



McDONALD INSTITUTE MONOGRAPHS

# The Isola Sacra Survey

## Ostia, Portus and the port system of Imperial Rome

Edited by Simon Keay, Martin Millett,  
Kristian Strutt and Paola Germoni



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*With contributions by*

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# Preface

Carlo Pavolini

The survey that is published in this volume forms part of the Portus Project which is directed by Simon Keay. This initiative followed on from the overall 1998–2004 survey of Portus (Keay *et al.* 2005) and, since 2007, has produced several benchmark publications (eg. Keay and Paroli 2011).<sup>1</sup> It is an initiative conducted in close collaboration with the *Soprintendenza Archeologica di Ostia*, now the *Parco Archeologico di Ostia Antica*. The contribution of the latter to the publication is recognized by the presence of its archaeologist Paola Germoni, who is one of the four editors of the book, and who also co-signed the introduction, oversaw the preparation of other parts of the book, and took part in the drafting of its text (see below), along with Simon Keay, Martin Millett and Kristian Strutt.

In the first years of its activity, the Italian-British research programme was focused upon the imperial harbour basins to the north of the Tiber delta at the site of Portus and in its hinterland. They produced extraordinary results, for an idea of which one only needs to refer to the essential works mentioned in the previous paragraph. But in turning specifically to the Isola Sacra – where the results of the research are no less exceptional, as we shall see – the greater part of the work was undertaken between 2008 and 2012, with the collaboration (apart from the *Soprintendenza*, now the *Parco Archeologico di Ostia Antica* by virtue of its responsibilities to protect its cultural heritage) of such scientific institutions as the British School at Rome, the Universities of Southampton and Cambridge, and many other institutions and scholars of diverse origins and specialisms.

The difference between the survey of 1998–2004 (Keay *et al.* 2005) and that published here is fairly clear. The objective of the former was to study an area that had been built-up in antiquity, in some areas densely, while the latter is a landscape survey that has as its setting an area of c. 98 ha that we could define as ‘free’ of structures. However, this was only ‘free’ in a certain

sense: the authors of the introduction make it clear that while the lands of the Isola Sacra are largely used for agricultural purposes today, there is also a large presence of houses, warehouses and other structures, as well as drainage channels relating to the *Bonifica* (drainage programme) of the early twentieth century and trenches for electric cables etc, all of which have inevitably conditioned a survey based upon geo-detection methodologies. While undertaking the survey, the archaeologists also had to take into account periods of time when fields were fallow or used for pasture.

A separate debate concerns the serious problem of illegal building. Nowadays, this is less prevalent and more controlled across the land area of the ancient Isola Sacra on account of various land protection measures; unfortunately, however, it is still widespread across the land which extends as far as the present-day coast of Fiumicino, and which corresponded to the sea in antiquity. It is also responsible for the current state of the banks of the watercourses which define the Isola to the north-east and to the north-west (in other words the Fiumicino Canal, or ‘*Fossa Traiana*’, and the Tiber itself), which are cluttered with workshops for boat repairs and other often illegal installations. It is a situation that is lamented by the authors and which only leaves free the area of the Capo Due Rami, which corresponds to the north-eastern angle of the Isola.<sup>2</sup>

I will not detain myself on the numerous details provided in the text. This is the case of the ‘traditional’ sources discussed in Chapter 2, in which are included, for example, maps before and after the flood of 1557,<sup>3</sup> and aerial photographs from 1911 (Shepherd 2006) down to the Second World War (R.A.F. and *Aeronautica Militare Italiana*) and subsequently (S.A.R.A.-*Nis-tri*). Amongst these sources, those that derived from archaeological research undertaken before the start of the Portus Project stand out, and the description of them by the authors of this book forms a cohesive whole in the context of a review of the topography of

the Isola as traditionally understood. Some of these are very well-known sites, such as the *Ponte di Matidia*, the *Basilica di S. Ippolito*, and the building identified as the *Isaeum* of Portus, a hypothesis which the authors support, to my mind correctly. Above all, the famous *Necropoli di Porto*, otherwise known as the Isola Sacra necropolis, which has been the object of excavations since the time of Guido Calza,<sup>4</sup> and which was given this name at a time before other burial areas, often of a similar size, had been uncovered in the vicinity. At this point, it is useful to mention the important Gazetteer of Sites, an appendix to the volume prepared by Paola Germoni, which lists discoveries of every kind from the Isola Sacra, collated not only from earlier publications, but also from official archives, including the old *Giornali di Scavo*, accounts sent to the *Ministero*, unpublished notes produced by members of the *Soprintendenza* etc. It consists of 52 sites that are distinguished with the symbol G (G1, G2, etc) that are located on the map Fig. 2.11.

I do not wish to reflect upon the methodologies used in the survey (Chapter 3, which like Chapters 6 and 7, was written by Keay, Millett and Strutt), not least because I do not feel sufficiently competent to do so. Correctly, this is a very technical account which will surely be of great value to experts who specialize in the application of non-destructive techniques to the study of ancient landscapes, an area of expertise which is going through a period of continual development. In the case of the Isola Sacra, therefore, the use of aerial photographs was accompanied by the study of satellite images and LiDAR data, the latter being a form of aerial laser scanning. I have already referred to the topographic survey undertaken between 2008 and 2012, and in Chapter 3 it is mentioned again, providing numerous technical details; the same is the case for the approach taken by the main form of geophysical survey undertaken in the Isola Sacra, namely magnetometry.

Up until this point, I have reflected upon the methods used in the survey. The following chapter, however, examines the results, which are presented on a method-by method basis: the results obtained from the gradiometry - effectively the interpretation of the geophysical anomalies, those from Ground-Penetrating Radar (G.P.R.), aerial photographic evidence and LiDAR coverage. The outcome of all of this fieldwork is provided by the splendid set of images, all of a high quality and definition, that are amongst the greatest merits of the book. It is logical that within its broader iconographic repertoire, and over and above the many photographs provided, the drawings should be of overall importance, particularly the plans. To give just one example to illustrate my point, the plan in Fig. 4.2

reproduces the general 'mosaic' of the 33 rectangular areas in which the area covered by the Roman Isola Sacra was divided in order to present the results of the survey. Area by area, the successive figures present the results obtained by means of the different (and integrated) techniques that I briefly describe above. Thus, for instance, Fig. 4.4 (which corresponds to Area 1, which represents the northern sector of the Isola Sacra between the *Basilica di S. Ippolito*, the '*Fossa Traiana*', and the *Ponte* and *Terme di Matidia*) synthesizes the results from the gradiometry and the discoveries made before the survey, which are superimposed upon the layout of the modern landscape, which is represented in a lighter colour.

In any event, the author of the preface to a book does not need to describe the results point by point, as this would be both repetitive and boring. For a book as rich and complex as this one, it was necessary to try and understand its overall structure and to focus upon specific issues. Now that I have done this, I would like to concentrate upon several specific points about which it seems to me possible to put forward some personal reflections, in some cases. There are also the issues relating to the most 'revolutionary' discoveries provided by the Portus Project in relation to the historical and archaeological study of the Isola Sacra in recent years.

Pride of place amongst these goes to the discovery of the canal which crossed the whole of the island from north-west to south-east: this had already been reported in previous years,<sup>5</sup> but is only described in detail and with the benefit of full documentation in this volume. Thus, the Portus to Ostia Canal not only occupies the whole of Chapter 5 in this book, but also acts as one of the key factors underlying the new interpretation of the topography of the ancient island. In the conclusions, the authors define it as the most ambitious work of infrastructure and engineering documented on the Isola Sacra, with evident implications for the history of the entire port and urban system that had the mouth of the Tiber as its fulcrum. And it is right that the editors refer to it as the Portus to Ostia Canal, and not *vice versa*; this might seem to be purely a question of terminology but for them, however, it confirms the absolute centrality of the creation of the Claudian and Trajanic basins (and the settlement which developed around them) within the context of the transformations of the entire coastline which they brought about during the first and second centuries AD.

The mouth of the northern end of the canal was cut into the southern quay of the '*Fossa Traiana*'. Significantly, this point lay opposite the mouth of the *Canale Romano* on the northern side, a canal which



ran eastwards in an arc in the direction of the Tiber (see the topography of this in Fig. 1.2). The Portus to Ostia Canal was the widest<sup>6</sup> of all those that have been located so far at Portus and in its vicinity since the publication of the 1998–2004 geophysical survey. It is not worth going into detail here about the geological and geoarchaeological research that has defined its characteristics, and which has been the result of work of experts on the prehistoric and protohistoric phases of the fluvial and coastal phases of the Tiber delta, such as F. Salomon, J.-Ph. Goiran, A. Arnoldus-Huyzendveld† amongst others. The boreholes, already published in part and now interpreted as part of a stratigraphic sequence in their broader context, were drilled in part between 2011 and 2013, and completed in 2017.

Turning attention to the historical aspects, and in particular hypotheses about ship draught and navigability, it is very interesting to learn that the canal could have been used at least in part by commercial ships of considerable tonnage equivalent to, for example, the 150-ton vessel on display in the splendid museum of the *Bourse* at Marseille. While it is true that this water route seems to have been crossed by a road and thus a bridge at a certain point, it is possible that this may have been a mobile installation. Moreover, the question as to whether the Portus to Ostia Canal was used for navigation alone or whether it also served to relieve Tiber flood waters, remains open.<sup>7</sup> Another major problem to confront us concerns the southern end of the canal. One cannot state with certainty that it flowed into the Tiber opposite Ostia, or directly into the sea; the various possibilities can be seen in Figs 5.1, 5.2 and 5.7. The writers would seem to favour the first possibility, not unreasonably. This issue is so important that it recurs several times, as well as in Chapters 6 and 7, where it is noted that in all the hypotheses noted above, the interplay of currents and the silt transported by the canal would have created difficulties for manoeuvring ships and made it difficult to establish a river port in this sector.

Nevertheless, a first conclusion concerning such a new and unexpected feature of the topography of the Isola is its chronology. In the volume it is argued that the watercourse was created between the end of the first and the beginning of the second century AD, an obvious coincidence with the grandiose Trajanic engineering enterprise at Portus; in the conclusions of the book, the dating is further refined to a date of somewhere between AD 110–120, with a final completion during the reign of Hadrian. Its disuse, however, would have begun between the late second and the beginning of the third century AD: this is an interesting suggestion which could be taken to support those

arguments which have suggested that the first signs of the decline of the port system at the mouth of the Tiber – referring to Ostia, however, and not Portus – were already becoming manifest in the Severan period (see below). This therefore means that the canal would have been in full use for a relatively short period of time, perhaps a century or so; in the conclusions, it is argued that after this, the authorities were clearly not able to manage dredging operations, and the canal silted up, perhaps in the course of the fourth century AD, as the 1998–2004 survey has shown to have been the case with other watercourses around Portus.

