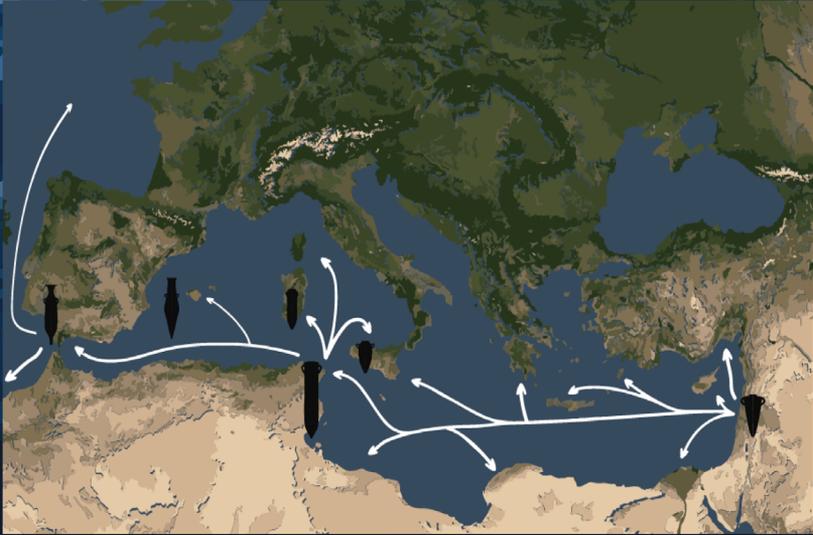


1st Amphoras in the Phoenician-Punic World Congress the State of the Art

Ghent, Belgium
December 15-17, 2017



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ABSTRACT BOOKLET



Contents

WELCOME NOTE.....	9
PROGRAM.....	12
KEYNOTE LECTURE	
Amphores phéniciennes puniques: deux décades de recherche by Joan Ramon Torres.....	15
FIRST SESSION. PUNIC STAMPS	
¿Marcas comerciales? Estampillas púnicas sobre ánforas by Luis Alberto Ruiz Cabrero	19
Punic bilateral stamps with repeated graphemes: new data about a particular series of marks on Carthaginian amphorae (4th-2nd centuries BC) by José Ángel Zamora & Antonio Sáez Romero.....	21
SECOND SESSION. EASTERN MEDITERRANEAN	
Phoenician Amphorae at Tel Akko and Environs by Ann E. Killebrew, Jolanta Młynarczyk & Jacek Michniewicz.....	25
Phoenician amphorae from the late Iron Age settlement at Tell el-Burak: typology, petrography, content analyses by Kamal Badreshany, Aaron Schmitt & Evgenia Tachatou.....	27
New Evidence on Phoenician amphora types and amphoric inscriptions by Eric Gubel.....	29
Torpedo Jars between Levant and Egypt : prototypes and imitations by Luisa Bonadies & Sylvie Marchand.....	31
Phoenician-Punic amphorae from Tebtynis (Egypt), between Mediterranean imports and local imitation by Sylvie Marchand & Max Luaces.....	33



Levantine-type transport amphorae in Cyprus during the Bronze and Iron Ages: Issues and Perspectives by Adriano Orsingher37

THIRD SESSION.

NORTH AFRICA

Nouvelles données sur les fabriques des amphores puniques provenant de Carthage, Hadrumète et Utique by Boutheina Maraoui Telmini.....39

36 shekels of wine to New Carthage. The relationship between Amphora capacity and monetary standards during the Second Punic War by Víctor Martínez Hahn Müller..... 41

The analysis of amphoras from Carthaginian settlement assemblages by Roald F. Docter43

Les amphores d'Utique et sa région aux époques phénicienne et punique by Imed ben Jerbania45

FOURTH SESSION.

SARDINIA

Punic Amphoras from Pani Loriga (Area A) by Tatiana Pedrazzi47

Ricerche archeologiche subacquee nella Sardegna centro-meridionale: anfore fenicie e puniche, contesti, forme, contenuti e produzioni by Ignazio Sanna & Carla del Vais49

The Mediterranean exchanges of Neapolis (end of 6th and 4th centuries BC) by Elisabetta Garau53

Amphorae from Sant'Imbenia (Alghero-Sardinia) by Marco Rendeli, Beatrice de Rosa & Elisabetta Garau55



Phoenician and Punic amphoras from the waters of Nora (Sardinia). The recoveries of Michel Cassien (1978-1984) by Emanuele Madrigali.....57

Le anfore di Olbia fenicia, greca e punica: quadro complessivo e problemi aperti by Paola Cavaliere, Rubens D'Oriano & Giuseppe Pisanu 61

FIFTH SESSION. IBERIAN PENINSULA AND BALEARIC ISLANDS

Punic amphorae in the Northwest coast of the Iberian Peninsula: Origins, distribution and commercial dynamics by Eduardo Ferrer Albelda, Josefa Rey Castiñeira, Javier Rodríguez Corral, Antonio Sáez Romero & Francisco J. García Fernández63

The dissemination of the so-called “Late Punic” amphorae from the Circle of the Strait to ancient Gaul: a trade route which underneath Late Republican phenomena? by Max Luaces.....67

The amphoras from Baria (Villaricos, Spain) by Jose Luis López Castro, Carmen Pardo Barrionuevo & Laura Moya Cobos..... 71

Punic amphorae in the interior of the Guadalquivir valley: Origin, distribution and contents by Francisco J. García Fernández, Eduardo Ferrer Albelda & Violeta Moreno Megías73

Amphorae production and trade in the Western Iberia: an overview by Elisa de Sousa & Ana Margarida Arruda77

Ánforas púnicas en contextos menorquines de época postalayótica by Helena Jiménez Vialás, Fernando Prados Martínez, Joan Carles de Nicolás Mascaró & Andrés M. Adroher Aurox79



Local production of amphorae in Turdetania during the II Iron Age: A typological, compositional and commercial study of production and distribution by Violeta Moreno Megías, Francisco J. García Fernández & Eduardo Ferrer Albelda..... 81

Amphorae production in Gadir: an update by Antonio Sáez Romero..... 85

SIXTH SESSION. SICILY

From potter's kiln to seafaring: Punic amphorae from underwater western Sicily by Francesca Oliveri & Maria Pamela Toti..... 89

Transport amphorae and the historical space - city - chora - hinterland by Rebecca Diana Klug 91

La circolazione anforica nella Palermo punica (fine del VI-metà del III sec. a.C.): nuovi dati emersi da recenti scavi in area urbana e di necropoli by Babette Bechtold 95

Jars, burials and rituals. Ceramic caskets and funerary boxes in Phoenician mortuary traditions: new evidence from the excavations on Motya, West Sicily by Gioacchino Falsone & Paola Sconzo 99

SIXTH SESSION. POSTERS

The characterization and origin of the Carthage Tophet funerary urns by Dennis Braekmans, Brien K. Garnand, Joseph A. Greene, Lawrence E. Stager & Patrick Degryse 101

Between Carthage and Rome: the island of Proratora in Sardinia by Paola Cavaliere, Jeremy Hayne & Giuseppe Pisanu 103



Amphorae production in Punic and Late Punic Malaca (Málaga, Spain). New evidence from the Carranque workshop by Cristina Chacón, Ana Arancibia, Bartolomé Mora Serrano & Antonio Sáez Romero	105
Punic amphoras in the Pla del Rey (Valldemossa, Mallorca) by Guy de Mulder, Mark van Strydonck & Johan Deschieter	109
On some aspects of Iron Age Storage and Transport Jars from the Northern Levant by Lione du Piéd	111
Punic amphorae at Euesperides, Cyrenaica by Kristian Göransson	113
Punic amphorae lids. Evidence of a particular class of pottery from central-west Sardinia by Jeremy Hayne & Peter van Dommelen	115
Western Mediterranean Phoenician Amphorae Imports in the Northeastern Iberian Peninsula during the Early Iron Age by Eva Miguel Gascón, Jaume Buxeda i Garrigós & Peter M. Day	117
Late Punic amphorae in the Adriatic : the evidence of the finds in the Potenza Valley (Marche, Italy) by Patrick Monsieur	121
Amphorae from the 1st millenium BC at Quinta do Almaraz (Almada, Portugal) by Ana Olaio	123
Archaic Phoenician and imported amphorae from Gadir: the Teatro Cómico site (Cádiz) y Juan Miguel Pajuelo, José María Gener, María de los Ángeles Navarro, Ester López Rosendo & Mariano Torres	127
Another kind of salting, the salt-cured meat in the Phoenician Amphoras by Carmen Ana Pardo Barrionuevo	129



Phoenician and Punic Amphorae from S'Urachi (San Vero Milis, Sardinia) by Andrea Roppa, Emanuele Madrigali, Alfonso Stiglitz & Peter van Dommelen.....	131
Anfore puniche, macine e vetro egiziano dal relitto di Su Pallosu (San Vero Milis-OR) by Ignazio Sanna & Carla del Vais	133
DIRECTIONS.....	137
SPONSOR, COMITEES & CONGRESS STAFF.....	141



Welcome Note

Dear colleagues, we welcome you to the *1st Amphoras in the Phoenician-Punic World Congress: the State of the Art*. It is our privilege to host both leading and more junior researchers from all over the globe who have come to Ghent in order to present their research and to receive feedback from their peers on several topics relating to the production, distribution and consumption of amphoras in the Phoenician and Punic Mediterranean. We have received more abstract submissions than expected and even had to add one day to the initially scheduled two-day program. It clearly shows that there was a widely-felt need for a conference that would offer a floor for the exchange of ideas, approaches, and data with other specialists in the field.

The venue of the three days conference will be Ghent, one of the most beautiful cities of Flanders, and home to one of the largest universities in Belgium that celebrates its 200th anniversary this very academic year. We are

hosted by the *Koninklijke Academie voor Nederlandse Taal en Letterkunde* (Royal Academy of Dutch Language & Literature; KANTL) in its magnificent mid-XVIIIth century Rococo building situated in the very center of the town.

The conference will start with brief welcome addresses by the Head of the Archaeological Department of Ghent University, Frank Vermeulen, and one of the organizers. We will then have the pleasure to listen to a special Keynote Lecture by Joan Ramon Torres, whose monographic typology has profoundly changed our understanding of Phoenician and Punic Amphoras since its appearance in 1995. Thereafter, the congress will develop with talks distributed along on several thematic and geographic lines: Punic Stamps, the Eastern Mediterranean, North Africa, Sardinia, the Iberian Peninsula and the Balearic Islands and, last but not least, Sicily. Since there are no parallel sessions, you will have the opportunity to attend all presen-



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Phoenician-Punic World Congress
the State of the Art

tations and you are kindly invited to take part in the discussions.

Lunches and coffees will be served in the *Rode Salon* (Red Salon) of the KANTL that, at least for a few days, will be one of the

enjoy a special conference dinner in a typical Ghent restaurant, Amadeus, located in one of the most beautiful parts of the city.

After the last presentations we will decide where and when



top research centers on Phoenician and Punic Studies. All presentations will be conducted at the *Vergaderzaal* (Conference Room) and our posters will be exhibited in the main corridor that connects the entrance of the building and the Conference Room from the very first day on. On the evening of the second day there will be the opportunity to

the *2nd Amphoras in the Phoenician-Punic World Congress* will take place. But before you leave Ghent we will have a touristic boat trip on its two rivers and canals, provided the river is not frozen. During the three days of our scientific meeting you will also have the opportunity to enjoy the scenic center of Ghent and its large Christmas Market.



We acknowledge the generous support of various institutions and companies, listed on page 141. A dedicated Conference Support Team is formed by Master students in archaeology and volunteers. All members of our Team will be available at any time if you have a question or need any help.

We hope that you will have a wonderful and engaging time at this conference.

