

LRFW 1
LATE ROMAN FINE WARES
SOLVING PROBLEMS OF TYPOLOGY
AND CHRONOLOGY

A review of the evidence, debate and new contexts

Edited by
Miguel Ángel Cau, Paul Reynolds and Michel Bonifay



Roman and Late Antique Mediterranean Pottery 1
Archaeopress
2011

Roman and Late Antique Mediterranean Pottery

Archaeopress Series

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LRFW 1. LATE ROMAN FINE WARES. SOLVING PROBLEMS OF TYPOLOGY AND CHRONOLOGY

A REVIEW OF THE EVIDENCE, DEBATE AND NEW CONTEXTS

Edited by

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Archaeopress

Gordon House
276 Banbury Road
Oxford OX2 7ED

www.archaeopress.com

ISBN 978 1 905739 46 2

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Cover photograph © CCJ-CNRS, Philippe Groscaux

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Printed in England by CMP (UK) Ltd Oxford

This book is available direct from Archaeopress or from our website www.archaeopress.com

A new Archaeopress series devoted to Roman and Late Antique Mediterranean Pottery

For those of us working in the field of Roman and late Antique pottery in the Mediterranean, there are certain major obstacles when it comes to the publication of our research. Pottery in the Mediterranean is abundant, and if published in more than summary fashion, requires many pages for typologies, catalogues and comment, and finally for the all important illustrations. Amphorae, in particular, require a large format (A4) if the drawings are to serve any useful purpose.

There is still a considerable resistance among publishers to accept whole monographs on pottery, even when they must accompany an excavation report. Short articles on pottery tend to appear in conference volumes, primarily those dedicated to pottery studies. Even here, the author is somewhat restricted by the number of illustrations or pages of text allowed, due to the popularity of such conferences. In these circumstances, the publication of one or more significant deposits from a site, never mind whole sequences of ceramic assemblages, is well nigh impossible. A few journals, notably those of the International Schools, allow the publication of ceramic deposits, but one often finds similar restrictions on both quantity and format. Indeed, even in these journals pottery has to compete for space with every other branch of research in Mediterranean archaeology and rarely wins the day.

In November 2008, an ICREA/ESF Exploratory Workshop on the subject of late Roman fine wares was held in Barcelona, the main aim being the clarification of problems regarding the typology and chronology of the three principal table wares found in Mediterranean contexts (African Red Slip Ware, Late Roman C and Late Roman D). The discussion highlighted the need to undertake a similar approach for other ceramic classes across the Mediterranean provinces. In addition, it was perceived that ceramic studies are often dispersed and in such a variety of publications that it is difficult to follow progress in this vast field. Therefore, a series devoted to Roman and late Antique pottery in the Mediterranean was proposed to serve as a reference point for all potential authors devoted to pottery studies on a pan-Mediterranean basis. The creation of such a series would not only serve as a means of publishing the results of the ICREA/ESF workshop but also as a network for publication of in-depth monographs devoted to archaeological ceramics of the Mediterranean in the Roman and late Antique periods.

There has, therefore, long been a need for a series that is dedicated to this particular niche of ceramic studies. It is thus with great pleasure that we launch, with this first volume on ceramic assemblages and the dating of late Roman fine wares, a new series devoted to the publication of ceramics in the Roman Mediterranean and outlying territories from the late Republic to late Antiquity.

When we decided to undertake the creation of the Series, our first thought was to propose the idea to David Davison and Rajka Makjanić of Archaeopress, thinking of British Archaeological Reports (BAR). The BAR Series launched in the 1970s offered a fast and inexpensive means of publishing monographs or collections of papers on British archaeology that did not attract the interest of the mainstream publishers of the day. Soon, in response to demand, it became clear that the same need applied to works on archaeology in Europe and the Mediterranean. Hence, the creation of the BAR International Series in the 1980s, whose output soon became, and certainly now is, quite prolific, eclipsing the original British-orientated series. Archaeopress was very enthusiastic about our initial proposal and it was decided that the best option was to create a new, separately numbered series for Archaeopress.

It has been extremely difficult to provide a final title for the Series that covers all the conceptual aims intended. For this reason we should clarify here the principal geographical and historical parameters that we aim to include. The main focus of the series is the Roman and late Antique pottery of the Mediterranean and the study and interpretation of all aspects of its production, distribution and consumption. Outlying non-Mediterranean regions, such as the Black Sea, the lower Danubian provinces, or the Atlantic and northern provinces, in so far as they are clearly linked to the Mediterranean, culturally, economically or administratively, for example, are also included. One cannot, unfortunately, simply state 'Pottery of the Roman Empire' or 'Pottery of the Roman Mediterranean provinces' as these would be technically too exclusive in terms of their historical parameters and either too inclusive or exclusive, respectively, in terms of their geographical limits. That maritime transport connected the cities and provinces of the Mediterranean basin with these outlying regions is of course key and the principal reason why the focus of the series is the Mediterranean. Late Antiquity, again an imprecise concept, is named in order to clarify that the period under study ends, not with the end of the Roman West in the 5th century, but sometime in the 8th century with the transformation of the Mediterranean world and its economies following the fall of Carthage in 698. 'Classical pottery', though Mediterranean, would take us back to the 6th or 5th century BC. 'Roman' (period) will at least allow for 'Hellenistic' in the case of the Roman East, and it is indeed during the Hellenistic period that the cultural and economic interaction between Republican Rome and the Greek World is demonstrable in the ceramics of both cultures (table wares, amphorae and kitchen wares). Some degree of flexibility will be inevitable.

The new Archaeopress series, *Roman and Late Antique Mediterranean Pottery (RLAMP)* seeks to gather innovative individual or collective research on the many dimensions of pottery studies. It is intended that these studies will cover the following range: pure typological and chronological essays and diachronic approaches to particular classes, the complete publication of ceramic deposits, pottery deposit sequences, archaeometry of ancient ceramics, methodological proposals, studies of the economy based on pottery evidence, also ethnoarchaeological ceramic research that may contribute to the understanding of the production, distribution and consumption of pottery in the Mediterranean basin. Thus, pottery monographs, collections of papers on specific themes, pottery conferences and workshops, and any other manuscripts are welcome. Proposals may be submitted to the editorial board of this series for considerations.

The editorial board is made up of specialists in pottery and other related fields and this will ensure the quality of the publications and the selection of new manuscripts for the series. We want to thank all those who have accepted to take part as associated editors and members of the editorial board in this new initiative. We hope that Roman pottery specialists will take advantage of this new opportunity, specially tailored to suit our needs, and make this venture a success.

Barcelona/Aix-en-Provence, 24th August 2011

M. Bonifay, M.A. Cau and P. Reynolds

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Foreword

The development of ceramic studies in the Classical and post-Classical Mediterranean has been a slow process that gained ground only relatively recently, from the 1970s onwards. The genesis of this work in the early 20th century was the dating of the early Roman fine wares in the Roman forts established by Augustus along the Rhine frontier. Research tended then to be restricted to the early Roman Empire. It was not until the seminal work of John Hayes on the principal late Roman fine wares (*Late Roman Pottery* was published in 1972) —wares that were traded across the Mediterranean from the 2nd to 7th centuries— that archaeologists were able to date and begin to reconstruct this long period of Mediterranean history.