There are several indicators that help us to better define this chronology, such as the function of the watercourse as interpreted from another sensational discovery. This concerns two shipwrecks from the Isola Sacra (Figs 5.9–13), whose relationship to the canal is stated as probable rather than certain.<sup>8</sup> The section of text that discusses these benefitted from an expert in the archaeology of ships, Giulia Boetto, as well as Alexandra Ghelli and Paola Germoni. Wreck no. 1 was discovered in 2011, c. 300m to the north of the north bank of the Tiber, in the course of works for the new *Ponte della Scafa*; Wreck no. 2 (arranged perpendicularly to Wreck 1) was found a little later, but while the remains of the former were completely recovered,<sup>9</sup> the latter has not yet been completely excavated (the known section is 14m long). Apart from presenting very interesting details about process of excavation, restoration and conservation, and the types of wood used in Wreck no. 1, there is a discussion of its chronology, with a *terminus ante quem* of the third century AD proposed on the basis of stratigraphic evidence.<sup>10</sup> On the other hand, the relatively small size of the boats supports the idea – proposed by the writers in the preceding pages – that this watercourse may have also been used by boats of small and medium capacity, with a draught of 2.5m: in other words, *naves caudicariae* or boats of a similar typology used for local commercial cabotage and, above all else, in connecting Portus with Ostia.

Overall, therefore, the Isola Sacra canal would not have constituted port infrastructure in the strict sense, as was indeed the case of the *Canale Romano* or the '*Fossa Traiana*' itself; nor were warehouses or analogous installations documented along its banks. It must, therefore, have served more for transit (and occasionally for mooring<sup>11</sup>) than for the unloading and storage of merchandise.

In the final part of the book (Chapters 6 and 7), Keay, Millett and Strutt present a holistic synthesis of everything presented up to this point. For ease of reference, I have alluded to many of their conclusions in my preceding pages. For what remains, I will omit



much information that was known prior to the survey. However, it is important to note that the writers take a stand on the respective roles of Claudius and Trajan in the complex process of the port system as we understand it today. The impact of the interventions undertaken under the first of the two emperors is reinforced: while the Fiumicino Canal was thought to have been excavated in the Trajanic period until recently, the 1998–2005 survey has confirmed that it must have already existed under Claudius.<sup>12</sup> A not unimportant consequence of this was that the Isola Sacra could be considered to have been an island by the middle of the first century AD,<sup>13</sup> even though it did not have the epithet ‘Sacra’; the chapter also discusses the Late Antique name for this strip of land and its possible explanation, an issue upon which I will not dwell.

The frequent floods which would have affected the Isola, also explain the rarity of ancient rural settlements, a fact confirmed by the survey. The excavation of canals clearly improved the situation, as we have seen, but the impression that the Isola had a limited population is also true of subsequent periods, with one exception. It is at this point that a highly relevant issue, that of the so-called *Trastevere Ostiense*, makes its first appearance in the book. It has only been in the last decades that it has begun to receive the attention that it deserves, owing to discoveries on the ground and numerous publications. One should not forget that the Isola Sacra in the Roman period was very different to what it is today, not only because it was ‘narrower’ on the coastal side, but also because to the east, the ancient course of the Tiber incorporated the extensive meander that was subsequently cut and isolated by the sixteenth century flood mentioned earlier. They are very well-known issues, but not everyone realizes that the part of the Isola which corresponded to the spur of land within the meander was relatively heavily urbanized down to at least the first century AD.<sup>14</sup>

In terms of terrestrial communications, the principal ancient road on the Isola was the via Flavia, as is well known; but also of importance here, was its connection with Portus (and thus its crossing of the ‘*Fossa Traiana*’). The authors argue in favour of a Flavian date for the origin of the *Ponte di Matidia*, which would have then been repaired – by Matidia – in the Trajanic period. In short, the Flavian interventions in the Isola would have been considerable, and are also attested (as is discussed in another part of the text) by both the building of the first *mausolea* at the *Necropoli di Porto* at the end of the first century AD, and the fact – noted by P. Pensabene – that 15 percent of the documented marble blocks from the *statio marmorum* on the south side of the ‘*Fossa Traiana*’ are also attributable to the Flavian period.

The line of the via Flavia in the southern part of our territory is uncertain, and its relationship to that of the Portus to Ostia Canal cannot be defined with certainty; neither are we in a position to document in detail and with certainty the route by which, in the opposite sense, it entered Ostia from the south and left it again by the north in order to reach the river, and in the end to cross the Isola itself and arrive at Portus.<sup>15</sup> As for the means by which the road crossed the Tiber, the location and configuration of the bridge whose piers were seen in 1879, are not precisely known (Site G50 of the Gazetteer). Several suggestions, however, are possible. The text provides reasons for thinking that in origin, the via Flavia would have followed a straight line, from its origin in the north-west down to the right bank of the river. This would support an argument in favour of a bridge at the position of site G50 (Fig. 2.10), and thus a road access into Ostia at a point at or near Tor Boacciana. The creation of the canal on the Isola under Trajan would have thus led to a change in the line of the via Flavia and the creation of a bridge on the canal itself (see above), which should not be confused with the archaeologically attested structure crossing the Tiber to the south. All of these topographic details are illustrated on Figs 5.1, 5.7 and various others.

The survey has also documented – and this is another significant novelty – the division of the land on the Isola into lots (Fig. 6.4), by ditches of substantial width that could also have been navigated by small boats, as well as being used for drainage. Leaving details of them aside, there are several important aspects worth noting. In some parts of the Isola one glimpses the existence of rectangular allotments oriented east–west, following a modular length equivalent to 50m or multiples of 50m (100m, 150m) that are difficult to relate to the customary system of Roman land divisions; nor are the productive uses of the allotments easy to identify. As regards their chronology, there are reasons for thinking that the sub-divisions of the land into allotments occurred after the establishment of the via Flavia, which then came to constitute the western, or rather the north-western, margin of the land scheme, and was subsequently cut by the Portus to Ostia Canal. Did this belong to a formal *limitatio*? The authors leave this question open, while recalling that in one passage (222.6) the *Liber Coloniarius* speaks of lands around Portus being assigned to *coloni* by Vespasian, Trajan and Hadrian, and to single individuals by Lucius Verus, Marcus Aurelius and Commodus. Certainly, none of these sources explicitly mention the Isola Sacra, although in theory, the term *strigae* could correspond to these lots.

In terms of the areas of burial, the survey confirms the existence of a burial area along the via

Redipuglia (G17–G19) that largely represented a continuation of the *Necropoli di Porto* par excellence, which is situated along the via Flavia, and its offshoots (viz. the burials of the *Opera Nazionale Combattenti*, site G20). There were also other groups of tombs, and for an overall evaluation of this phenomenon and the observations that follow, the general plans on Figs 6.4–6.5 prove useful.

It is interesting to note that, amongst other things, the tombs located to the north-east of the via Flavia, which are difficult to identify from geophysical evidence alone, do not seem to have included standing *mausolea*, with a few exceptions. Moreover, the strange structures identified along the west bank of the Tiber on the eastern side of the Isola, could also be evidence of *mausolea*, although this would need to be confirmed with excavation.

With good reason, the authors pose the question: since fairly large cemeteries have been documented on the Isola, where did the people reside when they were alive? There was a settlement near the southern bridgehead of the *Ponte di Matidia*, to be sure, but this was not very dense and was for the most part occupied by public buildings.<sup>16</sup> There is a lack of evidence for *domus*, *insulae* and similar buildings on the Isola, and this is also in large measure the situation at Portus. This is at least what is understood from the current state of research.

This is a major issue that is not easily interpreted. As the geophysical survey proceeded and subsequent open area excavations of certain areas were undertaken, it has intrigued members of the Portus Project and caused them to pose questions about the ‘urban’ character of Portus. In his publications and in conference presentations, Simon Keay has put forward the suggestive hypothesis that there existed a substantial degree of commuting between Ostia and Portus: that is that many individuals involved in the loading and unloading of merchandise at the imperial harbour basins, and in storing it in the warehouses etc, would have lived in the old *colonia* and travelled to their ‘place of work’ daily, either by road (along the via Flavia), or by boat – in which case they would have used the Isola Sacra canal, or directly by sea. Boats for local cabotage, such as the *caudicariae* or the *lyntres*, would have also been used for this. This is what is left to be guessed at in another passage of the text, where it is argued that thanks to the transport infrastructure that we now understand better, Portus could be reached from Ostia (and *vice versa*) in as little as an hour on foot or by boat. Another hypothesis that is suggested in addition, or as an alternative, is that some of the port workers could have resided in lodgings situated on the now lost upper storeys of the *horrea* at Portus.

Returning to the funerary landscape of the Isola Sacra, the authors suggest, if I understand them correctly, that the *mausolea* on the north side of the Isola were destined for the inhabitants along the southern bank of the ‘*Fossa Traiana*’ and the *Portuenses*, and that the tombs along the via Flavia (including the so-called *Necropoli di Porto*), as well as those situated along the banks of the Tiber, would have served the needs of the *Ostienses*. This is an interpretation about which I would be cautious, and indeed the conclusions warn against overly simplistic hypotheses about ‘spatial segregation’ and instead suggest the existence of ‘mixed’ funerary situations; in relation to this, they cite inscriptions from the *Necropoli di Porto* recording individuals who were active in both port cities,<sup>17</sup> both of which were characterised by having societies that were both complex and mobile. All of this is true, although in my opinion, the main argument is a topographic one: in fact, if one examines plans like Figs 6.4–5 (and others), one cannot not help but notice the fact that the tombs along the via Flavia only become dense along the northern stretch of the route, suggesting or confirming the idea that this cemetery had mainly comprised just one of the ‘*necropolis di Porto*’.<sup>18</sup> When (and if) the funerary panorama of the north-east bank of the Isola along the Tiber are better known, it will perhaps be possible to know whether this sector really was a burial space shared by the residents of Ostia and Portus.

The settlement which, thanks to the survey, has been identified along the southern bank of the Isola Sacra, and thus the right bank of the Tiber, constitutes a reality that is so new and important, as well as having so many implications, that it is justly assigned ample space in the concluding chapters of the book, and inevitably I will do the same here. The discovery, even if only by means of geophysical survey and without verification by means of excavation, had already caused a major sensation (and not just in the scientific community) at the time when Simon Keay made it the object of a press conference held in Rome in April of 2014, that was broadly taken up by the mass media. Following that public presentation, the coordinators of the survey published a report on the discovery that was synthetic, but also exhaustive (Germoni *et al.* 2019). I also attempted to formulate some personal reflections on the matter that were published in the same collection of papers (Pavolini 2019).

The settlement of which we are speaking covers c. 4 ha, and is comprised – overall or in large part – by a group of warehouses that were aligned along the southern bank of the Isola. This excluded the area lying between the presumed course of the canal and the route of the via Flavia to the west, which is

understandable because between both of these only a narrow tongue of land would have remained available, and it would have been unsuitable for these kinds of construction. On the eastern side, the complex of buildings that have been identified could be seen to represent a continuation of the collection of buildings that had already been identified in the spur of land within the ancient meander of the Tiber (see in particular, Fig. 6.2). However, it is unclear whether or not there was a gap between both groups of buildings at its narrowest point.

In summary, therefore, five buildings have been revealed to date by the geophysics (the essential details are summarized in Table 6.1 of the book), of which four were definitely warehouses,<sup>19</sup> while the interpretation of the fifth remains more uncertain. In terms of the typology, three of the *horrea* belong to the courtyard type,<sup>20</sup> for which the authors cite Ostian parallels. The fourth is also a probable warehouse although it may perhaps have had a different function and is without any strict parallels on the other side of the river. The fifth building is decisively different, as it seems to consist of a large enclosed quadrangular area and subdivided by lines of internal pilasters<sup>21</sup> (a space for unloading cargoes prior to their storage in warehouses?). In terms of the chronology of this quarter, settlement evidence prior to the late first century AD is rare, perhaps on account of the frequent Tiber floods, while the excavations of the last century indicate that the earliest structures were built from *opus reticulatum* (see Note 21), which can be generically dated to the first–second century AD.