Roald Docter

Eric Gubel

Víctor Martínez Hahn Müller

Andrea Perugini



1st Amphoras in the Phoenician-Punic World Congress the State of the Art

Thursday, 15th December 2016

- 09.00-10.00 Registration
10.00-10.05 Wellcome notes
by **Frank Vermeulen**
10-05-10.15 Introductory note
by **Roald F. Docter**
10.15-11.00 Keynote Lecture. Amphores phéniciennes puniques: deux décades de recherche
by **Joan Ramon Torres**
11.00-11.15 Coffee Break

First Session. Punic Stamps

Chair: Patrick Monsieur

- 11.15-11.35 ¿Marcas comerciales? Estampillas púnicas sobre ánforas
by **Luis Alberto Ruiz Cabrero**
11.40-12.00 Punic bilateral stamps with repeated graphemes: new data about a particular series of marks on Carthaginian amphorae (4th-2nd centuries BC)
by **José Ángel Zamora & Antonio Sáez Romero**

- 12.05-14.00 Lunch

Second Session. Eastern Mediterranean

Chair: Joan Ramon Torres

- 14.00-14.20 Phoenician Amphorae at Tel Akko and Environs
by **Ann E. Killebrew, Jolanta Młynarczyk & Jacek Michniewicz**
14.25-15.05 Phoenician amphorae from the late Iron Age settlement at Tell el-Burak: typology, petrography, content analyses
by **Kamal Badreshany, Aaron Schmitt & Evgenia Tachatou**
15.10-15.40 New Evidence on Phoenician amphora types and amphoric inscriptions
by **Eric Gubel**
15.45-16.00 Coffee Break
16.00-16.30 Torpedo Jars between Levant and Egypt : prototypes and imitations
by **Luisa Bonadies & Sylvie Marchand**
16.35-17.05 Phoenician-Punic amphorae from Tebrynīs (Egypt), between Mediterranean imports and local imitation
by **Sylvie Marchand & Max Luaces**
17.10-17.40 Levantine-type transport amphorae in Cyprus during the Bronze and Iron Ages: Issues and Perspectives
by **Adriano Orsingher**
17.45-18.00 Coffee Break

Third Session. North Africa

Chair: Eric Gubel

- 18.00-18.30 Nouvelles données sur les fabriques des amphores puniques provenant de Carthage, Hadrumète et Utique
by **Boutheina Maraoui Telmini**
18.35-18.55 36 shekels of wine to New Carthage. The relationship between Amphora capacity and monetary standards during the Second Punic War
by **Víctor Martínez Hahn Müller**

Friday, 16th December 2016

- 09.00-9.20 The analysis of amphoras from Carthaginian settlement assemblages
by **Ronald F. Docter**
- 09.25-9.45 Les amphores d'Urtique et sa région aux époques phénicienne et punique
by **Imed ben Jerbania**

Fourth Session. Sardinia

Chair: Andrea Perugini

- 09.50-10.10 Punic Amphoras from Pani Loriga (Area A)
by **Tatiana Pedrazzi**
- 10.15-10.30 Coffee Break
- 10.30-11.00 Ricerche archeologiche subacquee nella Sardegna centro-meridionale: anfore fenicie e puniche, contesti, forme, contenuti e produzioni
by **Ignazio Sanna & Carla del Vais**
- 11.05-11.25 The Mediterranean exchanges of Neapolis (end of 6th and 4th centuries BC)
by **Elisabetta Garau**
- 11.30-12.00 Amphorae from Sant'Imbenia (Alghero-Sardinia)
by **Marco Rendeli, Beatrice de Rosa & Elisabetta Garau**
- 12.05-12.25 Phoenician and Punic amphoras from the waters of Nora (Sardinia). The recoveries of Michel Cassien (1978-1984)
by **Emanuele Madrigali**
- 12.30-14.00 Lunch
- 14.00-14.30 Le anfore di Olbia fenicia, greca e punica: quadro complessivo e problemi aperti
by **Paola Cavaliere, Rubens D'Oriano & Giuseppe Pisanu**

Fifth Session. Iberian Peninsula and Balearic Islands

Chair: Wim Broekaert

- 14.35-14.55 Punic amphorae in the Northwest coast of the Iberian Peninsula: Origins, distribution and commercial dynamics
by **Eduardo Ferrer Albelda, Josefa Rey Castiñeira, Javier Rodríguez Corral, Antonio Sáez Romero & Francisco J. García Fernández**
- 15.00-15.30 The dissemination of the so-called "Late Punic" amphorae from the Circle of the Strait to ancient Gaul: a trade route which underneath Late Republican phenomena?
by **Max Luaces**
- 15.35-15.55 The amphoras from Baria (Villaricos, Spain)
by **Jose Luis López Castro, Carmen Pardo Barrionuevo & Laura Moya Cobos**
- 16.00-16.15 Coffee Break
- 16.15-16.35 Punic amphorae in the interior of the Guadalquivir valley: Origin, distribution and contents
by **Francisco J. García Fernández, Eduardo Ferrer Albelda & Violeta Moreno Megías**
- 16.40-17.20 Amphorae production and trade in the Western Iberia: an overview
by **Elisa de Sousa & Ana Margarida Arruda**
- 17.25-17.45 Ánforas púnicas en contextos menorquinas de época postalayótica
by **Helena Jiménez Vialás, Fernando Prados Martínez, Joan Carles de Nicolás Mascaró & Andrés M. Adroher Auroux**
- 17.50-18.00 Coffee Break
- 18.00-18.20 Local production of amphorae in Turdetania during the II Iron Age: A typological, compositional and commercial study of production and distribution
by **Violeta Moreno Megías, Francisco J. García Fernández & Eduardo Ferrer Albelda**
- 18.25-19.05 Amphorae production in Gadir: an update
by **Antonio Sáez Romero**

- 19.30 Conference Dinner

Saturday, 17th December 2016

Sixth Session. Sicily

Chair: Víctor Martínez Hahn Müller

- 09.00-9.20 From potter's kiln to seafaring: Punic amphorae from underwater western Sicily
by **Francesca Oliveri & Maria Pamela Toti**
- 09.25-9.45 Transport amphorae and the historical space - city - chora - hinterland
by **Rebecca Diana Klug**
- 09.50-10.10 La circolazione anfórica nella Palermo punica (fine del VI-metà del III sec. a.C.): nuovi dati emersi da recenti scavi in area urbana e di necropoli
by **Babette Bechtold**
- 10.15-10.30 Coffee Break
- 10.30-10.50 Jars, burials and rituals. Ceramic caskets and funerary boxes in Phoenician mortuary traditions: new evidence from the excavations on Motya, West Sicily
by **Gioacchino Falsone & Paola Sconzo**

Seventh Session. Concluding remarks

- 11.00-12.00 Closing act
- 12.00 Facultative boat trip



PEETERS



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Fenicios y Púnicos





Keynote Lecture

Amphores phéniciennes puniques: deux décades de recherche by

Joan Ramon Torres

En fait, plutôt que de deux décades, il serait question ici d'un quart de siècle, car l'ouvrage, bien que mis en circulation il y a maintenant vingt-un ans, est rédigé en 1990. Vingt, ou vingt-cinq ans, quoi qu'il en soit, ont signifié une épreuve permanente sur les bases préalables et l'évolution des recherches.

Quelques-uns des vides jadis mis en évidence sont restés à peu près en même point, exactement là où on les a laissés. C'est bien sûr le cas du nombre immense de kilomètres qui compose la côte algérienne, voir aussi la Libyenne. Enfin, un état de choses dont les raisons sont pour tout le monde malheureusement trop connues.

Si on passe la loupe plus précisément sur d'autres zones géographiques à qualifier de plus dynamiques du point de vue de la recherche, la prolifération ici et là des études archéométriques,

voire techniques, est à mon avis, le trait le plus saillant de ces deux décades. Et en effet, les travaux actuels concernant toujours les amphores phéniciennes puniques, par la plupart, ou bien il sont accompagnés par des annexes de ce type, ou bien ils appartiennent simplement et spécifiquement à ce genre. Certes, ils ont résulté fort utiles dans le terrain des précisions, mais aussi dans celui de la confirmations d'un tas de suppositions, voire des presque certitudes, que l'on avait déjà acquises.

En revanche, des questions-clé, parmi lesquelles les contenus, n'ont pas suivi tout à fait le rythme qu'on aurait tous nous désiré, bien que toutefois, dans certains cas, trop d'évidences de catégorie différente se sont liguées jusqu'au point de gérer une espèce de consensus ou quand même une conviction presque générale (les saumures



du sud de l'Espagne et du cercle de Gibraltar ou les vins d'Ibiza, pour ne citer que deux exemples).

Par contre, je continue à me poser les mêmes questions qu'il y a vingt ans concernant tant d'autres productions y compris quelques-unes à qualifier de vraiment importantes. C'est le cas, évidemment, des amphores cylindriques et les ovoïdes de Carthage et sa région et tout cela sans épuiser le répertoire des situations concernées par des problèmes semblables.

En bref, malgré le fait incontestable qu'au cours du dernier

quart de siècle la connaissance des amphores phéniciennes puniques -grâce aux travaux mis à point par de nombreux chercheurs, dont il n'est pas question ici de donner tous leurs noms- a expérimenté un progrès considérable, je préfère revenir toujours à la phrase finale de l'ouvrage publié en 1995 : "on aura besoin encore d'un nombre considérable d'études et cependant l'histoire en tirera un profit considérable".



First Session.

Punic Stamps

**¿Marcas comerciales? Estampillas púnicas sobre
ánforas by**

Luis Alberto Ruiz Cabrero

El uso de estampillas sobre ánforas a partir del S. II a.n.e. parece confirmar una tradición fenicia en torno a la identificación familiar a través de la iconografía y por tanto de las diversas entidades comerciales que avalan el producto comercializado.



Punic bilateral stamps with repeated graphemes: new data about a particular series of marks on Carthaginian amphorae (4th-2nd centuries BC) by José Ángel Zamora & Antonio Sáez Romero

The existence of stamps on Punic amphorae of various types, proveniences and chronology is a well-known fact in the last decades. Among the productions of Carthage and its economic area, such stamps typically were placed on handles and necks, normally with rounded shapes and a reduced size. Quite often these stamps include iconographic motifs of very different types; other times, one or more graphemes; occasionally, they combine iconographic motifs and letters. Despite there is a solid basis for its research, an increasing catalog of finds and the fact that the stamps are frequently found in every type of archaeological contexts (including pottery workshops) their concrete function has not yet being satisfactorily defined. This paper aims to shed light on a relatively large and particularly problematic group of these Carthaginian stamps. Thus, we will focus on

the stamps characterized by the presence of just two identical graphemes; that is, biliteral stamps in which the same letter is repeated. In contrast to stamps with varied graphemes, read in many cases as abbreviations of anthroponyms, the ones in which the repetition of the same letter do not find a similar convincing translation as Punic personal names. It seems rather a special and distinctive way of marking the amphorae, different from the figurative and anthroponymic sealing. The variety of letters involved (that seems to reach all the Phoenician alphabet) suggests that a role as a numbering system based on the spelling system cannot be discarded. The connection between stamps and the vessels on which were impressed appear to support this uniqueness. Considering the cases that the amphorae carrying double-grapheme stamps have been identified only two types



seem to be linked to this procedure: T-4210 and T-5230 series. Both types were consecutive groups with remarkable technical connections and continuity in shapes and volumes. Produced from the late 4th century until the first decades of the 2nd century BC, both series had a significant commercial success in the trading routes of the western and central Mediterranean. All individuals appear to come from the same production area located in the vicinity of Carthage. It is possible that this particular type of stamp was developed exclusively in such

pottery workshops, where at least if was not created, such sealing manner seems to have had its furthest development. In summary, the paper aims to carry out a combined epigraphic and archaeological study to understand a homogeneous type of stamps with distinct and very specific characteristics. Additionally, on the basis of this analysis, a secondary goal will be to achieve a better understanding of the entire phenomenon of amphoric sealing in the Punic world, closely linked to far-reaching economic processes.



Second Session.

