AMERICAN JOURNAL OF ANCIENT HISTORY
**AMERICAN JOURNAL OF ANCIENT HISTORY**

*Editor, New Series:* T. Corey Brennan, Rutgers University

*Associate Editor:* Christopher Mackay, University of Alberta

*Assistant Editors:* Dobrinka Chiekova, Bryn Mawr College; Debra Nousek, University of Western Ontario

*Editorial Advisory Board:* W. Robert Connor, President, The Teagle Foundation, New York; Erich S. Gruen, University of California, Berkeley; Sabine MacCormack, University of Notre Dame; Stephen V. Tracy, The Ohio State University and Director, American School of Classical Studies, Athens.

*Editorial assistant:* Andrew G. Scott, Rutgers University

*For Contributors:* From New Series volume 1 (2002) the editorial office of the *Journal* is at The Department of Classics, Ruth Adams Building 007, Rutgers University, 131 George Street, New Brunswick, NJ 08901-1414, (USA), tel. 732.932.9493, fax 732.932.9246, email: tcbr@rci.rutgers.edu. For further information, please visit the journal website www.ajah.org. All editorial correspondence should be addressed to the Editor.

Typescripts intended for publication should be at least double-spaced (text and notes), with the notes numbered consecutively and following the text. Journals should be abbreviated as in *L'Année philologique*; modifications customary in English will be accepted. No indication of the author’s identity should appear on the typescript: the name and address should be on a separate page. References to the author’s own work should be in the same style as references to the work of others. Personal acknowledgments should not be included: they may be added after the article has been accepted for publication. Authors who want rejected articles returned should enclose postage.

*For Subscriptions:* From New Series volume 2.2 (2003) [2007] *AJAH* is published by Gorgias Press. All correspondence on business, subscription, advertising and permission matters should be addressed to Gorgias Press (AJAH), 954 River Road, Piscataway, NJ 08854 (USA), tel: 732-885-8900, email: helpdesk@gorgiaspress.com. Subscriptions are $85/vol. for individuals and institutions, plus shipping, handling and sales tax when appropriate. All prices are in USD and payments can be made by credit cards or checks drawn on US banks. *Prepayment is required for shipment.*
THE ROMAN EMPIRE
DURING
THE SEVERAN DYNASTY:
CASE STUDIES IN HISTORY,
ART, ARCHITECTURE, ECONOMY
AND LITERATURE

Edited by Eric C. De Sena
(American Research Center in Sofia
and John Cabot University, Rome)
TABLE OF CONTENTS

Editor’s Note .................................................................................................................. ix
Introduction ...................................................................................................................... xi

SEVERAN HISTORY AND LITERATURE .................................................. 1

The Parthian Campaigns of Septimius Severus: Causes, and Roles in Dynastic Legitimation ................................................................. 3
Mark K. Gradoni

“Unitas ex Africa: Was Tertullian the Origo of Imperial Unification?” .................................................. 25
E.T. Walters

URBAN TRANSFORMATIONS DURING THE SEVERAN PERIOD .......... 67

La Gallia Mosellana nell’età dei Severi:
    il caso del Vicus di Bliesbruck .............................................................................. 69
Jean-Paul Petit
Sara Santoro

Water Works and Monuments in Gaul in the Severan Age:
    Some Considerations ......................................................................................... 95
Alice Dazzi

More Water for Rome: Nothing New in the Eternal City?
    Water-Related Monuments as Part of the Severan Building Program ......................... 117
Jens Koehler

A Note on the Architectural Decoration
    of the Severan Period in Pamphylia and Cilicia ............................................. 151
Müjde Türkmen-Peker
L’Attività edilizia a destinazione pubblica fra i Severi e i Soldatenkaiser: continuità e trasformazioni ......................173
Simone Rambaldi
Il tempio di Serapide sul Quirinale: note di archeologia e topografia tra Antichità e Medioevo...207
Ottavio Bucarelli
Alcune osservazioni sulla Sicilia durante il periodo dei Severi ....227
Giancarlo Germanà
Vestigia architettoniche del periodo di Settimio Severo
in Tunisia .................................................................255
Paola Puppo

ASPECTS OF SOCIETY AND ECONOMY
DURING THE SEVERAN PERIOD.................................285

The Origo of the Thracian Praetorians in the Time of Severans...287
Ivo Topalilov
Un riempimento fognario di età Severiana dalle cosiddette “Terme di Elagabalo” a Roma .........................301
Edoardo Radaelli
La ceramica ad ingobbiatura nera di Treviri – una merce costosa in Pannonia durante l’epoca Severiana...341
Eszter Harsányi
Baetican Oil and Septimius Severus .............................361
Lúcia Afonso
Economic Growth in the Early and Middle Imperial Periods,
Pre-200 AD: an Economic Approach from a Peripheral Hispanic Province, Lusitania ............377
José Carlos Quaresma
Economy and Trade of Sicily During Severan Period:
Highlights Between Archaeology and History...............415
Daniele Malfitana – Carmela Franco – Annarita Di Mauro
Thematic Maps By G. Fragalà
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEVERAN ART AND IDEOLOGY</td>
<td>463</td>
</tr>
<tr>
<td>Between Tradition and Innovation —</td>
<td>465</td>
</tr>
<tr>
<td>the Visual Representation of Severan Emperors</td>
<td></td>
</tr>
<tr>
<td><em>Florian Leitmeir</em></td>
<td></td>
</tr>
<tr>
<td>Ideological Messages and Local Preferences:</td>
<td>493</td>
</tr>
<tr>
<td>the Imagery of the Severan Arch at Leptis Magna</td>
<td></td>
</tr>
<tr>
<td><em>Stephan Faust</em></td>
<td></td>
</tr>
<tr>
<td>Elagabalo <em>invictus sacerdos</em>: l’imperatore fanciullo</td>
<td>515</td>
</tr>
<tr>
<td>e la centralizzazione del sacro attraverso</td>
<td></td>
</tr>
<tr>
<td>lo specchio delle monete</td>
<td></td>
</tr>
<tr>
<td><em>Andrea Gariboldi</em></td>
<td></td>
</tr>
<tr>
<td>The Arch of Septimius Severus in the Roman Forum:</td>
<td>541</td>
</tr>
<tr>
<td>a Re-Consideration</td>
<td></td>
</tr>
<tr>
<td><em>Maria Lloyd</em></td>
<td></td>
</tr>
</tbody>
</table>
ECONOMIC GROWTH IN THE EARLY AND MIDDLE IMPERIAL PERIODS, PRE-200 AD: AN ECONOMIC APPROACH FROM A PERIPHERAL HISPANIC PROVINCE, LUSITANIA