An equally relevant structure that has been revealed by the non-destructive survey in this southern sector of the Isola, is the probable defensive wall that shuts off the ‘warehouse quarter’ to the north (Fig. 6.6), whose chronology is far from clear. It is significant that, as its discoverers note, it respects the orientation of the system of landscape division that has been discovered to the north: but does that mean that we ought to necessarily attribute it to the same period, that is the late first century AD, or ought we think instead of a more recent date which is not in itself identifiable? To answer this is challenging: as we will see, the authors incline towards the second hypothesis, but in the meantime discount the idea that this defensive circuit could be considered to have been some kind of continuation, on the other side of the river, of the walls of Ostia that are dated by Fausto Zevi on the basis of epigraphic evidence to 63–58 BC. They do this because it is logical to do so (the Isola defensive circuit was clearly destined to protect a complex of vital importance such as the series of *horrea*, and these are much later than the Ciceronian period,

as we know), as well as for a whole series of issues. In effect, the defensive wall has a width of 3–5m and has square external towers (not on the angles) of c. 6–8m: these are characteristics that – without going into too much detail – differ significantly from those of the late Republican wall circuit of Ostia.

In terms of its circuit, once the Isola Sacra wall reached its western limit, it turned sharply south in the direction of the northern wall of Building 1. The relative chronology of both structures will only be resolved by excavation; however, there are indications from the magnetometry to make one think that the defences were later than the outer wall of the warehouse and that this was incorporated into them in order to consolidate the defensive system. Towards the east, albeit without proof, the authors argue that the wall continued in a straight line as far as the inner (west) bank of the meander (as the above cited plans might be taken to suggest). If this is the case, it would have ensured that the southern and eastern arms of the Tiber would have been provided with an adequate degree of protection against any assailants.

Turning now to the crucial question of its chronology, one point of great importance is the fact that if on the one hand the Isola Sacra wall circuit is significantly different from that of Ostia, on the other it has characteristics that are remarkably similar to those of late antique date that were built at Portus,<sup>22</sup> as the authors argue. Fundamental to understanding the chronology of these are the results of the sondage, albeit of limited scope, undertaken at the so-called ‘*Antemurale*’ of Portus. The stratigraphic sequence here has made it possible to push the date of the fortifications of Portus back from both the traditional Constantinian period, and the late fourth to early fifth century AD date that had been attributed to them at one stage. It is now argued that the fortification could have been completed around AD 470–80, and that it could have been undertaken by a *praefectus Urbi* of Odovacar (Keay and Paroli 2011, 7, notes 22, 82 and 141).

It is clear, then, that if the fortification running along the northern side of the *horrea* on the southern side of the Isola Sacra should also be attributed to a late date on the grounds of similarity, and that if a future stratigraphic excavation should confirm this, then it would raise interesting questions about the last stages of the history of Ostia. These are issues that I have raised in the article mentioned above (Pavolini 2019), which is also cited by the authors of this volume who tend to agree with the hypotheses formulated there. They thus espouse the vision of an Ostia in which the underlying rationale for its earlier floruit had already begun to fade from the third century AD onwards, and which in the middle of the fifth century AD was

heading towards its definitive crisis as an urban institution. There is far too much to say about this issue, but it has already been done on numerous occasions and not only by me.

And still, given the context of our discussion, we can do no less than remember a key fact which is that after the end of the Republic, let alone during Late Antiquity by which time they had largely fallen into disuse, the fortifications of Ostia were never reconstructed. At Portus, as we have just seen, matters played out differently, something which makes one think that in the last period of its use, the warehouse quarter of the *Trastevere Ostiense*<sup>23</sup> with its protective wall, and I would say the Isola Sacra as a whole, was by now under the administrative jurisdiction of Portus<sup>24</sup> rather than Ostia, and therefore under its economic and political control as well. The historical implications would have been evidently highly significant, and need to be further explored.

The final paragraphs of Chapter 7 are dense with final observations and important questions. For the large scale building projects undertaken at both Ostia and at Portus at different times in their histories, particularly those completed for the *annona*, should one think of them in terms of public or private initiatives, or perhaps as combined operations, and in what proportions? As regards Ostia, Janet Delaine (2002) has suggested that in many cases, the investment would have come from private sources (from members of the urban *ordo* or from *collegia*, freedmen of the *colonia* etc), but it is then worth posing the same question about land ownership, as the authors of the book do, where there are similar problems. In the case of Portus, one can probably attribute it to imperial property, which would have been acquired through inheritance: but what about the lands of the Isola Sacra? Here the question seems to be more complex: the directors of the survey tend to distinguish between the lots, which in the central and northern sectors of the Isola came to be divided up and distributed to *coloni* or those to whom it had been assigned – perhaps as a result of imperial intervention, and those along the southern strip, which at least from the second half of the first century AD when the *horrea* began to appear, could have been in private hands.

The definitive conclusions to the volume do no more than expand upon the contents of Chapters 6 and 7 (which are in themselves conclusive as we have seen), but do so in terms of a broader context. One aspect perhaps prevails above all others: for any future study of Ostia, the change in our perception of its history as a result of the survey results is, and will remain, fundamental. This is because from now on, we need to envisage Ostia as no longer being just

the settlement on the left bank of the river as we have traditionally known it, with the *Trastevere* as a poorly studied appendage, but as a great commercial river port (a ‘commercial corridor’ is the textual definition), or a port cut in two by a river (‘a port bisected by a river’ as described in the book). And here, a comparison with the Urbs itself becomes inevitable, since studies in recent decades (it is not necessary to provide references, but sufficient to think of the contributions by C. Mocchegiani Carpano, E. Rodríguez Almeida and F. De Caprariis, amongst others) have given the impression of a Rome served commercially by quays and landing stages – with their ensemble of storage buildings – not just concentrated around the *Emporium* and the northern river port of *Tor di Nona*, but spread out along the whole length of the urban stretch of the Tiber.

Consequently, our image of Ostia should also change in respect of its demographic profile. Even though calculations concerning this have always been somewhat random, for obvious reasons, and it seems appropriate to retain the same note of caution from now onwards, it is clear that we cannot still think – for this Ostia as broadly understood – of a population equivalent to the figure of 30,000–40,000 that is usually cited; there would have been many more. The text states this, as well as alluding to another element that, in the context of needing to re-examine the size of the population, is particularly relevant: I am alluding to the large urban expansion of Ostia to the south-east of the Republican walls that would have been documented by another programme of non-destructive survey, namely the geophysical survey directed years ago by Michael Heinzelmann, which remains almost completely unpublished, as our authors lament. In any event, if there is a confirmation of this and add this possible ‘Ostia outside the walls’ to a *Trastevere* that is otherwise somewhat more densely occupied than previously thought, in schematic terms Ostia would pass from the status of a small to medium sized centre to one of a middle to large size. So many aspects of its history (its relations with Rome and Portus itself), will have to be radically reviewed, while in terms of didactic communication to the non-specialist public, someone would need to re-write the popular guides as well.

The conclusions to the volume speak of the beginnings of the first century AD as the possible initial establishment phase of the commercial infrastructure to the north of the Tiber, with everything that this implies. Without prejudice to excavation controls, this dating could be considered to be too high, since in some parts of the text, the second half of the first century AD had been suggested as the period that



marked the first appearance of the *horrea*, which would have developed above all in the course of the second century AD. In any case, even if it is admitted that a true flourishing of the 'Trastevere' had begun between AD 50 and 100, in the analysis of the authors this would suggest that the commercial and urban revitalization of the old colony of Ostia was essentially determined by the establishment of the Claudian basin at Portus, rather than as a result of the Trajanic basin, and we have already seen some possible reasons for this.

This picture is completed by the reflections that appear in the final paragraphs of the chapter, and which encompass the broader geographical context of the port system created by the Romans along the central stretch of the Tyrrhenian coast (with Trajan as the protagonist in some of the decisive interventions), and which ranged from Centumcellae in the north to Terracina to the south, if not beyond, since further south lie Pozzuoli and Naples. At the 'heart' of this system lay the Ostia/Portus conurbation, and the 'heart of the heart' was the Isola Sacra, for the understanding of which this book accomplishes a gigantic breakthrough. Notwithstanding its length and completeness and the fact that the present contribution stands out as an essential point of departure, it is not necessarily one of arrival (and I believe that the authors can agree with this). So, the wish – that can perhaps seem to be customary but which has rarely been so justified – is that the Portus Project and the Italian-British surveys of the Isola Sacra around the imperial harbour basins and in its hinterland continue, using both non-destructive and traditional archaeological methodologies, so that they can provide us with further new and unexpected discoveries for historical reflection.

## Notes

- 1 In relation to this Pavolini 2013.
- 2 Many programmes of urban and landscape replanning along the modern Roman coastline have been drawn up in recent years, with few practical outcomes up until now. Nevertheless, interesting ideas relating to these – with projects in which the archaeological context based upon Ostia and Portus (with the Isola Sacra at their heart) assumes crucial importance – are to be found, for example, in two recent volumes produced by the *Dipartimento di Architettura e Progetto dell'Università di Roma La Sapienza*, with a contribution by this writer. (Pavolini 2015); see also Pavolini 2019.
- 3 This is the date which is usually attributed to the moment when the meander formed by the Tiber close to Ostia is cut, remains isolated and silts up, creating the so-called Fiume Morto, although it has been argued that this was a gradual process lasting several years and was not complete until 1562: see amongst others Pannuzi and Rosa 2017.
- 4 The book cites works down to and including the most recent contribution by Olivanti and Spanu 2019, although it omits the matching article in the same *Atti del Terzo Seminario ostiense* (Baldassarre *et al.* 2019) which integrates and replaces earlier publications by Baldassarre and her collaborators.
- 5 It was first presented publicly by Germoni *et al.* 2011: figs 1.3–4, although at this stage it was only possible to provide an illustration of the first stretch of the canal.
- 6 The writers estimate its width at c. 35m.
- 7 In effect, given the general topography, a double function would seem the most probable, and this would not only be the case with the Portus to Ostia Canal, but also those that have been identified, or better interpreted, as a result of recent fieldwork (the *Canale Romano*) mentioned above, the northern canal and the '*Fossa Traiana*' itself: see Keay and Paroli 2011: Figs 1.3–4.
- 8 Further on, the editors of the volume put forward the hypothesis that the vessels were found in what was the final stretch of the canal which, in nearing the bank of the Tiber, would have turned gently to the west, as seems to be suggested by aerial photographs, coinciding with the route taken by the via Flavia.
- 9 Length of c. 12m x width of 4.88m.
- 10 This is the rationale for suggesting that the canal was not abandoned later than the Severan period.
- 11 This may have been the context of the Isola Sacra wrecks.
- 12 This is probably one of the canals referred to in the well-known inscription (CIL XIV, 85) that records the decision of the central power to create canals that aimed to resolve at least in part the problems of the Tiber floods. It dates to AD 46, and such a chronology confirms (something implicit in the analysis of the authors) that the excavation of the first harbour basin and its canal lying to the south of it must have been planned together. However, the fact that the *statio marmorum* along the line of the '*Fossa Traiana*' was active during the final decades of the first century AD (see below), is a fact that speaks for itself.
- 13 Which implies that it is only from this point that we can speak of a Tiber delta.
- 14 All of the relevant bibliography for this, with studies by A. Arnoldus-Huyzendveld, L. Paroli, A. Pellegrino and others, is cited in the volume.
- 15 In respect to the solution adopted in this book, the question is perhaps rather more complex. I simply refer the reader to Pavolini 2018 which discusses hypotheses relating to the final stretch of the coastal *via Severiana*, which ran from southern Lazio, and after entering Ostia from the south probably, at least to my mind, coincided with the southern stretch of the Decumanus Maximus and the *Via della Foce* as far as the Tiber. There must have been, therefore, stretches of coastal roads that existed prior to the Severan re-organization of the road, and hypothetically the via Flavia could thus be considered to represent their continuation on the Isola Sacra.
- 16 I note in passing some hypotheses that appear later in the text (in other words, the conclusions), that suggest

the possibility that both here and in the *statio marmorum* further to the east were situated offices – used by imperial officials – charged with collecting customs on merchandise that being transported from the ports to Rome (and in lesser quantity to Ostia).

