 7th c. BC and later, mainly due to the foundation of Greek emporia in Catalonia and south France. For Archaic Greek imports, see e.g. Rouillard (1991) and for the most recent corpus, Domínguez (2001).

workable results ineluctably introduce cumulative error variants that may significantly affect the value of the calendrical dates obtained.[10]

This tendency to overlook the weaknesses of the radiocarbon dating method necessitates the re-examination of the absolute dates of Greek Geometric pottery, so as to impede the fragmentation and regionalisation of Mediterranean chronology, which engenders creating incongruous, and thus parallel reconstructions of historical realities for the very same chronological period.[11] This is all the more necessary, as the Iberian data have been used by archaeologists working on the western Mediterranean front to argue for a higher absolute Greek Geometric chronology. Proposals to raise the date of the Middle Geometric (MG) style, and consequently of the Early Geometric (EG), have been voiced,[12] but these have received limited reactions from the Aegean front, pending further conclusive results. This runs the risk of operating with two different chronologies for the same ceramic style in different Mediterranean regions. The extant archaeological record in Iberia relating to this issue is by all means restricted. Nonetheless, given the crucial position that dating has in archaeology, an additional source of data for cross-examination should be utilised as a checking mechanism for the current dating followed (see below).

It is in this spirit that the present study reverses the usual aims of the customary analysis of Greek imports in the Iberian Peninsula, which tended to focus on the information it could supply for the dating of sites in Iberia or for the reconstruction of trade patterns. Instead, I examine the most recent contextual data of Greek Geometric imports, mostly Attic, with a view to screening its attached dates for compatibility with other chronological indicators, so as to examine the information that Iberian contexts can provide for the dating of the Greek pottery itself. Ceramic imports from other

[10] E.g. the Bayesian process modelling used for radiocarbon age calibrations resulted in the INTCAL04 calibration curve, in which atmospheric ^{14}C variations are described using a Gaussian distribution with a set mean and variance per year, determined by the assumption of "equal probability for a rise and fall in atmospheric ^{14}C-levels in consecutive years" (Weninger and Jung 2009: 383).

[11] This is in addition to the obvious problem of skewing the interpretations of archaeological evidence by transposing them to a different historical context. For how shifts in chronology had a crucial impact in the interpretations of Phoenician settlement in Iberia, see Aubet (2008).

[12] Based on evidence from both the eastern and the western Mediterranean, see Mederos Martín (2005: 323); Torres Ortiz (1998: 56–57).

contexts, as well as local adaptations or imitations of the Greek Geometric shapes and decoration are also taken into account. Information will be provided on all findspots of the Geometric style with known contexts in Iberia, while data on the radiometric chronology and local pottery production will be taken into account. The results are thus tentative pending further excavation and publication of finds.

This study is intended as a springboard for further discussion on the possible effects of developments in the Iberian Peninsula on the conventional dating of Greek pottery, if or when more of these finds become available. It is by no means intended to offer an exhaustive and conclusive review of the existent chronological framework for the Attic Geometric style, which in any case the quality of new finds and contexts at the present stage of archaeological knowledge would not permit. Rather, it is meant as a contribution to bridging 'barriers' of (geographically) different spheres of research, bringing to the fore crucial developments taking place in the West.[13] In that, it joins an as yet limited number of studies that discuss the possibilities and limitations of the absolute dating of early Greek pottery in response to the wider developments in the western Mediterranean (e.g. Brandherm 2008).

THE ABSOLUTE DATING OF THE GREEK GEOMETRIC SERIES: A VIEW FROM THE EAST

In the 1960s, when Coldstream was working on the typology of the Greek Geometric series, he was interested in providing a precise stylistic seriation of the available ceramics, as well as in documenting their stylistic evolution along a chronological axis. For that, he had to turn to the East. His resultant chronologically-framed classification (Fig. 1) became not only his main *œvre*, but also the standard reference work for every archaeologist working on that period of Greek antiquity, whether specialising on pottery or on other types of material culture (Bouzek 2010: 668).

[13] Analogous problems of parallel developments and the occasional circularity have been discussed from the Near Eastern perspective for the Aegean world, see e.g. Fantalkin (2001).

Coldstream's typology of the Geometric style utilised the then available chronologies of Israeli stratigraphic levels where a few Greek Geometric fragments had been found, leading him to conclusions via a series of logical assumptions. Criticism has often been levelled in recent years, but as Lemos (2002: 25) notes, Coldstream was not oblivious to the shortcomings of his own chronology. The problems, as they are now known, are of three types. Coldstream used as chronological markers synchronisms with contexts that produced only few Geometric fragments and that in addition are nowadays deemed too problematic (either unclear or stratigraphically unreliable) to be taken into consideration.[14] The third problem relates to the fact that when Coldstream was establishing his chronology based on the Israeli chronology, the latter was in a flux, and in fact two parallel dating systems existed. Of the two systems in use, he chose to employ Kenyon's Low Chronology.[15] Kenyon's chronology has long since then been discredited, but Finkelstein's Low Chronology, developed in the mid-1990s, substantiates nowadays the 'low dating' of the Greek series (Fantalkin 2001). Finkelstein (1996) effectively suggested the lowering of Iron Age I to the 10th from the late 11th c. and of the IIA to the 9th c. from the 10th c BC, which caused turbulence. As an effect, the conventional dating of the Greek pottery, as it now stands, is based on a chronological reconstruction of the Iron Age in Israel (Kenyon's Low Chronology) that fell into disuse but which later revived, via an independent methodological approach, by Finkelstein (Fantalkin 2001: 122)

New Sub-Protogeometric and Geometric finds at recent excavations in the Near East can go so far to dispel some of these problems.[16] The largest such assemblage, numbering a total of eight fragments representing six

[14] At Tel Abu Hawam III, Megiddo V or IV and at Samaria, either unstratified, lacking recorded contexts or in four different strata, some of which clearly disturbed, see Fantalkin (2001: 119–120).

[15] Kenyon (1964) had already suggested in 1964 that the pottery at Megiddo VIA be dated to the 9th c. BC, while retaining the 10th c. BC date for the building of the stratum, see also Mazar (2005: 15).