Key to the dating of Classical and later deposits is the identification and dating of the fine wares, as some were well traded and distributed throughout the Mediterranean. Once these have been identified, they can be used to date the rest of the material in the deposit, the amphorae, the cooking pots, etc. One can then use the latter to date other deposits that do not contain fine wares, or where the dating needs further corroboration. Once the typologies and dating of associated ceramics have thus been established, one can begin to reconstruct entire regional economies and study local, regional and inter-regional-provincial trade patterns through the identification of, now better dated, amphorae and cooking pots that were traded on a vast scale throughout the Mediterranean. Once archaeological layers have been dated, these dates can be applied to other non-ceramic material, such as glass vessels, or finds that are otherwise undatable and their respective economies traced. The ceramics, of course, also date building sequences and are the primary tool for the reconstruction of the site sequence, whether town house, bath building, country villa or hut. The process is thus a ‘chain’ of information and cross-referencing that begins with what can be assumed to be correctly-dated fine ware forms.

The publication of *Late Roman Pottery* (hence *LRP*) offered new typologies for several of the most commonly traded late Roman fine wares: African Red Slip Ware (hence, ARS), produced in Tunisia (late 1st to 7th centuries AD: many workshops now located); Late Roman C Ware (hence, LRC) or Phocian Red Slip Ware (hence, PRS), produced near Foça (Turkey); Late Roman D Ware (LRD) or Cypriot Red Slip Ware (4th to 7th centuries) as it was thought to be Cypriot (hence, CRS); Çandarlı ware (Turkey) (1st to 3rd centuries), the predecessor of LRC; Egyptian Red Slip Ware (ERS A and B) (up to 8th century).

Since the publication of *LRP* and the recognition of these wares in the field, there has been some additional work on the typology and workshops of ARS (i.e. Carandini *et al.* 1981 on the typology of ARS; Fulford and Peacock 1984, on the ARS of Carthage; Mackensen 1993, Mackensen and Schneider 2002 and 2006 on the production sites of ARS; Bonifay 2004 on Tunisian wares in general) as well as detailed overviews of Roman trade based on the growing ceramic evidence (e.g. Reynolds 1995). There has also been a growing body of unpublished data on recent excavations in the Mediterranean (notably those in Beirut, Cyprus, Alexandria, Ephesus, Corinth, Butrint/Albania and *Pollentia*/Mallorca, among others).

LRP has been widely used as a ‘handbook’ for the classification of late Roman fine wares. What has become clear to the small group of world experts on classical ceramics —those who were gathered together for the Barcelona ICREA/ESF workshop— is that the dating and typologies of these fine wares needed serious revision. It was generally accepted that there is now great confusion, ‘circular argument’ and disagreement over both the typology and dating of the complex range of forms and regional ‘variants’ of these wares. There is an urgent need to provide a consensus over dating and typology, as these fine wares are used and misused for dating archaeological deposits and reconstructing trends in the Roman economy, now ‘fine-tuned’ to within decades. Wider issues of relevance to archaeologists and historians studying the Mediterranean economy also need to be discussed.

To solve some of the chronological and typological questions posed by actual research in late Roman fine ceramics, a group of leading scientists in their field met in Barcelona in November 2008. The Barcelona workshop was organised as a joint venture between the European Science Foundation (ESF), through its Exploratory Workshops Scheme, and the Institució Catalana de Recerca i Estudis Avançats (ICREA), through the Conference Awards scheme. In this way two important scientific institutions supported the initiative with additional funding being provided by the Universitat de Barcelona. Other support came from the Equip de Recerca Arqueomètrica de la Universitat de Barcelona (ERAUB); the CERPOANTAR (HUM2005-00996/HIST) project, the Ministerio de Ciencia e Innovación de España; and the Centre Camille Jullian, Aix-Marseille Université/CNRS. The workshop was convened by Miguel Ángel Cau and Paul Reynolds from the Institució Catalana de Recerca i Estudis Avançats (ICREA) and Equip de Recerca Arqueològica i Arqueomètrica de la Universitat de Barcelona (ERAAUB,

previously ERAUB) and Michel Bonifay, Centre Camille Jullian, Université Aix/Marseille, CNRS. A total of 23 scholars from several European and non-European countries were invited to the meeting.

In order to prepare the ICREA/ESF Barcelona Workshop, previous meetings were held at Aix-en-Provence (France) (26th October 2008) and Barcelona (Spain) (3rd November 2008).

We would like here to thank all those institutions that supported this initiative. We are grateful to ESF, ICREA, University of Barcelona, ERAAUB, Ministerio de Ciencia e Innovación, Maison Méditerranéenne des Sciences de l'Homme and Centre Camille Jullian (CCJ) for financial and organisational support. We are also most grateful to those who helped us in the preparation and running of the three workshops: in Aix, Céline Huguet, Tomoo Mukai, Jean-Christophe Tréglià and the members of the Centre Camille Jullian; in Barcelona, Evanthia Tsantini, Catalina Mas, Bartomeu Vallori, Verónica Martínez and in general to the members of ERAAUB. Finally, a special thanks to Patricia Francis who took on the task of correcting the English in the texts contained in this volume.

A brief summary of the development of the ICREA/ESF workshop and its main results is given in an initial chapter in this book. Because of the intense debate four volumes were planned for publication as a direct result of the meeting. This motivated the creation of this new series on *Roman and Late Antique Mediterranean Pottery (RLAMP)*. As has been explained in the introduction to the series, this was initially conceived as a vehicle for the dissemination of the results of the workshop but it gradually became a larger initiative that aims to serve the particular needs of those of us who wish to publish the Mediterranean pottery of this period.

The first volume of the ICREA/ESF Exploratory Workshop on Late Roman Fine Wares is also the first volume of the new Archaeopress series presented here. Its content will be presented later in this text. The second volume of the ICREA/ESF meeting, *Late Roman fine wares in the Mediterranean: a first revision*, will present the results of the discussions on the typology and chronology of the three main ceramic classes under study (African Red Slip Ware, Late Roman C Ware and Late Roman D Ware) held during the principal workshop and pre-workshop meetings. *Volume 3, Late Roman ceramic assemblages in the Mediterranean: a revision*, will be devoted to the revision of the chronology of the main reference contexts. In this volume a short explanation of the contexts and their nature, external absolute or relative dating, ceramic composition with illustration of the fine wares, as well as published and modified dating, will be provided. Finally, *Volume 4, Archaeometry of late Roman fine wares in the Mediterranean*, will incorporate all the published evidence and present essential new work in this scientific field.

This first volume in your hands offers a variety of contributions focused on several aspects of late Roman fine wares in the Mediterranean by the scholars present in the Barcelona workshop or by other scholars, including those who participated in the preparatory meetings held in Aix-en-Provence and Barcelona.