- 17 Also, in another passage which refers to epigraphic and juridical documentation, it is noted how many *navicularii* and other members of associations connected with commerce supply and port activities, would have carried out their work both in the old *colonia* and the imperial harbours.
- 18 And to my mind it is significant that the ‘decline’ of the cemetery dateable only by its *mausolea* can only be detected from *c.* the first half of the third century AD, as has always been understood. This is perhaps a confirmation of the fact that the importance of Ostia was gradually decreasing and that, as a consequence, the intensity of fluvial and terrestrial connections between Ostia and Portus was also diminishing. While all of this was occurring, Portus obviously continued to be inhabited and flourished, although its inhabitants came to be buried elsewhere. This is, therefore, a complex issue that clearly cannot be developed here.
- 19 A small part of Building 1 was discovered during an excavation in 1968 (Zevi 1972 and G41).
- 20 I would like to draw attention in this note to many issues relating to such warehouses and related problems that are all very well documented in Chapters 6 and 7 of the book. For example, the probability that the principal product stored in them was grain; the possibility that there were auctions or similar activities in their courtyards, as Janet DeLaine (2005) has suggested in relation to some Ostian buildings; finally, calculation

of storage capacity, not only that of the ‘warehouse quarter’ but also of the urban area of both Portus and Ostia as a whole, a subject about the authors themselves stress prudence.

- 21 This Building 5 had been observed in the sondages dug in the 1960s (the circumstances of the find and the publication by Zevi and others appears in the entry G44 in the Gazetteer), and to it perhaps belonged the mosaics located immediately to the east of the limits of the survey, G45-G46. This was a built-up area, the characteristics of which are for the moment less clear, which extended to the south-west of the sites listed and included structures built from *opus reticulatum* (of the first century AD) that were observed in the same sondages.
- 22 In making all of these observations, I take as read the fact they all derive from magnetometry results. I have pointed this out on various occasions, and the authors themselves also have this in mind; however, this does not prevent us from reasoning and formulating hypotheses from this kind of evidence.
- 23 The date of whose abandonment is unknown; in the conclusion, reference is made only to the existence of an undated tomb ‘a cappuccina’ which was discovered in the old excavations at G43.
- 24 As is well known, the first source that defines Portus as a *civitas* dates to AD 313. The change in its administrative status could have thus occurred earlier, we do not know when, and it could have involved the ‘annexation’ of the Isola Sacra to the new territory administered by the new *civitas*. Rather broader considerations related to the continued flourishing of Portus in Late Antiquity are discussed in Pavolini 2019.





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### Note regarding the Gazetteer

Information about previously explored sites on Isola Sacra is summarized in the Gazetteer (see pp. 173–85). Throughout the text and on the illustrations, references to these sites in text uses the abbreviated form (G1), meaning Gazetteer site 1.

### Note

- 1 It was directed by Simon Keay; Grant numbers AH/1004483/1 and AHE509517/1.



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# Gazetteer of Sites

Paola Germoni<sup>1</sup>

For site locations see Fig. 2.10.

## **G1 Buildings and dock on the south side of the 'Fossa Traiana' (destroyed)**

A building subdivided into a series of rooms facing onto the 'Fossa Traiana' and interpreted as warehouses. A continuous row of eight rectangular rooms lay adjacent to an open area with a portico renovated in the third century AD. The columns of the portico were made of brick and rested on a travertine plinth. Three small rooms faced onto the portico. A mosaic pavement in *opus tessellatum* was preserved in one of these rooms (a), with a representation of Bacchus at the centre and the heads of the Four Seasons in the corners. Coins dating to the reigns of Antoninus Pius (AD 140–43) and Gallienus (AD 254–68) were recovered from beneath the mosaic. The adjacent room (b), was also small but floored with irregular fragments of coloured marble and yielded a brick stamp dated to AD 133. A large expanse of concrete defined at the eastern end of the building (Gatti 1911: 410–12, fig. 2) can be identified as the river mole.

## **G2 Ponte di Matidia**

A construction comprising two arches that ran perpendicular to the 'Fossa Traiana' permitted communication between Portus and the Isola Sacra. Underwater surveys carried out in the canal silts during the Veloccia excavations in 1972 revealed the foundations of the central pier and the southern bridge abutment. The distance between the two is shown on the published plan as c. 11m. The opposite abutment, which is visible on the northern bank, comprises concrete covered with rectangular slabs of travertine. It resembles a mass contained between parallel walls that suggest this was the site of a small platform analogous to that documented by the southern bridgehead. The discovery in the excavation of an opisthographic inscription which had been reused

as the floor of a later burial to the west of the northern edge of the via Flavia provided fundamental historical information about the bridge, including its name (*Pons Matidiae*) and a record of two phases of rebuilding. The earlier text records a restoration, probably necessitated by damage caused during the Gothic invasion of AD 408. It is ascribable to the period AD 412/413–423, the reign of Theodosius II and Honorius, and records work under the Prefect of the *Annona*, Fundanius Martirius Felix. A second rebuilding, the chronology of which is more uncertain, dates broadly to the fifth–sixth centuries AD and records work on behalf of the Prefect of the *Annona*, Flavius Splendonius Aufidius and of the Urban Prefect, Iunius Pomponius Ammonius (Floriani Squarciapino 1973–74: 260; Veloccia Rinaldi 1975: 19–27; Geremia Nucci 2000: 470–1; Germoni 2001b: 384 fig.1; Keay *et al.* 2005: 317, no. 11).

## **G3 Buildings and basalt road along the south bank of the 'Fossa Traiana' near the Ponte di Matidia**

Work on the south bank of the 'Fossa Traiana' carried out on behalf of the Genio Civile in 1971 brought to light structures which were excavated systematically in 1972 and 1974. The excavations revealed an urban landscape organized on either side of the via Flavia in the vicinity of the bridge. Buildings on several storeys were arranged in parallel strips along the banks of the canal. The initial period of construction has been dated to the first half of the second century AD. Important functional transformations that brought about a general raising of the ground level and consequent burial of the ground floor of the structures have been attributed to the Severan period. A similar sequence has been noted in the *cryptoporticus* under the convent of Sant' Ippolito. The interpretation of these buildings is not easy to resolve. However, they were in use for a long period of time, while continued maintenance and the presence of a plentiful number of fourth-century AD coins in the

trodden layers covering the floor suggests that their abandonment was a consequence of the destruction that occurred during the siege of Portus in AD 408. The proximity of the bridge, the large numbers of coins, and the evidence of continued road use until the seventh century, make plausible the idea that this was the site of a *statio* with functions related to the payment of a toll for crossing the 'Fossa Traiana' (Veloccia Rinaldi 1975: 14–9; Germoni 2001b: 384 fig. 1).

#### **G4 Building with an exedra along the south bank of the 'Fossa Traiana' (destroyed)**

The structures that were discovered during the widening of the canal in 1909 comprised a series of rooms lying perpendicular to the 'Fossa Traiana', and were delimited by narrow walls faced with brick. A wide exedra to the east was reinforced by external pilasters made from *opus latericium* (Gatti 1911: 412, fig. 3).

#### **G5 Buildings and access stairs along the south bank of the 'Fossa Traiana' (destroyed)**

A number of rooms perpendicular to the 'Fossa Traiana', probably *magazzini*, were also discovered during the widening of the canal in 1909. Access to these was via a short corridor with steps opening onto the 'Fossa Traiana' (Gatti 1911: 413, fig. 4).

#### **G6 Findspot of a bust of Septimius Severus**

A larger-than-life-sized bust of Septimius Severus wearing armour (inv. 29) was discovered in 1925 at Isola Sacra and moved in 1940 to the *Ufficio dell' Opera Nazionale dei Combattenti*. Since 1948 it has been displayed in the Museo di Ostia (Ricci 1939: 59–61, fig. 2; Calza, R. 1978: 44–5, no. 55, tav. XLII–XLIII).

#### **G7 Bath buildings and structural remains identified as the *Isaeum* of Portus**

This complex was discovered in 1969 and excavated in three campaigns between 1974 and 1989. It comprised buildings of various chronological periods within which there were two main nuclei separated by a road parallel to the coastline. A bath building of late second-century AD date is visible in the east and was used until the Late Antique period. To the west, there are buildings of various periods, but mainly of Late Antique date, amongst which there is a cistern, rooms with fountains and a trapezoidal courtyard, off which opened rooms and corridors, an arrangement that suggests that they were used as meeting places for *collegia* or religious groups. Both building complexes are located along a

stretch of road perpendicular to the 'Fossa Traiana'. The discovery of a bust of Septimius Severus (G6), with hair in the style of Serapis, a statue of Isis and of the snake *Agathodaimon*, have led to the identification of the building as the *Isaeum* of Portus known from ancient sources and epigraphic evidence (Chastagnol 1969: 135–44; Zevi 1970–71: 25; Zevi 1971b; Floriani Squarciapino 1975: 6–7; Lauro 1987: 189–92; Lauro 1993: 170–2, fig. 6; Zevi 1997: 322–3; Zevi 2002: 302–4).

#### **G8 Structure on the property of Pes**

Structures were discovered in foundation trenches for the construction of a small residential building on the property of Pes in 1968. It comprised a paved floor on an east–west orientation, composed of a tufa mass covered by a layer of lime. It was 1.06m wide and is preserved for a maximum height of 0.14m, and was traced for a distance of 13.50m (ASSBAO 1968: *Giornali di scavo* vol. 42, Isola Sacra, proprietà Pes).

#### **G9 Artisan complex known as *La Casetta*, in private property**

The construction of a private residential building in 1974 revealed an extensive complex of rooms of various dimensions, with multiple phases of use and with good evidence for small-scale manufacturing. This provides the only evidence found to date of production activities on the Isola Sacra, and is probably dateable to the late antique period (Floriani Squarciapino 1975: 7 and 10, note 8; Lauro 1993: 168, fig. 2).