[16] The new Iron Age chronology of Gordion in Anatolia (central Turkey), based on radiocarbon and dendrochronological data, does not seem to affect the absolute dating of the LG II Euboean and the LG East Greek vessels found in the post-destruction contexts in the citadel of the site. It appears that the authors consider the presence of this pottery as reinforcing their redating of the destruction level to 800 BC, rather than altering the conventional dating of the Geometric pottery (Voigt and DeVries 2011: 26–27; Sans 2011: 59).

vessels, was recently found at the large tell site of Tel Rehov in the Beth-Shean valley (Coldstream and Mazar 2003). Two fragments of an Attic MG I skyphos were found in a large building destroyed by fire in Area C, Stratum IV. Unfortunately, the radiocarbon dates obtained by different laboratories on different samples and contexts and their subsequent reconstruction by different authors led to suggestions that the new dates from Stratum IV support the conventional chronology according to some, and Finkelstein's Low Chronology according to others.

Bruins et al. obtained a date of 880–836 BC at 1 σ (42.8% probability) and 918–892 BC (25.4%) on grain samples from the building where the two MG I fragments were found (934–830 BC at 2 σ, with a 89.5% probability), as the weighted average of *three* uncalibrated dates and given an acknowledged calibration plateau (estimated at between 875 and 845).[17] These date range options can thus be used as a *terminus ante quem* for the MG I skyphos. Mazar combined ^{14}C and chrono-histrorical evidence (historical dates for destruction layers etc) to assign a date of 840–830 BC to Stratum IV, which fits Coldstream's chronology (Coldstream and Mazar 2003: 41). [18]

Subsequently, these three uncalibrated dates of this same measurement were used by Mederos Martín to argue that the beginning of the MG should be placed at around 875 BC, allowing for the chronology of the early phases of the Geometric style to be raised between 25 and 50 years (Mederos Martín 2005: 323). This is an unwarranted extrapolation given the limitations of both the calibration curve and the dates themselves. Neither the qualifications Bruins et al. had expressed in publishing these dates were mentioned, nor, more peculiarly, their actual calibrated ranges. As was just shown above, the weighted calibrated date of these three, provided at 1 σ (42.8%) is 880–836 BC, which perfectly accommodates Coldstream's chronology. In a later paper, Brandherm (2008: 98) used the same ^{14}C dating

[17] At 2 σ, the dates are: 934–830 (89.5%), 970–958 (5.9%), see Bruins et al (2003a), especially Table S1. The results were criticised on both methodological and interpretational grounds, unfairly at least regarding the former, see Finkelstein and Piasetzky (2003b). For responses see Bruins et al. (2003b).

[18] Also cited is a MG II find from the Beth Shean, local stratum P8, which has been dated to the late 9th c. or early 8th c. BC, with *a terminus ante quem* of 732 BC.

results to place the beginning of the MG I style at *ca.* 900 BC, citing the calibrated date range published originally by Bruins et al. at 2 σ.[19]

To add to the ambivalence, in the latest chronological reconstruction by Finkelstein and Piasetzky for the entire Iron Age of Israel, using radiocarbon, stratigraphy, ceramic typologies and 'reliable historical events', Tel Rehov IV was dated to its later calibrated slot of 875–844 BC based on previously available ^{14}C dates obtained by different laboratories and different samples (Finkelstein and Piasetzky 2009: 271).[20] The constraint here for *selecting* the later part of the calibration slot is dictated by stratified archaeological wiggle matching (Finkelstein and Piasetzky 2009: 267). They used two methods (uncalibrated weighted average, Bayesian modelling) to compare the results obtained on secure contexts, while also excluding outliers. Effectively however, although purportedly their reconstruction supports the Low Chronology, it does not deviate from the conclusions of Bruins et al, on whose ^{14}C data, after all, it was based. An observation to be noted, however, is that the range of 875–844 BC, selected by stratigraphic wiggle matching corresponds exactly to the calibration curve plateau mentioned by Bruins et al. when obtaining the date. This may be a serious obstacle for establishing the chronology of that time period.

Part of the problem is the great expectation one reserves for the possibilities of the radiometric dating to offer aid in resolving disputes of such short time spans, requiring a high degree of precision in historical years. Nearly always the date ranges of calibrated dates are wider than the error variants of traditional chronological sub-divisions. Mazar's poignant comment is still relevant "…in a debate like ours, over a time-span of about 80 years, we push the radiometric method to the edges of its capability, and perhaps even beyond that limit" (Mazar 2005: 20). The paradox of maintaining two different chronologies while using the same ^{14}C and the same sources of historical constraints loses its sharpness if we consider the

[19] For the date range at 2 σ, see *supra* note 17.

[20] The actual ^{14}C measurements used in this reconstruction seem to have been furnished by an earlier publication summarising all previous radiocarbon dates obtained by Laboratories at the Weizmann Institute, the University of Arizona and the Groningen Laboratories, see Mazar et al. (2005).

qualifications expressed by both sides (Low/High Chronology supporters), whose dispute now seems to be toning down.[21]

At the very least, what can be said is that at the site of Tel Rehov, the weighted average of three uncalibrated dates sealing a context containing an MG I skyphos, gives a date range of 934–830 at 2 σ, with a 89.5% probability, which functions as *a terminus ante quem* for this vessel. This is wide enough to accommodate Coldstream's chronology. The discussion of contexts and chronologies from the other end of the Mediterranean will help address these issues in a complementary manner.