José Carlos Quaresma
(Post-doctoral grant, Fundação para a Ciência e a Tecnologia; Researcher, CIDHEUS – Un. Évora / UNIARQ – Un. Lisbon)

INTRODUCTION

In the last 20 years some important studies (Panella 1993; Carandini 1993; Wilson 2009; Bauman, Wilson 2009; Jongman 2007; Scheidel 2009; 2010) has resumed an old scientific debate concerning the evolution of the Roman economy and especially the changes occurred in the Antonine period. This debate has discussed the archaeological data and not only the historical sources information, on the opposite of the former proposal published by Gibbon (1776), in the 18th century and Rostovtzeff (1926), in the first half of the 20th century.

A time of urban and economic development, 2nd century (its first half) presents also other complex evolutions which characterize it as a transitional period where one can see the progress of the 1st century, but also the first lines of the major changes which will characterize the Low Empire. In the words of P. Bang (2008), are we facing a return to Ros-
tovtzeff, or according to Jongman (2007), a return to Gibbon? Or are we rather facing a period of transformation and change? And what is the geographic scale of these phenomena? Does several similarities point to the connectivity of the Roman economy, as the modernist theories propose?

By applying line graphics, a methodology introduced by Fentress and Perkins (1987) to the African *terra sigillata*, on the total *terra sigillata* amount consumed in Chãos Salgados and other published peninsular sites, showed an extreme coincidence with the issues raised by the evolution of other items throughout the 2nd century. Unfortunately we have no other Roman sites where the total amount of *terra sigillata* has been calculated, except for London (Marsh 1981) and Poitiers (Tilhard 2004), whose imports of the 1st and 2nd century are published. This is the more original contribution from this paper and this lack of data for other regions of the Empire makes automatically impossible to compare this Hispanic and Atlantic (?) evolution to the central or the eastern Mediterranean’s one. Nevertheless, the importance of the *terra sigillata* as the main table fineware, its industrial production framework, and its statistic value when we try to draw economic evolutions in long-distance trade, are reinforced by the strong similarity of the line produced in all the graphics, which show drops in consumption over the 2nd century, making this century pivotal in explaining the transformation of Roman economy, a kind of precursor to Low Empire.

This article is therefore an attempt to explain this century from *Lusitania*, a peripheral provincial of *Hispania*, where surprisingly we find the major amount of sites whose total *terra sigillata* imports were quantified, but trying also to establish the similarities and contradictions of the archaeological and historical sources, which led us to a wider view of the Roman economy. A question rises easily from the graphs we have drawn on *terra sigillata* consumption: why does consumption in the 1st century is several times stronger than in the next centuries? We may put a second one: why does this change occur in these Hispanic, Gallic and Britannic consumption sites, when their *terra sigillata* regional productions decrease strongly and move to a new strategic region, the North Africa? Finally, what can we conclude from the similarity of different patterns concerning the Roman economy, already stressed during the last 20 years, with regard to the *terra sigillata* pattern?
THE ROMAN ECONOMY OF THE 2ND CENTURY AD:
THEORETICAL FRAMEWORK

The primitivist theories, headed by Finley (1973), and modernist, headed by M. Rostovtzeff (1926) marked the historiographic debate of Roman Economy, since the 20th century and they are crucial to the understanding of the role of the 2nd century AD, somewhat balancing what is proposed by H. Pirenne (1937), who proposed a major transformation related to the Arabic expansion.

Embedded with a more pessimistic view of Ancient Economy, L. Blois, H. Pleket and J. Rich (2002, xiii) point out clear constraints, supported by primitivism: “The Roman Empire may have been nothing else than a conglomerate of different cultural and economic entities, which were kept together by the Roman imperial administration, the armed forces, and—to a lesser extent—Graeco-Roman elite culture, but certainly not by economic integration”. In the words of P. Temin or of J. Paterson we speak in the first instance of regional interdependent markets, but coordinated in an imperfect way, and in the second case, of a network of regional micro-economies that in certain periods had an increased range and dynamics, becoming wider markets (apud Blois, Pleket, Rich 2002, xiv). This intermediate level of debate, which has been the focus of many authors over the last decades, reaches not only this tendency closer to Finley, but also an important series of authors that we may perceive as closer to the modernist theory. “Returning to Rostovtzeff?” is actually the title of a book chapter by P. Bang (2008, 26–30), The Roman Bazaar, that focuses on this historiographic debate and reminds us that Rostovtzeff (1926) himself said that the limitations to Roman economy and technology were the lack of capital and production, still insufficient for industrial development.

Ph. Kenrick (Ettlinger et Al. 1993, 36) or R. Marichal (1988) proposed that Italian and South-Gaulish terra sigillata productions (namely La Graufesenque) are modernist, taking into account the empirical epigraphic basis (potter stamps and pre-firing graffiti), workshop structures, branches and inter-potter or hierarchical relationships (Bang 2008, 30). Production of terra sigillata is viewed as an anti minimalist proof by P. Horden and N. Purcell (2000, 123, 250); if this ceramic was capable of reaching such vast areas and places of different hierarchy, from the most important cities to the smallest settlements, it would need to have a mas-
This intermediate criticism has two nuclear authors for the construction of an economical paradigm.

For R. Duncan-Jones (1974), a strong commercial inter-regional growth had occurred, generated by the great cities, but with strong limitations to the private world due to the role of the Estate and mainly because of the tax load. For K. Hopkins (1980, 101–116), taxes in money had certainly stimulated commerce by creating complex networks, mainly until 200 AD, and the taxed provinces had to generate wealth to pay those taxes. He points out the growth in coin minting to finance that commercial activity in an integrated fashion as shown in the similar graphics resulting from the monetary volume circulating in several areas of the Empire (fig. 2). K. Hopkins however, stresses the influence of climate on trade volume, the existence of many taxes as supplies and the maintenance of an essentially subsistence economy, calculating the autarchy as around 80 to 90% of the gross domestic product of the imperial space.