Eastern Mediterranean

**Phoenician Amphorae at Tel Akko and Environs by
Ann E. Killebrew, Jolanta Młynarczyk & Jacek
Michniewicz**

This paper presents the 7th - 4th/3rd century BCE Phoenician amphorae assemblages excavated at Tel Akko, Tel Keisan and Shaar HaAmakim. By means of a typological and technological study of these Phoenician-type jars in their stratigraphic and cultural contexts, this study aims to distinguish several local and regional pottery workshops in the Akko plain and its environs. Based on the macroscopic, petrographic, ICP and INAA analyses of the main pottery fabrics, we propose that one of the most prominent wares, a distinctive “white ware” Phoenician jar, was manufactured in the vicinity of Tel Akko.



Phoenician amphorae from the late Iron Age settlement at Tell el-Burak: typology, petrography, content analyses by

Kamal Badreshany, Aaron Schmitt & Evgenia Tachatou

This presentation focuses on a large set of Phoenician amphorae excavated during several seasons at the late Iron Age settlement at Tell el-Burak (Lebanon) covering a time span from the end of the 8th until the middle of the 4th century. The assemblage mainly consists of thousands of sherds, but also of a room inventory of ca. 60 amphorae of the late 7th century.

We have approached the study of this material from three different directions (typology/A. Schmitt, petrography and chemical analyses/K. Badreshany as well as content analyses/E. Tachatou) and our results will be presented respectively. It is the first time that such a comprehensive approach is pursued for ceramic material from the Phoenician homeland.



New Evidence on Phoenician amphora types and amphoric inscriptions by Eric Gubel

Combining data from research fields including iconography, ceramology and epigraphy, a multifocal approach seemed appropriate in order to valorise their relevance with regard to the issues addressed in our contribution. Consequently, the latter's topic will be introduced by a brief presentation of amphorae and sets of drinking vessels in the late Bronze Age Levant, Phoenician and, to a lesser extent, Punic art. Special attention will be paid to sets of large alabastron-like wine containers represented on bowls and ivories inspired by early Ist millennium BCE Lower Egyptian Nilotic marsh scenes as they might reflect actual Phoenician amphora types.

Recent excavations and studies of material evidence in public and private collections

(Lebanon, Galilea, Cyprus and Egypt) have yielded appreciable scores of new data pertaining to the origin, evolution and diffusion of Phoenician vessels containing liquids or foodstuffs. Reviewing some of the amphoric "highlights" of different types, the relevance of inscriptions, dipinti and jar stamps on the aforesaid issues will be underscored.

Finally, a selection of Persian and Hellenistic Age finds from the AUB excavations at Tell Kazel and Tyre will be presented. The former shed more light on a.o. the most recent development of the basket-handle amphorae now definitely on the Egyptologists' radar. The Tyrian samples on the other hand, contribute to the question of the commercial exchanges under administrative control between the metropolis and Galilea.



Torpedo Jars between Levant and Egypt : prototypes and imitations by

Luisa Bonadies & Sylvie Marchand

The amphoras known under the name Torpedo or more commonly called Carinated-shoulder amphora were produced with many variations from the Bronze Age to the Middle East to the Punic era in the western Mediterranean. It is well known that these containers have been widely disseminated throughout the Levantine and Syrian-Palestinian area, archaeological researches conducted in the Nile valley have revealed massive imports of Levantine Torpedo from the 7th century BC in Egypt too. These jars finally disappeared in the first half of the 3rd century BC. During this presentation we will try to trace the route of dissemination of the Torpedo-type containers between Levant and Egypt, focusing mainly on the analysis of specimens unearthed in some Egyptian sites

of the Nile Valley and in the Western desert of the Bahariya and Kharga Oasis. A detailed study of attested forms will be conducted by making a comparison with the Near Eastern prototypes. We also propose to present here the results of analysis of the sources of clays, in order to identify the place of origin of these amphoras. The purpose of this section will be to trace a history of the places of production of the equipment reached the Nile Valley and the reasons for these selections. The last part of our presentation will be focused on the phenomenon of imitation carried out by Egyptian potters from the middle of the 4th century BC, with the production of several types of containers inspired by Levantine and Syrian-Palestinian traditions.



Phoenician-Punic amphorae from Tebtynis (Egypt), between Mediterranean imports and local imitation by Sylvie Marchand & Max Luaces

Tebtynis is a small village in the Fayoum area (Egypt), which occupies the central part of the vast archaeological site called Umm al-Brigat. The Greco-Roman sector (mid 4th BC - 3rd AD) includes residential areas, a temple, chapels and a necropolis. Habitats, dated between the middle and the end of the 2nd century B.C., have yielded several series of container which shape and fabric are quite particular. Classified as imported container of “Phoenician-Punic” tradition, the origin and economic importance of some of these amphorae is not well understood. Another important aspect concerns the growing problematic on the imitation of these Phoenician Punic amphorae in Egypt: recent studies have permitted to highlight the integration of the foreign amphoric tradition represented by those containers, in the Egyptian transport containers directory, during the Ptolemaic period. From the point of view of their morphology and fa-

abric, some Phoenician-Punic amphorae of Tebtynis sparkle with originality. These containers have a very specific profile, with no direct parallel in the typologies of Phoenician and Punic amphorae of the same period (3rd BC - 2nd BC). One could recognize a more oriental tradition, but an initial examination of their fabric is not conclusive with respect to their production in this sector. Iberian, Moroccan or Tunisian origin also seems have to be ruled out. But a provenance from the central Mediterranean is not impossible when observing the fabric. In addition, levels of this period offered few fragments of Iberian and Punic amphorae from the Western Mediterranean. The question arises about its origin, even so when knowing that it could have experienced a significant spread in Egypt. The period between the end of the 3rd century BC and the beginning of the 2nd BC was undergoing major political changes in the Mediterranean. Following



the first Punic War, most of the Carthaginian territories sector came under Roman control (Sicily and Sardinia). In the East, Phoenicia passed in turn under the control of Ptolemy and Seleucid. In one case as in the other, we are confronted to periods of political disorder that could have led to changes in the economic environment but are poorly understood

archaeologically. The study of the Phoenician-Punic material raises the difficulty of linking the two Mediterranean basins. As there is no certainty regarding the origin of some amphorae of Tebtynis, whether Eastern or Western, we have decided to try to compare experiences and knowledge on this material, through a IFAO's research program beginning in 2017.



Levantine-type transport amphorae in Cyprus during the Bronze and Iron Ages: Issues and Perspectives by Adriano Orsingher

The arrival of Levantine transport containers in Cyprus started as early as the Middle-Late Cypriot transition and continued without interruption over the 1st millennium BC, attesting the long-lasting trade of some precious commodities (e.g. oil, wine, resin and honey). After the work by A. Sagona in 1982 on the examples of the 13th to 4th century BC, analysis of Levantine-type transport jars in the Eastern Mediterranean have mainly concerned shorter periods of time and assemblages from single settlements. Despite the often-used expressions “Canaanite jars” for Late Bronze Age examples and “Phoenician amphorae” for Iron Age ones, the scenario is highly fragmented and various regions of the Eastern Mediterranean

were involved in the production of these containers during this time-span. The aim of this paper is to offer a diachronic, long-term, and updated overview on the Levantine-type transport amphorae currently attested in the island, analysing their typologies, spatial distribution, contexts, chronologies and main parallels in the Levant and the Western Mediterranean. The survey will follow a diachronic perspective, starting with a brief review of the evidence from the Middle Cypriot III and Late Cypriot periods. According to the goals of this conference, the focus will be mainly on the Iron Age evidence and its related issues. Assembling and investigating such an inventory will also allow us to point out perspectives and the next stages of the research.



Third Session.

North Africa

Nouvelles données sur les fabriques des amphores puniques provenant de Carthage, Hadrumète et Utique by Boutheina Maraoui Telmini

Les récentes découvertes à Carthage et Hadrumète viennent de révéler un nouveau matériel amphorique, issu de contextes bien datés, qui remonte aux époques puniques ancienne et moyenne. Des observations macroscopiques et microscopiques faites sur un échantillonnage de ce matériel ont permis une caractérisation préliminaire d'un certain nombre de fabriques locales notamment à Carthage et Hadrumète. Des investigations pétrographiques et archéométriques appliquées aux mêmes échantillons auront pour objectif de mieux caracté-

riser chaque production de point de vue minéralogique. Parmi celles-ci, apparaît à Carthage, une fabrique d'amphores archaïques restreinte aux contextes les plus anciens de la Cité, qui remontent exclusivement au 8ème s. av. J.-C. Des observations faites d'abord, sur les fabriques locales de Carthage, déjà répertoriées et étudiées, ensuite, une comparaison avec le matériel archaïque d'Utique nous ont permis d'envisager une possible présence, à Carthage, d'amphores utécéennes durant les premiers temps de la fondation phénicienne.



36 shekels of wine to New Carthage. The relationship between Amphora capacity and monetary standards during the Second Punic War by V́ctor Mart́nez Hahnmüller

The Hannibal's Amphorae, that is the Carthaginian amphorae repertoire from the late third century BC, will serve in this presentation as the basis for get a scientifically valid estimation of the Carthaginian agricultural resources available to supply its army from the exploitation of the territory directly under its rule since. The maximum capacity of each of these amphorae, obtained from a three-dimensional model of each complete documented model, has been placed in relation with the Carthaginian monetary standard of the late third century BC in order to help us to establish the actual capacity of the contain-

er that it was less than the maximum volume to prevent spillage of contents during the filling and transportation processes. After obtaining the hypothetical volume of these amphorae, we will calculate the Carthaginian surplus production by multiplying the index by the documented examples. Nevertheless, this will be, necessarily, a low estimate, since it is not possible to archaeologically document all the amphorae that were produced. Besides, through content studies that have been already done on many of these amphorae, we can even establish if they correspond to the surplus production of wine or oil.



The analysis of amphoras from Carthaginian settlement assemblages by Roald F. Docter

Since the publication of Joan Ramon Torres' typology of central and western Mediterranean Punic amphoras in 1995, the study of this class of material has progressed enormously. This certainly holds for Carthage, where settlement excavations have yielded stratified amphora fragments in huge numbers (Docter 2007; Bechtold, Docter 2011). In this presentation I return to an argument touched upon in reviewing Ramon's 1995 work (Docter 1999), i.e. the importance of fragmentary amphora assemblages for addressing economic-historical questions.

B. Bechtold, R.F. Docter, *Transport Amphorae from Carthage: an Overview*, in: L. Nigro (ed.), *The Phoenician Ceramic Repertoire between the Levant*

and the West 9th - 6th century BC. *Proceedings of the International Conference held in Rome, 26th February 2010 (Quaderni di Fenici-Punica)*, Roma 2011, 85-116.

R.F. Docter, *The Typology of Phoenician and Punic Transport Amphorae in the Central- and Westmediterranean*, *Journal of Roman Archaeology* 12 (1999), 485-492.

R.F. Docter, *Archaische Transportamphoren*, in: H.G. Niemeyer, R.F. Docter, K. Schmidt, B. Bechtold et alii, *Karthago. Die Ergebnisse der Hamburger Grabung unter dem Decumanus Maximus (Hamburger Forschungen zur Archäologie 2)*, Mainz a.R., 2007, 616-662.

J. Ramon Torres, *Las ánforas fenicio-púnicas del Mediterráneo central y occidental (Collecció Instrumenta 2)*, Barcelona, 1995.



