Concluding Reflections

Simon Keay

Introduction

All of the papers presented at this conference were of the very highest quality and have ensured that overall this volume will make an important contribution to our understanding of Roman Mediterranean ports. Fréjus was a Roman fleet base and a major stopping point along the coastline of *Gallia Narbonensis* and Italy, and thus the results of the recent excavations at the port provide us with an excellent starting point for broader reflections about other such ports. These concluding reflections are an attempt to distil some of the main issues that emerge from all of the contributions. They take the form of eight major themes of pan-Mediterranean significance. While not comprehensive, they might form the basis of future comparisons and thematic discussions.

Theme 1: Origins of ports

While it is probably true to say that the majority of Roman Mediterranean ports had their origins in the pre-Roman period, particularly so in the Hellenistic East, there are a few exceptions that were created by Rome in the West, even if details of their earliest layouts are sometimes obscured by later phases of development: Trajanic Portus and *Centumcellae* are amongst the most obvious examples of this. The case of Fréjus is particularly complex, although important new considerations are presented in the paper by Rivet. The regularly planned structures that make up the earliest, mid- to late 1st century BC phases of occupation detected in the recent excavations of the Butte Saint-Antoine at the south-western side of the future harbour basin offer us a tantalizing glimpse of the very first Roman port buildings from *circa* 45 BC, through to the period when ships that had participated in the battle of Actium in 31 BC were stationed in the vicinity of Fréjus, down to the *deductio* of the *colonia* of *Forum Iulii circa* 29-27 BC. Around 15/14 BC the structures were consolidated into a major centrally planned complex, which is interpreted as a palace of the *praefectus* of the fleet based at Fréjus, whose base has been identified further to the south-west near the river Argens, even though there are no attested layers of occupation prior to the very end of the 1st century BC. While the role played by this complex cannot be clearly identified, it seems to have been official in some sense, and needs to be understood in relation to the complex of the platform at the north end of the harbour basin that was developed from the 20s BC. More broadly, this work illustrates the clear need for excavations at ports to reach foundation levels, even though this is often not easy on account of overlying structures or waterlogged deposits. The results of the excavations at the Piazza del Municipio in Naples (Giampaola and Carsana) are an outstanding example of best practice in this regard, with a combination of open-area excavation and geoarchaeological coring revealing a full sequence of the harbour basin down to its establishment in the late 6th century BC. Elsewhere, as at Portus, Elaia, Miletus and Ephesus, geoarchaeological cores drilled into deeply stratified deposits have identified the earliest levels of the harbour basins, even if the contemporary structures that would have been associated with them have yet to be reached by means of excavation.

Theme 2: Structural components of ancient ports

The moles and quays that defined the edges of harbour basins are the classic indicators of ports of all sizes and were given early prominence from discoveries made at Portus and Caesarea since the 1970s, and more recently through the ROMACONS project (2014), whose results are summarised in the paper by Brandon in this volume. Ongoing work at some of the larger Mediterranean ports continues to further our understanding of the scope of the technology of Roman harbour concrete. Research into the north/south mole at Portus (Bukowiecki and Mimmo) has revealed important details about the wooden formwork used to structure its *opus caementicium* mass, and its complex constructional