According to P. Horden and N. Purcell (2000, 153), “it is the seventh century rather than the second in which aggregate demand was small, merchants were lowly, and only luxuries could profitably be moved over long distances. For all that, the early medieval depression is of course inextricably associated with neither Jones nor Finley, but rather with Henri Pirenne (...).” “Gibbon’s problem” (1776) is by and large the view of Rostovtzeff (1926, LV) who establishes two great phases in his Economic and Social History of the Roman Empire: the first one, of development, between the end of the Republic and the beginning of the principality of Augustus, prolonging until the 2nd century; the second one, of regression and decline, in the 3rd century. The turning point between them would be around the end of the 2nd century, when the political and economical decline had been the result of a large, social, upraise of the poorest classes, mainly agricultural, against the urban elite.

The Marxist vision of the slavic author, searching for essentially socio-economic explanations, is today somewhat limited, when considering the amount of diverse information collected, and the new historiographic perspectives. However, it was the empirical basis currently known that actually led to the reprise of this period’s study and to many authors considering this century, or its ending, a turning point. W. Jongman (2007, 183, 195, 199) ironically entitles one of his articles with the following words: “Gibbon was right: the decline and fall of the Roman economy”
and accepts a strong economical growth in the 1st and 2nd centuries, but replaces the notions of *decline* and *fall* by *transformation*. However, Jongman finishes his text with a hyperbolic expression of his concept of the 2nd century: “The age of Antoninus Pius was indeed probably the best age to live in pre-industrial history” and places the rupture somewhere at the end of the 2nd century AD. We will find the same conception in the recent work of A. Bowman and A. Wilson (2009, 47), *Quantifying the Roman economy*, with the date of c.200 AD for the end of economical growth. A. Wilson (2009, 224) poses the question: “the marked drop between the first and the second centuries AD appears surprising, and is not easily explained. The numbers are fairly constant throughout the second century, and the drop occurs too early to be a result of the Antonine Plague”.

The late 1st century/early 2nd century seems to have been the beginning of a turning period, with a slower growth in the economy and a likely slower inflationary process, in the principalities of Trajan and Adrian, possibly with underlying deflationary processes.

This is illustrated by the price of the donkey, an important terrestrial means of transportation, according to an Egyptian source, when compared with the evolution of coin circulation (*figs. 1 and 2*). There is a clear inflationary process until the end of the 1st century and a deflection, not abrupt, but that is more marked at the time of Adrian. The monetary circulation seems to confirm that situation: the high minting of *Claudius* supports the transactions over several decades and the monetary circulation only increased again, albeit mildly, with Adrian or *Marcus Aurelius* (*figs. 1 and 2*).

The shipwrecks curve in the Mediterranean, published by Parker, in 1990 (*fig. 3*), and recurrently used by Roman Economy Archaeologists and Historians (Scheidel 2009; Wilson 2009) demonstrates a trade peak in the second half of the 1st century AD, that decreases in the 2nd century, despite still having high levels during Trajan and Adrian phases. Such a low curve from the 2nd century onwards is questioned by several authors. Scheidel (2009, 16) states pertinently that, at least the 4th century curve should be higher, even knowing about the more frequent use of leather bags and barrels in relation to amphorae, from the 2nd century on. Horden and Purcell (2000, 160) also raise this question and believe that something radical was occurring to the economy. Wilson (2009, 220, 224–226) elaborates on this question: on one hand, inter-provincial trade is contrary to an exaggerated growth of the autarchy; on the other hand,
the hypothesis of an increased use of barrels (despite important for italic wine from the 3rd century onwards) does not match the important trade of Hispanic and African salted fish, a question also debated by Harris (2009, 259). The known predominance of the African trade, in foodstuffs such as olive oil, as well as in table ceramics, constitutes a problem in relation with the shipwrecks results. Because of that, Wilson questions if part of the result can be caused by the lack of underwater archaeology along the African coasts.

Jongman (2007) presents two other graphics highly suggestive of the falling results in the 2nd century: a decrease in the consumption of animals is seen in Italy as in the provinces; a fall which is even more notable in the length of the human femur, denouncing small statures, consequence of less quality of life (figs. 4–5). This author (Jongman 2007, fig.2) presents still another graphic, suggestive but more questionable concerning its causes: also in the 2nd century, lead levels in Greenland drop, indicating lower levels of global environmental pollution.

Another factor recurrently debated as a cause for the 2nd century decreases is the so-called Antonine Plague, occurring in 165–180 AD, originated in the Eastern part of the Empire and brought to the West by the imperial army on the Partic campaigns of Lucius Verus (161–166 AD). According to Ammianus Marcellinus it would have expanded through Gallia and the Rhine legions; Dio Cassius and Eutropius mention high levels of deaths in the Empire, particularly in Rome (apud Bruun 2007). However, the true reach of this phenomenon is far from being known and is questioned by Rostovtzeff (1926, 269) or Scheidel (2010, 9).

Two sentences by A. Wilson and W. Harris synthesize how hard it is to explain the 2nd century juncture. On one hand, as we referred before, “the marked drop between the first and the second centuries AD appears surprising, and is not easily explained. The numbers are fairly constant throughout the second century, and the drop occurs too early to be a result of the Antonine Plague” (Wilson 2009, 224); on the other hand, according to Harris (2009, 259), “neither the textual nor the material evidence from sites on land would lend us to suspect that there was a decline in maritime trade in the Western Mediterranean after AD 50 and especially after 100, as the shipwreck evidence suggests”.

From the Trajan period we know new political attitudes for famine control, such as performing a feeding scheme for the rural children in Italy. These alimenta, brought to us by Plinius (Ep. VII, 31, 4. Apud Garnsey, Saller 1987, 60), started, according to Rostovtzeff (1926, 260), in Italy, and were progressively widened to other provinces, in an apparent indication of an increase in poverty. Silver coin debasement occurring in the principality, with a decrease in precious metal from 90 to 85%, is probably not the result of a new inflation increase, rather a correction of denarius value on the aureus, which had lost some value due to the high quantities of gold available after the conquest of Dacia (Jones 1953, 191).