A first introductory section presents a brief summary of the development and results of the ICREA/ESF Workshop and the main ideas under discussion. A brief summary of the main contexts important for dating purposes is also presented. The second part of the volume comprises papers more theoretically orientated. Such are the cases of the problem of residuality proposed by Zanini and Costa, and Reece comments on the use and misuse of coin evidence in the dating of ceramic deposits. The reappraisal of LRD is dealt with by Poblome and Firat from the point of view of the production and by Reynolds from the point of view of the typo-chronology. Last but not least, Quaresma wonders about the final chronology of ARS A. The third section is devoted to the presentation of new contexts or the revision of old ones. The different contributions are organised following a circular geographical circuit from Spain in the West, to Beirut in the East, then West, back to Carthage. Three Spanish contexts are presented first, from Seville (a cistern group, by Vázquez Paz and García Vargas), Cartagena (the full details of an early? 7th century deposit, by Reynolds) and Mataró (Revilla Calvo), the latter being a chronological revision of already edited assemblages. In France, Marty provides us with new information on the eastern fine wares documented in the Gulf of Fos. Deposits of the 5th and 6th centuries from the *oppidum* of Constantine, in France, are studied by Duperron and Verdin. Several contexts found in Porquerolles and in Fréjus are presented by Pellegrino, and another from Corsica by Lang-Desvignes. In the East, Reynolds offers a large number of fine ware assemblages from Beirut. Lastly, a deposit found in a cistern in Carthage is studied by Bourgeois.

Overall, this volume, in the spirit of the ICREA/ESF Exploratory Workshop and heralding future monographs that will result from it, offers both deposits that are important for the dating of fine wares, together with more theoretical papers on the same subject. We would like here to apologise for the unacceptable delay of this publication, three years after the meeting, due to number of personal and practical problems befalling each of the volume editors at one stage or another.

Nevertheless, we hope that this initiative will encourage all of you working on Roman and late Antique Mediterranean pottery to join the informal network that has been established as a result of the ICREA/ESF meeting and contribute to the framework that is in the process of being built and that aims to create an *Encyclopaedia on-line* for pottery in the Mediterranean. In this direction we are already working in France with the *Céramopôle* initiative promoted by the Maison Méditerranéenne des Sciences de l'Homme (MMSH) in Aix-en-Provence or in Spain, building in a truly international collaborative initiative, through the project LRCWMED, the web-page and virtual laboratory devoted to late Roman coarse wares and cooking wares in the Mediterranean (LRCW.net) promoted by ERAAUB and ICAC. It is our deeply held belief that the solution to some of the problems posed by actual research in this field will not be reached unless a large collaborative work is undertaken.

Barcelona/Aix-en-Provence, 24th August 2011

M.A. Cau, P. Reynolds and M. Bonifay

An initiative for the revision of late Roman fine wares in the Mediterranean (c. AD 200-700): The Barcelona ICREA/ESF Workshop

LRFW Working Group

(Text by Miguel Ángel Cau,* Paul Reynolds* and Michel Bonifay**)

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This paper summarises both the evolution and the results of the Barcelona ICREA/ESF workshop on late Roman fine wares. A brief guide to what we agreed were the principal Mediterranean contexts for the dating of fine wares, as well as a summary of the principal conclusions on the dating and sources of ARS, LRC and LRD forms are presented. Plans for the publication of the workshop and its results, as well as future collaborative projects are outlined.

KEYWORDS: DATING, TYPOLOGY, CONTEXTS, ARS, LRC, LRD, PUBLICATION STRATEGY, ENCYCLOPEDIA

1. Introduction

The ICREA/ESF Exploratory Workshop on Late Roman Fine Wares: solving problems of typology and chronology was organised as a joint venture between the European Science Foundation (ESF), through its *Exploratory Workshops* Scheme, and the Institució Catalana de Recerca i Estudis Avançats (ICREA), through the *Conference Awards* scheme. In this way, two important scientific institutions supported the initiative, with additional funding being provided by the Universitat de Barcelona. Other support came from the Equip de Recerca Arqueomètrica de la Universitat de Barcelona, from the CERPOANTAR (HUM2005-00996/HIST) project funded by the Ministerio de Ciencia e Innovación de España and from the Centre Camille Jullian, Aix-Marseille Université /CNRS.

The workshop was convened by Miguel Ángel Cau and Paul Reynolds from the Institució Catalana de Recerca i Estudis Avançats (ICREA) and Equip de Recerca Arqueològica i Arqueomètrica de la Universitat de Barcelona (ERAUB) and by Michel Bonifay, Centre Camille Jullian (Aix-Marseille Université/CNRS). The meeting attracted 23 participants from several European and non-European countries. The sessions were held in the Historical Building of the University of Barcelona on 5th-9th November 2008.

Since the publication of John Hayes' *Late Roman Pottery* in 1972 (hence, *LRP*) and its *Supplement* in 1980, the chronology of Mediterranean sites of c. AD 200-700 has been guided primarily by the dates assigned to the accompanying fine wares. The dating of ceramics and

deposits in general, however, is not a straightforward process. There is, to some extent, too much subjective reading of the evidence.

An important aim of the workshop was to illustrate the full range of variants of specific forms, as well as to communicate the difficulties and flaws in the dating and interpretation of published deposits. A consensus over the typology and dating of these wares was urgently needed. The participants discussed published evidence and presented key new data from excavations in order to solve problems of the typology and chronology of late Roman fine wares. Moreover, further directions for late Roman fine wares studies were debated and new initiatives of truly international collaborative work have been opened.

In order to prepare the ICREA/ESF Barcelona Workshop, previous meetings were held at Aix-en-Provence (France) (26th October 2008) and Barcelona (Spain) (3rd November 2008). At the first meeting 30 French pottery specialists discussed the dating of published Gallic contexts (according to a pre-established order) and presented unpublished deposits from Gallic sites of relevance to the themes of the Barcelona workshop. Indeed, some of these data were immediately incorporated into the Barcelona programme (dating evidence for fine wares, as well as 'Key Deposits'). The experience was also valuable to the convenors as it offered a chance to test and modify the format of the principal workshop prior to the event. In a similar fashion Spanish and Portuguese ceramicists presented new data from Spanish and Portuguese sites and their opinions on the dating of fine wares and listed deposits of the Iberian Peninsula.

In the ICREA/ESF Exploratory Workshop discussion was carried out on the basis of three main documents (A=Detailed Agenda, B=List of Contexts, C=Bibliography) prepared by the convenors, incorporating additional bibliography provided by the participants over the months prior to the workshop. As has been noted, the Agenda and List of Contexts were modified immediately prior to the meeting in order to add the new evidence provided by our French and Spanish colleagues. Throughout the proceedings the use and misuse of coinage with respect to the dating of archaeological deposits were reviewed by Reece and Marot. Their input and interpretation was extremely helpful and illuminating.

The idea of this introductory article, based on the final report submitted to the ICREA and to the ESF and the recordings of the meeting, is to summarise the development of the workshop, its main results and the future research directions that were discussed and agreed.

2. Scientific content of the event

The Workshop was designed as an authentic workshop for real discussion on specific topics in order to solve the principal questions that formed the agenda of each session. No formal presentations were given, but participants provided information on new ceramic deposits that are important for dating purposes, as well as new fine ware pottery types and/or variants found in their excavations.

2.1. Introductory addresses

In the initial welcome, Jaume Bertran Petit, director of the Institució Catalana de Recerca i Estudis Avançats (ICREA) provided us with a summary of the purpose and aims of ICREA, its principal and innovative goal being to attract scientific excellence to Catalonia. So far, the ICREA programme maintains around 260 researchers from many different disciplines. Miguel Ángel Cau focused on the idea that individual and isolated research is, or should be, no longer a characteristic of current and future research. In a global world and with the construction of a *European Research Area*, we need to combine our efforts in order to solve some of the important problems posed by Science. This was precisely the aim of the workshop of Barcelona, as it has brought together and combines the effort of all the participants and varied initiatives of research in order to solve problems and explore future directions for the dating of late Roman fine wares. It was essential that these complex problems be addressed, as these wares are fundamental for the dating of deposits and sites across the Mediterranean. Raymond Brulet, ESF Representative then explained the role of the ESF in Science and the Humanities programme.