#### **G10 Rooms with mosaic, cistern and wall fragments in via Ponte di Matidia**

In 1983, during the course of activities by the ACEA, a long excavation trench was cut along the road revealing walled structures and buildings 60m from the angle with the via Redipuglia. These were recorded only in plan. The structures were all oriented northwest–southeast and seem to represent a regular grid of structures in *opus latericium* and *opus vittatum* in which were identified two adjacent rectangular rooms with mosaic pavements at a depth of c. 2.10m below street level, part of a cistern with a central pillar and a rectangular room cut by an ancient drain (ADSBAO. *Scavo Acea* 1983: plan and sections by Aldo Pascolini, scale 1:50).

#### **G11 Funerary structure in via Redipuglia to the west of via Ponte di Matidia**

In 1983 work by ACEA along the via Redipuglia detected three sides of a brick building oriented

east–west. These are documented on a topographic plan where they are described as ‘tomb’ (ADSSBAO. *Scavo Acea* 1983: plan and sections Aldo Pascolini, scale 1:50).

### G12 Complex of buildings of the so-called Baths of Matidia

The baths were excavated during the 1970s and are organized around a vast hall paved in *opus sectile* around which are located a series of rooms with various functions dating to different phases. On the northern side there are *tabernae*, on the south side a store-room (*dolia defossa*), while on the western side there are rooms associated with baths themselves (*frigidarium*, *tepidarium*, *calidarium*) and related services. The *praefurnia* were placed directly under the plunge baths and were accessible by means of a long and narrow service corridor. The complex remained in use until the end of the sixth century AD when in the course of its destruction it was robbed of nearly all of its marble panelling. In some rooms, however, new activities took place, exemplified by the presence of a small lime-kiln in one of the pools of the *frigidarium* (Veloccia Rinaldi 1975: 29–35; Germoni 2001b: 384 fig. 1 and 389–90 fig. 6).

### G13 Rooms alongside the basalt road to the north-west of the S. Ippolito basilica

The area was the subject of limited excavation in 1971 during the course of which two paved sections of the via Flavia were found together with the walls of structures situated on either side and oriented on the same axis. In October 1975 excavation resumed with the cutting of parallel trenches oriented east–west. This work revealed a regular series of buildings that were partially investigated and characterized by the regularity of their layout. The walls, which were brick faced, were poorly preserved above floor level and represented only by travertine threshold blocks *in situ*. The excavation failed to define the functions of the buildings as they were sealed by mixed deposits containing fragments of funerary inscriptions, columns, sarcophagi and unidentified ceramics. The most interesting discovery was a circular room measuring 5m in diameter that preserved the spring of its vaulting and, on the east side, the mouth of a furnace. This is probably to be identified as a lime kiln since burnt marble fragments were recovered from the surrounding area (ASSBAO, *Giornali di Scavo* 1975 vol. 53, fasc. 3; Veloccia Rinaldi 1975: tav. I, B). During the course of major public works promoted by the Regione Lazio in 1990, a short section of the via Flavia paved with

polygonal basalt blocks was recovered c. 3.10m below the modern ground level. The road was 4.40m wide and was visible for a stretch of 2m. To the east of the road was discovered a north–south wall in tufa *opus reticulatum* that was 1m wide was visible for a distance of 2m (ASSBAO, 1990. *Giornali di Scavo* vol. 65).

### G14 The S. Ippolito basilica complex

The history of this church was outlined in general terms by the excavations of 1970–78, with the final phase of its use being ascribed to the twelfth century. The excavations culminated in 1973 with the recovery of the *ciborium* and a sarcophagus containing a well-known inscription (Pani Ermini 1979: 247). A large basilica was built between the end of the fourth and the beginning of the fifth century AD on the site of a pre-existing structure with a nave aligned north–south with a small apse that was oriented towards Portus. The basilica, which follows the alignment of the earlier building, measures 37m in length by 18m in width. It is subdivided into three aisles by two rows of eleven columns whose intercolumniations were blocked up after the ninth century (Testini 1978–80: 32) when the entrance was moved and the interior was remodelled to a single main aisle. The remains of a *schola cantorum* are preserved in the middle of the main nave. The apse was paved in *opus sectile*, contained a basin decorated with a mosaic, and was provided with an episcopal chair. The façade was pierced by three entrances and was abutted to the east by a *hypogeum* which was transformed into a cistern in its final phase. Structures at the front of the basilica have been interpreted as a portico which, to judge from the heterogeneity of its construction materials, was added at a very late phase. Further excavations were conducted in 1993 (Paroli 2005a: 57). Important marble furnishings, dating to the sixth–ninth centuries, are displayed in the adjacent Antiquarium, known as the Conventino, and dated to the seventeenth century (Testini 1970–71: 43, 223–58; Testini 1971–72: 219–36; Testini 1973–74: 165–79; Testini 1975: 43–151; Testini 1978: 505–12; Testini 1978–80: 23–46; Mazzoleni 1983; Turchetti 1994: 129–30; Germani and Izzi 2001: 384, fig. 1 and 391; De Minicis 2003: 196).

### G15 *Cryptoporticus*, cisterns and a building known as La Rotonda in via Col Moschin

A rectangular building annexed to the Campanile of S. Ippolito is known as the Conventino. It overlies an imposing complex of *hypogaea* and shares their orientation. The latter are datable to the second century and have had a variety of uses down until the present day. They comprise a series of rooms that are faced in *opus*



*mixtum* and *opus testaceum* and roofed with barrel and cross vaults. They are subdivided longitudinally into two rows of spaces delimited by walls that are oriented north–south and extend for more than 50m in length. They are organized on three levels, the lowest of which is situated below the level of the present water-table. The rooms on the upper level retain windows in the *a bocca di lupo* form and have been interpreted as having formed a *cryptoporticus*, while those below form part of an imposing cistern that is still filled with water today. Modern restoration and the blocking of openings with concrete have interrupted the continuity of the structures, which continued to the east in a U-shaped plan. In the centre of this *hypogeum* is located the stone wall of a circular building some 20m in diameter, called *la Rotonda*. It is known as the *caciara* or *casara*, a term that refers to the use of the building as a place for cheese production and used as a barn and warehouse in the second half of the nineteenth century. Its illicit use as a restaurant, despite it being the property of the Regione Lazio, has hitherto prevented archaeological verification of various identifications of the building as a baptistery, a tomb or a bath (Gatti 1910: 291; Floriani Squarciapino 1974: 181 and 185 note 8; Testini 1975: 122; Veloccia Rinaldi 1975: 14; Germoni 2001c: 391–92, 384 fig. 1).

#### **G16 Funerary buildings to the south of the so-called Baths of Matidia**

Excavations carried out in the woods to the southwest of the so-called Baths of Matidia in 1975 led to the discovery of a number of tombs, whose surviving perimeter walls are in brick and *opus listatum* and oriented southeast–northwest. Inside the walls are covered with painted plaster and articulated by well-preserved arched niches (ASSBAO 1975 *Giornali di Scavo*, vol. 53, fasc. 3,3,1-2).

#### **G17 Building located between via Redipuglia and via Sante Doumont**

A large and imposing rectangular building was uncovered in 1960 close to the junction of the via Redipuglia and the via Doumont during the construction of the latter. It has an entrance to the west and a series of rooms that have not been completely investigated. The southern perimeter wall is of brick, while the northern perimeter wall and internal walls are built from *opus listatum*. According to the excavation diary the archaeological structures continue below the via Redipuglia while there appear to be no further features to the south. Available information makes it difficult to interpret the function of this building, the plan of which is comparable with the rooms organized in

parallel rows along the bank of the canal (ASSBAO 1960, *Giornali di Scavo* vol. 32.1 and 359).

#### **G18 Funerary complex with courtyard with mosaic**

In August 1958 a complex of funerary structures preserved to the level of the ancient paving was found during works near the sports ground between via Redipuglia and via dell'Aereoporto, although there is no surviving written documentation. The plan produced at the time of the excavation shows a central courtyard paved with mosaics and provided with a well. Along the sides of the courtyard there are two rectangular buildings, the limits of which were not completely defined. Below the ancient paving were a regular series of graves (*formae*) containing inhumation burials. The complex appears to have been solely for inhumation, and the mosaic is dated to the second half of third century, allowing us to place the buildings in the final phase of use of the necropolis when it extended beyond its western limit and nearly reached the ancient beach. The mosaic (inv. 10894), which was removed to the Museo di Ostia and mounted on a concrete base, measures 2.30m by 1.75m and shows two black bands framing the central field with a dolphin on a white background laid out facing to the left with its tail curled. Above the dolphin part of an inscription is preserved: FELIX ETERN... /DOMUS towards the centre of the composition. On the upper left hand side, it is possible to see part of another curled tail and three letters ...VMV... The marine landscape is represented by means of thick and short lines and by an open conch-shell (Becatti 1961: 242–43, tav. CLXX).

#### **G19 Funerary buildings below via Redipuglia**

Via Redipuglia, originally a service road for the houses constructed as part of the agricultural reclamation of the zone that led to the discovery of the well-known cemetery in the first decades of twentieth century, is today one of the main roads in the area. It runs from east to west cutting through the monumental structures of Roman imperial date in the northern sector of the Isola Sacra. Between 1999 and 2000 evaluation trenches were excavated prior to the laying of pipelines under the road between via Rombon and the *palazzina* which formed the headquarters of the Direzione dell'Opera Nazionale Combattenti. They revealed funerary structures oriented east–west along the road line (tombs I, II, III, VI and IX) and a service corridor which runs north–south (tombs V and VIII). The tombs are preserved to approximately one-third of their original height and relate to the nucleus of the so-called *Tombe ex Opera Nazionale Combattenti*

(G20) and to the funerary buildings detected in the 1970s to the south of the baths of Matidia (G16). The archaeological work focused in particular on tombs VI and VIII, which had suffered frequent damage in antiquity and more recently. They were designed for inhumation burial, with *loculi* and arched niches (*arcosolii*) that provided space for burials around the walls, while graves (*formae*) had also been excavated beneath the ancient floor.

Internal modifications had been undertaken to widen the tombs and provide space for more inhumations, while the level of the main entrance had been raised in tomb VI. This is the only tomb to contain a painted scene: it was found within an arched niche on the west wall and represents ducks in an aquatic landscape. It was removed for conservation and is now kept in the store at Ostia. The pavement outside the tombs was well preserved with a shallow stratigraphic sequence that reveals the original foundations and the later floor level of the buildings, the latter built by use of rows of moulded bricks.

These strata vary between 1.30m and 2.35m above sea level, indicating that tombs VII and VIII were constructed earlier than tombs I, II, III, IV, V and VI. The earliest of the tombs dates to the end of the second century, while the more recent levels are dated to the third century.

(Archaeological assistance for work on this site was provided by Dr G. Gatta, who also documented the results of the excavation.)