history. Beginning with Claudius and extended under the Severans and again in the mid- to late 5th century AD, one of its functions was supposedly to shelter the water space immediately in front of the north face of the *Grandi Magazzini di Settimio Severo* and the western façade of the *Palazzo Imperiale*. A similar technique of construction and complex structural development is true of the *Molo della Lanterna*, lying to the east of the north/south mole (Bermejo, Campos, Sebastiani and *alii*), and has been recorded by the Portus Project in the *opus caementicium* quay that bordered the south side of the Claudian basin a short distance to the north-east. Both of these cases act as a reminder that the harbourscapes of major ports were never static, but in a continual process of development, repair and regeneration. Since all of these discoveries were made along the uppermost levels of the quays closest to modern ground surfaces, they tell us little about the technique used for the construction of their foundations. Unpublished ongoing analysis of the northern mole of the Claudian harbour by the Portus and Portus Limen projects since 2017 has begun to shed light on this issue at Portus. Survey work along the western tip of the northern mole of the Claudian basin near the *pharos* revealed that the foundations (30 m wide and 7 m high) on the Roman seabed were built from massive basalt boulders, on top of which was added the *opus caementicium* body of the mole itself. Similarly, the monumental *opus pilarum* jetty at Fos-sur-Mer that was built directly onto the seabed may be another example, recalling perhaps the celebrated example at *Puteoli* (Pozzuoli). Another possible parallel for this can be found at Fréjus, where the foundations of the late 1st-early 2nd century AD *opus caementicium* north quay and southern jetty (Excoffon, **fig. 1**) were built from large stone blocks and reused stonework: the main body of the jetty was built from stone *petits appareils*, with the latter near the *Lanterne d'Auguste* having a stone balustrade running along the top.

But how common were these massive *opus caementicium* structures across the Mediterranean? The ROMACONS study of Brandon and Hohlfelder suggests that they were widespread, although recent work, particularly at smaller ports, implies that we should perhaps be more cautious, and that they may actually have been comparatively rare. A good example of what may have been more common construction materials is to be found in the excavations of the Piazza del Municipio in Naples, which provides us with one of the most complete examples of the harbour of a middling size port at different periods in time. The excavations have shown that the harbourside quay was built from a mixture of concrete and ashlar blocks, while the mole running out to the offshore island was a wooden construction (Giampaola and Carsana). At the small port of *Cissa* (Caska) in Croatia, boats were scuttled and filled with stones in order to create the foundations of certain stretches of the mole (Boetto and Radić Rossi) between the late 1st and mid-3rd century AD, a practice that has also been attested along the line of a canal near Narbonne and on the eastern stretch of the northern mole at Portus, amongst other places. However, perishable materials were also used at some of the large Mediterranean ports. Wooden structures that have been found at the bottom of the Great Harbour at Alexandria, for example, are an important reminder that perishable materials were also used for quays and jetties projecting into some of the larger harbour basins, either separately or perhaps in conjunction with concrete. It is thus important not to overestimate solid quays as opposed to beaches, offshore anchorages and causeways. The technology used at any particular port surely depended very much upon the geographical context and the role of the port, the availability of the best kinds of construction material, and in the case of the use of concrete, access to pozzolana.

Theme 3: Infrastructure related to navigation and shipping

The fragmentary nature of known Roman harbours means that much effort is often expended in tracing the edges of basins and canals, whereas relatively little attention has been directed towards understanding how these water spaces may have been used by ships and boats. The discovery of wrecks in situ is relatively rare, and although the papers in this volume discuss well-documented examples at *Neapolis* (Naples) (Giampaola and Carsana), *Cissa* (Caska) (Boetto and Radić Rossi) and *Massalia* (Marseille) (Corré), they tell us more about ship technology than how they may have moved across the basins themselves. It is clearly important therefore to understand the visual points of reference that mariners would have used on approaching the port and moving through its harbours and canals. This is an issue addressed by Christiansen in a paper that looks at the role of "lighthouses" in Roman ports, focusing specifically on Alexandria, *Patara*, *Lepcis Magna* and *Forum Iulii* (Fréjus) amongst other ports. He makes the important point that in some of these cases lighthouses may have occurred in pairs, helping to guide mariners entering the port, guiding them across the harbour, and also facilitating surveillance by port authorities. Nor should one forget that lines of sight for incoming mariners could also have been provided by standing columns of the kind that are known from Portus and *Puteoli*, as well as prominent buildings and other landmarks adorning the maritime façade of certain portscapes, perhaps best exemplified by the famous glass flasks that portray the seafront at *Puteoli*, referred to by both Lafon and Ardisson in their papers.