Les amphores d'Utique et sa région aux époques phénicienne et punique by Imed ben Jerbania

Le progrès des recherches archéologiques en Tunisie durant ces dernières années a permis une meilleure connaissance des amphores commerciales et une identification de leurs origines. Toutefois, cette situation – malgré tous les éléments de réponse qu'elle a apportés aux épineuses interrogations liées au commerce et aux produits échangés – n'est valable pour l'instant que pour un site majeur à savoir Carthage. La rareté ou presque l'absence des études relatives aux niveaux phéniciens et puniques d'Hadrumète, Kerkouan, Leptis Minus et Thapsus, pour ne pas citer d'autres, ne doit en aucun cas nous rendre prisonnier des postulats qu'offrent les données carthaginoises. Ces derniers sites avaient certainement leurs propres productions et bénéficiaient d'une autonomie dans la gestion de leurs affaires commerciales. A travers cette participation à ce congrès sur les amphores phéniciennes et puniques, nous présentons les nou-

velles données qu'Utique, la première cité phénicienne de Tunisie, a apportées dans ce domaine. En effet les récentes fouilles des niveaux phéniciens de ce site majeur ont révélé un nouveau panorama sur la production amphorique. A coté des amphores levantines figurent celles puniques caractéristiques de la méditerranée centrale, mais aussi d'autres productions notamment sarde et ibérique. Nous souhaitons insister ici sur les premiers contextes datés dans lesquels ce matériel est associé à une vaisselle fine d'accompagnement, de différentes origines : grecque, orientale ou locale.

Durant la période punique moyenne et récente nous assistons à une profusion de la production à travers l'attestation de plusieurs formes surtout d'origine locale ou régionale. Le matériel funéraire d'Utique, mais surtout de la région de Bizerte apporte ici un éclairage intéressant sur ce matériel et sur son usage dans les tombes.



Fourth Session.

Sardinia

Punic Amphoras from Pani Loriga (Area A) by Tatiana Pedrazzi

In the Phoenician and Punic settlement of Pani Loriga, in Sardinia, a residential quarter on top of the mound (area A) has been discovered in the 2007-2011 excavations directed by Ida Oggiano (CNR-Italy). In a large room, more

than 15 complete Punic amphoras have been unearthed. A typological study of these vessels will be presented here, with some additional reflections on the contexts of provenance and the utilization.



Ricerche archeologiche subacquee nella Sardegna centro-meridionale: anfore fenicie e puniche, contesti, forme, contenuti e produzioni by Ignazio Sanna & Carla del Vais

Le ricerche subacquee effettuate nella Sardegna centro-meridionale durante l'ultimo ventennio, in ambito marino, portuale e lagunare, restituiscono un insieme di contesti di grande interesse, databili tra l'VIII e i primi decenni del II sec. a.C. I più significativi, frutto di indagini sistematiche, sono quelli individuati nelle aree di Cagliari, di Nora e nella laguna di Santa Giusta. Nello specchio di mare prospiciente la città di Nora sono state recuperate anfore databili tra VIII e VII sec. a.C., tra cui frammenti di contenitori carrenati del Circuito dello Stretto (T.10.1.1.1.; CdE 1A), frammenti di anfore di tipo Sant'Imbenia, altri riconducibili ai tipi T-3.1.1.1. e T-2.1.1.1.; tali anfore, tutte resinose internamente, possono attribuirsi al carico di un relitto attualmente inglobato nelle mattoni di Posidonia presenti a -30m di profondità. Nel medesimo settore sono state identificate anche anfore del tipo T-2.1.1.2., presu-

mibilmente pertinenti ad un contesto più recente. Anfore dello stesso tipo sono attestate anche all'interno del porto e nella rada di Cagliari, oltre che in un contesto, di recente individuazione, localizzato 4 miglia a sud della città e a -45 m di profondità. Nel Banco Sentinelle, 130 km a sud di Cagliari e a -180 m di profondità, è stata recuperata un'anfora del tipo T-2.1.1.1. quasi integra, forse riconducibile a un carico simile a quello del relitto di Gozo che trasportava contenitori dello stesso tipo associati ad altri coevi, tra cui anfore di tipo Sant'Imbenia. La localizzazione dei vari contesti arcaici individuati sembra riflettere concretamente le percorrenze marine preferenziali e le caratteristiche dei carichi eterogenei delle navi in relazione alle anfore e al loro contenuto. Nella baia occidentale di Nora è stato identificato un contesto misto databile al IV sec. a.C. che ha restituito anfore puniche di produzione lo-



cale (tipi T-4.1.1.3. e T-4.1.1.4.) e cartaginese (tipo T-4.2.1.2.), associate ad alcuni esemplari di anfore Gr.-Ita. IV ed egee, tra cui una corinzia B e alcune non ancora identificate. La medesima associazione di materiali, comprendente anche ceramica attica a vernice nera, è stata riscontrata in alcuni saggi di scavo subacquei condotti recentemente sottocosta. I due casi norensi trovano riscontro nell'areale cartaginese in contesti di IV secolo a.C., nei quali è stata segnalata l'alta percentuale di anfore sardo-puniche dei tipi T-4.1.1.3. e T-4.1.1.4. In merito al contenuto trasportato dalle anfore di produzione sarda, si segnala, sia nel caso cagliaritano che in quello norense, la significativa prevalenza di ossa pertinenti carni macellate di ovicaprino e di bovino, con buona probabilità destinate all'esportazione. Rispetto ai rinvenimenti terrestri, dove in larga misura i contenitori da trasporto risultano quasi sempre riutilizzati, nei rinvenimenti subacquei è possibile documentarne la funzione primaria. Le ricerche subacquee sistematiche eseguite nella

laguna di Santa Giusta, ubicata in prossimità del Golfo di Oristano, hanno permesso di individuare due grandi contesti del VI-inizio V e del III-II secolo a.C., oltre che materiali dispersi di V-IV secolo a.C. I giacimenti sommersi sono costituiti in gran parte da anfore da trasporto, le più antiche delle quali (tipi T-1.2.1.2., T-1.4.2.1.) sono disperse su un'area molto vasta, mentre quelle tardo-puniche (tipi T-5.2.1.3., T-5.2.2.1.) risultano concentrate in un settore più ristretto sovrapposto al contesto più antico. In molte delle anfore sono state individuate ossa animali principalmente di ovicaprino e minoritariamente di bovino e di altre specie faunistiche, spesso associate a numerose pigne, pinoli, vinaccioli, nocciole, noci, prugne e ad altri semi ancora in fase di studio. La maggior parte dei contenitori, di produzione locale, è di ottima fattura, con le superfici interne in genere resinata anche nei casi in cui esse contenevano carni macellate. In associazione sono stati identificati numerosi legni lavorati, ceramica comune e da cucina di età punica.



The Mediterranean exchanges of Neapolis (end of 6th and 4th centuries BC) by Elisabetta Garau

Between the end of 6th and 4th centuries BC the economic feature of Neapolis (Sardinia) is defined by an important presence of Punic amphoras, both imported – like from North Africa and Iberian peninsula – and presumably local. This context is also marked by the circulation of Greek, of Greek tradition, and Etruscan transport amphoras, that underlines the participation of this coastal centre to

intense Mediterranean exchanges and the continuity of some trade contacts already established. The analysis of these amphoras allows to reconstruct the framework of the exchange and the trade that involve this part of the isle and its economic organization. So we can try to understand the role of Neapolis respect to the hierarchical system of the territory and the presence of privileged exchange routes for this site.



Amphorae from Sant’Imbenia (Alghero-Sardinia) by Marco Rendeli, Beatrice de Rosa & Elisabetta Garau

The site of Sant’Imbenia has given back a large number of imported and local amphorae for the 8th and 7th centuries BC. The imported transport amphorae are related to Phoenician products both of North Africa (area of Carthage) and of Iberian Peninsula (Círculo del Estrecho), as the comparison between the technological characteristics and the morphological types of these productions shows clearly. The production and use of the Sant’Imbenia amphorae is one of the most ancient local type diffused on the Western Mediterranean

area. Derived from Levantine prototypes, it was spread all over this part of Mediterranean, notably Carthage, Utica and in various settlements of Southern Spain. We have carried out archaeometric analysis in order to define an identikit of clays from the Sant’Imbenia area and to analyze the technological process of production. The relation between archaeometric and archaeological research brings into light new data and trends about these transport amphorae and underlines the importance of the change in social and economic organization.



Phoenician and Punic amphoras from the waters of Nora (Sardinia). The recoveries of Michel Cassien (1978-1984) by Emanuele Madrigali

The paper offers an overview on Phoenician and Punic amphoras recovered in the waters around the Nora peninsula (Sardinia). The study focuses on several transport containers found through six extensive campaigns of underwater exploration and recovery directed by Michel Cassien and his team (Touring Club de France) between 1978 and 1984. The on-going project 'The Underwater Cultural Heritage of the city of Nora (Sardinia). Phoenician and Punic finds from the explorations of Michel Cassien' funded by the Honor Frost Foundation aims to analyse the large amount of Phoenician and Punic pottery from Cassien's underwater recoveries off the coast of Nora, the 'first city of Sardinia' according to Pausanias. Even though found in an extraordinarily good state of preservation, almost none of the recovered materials have been edited. More than forty amphoras, the majority

of which preserve the whole profile or a large portion of it, have been already studied in the depot of the Museo Civico G. Patroni of Pula. A chrono-typological analysis can be offered to identify the types of the vessels that were traded from/to Nora and consequently to highlight some essential phases for the historical and archaeological reconstruction of the development of this settlement. The analysis of the underwater recoveries increases our knowledge of the area when integrated with the material data from the several excavations and the surveys that have taken place on the mainland. The study of the fabrics of the different artefacts may shed light on the circulation of amphoras and the connections of this Sardinian centre with other Mediterranean communities from the second half of the 8th century. Moreover the analysis of the contents of some containers allows us to relate vessels to the



transport and consumption of foodstuff. The identification of bovine and ovine remains (François Poplin) and the association with seeds, charred timbers and resin (Philippe Marinval) provides evidence of the transport of meat and defined storage techniques to preserve foodstuffs. The chronological definition of the containers allows us to recognize

some coherent contexts. Thanks to an integrated study of the reports edited by Cassien, it is possible to reconstruct the positions of the objects recovered and to present a new reference map for a better understanding of local and overseas trade flows that affected Nora between the early Phoenician and the late Punic periods.



Le anfore di Olbia fenicia, greca e punica: quadro complessivo e problemi aperti by Paola Cavaliere, Rubens D’Oriano & Giuseppe Pisanu

Il lavoro intende fornire il quadro complessivo delle presenze di anfore ad Olbia (fenicie e puniche di importazione e produzione locale e importazioni dal resto del mondo mediterraneo), articolato lungo le fasi della storia dell’insediamento urbano: Olbia fenicia: metà VIII-terzo quarto del VII sec. Olbia greca: ultimo quarto del VII – fine VI sec. Olbia punica prima dell’area urbana ellenistica: fine VI – terzo quarto del IV sec. Olbia punica dalla nascita dell’ area urbana ellenistica alla romanizzazione: ultimo quarto del IV-II sec. Per “Olbia” si intende, in questo lavoro, l’abitato, la necropoli e il territorio di stretto riferimento, e i dati sulle anfore sa-

ranno considerati in blocco, senza differenziazioni topografiche. Lo spettro delle presenze sarà considerato in senso assoluto, e cioè senza fornire percentuali tra forme, tipi, produzioni ecc., salvo rari casi, poiché, stante la totale sovrapposizione della città moderna su quella antica che impedisce l’effettuazione di grandi scavi integrali, qualsiasi calcolo sarebbe comunque aleatorio. Oltre a fornire il quadro complessivo nei termini sopra indicati, ci si soffermerà sulle problematiche più rilevanti: flussi di commercio, rapporti con le importazioni anforarie non fenicio-puniche, produzioni locali, imitazioni, derrate trasportate, bolli olbiesi, usi particolari, ecc.



Fifth Session.