THE EARLY DATING OF PHOENICIAN SITES IN THE IBERIAN PENINSULA: GREEK POTTERY AS A BENCHMARK FOR BUILDING A LOCAL CHRONOLOGY

Sites recognised as Phoenician began first to be identified on the Spanish littoral in the 1960s, in the provinces of Granada and Malaga (Fig. 2). The first such sites were dated with the aid of imports, mostly the scarce Archaic Greek pottery fragments, found in a few strata. Through implicit assumptions and some degree of extrapolation, strata not containing this pottery were assigned absolute dates in slots of 25–50 years on either side of the chronological peg provided by the Greek finds. The latter provided also the chronological framework for the seriation of the Phoenician Red Slip pottery. Thereby the locally-built typologies of western Phoenician pottery were used as 'chrono-typologies'.[22]

Specifically, the first such site to be excavated was the necropolis of Cerro de San Cristóbal ('Laurita') in Almuñécar (province of Granada), where in tomb 19B two Proto-Corinthian (PC) kotylai were found, belonging to the early and the middle phases of the style respectively. The tombs at this necropolis were dated with reference to the dates of the Archaic finds, *i.e.* "around these dates with the possibility of slightly earlier and later burials within the first three quarters of the 7th century and during the final quarter of the 8th century" (Pellicer Catalán 2002: 54). Thus, contexts lacking Greek

[21] Revolving around a period of few decades (Mazar 2005: 21–23).
[22] For the use of the term 'chrono-typology' (in Greek archaeology), see Kourou (2008).

pottery were dated with it as a benchmark, based on stratigraphic considerations and assumptions.

The dating of the settlement of Toscanos (province of Malaga), the site that was excavated immediately afterwards, was partly developed in correspondence with that of Laurita. Stratum IV of Toscanos, which designated one of the later periods at the site, yielded fragments of PC kotylai, Attic SOS amphorae, a small Ionian bird bowl cup and the rim of a small Corinthian aryballos, as well as Etruscan *bucchero sottile*. The excavators dated this stratum towards 700 BC, which led to the earliest phase of the settlement being dated to the middle of the 8th c. BC (Schubart et al. 1969), through a process of allotting slots of 25–50 years to the preceding strata — effectively then, by a degree of extrapolation.

Subsequently, the seriation of the Red Slip ceramics developed within this chronological framework. This process consisted in trying to correlate Red Slip plates and Greek chronologies based on the stratigraphic evidence for a morphological evolution of the former. The excavators observed a development in the shape of the Red Slip plates, characterised by an increasing rim width and a corresponding decreasing quotient of rim width to plate diameter (Schubart 1976: 183, 185). Assigning such differences in the morphology of the shapes to different phases within the chronological framework established on the basis of Greek imports seemed to offer the key for dating western Phoenician sites. Yet the Red Slip plates found at Strata IV and V, displaying rim widths varying from 41 to 73 mm (Pellicer Catalán 2002: 71), were the only such ceramics to be found in levels with Greek pottery. As it has been noted, the dates assigned to the remaining strata of the site, representing earlier phases of occupation and designated in the seriation of Red Slip plates by specific rim widths, were only *approximations.*

Effectively, to further compound the methodological leap of faith of considering the initial snapshot date offered by the Greek pottery as a benchmark (providing specific time slots for a ceramic style that could have been in use for longer periods of time), the bold step was taken of assigning absolute dates to the other strata and by extension to different types of Red Slip contained in these strata. Inevitably, various chronological

reconstructions differed significantly in the dates they ascribed to the very same contexts (Fig. 3).[23] As observed even by the staunchest supporters of this chrono-typology, not all plates corresponded to the rim widths expected from their stratigraphic position based on the model of ever-widening plate rims (Maass-Lindemann 1982: 53). A third leap of faith entailed using the morphological variants of the Red Slip plates, with their attached hypothetical absolute chronology, to date sites on the Atlantic coast where no Greek pottery was found. As noted by Arruda (2002) throughout her treatment of Atlantic Phoenician sites, this led to some chronological discord since there did not seem to be a coeval morphological evolution of Red Slip plates between the Mediterranean and the Atlantic coasts.

As a result of these processes, the dating of the Phoenician sites in the Iberian Peninsula was inextricably linked to that of the Greek pottery from the late 8th c. BC onwards; thus the Red Slip chrono-typology is problematic as an independent chronological marker for the Geometric pottery, besides its internal limitations as a dating system. In the past twenty years, a series of radiocarbon dating measurements offered high dates that were incompatible with the established chronology of the Phoenician typologies as described above, as well as with the dating of the Greek Geometric pottery that was in recent years identified in stratified contexts. The following section offers an evaluation of the new developments for the dating of the earliest Greek Geometric pottery

THE CHRONOLOGY OF THE GREEK GEOMETRIC POTTERY: A VIEW FROM THE WEST

Greek Geometric pottery is known from limited sites with Phoenician material culture: Huelva (province of Huelva), El Carambolo (province of Seville), La Rebanadilla (province of Malaga) and La Fonteta (province of Alicante) (Fig 3). The last is a large Phoenician settlement and the northernmost on the Mediterranean coast of Spain. From this site, a black-glazed kotyle, a LG Thapsos skyphos and a Phoenician imitation of an

[23] For 'snapshot dates' as the end result of the misuse of synchronisms, see Nijboer (2005: 258–259).

Euboean skyphos were found, but are of little value for chronological considerations (Domínguez 2001: 42–43) and will not be discussed here further. Imitations of Greek Geometric cups were also discovered at Toscanos, but the dating of their stratigraphic context is problematic. The sites of Huelva (Plaza las Monjas/Calle Méndez Núñez 7–13), El Carambolo and La Rebanadilla comprise the most recent findspots Greek Geometric pottery. An additional line of investigation is provided by the local ceramic style of 'Tipo Carambolo' (hereafter: 'Carambolo Ware'), which appears to have been inspired by Greek Geometric pottery and is consistently found at sites yielding fragments of MG pottery.

Toscanos

The site-cluster of Toscanos by the Río Vélez in Malaga is one of the most important Phoenician settlements in Iberia. Local imitations of Greek vases (whether Phoenician or indigenous) form a corpus of a total of 89 fragments imitating skyphoi and kotylai, particularly LG Thapsos kotylai and LG Euboean skyphoi (Domínguez 2001: 30).[24] They were thus considered locally-made imitations of late 8th c. Greek vases and were mostly dated to the 7th c. BC, using the chronological framework devised for the Red Slip pottery. The majority was found in Stratum IV of Toscanos, for which the series of obtained ^{14}C are practically of no value.[25] Little independent chronological information can thus be derived from this corpus.