Our understanding of the location of shipbuilding and repair within Roman ports is very limited, although in many cases it probably lay away from the main harbour basin and out of the way. The only other harbourside buildings

specifically associated with ships were *navalia* in the western Mediterranean, or *neoria* in the east, sheds built for the sheltering of galleys. While the recent monumental study of shipsheds by Blackman *et al.* (2013) has contributed much to clarify our understanding of the character and development of these buildings in the Greek world, the archaeological evidence from the Roman period is virtually non-existent, with the possible exception of Massalia, mentioned by Corré in his paper, which as a Greek port is recorded as having had *neoria*, even though there are many pictorial representations of them and they are mentioned by Roman writers. The topic is revisited here by Baika and Carre, starting from a re-analysis of the archaeological evidence for the two long piered buildings of the mid-1st century AD, known as the "Hangars du Cavaou", in the Anse St-Gervais at Fos-sur-Mer, which have in the past been identified as *navalia*. The authors reject this hypothesis, and also suspend judgement on the identification by the Portus Project of the long building of Trajanic date adjacent to the *Palazzo Imperiale* at Portus as *navalia*. While there are strengths to the argument that the Portus building was indeed an imperial *navalia* (plan, position, architecture, nature of floor, finds and similarity to medieval *arsenale*), there are also weaknesses (likely but not certain gradient, subsequent reform) and contextual issues to consider (large scale in an imperial port which hosted detachments of the *classis misenensis*). We have to bear in mind, however, that so far very few military ports where we might expect to find these buildings (Ravenna, *Misenum* etc.) have been excavated sufficiently to produce evidence for navalia. One possible exception is the military camp outside the fleet base at Fréjus, where excavations have revealed a piered building of Augustan to mid-1st century AD date, which is usually interpreted as a *horreum*, but which might be *navalia*.

Theme 4: Economic implications of supporting port infrastructure

The successful functioning of port infrastructure was heavily dependant upon the continued supply of a wide range of materials and resources, which had major economic implications for the communities that frequented them. Although this is not an issue that is directly addressed by any of the papers in this volume, it is fundamental to our understanding of much of the port infrastructure that they discuss.

One imagines that the large amounts of wood used for jetties and stone for quays at regional and smaller ports, such as *Forum Iulii* (Excoffon) and *Cissa* (Boetto and Radić Rossi), would have been obtained locally. For the largest ports, such as Portus and *Caesarea Maritima*, the materials needed could not be obtained locally, or not in sufficient quantity, and would have to have been transported over considerable distances. At one level there were all of the materials that were needed for the construction of the *opus caementicium* quays and moles. Massive quantities of wood, lime, sand and material for the *caementa* were needed for lining the massive concrete harbour basins at the larger ports, thereby acting as a significant drain on municipal resources. The same is true of the stone, bricks and marble needed for the construction of the warehouses and the range of other buildings that made up the portscapes. The built environments of Ostia and Portus, for example, were constructed from millions of bricks manufactured in the brickyards of the Tiber Valley, while the marble came from quarries across the Mediterranean. Furthermore, as the excavations at *Neapolis* (Giampaola and Carsana) have so clearly revealed, and discontinuities in the sedimentary sequences from other ports suggest, harbour basins were prone to silting if they were not carefully managed, and needed to be dredged to ensure that they remained deep enough to accommodate ships of an appropriate draught. Recent work at Massilia (Corré), by contrast, has documented the continual infrastructural work that was needed to ensure the functioning of the harbour basin, as the economic demands upon it changed throughout the Roman Period.

Freshwater was another critically important resource, perhaps the most significant for the viability of a port, being needed not only for drinking and flushing out the sewage system, but also for the treatment of the hulls, decks and sails of ships moored or in dry dock. While local rivers and streams and rainwater provided an obvious freshwater source, the particular demands of Roman ports necessitated the transport of water over long distances by means of aqueducts. The proliferation of baths at ports such as Fréjus is a case in point, providing welcome respite for travellers arriving after a period of confinement at sea. This is particularly clear at Ostia, and Poccardi maps out the *thermae* built by emperors and imperial officials, privately owned *balneae* for paying public use, and the *balneae* for private use only. He also attempts to identify the freshwater sources that supplied them, notably from the local water table, rain, and freshwater that was transported by aqueduct from Colli Albani 13 km away to a point just south of Domitianic *castellum aquae* on the Late Republican wall circuit (Bukowiecki, Dessales, Dubouloz 2008). He also suggests that seawater was used for *thermae maritimae* on the seafront.