A second part was devoted to practicalities and how the meeting was to progress over the following three days. As has been mentioned, the meeting was organised on the basis of three main documents (A=Detailed Agenda, B=List of Contexts, C=Bibliography) prepared by the convenors with

additions from the participants and additional documents of evidence provided by the latter. Because the meeting was based on real discussion, all the sessions were audio-registered and some videos were taken.

2.2. Session 1. Revision of the main Mediterranean ceramic assemblages

The first session was devoted to a review of the main Mediterranean late Roman contexts important for the dating of fine wares and therefore for the dating of archaeological sites. The participants had been provided well before the meeting with a list of the main contexts organised by region across the Mediterranean (e.g. Spain, France, Italy, etc.). However, in the days before the Barcelona workshop the convenors prepared an alternative table, with the contexts organised in chronological order. The idea was to assess the contexts chronologically (regardless of the regional origin of the deposits) to demonstrate similarities and differences between contexts that could help to refine their dating: a context 'seriation'. The fine ware composition of deposits could thus be demonstrated to shift progressively over the decades. In this way deposits that appeared to be particularly significant as chronological indicators could be identified (see Reynolds, Bonifay and Cau, Contexts, this volume, Table 1). Participants received this table of contexts organised chronologically at the beginning of the session as the basis for discussion. It was agreed after some debate that the chronological approach would be applied, rather than the original format based on regions.

During the session, each context was illustrated and discussed in order to agree on its date and to identify the forms and variants that cause problems in the chronological assignment of particular deposits. As a result, the chronology of some important reference contexts was modified and this will have major implications in future research. In addition, problematic forms and variants were identified so that they could be discussed in greater detail in the following sessions of the workshop (Days 2 and 3, devoted to forms).

As had been the case in the two pre-workshops, a special effort was made to collate and have to hand in the room all the bibliography relevant to the subject in such a way that all the contexts and types and variants could be illustrated and the participants had access to them to discuss specific issues. Books, offprints and photocopies were therefore present to complement Document C, the bibliographical list. The projection of the documents was also possible due to the presence of an opac projector in the room.

Of the 300 contexts chosen to be of interest for their ceramic content, 150 were summarised and 105 were fully discussed during the session.

As had been hoped, this process was indeed successful in identifying what will, in the future, be regarded as key contexts for the dating of late Roman fine wares, as well as identifying well known contexts that should be treated

with more caution. Certain forms and variants were also identified as problematic and in need of further, more detailed discussion in the following three sessions devoted to typology and dating.

The agenda of assemblages discussed and some of the most significant deposits identified were as follows (see LRFW Working Group, 'Contexts', this volume):

- (Mid-) Late 2nd century AD: The Antonine Temple of Sabratha (Libya) (**context 1**); Tolegassos/Well (**2**); Troia/Factories I/II [Vat 15] (Portugal) (**3**); Marseille/Bourse wreck (France) (**4**); Knossos [Context R] (Greece) (**5**);
- Late 2nd-early 3rd century: Saint-Romain-en-Gal (France) (**6**); Knossos [Context S] (Greece) (**7**); Beirut BEY 045/Imperial Baths (Lebanon) (**8**);
- Second quarter 3rd century: Carthage/Circular Harbour (Tunisia) (**9**); Ostia/Terme del Nuotatore (Italy) (**10**);
- Mid 3rd century: Ibiza/Avenida España (Spain) (**11**); Beirut/Souks 006 [5051] (Lebanon) (**12**); Ceuta (Spain) (**13**); Chemtou (Tunisia) (**14**); Dura Europos (Syria) (**15**); Zeugma (Turkey) (**16**); Athens (Greece) (**17**);
- Third quarter 3rd century: Cabrera III wreck (Spain) (**18**);
- The rarity of late 3rd to early 4th century deposits was noted: Rome/East Palatine (Italy) (**19**); Femmina Morta wreck (Italy) (**20**); Fontanamare A wreck (Italy) (**21**); Corinth/Peribolos of Apollo (Greece) (**22**);
- Second quarter to third quarter 4th century: Beirut/Souks 006 (Lebanon) (**23**); 365 earthquake deposits in Cyprus (Kourion) and in Crete (Eleutherna: **24**); Roses/Ciudadela (Spain) (**25**);
- Late 4th century: Beirut/Souks 006 [9429 and 9430] (Lebanon) (**26 and 27**); Yassi Ada II wreck (Turkey) (**28**); *Caesarea*/Harbour (Israel) (**29**); Carthage/Michigan [Deposit XIV] (Tunisia) (**30**); Carthage/Circus (**31**); Somma Vesuviana [Context 1] (Italy) (**32**);
- End 4th century: Troia/Factories I/II [Vat 19] (Portugal) (**33**); Carthage/DAI [62b E11 /r4/4a] (Tunisia) (**34**);
- Early 5th century: Ortona/Cistern (Italy) (**35**); Beirut/Souks 006 [13017] (Lebanon) (**36**); Clos de la Lombarde (Narbonne) (**37**);
- Second quarter 5th century: Narbonne/Hôtel-Dieu (France) (**38**); Mallorca/Sa Mesquida (Spain) (**39**); Tarragona/Vila-roma (Spain) (**40**); Dramont E wreck (France) (**41**); *Iesso*/Guissona (Spain) (**42**);
- Mid 5th century: Marseille/Bourse [Period 1] (France) (**43**); Port-Miou wreck (France) (**44**); S. Giacomo degli Schiavoni (Italy) (**45**); Corinth/Assemblage 1 (Greece) (**46**);
- Third quarter 5th century: Beirut/Souks 006 [9402] (**47**); Carthage/Michigan [Deposit XXVII] (Tunisia) (**48**); Carthage/Canadian (**49**); Marseille/Bon-Jésus (France) (**50**); San Giovanni di Ruoti [Period 3A] (Italy) (**51**); Sidi Jdidi/Basilica 2 (Tunisia) (**52**);
- Late 5th century: Somma Vesuviana/Pollena? eruption (Italy) (**53**); Corinth [Assemblage 2] (Greece) (**54**); Carthage/Michigan [Deposit XV] (Tunisia) (**55**);
- End 5th century/c. 500: Tarragona/Torre de l'Audiència (Spain) (**56**); Ibiza/Es Castell (Spain) (**57**); Capua/Carrillo (Italy) (**58**);
- Early 6th century: Lagos/Factory (Portugal) (**59**); Rome/Casa delle Vestali (Italy) (**60**); Istanbul/Saraçhane [Deposits 14-18] (Turkey) (**61**); Sardis/Well (Turkey) (**62**); Sainte-Propice (France) (**63**);
- Second quarter 6th century: La Palud wreck (France) (**64**); Roses/Ciudadela [G VIII, UE 29] (Spain) (**65**); Mataró/El Carreró (Spain) (**66**); Mataró/Carrer La Palma (**67**); Knossos/Medical Faculty [Tomb 224] (Greece) (**68**); Butrint/Triconch [Context 1152] (Albania) (**69**); Beirut/Souks 006 [11081] (Lebanon) (**70**);
- Mid 6th century: Beirut/Souks 006 [2528/2483 and 20201, 20216] (Lebanon) (**71 and 72**); Carthage/Michigan [Deposit VII] (Tunisia) (**73**); Carthage/Kobat Bent el-Rey [Context 3.2] (**74**); S. Giovanni di Ruoti [Period 3B] (Italy) (**75**);
- Third quarter 6th century: Benalúa-Alicante (Spain) (**76**); Rome/Aventine (Italy) (**77**?);
- Late 6th century: Beirut/Souks 006 [14050] (Lebanon) (**78**); Butrint/Triconch [Contexts 1676/5056/1606] (Albania) (**79**); Argos/585 layer (Greece) (**80**);
- End 6th century-beginning 7th century: Corinth [Assemblage 3] (Greece) (**81**); Beirut/Souks 006 [5503] (Lebanon) (**82**); Carthage/Kobat Bent el-Rey [Context 1.3] (Tunisia) (**83**); Carthage/Michigan [Deposit XXIX] (**84**); Marseille/Bourse [Period 2B.3/4] (France) (**85**); Marseille/Alcazar [Period 1] (**86**);
- First quarter? 7th century: Cartagena/Theatre [Phase 10.3] (Spain) (**87**); Cartagena/Soledad (**88**);
- Mid 7th century: Corinth [Assemblage 4] (Greece) (**89**); Tocra/Level 3 (Libya) (**90**); Marseille/Bargemon (France) (**91**); Knossos/Medical Faculty [Cistern group] (Greece) (**92**); Paphos/Saranda Kolones (Cyprus) (**93**); Yassi Ada I wreck (Turkey) (**94**);
- Third quarter 7th century: Carthage/DAI [E 118-R 69] (Tunisia) (**95**); Istanbul/Saraçhane [Deposit 30] (Turkey) (**96**); Chios/Emporio (Greece) (**97**);
- Late 7th century: Sant'Antonino di Perti (Italy) (**98**); Saint-Gervais 2 wreck (France) (**99**); Marseille/Alcazar [Period 2] (France) (**100**); Sidi Jdidi/Basilica 1 (Tunisia) (**101**);