Iberian Peninsula and Balearic Islands

**Punic amphorae in the Northwest coast of
the Iberian Peninsula: Origins, distribution and
commercial dynamics by**

**Eduardo Ferrer Albelda, Josefa Rey Castiñeira,
Javier Rodríguez Corral, Antonio Sáez Romero &
Francisco J. García Fernández**

The study of Punic trade with the peoples in the northeast of the Iberian Peninsula is a recent scholarly phenomenon. In the closing decades of the 20th century, several excavations in the northeast have discovered products from the Mediterranean and also the southern regions of the Iberian Peninsula, especially the Strait of Gibraltar: e.g. glass beads, metal objects and ceramic containers. With some exceptions, these items aroused little interest among researchers; at best, the most representative, or those which were considered luxury products, were analysed in isolation, within the

framework of a prestige economy and always at a local level. It was not until the last decade that the first synthetic proposals appeared; the presence of these products was interpreted as a result of the commercial expansion of Gadir in the Late Iron Age. The role played by the receptor communities has also been taken into consideration. Amphorae have a significant presence within these ceramic assemblages, both in terms of geographical distribution and chronological representation, which spans virtually the entire II Iron Age and the earliest Roman presence in the northwest. They



can also be informative regarding consumption habits and food imports during different periods. A first analysis of these amphorae has begun, with the selection of a series of sites where these wares are abundantly represented; we have tried to represent all regions. The first analyses concerned material from the Rías Bajas (Vigo and Pontevedra) and the Rías Altas (A Coruña). Sites that have been systematically studied are Castro de A Lanzada (Pontevedra), Castros de Toralla and Punta do Muiño-Alcabre (Vigo), and materials from Castro Elviña and the Bay of Corunna have also been examined. The material chiefly consists of amphorae

from Cádiz. Their chronology, with some gaps, stretches from the late 4th century BC to the 1st century BC. In the final period, these wares coexisted with Italian imports, imitation Italian containers produced in the south of the Iberian Peninsula and the earliest Baetican productions. The target of our project is to analyse this process from a diachronic perspective, identifying the products, their provenance and their distribution, as well as the different phases, taking into consideration not only Cádiz's commercial dynamics but also the ongoing political and social processes that were taking place at this late stage of the Castreña culture.



The dissemination of the so-called “Late Punic” amphorae from the Circle of the Strait to ancient Gaul: a trade route which underneath Late Republican phenomena? by Max Luaces

The so-called “Late Punic” material represents a group of amphorae, produced in the area of the “Circle of the Strait” (Modern Southern Spain and Western Morocco regions), which was only recently discussed separately. The work of J.L López Castro has demonstrated the complex history of this Phoenician-Punic area during the Roman period. The founding studies of J. Ramón Torres and A. Sáez Romero have highlighted the specificities of the amphoric production from the Strait of Gibraltar region, in the second century B.C. onward. Thus, we observe the appearance of peculiar morphologies of amphorae in this sector, around 150 B.C. The amphoric repertory manufactured during this period is marked by a confusing mix of Phoenician-Punic (T-12.1.1.2), Punic (T-7.4.3.3) and Roman (adapted Dressel 1) amphorae. A certain number of

recent discoveries allowed to highlight the importance of these Late Punic containers in the amphoric production of the “Circle of the Strait”. Whether it is in the study of ceramic workshops in ancient Cadiz (“Torre Alta” and “Avenida de Portugal”), or those in Malaga (“Avenida Juan XXI-II” and “Calle Granada”), various excavations have shown that the Late Punic types represented a major productions during Roman period. Other studies carried out in Morocco concur to make us consider it was a regional phenomenon (“Kouass” and “Sala”). In the course of my PhD studies, I had the opportunity to observe the implementation of newly commercial circuits, during the Late Republican era. The study of several shipwrecks (“Chrétienne M2” and “Moines 2”), as well as that of several ground contexts (Ensérune, Narbonne,



Lascours and Nages), allowed me to identify the presence of a significant number of Late Punic amphorae. However, the fact that some of them are of Roman tradition (adapted Dressel 1) inferred numerous difficulties. These “adapted Dressel 1” was produced in the same workshops as other more Phoenician Punic types (“Avenida of Portugal”, “Gregorio Marañón” and “Avenida Juan XXIII” for Spain, and probably in “Sala” in Morocco). Moreover, the couple T-7.4.3.3 / Dressel 1 seems to have been the main component of the amphoric directory manufactured in the “Circle of the Strait” region between 110-70 B.C. Nonetheless, the connection of these “adapted Dressel 1” with a Roman tradition might have hid their origin. Both at the typological and epistemological level, the Late Punic amphorae represents a case difficult to consider. Because of its cultural and chronological ambiguity, it is not easy to identify and to interpret them (how should we identify an amphora close to the

Dressel 1 in the shape but with a stamp indicating the goddess Tanit? How to distinguish an adapted Dressel 1 of the strait from its italic counterpart, both being produced during Roman period? What’s to be done with amphorae stemming from a Punic tradition, like the T-7.4.3.3, but produced in Romanized contexts and stamped in Latin?). Nevertheless, the fact that this material is present significantly in Gaul invites to deepen its study. Furthermore, they could represent an illustration of complex phenomena, between the economical and political implication of the Phoenician-Punic elites of the strait in the Roman world and their progressive cultural integration. As such, they make a major object of study as much for those interested in the what has happened to the Phoenician-Punic populations during Roman times, as for those interested in the dynamics which have sustained economic and cultural integration of provincial populations in the Roman world.



The amphoras from Baria (Villaricos, Spain) by Jose Luis López Castro, Carmen Pardo Barrionuevo & Laura Moya Cobos

Modern excavations in Baria have offered stratigraphical information on the origins and typological development of the local amphoras production in the western Phoenician foundation. The maritime and terrestrial distribution of these barian amphoras is analyzed too in the paper in relation with Baria ancient trade between late 7th and late IIIrd centuries BC.



Punic amphorae in the interior of the Guadalquivir valley: Origin, distribution and contents by **Francisco J. García Fernández,** **Eduardo Ferrer Albelda & Violeta Moreno Megías**

After the so-called ‘crisis of the 6th century BC’, the Lower Guadalquivir Valley and, especially, the interior of the Turdetania, progressively joined the commercial circuits led by the city of Gadir. Indeed, from the late 5th century onwards the economy of the riverside emporia started to grow and became an outlet for the agricultural surplus produced by the interior farmlands. These products were commercialised and formed new typologies inspired by the Archaic containers (T-10.1.2.1), the so-called ‘Pellicer BC’ amphorae. These containers were also used for the importation of salted sea produce and oil from the area of the strait. This traffic back and forth became more intense in the 4th century, when Gadir lead became undisputable, and its products monopolised the Turdetanian markets. This position of privilege survived the Roman conquest and lasted until the reign

of Augustus, when the economy of the new province of Baetica changed its strategic orientation and even scale; this constituted a time when the Romanisation of amphoric production, which had started years previously, became widespread. It was only during the Second Punic War and after the Roman conquest that amphorae from further afield began to make their way into the Iberian Peninsula, for example Punic amphorae from the Central Mediterranean and the Graeco-Roman amphorae used to contain Campanian wine. At any rate, even in such cases the commercialisation of these products had to go through Gadir. The target of this paper is to analyse this process from a diachronic perspective, on the basis of the material recorded by excavations carried out in some of these centres, such as Spal (Seville), Caura (Coria del Río), Ilipa (Alcalá del Río), Cerro Macareno (La Rinconada) and



Itálica (Santiponce), all of which are in the province of Seville. In some cases, we have revised old excavations, but in others the excavations are recent and have provided a large volume of interesting but unpublished material, especially from clear consumption and abandonment levels. The stratigraphic and typological contextualisation and the macroscopic analysis of the fabrics is complemented by the results of archaeometric analysis carried out on specific assemblages. The combined use of physical-chemical techniques, such as petro-

graphic analysis on thin sections, XRD and XRF, provides new data on the imports that circulated in the interior of the Guadalquivir Valley, whereas residue analysis is a first approximation of the possible contents of the amphorae. The ultimate target of this contribution is, therefore, the study of the commercialisation of foodstuffs that were commercialised in Punic amphorae, the mechanisms of exchange involved, and consumption patterns in the Lower Guadalquivir Valley between the 5th and 2nd centuries BC.



Amphorae production and trade in the Western Iberia: an overview by Elisa de Sousa & Ana Margarida Arruda

Recent developments concerning the study of the Iron Age occupation of the Portuguese territory have provided a significant amount of new data related with amphorae production and distribution in the Iberian Western Atlantic front. In this paper we intend to present an updated overview related with the circles of distribution of the various types of amphorae identified across the Portuguese territory according to different cultural areas, particularly in Algarve and the estuaries of Tagus, Sado and Mondego. However, the most recent and in-

teresting findings concerning this theme are related to the identification of a new production area, located in the mouth of the Tagus estuary that operated throughout most part of the 1st millennium BC, even if apparently restricted to a regional scale. This specific case study is particularly significant providing interesting insights on the development of a regional production that operated outside the main distribution circles of the Southern Iberia throughout most part of the second half of the 1st millennium BC.



**Ánforas púnicas en contextos menorquines de
época postalayótica by
Helena Jiménez Vialás, Fernando Prados Martínez,
Joan Carles de Nicolás Mascaró &
Andrés M. Adroher Auroux**

In this paper we introduce the last data related to the punic amphorae from archaeological surveying at Torrellafuda at the last excavations at Son Catlar, two of them talaiotic sites which was occupied after this, in the last three centuries BC. This data will be compared to others belonging to the different contexts all over the Menorca Island from the same datation



**Local production of amphorae in Turdetania
during the II Iron Age: A typological, compositional
and commercial study of production and distribution
by Violeta Moreno Megías,
Francisco J. García Fernández &
Eduardo Ferrer Albelda**

Turdetania was strategically located between the Atlantic and Mediterranean commercial routes. The region underwent a spectacular period of economic growth in the II Iron Age. This period of prosperity lasted from the economic take-off of the 5th century until the Romans took effective control. In this context, the area that embraced the middle and lower courses of the Guadalquivir River and its tributaries, as well as the coastal zone that links the river with the straits, witnessed the phenomenon of agricultural colonisation and the associated development of ceramic industries which provided the necessary containers for the commercialisation of agricultural surplus. The emergence of the amphoric types should be linked to archaic Phoenician containers (T-10.1.2.1), which were

already known in the area and which constituted the beginning of a long process of evolution. In some instances, these shapes were being produced alongside Roman shapes until the 1st century BC. These local shapes are known as Pellicer B/C and Pellicer D, following the classification suggested during the exemplary excavation of Cerro Macareno. Over the long period of time in which these containers were in use, morphological evolution was constant, and by studying this evolution the influences and local peculiarities of different types may be noted. The last version of these types was the so-called 'evolved Pellicer D', a type with almost no lip. In this work we undertake a comprehensive analysis of these Turdetanian containers, including a revision of their complex typological variations and



the results of ongoing research. Moreover, a broad archaeometric study has also been undertaken for the chemical and petrographic characterisation of these containers and their possible contents. In addition, we have examined distribution networks that linked possible production areas – identified on the basis of the preliminary results of the archaeometric analysis and the scarce remains of production structures – with consumption centres, which dominated demand, and redistribution centres, which connected local routes with interregional network-

ks. The wholesale trade in foodstuffs revolved around Gadir, which was a major commercial node and also the cultural centre of the area around the strait of Gibraltar. These containers were not only found in the Lower Guadalquivir Valley, but reached a broad area from the Portuguese coast to Upper Andalusia. This indicates the commercial success of Turdetania, a region which was both fertile and commercially active, owing especially to the privileged trade route provided by the Guadalquivir River.