Theme 5: Representation and the portscape

The many published excavations that have taken place at Fréjus in recent years mean that it is emerging as an

increasingly clear example of a major early imperial portscape along the coast of *Gallia Narbonensis*. In terms of its monumentalised maritime façade, the papers in this volume provide us with important analyses of two well-known public buildings; the Villeneuve baths to the south-west of the port, and the baths at the *Porte d'Orée* further north, the latter at least making an important statement about the urban image to individuals arriving in the town by sea. These complexes are two of five known bath buildings at Fréjus and were built between the town walls and the harbour basin. They are discussed by Ardisson, who stresses differences between them, with the former probably originating in the military camp and having a hybrid layout but serving the western extramural sector of the port. The complex at the *Porte d'Orée*, with its richly decorated *natatio*, however, was a major monumental statement of the 2nd century AD, which transformed the maritime façade of the harbour proper and catered for travellers arriving by sea. Large public baths form an important constituent element at many Mediterranean ports from Carthage to Ephesus, even though the rationale for this is not yet entirely clear. At 2nd century AD Ostia, for example, some baths, such as *thermae della Marciana*, and many *balneae* concentrate towards the west, either implying a preference for seaside locations by inhabitants of the port, or a wish to provide a service for the travellers on ships moored offshore (Poccardi). Although most of the rest of the maritime façade of *Forum Iulii* is now lost to us, the discovery of fragments of a marine thiasos relief of the 1st century AD close to the edge of the harbour basin (Lemoine) is an indication that buildings overlooking it would have been decorated with reliefs and sculptures of deities with strong maritime connotations. Furthermore the discovery of dolphin capitals in different parts of the town is evidence that iconography inspired by maritime themes was probably quite widely spread across *Forum Iulii*.

Since all of these results, and even those from ports whose surviving architectural sculptural schemes are more complete or better known, like Ephesus and Lepcis Magna, are still incomplete, there have been various attempts in the past to draw upon iconographical evidence from coins, paintings and mosaics. In his paper, Lafon draws upon comments by Vitruvius and Pliny to argue that Romans made choices when representing ports on different artistic media, a practice that makes it difficult for us to interpret them. He rightly talks of the codified nature of these representations, which drew upon Hellenistic pictorial schemes. The many known paintings of ports, *villae maritimae* and sacro-idyllic maritime scenes from the Vesuvian towns and from Rome, for example, were elements of a symbolic language that needs to be deciphered by knowing viewers, rather than being a representation of reality which can be compared to archaeological evidence, and that they were informed by various maritime tropes. On the other hand, the relative positions of the buildings depicted on the Pozzuoli glass flasks seem to represent an attempt at a more literal representation of reality.

Coins are another important source of information about ports, although perhaps more in alluding to specific aspects of their topographies, roles, histories or presiding deities than as accurate representations of major buildings or elements of infrastructure (Grimaldi). *Forum Iulii* is thus represented on rare bronze issues by the Capricorn symbol of Octavian on the obverse, and the prow of a galley on the reverse, a likely reference to the use of the site of the future *colonia* as the destination of redundant ships that had belonged to the fleet of Antony and Cleopatra after the battle of Actium in 31 BC. Grimaldi analyses the images on issues minted by a wide range of ports, primarily in the Hellenistic East, but also less frequent examples from a smaller range of ports in the West. Of the latter, the *sestertii* issued by the emperors Nero and Trajan commemorating Portus are amongst the best known of all coin representations of harbours. The former is a very fine coin that seems to have been issued in AD 64 to commemorate the formal inauguration of the port that had been initiated by Claudius. Considerable attention to detail was lavished upon representing the structure of two moles that enclose the Claudian basin, highlighting differences that recent fieldwork suggests were an attempt to represent structural reality as the artist perceived it. The Trajanic *sestertius*, however, which was issued *circa* AD 112-4, portrays buildings around the hexagon that had not yet been built, suggesting that the issue of the coin may have been timed to announce completion of the harbour basin (Keay & Woytek 2021, forthcoming), rather than for the construction of the buildings which surrounded it, and which were probably not completed until sometime around AD 117-120.