- End 7th century: Carthage/Michigan [Deposits XXV, XXI, XXIV] (Tunisia) (102, 103, 104); Rome/Crypta Balbi (Italy) (105).

2.3. The typology and dating of late Roman fine ware forms

2.3.1. African Red Slip Ware (ARS)

The session opened with a discussion of ARS technology, wondering whether saggars used for the protection of the vessels against flames and carbon in the kiln could be considered as the unique way of firing these wares or if, on the contrary, Gaulish fashioned *tubulures* were also attested in some places (central Tunisia? according to Ben Moussa). Mackensen explained his own interpretation of the use of these saggars, contesting the reconstruction proposed in Bonifay (2004), and showing that more than one model could be proposed in the way of stacking pots inside saggars and saggars inside the kiln (see now Mackensen 2009). It was also decided to exclude from the discussion the other red slipped products of the African workshops (e.g. lamps and cooking wares) and to focus on tableware.

Production

After paying a deserved homage to Lamboglia (as did Ben Moussa) for the 50th anniversary of the publication of his first paper on the 'Terra Sigillata Chiara' (Lamboglia 1958, followed by Lamboglia 1963), the discussion moved on to the merits and flaws of the nomenclature of ARS wares (A1-2, A/D, C1-5, D1-2 and E) introduced in *Atlante I* (1981) on the basis of Lamboglia's original classification and the Hayes' detailed descriptions of the ARS wares in his typology (Hayes 1972: 287-292). The *Atlante* nomenclature has been widely adopted by specialists in order to attribute the (regional) sources of ARS. Should this be retained? It was first stressed that this nomenclature is still needed because of our poor knowledge of the location of the different ARS workshops, a state that will persist until a programme of systematic survey of the pottery workshops is undertaken in North Africa. Where products and specific variants can be assigned to specific workshops-centres these need to be described and illustrated.

While ARS A has been for a long time considered as a North Tunisian product, the only workshops of this ware discovered up to now are located in central Tunisia, in the Oued el-Gattar valley (Ben Moussa 2007b: 116 and fig. 7) and at Chougafia (Ben Moussa during the meeting: forms Hayes 3 and 6). The question whether ARS A1 with a fine fabric ('A1 fine'), very similar to the ARS C fabric (Bonifay 2004: 47) and rare at Carthage, according to Mackensen, could originate in these central Tunisian workshops was discussed.

Though the location of ARS C workshops in central Tunisia is now certain, Sidi Marzouk Tounsi being one of the

most important (Mackensen: 25ha), we were reminded by Mackensen that El Djem cannot definitely be considered an ARS production centre. The Carandini's nomenclature (C1-5), which has in this case only a chronological significance, is not easily usable, as Reynolds remarked during the meeting, in particular when dealing with the categories C3 and C4.

Several ARS D workshops are also known. After discussion, we concluded, at least provisionally, that *Atlante's* ware D1, clean breaking with few inclusions and a fairly matt slip, could be assigned to the region of El Mahrine, and the ware D2, coarse grained with a glossy slip, corresponds to the products of Oudhna and of the 'large D2 pottery/atelier X' workshop. Though the late ARS D form 105 is generally considered to be a North Tunisian form (e.g. in *Atlante I*), the possibility that it was produced on the central Tunisian coast needs to be explored (according to Reynolds, with regard to the *Leptiminius* survey).

Attention was drawn to the products of Sidi Khalifa (Ben Moussa 2007a) that cannot be classed as either ARS C or D, due to differences in fabric and forms. In fact this underlines one of the flaws of the *Atlante* classification of wares into broad regional classes. Certain products not clearly identified in *LRP* or the *Atlante* were also discussed, e.g. the Reynolds 1987 Ware 1 (Reynolds 1987) and Nabeul products (Bonifay 2004).

The possible origins of A/D ware(s) were discussed but the problem could not be resolved, scholars hesitating between Tripolitania, central and Northern Tunisia (Mackensen, Kenrick, and Bonifay). The participants concluded that there appears to be a wide range of ARS 'A/D' fabrics (in other words, various sources producing ARS 28-33). Reynolds stressed the similarities between some ARS A/D products discovered at Butrint and his ARS Reynolds 1987 Ware 1 at Benalúa.

No new information is available on the origin of ARS E, the most probable hypothesis still being (*LRP*) that it derives from the south-eastern coastal region of Tunisia (Hayes).

It was agreed that a solution to the source of specific wares and fabrics could come from the development of archaeometric analyses, which have already provided valuable information through chemical (Taylor and Robinson 1996; Mackensen and Schneider 2002 and 2006) as well as petrographical methods (Capelli and Bonifay 2007). One aim of future research should be to provide integrated morphological and macroscopical definitions (on the basis of archaeometric results) of the specific products of all the workshops of ARS. This should enable us to redefine the regional classes of ARS more accurately on a macroscopical level.

For the moment, the recommendation when sorting ARS macroscopically could be to proceed by stages: 1) refer to specific workshops only when identification is

obvious (e.g. Oudhna); 2) refer to Lamboglia/*Atlante*'s nomenclature 'A-C-D-E', taking into consideration that it is not necessary to specify all the refinements of this classification when identification is not secure (e.g. C1, 2, 3, 4) refer only to 'ARS' in all the other cases.