Amphorae production in Gadir: an update by Antonio Sáez Romero

After several decades of continued research, including excavations in stratified pottery workshops, archaeometric investigations and typological seriation, it is possible to provide an improved view of amphorae production in the Bay of Cadiz. Latest research grants archaeological data which makes possible to trace the main groups, from the Phoenician period to the Late Republican age, in which most of the Punic types ceased its production and were replaced by 'provincial' series almost fully Romanized. A significant number of workshops have been discovered and excavated in the insular hinterland of the city, mostly dating from the late-6th to the 1st century BCE, providing key information about the evolution of artisanal techniques and production trends. Also, recent archaeometric research has supplemented that information with new indications of the earlier stages of local pottery production (focusing both on amphorae and tablewares), and providing an ac-

curate fingerprint for the identification of local ceramics of the 1st millennium BCE. Based on these data and the analysis of pottery finds from other sites located around the bay (such as Cadiz itself, Castillo de Doña Blanca, Chiclana, etc.), a massive production of transport vessels in the insular ateliers can be suspected from the colonial stage and particularly during the 6th to the 1st century AD linked to the commerce of salted fish (and other secondary commodities such as wine). Consequently, the main goals of this paper will be: 1) the examination of 'families' and types from Phoenician to Late Punic times, introducing some unidentified variants; 2) present a panoramic view of the workshops; 3) results of the archaeometric approaches and exploration of future steps of the research; 4) Analysis of stamps and its role in production processes; 5) Contents, residue analysis and experimental archaeology (filling up and sealing of amphorae); 6) study the dis-



tribution of the amphorae from Gadir, considering some significant case studies; and finally 7) discuss some ideas about the economic and social relevance of the amphora trade and the maritime activities in the Bay of Cadiz during the 1st millennium BCE.



Sixth Session.

Sicily

From potter's kiln to seafaring: Punic amphorae from underwater western Sicily by Francesca Oliveri & Maria Pamela Toti

Described by the sources as both great sailors and crafty pirates, prime actors of maritime and commercial expeditions around the Mediterranean basin and the ocean routes, Phoenicians have linked their fate to the sea. In addition to the “endless shoddy” mentioned by the swineherd Eumaeus (Od.XV, 415-484), the undisputed protagonist of their ships was the amphora, common transport container of perishable food products, now a tool for archeology to trace the established network of Mediterranean connections identified in this remote area of Sicily. Though at present underwater discoveries of Punic amphoras are not very numerous, this work will examine published

and unpublished artefacts, both occasional finds and the results of systematic research, with special attention to those coming from the submerged causeway of Motya, from the wreck of Porto Palo di Menfi and the area of the Battle of the Aegadian Islands. Types are related to forms dating from the 4th century B.C. onwards, of which a good number of materials could be attributed to African productions. Notwithstanding the obvious limitations concerning the availability of information, we will try to relate the amphora materials of marine origin with those, similar in type, of terrestrial origin, found along the coasts or on the sea bed of Western Sicily.



Transport amphorae and the historical space - city - chora - hinterland by Rebecca Diana Klug

One result of Greek Colonisation was the increasing trade between Greece and the western Mediterranean; the amount of Greek imports is higher. The excavations and surveys show that the Greek vessels also reached non-Greek areas. Foodstuffs, like wine and oil, had been important exchange goods. Amphorae were used as transport vessels for liquid and solid goods. Amphorae are both most common and best preserved transport vessels. The different shapes are significant for their origin, not for the contents. All attempts to connect the shape to the content would mean reducing the export goods of one city or region to a single kind. The amphorae are therefore a significant object group to study the ancient economy; even if they are not the proper exchange good, but rather the package. South Italy and Sicily create the investigation area. Both were directly influenced by Greek Colonisation, because of the founding of colonies around the

coasts. These Greek settlements enforced exchange and contacts between different cultures, which can be seen in the changes to the material culture. The focus of this project is based on the Greek amphorae found in Greek and non-Greek contexts of the 8th-5th century BC in South Italy and Sicily and the information they give us about the type of exchange inside the Greek world on the one hand, and between the Greeks and non-Greeks on the other hand. It includes therefore also intercultural aspects and questions as much as non-Greek amphorae in Greek contexts, like Punic amphorae. It makes sense to divide the research into different parts, to study first the Greek settlements, the chora – the Greek hinterland – and then the non-Greek hinterland. It seems probable that the imported amphorae (including Greek, Punic and Etruscan amphorae) reached the Greek settlements first and were then distributed into the non-Greek areas. I will ask the fo-



llowing: Which amphorae types arrived in the Greek settlements? Was there a strong connection to the 'mother-city'? Or, does the distribution of the amphorae follow other rules? Do we have the same amphorae types inside the agricultural hinterland as in the settlements? And which types arrived inside the non-Greek areas in South Italy and Sicily?



La circolazione anforica nella Palermo punica (fine del VI-metà del III sec. a.C.): nuovi dati emersi da recenti scavi in area urbana e di necropoli by Babette Bechtold

La presente relazione focalizza il panorama delle anfore commerciali in circolazione nella Palermo punica. Recenti scavi di emergenza effettuati dalla Soprintendenza BB.CC.AA. di Palermo in area di necropoli (Crs. Calatafimi, Palazzo Orlando, Piazza Indipendenza) ed in contesto urbano (Piazza Bologni, Palazzo Steri) hanno restituito ca. 250 frammenti diagnostici di anfore da trasporto di cui la metà relativa a tipologie puniche per lo più di produzione regionale e l'altra metà composta da contenitori di morfologia greca soprattutto di importazione extra-regionale. Il materiale dai depositi urbani proviene maggiormente da strati di accumulo e di riporto databili nella prima metà oppure attorno alla metà del III sec. a.C., mentre i frammenti recuperati in area di necropoli appartengono a contesti relativi alla frequentazione o anche al disturbo di alcune tom-

be puniche, tutte rinvenute violate. La schedatura dei frammenti anforici qui in argomento è stata completata dalla documentazione di campioni di impasto esaminati secondo le norme standardizzate implementate per la banca-dati di FACEM. All'incirca il 60% dei frammenti databili si colloca nella prima metà del III sec. a.C. e il 10% fra l'ultimo terzo del IV e l'inizio del III sec. a.C. Solo il 7%, invece, appartiene ad una fase più antica, compresa fra la fine del VI e l'inizio del IV sec. a.C., mentre il resto del materiale non è attribuibile con esattezza a nessuno di questi periodi. I materiali presi in esame offrono quindi interessanti dati sulla circolazione anforica della Palermo punica nel periodo compreso fra l'età timoleontea e la conquista della città nel corso della prima guerra punica, caratterizzata dalla ripetuta associazione fra le serie puniche di produzione locale o soluntina e anfore sopra-



tutto di provenienza tirrenica, dalla Lucania e dal Golfo di Napoli. Specificatamente, i materiali palermitani hanno permesso di consolidare la nuova classificazione tipologia delle produzioni puniche di Panormos e Solus con particolare riguardo alla fase della prima età ellenistica che coincide con il momento storico della piena realizzazione dell'epikrateia cartaginese in Sicilia. Il seppur

piccolo insieme di anfore più antiche, invece, fornisce indicazioni utili, anche se ancora molte frammentarie, sulla compresenza, nella Palermo di età preellenistica, di contenitori da trasporto di produzione locale che afferiscono ovviamente soprattutto a tipologie puniche, ma che in alcuni casi imitano anche delle forme di anfore greco-occidentali.



Jars, burials and rituals. Ceramic caskets and funerary boxes in Phoenician mortuary traditions: new evidence from the excavations on Motya, West Sicily by Giacchino Falsone & Paola Sconzo

The use of jars and amphoras as funerary containers is largely attested in Phoenician burial customs both in the East and West. Such a practice goes back to an age-old tradition, as it occurs since early times in various cultures of the ancient Near East. In the Iron Age, when the rite of cremation was introduced in the Levant, it became a widespread phenomenon to bury the ashes and burnt bones of the deceased inside a pot of large size, especially amphoras. A case-study to be discussed here concerns the archaic necropolis of Motya, the main Phoenician colony in Sicily founded during the 8th century BC. Excavations conducted in the past had already shown that this early cemetery, located on the northern sea-shore of the island, was characterized by a large number of cremation burials, mainly dating to the 8th/7th century B.C. Around mid-6th century, when the town wall was built across, the cemetery was

apparently abandoned. This picture is now partially changed in the light of fresh data recently retrieved by the investigation currently undertaken by a team of Palermo University. Side by side with stone cists and plain rock-cut pits, cinerary urns are quite common in the early period. These mainly include two standard classes of jars: the first is a kind of transport hole-mouth amphora of ovoid shape, with round bottom and narrow collared rim. The second class is instead a kind of domestic necked jar, characterized by a globular body, flaring rim and horizontal handles, generally bearing painted geometric patterns. In an upper level, previously unknown, cinerary urns seem to disappear. Of particular interest is a group of transport amphoras with elongated body, containing child inhumations (*enchytrismoi*), thus showing a pattern quite rare in the West Mediterranean.



Sixth Session.

Posters

**The characterization and origin of the Carthage
Tophet funerary urns by
Dennis Braekmans, Brien K. Garnand,
Joseph A. Greene, Lawrence E. Stager &
Patrick Degryse**

Great variability exists in the quality and composition of the funerary urns found at the Tophet of Carthage (8th to 2nd centuries BC), a sacred precinct situated close to the mercantile and military harbours of Carthage. The significant differences in macroscopic features present problems as to where and how these urns were made. In general, issues in sourcing North African ceramic materials stem from their compositional homogeneity, with mostly sand and calcareous fractions varying to a greater or lesser degree. In fact, most clay sour-

ces in the immediate region of Carthage are remarkably similar.

Here we present the results of our current analysis of the ceramic materials based upon new data derived from analytical methods, such as optical and electron microscopy as well as chemical techniques (ICP-OES and INAA). By studying the Tophet ceramic assemblage from a *longue durée* perspective, we trace transformations in local and regional ceramic production, as well as discover patterns of exchange and developments in resource utilization.



Between Carthage and Rome: the island of Proratora in Sardinia by Paola Cavaliere, Jeremy Hayne & Giuseppe Pisanu

A short excavation in 2011 investigated two rooms that formed part of a larger stone walled structure on Proratora island, at the southernmost tip of the bay of Olbia. In primary deposits, alongside cooking and Black Glaze Ware, were found a large number of Punic transport amphorae. These amphorae dated between the end of the 3rd and mid-2nd BC can be mostly classified as Ramon T-5.2.1.3 (of probable local production), but also contained a distinct group of examples classifiable as Ramon T-7.4.2.1 from North Africa. Proratora is a small island with little agricultural possibilities, but with an excellent maritime posi-

tion. In what way can these many amphorae be interpreted? Were they used to store foodstuffs for local use? Or were they rather used to send material to markets further afield? Was this a stopping off point for goods on the way to the nearby city of Olbia? It may be that there was a possible production area nearby. This contribution makes a preliminary attempt to frame these finds, from a period that has been little studied in Sardinia, within the larger picture of Late Punic/Early Roman Sardinia in a phase when Romanisation had not yet altered the previous cultural and economic organisation of the island.



**Amphorae production in Punic and Late Punic
Malaca (Málaga, Spain). New evidence from the
Carranque workshop by
Cristina Chacón, Ana Arancibia,
Bartolomé Mora Serrano & Antonio Sáez Romero**

Construction of Line 2 of the local subway caused a salvage excavation in Avenue Juan XXIII during 2010-2011, an area in which previous work brought to light some evidence linked to pottery production dating from Punic and Roman times (the site was named in historiography as “Alfar de Carranque” or “Puente Carranque”). The site is located not far from the economic core of ancient Malaca (characterized by the port, cetariae and other pottery production centers), next to the former coastline in Antiquity, and can be linked to the commercial expansion of the city after the Late Archaic period. The most recent excavations revealed that the area was first used, perhaps as pottery workshop, as early as the 5th century BC, but primarily uncovered the remains of several buildings and pits dating from the late-2nd and 1st centuries BC. In

particular, the significant amount of pits and discarded pottery/wasters suggest a growth of this artisanal sector in that period, with a principal role of the amphorae linked to maritime trade of local salted-fish products. Most of them can be identified as local variants of type T-7433, but other forms such as imitations of Italic types (Dr. 1A y 1C, and perhaps Dr. 21-22) were produced in considerable quantities. Other buildings and pits dating from the Roman imperial period overlapped the earlier phases, and the workshop continued producing T-7433 amphorae, but mostly the typical regional types of the 1st c. AD (Dr. 7/11, Dr. 20, Dr. 14, Beltrán II, etc.). The activity in the area continued all along the imperial period (perhaps until the 5th c. AD) but there is no secure evidence of pottery production for this later phase. This paper fo-



cuses on the examination of the sequence of the site from the early Punic evidence to the Roman imperial period, and particularly on the contexts connected with the production of amphorae. The main goal will be to settle the chronology of the successive and overlapping phases characterized by buildings and pits (wastewater). Additionally, a preliminary

analysis of the production of amphorae and red-slip tablewares from the 5th century BC to the 1st century AD will make possible to propose some initial ideas about the evolution of the local economy and also suggest a comparative model of the artisanal trends with other main coastal commercial hubs of the region such as Gadir, Lixus or Carteia.



