# THE UNIVERSITY OF MICHIGAN PRESS



www.press.umich.edu

Recent Archaeological Survey at Portus

Author(s): Simon Keay, Martin Millett and Kristian Strutt

Source: Memoirs of the American Academy in Rome. Supplementary Volumes, 2008, Vol. 6, The Maritime World of Ancient Rome (2008), pp. 97-104

Published by: University of Michigan Press for the American Academy in Rome

Stable URL: https://www.jstor.org/stable/40379299

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at https://about.jstor.org/terms



American Academy in Rome and University of Michigan Press are collaborating with JSTOR to digitize, preserve and extend access to Memoirs of the American Academy in Rome. Supplementary Volumes

# RECENT ARCHAEOLOGICAL SURVEY AT PORTUS

Simon Keay, Martin Millett, and Kristian Strutt

## 1. Introduction

The Roman harbors at Portus are of central importance for any understanding of the maritime conomy of the Roman world. Although they have been the subject of antiquarian research since the sixteenth century, the enormous scale of the ancient structures and limitations on accessibility have meant that knowledge of the site has remained comparatively limited. The first published survey of the site was produced by Rodolfo Lanciani in the mid-nineteenth century.<sup>1</sup> His work was complemented by the studies of Lugli undertaken in the 1920s and 1930s. Although Lugli's results were comprehensively published, the volume was produced in a limited edition and did not reach a wide audience.<sup>2</sup> Extensive work on the Claudian harbor was undertaken during the construction of Fiumicino airport in the 1960s, and a general account of this work was produced,<sup>3</sup> together with a full report on the excavated ships.<sup>4</sup> The Soprintendenza per i Beni Archeologici di Ostia has continued with a program of excavation since this date and most recently has been undertaking extensive topographic survey and on-site conservation in preparation for the opening of part of the site to the public.<sup>5</sup> Since 1998, at the invitation of the Soprintendenza per i Beni Archeologici di Ostia, we have undertaken an extensive geophysical survey covering all available areas of the site. The results of this work complement previous studies and provide new evidence for the development and organization of the harbor complex. In the present paper we summarize our approach and the principal conclusions. A full report on the project has recently been published, and this provides the detailed evidence on which the present account is based.6

The survey was undertaken in collaboration with the Soprintendenza per i Beni Archeologici di Ostia and the British School at Rome, with financial support from them and from the Arts and Humanities Research Board of the United Kingdom. It has also enjoyed the support of the Universities of Southampton, Cambridge, and Durham. We also wish to acknowledge Duke Sforza Cesarini for allowing access to his property.

## 2. Historical Context

Portus lies on the Tyrrhenian coast of Italy, just north of the mouth of the river Tiber and ca. 4 km north of Ostia (fig. 1). Ancient literary sources and an inscription dated to A.D. 46 (CIL 14.85)

<sup>1</sup> Lanciani 1868.	<sup>4</sup> Scrinari 1979.
<sup>2</sup> Lugli and Filibeck 1935.	<sup>5</sup> Mannucci 1996.
<sup>3</sup> Testaguzza 1970.	<sup>6</sup> Keay et al. 2006.



Fig. 1. Map showing the location of Portus on the Tyrrhenian coast of the Italian peninsula.

record that the complex was planned by the emperor Claudius in order to provide a harbor for seagoing vessels at the mouth of the Tiber. The project was intended to improve the supply of the City of Rome, which had hitherto been served only by the river port at Ostia, with many goods thus having to be carried over land from the harbors in the Bay of Naples. However, construction took a considerable period, and the inauguration of the complex was celebrated with a coin issue struck by Nero in A.D. 64 (*RIC* 1, nos. 178–183). Subsequently the complex was enlarged under the emperor Trajan as one of his actions to improve the infrastructure of Italy and to secure Rome's supply of grain. It has long been recognized that the harbor constructed by Claudius (the Porto di Claudio) can be identified with the remains of moles and quays in the northern part of the site, while the later extension (the Porto di Traiano) is represented by the hexagonal basin to the southeast. The problem in reconstructing the topographic development of the harbors in greater detail has always centered on the identification of the different canals known from inscriptions and establishing how they worked in relation to the harbor basins.