On a financial level, the middle 2nd century, with Antoninus Pius, is a moment of stability on the wake of the policy started by Adrian, for pacification, therefore contrary to the aggressive policy of Trajan (Rostovtzeff 1926, 261–266). Peace allows for government treasury to accumulate around 675 million of denarius according to the sources (Jones 1953, 189–190). It is during Marcus Aurelius that, once the peace ended, public finance met with serious problems.

To face the deficit, Trajan had already resorted to selling real estate in public sale. Marcus Aurelius adds to these goods, jewellery and luxurious clothes, to face spending of the Marcomanic War (Dio, LXXIII. 8. 3; Plinius, Paneg. 50; S.H.A., Marc. 17. Apud Jones 1953, 189–190; Rostovtzeff 1926, 268).

Highly suggestive of the public finance, the state of the economy and the need for control of food supplies in Italian area, is the Oratio de pretiis gladiatorum minuendis, found at Italica and in Lidia and published in 177–178 AD (Rodriguez de Berlanga 1891; Ceballos Hornero 2004, 162–178). Despite being requested by Gallia priests, this law, aiming at decreasing the prices of circus shows, intended to target the whole Empire. The Hispanic document mentions some interesting subjects, which are interesting to understand how far the State had the perception of the general economic context, safeguarding a possible excessive rhetoric. According to the text, this one was made after examining public accounts for the previous 10 years and taking into account the growing ruin of private fortunes. Most of all it was a measure to defend the imperial treasury and urban structures, whose finances were also going through serious problems. According to the text, public revenue was expected to recover 20 to 30 million of sestercii per year with this law. The final aspect to point out
is related to law observance: it is attributed to provincial administration, except in Italy, where it should be supervised by the Praefectus Alimentorum, which seems a pressing necessity to preserve food distribution in that central area.

In that sense, a 2nd century law clears from other tax obligations those who build ships and those who use them to supply wheat to Rome, as long as they have at least 330 tonnes of capacity or if they own enough boats to fulfil that capacity, just as long as each one was not below 65 tonnes in capacity (Dig. 50.5.3; vide Hopkins 1983, 98). The growing state interventionism shows itself in other legislative points. If during Trajan there had been an increase in the use of collegia of navicularii, mercatores of cereal and olive oil, and bakers, which would have higher privileges if they preferably served the Annona and Munus Publicum, the middle of the century sees a different juridical activity to strengthen the number of navicularii, as opposed to the number of mercatores (Dig. 27.1.17.6; Dig. 50.6.6.3; Dig. 60.6.6.6; vide Rickman 1980, 271–272).

The Bingen 77 papyrus (Rathbone 2003, 223) proves the existence of mixed cargoes in the second half of the 2nd century, thus showing the maintenance of public-private trade efforts. This document, related to ships arriving at a port, probably that of Alexandria, reveals that one of them, a 7000 artaba akatos (210 tons), was coming from Side (Pamphylia), led by G. Ulpius Iasôn, with a cargo of pine logs and wine, owned by the Emperor and a private trader, Noumênos al. Kallistatos.

It is likely that these market control measures are linked with the new debasement of the silver coin, which content in precious metal decreases from 85% (Trajanus) to 75%, with Marcus Aurelius (García Vargas 1998, 242). The Comodus principality seems to affect the whole West, namely some measures related with state commerce, such as the construction of a state-owned merchant fleet with its headquarters in Carthage (Reynolds 1995, 107), probably related to the lack of 300 ton ships to supply wheat to Rome, mentioned by Ulpianus, in the beginning of the 3rd century (vide Hopkins 1983, 98; Dig. 3.6).

The monetary fluxes increase again during Septimius Severus, who debased the silver coin, now to 50% of that metal, and increased the soldiers’ salaries to 400 denarii, a rise followed by that of Caracala, to 600 denarii, revealing somehow inflation was progressing (Jones 1953, 194). Donkey’s price in Egypt (fig. 1) shows exactly a strong increase in the end of the 2nd century, as well as other prices in this region (Wilson 2009, 292).
At the fiduciary circulation level, the 2nd century confirms the transition of the primacy of the Northern part of the Empire (Hispania, Italy, and militarised areas of Britannia and Germania), to the new director-area, North Africa: a certain stabilisation in the number of circulating coins in the more militarised areas of the North, in Italy and Hispania and an increase in North Africa (fig. 2).

CONSUMPTION IN HISPANIA: HISPANIA’S GEO-ECONOMIC POSITION

Plinianus and Aelius Aristides tell us about the development of the Atlantic route and the role of Gades and Olisipo in that economic axe, during the High-Empire (apud Mantas 2004, 433–435). The peninsula’s situation, especially the Atlantic side remained however peripheral in the Empire.

K. Hopkins (1980, 101) presents a model with three levels of provincial hierarchy: an external ring of border provinces with great military presence, an Italian core and an intermediate ring with tax-exporting provinces, composed by Hispania, Gallia, North Africa, Asia Minor, Syria and Egypt. Ph. Leveau (2007, 651–652, 668–669), in his contribution to The Cambridge Economic History of the Greco-Roman World, distinguishes between a Mediterranean and a later-evolved continental and Atlantic area and highlights that in Hispania, most cities have not over than 1000/2000 inhabitants and that a fourth of those cities paid stipendium. The same author recalls Friedman’s proposals for the hierarchy of western provinces. For this author, on the first level, the core region, we find not only Italy but also the Carthage area; he names the third level, resources frontier regions and the fourth, downward-transition regions; the Hispanic provinces, such as Gallia, would be the second level, the upward-transition regions. According to this author, “regions which experienced their first phase of development at the end of the Republic and in the early Empire are also those where the first withdrawals, which took place from the second century AD onward, signaled the crisis of the third” (apud Leveau 2007, 668).

The same Ph. Leveau (2007, 669) warns: “this is the subject of a debate connected with the interpretation of the archaeological data (…) Hence the impression of a crisis could simply be an effect of the scale of observation”. It is this frame that we will seek to demonstrate in this chapter: in the West what seems to happen is the transition from an economic primacy of the provinces of the northern shores of the Mediterra-
nean (Italia, Gallia and Hispania) to a new North African primacy, mainly in Proconsularis and Byzacena. Terra sigillata’s consumption curves for the Iberian Peninsula show, however, that the fall in South Gaulish and Hispanic productions precedes in several decades the noteworthy growth of African terra sigillata.