Huelva

Until the turn of the 21st c., the only Geometric pottery known from Iberia was limited to a single piece lacking exact provenance from the city of Huelva,[26] located on the Atlantic coast of south Spain, on the confluence of the Odiel and Tinto rivers. Since then, excavations in the city of Huelva

[24] Eight fragments were published by Rouillard (1990: 178–185). A group of 81 fragments were added by Briese and Docter (1992: 30–34, 42–58).
[25] Two different laboratories undertook the measurements, but the resulting date ranges on carbon and unknown samples span several centuries, see Brandherm (2008: fig. 10).
[26] A MG II pyxis (province of Huelva) (1982).

brought to light the largest assemblage of Sub-Protogeometric (SPG) and Geometric pottery known in Iberia. Huelva is identified with the *Onuba* of the ancient sources.

Rescue works during the early phases of an urban building project (Plaza las Monjas/Calle Méndez Núñez 7–13) uncovered dozens of thousands of pottery fragments in a rich assemblage pertaining to a wide range of craft-working activities. Of the catalogued 8,009 pottery fragments (from an estimated 88,988 in total), the majority belongs to hand-made ('indigenous') pottery, followed by Phoenician pottery, while a small percentage is taken up by Greek, Cypriot and Sardinian fragments. The deposit was dated to *ca.* 900–770 BC (González de Canales Cerisola 2004; 2006). [27]

Twenty-two fragments from a total of 33 identified in the sample of pottery studied from the site could be typologically assigned to specific stylistic subdivisions and regions: 15 pendent semi-circle plates and 2 skyphoi were assigned to the SPG I–II style and were considered Euboeo-Cycladic; 1 trefoil jug, 2 kantharoi and 2 skyphoi and a trefoil jug (Fig. 4), all apparently from Attica, were assigned to the MG II (González de Canales Cerisola 2004: 82–94, 100–186). The majority of the Phoenician pottery was dated to *ca.* 900–760 BC, classified using both Bikai's (1987) and Anderson's (1988) typologies, allegedly incompatible as the latter uses the Israeli chronologies according to charges by Gilboa et al. (2008: 169), who proposed that the Near Eastern pottery be dated to *ca.* 835–800 BC at the earliest, the only possibility when taking both dating systems into account.[28] As an approximate *terminus ante quem* of 835–800 BC for the MG II pottery, it falls on the early side of the MG I–II threshold. This should not be alarming from the perspective of Aegean archaeology, given that the *terminus ante quem* date was arrived at with reference point a compromise accommodating two different dating systems of the Near Eastern pottery (Cypro-Phoenician and Israeli-Phoenician), while the MG pottery itself came

[27] Previous excavations at the same area led to the discovery of the superimposed structures of a sanctuary (8^{th}–5^{th} c. BC). Phoenician and Greek pottery was of later periods in that instance, *ca.* 7^{th}–6^{th} c. BC (Belén Deamos 2009: 196–197; Osuna et al 2001).

[28] For clarifications to these concerns on the typological ascription of the pottery and its dating, see González de Canales Cerisola et al. (2008: 168–173).

from a mixed-period context, whereby its contextual association with the Near Eastern pottery cannot be safely established.

The radiocarbon determinations do not really affect the present question of the absolute chronology of Geometric pottery. The context of the early Greek pottery was a waterlogged, secondary deposit. Notwithstanding the criticisms levelled against the radiometric results obtained due to the mixed-period content and the averaging of uncalibrated dates from three, effectively potentially different-period samples (giving a date range of 930–830 at 1 σ, with 94% probability) (Fantalkin et al. 2011: 179–198; Gilboa et al. 2008: 173), it was expressly stated in that same publication that the presented ^{14}C dates had no value in dating the MG II finds (Nijboer and van der Plicht 2006: 31–36). The date range has now been revised to 920–845 BC at 1 σ (van der Plicht et al. 2009: 226). All in all, the high radiometric dates do not challenge the conventional dating of the MG pottery.

El Carambolo

A second site that yielded MG pottery is the Phoenician-type sanctuary complex of El Carambolo, located on a hilltop in the municipality of Camas, 3 km from the city of Seville, on the former Guadalquivir estuary. An Egyptian statuette of Astarte from the area, which bore a Phoenician inscription identifying it as a votive offering, provided one of the earliest attestations of Phoenician script in Iberia (e.g. Escacena Carrasco 2007: 5). Yet the site became initially known due to the chance discovery in 1958 of the renowned 'Carambolo treasure', a hoard/deposit of gold jewellery and other ornaments that stylistically and technologically are of Near Eastern derivation, although some recall Late Bronze Atlantic forms. The discovery was followed by excavations in the area by Carriazo (1973; 1970), bringing to light what became known as the 'fondo de cabaña', allegedly the remains of an indigenous, circular dwelling. This feature yielded faunal material, remains of adobe bricks and ceramics, including the previously-unattested

Carambolo Ware (Carriazo's Levels III and IV), a type of hand-made ware decorated with geometric patterns.[29]

Excavations on the hilltop resumed between 2002 and 2004, under the direction of Fernández Flores and Rodríguez Azogue, revealing the five phases of an expanding sanctuary complex (V–I), which yielded MG pottery in Phase IV. Re-examination of Carriazo's stratigraphy determined that the 'fondo de cabaña' should be assigned to Phase III. The El Carambolo hoard had been found on the sealing layer of that feature, which was aptly re-interpreted as a bothros, not a dwelling. Two occupation phases of the site (Phases V and III) were dated by radiocarbon, pointing to chronologies that were substantially higher (over a century) than the dates yielded by the Red Slip and Gray Ware ceramics (Fernández Flores and Rodríguez Azogue 2007: 125, 154), illustrating the problems discussed above regarding the chrono-typologies of Red Slip pottery in Iberia. Gray Ware appears in the earliest strata of the Phoenician settlements (e.g. at Toscanos I) and its dating is anchored on the Red Slip chrono-typologies.[30] Thus, it cannot serve as an independent chronological basis. At El Carambolo, the excavators worked with two incompatible chronologies for Phases V and III (radiocarbon/ceramics) and dated the remaining phases according to conventional chronology and assumptions based on the chronological pegs of the available ^{14}C date series for those two phases. They placed the use of the sanctuary between the 10th/9th c. BC and the 5th c. BC.