Typochronology

Following the initial grouping of deposits according to likely chronological order (based primarily on trends in the presence and absence of forms-variants), it was possible to make some suggestions and corrections to the accepted date ranges of a wide range of forms and variants of *LRP*.

The session began with a reassessment of the dating of the latest series of ARS A products (Hayes 8B, 9B, 10B, 14-16, 26-27), with evidence for the production of the majority of these shapes well into the 3rd century (contexts **11, 13, 14, 18**) and perhaps the beginning of the 4th centuries (context **19**) being presented (see also Quaresma in this volume). Form 10B is attested until the end of the 4th century (e.g. contexts **31** and **34**).

The dating of the appliqué decorated series of ARS A1/2 was discussed, with little evidence being available (e.g. context **4**), with the exception of the *floruit* of form *Atlante* LXX, 2 (decorated variant of the dish XVII, 17), datable to the first half of the 3rd century, observed at *Pupput* (Bonifay 2004: 162).

An earlier starting date for ARS A/D than that of the early 3rd century proposed in *LRP* cannot be ruled out, based on the evidence from *Sabratha* (context **1**). On the other hand, a later end date (end 3rd century?) was suggested by Hayes on the basis of some Italian contexts (Castel Porciano) and the Athenian Agora.

It was found that there is no evidence for a starting date for ARS C prior to the 3rd century, the precise date always floating between 200 and 220/30, following Mackensen during the meeting.

On the difficult problem of the evolution of form Hayes 50, it was specified by Hayes that, according to him, the shape changed little until the mid 4th century, and even then, only the fabric (primarily the slip) was affected. On the other hand, most of the variant B examples of these forms (e.g. *LRP* vessels nos. 60 and 61) are not ARS C, but ARS D or related (Nabeul) products.

Concerning the latest phase of ARS C (C5), very characteristic of the second half of the 5th century (e.g. contexts **50, 52, 58**), it was considered during the meeting that the series could begin just before the Vandal period (Hayes: his form 83) and end later than previously assumed in *LRP*, about the mid 6th century (on the bases of decorative schemes: see Mackensen 2003). Some of the mid-late 6th century form Hayes 90 could also originate in this central Tunisian region (Bonifay: unpublished Rougga contexts), as well as some examples of Hayes 105

(Reynolds, see above), but the evidence seems very slim in this latter case.

For the initial date of ARS D forms, the dating of Hayes 58 and its relationship to Hayes 32/58 were discussed. This form is attested as early as the beginning of the 4th century (context **19, 20, 21, 22**). But it not always clear if Hayes 58 is in ARS C or D in these contexts.

At El Mahrine, the beginning of the production can be placed c. the 320s (Mackensen 1993), a chronology paralleled (Mackensen during the meeting) by the early ARS D Hayes 59A from the necropolis of Frontignan (France), in association with a coin of 322-23 (Valaison, Valaison and Albagnac 1969). This could be also the date of the beginning of the form 61A: no change, according to Hayes during the meeting.

The end date of Hayes 67 proposed in *LRP* (460-490) was discussed: there is now further evidence (contexts **55, 56**) to support this rather late date. Its absence in Beirut after 450 would seem to be due to the distribution of ARS following the Vandal conquest, and not its actual production date. This form could also start a little earlier (c. 340?) than previously assumed (c. 360), according to the present knowledge on the evolution of the decorative scheme.

Attention to specific variants of forms Hayes 61A and 67, and the importance of their correct identification were underlined, as was also the importance of providing adequate illustration of both forms and their variants.

The range of Hayes 61B, 61C and 87A variants can now be more clearly identified and more precisely dated to specific decades of the 5th and beginning 6th centuries (see contexts **44, 45, 50, 51, 52, 56, 57, 58**), some of them being produced at the Sidi Khalifa workshop, as stated by Ben Moussa during the meeting. Reminding us of his work in the Segermes valley, Lund argued for a much longer evolution of the form 88, also produced at Sidi Khalifa, than indicated in *LRP*, lasting well into the second half of the 6th century.

The starting date of Hayes 99A was discussed. The proposal to date this form as early as prior to 450 (see *Atlante I*) cannot be accepted. A beginning in the last twenty years of the 5th century or c. 490, according to Hayes and Mackensen, seems more likely (context **58**). No change for the variant B was suggested, which seems to appear in the second quarter of the 6th century (contexts **64, 65**). Variant C may date as late as the end of the 7th century (context **105**). The participants could not decide whether or not the variant 80B/99 represents the latest stage of the evolution of this form (for additional comment on this variant, see Reynolds, Cartagena, this volume).

It is obvious now that Hayes 104A started much earlier than stated in *LRP* (c. 530), probably in the late 5th century, with a decoration of style A(iii)/E(i) (Mackensen

1993), even though not all the participants agreed with a date of 472, at least for the variant with an E(i)-E(ii) decoration (context 53). It was also proposed by Hayes that the transition from variants A to B dates to around the middle or the third quarter of the 6th century (context 76), while variant C appears to be a parallel series, also starting in the 560s but lasting much longer than B, well into the 7th century (contexts 83, 84, 96, 104).

One of the principal outcomes of this workshop will be the identification, description and, hence, clarification of specific variants as well as forms that have been incorrectly identified in publications, or for which there is confusion about what specific shape the *LRP* type piece actually refers to (e.g. Hayes 93, 94, 98, 107, 108). Hayes 94 corresponds to Hayes 93 in terms of general shape, but is deeper (Hayes); it should not be confused with Hayes 98.

One of the significant tasks of the workshop was to try to clarify the typological evolution of Hayes 109 through the late 6th to late 7th centuries (see Reynolds 'Soledad', in this volume).

The extent to which our concept of a form is affected by the variants or sources of that form was also underlined. In a similar fashion, the dating of forms can also be influenced by regional trends in their distribution.

It was agreed that, in further work of the LRFW group, the full range of closed ARS forms should be illustrated (many of these were unknown in *LRP*). It was also agreed that, where possible, all the examples of ARS appearing in *LRP*, or at least their equivalents, should be illustrated.

2.3.2. Late Roman C Ware/Phocean Red Slip Ware (LRC/PRS)

Production

The session opened with an update on the current evidence for the main production sites of the ware, sources of a large percentage of long distance exports (Phocea/Foça, Çandarlı, Gryneon, and one other unidentified product), as well as 'satellite' centres whose products travelled only rarely (e.g. those of Ephesus, Pergamum).

The possibility of a break or not in the production of Çandarlı Ware and LRC resulted in a heated debate in which it emerged that key data on production trends at the major centres of Foça and Gryneon are still to be processed. Furthermore, the 'excavation histories' of the major Asia Minor cities that should have been able to provide key dating evidence for the identification of a possible mid Roman phase of production (Pergamum, Ephesus, etc) have obliterated what would have been an invaluable resource.

It was agreed that we must ask our Turkish colleagues who have excavated the kiln sites at Foça to contribute to the

discussion. Similarly it was clear that we would all benefit from Maurice Picon's input on the chemical analyses of LRC samples from Gryneon (stored at the laboratory 'Archéométrie et Archéologie', Maison de l'Orient et de la Méditerranée, Lyon).

Typochronology

The following session discussed the dating of the principal LRC forms. The *LRP* dating of LRC forms was presented in each case and any new data was brought to light. Some of the highlights of these discussions are as follows:

It is clear that the historical interpretation and dating of specific deposits, of the Athenian Agora ('Alaric destruction' levels) and S. Giacomo di Schiavoni (context 45) in particular, have influenced the dating and re-dating of LRC 1 and 2, with a lean towards a later, 5th century starting date for LRC 2 than that proposed in *LRP* (these amendments appear in Hayes 2008).