Theme 6: Artisanal activity and commercially related infrastructure

These two issues are vital to the successful functioning of ports, as indeed to all Roman towns, although our understanding of them is limited by the visibility of the archaeological and epigraphic evidence and our interpretation of it. Gaucher's discussion of the two major *dolia* enclosures on the boundary of the port basin at Fréjus is a reminder that there were a whole range of activities that supported the needs of the urban population, those of traders exporting and importing through the harbour, whose position, range and location remain unknown. Indeed, the same paucity of information and understanding is sadly true for most Roman Mediterranean ports, except for such sites as Ostia and Pompeii, where excavations have uncovered many likely workshops, although even here the kinds of artisanal activity and its development over time is still imperfectly known. Perhaps the key elements of infrastructure were the warehouses and storerooms,

which underpinned the storage, accounting and control of merchandise moving through the port, and which are being successfully identified at many other Mediterranean ports, particularly at Ostia-Portus, but also at regional ports ranging from *Tarraco* and Marseille to the west to at *Patara* and Ephesus to the east. Notwithstanding these challenges, Rougier's paper looks at artisanal and commercial activities from the perspective of the epigraphic evidence. She highlights the exceptionally rich textual record from Ostia-Portus, and to some extent Arelate and Hispalis, and the poorer record from Aquileia and Narbonne, reading into this some kind of indirect reflection of the broader relative economic and commercial strengths of all of these ports. Gaucher's paper also raises issues as to whether there was any kind of zoning in the siting of production and storage facilities at ports, with storage areas close to harbours for transhipment, and monumental and residential areas further away, or whether in some exceptional cases there existed an overlapping of the functional/commercial and the monumental sectors of ports.

Theme 7: Administration

This is a subject which was not directly addressed by any of the papers at the conference, but which is nonetheless key to our understanding of the financing and organisation of harbour activities. One of our main challenges is that, except for occasional literary references, our main source of evidence for this is epigraphic. Aside from the exceptionally rich epigraphic repertoire of Ostia-Portus and Ephesus, and to a far lesser extent a small number of exceptional texts from *Arelate* and *Hispalis*, all of which are summarised by Rougier in this volume, there are very occasional references to office holders with port-related duties, on account of these not being considered to have been offices worthy of mention on inscriptions that recorded municipal careers, or rare records of donations by communities or individuals on various elements of port infrastructure. As Arnaud has recently argued (2020), in general, harbours and their associated infrastructure were financed and administered by the urban community to which they belonged, with only rare interventions by provincial authorities or the emperor. Using archaeological evidence alone for layout and function of buildings without associated epigraphic evidence as a way of arguing for an administrative role, even though this is admittedly rare, is thus potentially hazardous. Nevertheless, as Rivet notes in his paper, the early date, scale, layout and position of the Butte Saint-Antoine site and the platform at the south and north limits of the harbour's edge argue for some kind of official function in the context of *Forum Iulii* acting as a fleet base from the late 1st century BC. In a similar vein, one should note the broad similarities between the position of Butte Saint-Antoine relative to the harbour basin at Fréjus and the position of the imperial villa to the Claudian basin at Portus, and that of the Forte Michelangelo villa complex in relation to the outer basin of *Centumcellae*. The former was almost certainly used by the imperial administration and, of course, the emperor, while there were strong imperial associations at the latter, and *milites* from the *classis* at *Misenum* were found at both ports.