## G20 The complex of the tombs *ex Opera Nazionale Combattenti*

In January 1923 a funerary building with rectangular plan was accidentally discovered (Tomb N). It was preserved up to the level of its vault and richly decorated with stucco and polychrome paintings, some of which are interpreted as depicting Dionysiac scenes (Calza 1928: 133–74). The tombs that were subsequently uncovered were the first group of monumental tombs to be excavated on the Isola Sacra and dated to between the beginning of the second and third centuries AD. They had been filled and covered over with a 'large deposit of amphora and *dolia* sherds'. They consisted of a sequence of rooms along either side of a secondary road on a north–south orientation. All the tombs were of a homogeneous type with the burials housed in a simple cell-shaped structure with a barrel-vaulted ceiling, some within a contemporary or later walled enclosure. The interior was designed for ritual deposition with large arched niches for inhumations (*arcosolii*) at a lower level, and small niches to contain urns containing cremations on the

upper level. Their decoration is particularly important: most of the paintings, stucco and mosaic from tombs C (Bedello Tata 2001: 106–09), N, and R were lifted on account of conservation problems and transferred to Ostia in the 1960s.

Further investigations of the road alongside these *mausolea* took place in 1967. This area revealed a concentration of amphora burials and occasional burials *a cappuccina*. Low walls were also found adjacent to the entrances to the tombs of complex C, built to prevent flooding. (ASSBAO, 1967, Gds. vol. 35). More recently, between 2002 and 2003, as part of the restoration programme following vegetation clearance and consolidation on the occasion of the Giubileo in 1999–2000 (Germoni 2001a: 384, fig. 1, 389), three further buildings (S, AA and J) were revealed, modifying our understanding of the road system of the site. It was demonstrated that a secondary road leads off the via Flavia but was blocked by a large tomb to the east. It also revealed a sealed stratigraphic sequence in which there was evidence for craft manufacture involving metal and bone working.

(Archaeological assistance for the work on site was supplied by Dr Patrizia Turi, who carried out documented the excavation and a preliminary analysis of the archaeological materials, by Arnaldo Cherubini who carried out the topographical and the volumetric survey of all the structures, and by Archer Martin who carried out a preliminary study of the ceramics.)

## G21 Funerary building with a marble relief

Drainage work on land owned by the Regione in 1990 revealed part of a tomb c. 0.5m below the level of the road. An *opus reticulatum* wall was found with travertine doorjambs, above which was a marble relief decorated with a harbour scene (Lauro 1993: 171 fig. 7 and 173). This has been removed and catalogued (inv. 49132) while the structures themselves have been backfilled with *pozzolana*. The tombs in this zone were demolished during the third century and covered by a dump of pottery.

## G22 Funerary building in via di Valle Sacra at the junction with via Redipuglia

Walls suffering from modern damage were discovered in the course of public works undertaken in April 2006. One of these was on a north–south alignment, was curved and faced in brick externally and with white plaster internally. The structure has been interpreted as the upper part of a funerary building.

(Archaeological assistance for the work was supplied by Dr Patrizia Turi, who documented the

excavation and Arnaldo Cherubini who carried out the topographical survey.)

**G23 Funerary building in via di Val d' Astico at the junction with via di Valle Sacra**

A small part of a concrete vaulted ceiling was brought to light at a depth of 1.2m below street level during work connecting pipes to the communal drain in March 2008. It is to be identified as a funerary structure below which was part of an arched niche (*arcosolio*).

(Archaeological assistance for the work was given by Dr Patrizia Turi, who has documented the excavation, and by Arnaldo Cherubini who carried out the topographical survey.)

**G24 Cemetery: funerary building in the vicinity of the house no. 47 on via Redipuglia (Fig. 6.8)**

An area to the west of the headquarters of the *ex Direzione Opera Nazionale Combattenti* was investigated during work on the supply system by Italgas in April 2000. The excavations, which were restricted by service pipes and the large tree roots, were located on the supposed line of the via Flavia. A huge quadrangular building with an extension on its western side was found. Its main entrance was on the northern side and the external wall used high-quality brick facing. The interior was faced in *opus vittatum* utilizing small blocks of highly eroded tufa. Close to the north-east corner an entrance in travertine was preserved *in situ*, although the doorjambs appear to have been removed. The interior of the building was filled with heterogeneous modern deposits so its interpretation remains uncertain, although the character of its elevations and their proximity to the new group of tombs discovered below via Redipuglia suggest that it was also a tomb constructed during the second century AD.

(Archaeological assistance for the work was lent by Drs Claudia Corsello and Massimiliano Rossi (Cooperative Gea S.C. a.r.l.), who also documented the excavation.)

**G25 Walled building in via Redipuglia at the junction with via Col Moschin**

Between January and September of 2000, in the course of the excavation of trenches for the construction of the communal drainage system along via Redipuglia, a fragment of wall 1m long and 0.40m wide was detected 2m below the modern street level on an east-west orientation. It was not completely investigated. It was in a very bad state of preservation, but the south face was constructed from pieces of tufa and re-used brick.

(Archaeological assistance for the work and the documentation of the excavation was supplied by Dr G. Gatta.)

**G26 Walled structures near house no. 71 on via Redipuglia**

Between January and September of 2000, in the course of the excavation of trenches for the construction of the communal drainage system along via Redipuglia, the north-west corner of a building was detected but not completely investigated. It was delimited to the north by a wall 8.60m in length with a facing in *opus vittatum*, and to the west by a brick-faced wall 3m in length. The building, whose standing remains were badly preserved and which had obvious traces of multiple phases of use, had been demolished and buried, probably in an attempt to raise the ground level to that of the modern street.

(Archaeological assistance for the work was supplied by Dr G. Gatta who also documented the excavation.)

**G27 Cemetery: burial area between house nos 75 and 91 in via Redipuglia**

The excavation of evaluation trenches prior to the construction of the communal drainage system along the via Redipuglia between January and September 2000 revealed various structures. These included isolated stretches of wall and parts of other structures, and burials a *cappuccina* damaged and covered by the street foundations. Modern disturbance meant that most structural remains were preserved in section alone. An inscribed marble slab from this excavation dated to c. AD 240–50 has been published by Germoni *et al.* 2011: 248, 255–56, fig. 12.10.

(Archaeological assistance for the work was supplied by Dr G. Gatta who also documented the excavation.)

**G28 Partly-worked block of *cipollino* marble from near house no. 98 in via Redipuglia**

Between January and September 2000, the excavation of evaluation trenches prior to the construction of the communal drainage system along via Redipuglia revealed a partly-worked *cipollino* marble block c. 1.10m below the modern street level. It measures 2.10m in length and 1.05m wide.

(Archaeological assistance for the work was supplied by Dr G. Gatta who also documented the excavation.)



**G28a *statio marmorum* – partly worked marble blocks**

In 1839 a large quantity of marble, mainly of African origin, was recovered along the south bank of the Fiumicino Canal. Further marble blocks, including *bigio*, *africano* and *cipollino*, came to light in the 1920s during agricultural activities to the north-east of the campanile of S. Ippolito. In 1989 several partly worked marble blocks were also recovered from the land of the Volpe family, while other marble blocks were found in a series of private properties along via Redipuglia in 1995. Blocks of moderate and larger dimensions emerged in 1999 in the via della Basilica di S. Ippolito, while another partly worked block of *cipollino* marble was recovered in 2000 along the via Redipuglia close to the drainage channel of the *Grandi bonifiche* (Baccini Leotardi 1979: 11–12 nos 1–5; 15–16 nos 15–34; 18 no. 42; 19–23 nos 44–75; 29–30 nos 100–102, 104–105; Calza 1928: 136; Gatti 1910; Melchiorri 1840; Pellegrino 1990; Pensabene 1994; 2007: 389–430).

**G29 Building between via Redipuglia and via Basilica di S. Ippolito**

In November 1999, during work undertaken by Italgas, a roughly constructed building made with reused materials (formless blocks of marble, fragments of concrete tiles and bricks) was discovered; only its foundations were preserved. The presence of a layer of marble fragments is archaeologically significant, suggesting that marble was worked here and that there was, therefore, a connection between this building and *statio marmorum* of Portus.

(Archaeological assistance for the work was supplied by Dr Claudia Corsello and Dr Massimiliano Rossi (Cooperativa Gea S.C. a.r.l.), who also documented the excavation.)

**G30 Burial area close to house nos 69 and 97 in via Basilica di S. Ippolito**

In November of 1999, the excavation of a trench by Italgas led to the discovery of a small area of burials. Three single inhumations were found 0.90m below the modern street, one in an amphora, the second in an *a cappuccina* tomb and the third in a tile-lined cist. The burials were unaccompanied by grave goods and are dated generically to the Late Antique period.

(Archaeological assistance for the work was supplied by Dr Claudia Corsello and Dr Massimiliano Rossi (Cooperativa Gea S.C. a.r.l.), who also documented the excavation.)

**G31 Masonry feature to the south of a spring**

A structure c. 20m in length and oriented north–south is shown on a map dating to 1960 and kept in the archive at Ostia. It is located on private property, a pasture, which is not easy to access. Field investigation revealed that the spring survives on the surface but that it is completely covered by vegetation. Brick faced walls with thick layers of mortar were visible. The area around the spring is rich in fragments of ceramic and marble. The geophysical survey shows that this relates to the bridge across the Portus to Ostia Canal (see above, Chapter 4, area 6).

**G32 Cemetery: tomb of the so-called sarcophagus of the Muses**

In February 2008 a sarcophagus decorated with a frieze showing scenes representing the Nine Muses in the presence of Athena and Apollo was recovered *in situ* by the Guardia di Finanza-Nucleo Polizia Tributaria-Tutela Patrimonio Archeologico. The results of the subsequent excavations on behalf of the Soprintendenza per i Beni Archeologici di Ostia are still in the course of study, but the sarcophagus has been published (Germoni *et al.* 2011: 249–50, fig. 12.11). The excavations revealed a new area of the cemetery with a tomb *a cella* located within a large enclosure, to the north, west and east of which are arranged other funerary buildings. The tomb *a cella* itself is square in plan. Its entrance had a travertine threshold and opened onto the ancient street, while along there are large arched niches (*arcosolii*) along its lateral walls; burials *a cappuccina* are located below the level of the floor. The sarcophagus was situated against the back wall in a setting that reused earlier structures. The geophysical survey reveals other *mausolea* in the area around this findspot (see above, Chapter 4, Area 5).

(Archaeological assistance for the work was given by Dr Patrizia Turi, who documented the excavation, and by Arnaldo Cherubini who carried out the topographical survey.)

**G33 Building structure in agricultural land on a private property**

The clearance of vegetation in an area of private property revealed a structure with an *opus latericium* walls of imposing thickness. The layout of visible remains, which seem to include a vault make its identification as a funerary building unlikely, especially considering its substantial dimensions and the surviving height of its standing walls.

### G34 Cemetery: complex of covered tombs 101–143 in a private property.

The central western nucleus of the western cemetery of Portus on the Isola Sacra consisted of forty-three tombs that lay close to the ancient beach but were not aligned on the via Flavia; they were excavated in 1938 and then quickly backfilled. The buildings are known from the general plan and synthetic description in an appendix to the published report on the main cemetery of Portus at the Isola Sacra (Calza 1940: 369–77). They are arranged from north to south in a broken line, with large open areas between them, thus forming a third row of tombs with respect to the road. The construction of the cemetery dates to between the second and third centuries AD and is characterized by large enclosures, some of which lack internal structures while others were set around a *cella*. The juxtaposition of some tombs as well as the content of some inscriptions from the cemetery show that in some cases funerary plots were modest in size. During the fourth century graves were frequently cut into earlier pavements. The plan of tomb 130 reveals characteristics that are paralleled in tomb E 27 on the eastern side of the via Flavia in the main Isola Sacra cemetery (G35), and excavated in 1998–99 (Germoni 2001d: 392–93). An arrangement common to both tombs is the provision of porticoed areas and the placing of benches between pilasters, as in the case of tomb 130, or in a line of *formae* in tomb 127. The poor state of preservation of the standing structures and their decoration or, more probably, the great investment, economic and otherwise, required for final restoration in the southern sector of the cemetery, necessitated that this group of buildings be re-buried. Nevertheless, despite their poor state of preservation, they have not only provided important epigraphic evidence but also some high quality sculptural remains (Calza 1940: 369–77).