**Punic amphoras in the Pla del Rey
(Valldemossa, Mallorca) by
Guy de Mulder, Mark van Strydonck &
Johan Deschieter**

The Pla del Rey is located in the northern mountains, the Tramuntana, on Mallorca. W. Waldren, former director of DAMARC, excavated in the previous century two sites in this area. The site of Son Ferrandell Oleza was a settlement with a long occupation history. The neighboring site of Son Mas had a religious function and also an area, the so-called agora, where economic activities were located. In this contribution the results from a living area close to Talayot 1 in Son Ferrandell Oleza

and the finds from the 'agora' at Son Mas will be presented. Amphoras from Ibiza are dominating the imported goods, but there are slight differences between both sides. These differences in the importation of Punic amphoras seems to reflect the occupation period of both sites. In the excavated area at Son Ferrandell Oleza fragments of Punic amphoras from Central-Mediterranean origin discovered which lack at the so-called agora at Son Mas.



On some aspects of Iron Age Storage and Transport Jars from the Northern Levant by Lione du Piéd

Storage and Transport Jars from three sites in the Northern Levant (Ras el-Bassit, Ras Ibn Hani and Tell Kazel) have been studied as part of a local and regional Iron Age (ca. 1200-600/550) pottery assemblage. This type of complete assemblage study over a long time span enables the identification of continuity and changes in shapes, fabrics and manufacture methods. Also the

specific position of this group of pottery within the total assemblage and over time can be followed. Aspects like shape and fabric variety, distribution patterns can be used to reconstruct possible local and regional pottery preferences or even production centers. An attempt will be made to explain some differences and resemblances between the pottery repertoires of the three sites under study.



Punic amphorae at Euesperides, Cyrenaica by Kristian Göransson

In the 1999-2006 excavations at the ancient Greek city of Euesperides (modern Benghazi, Libya) large quantities of transport amphorae from the late Archaic to early Hellenistic periods came to light. The vast majority are local or imported Greek amphorae, but some 5% of the total amphora assemblage consists of Punic amphorae, which is more

than the imports from Italy and Sicily. Building on the author's study of the amphorae from Euesperides this short presentation aims at giving an overview of the range of Punic amphorae present at the site and discuss the patterns of trade between this westernmost of the Greek cities in North Africa and the Punic West.



Punic amphorae lids. Evidence of a particular class of pottery from central-west Sardinia by Jeremy Hayne & Peter van Dommelen

Recent excavations in central west Sardinia have shed much light on the life of rural Punic communities in the later 1st millennium. Since 2007 excavations by the university of Glasgow and Brown University (latterly supported by the museum of San Vero Milis) have revealed stratified deposits in several important sites; the Punic farmhouses of Truncu e' Molas and Pauli Stincus near Terralba and the site of S'Urachi, continuously inhabited between the Late Bronze Age and Roman period, near Oristano. These sites have produced a substantial number of amphorae

which are currently being studied. One class of material that has often been overlooked and mis-identified is the associated amphora lids which were probably used, not during transport, but during the storage period. A number of these have been identified from the Punic area at S'Urachi and research has produced evidence also from the other Sardinian sites. In this poster we present the evidence of these lids and their associated fabrics from these locations in parallel with studies carried out by our colleagues on the amphorae themselves.



Western Mediterranean Phoenician Amphorae Imports in the Northeastern Iberian Peninsula during the Early Iron Age by Eva Miguel Gascón, Jaume Buxeda i Garrigós & Peter M. Day

The Phoenician arrival to the Northeastern Iberian Peninsula, its network commerce and interaction with the indigenous communities has been a trend topic between the Protohistory researchers since the 1970s. It was in this moment when it was recognised the importance of these traders and it was left apart the traditional explanation that explained the introduction of structural changes that developed the Iberian culture just through the influence of the Greek colonisation. It is important to understand these dynamics in order to figure out the mechanisms that ruled the Phoenician economic system for the Western Mediterranean Sea. In fact, there are still questions to answer about the early presence of the Phoenician traders in this part of the Iberian Peninsula and why they did not establish themselves in a permanent settlement. Instead of that,

it seems that a long distance and regular commerce was their best choice but there is a lot of work to do in order to determinate if this system was ruled by a specific Phoenician colony or how it was directed. It is possible to identify this fluid and intense interactions between the Phoenician traders and the Early Iron Age communities because of the presence of the first wheel-thrown pottery productions, mainly amphorae, in the archaeological record of the indigenous contexts dated back to the seventh century – 575 BC.

Since 2002, the Universitat de Barcelona has been analyzing Phoenician archaic amphorae through chemical, mineralogical and microstructural analysis, in order to determinate the provenance and the technical characteristics of the different productions that arrive to the Northeastern sites of the Iberian Peninsula during the Early Iron



Age. There were sampled 122 amphorae of the sites of Sant Jaume-Mas d'en Serrà (Alcanar), Aldovesta (Benifallet), El Calvari (El Molar), Barranc de Gàfols (Ginestar) and Turó de la Font de la Canya (Avinyonet del Penedès). In this poster we present a total of 123 amphorae that have been analysed by means of X-ray fluorescence (XRF), X-ray diffraction (XRD), with selected samples analysed by means of thin section petrography (PE) and scanning electron microscopy (SEM).

The results that were obtained through this study permitted to identify up to 26 different productions. For some of this

groups was possible to determine their provenance and connect the Northeastern Iberian Peninsula with the production centers of Cerro del Villar and Toscanos. The panorama that is drawn with the presence of such a variety of productions can give us information about which was the type of commerce that the Phoenician were developing at the Early Iron Age and how were the colonies organising the exportation of there manufactured products. All of these clues can help us to understand the general economic system that changed the indigenous communities all around the Mediterranean Sea.



Late Punic amphorae in the Adriatic : the evidence of the finds in the Potenza Valley (Marche, Italy) by Patrick Monsieur

In contrast to the Tyrrhenian coast Late Punic amphorae seem very rare in the Adriatic region. Is it a question of invisibility and identification, or is their appearance only anecdotic due to a different commercial network? In the Lower Potenza Valley, the former ager Potentinus at the south of Ancona, survey and excavation revealed several fragments of Late Punic amphorae. A very peculiar type, the so-called ‘tubular’ amphora, was found in the ancient colonial town of Potentia, near present-day Porto Recanati, as well in the Italian excavations of the city center, as in those of

the Belgian mission in the west gate zone. In the survey of a neighbouring early colonial rural settlement close to the seaside another fragment turned up. In both cases the fragments were found together with locally produced Greco-Italic amphorae dated in the first half of the 2nd century BC. The presence of more ‘tubular’ amphorae in the East, especially in the débris of the destruction of Corinth in 146 BC where they were also found in association with Adriatic Greco-Italic amphorae, is crucial for their chronology and economic relevance.



Amphorae from the 1st millenium BC at Quinta do Almaraz (Almada, Portugal) by Ana Olaio

The archaeological excavations conducted at Quinta do Almaraz, in the Tagus estuary, between the 80's and 90's, revealed an extensive occupation of the 1st millennium BC, which extends at least since the 7th century until the end of the 5th BC. The site stands out for the antiquity that has demonstrated in the context of Phoenician influence of the Iberian Peninsula and for the importance it has revealed in the economical and political dynamics of the Tagus estuary. The amphorae from Quinta do Almaraz stand out as a broad, typologically diverse and diachronic extended set, thereby revealing a huge potential. The conclusions here summarized are the result of a thesis presented in 2015, in which were discussed the morphologies, suggested timelines and analyzed the manufactures of amphorae, among other issues. Several aspects were highlighted by the study of amphorae from Almaraz. Firstly, the clear

predominance of regional production, represented in 98.8% of the total set, bearing witness the regional production that has been demonstrated by other sites from the Tagus estuary. Three manufacture groups of alleged regional production were differentiated, with a similar matrix, homogeneous and non-calcareous, being one of them - 1A, the most well represented (91.5% of the total) - a very likely production from the area of Lisbon/Almaraz. In contrast, the shortage of imports, consistent with what was observed in the majority of sites from the Tagus estuary, suggests that these goods were quickly replaced by productions of regional origin. The amphorae imports in Almaraz are specimens from the south of Iberian Peninsula, namely six individuals from the 10.1.2.1. group of Ramon Torres and one from the series 11 of Ramon, all of them from Cádiz area. It was advanced the hypothesis of an early amphorae production in



Tagus estuary, starting in the first moments of the orientaling influence on the area, revealing a quick transfer of the technology and an apparently fast and spontaneous absorption of the new productive, culinary and social habits. Soon was also realized that the reality of the Tagus Estuary was quite unique, so the set was organized in order to highlight their specificities and characteristics of Almaraz's amphorae, stressing its variability and traits - although always articulating with the traditional typologies. From the extensive set of amphorae studied (442 NMI) were distinguished three broad morphology groups of regional production. The first and most well represented, with 326 individuals, derives from the models of the series 10 of Ramon (10.1.1.1 and 10.1.2.1.). Then there's a group of amphorae with clear similarities with the models from Andaluzia and Spanish Extremadura. And finally, in less representation, a group with great similarities to the series 11 of Ramon. However, there were

differentiated 19 variants within the various groups, and it was made clear that the set was not standardized, presenting a great variability within the same model. One of the features that demarcates clearly this lack of standardization is the large fluctuation of diameters and the morphological variability of edges within the same generic model. With this in mind, it was equated the hypothesis that several production centers of small size worked in Tagus estuary, presumably within or near the villages - being one of them probably in Almaraz, taking into account the presence of several ceramic prisms. Other findings withdrew from this study, particularly with regard to commercial contacts, the chronology of the site and even regarding the period of circulation of the different amphorae groups. The economic autonomy and supply capacity of the Tagus estuary, which seems to have been consolidated since the end of the 7th century BC, has become increasingly noticeable.



**Archaic Phoenician and imported amphorae from
Gadir: the Teatro Cómico site (Cádiz) by
Juan Miguel Pajuelo, José María Gener,
María de los Ángeles Navarro, Ester López Rosendo &
Mariano Torres**

The excavations carried out in recent years at Teatro Cómico site (Cádiz) have provided a good amount of amphora sherds from the c. 800 until c. 550 BC. In earlier layers, metropolitan Phoenician storage jars, Nuragic Sant'Imbenia type amphorae and Phoenician amphorae from coastal Mediterranean Iberia have been attested, lacking local productions. In later layers, the bulk

of amphorae are locally made in the Bay of Cadiz, although some Central Mediterranean Phoenician and Etruscan amphorae have been found. This phenomenon clearly shows a change of procedence of the amphorae in Gadir between the 8th and the 6th centuries BC that points out an economic change in that area and attests the introduction of olive tree and vineyard cultivation.



Another kind of salting, the salt-cured meat in the Phoenician Amphoras by Carmen Ana Pardo Barrionuevo

The Phoenician Trade of salted meat was one of the most important food trade goods in Antiquity, at least, from the seventh century BC. We can study this type of Economic activity through three key evidences: the direct preservation of the amphoras' contents, the chemical analysis of organic residues on inner surface of this special container and, indirectly, through the absence of specific anatomic regions in the

faunal studies. Moreover, since the second half of the sixth century BC, the association of each amphora type with an specific content and its identification in the Mediterranean sites, could be interpreted as an evidence of the importance of the redistribution of this products. Finally, in the scarce cases when we find the complete content of the amphora, we should be able to analyze the preservations recipes.