THE HISPANIC EMPIRICAL BASIS: OPERA PUBLICI, METAL PRODUCTION AND MAURI INCursions

In Hispania, the level of evergetism at the opera publici seems also to have a more fruitful period between Augustus and Trajanus, despite maximum levels being reached at the Julian-Claudian and Flavian periods (Andreu Pintado 2001; Melchior 1999, 252). The urban expansionism, stimulated by the Flavian emperors, extends through Trajanus and Hadrianus, in areas such as the Northwest (Morais 2005, 2), but also in cities of the southern Lusitania, such as Itálica or Chãos Salgados (Quaresma 2009, 9). However, in the imperial space, the marble consumption levels seem to be high for the two first centuries (Jongman 2007, 186; Fant 1993). Also in this domain one can observe a certain transition to the African space: with Trajan many colonies in Africa are founded and the urban development also reaches the near Orient in detriment of the areas that were earlier developed, including Gallia or Hispania, in Rostovtzeff’s opinion (1926, 157).

Jongman (2007, 196) points to a crisis in Hispanic silver as a possible cause to successive coin debasements. Bustamante, Pérez Macias and Martins (2008) place the steep production decline at Víspasca (Southern Lusitania), around 150 AD, considering the imported ceramics, and point out to the 173 AD Tabula, dedicated by the colonists to the procurator Berylus, restitutor metallorum, epithet which confirms a previous fall of richness. The same crisis chronology is known in the Baetican metal extraction areas, that is, a floruit until Antoninus Pius. Bustamante, Pérez Macias and Martins (2008, 169) however, point the beginning of the mining activity in Britannia, starting with Hadrianus, as a possible cause to

1 One may note that recently it has taken place an international meeting organized in Spain by Casa de Velasquez, with this title “Crisis urbana a finales del Alto Imperio”.
this decline. After the end of the 2nd century, we find few data concerning mining in Hispania and they are concentrated mainly in the South (Domergue 1990, 217).

The first Mauri incursions occur in the principality of Marcus Aurelius, according to the Historia Augusta, which describes them in omnes Hispanias, an exaggerated manifesto. The Life of Septimius Severus describes the Baetica as a target in 171 AD and a second raid occurred in 177 AD, according to the Tabula Banasitana. Other epigraphic documents, such as in Antequera, reveal city sieges, but it seems not to be present in the epigraphy of important Baetican cities, such as Italica, which reveals the difficulties to draw the real geographic extension of these incursions (apud Arce 2005, 343). Their chronology as well as Antonine Plague’s one is nevertheless interesting, when compared with those of the decline in Lusitanian production of salted fish (see infra), despite being impossible to demonstrate causality.

**TERRA SIGILLATA CONSUMPTION: THE FIRST ECONOMIC INDICATOR OF A SLOWER JUNCTURE?**

The high sales of terra sigillata, in particular of La Graufesenque, throughout the second half of the 1st century, as observed by the import curves of Chãos Salgados and other peninsular sites, integrated a process of continuous general economic growth (fig. 7; Quaresma 2009). Terra sigillata consumption curve at Chãos Salgados has a similar development to the one observed in the consumption centres in the peninsula and in London (fig. 8), as well as in Poitiers, in the western Gallia (Tilhard 2004). Ceramic data prove that there was a certain level of commercial dynamics and regional interdependence and that the falling levels of terra sigillata are part of a possible recession.

Results obtained at Chãos Salgados, where South Gaulish and Hispanic terra sigillata present a noteworthy progression in lesser quality manufacture throughout the chronotypy and stratigraphy (Quaresma 2009), lead us to propose that there was, for South Gaulish and Hispanic terra sigillata, a Flavian overproduction phenomenon, with a noteworthy drop in sales, in the first half of the 2nd century, due to a possible excessive offer in relation to demand. That was not due to the competition by African terra sigillata, whose trade is only well settled from the middle of the 2nd century onwards (fig. 7).
In the Italian peninsula, stratigraphy at the Nuotatore’s baths in Ostia, shows that between 70 and 100 AD, the Italian sigillata predominates with c.80%, followed by the South Gaulish with c.10%, while the African is below 5%, and that between 100 and 120 AD the situation is similar. The turnaround starts slowly between 120 and 140 AD, when Italian sigillata represents c.70%, South Gaulish c.10%, Hispanic less than 5% and African c.20%. The definitive reversal occurs in the second half of the 2nd century: between 160 and 190 AD, Italian decreases to 10–20%, South Gaulish is below 5%, as well as Hispanic, and the African dominates for the first time, in a hegemonic way, with 70% (Martin 2006, tables 1–4). In Benghazi, Libya, the deposit n.73, dated from the first half of the 2nd century, shows the supremacy of Italian and oriental imports (Kenrick 1985, 422).

The main role of Italian sigillata in the Italian peninsula, as well as the Italian and Eastern sigillata in the eastern half of North Africa, seems to parallel in the Iberian Peninsula, where Hispanic sigillata continues to lead the market throughout the first half of the 2nd century, in the southern part, as concluded by the quantities from Andújar (Baetica) at Chãos Salgados and at Ilha do Pessegueiro, on the Lusitanian western coast (Quaresma 2009; Silva, Soares 1993).

In the first site, between 100 and 150 AD, there is a Hayes 9A specimen, whereas at Ilha do Pessegueiro, the first specimen, Hayes 8A, belongs to Flavian layers. Conversely, the A trench on this island is revealing of the importance of Andújar until the middle of the 2nd century, when African sigillata A is still incipient and presents the same type as Chãos Salgados, Hayes 9A (Silva, Soares 1993). On the abandoning level (layer 4) of the first phase (50–200 AD) of Sines tanks nr. 1 and 2, at the Praça João de Deus, Hispanic terra sigillata from Andújar totalises the existing sigillata (Silva, Coelho-Soares 2006, 110). In Salacia, just as in Ilha do Pessegueiro, the African Hayes 8A starts in Flavian levels with 3 specimens, together with another specimen of decorated Hayes 3B (Silva, et Al. 1980, 192).