It also emerged during this discussion, as well as the following one on LRD, just how different the distribution patterns of early to mid 5th century ARS were in the eastern Mediterranean (e.g. rarer in Athens and Corinth, than in Beirut) and how this can affect our dating of deposits. The presence or absence of LRD, also determined by regional distribution trends (e.g. rare in Athens, Corinth; common on the Levantine coast and northern Egypt), also affects the 'reading' and dating of deposits.

The dating and typology of the long-lived and complex form LRC 3A-H resulted in considerable debate. It was generally agreed that, as presented in *LRP*, LRC 3 remains a difficult form to classify when faced with the identification of rims 'in the field'. It was unanimously agreed that the publication resulting from this workshop should provide a better illustrated, comprehensive guide to the form and its complex development. John Hayes' presence was invaluable to us, as he explained the factors that governed the definition and dating of specific variants. The degree to which some were considered part of a 'linear' sequence or were simply parallel products from several contemporary workshops was outlined.

Though a simplification of the LRC 3 variants into 5th century and 6th century types was suggested, this was contested.

The importance of the variant LRC 3G (not actually illustrated in *LRP*) for the dating of mid 6th century deposits and for our understanding of the evolution of LRC 10 from it (not greatly discussed in *LRP*) was affirmed.

Both Butrint and Beirut emerged as new key sites for the dating of 5th and 6th century LRC. Problems in the interpretation and dating of the 'Antioch 526 earthquake' deposit were also aired (Waagé 1948: 56-57). Several other new key deposits were also signalled (En Boqeq; Black Sea forts).

Richard Reece (see Reece, this volume) provided us with his interpretation of the coin evidence accompanying the Agora deposits of c. 450-475 (those lacking coins of Zeno) and illustrated the extent to which the presence or absence of specific coins in deposits may, or may not be significant for their dating in different sectors of the eastern Mediterranean, according to the varying regional supply of coinage.

Whereas the dating of LRC 10 remains solid, there was some discussion of the end-date of the form and LRC in general – late 7th or 8th century? – versus problems of ‘residuality’ in such late contexts, based on new evidence from Kythera and Pseira.

2.3.3. Late Roman D Ware/Cypriot Red Slip Ware and related products (LRD/CRS)

At the outset of the session, the fundamental new work of Henryk Meyza (2007) on LRD was presented. It is clear that the forthcoming volume of the Workshop will have to incorporate this new data, particularly in view of the fact that it offers forms and variants absent in *LRP* that now provide the earlier (4th to 5th/6th century) precursors of what were essentially 7th century forms in *LRP* (Form 7, basins as LRD 11; closed form 12), as well as some quite unconnected shapes not encountered in *LRP*. New dating evidence was presented for specific forms that were rare at the time of *LRP* and hence poorly dated (LRD 4, 6, 8).

Production

The session opened with a discussion of the origins, if not multi-regional origins, of LRD and its southern Anatolian counterparts or contemporaries. This theme of the ‘classic’ Cypriot ware (of *LRP*) versus the Anatolian wares produced at various centres (perhaps Perge and Pednelissos, certainly Sagalassos, and at least one other unidentified source) ran throughout the session, often resulting in heated debate (see Poblome, this volume). It was agreed that the other likely Anatolian products need to be defined macroscopically and archaeometrically, and their typologies illustrated. The cooperation of our Turkish colleagues in this future endeavour is crucial.

Typochronology

The date of each form and variant of LRD was discussed with respect to the dating presented in *LRP*: there are really no significant changes. As we have said, it will be necessary only to add on the earlier development of what were essentially the latest stages of the development of LRD 6, 7, 11 and 12.

There is a need, nevertheless, to look more closely at the date of the introduction of LRD 2 and its relationship to ARS 84.

The 6th century sequences in Beirut, notably those of the AD 551 earthquake (contexts **71** and **72**), as well as those

prior to and following this historical event, allow us now to illustrate far more clearly the linear development of LRD 2 and its successor LRD 9, as well as Form 5 (the small bowl version of form 9) (see Reynolds, LRD, this volume).

The end date of LRD was discussed. That it reached the very end of the 7th century (at least) is likely, given the new evidence published by John Hayes from the Kourion basilica.

3. Assessment of the results, possible outcomes and contribution to the future directions of the field

A full session was devoted to future directions in research and publication. The results of the Workshop are relevant in three different areas. First, for the dating of reference contexts widely used by scholars for dating their ceramic assemblages and sites. Second, for the dating and typological definition of the various products of African Red Slip Ware traded throughout the Mediterranean and beyond. Third, for typological definition and the dating of the principal traded eastern fine wares, Late Roman C Ware/Phocean Red Slip Ware and Late Roman D Ware/Cypriot Red Slip Ware. In fact, these three ceramic classes are among the most important dating elements in Mediterranean Late Antiquity.

The dating evidence and nature of the deposits as well as the main forms and variants present in the main ceramic assemblages were reviewed. In some cases, these revisions led to a major modification of the chronology of several contexts. These modifications can contribute to a better chronological assignment of many Mediterranean assemblages and sites. The fact that flaws and contradictions have been identified will help other researchers by signalling which contexts should or should not be used as references for comparative purposes, or at least identifying those contexts that should be assessed with a relative degree of confidence.

First, some problems of terminology were outlined. It was agreed that the nature of the context and site formation leading to its composition were important. The importance was also established regarding the existence, or not, of external factors for the dating of the contexts: presence of coins, inscriptions, historically dated contexts-events, and so on, or if the context was dated solely on the base of the ceramic evidence. The care with which the coin evidence should be read and interpreted, primarily according to specific regional supply, use and discard, was highlighted and put into practice.

A major problem was addressed in the sense that it was agreed that there are still important flaws in the definition of the production centres and of the macroscopical, petrographical, chemical and technological features of their products. The participants recognised the important role that Archaeometry should play in future research in order to define the productions with a more solid basis, with the aid of techniques that evolved in the Experimental

Sciences and which are nowadays fully established within archaeological practice.

Some problems in the definition of the wares and the use of established ware definitions and descriptions (Waagé 1948; Lamboglia 1958 and 1963; Hayes 1972 and 1980; *Atlante I*), especially for African Red Slip Ware, were highlighted. Two clear groups of researchers were identified at the meeting. One that used the Lamboglia-Carandini system with definition of African Red Slip Ware A1-2, A/D, C1-5, D1-2 and E and the descriptions derived from the fundamental work of John Hayes in *LRP*. A second group, aware of the complexity of the ARS production on the African territory, had problems in using this system and tried to identify instead large geographical production zones or even single workshops. There were also others who saw problems in the unclear definition and classification 'in the field' of some of the Carandini categories, notably C3 and C4.

It is clear that we may use what has already been constructed (*LRP* and *Atlante*), but at the same time we need to introduce a more comprehensive, back-to-basics approach, based on the characterisation of production centres according to wares-fabrics and their specific range of forms and variants. However, the way forward is to describe the actual complexity of production centres, just as it is, and not attempt to summarise and reduce to a homogeneous group the essential details that in fact characterise each production centre. We may in the end be able to group regional workshops, but we must do this only when the details are established. The problem has been one of the over-simplification of complex data.