#### 3. Methods of Study

Our work comprised a geophysical and surface survey that was undertaken at Portus between 1998 and 2004. The survey, commissioned by the Soprintendenza per i Beni Archeologici di Ostia, formed part of a broader research project, "Roman Towns in the Middle and Lower Tiber Valley," and included topographic survey, large-scale magnetometer survey, and the systematic collection of surface materials. The techniques deployed in the project have been reviewed elsewhere.<sup>7</sup> They

<sup>7</sup> Keay et al. 2004.



Fig. 2. Overall plan showing the areas of Portus covered by the geophysical survey (magnetometer) discussed in this paper. Gray indicates the area of geophysical survey, with the darker shade indicating the presence of high magnetic anomalies.

enable large areas of ground to be covered very rapidly and are well suited to research on extensive archaeological sites like Portus. The magnetometry produced a plan of localized unidimensional magnetic anomalies generated by buried features, including construction material (fig. 2). These geophysical features were then interpreted in the light of knowledge of ground plans of known Roman building types. The results were incorporated into an existing cartographic base, enhanced with a new topographic survey. The geophysical survey does not provide any information about the chronology of the buried features revealed. Surface materials were also collected systematically wherever the ground conditions were suitable in order to provide further information about occupation and abandonment dates as well as about the character of the buried deposits. The total survey area covered an area of ca. 173 ha and encompassed the southern and eastern parts of the Porto di Claudio, the areas around the hexagon of the Porto di Traiano and between it and the ancient coast to the west, as well as the extensive flatlands lying between the hexagonal harbor and the Tiber.

# 4. The Topography of Portus: The Claudian Complex

Much of the Claudian harbor was unsuitable for geophysical survey. To the north it is partially obscured by the modern Aeroporto di Leonardo da Vinci di Fiumicino, while buildings of later phases in the Roman development of the site are superimposed over the area to the south, creating a complex building sequence around the Darsena. Furthermore, the construction of the Trajanic hexagonal basin seems likely to have destroyed parts of the earlier complex. Nevertheless, limited geophysical



Fig. 3. Geophysical survey results of the area immediately south of the Darsena. The building identified as the "Foro Olitorio" is visible in the central area. Gray indicates the area of geophysical survey, with the darker shade indicating the presence of high magnetic anomalies.

survey, combined with observations of standing buildings and a reconsideration of earlier published accounts, allowed us to put forward a new reconstruction of this initial phase of the port.

Key to understanding the Claudian harbor is the identification of the canals recorded as having been constructed in A.D. 46 in order to relieve flooding at Rome and to facilitate the construction of the port. Previous authors have suggested a variety of possible identifications. Our work leads to several key conclusions based on the premise that there were only two Claudian canals. One, in the northern part of our survey area and also visible on aerial photographs, lay immediately north of the Claudian harbor basin and would have carried water westward to the coast directly from the point where the Tiber bends sharply southward. The other links the Tiber with the sea immediately to the south of the Claudian harbor and is to be identified with the modern Canale Navigabile di Fiumicino—confusingly and erroneously called the Fossa Traiana by earlier commentators.<sup>8</sup> The presence of a *statio marmorum* dated to the later first century A.D. on its southern side confirms its pre-Trajanic date.<sup>9</sup> These two canals defined the area to be developed for the harbor, which was constructed with enormous concrete moles reaching out from the shore and an area of the ancient coast also being excavated to extend the basin inland.

Our survey work revealed new details of the quays on the landward side of this harbor basin as well as new information about the structures on its southeastern side. To the south of the Darsena, a building identified by Lanciani<sup>10</sup> as the Foro Olitorio and excavated features in the

<sup>10</sup> Lanciani 1868.

<sup>9</sup> Pensabene 2002.

<sup>&</sup>lt;sup>8</sup> E.g., Lugli and Filibeck 1935; Testaguzza 1970.

area of the Portico di Claudio suggest that an orthogonally planned harbor town was developed during the second half of the first century A.D. (fig. 3). This flanked the so-called Fossa Traiana at the south and, at least by the later first century, was connected to Ostia by a road, the Via Flavia.