The first stratigraphic fragments at Cordoba (Baetica) are from the end of the 1st century or first half of the 2nd century (Vaquerizo, Garriguet, Vargas 2005), maybe at the same time as in the capital of Lusitania, Augusta Emerita, where African terra sigillata occurs in the Domitian levels of Suburbio Norte (types Hayes 3 and 8. Bustamante 2010, 153–170).
The beginning of the imports at the southern coast of Lusitania was more diverse, even though it also shows continuity problems: in Monte Molião-Lagos, African terra sigillata A appears through types Hayes 7, 8 and 9, at the SUs of the end of the 1st century/beginning of the 2nd century, but is absent at the SU 29, between 125–150 AD (Arruda et al. 2008, 158–161). In Lagos, in the industrial area of Rua Silva Lopes, the levels of c.50–150 AD have Hayes 3A, 8 and 20 (Ramos, Almeida, Laço 2006, 91).

In the Northeast of the Iberian Peninsula (Tarragonensis), the oldest levels with African terra sigillata A belong to Domitian, at Ampurias, Baetulo and Tarraco, but their indices are still very poor. In the last city, between 90 and 110 AD, the imports rise mildly; between 100–125 and 125–150 AD, the African terra sigillata A becomes important, but the dominance still belongs to Hispanic terra sigillata whose numbers usually are twice or sometimes five times higher than the ones for African terra sigillata. In Baetulo, slightly further North of Tarraco, therefore slightly more distant from the Ebro river, where Hispanic terra sigillata from La Rioja was produced, African terra sigillata dominates the 125–150 AD deposits, with more specimens than the total amount of South Gaulish and Hispanic terra sigillata. Importing African terra sigillata is equally important in Ampurias, in the first half of the 2nd century, but here, South Gaulish terra sigillata still predominates, with more than the double of African sigillata specimens (Aquilué Abadias et al. 2005; Comas et al. 1994; Madrid Fernández 1999; Aquilué Abadias 1987; 1992b; García Noguera et al. 1997; apud Quaresma 2009, annex 2, tables 51–54).

According to the stratigraphic data from Valentia, African terra sigillata A never heads the deposits: it starts during the Flavian time and only increases its trade notably from the second half of the 2nd century, but even at the 3rd century levels Hispanic terra sigillata always predominates (Escrivà Torres, 1989; apud Quaresma 2009, annex 2, table 55). In this very city, in the second half of the 2nd century deposit, at Plaça del Negret, some African terra sigillata was found, but 90% of fine ceramic is Hispanic terra sigillata from La Rioja (Huguet Enguita 2005, 185).

The shapes that are found chrono–typologically until 150 AD, especially Hayes 3A, 3B, 6A, 8A, or 9A, are well represented on the southern and eastern parts of the Peninsula: at Baelo (Bourgeois, Mayet 1991, 228), Carteia (Roldán Gómez et al. 2006, 476), Almeria (García López, Cara Barrionuevo 1995, 138), Portus illicitanus (González Prats 1984,
125) and Tarraco, where, in 100–125 AD, types Hayes 3A, 8A and 9A are present (apud Quaresma 2009, annex 2, table 54).

This trade, with a tendency for the coastal line, also reached the western shores at Olisipo (Lisbon), in the first half of the 2nd century, with some natural means of penetration described, at Alto do Cidreira (Nolen 1988, 61) and we have data for this phase in Britannia – in particular at the Southeast, with a few points in the Centre and North, where types Hayes 2, 3B, 3C, 5C, 6A, 8A and 9A were traded (Bird 1977).

From the 2nd century onwards, African terra sigillata exports are strengthened, as shown by the curves at sites such as Tarraco, Alicante, or Almeria. Figure 10 shows curves with a fast increase from the beginning of the 2nd century because on these calculations, authors did not separate quantities of African cooking ware that had important sales in the South and East of Hispania, just as in Italy, as Reynolds (1995, 12) has already stressed.

From c.150 AD on, African terra sigillata reaches new inland points of southern Lusitania, as in what seems to be the case in the Monte Novo do Castelinho (Hayes 14B and 27: Fabião et al. 1998, fig.29, n. 9 and fig.30, n. 6) and in Ammaia (Hayes 5C and 6B: Pereira 2006, 58). The import quantities of Hayes 14 and 27, at Baelo, with 450 and 362 vessels (Bourgeois, Mayet 1991, 228), show that, just like in Chãos Salgados (Quaresma 2009), the indices at the Strait and Atlantic areas increase in two stages: the middle and the end of the 2nd century.

It is at this stage, from the middle or end of the 2nd century, that African terra sigillata reaches new Lusitanian sites North from the Tagus, in hinterland positions: Parreitas (Hayes 9B, 14, 16 and 27: Dias 2008, 96); Conimbriga (Hayes 15, 16 and 27: Delgado, Mayet, Alarcão 1975, 251); it appears scarcely at Brigantium (López Pérez 2004), in the Northwest, and at Alava, in Bask Country (Filloy Nieva, Gil Zubillaga 1997, 335), but does not reach Britannia, where this African trade is interrupted between c.150 and c.200+ AD (Bird 1977).

If we analyse the import curves for terra sigillata from Chãos Salgados, other sites in Hispania and London (fig. 8), we find an almost generalised fall in trade values of this fine ceramic in the first half of the 2nd century. In Chãos Salgados, Baelo, Valentia, Conimbriga, São Cucufate, Represas and Tróia, this fall is likely.

Even quantities of stratigraphy in Rome seem to point to a drop in consumption. The quantities published by G. Rizzo (2003, 201) are of 251 specimens in Neron, 272 at the Flavian, and only 108 at the Antonine
period. This lack of imports seems to match with the similar stratigraphic behaviour in ambiente XXV of Ostia, where we find a gap in the second half of the 2nd century (Carandini, Panella 1977).

The second century is thus of clear trade contraction: in Londinum, the deposits of the 1st century have between 10 and 25% of terra sigillata, whereas on the 2nd century, this ceramic rarely goes over 10% of the remains (Fulford 1987, 65). Despite terra sigillata import curve apparently recover some ground in the third quarter of the 2nd century (not by imports of African A terra sigillata, but through the one from the centre of Gallia), it drops sharply from this stage onwards (fig. 8).