Phoenician and Punic Amphorae from S'Urachi (San Vero Milis, Sardinia) by Andrea Roppa, Emanuele Madrigali, Alfonso Stiglitz & Peter van Dommelen

The site of S'Urachi in west-central Sardinia was continuously inhabited between the Bronze Age and the Roman Republican period. Past research at the site has already shed light on the gradual transformations the settlement underwent throughout the Iron Age, when interaction with Phoenician newcomers resulted in substantial changes in the indigenous community. Since 2013 ongoing excavations, jointly supported by the museum of San Vero Milis and the Joukowsky Institute of Brown University have brought to light securely stratified contexts and a large assemblage of primarily ceramic material culture which enables us to understand human activity at S'Urachi between the 8th and 2nd centuries BC.

The ceramic functional cate-

gories which have been identified include a substantial number of Phoenician and Punic transport amphorae. In this poster, we aim to present an overview of amphora types and the main associated ceramic fabrics between the initial period of contact with Phoenician newcomers in the early 7th century BC and the late Punic period (2nd century BC). Particular focus will be given to amphora typologies, key contextual chronologies and ceramic fabrics to define and fine-tune the chronology of most recurrent amphora typologies found at S'Urachi. With this information we hope to contribute to reconstructing the long-term development of Sardinian and western Mediterranean trade networks, based on the association between ceramic fabrics and likely production areas.



Anfore puniche, macine e vetro egiziano dal relitto di Su Pallosu (San Vero Milis-OR) by Ignazio Sanna & Carla del Vais

Il relitto punico di Su Pallosu, indagato a partire dal 2001, è situato nel settore centro-occidentale della Sardegna, a nord del Golfo di Oristano e di Tharros; le prime indagini, concentrate nell'area di dispersione del carico trasportato, hanno messo in luce, oltre ad un gruppo di macine rotatorie semilavorate (tipo "pompeiano") comprendente metae e catilli, anche un rarissimo carico di vetro semilavorato consistente in piccoli ciottoli di colore giallo ocra e blu cobalto, destinati verosimilmente ad essere rifusi e trasformati in manufatti policromi. Si tratta indubbiamente di un rinvenimento di grande interesse, anche in ragione delle recenti analisi chimiche eseguite dal CNRS su alcuni campioni che hanno confermato un'origine egiziana del materiale vitreo. Per quanto riguarda le anfore, sono prevalenti gli esemplari di produzione cartaginese attribuibili al tipo T-5.2.3.1., comprendenti alcune varianti morfologiche e differenti tipi di

impasto, evidenziati in modo dettagliato dalle analisi eseguite nel laboratorio della Soprintendenza archeologica di Cagliari. I risultati ottenuti si allineano con quelli delle indagini archeometriche e archeologiche effettuate negli ultimi decenni da diversi ricercatori nell'areale nord-africano in relazione agli ateliers in cui venivano prodotte le T-5.2.3.1. e le successive anfore africane, quasi senza soluzione di continuità fino al III-IV seco. d.C. Sono stati inoltre recuperati alcuni esemplari frammentari di anfore puniche riferibili ad un tipo di produzione ebusitana (T-8.1.3.1.) databile alla fine del III-inizio II secolo a.C.; tale attribuzione si fonda, oltre che sulla caratteristica forma biconica del corpo con superficie scanalata, anche dall'analisi degli impasti e delle tecniche di lavorazione. La verifica delle superfici interne dell'intero lotto di anfore non ha evidenziato tracce di resina o di altri rivestimenti nel caso dei contenitori cartaginesi (T-5.2.3.1.),

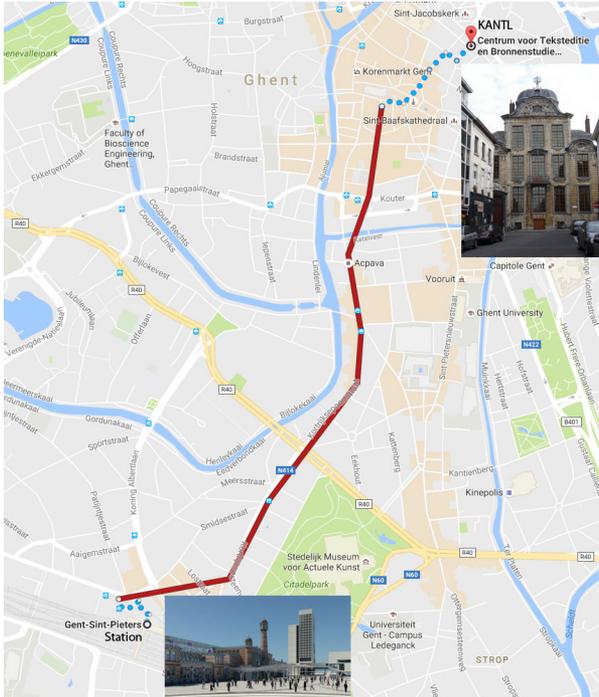


mentre residui di resina sono stati osservati al microscopio nei frammenti delle anfore ebusitane. Il lotto dei materiali rinvenuti comprende anche ceramiche comuni (bacini, coppe), attrezzature di bordo e di navigazione, elementi della struttura navale. Le indagini sono ancora in corso; il basso fondale e le condizioni ambientali hanno favorito intensi processi di carbonatazione che hanno coperto e cementato i materiali del carico ancora in giacitura, rendendone molto difficoltosi l'indivi-

duazione, la documentazione e il recupero. Sulla base dei materiali finora rinvenuti, il contesto può essere datato all'ultimo quarto del III secolo a.C. Pur considerando la limitata quantità di materiali identificati, il tipo di carico della nave punica di Su Pallosu richiama due relitti importanti, quello di El Sec (Maiorca), più antico e datato al secondo quarto del IV secolo a.C., e quello delle isole Sanguinaires, sul versante sud-occidentale della Corsica, datato tra fine III e inizio II secolo a.C.



Directions



CONGRESS VENUE.

Koninklijke Academie voor
Nederlandse Taal-&Letterkund
(KANTL)

1. Go out of **Gent Sint-Pie-ters** station and walk to the tram 1 platform on the left (just beneath the Vlaamse Overheid building – Virginie Loveling Building).
2. Take the **tram 1** in the direction of Wondelgem and exit at the Korenmar-

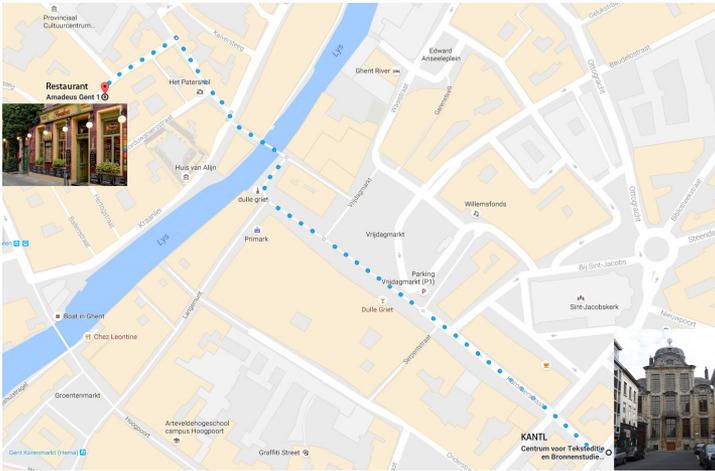
kt stop (you can buy a ticket with machine at the platform).

3. Walk along the small gardens on the right, turn left in the **Botermarkt** and proceed in the **Belfortstraat**.

4. Turn right in **Kammersstraat** and you will be arrived at KANTL (Centrum voor Teksteditie en Bronnenstudie - Koninklijke Academie voor Nederlandse Taal- en letterkunde).



1st Amphi-ras in the
Phoenician-Punic World Congress
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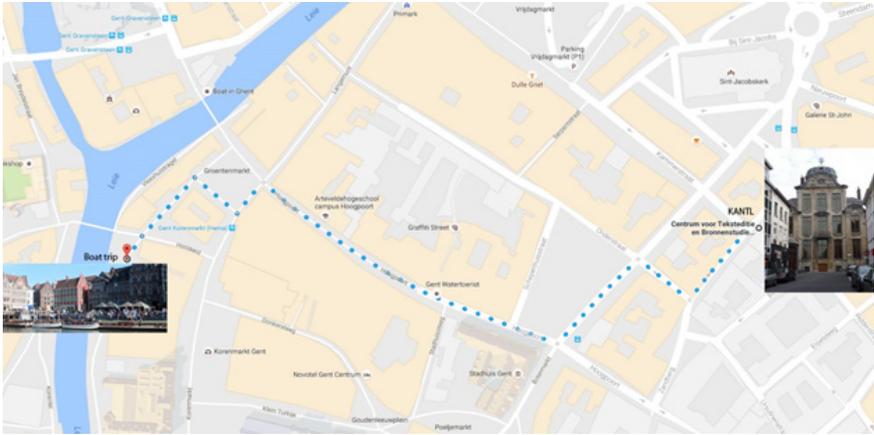
CONFERENCE DINNER

Amadeus 1 Restaurant (Patershol)

1. Go straight on **Kammestraat** and continue straight onto the **Vrijdagmarkt** till the large canon (**Dulle Griet**); turn right.
2. Cross the **Zuivel-**

brug and continue straight in **Rodekoningstraat**.

3. Turn left in **Plotersgracht** and you will be at Amadeus Gent 1 (Patershol).



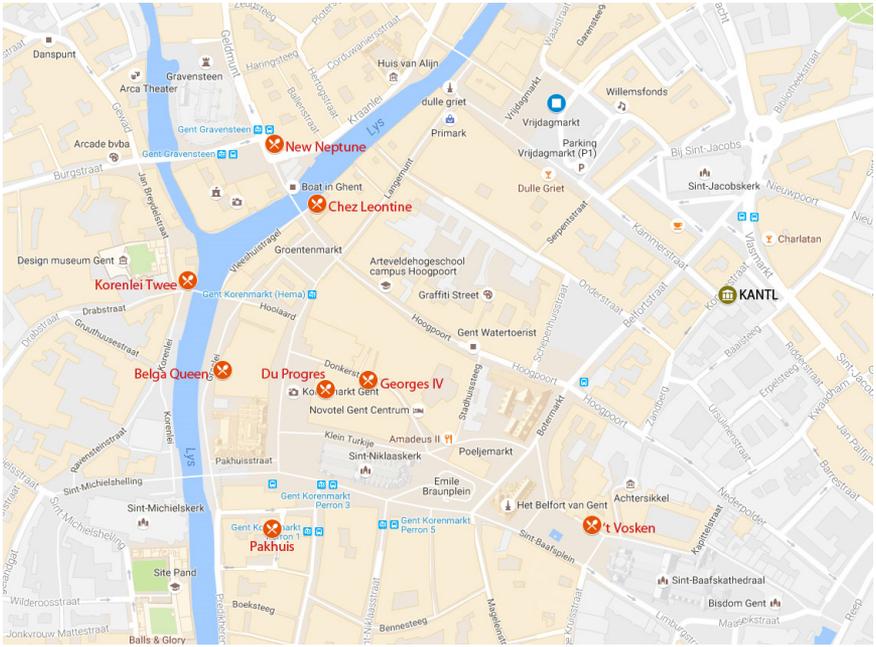
BOAT TRIP

1. Go left in the **Konings-
straat**, turn right in **Onderstraat**
and then turn left in **Belfortstraat**.
2. Turn right in **Hoo-**

- gpoort** and continue
straight for 260 metres.
3. Walk along the **Groot
Vleeshuis** on the right and you
will be at Gert Waterloerist.



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There are several restaurants located in the immediate surroundings of the conference venue. Many of them are in

the **Vrijdagmarkt** square, and the others marked on this map will not disappoint you either.



Sponsor, Comitees & Congress Staff



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Guy Dierkens
Paulien Fonteyn
Elenora van Brabant
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