### G35 The cemetery of Portus on the Isola Sacra: area owned by the state

The complex in which more than 200 funerary buildings are now displayed in the state-owned part of the necropolis of Portus, forms the southern edge of the cemetery that developed along the sides of the via Flavia–Severiana from the end of the first until the fourth centuries AD. Regular excavations of this necropolis were begun on 22 January 1922 when part of a basalt-paved road with a series of graves along each side was accidentally discovered (ASSBAO. *Giornale degli scavi*, vol. 18). In January 1923, the group of tombs known as the *Opera Nazionale Combattenti* (G20) was discovered. The first excavations took place between 1928 and 1938 and were directed by Guido Calza.

By 1938 the complex restoration of the buildings, in particular of those situated along the western side of the via Flavia, was completed, with an 800m section of the road having been exposed. The same year also saw the systematization of the site, characterized by monumental tombs destined to contain large family groups and areas occupied by simple single earth-cut graves with the bodies covered with tiles *a spiovente* (sloping roof) or *a cappuccina*, in amphorae, in ceramic sarcophagi, and semi-cylindrical masonry vaults with or without an *aedicula* at the front.

Our understanding of the dynamics of the cemetery has been transformed through the fundamental reinterpretation of the site by Ida Baldassarre from the second half of the 1970s to the end of 1980s together with campaigns of excavations promoted by the Soprintendenza per i Beni Archeologici di Ostia during large-scale drainage work in the area. In particular, the open areas between the tombs and the so-called *campo dei poveri* were investigated, revealing more than 600 individual earth-cut graves with one or more amphorae placed on the surface as grave markers and as filters for libations. A new series of excavations was carried out from July 1998 to September 1999 in order to obtain a more comprehensive understanding of the topography, the distribution of buildings along both sides of the road and to investigate the eastern limit of the cemetery. This work took place to the north of the *Tomba della Mietitura*, where standing remains and the plans produced in the 1930s attested a continuation of the cemetery. The archaeological work directed by the Soprintendenza per i Beni Archeologici di Ostia brought to light two rows of tombs. The first, towards the via Flavia, was intensely built up, while the second was characterized by fewer structures. Close to the second row was a broad area of ‘poor graves’.

The development of the cemetery emphasizes the importance of the raised road upon which the tombs were aligned. The earliest tombs were set apart from it, but as further development took place, they progressively formed the road frontage. Subsequent encroachments incorporated the base of the road and the construction of a second and more limited row of tombs. The final stage of development saw the disappearance of the remaining gaps in the row facing onto the road, resulting in the development of a discontinuous built-up façade. The tombs closer to the road tend to be more monumental although the evidence varies on account of the uneven state of their preservation, while in one case (E43) the large number of sub-floor grave-vaults (*formae*) indicates the existence of a burial area belonging to funerary associations or *collegia*.

The monumental tombs in the cemetery are of a homogeneous type: a cellular *mausoleum*, sometimes

of two storeys, tends to be square in shape, often attached to a contemporary or later in enclosure. The roof comprises either a barrel vault or flat roof, with a triangular pediment on the façade. The brick façades are articulated with pilasters, plinths, columns and capitals in brick and with window and door jambs and architraves in travertine. The monumental character of the façade is emphasized by inscriptions (in Latin, or more rarely, in Greek), placed above the entrance, within frames of tufa or brick. These inscriptions name the owner of the tomb, the dimensions of the grave plot, the will of the deceased and rules for the use of the tomb. These inscriptions provide important information about the social structure of the population of nearby Portus, attesting the prevalence of traders, freedmen and small businessmen. Furthermore, scenes of daily life are represented on panels flanking the inscriptions, thereby providing a vital expression of popular art, such as an obstetrician assisting with the delivery of a baby, a surgeon undertaking an operation, a man manufacturing and selling iron work, and a grain trader.

While the exteriors of the tombs are the same whether the funeral ritual involved cremation or inhumation, the interiors do reflect these different customs. The inner faces of the wall are divided into two levels: on the upper level there are small niches to hold cremation urns, below there are larger arched niches for inhumations, while below the floors are vaults for inhumation burials. The rituals of cremation and inhumation co-existed through the Antonine period (AD 140–90), with an increasing prevalence of inhumation during the third century AD. The ritual depended upon individual choice, as indicated by the co-existence of both within the same family tomb. The interior decoration of the *mausolea*, deploying paintings, stucco and mosaic (often destroyed in ancient times in order to cut new graves below the floor), covers the walls, inhumation and cremation niches, and ceilings. Chosen topics are drawn from contemporary artistic repertoires, including floral elements, myths, martial and hunting scenes. Themes relating to human destiny, the cycle of the seasons, or allegories to the passing of life are less common, while polychrome mosaics are rare. The iconography and scenes of the mosaics from tomb E25, or *Tomba della Mietitura*, are an exception and represent the myth of Admetus and Alcestis, and scenes of grain processing. Shelves forming seats and beds (*klinai*) with slightly sloping tops and masonry supports are attached to the façades of some tombs. The importance of the communal meal is emphasized by the frequent presence, both inside monumental tombs and with more simple graves, of conduits set in the ground for the pouring of libations

to emphasize contact with the dead. Funerary goods are generally scarce and associated with individual graves, and include small personal objects, coins, glass phials and lamps. Typical and perhaps connected to the preparation for banquets are small pottery vessels and incense burners.

(Calza 1931: 510–42; 1940; Guarducci 1945–46: 143–49; Thylander 1952: 5, 19–232; Baldassarre 1978: 487–504; 1980: 126; 1984: 141–49; Sacco 1984; Baldassare *et al.* 1985: 261–302; 1987: 125–38; Angelucci *et al.* 1990: 49–113; Taglietti 1991: 163–78; Helttula 1995: 236–44; Baldassarre *et al.* 1996; Baldassarre 2001: 385–90; Taglietti 2001: 149–58; Germoni 2001d: 392–3).

### **G36 Section of the via Flavia near house no. 125 in via Sante Tani**

This comprised a layer of rammed pebbles, soil and mortar defined to the east by an *opus reticulatum* wall, which is interpreted as a segment of the via Flavia (G37 and G38).

(Archaeological assistance for the work was provided by the Gea Cooperative and by Dr P. Carrano, who also produced the excavation report.)

### **G37 Section of the via Flavia in a private allotment (unnumbered) in via Sante Tani**

As part of an archaeological investigation carried out between December 2007 and the summer of 2008, a further segment of the via Flavia (G36 and G38) was discovered in an undeveloped private allotment. It was found at 0.50m below the ground level and was oriented north-east – south-west. Both sides of the road were defined by *opus reticulatum* walls, with buttresses on the western side. It was 10m wide and exposed for a length of 23m. It is made up of a layer of irregular tufa blocks mixed with sand and covered with residual gravel bonded with rammed mortar. The surviving surface was cut by a large number of short furrows that ran perpendicular to the road axis and which attest the removal of its upper layers by a mechanical excavator.

(Archaeological assistance for the work was initially provided by Dr F. Ulisse, and the subsequent excavation of the whole area was supervised by Dr D. Pellandra who has completed the full documentation of the excavation.)

### **G38 Section of the via Flavia to the east of the via dell'Aereopuerto close to via Falzarego**

In 1990 during excavations carried out prior to the laying of the Italgas pipelines, a short segment of the via



Flavia was detected, oriented north-east to south-west, with its side walls supported by external buttresses (G36 and G37). The wall foundations were found at a depth of 0.30m with the occasional survival of the *opus reticulatum*. The road surface was made from a hard and compact layer of gravel mixed with mortar, below which its preparation layer was made up of blocks of tufa. The tracks running along the course of the road, attributed to the passage of wagons, together with the presence of some patching, attests to the use of the road although the absence of stratified finds makes it difficult to assign this to a specific chronological horizon (Lauro 1993: 169, figs 3, 4).

### G39 Funerary buildings and burials at Podere Monte Vodice

Between July 1999 and September 1999 preliminary excavations were carried out at the Podere Monte Vodice. A pair of funerary buildings at 0.60m below the ground level were uncovered: each was a small square *mausoleum* with its entrance on the south-western side. They were located in a burial area containing individual inhumation graves (tombs *a cappuccina*, in amphorae, and in earth-cut graves) and with cremations in small urns. The walls were preserved to floor level with obvious traces of damage resulting from modern disturbance and agricultural work.

(Archaeological assistance for the work was provided by Dr Stefano Orsini who has documented and written up the excavation and by Elena Panoritti who undertook the topographical survey.)

### G40 Burials on private agricultural land (Priolo)

Preliminary excavations in the via Falzarego on the Priolo property in 2002 uncovered a burial area at a depth of c. 0.50m. The archaeological horizon was represented by a layer that contained large amounts of building material and ceramics. Three individual inhumation burials were arranged irregularly and oriented north-south. One was covered by tile fragments while others were protected by amphora sherds.

(Archaeological assistance for the work was provided by Dr V. Rossi who has written up the excavation and by Arnaldo Cherubini who undertook the topographical survey.)

### G41 Building with portico with columns

In 1968 during the unauthorized construction of electricity pylons on the southern edge of the Isola Sacra, close to the former river meander, walls were discovered and partially exposed in the course of an

unsupervised enlargement of a foundation trench. In the excavation-trench called *buca 1* were recovered the badly damaged remains of tufa gutter blocks orientated north-south and associated with a building with a colonnaded portico. Part of an *opus reticulatum* wall and a cylindrical tufa column shaft were preserved. A road-foundation lay to the west of the gutter. (Zevi 1968: 34; 1971a, no. 5004; 1972: 405 fig. 1, 407-8, figs 2-5, 408-31; Floriani Squarciapino 1975: 6 and 9, note 5; Lauro 1993: 169-70).

### G42 Magazzino for grain

In the course of the same works described for G41 (above), a 'variety of drain' was destroyed by the excavation of a foundation trench for a pylon at the junction of two tracks close to the river bank. The extension of the trench to the east, known as *buca 2*, led to the discovery of a building a few centimetres below the ground surface. It was oriented north-south and organized around an open area with three parallel rooms on the eastern side and one on the west. This building has been interpreted as an *horreum* destined for the storage of grain. It was dated to the second century AD with restoration in the Severan period. (Zevi 1968: 34; 1971a; 1972: 405, 408-23, figs 6-18; Floriani Squarciapino 1975: 6 and 9, note 5; Lauro 1993: 169-70).