To forego the disparities in these two dating systems and provide independent chronological markers for the MG pottery, the Phoenician and Gray ware typologies will have to be set aside, instead taking into account the radiometric data, the stratigraphy and ceramics with undisputed chronologies (e.g. Greek pottery of the 7th c. BC and later). Radiocarbon determinations on charcoal samples from the foundation level, Phase V, yielded a date range of 1020–810 BC at 2 σ (95%) and 980–830 BC at 1 σ (68.2%). For Phase III, the date ranges are inconveniently long: 791–506 BC at 2 σ (93.1 %) and 440–417 BC (2.1 %), based on charcoal samples that

[29] For the initial excavations at the site and its 'misguided' identification as an indigenous site, see Carriazo (1970). Reservations had already been expressed with regard to this interpretation even by Carriazo (Escacena Carrasco et al. 2007: 6–7).
[30] For the latest typology and possible origins of the Gray Ware, see de Groot (2011).

came from layer 15 of the 'fondo de cabaña', assigned by the new excavators of the El Carambolo site and corresponding to Carriazo's Level IV. In any case, since the filling of the bothros seems to have taken place at a very short period, representing activities associated with food preparation and the discarding of related material, these stratigraphic subdivisions are chronologically of no importance (Fernández Flores and Rodríguez Azogue 2007: 103–104, 93–154)

The MG pottery consisted in an Attic skyphos, allegedly of the MG II style. It was found in a small antechamber room (A16, Area 3) in Phase IV. The skyphos came from a pit, into which were thrown Red Slip and hand-made pottery, animal bones, a piece of gold jewellery (replicating the technique of the Carambolo finds) and part of a rare clay replica of a hippos, a Phoenician boat. It is possible that the pit functioned as a bothros for the remains of sacrifices and for offerings,[31] similar to the 'fondo de cabaña'. The chronology of Phase IV, according to the excavators, could be established by the ceramics found in the main area, mostly the Phoenician Red Slip and Gray Ware. This would date Sanctuary IV to the period between the end of the 8th c. BC and the beginning of the 7th c. BC, acknowledging that if the radiocarbon dates for Phases V and III are taken into account instead, the period would stretch from the last third of the 9th c. to the beginning of the 8th c. BC. Consequently, on the basis of the radiocarbon dates of the preceding and the following phase, Phase IV would be placed between 830/810 and 791 BC. This neatly accommodates the transition between the MG I and II styles in the Attic sequence, but it is unlikely to reflect the entire length of Phase IV.

An independent date for the 'fondo de cabaña' was provided on the basis of two 'skyphoid' cups from Carriazo's Level IV. The first of these bears bands painted in red on the exterior, while its entire interior surface is covered in red. Based on morphological and iconographic parallels with East Greece (Miletus, Samos, Teichioussai), Schattner dated the cup to the first half of the 7th c. BC. The second cup was assigned a date close to the first quarter of the 6th c. on account of its pictorial scheme (pairing of double

[31] For more information on the context and possible interpretations of the pit, see Escacena Carrasco (2007: 15).

lines running across the inner surface) that again recalls East Greek prototypes, albeit of a slightly later period, which become abundant in Iberia at the time towards the end of the 7th c. and during much of the 6th c. BC. Previously, de Amores (1995: 63–65) had dated the cups to the late 7th c. BC. This traditional dating would place the chronology of the 'fondo de cabaña' towards the lower end of the ^{14}C dates obtained for the same context (Phase III, discussed above).

A problematic aspect for accepting this date for the 'skyphoid cups' and the lower end of the ^{14}C date is that the same context yielded Carambolo Ware, which appears to be earlier. Findspots of this pottery are confined to sites in the Middle and Lower Guadalquivir Valley (largely corresponding to the present provinces of Cordova and Seville) and to Huelva. Its initial discovery in the 'fondo de cabaña' at El Carambolo (after which it was named) transformed it into the 'calling card' of the pre-Phoenician horizon in Iberia, a marker for identifying indigenous settlements and contexts. On account of its stratigraphic position at the El Carambolo sanctuary complex and morphological features this cannot be maintained any longer. Suspicions over its supposed indigenous origin arose as early as it as was discovered given the immediately–observable similarities of its decoration with that of the Greek Geometric pottery. In the 1980s, Chamorro attributed the development of this ware to contacts with Greek sailors, suggesting that "early Tartessian commercial contacts with the Greek world probably occurred at the same time as Phoenician navigations" (Chamorro 1987: 91). At the time, however, the views remained conservative and the possibility of a Greek derivation was largely dismissed. After all, there had been no stratified finds of Geometric pottery in the Iberian Peninsula.

This hand-made ware was fired in very low temperatures, making it extremely fragile and unsuitable for everyday practical use, especially given the large size of the vessels involved. Most are tall containers of up to 1.20 m tall and 50 cm in diameter, although carinated, deep bowls also appear. The painted decoration was applied in red colour. Ornaments are arranged in parallel, metope-like spaces across the surface of the pot, depicting geometric and naturalistic motifs that most strongly recall the MG figurative decoration in composition, excluding, for example, the more complex and

'crowded' scenes of the LG style. It is probably no coincidence then that this type of pottery, not destined for daily use, was found at the sanctuary of El Carambolo.[32] It was also part of the Huelva deposit assemblage discussed earlier, again in an area where a Phoenician sanctuary had been previously identified.[33] As a result, negating a Greek derivation is untenable, since the Carambolo Ware is now known to have been found at sites that yielded Greek Geometric pottery too. Further, a sudden development of such a complex figurative style cannot emerge without prior stages of trials and development, for which there is no evidence whatsoever.

This provides equivocal evidence for the dating of the MG pottery. Carambolo Ware was found in the deposit of Huelva dated to 920–845 BC at 1 σ and at the 'fondo de cabaña' at El Carambolo, dated to 791–506 BC at 2 σ. A late 7th c. or early 6th c. BC date ascribed to the latter in view of the 'skyphoid' cups is also troublesome, as it implies the continuing production of what is clearly an imitation of MG pottery over a century after the style had disappeared in Greece. It is within plausibility that in the context of a sacred precinct, conservatism over a protracted period of time resulted in the preservation of a ceramic ware connected to ritual. More likely though is that either the 'skyphoid' cups were dated incorrectly or that the hypothesis of a quick filling of the *bothros* over a short period of time is erroneous.