These conclusions have allowed us to suggest a new hypothesis about the development of Portus in the first century A.D. The port began with the construction of two canals. This kept the area of the future harbor free of Tiber floods during construction. Next the great harbor basin was built. Its primary function was to act as an anchorage for sea-going ships while they unloaded their cargoes onto river barges for transport up the Tiber to Rome; so the port could have started to function in relation to Ostia even before other local shore facilities were fully developed. The inner harbor, known as the Darsena, and the canal connecting it to the outer basin and to the so-called Fossa Traiana, were then built, and there is some recent evidence to suggest that their construction took place in the Neronian period. Once this infrastructure was in place, the *magazzini* (warehouses) and other buildings could be built within the orthogonal grid. With these came the construction of the road link to Ostia. The survey has also located the line of the first-century aqueduct supplying this area of the settlement, as well as a series of funerary and other structures presumably facing onto a road that we believe ran beside the Tiber to the east of the new settlement. This activity illustrates the importance of the river as a focus for activity from this period.

In trying to understand the operation of the first-century harbor, we should bear in mind first that Portus was subsidiary to Ostia at this stage (and indeed remained administratively so until the fourth century), and second that although the new construction was monumental in scale, it seems to have lacked much in the way of architectural elaboration or display. We thus envisage Portus growing first as an enormous haven connected by sea to Ostia, then with the development of harbor and warehousing facilities increasingly becoming an independent entity with goods being transhipped, stored, and transported by barge via the canals to the Tiber and upriver to Rome. Thus, although still linked to Ostia, it was by the end of the first century increasingly operating in its own right as the principal harbor for Rome.

#### 5. The Topography of Portus: The Trajanic Complex

Previous work shows how the 33.25 ha hexagonal harbor constructed under Trajan, each side of which is ca. 358 m in length, created a major new focus for the complex. Our work adds detail to the understanding of the hexagon, but in addition it has provided key new information from the area of flat land between the hexagon and the Tiber. This provides a clearer picture of the scale of the Trajanic enterprise and clarifies how the complex may have functioned.

The new hexagonal basin to the southeast of the Claudian harbor was probably designed as an inner harbor, perhaps a larger-scale replacement for the earlier Darsena. It also accommodated far more extensive storage facilities than before, with the construction of large *magazzini* along at least five of its six sides. Its position with respect to the Claudian basin and Darsena also ensured that the earlier harbor could continue to function during the years of its construction.

Once completed, the integrated complex of the Claudian outer basin and the Trajanic hexagon functioned as a unified whole. Its focus lay on side II of the hexagon, directly opposite the entrance via the Canale di Imbocco al Porto di Trajano. At the center of this side, directly on axis to the entrance, the geophysical survey revealed a rectangular temple within a temenos that is probably



Fig. 4. Geophysical survey results of the central area of the Trajanic canal as it approaches the Tiber to the east of the Trajanic hexagon. The road runs parallel to its northern side, while the path of the aqueduct is marked by the line of dark dots beyond. Buildings can be identified between the canal and the road. Gray indicates the area of geophysical survey, with the darker shade indicating the presence of high magnetic anomalies.

to be identified with the building that Lanciani describes as a temple to Liber Pater Commodiana, in front of which was supposed to have been a colossal statue to the emperor Trajan.<sup>11</sup>

Most of the quays around the rest of the hexagon and beside the Darsena were occupied by huge warehouses. Our survey suggests that the entire ground-floor area occupied by warehouses of this period totaled ca. 92,000 m<sup>2</sup>. The form of the warehouses varies, but the majority are of the corridor type. The principal exception is on side VI of the hexagon in the area of the so-called Palazzo Imperiale. The survey provided no evidence to support this interpretation, although in the western part of the area major structures survive, including a cryptoporticus and the so-called Terrazza di Traiano. To the east there is also evidence for a monumental structure looking over the Claudian harbor basin and beside this a row of substantial courtyard warehouses with access onto both harbor quays. The character of the warehouses at Portus contrasts with those at Ostia, supporting the idea that they were principally associated with state-controlled supply. It can be no coincidence that the development of the harbor by Trajan coincides both with his reforms of the *annona* and also with Portus replacing Puteoli as the destination of the Alexandrian corn fleet.