### G43 Building

In the course of the same works described for G41 and G42 (above), a building oriented north-west to south-east was discovered in a cutting called *buca 3-3A*. It was covered by a layer of plaster debris with *opus reticulatum* walls dating to the beginning of the first century AD and restorations in brick facing. The main *opus reticulatum* wall (wall A) was reinforced by buttresses along its eastern side, while on its west there was a compact layer of basalt blocks. In the angle between two walls (wall A and wall H) the abandonment phase was represented by the presence of an *a cappuccina* burial (Zevi 1968: 34; 1971a, no. 5004; 1972: 405 and 423-31, figs 19, 21-25; Floriani Squarciapino 1975: 6 and 9, note 5; Lauro 1993: 169-70).

### G44 Walls

In the course of the same works described for G41, G42 and G43 (above), two segments of walls were detected. They were preserved at foundation level and visible in the section of the trench called *buca 4* (Zevi 1968: 34; 1971a; 1972: 405 and 431, figs 36-7; Floriani Squarciapino 1975: 6 and 9, note 5; Lauro 1993: 169-70).

#### G45 and G46 Structures and mosaic pavement

On the plan of Ostia in *Scavi di Ostia I* (Calza 1953: fig. 17) are represented segments of mosaic pavement as seen by Pietrogrande in 1959–60 (Zevi 1972: 406, fig. 1, note 1).

#### G47 Archaeological finds close to La Madonnella school

During construction work for the gym for the *La Madonnella* school in January 2006 trial trenches were excavated up to a depth of 2.40m. At 1.50m below the ground level was a silty layer which originated from fluvial deposits and which contained sporadic rounded and abraded sherds of amphora.

(Archaeological assistance for the work was provided by Dr Massimiliano Martinelli who has written up the excavation and by his colleague Paolo da Roit.)

#### G48 Archaeological finds from via della Scafa–via Cesare Piva

In 2005 a trench 6m by 8m and dug to a depth 3.20m was excavated in a plot of abandoned land. The first archaeological layers were detected at 2m below ground level although the very poor preservation of the archaeological finds recovered did not allow them to be dated. The sedimentary sequence encountered during the excavation changed from a marine to marine-sand/dune environment, while the geological evidence collected shows that the coastline at the beginning of the first century AD was located approximately 50m to the north-east of that represented on the *Carta dell'Agro* (Arnoldus-Huyzendveld 2005: 21, fig. 2.5).

#### G49 Archaeological finds

In 2003 sporadic and highly abraded archaeological finds were recovered during the excavation of trenches prior to the construction of a maternity school.

#### G50 Bridge across the Tiber between Ostia and the Isola Sacra

The existence of a bridge across the Tiber to allow communication between Ostia and the Isola Sacra, although plausible, has not previously been documented. An archive search has led to the discovery of a letter dated to 23 July 1879 written by the vice-secretary of the Museo Kircheriano, Angelo Pellegrini, and addressed to the *Ministero della Pubblica Istruzione*. In this letter, the Honourable Mr Commendatore (Fiorelli?) was informed of the discovery in the Tiber bed of piers for a bridge that

connected with the Isola Sacra. Given the uniqueness of the report, the full text of the letter follows:

*‘Sono stato informato che nell’aprirsi la strada fra Ostia e Fiumicino, dalla parte di Ostia si è incontrata l’antica strada lastricata a poligoni di selce che si dirigeva a quella volta. Restati sorpresi gli ingegneri di quella direzione, hanno testato nell’alveo del Tevere in cui hanno riconosciuto i piloni di un ponte che metteva all’Isola Sacra. In questa parimenti seguito il selciato verso l’altro canale artificiale del fiume fatta da Claudio, detta la Fossa Traiana, dove opinione esservi esistito altro ponte che metteva al Porto di Claudio ora Fiumicino come si dimostra.’*

Translation:

‘I have been informed that during the building of the road between Ostia and Fiumicino, the ancient road paved with polygonal basalt block was discovered on the Ostia side heading in the same direction. The engineers of that side were surprised, having sampled the bed of the Tiber, in which they recognized the piers of a bridge that led to the Isola Sacra. On this (Isola Sacra) side the basalt paved road continued towards the other artificial canal of the river created by Claudius, the so-called *Fossa Traiana*, where it is believed there existed another bridge the led to the Port of Claudius, now Fiumicino as is demonstrated.’

A sketch follows with the location of the following sites:

A) Parte di Ostia, B) Parte di Fiumicino, C) Canale naturale del fiume, D) canale artificiale di Claudio che si distacca a ... due Rami (E), F) Isola Sacra, G) Pile del Ponte antico con la strada che viene da Ostia (H) che graverebbero al Porto (I) presso la strada antica dalla parte di Ostia si sono ritrovate reliquie di sepolcri con varie iscrizioni funebri”

Translation:

(A) Part of Ostia, (B) Part of Fiumicino, (C) Natural river channel, (D) Artificial channel of Claudius which branches off at ... *due rami* (E), (F) Isola Sacra, (G) Piers of the ancient bridge with the road that comes from Ostia (H) which should lead to Portus (I), near the ancient road, on the Ostia side, remains of burials with various inscriptions were recovered (ASSBAO, fascicolo 1879–1884).

### G51 Possible residential structures and burials

On 19 October 2016, in the course of a watching brief at the via di Ponte Matidia 29 and 30 (NCEU on F. 1061, particelle 278, 277, 216, 1441 and 1524) in conjunction with the Nucleo di Polizia Tributaria, unauthorized excavations were found to have been undertaken. The excavations, clearly undertaken with a large mechanical excavator, had removed large parts of the extensive archaeological deposits that were visible across the whole area. The very abundant presence of archaeological material with architectural elements, notably bricks and tiles, painted wall plaster fragments and mosaic tesserae, pieces of strigilated *sarcophagi*, coarseware pottery, all attested to activity in the Roman period, even though its precise chronology is not yet clear. In the context of the geophysical survey of the Isola Sacra that is the subject of this monograph, it was possible rapidly to undertake a Ground Penetrating Survey of the area with the aim of establishing beyond doubt the presence of structures at this site, the condition *sine qua non* from an Italian legal perspective for declaring the site to be of cultural interest.

A Ground Penetrating Radar survey of the area was undertaken in July 2017 revealing notable anomalies down to a depth of c. 1.20m below modern ground level. The principal feature, c. 2m wide, ran for c. 16m across the survey area in a north-west to south-east direction, while there were additional lesser anomalies adjacent to this. The other feature detected was of variable width, while there was also a more substantial anomaly that measured c. 1.5 by 6m and ran from north to south. In the eastern part of the survey area there was a rectilinear anomaly measuring c. 4m by 6m that may indicate the presence of a possible structure.

Conclusions drawn from the classes and typologies of the finds from the site, above all the large amphora fragments, bowls, African cooking wares, bricks, tiles, decorative tesserae, glass, wall plaster and lamps (two of which were complete and unused), make it possible to suggest that the site was urban in character. Furthermore, it was not far from 'La Casetta' (G9) and the residential structures that have been documented in the same street (G10). The quantity, variety and size of the fragments present, as well as the completeness of the lamps, suggest that it is unlikely that this material derives from old or illegal excavations. The absence of anthropological remains and the scarcity of material typical to funerary environments suggest that the remains detected by this survey are precious remains of the urbanised north-western sector of the Isola Sacra, where the Isaeum (G7) and the so-called Baths of Matidia (G12), seem increasingly to have been rooted in a settlement context.

(Unpublished internal report to the *Parco Archeologico di Ostia Antica* by P. Germoni. The G.P.R. survey was conducted by Sophie Hay (BSR/University of Southampton) and Gabriella Capintiero, while the results were analysed by Kristian Strutt.)

### G52 Shipwrecks Isola Sacra 1 and 2 (pp. 139–45)

The remains of the first vessel, Isola Sacra 1, came to light in 2011, at an average depth of 3m below ground level, in the course of trial trenching for the project to build the Nuovo Ponte della Scafa and its approach roads. This boat, dateable to between the end of the second and the beginning of the third century AD, was constructed with a shell-first technique by means of the mortice-and-tenon, typical of the Graeco-Roman period. Preserved for a length of up to 12m and a width of 5m, the vessel had a prow – thus ending with a vertical plank – and a particular treatment of the area of the prow, where exceptionally, two oars used in manoeuvring of the vessel were still visible. These characteristics suggest that the vessel was used in the same way as *horeia* in the servicing of ports, a type of boat known from iconography and from examples discovered in ancient port basins (Toulon and Naples).

After the first phase of excavation and documentation, the wreck was covered with layers of geotextile and sandbags, causing a rise of the water-table in line with the advice of the experts in the field of waterlogged wood, with the objective of re-creating the original environment. In 2015, the wreck was freed from its protective covering, cleaned again, and its individual elements identified with labels and documented by means of a digital photogrammetric survey. The position of the Isola Sacra 1, which partially overlay a second vessel (Isola Sacra 2) at a lower level, made it necessary to take the individual elements of the boat apart rather recovering it intact. Indeed, this was the only way of ensuring that the Isola Sacra 2 wreck was not damaged. Its various groups of structural elements were thus taken apart and lifted: first the internal wooden planking, followed by the ribs, the planking of the external shell and, last of all, the keel. After having replaced the plastic labels with more resistant aluminium ones, the various elements were washed and then photographed both separately and in groups. Particularly interesting elements were recorded by means of digital photogrammetry. This documentation will provide the basis for reconstructing the original shape of the vessel and will also be fundamental to re-assembling and displaying it in a museum. Finally, every single element from the wreck was protected and wrapped in order to mitigate the deformation of the wood.

The recovery operations were completed in October 2015 with the transfer of the disassembled wreck to a suitably prepared structure within the Parco Archeologico di Ostia Antica. Upon completion, the total volume of the wooden elements deriving from the wreck was equivalent to 2.5m<sup>3</sup>, and comprised some 600 items. The various installations in the building (nebulizer with water-softener and related installations for the supply and drainage of water), made possible the anticipated activities, ending with

the de-salinization and conservation of the wood in anticipation of the treatment of the various parts of the wreck. (Boetto *et al.* 2012a; 2012b; 2017; see also Boetto *et al.* this volume; Fiore *et al.* 2015).

#### Note

- 1 This text is a revised and updated version of that previously published (Germoni *et al.* 2011). Translated from the Italian by Pina Franco and Simon Keay.





# The Isola Sacra Survey

The Isola Sacra occupies the land between Ostia and Portus at the mouth of the Tiber, and thus lies at the centre of the massive port complex that served Imperial Rome. This volume focuses on the results of a survey of the island completed as part of the Portus Project, complementing the previously published survey of Portus (2005) and the forthcoming publication of the German Archaeological Institute's survey of Ostia. The survey is framed by an analysis of the geomorphology of the delta, and integrated with information from past excavations. It is complemented by a programme of geoarchaeological coring and a short account of the ships excavated on the Isola Sacra in 2011.

The results make an important contribution to the understanding of the landscape of both Portus and Ostia, offering new information about the development of the delta, and the changing use of the Isola Sacra. They also provide evidence for the buildings along Isola Sacra's northern shore and the cemeteries that flank this settlement and the via Flavia (which runs between Portus and Ostia across the centre of the island). Most significantly, three completely new sets of features were revealed: a major canal that ran north–south across the island; a system of land divisions, which created blocks of fields; and a suburb of Ostia on the island's southern flank. These results are key for understanding the development of the Portus–Ostia complex, and hence the economy of the City of Rome itself.

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