For this purpose there is an urgent need for an extensive programme of archaeometric characterisation of wares, and the forms and typological variants found within each more broadly defined 'ware', in order to isolate specific workshops.

Furthermore, the involvement of the Mediterranean governments where the production centres are located (e.g. Tunisia, Turkey) is essential to facilitate collaboration for an extensive research programme in order to locate workshops, and provide the archaeometric characterisation and definition of their specific forms and variants. This could be explored as a truly international collaboration. In fact, the participants were keen to ask the ESF if it could play this intermediate role, especially in the case of Turkey and Tunisia. We need to make the Culture Ministers of these countries aware of the clear importance of their territories for our understanding of ceramic production of pan-Mediterranean significance.

There was a strong feeling that what has been done in Barcelona for late Roman fine wares should now also be done for other ceramic classes, such as cooking wares, amphorae or lamps, for instance.

Moreover, participants agreed that the main aim of future research should be to define and clarify the material culture of the Mediterranean as a whole, including all ceramic classes and objects of daily life.

This, it was agreed, should be done by establishing a 'Research Network for Roman and Late Roman Mediterranean Material Culture'.

Participants agreed, also following the advice of the ESF representative, Raymond Brulet, that Barcelona, in view of its significant Mediterranean position and for other reasons, would be a perfect place to lead and provide initiative for a major programme devoted to the gathering of raw data and coordinating studies of 'The Material Culture of the Mediterranean of the Roman to Late Antique Periods: 1st century BC to 7th century AD'.

There was a strong belief that future work should be focussed in a long term, trans-national project, truly collaborative and able to promote interaction and synergy, incorporating initiatives that may have already started on an individual basis. There was a strong positioning of the scholars in the sense that this research on material culture is a fundamental tool both for the dating and interpretation of the nature of archaeological sites (excavations), and, of course, for our reading and understanding of trends in trade, trade routes and the economy across the Mediterranean and beyond (the Black Sea and sites on the Atlantic).

It was also agreed that a project of such magnitude would provide the fundamental base of primary research and definition on which future work can be built. This work, nevertheless, should be continuously updated and must 'grow' and improve with future generations of researchers.

Publications

In the short term, in addition to the present volume (*LRFW I*), we aim to publish three other volumes arising from the work carried out during the pre-Workshops and Workshop meetings.

A second volume *Late Roman fine wares in the Mediterranean: a revision*, should include a practical and updated approach to the definition of the three main ceramic classes wares (African Red Slip Ware, Late Roman D Ware/Cypriot Red Slip Ware and Late Roman C Ware/Phocean Red Slip Ware), their typology and chronology. The work will be an updated version of the fundamental work of John Hayes: *Late Roman Pottery* (1972 and 1980).

A third volume, *Late Roman ceramic assemblages in the Mediterranean: a revision*, will be devoted to a reassessment of the chronology of the main reference contexts. In this volume a short explanation of the contexts and their nature, external absolute or relative dating, ceramic composition and illustration of the fine wares, as well as published and modified dating will be provided. This will be done for each of the chosen contexts that

represent the most important contexts of the Mediterranean that have been traditionally used to date other contexts. The volume will also highlight lesser known contexts of relevance for the dating of fine wares. Some contexts traditionally used as 'key' contexts for dating, but which are now thought to be inadequate for this purpose, will be highlighted and discussed.

A final, fourth volume, *Archaeometry of late Roman fine wares in the Mediterranean*, will be devoted to an in-depth, 'state of the art' archaeometrical study. This volume will incorporate all the published evidence and present essential new work in this field.

Longer-Term

As a result of the workshop it was agreed that the same sort of revision of core published and unpublished data should be carried out for other ceramic classes. Therefore a similar series of workshops should be held on the production, typology and chronology of other ceramic classes (amphorae, cooking and other kitchen wares, lamps, etc). The clarification of the dating of Roman fine wares is a first step in a much longer process.

The participants were keen on maintaining a permanent collaborative link. For this purpose a European Research Network was seen as the most appropriate way of proceeding towards a common specific project. This initiative should be an initial step for the creation of a Centre of Excellence on Roman to Late Antique Mediterranean Pottery Studies or more broadly on Material Culture in general. The idea is to coordinate all the initiatives already existing in pottery studies from the Roman period to Late Antiquity, integrating scholars and teams towards a common goal. The centre should play a coordinating role and support any initiatives including formative programmes and archiving samples and results. In addition, due to the nature of the teams involved in this centre, it could cover all aspects of pottery studies and/or material culture, including laboratory analysis, as some of the partners are in fact archaeometry laboratories.

In this respect, it was agreed that there is an urgent need to increase the archaeometric characterisation of pottery and that a major coordination of research units in this subject is also a major goal for the long term. This will have to be done by collaborative work on the harmonisation of methodologies and an inter-calibration programme for those laboratories working on chemical characterisation. The idea is to form a core of laboratories working within this larger programme. This would be the scientific analysis section of the project. A truly international-national partnership with Tunisia and Turkey is aimed for the full characterisation of ARS, Çandarlı/LRC and LRD/Southern Anatolian wares and production sites.

The ultimate goal is to create a web-based, ongoing and updatable, *Encyclopedia of Mediterranean Pottery* for the Roman and late Antique periods. A meeting held at Aix-en-Provence in December 2009, held by the *Céramopôle* (a transversal programme of the Maison Méditerranéenne des Sciences de l'Homme), made significant progress in establishing some of the norms for such a venture. An *Encyclopedia* is necessary to put into order present and future ceramic research (typology, chronology, characterisation of wares) across the Mediterranean. Whereas other sciences, such as Botany and Zoology have developed taxonomical classification systems, this has still not been done, or even attempted, for ceramic studies on a broad and truly integrated scale. As in the case of the Human Genome project where truly international research has been developed involving a large number of laboratories and individuals, this is equally necessary for an in depth and holistic classification of Mediterranean wares due to their complexity. This would be a long-term project of basic research, continuously updated and using the possibilities offered by Information and Communication Technologies.

This *Encyclopedia* or *Thesaurus* would form the basis of all future research on Roman to late Antique Mediterranean ceramics. Some of the scholars attending the meeting would like to go beyond these aims and proposed an even wider initiative, that of the full classification of all material culture. This would necessarily comprise, apart from pottery, artefacts made of glass, metalwork and stone.

4. Concluding remarks

The workshop made a major contribution to the dating of late Antique Mediterranean contexts and to the definition of African Red Slip Ware, Cypriot Red Slip Ware and Phocian Red Slip Ware typologies and chronologies as the main late Roman fine wares traded across the Mediterranean. The dating evidence and nature of the deposits as well as the main forms and variants for each ware were revised. In some cases, these revisions led to a major modification of the chronology of several contexts and also to the modification of the chronology of the forms. The modifications of the chronology can contribute to a better chronological assignment of many Mediterranean assemblages and sites and therefore it has a major impact on actual and future research on Roman to late Antique Mediterranean archaeology. The publication of these results would be a landmark for the study of late Roman fine wares. As a result of the workshop it was agreed that similar workshops should be organised to discuss and clarify the dating and typologies of all other Mediterranean ceramic classes (that of amphorae and cooking wares being the most urgent). It was also agreed that the "team" should continue to work together integrating also other scholars who were not present at the ICREA/ESF Barcelona workshop.

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