The survey also provided new evidence of the canal that is recorded to have been constructed in the Trajanic period (Plin. *Ep.* 8.17.1–2; *CIL* 14.88). Features had previously been noted in the area between the Tiber and the hexagonal basin, but the geophysical survey revealed a comprehensive replanning of this area with the construction of a new canal, ca. 40 m wide and ca. 1.4 km long, which connected the Fossa Traiana near the Episcopio with the Tiber. In its western stretch, this canal was constructed to run parallel with side III of the hexagon, so that goods in the warehouses here could be loaded directly onto canal barges. This arrangement ensured that the transshipment of cargoes and their movement upriver to Rome would have been much more efficient.

Farther east the canal curved and then cut straight toward its intersection with the Tiber. Here it ran parallel with a major new road and the rerouted aqueduct (fig. 4). The overall effect of this must have been dramatic for visitors approaching the port from Rome and would have been

<sup>11</sup> Lanciani 1868, 179–182.

an eloquent symbol of the imperial power represented by the port as a whole. The survey shows that the area between the road and the canal developed as a district of commercial activity. Major warehouses were found facing onto the road and extending back to the canal, while the surface collection yielded very high densities of imported African, Tripolitanian, and east Mediterranean amphorae associated with them.

To the north of the aqueduct, the geophysical survey and surface collection also revealed the presence of extensive cemeteries of middle to late Imperial date. This implies that Portus was becoming a major center of population, although it has proved difficult to identify houses or apartments in the areas surveyed. It seems probable that the main focus of occupation lay in the area to the south and southwest of the hexagonal harbor, flanking the Fossa Traiana. However, the deposits in this area are known to be extremely deep and complex, and only a limited area was available for survey, so our evidence for the nature of this part of the settlement remains limited. There was also a zone of domestic occupation on the Isola Sacra, around the bridgehead where the Via Flavia crossed the Fossa Traiana. However, this seems to have been rather limited in extent.

Flanking the Tiber, to the north of the canal entrance, a major complex of buildings subsequently developed. Important new evidence from aerial photographs provides details of the full layout of this complex. It comprises a series of temples and a series of *magazzini* that opened onto the Tiber; elsewhere there are extensive mausolea. The position of this site close to the intersection of the canal and road with the Tiber suggests that it acted as a river port. However, the presence of large temples suggests that it may also have acted as a sanctuary, possibly marking a transition from the terrestrial to maritime spheres.

It is clear that the Trajanic development significantly altered the character of Portus. The capacity of the harbor and storage facilities was greatly increased, and there is evidence for greater monumentalization. The epigraphic and sculptural evidence confirms the growth of a more cosmopolitan community and a much more urban landscape. We would interpret this as a culmination of the process by which Portus had started to become increasingly independent from Ostia during the first century A.D., but it is equally evident that the impetus for the second-century development comes from imperial initiative and is a direct consequence of the reorganization of Rome's food supply. Although Portus only became an autonomous municipality in the fourth century, the Trajanic development certainly established it as an independent entity and as the formal gateway to the imperial capital. The survey has provided evidence for the later development of the site and its continued use into the seventh century A.D., but the layout and functions seem to have been altered little after the second century.

## Works Cited

- Keay, S., M. Millett, L. Paroli, and K. Strutt, Portus Romae: An Archaeological Survey of the Port of Imperial Rome (London 2006).
- Keay, S., M. Millett, S. Poppy, J. Robinson, J. Taylor, and N. Terrenato, "New Approaches to Roman Urbanism in the Tiber Valley," in *Bridging the Tiber: Approaches to Regional Archaeology in the Middle Tiber Valley*, ed. H. Patterson (London 2004) 223–236. Archaeological Monograph of the British School at Rome 13.

Lanciani, R., Ricerche topografiche sulla città di Porto (Rome 1868).

- Lugli, G., and G. Filibeck, Il Porto di Roma imperiale e L'Agro Portuense (Bergamo 1935).
- Mannucci, V., ed., Il Parco Archeologico Naturalistico del Porto di Traiano: metodo e progetto (Rome 1996).
- Pensabene, P., "Il fenomeno del marmo nel mondo romano," in *I marmi colorati della Roman imperiale*, ed. M. De Nuccio and L. Ungaro (Rome 2002) 3–67.

Scrinari, V. S. M., Le navi del Porto di Claudio (Rome 1979).

Testaguzza, O., Portus: illustrazione dei Porti di Claudio e Traiano e della città di Porto a Fiumicino (Rome 1970).