On the other hand, if growing sales of African terra sigillata work in counter-cycle, it is necessary to relativize some excessively high import curves of this ceramic in the 2nd century, in several sites of the Eastern Hispania as previously mentioned (Reynolds 1995, 12), because this often includes the quantities of some African cooking ware forms such as Hayes types 23, 181 and 197, sold in great quantities at that time in the South and East of Hispania and in Italy (Quaresma 2009). The several sites calculated by Hawthorne (1987) and especially by Fentress and Perkins (1987) have therefore an incorrectly high curve of terra sigillata in the 2nd and 3rd centuries (fig. 10).

Lastly, even in the Lusitanian capital, Augusta Emerita, the stratigraphy of the Suburbio Norte (fig. 9) shows that the consumption of Hispanic terra sigillata (almost exclusively from La Rioja) decreases markedly in the first half of the 2nd century, reinforcing the idea of general decline in the consumption of this table ware, before the clear predomination of the African production.

OLIVE OIL AND SALTED FISH PRODUCTION:
THE CONFIRMATION OF THIS JUNCTURE?

Around half a century after the drop in consumption of terra sigillata, the middle of the 2nd century sees crisis clearly affecting the food sector.

On the Guadalquivir valley, there is a drawback of the harbour and handicraft areas, such as Calle San Fernando or Encarnación, in Hispalis, which were converted to residential areas. This picture, that according to García Vargas (2007, 353) may go as far back as the second quarter of the 2nd century, is to this author, a result of a downturn in private trade, in particular of salted fish, while the trade in olive oil is maintained at acceptable levels (García Vargas 1998, 247). In Britannia, the distribu-
tion of olive oil in Dressel 20 amphorae stays stable throughout the 1st and 2nd centuries, and actually increases from the middle of the 2nd century. In York, Dressel 20 has 8 specimens in 120 AD, 65 in 90–150 AD, 97 in 150–200 AD and 398 in 140–255 AD (Reynolds 2005).

In Lusitania, the stratigraphy of the fish-salting factory at Ilha do Pessegueiro, with a particular interest in trenches A, C and D’ demonstrates the advent of crisis even in the third quarter of the 2nd century, maintained in a steady-state until the middle of the 3rd century (Tavares, Soares 1993, 47–59). In the amphorae centre of Pinheiro, at the lower Sado, the transition from the end of the 2nd century to the beginning of the 3rd century may however belong to an “indeterminate phase in the second half of the 2nd century” (Mayet, Silva 1998, 114). In the Strait area, the Tahadartz, Thamusida and Banassa centres go into recession at the Severan time (Reynolds 2005, 389).

The graphics published by A. Wilson (fig. 11), both for Hispania and for other areas of the Empire, demonstrate a generalised decline around 150 AD and, just as in the terra sigillata consumption, after the 1st and 2nd c. floruit, the Low-Empire levels are much lower. On the other hand, as mentioned above, the drop in production values for salted fish seems to be later in several decades to the ones for terra sigillata consumption.

Thus we have a phenomenon lasting around 100 years, a crisis juncture in the salted fish sector, occurring widely, from Lusitania to the western coast of North Africa, not limited simply to the turning from the 2nd to the 3rd century, a time of change in Lusitanian centres such as Tróia or Abul, Praça do Bocage and Travessa de Frei Gaspar (Setúbal), in the Sado area, or the Casa dos Bicos, in Olisipo (Mayet 2001, 288; Fabião, Carvalho 1990, 49; Quaresma 1999, 176–177), and structuring itself, as Reynolds sees it (1995, 388), in the evolution of new smaller containers, in the reduction in the number of sites producing to export and in the increased numbers of small factories for local markets.
CONCLUSION

The main problem in the 2nd century is to know what is the geographical scale and sector range involved. It is a juncture that affected the whole Empire, so how can it indicate the shipwrecks fluctuations (fig. 3), monetary circulation (fig. 2), or meat consumption (fig. 4)? Other phenomena have a more questionable dispersion: what is the real impact of the so called Antonine Plague and of the imperial financial crisis, expressed in a gradual money debasement and in central measures to fight deficit, particularly sensitive in Marcus Aurelius principality?

Data from Hispania, a more peripheral region especially on the Atlantic side, but more connected to the Mediterranean in the eastern and southern coast, are compatible in terms of chronology. The opera publici in Hispania seem to stay stable until Trajan, as does the urban development in the Lusitanian areas and in the Tarraconensis.

On what concerns the decline in metal extraction, the plausible chronology is c.150 AD in Lusitania and in Baetica (Bustamante et Al. 2008). Lusitanian production of salted fish also declines in the third quarter of the 2nd century (Quaresma 2009), a time when the South of the Iberian Peninsula is affected by Mauri incursions, a phenomenon which effect is not easy to understand (Arce 2005).

We have thus several phenomena occurring from around c.150 AD, probably more contemporary to the possible demographic crisis induced by the Antonine Plague (Bruun 2007), but occurring after the prolonged decline in money circulation in several areas of the empire (fig. 2), which started clearly around c.100 AD, and also after the apparent decline of trade in the Mediterranean, with a beginning that could be situated on the first half of the 2nd century (fig. 3).

We therefore speak of at least two periods for this conjuncture: c.100–150 AD and c.150–200 AD.

---

2 This text has been adapted from part of a PhD thesis (Quaresma 2009) on the terra sigillata from Chãos Salgados (Mirobriga?), on the southwest Atlantic coast of Lusitania. On that work we had performed an extensive commercial analysis, comparing not only statistical and contextual data of the consumption of this fine ceramic throughout Hispania, but also other kinds of economic information.
Consumption data for *terra sigillata* in *Hispania*, quantifiable in several Lusitanian sites (cities of Chãos Salgados: *Mirobriga*; and *Conimbriga*; *villae* of Represas and São Cucufate; salted fish production centre at Tróia), in *Baetica* (*Baelo*) and in *Tarraco* (*Valentia*) match the slowing down in financial circulation as proposed by Hopkins (1980) and demonstrate, by their wide diachrony, that the consumption up to the beginning of the 2nd century was never matched again (even though the São Cucufate *villa* has excellent levels in the 4th century and Troia *floruit* is linked to a greater production dynamic of Lusitanian salted fish in the Lower Empire). More surprising still are the *terra sigillata* consumption levels in the 1st century, several times higher than in the rest of the Roman period (fig. 8).