Once/if better-quality radiocarbon determinations are provided for the remaining phases of the site or imports from the as-yet unpublished in detail ceramic assemblages of El Carambolo emerge, there will be a stronger basis for the re-examination of the dating of the MG finds. As the situation stands, the ^{14}C dating does not counter the conventional chronology ascribed to the MG pottery.

La Rebanadilla

[32] For the cultic function of this ware, based on its iconography and contexts, see Casado Ariza (2003).

[33] Carambolo Ware has also been found at another Phoenician site in the city of Huelva, at Cabezo de San Pedro Phase I (Brandherm 2009: 101).

A recent findspot of MG pottery is the settlement of La Rebanadilla, identified along with its associated necropolis of San Isidro during construction works for the extension of the airfield of the Malaga Airport. The site is known through a brief preliminary report, describing the main phases of occupation and the finds in a synoptic manner. MG skyphoi were reportedly found in the ceramic assemblage, which has parallels with those of Huelva and El Carambolo as the excavators note (Arancibia Román et al. 2011: 130–132).

In the Phoenician period, the settlement would have been located on an islet in the Guadalhorce estuary — prior to its sedimentary infilling. Four phases of occupation were identified. The earliest phase (IV) yielded only evidence for metallurgical activities and large depressions dug into the ground, interpreted as clay pits or 'fondos de cabaña'. Domestic units developing around patios, made of mudbrick walls and occasionally stone foundations, only appear in the subsequent phase (III), along with two separate rectangular buildings that had a religious function and can thus be interpreted as small sanctuaries within the settlement or parts of a larger ritual complex. Phase II corresponds to a rebuilding and re-orientation of the settlement. The last phase (I) yielded evidence for its transformation into an area of industrial activities, judging by the discovery of kilns and tuyères, perhaps as a satellite production centre of the large nearby colony of Malaga (Arancibia Román et al. 2011: 130–132).

Radiocarbon determinations are available for phases IV and I (Fig. 5) obtained by different methods. Thus the earliest phase produced two calibrated date ranges of 1040–840 BC and 1010–830 BC at 2 σ from two measurements. The last phase is anchored by another set, calibrated at 2 σ as 920–800 BC and 890–870 BC, 850–780 BC. All this points to a brief occupation of the site. It is unfortunate that the contexts of the MG pottery are not specified in this preliminary report. In any case, according to the present radiometric results, the earliest possible date is between 1040/1010 and the latest possible is 800/780. Only if the MG pottery came from the last phase of the settlement and only if we accept the lowest possible ranges of the ^{14}C dates provided by the samples can the conventional dating of the MG II pottery be corroborated. This seems an unlikely possibility, however,

considering that the final occupation of the site entailed its transformation into an industrial production area.[34] Pending further information, the results from La Rebanadilla only confirm the conventional dating if the context of the skyphoi belongs to Phase I, which seems improbable to the present author given the site description and interpretation. The hopefully forthcoming full report on the site will shed more light on this, either upholding the conventional dating of the MG pottery or severely challenging it in the case that the context(s) of the MG skyphoi pertain to Phases IV–III.

SYNCHRONISMS WITH THE AEGEAN CHRONOLOGY: IMPLICATIONS, PERSPECTIVES AND FUTURE RESEARCH

As it became apparent from the presentation of these incipient results, the value of excavations in the Iberian Peninsula for examining the dating of the Greek Geometric pottery has not exhausted its potential given the remaining uncertainties as to the stratigraphic positions of some of the finds (La Rebanadilla), the low-quality radiocarbon dates obtained (Toscanos) or their contextually problematic samples (Huelva). An initial observation is that since most radiocarbon dating at Phoenician sites in Iberia is performed with the intention of dating contexts, rather than their associated assemblages that is the topic under discussion here, a lot of crucial for this purpose details are sometimes not included in the publications presented. Even without such problems, radiocarbon dating is fraught with problems and limitations, from the potential contamination of samples to the often-large uncertainties of the analytical errors, in spite of which the method is pushed to the limits of its capabilities.

The chronology of the Phoenician presence in Iberia has attracted a lot of attention in recent years, with a special emphasis on the results provided by an extensive series of radiocarbon dates from sites with Phoenician material across the Peninsula. Their results are pushing further and further back the earliest evidence for the arrival of Near Eastern people, which ineluctably results in discrepancies with the Red Slip chrono-

[34] Granted that the MG pottery in Huelva was found too in a deposit with ample evidence for metal-working and other craft activities. However, that consisted in mixed-period material.

typologies. Periodisations of the available evidence for contacts between East and West have resulted in schemes that date the earliest evidence to the end of the 2nd millennium BC, in the 11th c. or by the first half of the 10th c. BC (*ca.* 1050–950/900 BC), [35] with an emphasis on the role of Cyprus in the connections (Blázquez Martínez 2011). The following phase is characterised by the finds of the Huelva deposit discussed above, placed at 950/900–825 BC, during which the Phoenician presence is limited to merchant activities at trading posts on the coast. Only the subsequent phase, beginning in the last quarter of the 9th c. BC denotes a period of permanent settlement (Torres Ortiz 2008: 139–140). The evidence from La Rebanadilla would not substantially challenge these results, as a permanent form of settlement is only detected in Phase III (after 840/830 BC) and neither would those of Phase V at El Carambolo. It is important to note here that Phoenician sanctuaries were often linked to commercial activities (e.g. Belén Deamos 2009), and thus the mercantile/'emporial' character of this phase is not countered by the early emergence of said sanctuary.