Theme 8: Port Systems

One of the major conceptual advances of recent years has been the realisation that ports cannot be understood in isolation from a range of smaller coastal settlements, anchorages and terrestrial sites. Instead, they are best contextualised within a network of related settlements with whom they shared a range of functions, such as mooring, production and storage. One of the clearest examples of these "port systems" is to be found at Narbonne, a town whose river port was served and supplemented by a network of maritime and terrestrial sites situated around the shoreline of the *étangs*. The paper by Duperron and Sanchez illustrates an aspect of these, presenting the *dolia* complex and lighthouse at Saint-Martin near the coast, and the complex of anchorage, warehouses, fishery, possible *villa maritima* and road at Port-la-Nautique closer to Narbonne. Sites such as these are key to understanding not only the distinctive nature of the "port" of Narbonne in particular, but are also important for the concept of port systems more generally. Similarly, Fos-sur-Mer and its connections by the *Fossae Marianae* to Arles provides another good example of a port system. Further afield, Ostia, Portus and the chain of Tyrrhenian ports south to *Puteoli*, the ports along the coast of *Africa Proconsularis* south of Carthage, and the maritime facade of Pergamon in the east are further examples. Together, they emphasise the need to move our focus of enquiry away from ports as nodes and to see them instead as forming part of complex interfaces between land and sea, as port systems. These worked at different scales and underwrote a network of interrelationships along and between coastlines across the Mediterranean.

Reference

Arnaud, Keay 2020: P. Arnaud, S. Keay (eds), *Roman Port Societies: The Evidence of Inscriptions*, Cambridge, CUP, (British School at Rome Studies), 2020, 455 p.

Blackman *et al.* 2013: D. Blackman, B. Rankov, K. Baika, H. Gerding, J. Pakkanen, *Shipsheds of the ancient Mediterranean*, Cambridge, Cambridge University Press, 2013, 597 p.

Bukowiecki, Dessales, Dubouloz 2008: E. Bukowiecki, H. Dessales, J. Dubouloz, *Ostie, l'eau dans la ville : châteaux d'eau et réseau d'adduction*, Rome, Ecole française de Rome, (coll EFR 402), 2008, 260 p.

Keay, Woyteck forthcoming: S. Keay, B. Woytek, The PORTVM TRAIANI sestertii: an archaeological appraisal, submitted to *Journal of Roman Studies*.

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Illustration de 1re et 4e de couverture

Décor peint sur toile : L'extrémité de la jetée méridionale du port de Forum Iulii (détail) © Vincent Fichaux

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Les ports dans l'espace méditerranéen antique

Fréjus et les ports maritimes

Au cours des années récentes, plusieurs projets de recherches et de fouilles programmées, associés au développement de l'archéologie préventive, ont renouvelé régulièrement nos connaissances relatives à l'archéologie portuaire, aussi bien en France que dans l'ensemble des pays du pourtour méditerranéen. Les actes du Colloque international de Fréjus (novembre 2018) abordent de nombreux thèmes portant aussi bien sur les aménagements et les fonctions spécifiques de ces lieux d'échanges que sur les transformations du milieu naturel. La première partie est consacrée à l'examen des éléments structurels des ports antiques : les modes de construction, certains aménagements (notamment les phares), les parcours des hommes et des marchandises sont envisagés par le biais de l'étude des techniques – y compris de l'archéologie expérimentale –, de l'épigraphie et de l'iconographie. Dans une seconde partie, autour des nouvelles données sur le port de Fréjus qui constitue le point central de ce dossier, des études de cas concernent divers ports de la Méditerranée occidentale en Narbonnaise (Marseille, Fos, Narbonne) et en Italie (Ostie/Portus, Naples). Elles mettent en lumière la diversité des solutions techniques et fonctionnelles adoptées pour répondre au mieux aux contraintes ~~physiques et fonctionnelles~~ que pose l'aménagement de ces infrastructures littorales destinées à accueillir des navires, mais aussi les pôles autour desquels s'organise le système économique, social, administratif de la cité.

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Les ports dans l'espace méditerranéen antique

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Les ports dans l'espace méditerranéen antique

Fréjus et les ports maritimes

sous la direction de Marie-Brigitte Carre et Pierre Excoffon

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Étude de cas. Autres ports de Méditerranée en Narbonnaise et Italie

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