Unfortunately we have no other total quantifications of *terra sigillata* in other consumption areas of the Empire. Despite Rome apparently also experienced a decrease in the consumption of this ceramic in the first half of the 2nd century (Rizzo 2003), it is impossible to determine the scale of the phenomenon. Nevertheless, this evolution seems to occur also in the Atlantic area, since the consumption in London (*Britannia*) and in Poitiers (western *Gallia*. See Tilhard 2004) has the same behaviour.

We have demonstrated that the production of the South Gaulish and Hispanic *terra sigillata* is not immediately replaced by the African one, in the first half of the 2nd century, not only in the Hispanic area (Quaresma 2009), but also in the Italian area (Martin 2006) or in Libya (Kenrick 1985), concerning Italian *terra sigillata*. The stratigraphy at *Augusta Emerita*, Lusitania’s capital, despite Hispanic *terra sigillata* is the single production quantified (fig. 9), demonstrates that this typology falls dramatically in the first half of the 2nd century, while a series of other Lusitanian, Baetican and *Tarraco* sites, show that African *sigillata* only imposes itself on the market from the second half of the 2nd century onwards (Quaresma 2009), despite the importance of African cooking ware in the eastern Hispanic coast and in other sites of the western Mediterranean, even in the first half of the 2nd century, a factor often not separated from African quantifications (such is the case of fig. 10).

Africa’s importance, already pointed out by Rostovtzeff (1926–1988) at an urban level, since Trajan, and discernible through the monetary circulation from the 2nd century (fig. 2), is well expressed by the domination of African *terra sigillata* A from c.150 AD onwards (Quaresma 2009 – *Hispania*; Martin 2006 – *Ostia*; Kenrick 1985 – *Benghazi*). It is quite possible that the receding (?) economy of the 2nd century is by and
large a transition of the economic primacy of the North Mediterranean area in favour of this new director area, the North Africa, in particular Proconsularis and Byzacena.

As Jongman (2007) put it, more than crisis or decline, we should talk about transformation, but the High-Empire floruit concerning several items also takes this author to remind us Gibbon’s problem (1776). Terra sigillata consumed in Hispania, London and Poitiers (and maybe in Rome) also confirms the ideas of Bauman and Wilson (2009): we can talk about growth until c. 200 AD, but the data for a economy in crisis are clearly earlier in several sectors, one being that of terra sigillata, the most important table fineware produced in large-scale and certainly one of the main economic indices of the Roman period.

REFERENCES


Aquilué Abadías, J., Relaciones económicas, sociales e ideológicas entre el Norte de África y la Tarraconense en época romana. Las cerámicas de producción africana procedentes de la Colonia Urbs Triumphalis Tarraco, Collecció de tesis doctorals microfitxades, n.1275, Universitat de Barcelona (1992a).

Aquilué Abadías, J., Comentaris entorn a la presència de la ceràmiques de producció africana a Tàrraco, in X. Duprà i Raventos (coord.), Miscelània Arqueològica a Josep M. Recasens (1992b) 25–33.


Duncan-Jones, R., Money and government in the Roman Empire (1994).

Escrivá Torres, V., La cerámica romana de Valentia. La Terra Sigillata hispánica, Ajuntament de València, Série Arqueológica Municipal, 8 (1989).

Étienne, R., Makaroun, Y., Mayet, F., Un grand complexe industriel à Tróia (Portugal) (1994).


Finley, M., A economia antiga (1973).
Fulford, M., Economic interdependence among urban communities of the
Fulford, M., Approaches to quantifying Roman trade. Response, in
A. Bauman, A. Wilson (eds.), Quantifying the Roman economy.
García López, J.L., Cara Barrionuevo, L., Un ejemplo de fondeadero en
la costa meridional. Análisis de distribución espacial de los hallazgos
romanos en la ciudad de Almería, Actas del XXI congreso nacional de
García Noguera, M. et al., Un contexto cerámico d’inicis del segle II d.C. a
García Vargas E., La Producción de ánforas en la bahía de Cádiz en
García Vargas, E., Hispalis como centro de consumo desde época tar-
dorrepublicana a la Antigüedad Tardía. El testimonio de las ánforas,
Garnsey, P., Saller, R., The Roman Empire. Economy, society and culture
Gibbon, E., The decline and fall of the Roman empire (1776).
González Prats, A., Aportaciones al conocimiento del Portus Illicitanus:
Reseña de los trabajos de urgencia de 1976. La terra sigillata, “Lu-
Harris, W.J., A comment on A. Wilson: Approaches to quantifying Roman
trade, in A. Bauman, A. Wilson (eds.), Quantifying the Roman economy.
Hawthorne, J.W.J., Post processual economics: the role of African Red
Slip Ware vessel volume in Mediterranean demography, in Proceed-
ing of the Sixth Annual Theoretical Roman Archaeology Conference
Hopkins, K., Taxes and trade in the Roman Empire (200 B.C. – A.D.
Hopkins, K., Models, ships and staples, in P. Garnsey, C. R. Whittaker
Horden, P., Purcell, N., The corrupting sea. A study of Mediterranean
History (2000).
Howegeo, Ch., Some numismatic approaches to Quantifying the Roman


Rodríguez de Berlanga, M., *El nuevo bronce de Itálica que publica de real orden Manuel Rodríguez de Berlanga* (1891).


Fig. 1: Donkey’s price and monetary circulation in Egypt (Duncan-Jones 1994).
Fig. 2: Monetary circulation in several sites or regions of the Roman Empire.
**Fig. 3:** Roman shipwrecks in the Mediterranean Sea (Parker 1990).
Fig. 4: Animal bone amounts in Italy and in the provinces (Jongman 2007).
Fig. 5: Femur length evolution (Jongman 2007).
**Fig. 6:** Chãos Salgados (Mirobriga?): terra sigillata evolution (Quaresma 2009).

**Fig. 7:** Chãos Salgados (Mirobriga?): terra sigillata evolution according to the regions of production (Quaresma 2009).
Fig. 8: *Terra sigillata* in several sites of *Hispania* and London.
Fig. 9: Hispanic *terra sigillata* in Augusta Emerita (stratigraphic amounts from the sector *suburbio norte*) (Bustamante 2010).
Fig. 10: African *terra sigillata* in several western sites.
Fig. 11: Fish-salting vat capacities (Wilson 2009).
Fig. 12: Iberian sites mentioned in the text