There is a tendency among scholars working on the western Phoenician colonisation to date the Phoenician evidence to increasingly earlier dates, occasionally by selecting the higher date ranges of the available ^{14}C series (Torres Ortiz 1998: 50). This creates such an incompatibility with conventional chronology that the former is subsequently dismissed. A case in point is provided by the study of the Phoenician settlement of Quinta do Almaraz, located on the south shore of the estuary of the Tagus, in Cacilhas (Almada), opposite the city of Lisbon (Barros et al. 1993). An extensive radiometric programme provided a series of 16 calibrated date ranges (excluding outliers) from three different contexts: a refuse pit with stratigraphic indications for the chronologically-distinct deposition of material and from two layers/pits in a defensive ditch that seemed to run parallel with the fortification wall surrounding the settlement (Barros and Monge Soares 2004). The earliest layer of the refuse pit (11), dated on bone and marine shell samples, yielded a consistent set of dates centring in the late 9th/early 8th c. BC (830–800 BC and 790–740 BC, both at 1 σ). The pottery of the context was dated typologically mostly to the 7th c. BC. The

[35] Beginning with the 'Ría de Huelva' phase, a hoard or assemblage of finds dredged from the mouth of the river Odiel in Huelva (Torres Ortiz 2008: 136–138).

next layer (12) yielded three calibrated dates with wider margins of uncertainty, whose intersections though pointed to the late 9th/ early 8th c. BC (800–600 BC, 770–650 BC and 910–790 BC, all at 1 σ). The pottery was again typologically later, pointing to the late 8th or the 7th c. BC.

The calibrated results of samples obtained from the other contexts at Quinta do Almaraz were considered less reliable due to broader margins of uncertainty and were mentioned in passing. They were also considered of lower value given the likelihood of mixed-period assemblage. Effectively though, the predominantly typologically 7th c. BC assemblage of Red Slip pottery and transport amphorae was considered as corresponding to the higher chronology of the late 9th/early 8th c. BC. The researchers acknowledge that in the case of the two pits in the defensive ditch (though less likely in the case of the refuse pit), the archaeological material likely postdates the organic samples on which the radiocarbon dating was obtained. All in all, the contextual association of the pottery in the earliest levels of the refuse pit that cuts into an earlier structure may be problematic, somewhat undermining the suggestion to abandon the conventional ceramic chronology in Phoenician-period Iberia (Barros and Monge Soares 2004: 333). It certainly though suggests that further probing into the matter is required. The same can be said with regard to the dates obtained from material at La Rebanadilla.

Torres Ortiz (2008: 143) notes that what is currently needed is an extensive dating research programme on "short lived samples from safe contexts". Once a new programme of research has been established for dating well-stratified contexts on short-life samples, the potential incongruity of conventional and radiocarbon archaeology will be clarified. Thereby initial indications should be systematised in such a way so as to draw information from as many as possible contexts and samples from each context from finds across the Mediterranean. This would also avoid assigning a snapshot date to a stylistic phase on account of some fragments in a stratum at a single site, when a longer time-span might be warranted.

Finally, the issue of the dating of the Geometric Greek pottery is of lower pertinence to the debate on the chronology of the Phoenicians in Iberia, given the very recent identification of few fragments in dubiously-

dated contexts. For this reason, it will remain side-tracked from a western Mediterranean perspective. At the moment, the results are inconclusive and do not support the claims for a higher redating of the Geometric pottery, notwithstanding the necessity to raise the conventional dating for the beginnings of Phoenician presence in Iberia. Further research will have a clear impact on the present issue of Aegean synchronisms with the West and by extension on chronologies in the Aegean and the eastern Mediterranean during the Early Iron Age.

FIGURES

Stylistic Phases	Absolute dates	
	Attic	Corinthian
Early Geometric I	900-875	875-825
Early Geometric II	875-850	
Middle Geometric I	850-800	825-800
Middle Geometric II	800-760	800-750
Late Geometric I a	760-750	750-720
Late Geometric Ib	750-735	
Late Geometric IIa	735-720	
Late Geometric IIb	720-700	

Fig. 1. Periodisation of the Attic and Corinthian Geometric style series and their conventional absolute chronology (data after Coldstream 2008: 327–331)

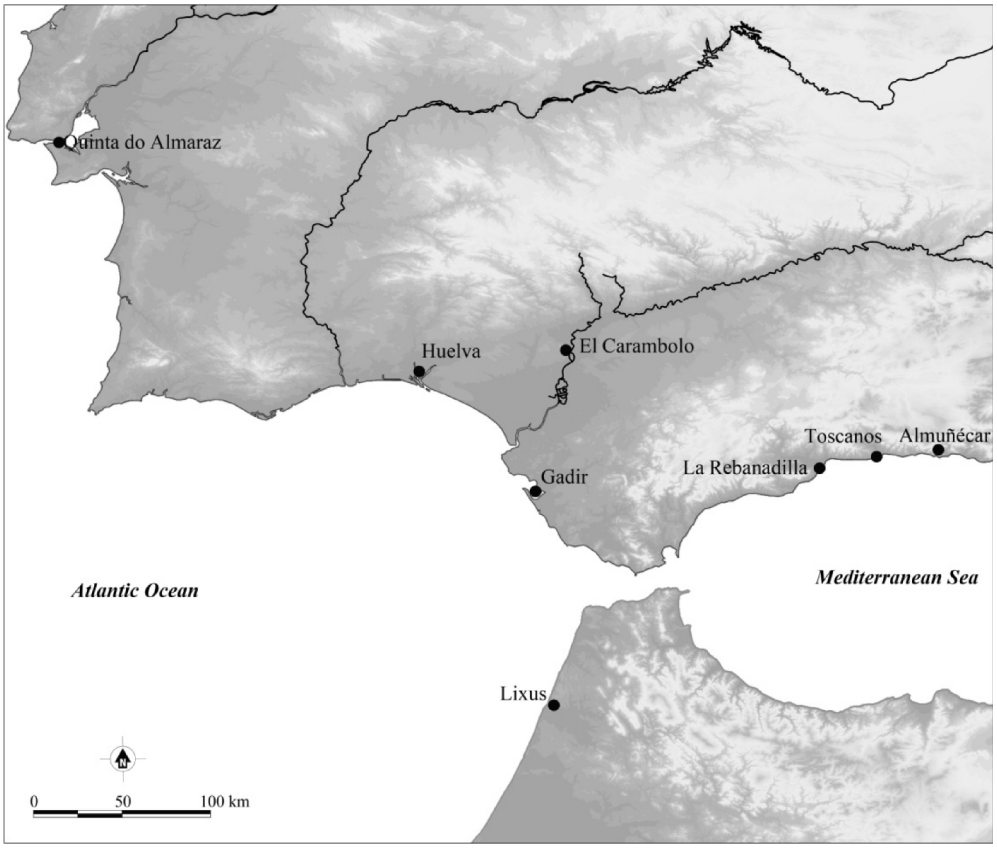

Fig. 2. The Iberian Peninsula and the north-western African coastline: sites mentioned in text

Schubart				Néguerela	Pellicer	Chronology
Red Slip plates				Red Slip pottery	Topography of grave goods	Absolute dates (BC)
Rim (mm)	Tomb	Quotient	Tomb	Tomb	Tomb	
35						**725**
45	13	65		13 20	20 14	**700**
50		56	13	19B 17	19 13 12 5	**675**
55	12	50	12	15B 2	10 11 16 3	**650**
58		40	15B 2 17	16 17	7 1 17 16	**625**
62	19B	35	15			**600**
68	17 15B 16 2	30				**550**
75		25				**500**

Fig. 3. Red Slip plate typology and its chronology as established from the 'Laurita' necropolis by different archaeologists (Schubart, Négueruela, Pellicer) (adapted from Pellicer Catalán 2007: figura 91)

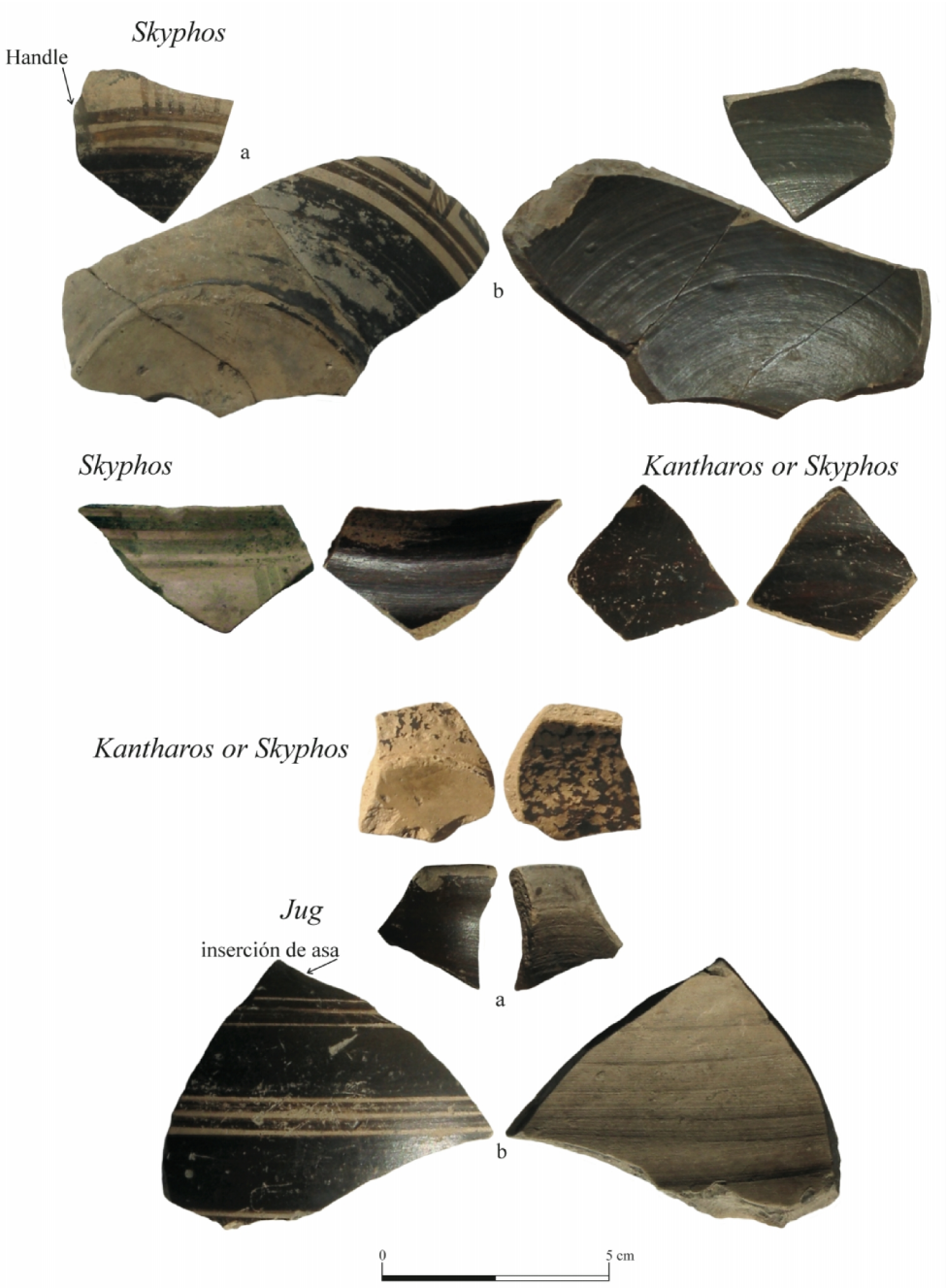

Fig. 4. Attic MG II fragments from Huelva (courtesy of Dr. Fernando González de Canales Cerisola)

Sample Code	Material Pre-treatment	Measured Age	13C/12C	Conventional Age (BP)	Calibrated Age at 2 σ (BC)
REBANAVE2168 (Phase IV)	AMS-Advance delivery	2810±40BP	-25.9 o/oo	2800±40BP	1040-840
REBANAVE2114 (Phase IV)	Radiometric-Standard delivery	2780±40BP	-25.0 o/oo	2780±40BP	1010-830
REBANAVE3140 (Phase I)	AMS-Standard delivery	2700±40BP	-24.3 o/oo	2710±40BP	920-800
REBANAVE2253 (Phase I)	AMS-Standard delivery	2610±40BP	-22.8 o/oo	2650±40BP	890-870 850-780

Fig. 5. Radiocarbon determinations of La Rebanadilla (adapted from Arancibia Román et al. 2011: tabla 1)

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