8

PORTUS

THE history of the imperial harbours and the settlement that grew up around them cannot be studied in such detail as Ostia town because no part of the area has been systematically excavated. The scale of the harbours and of the ruins around them attracted antiquarians from the fifteenth century onwards. The earliest description preserved records the visit of Pius II in 1461;[1] the earliest plan is by Giuliano da Sangallo, between 1485 and 1514. But there is little precise detail in the early descriptions and the plans represent wishful thinking rather than a record of what could still be seen. None had greater influence than Ligorio's handsome reconstruction of 1554, but to make a convincing picture Ligorio drew heavily on his imagination. Some of his successors were considerably more restrained, but their plans are suspiciously schematic and none has stood the test of detailed investigation.[2] Not until the nineteenth century was the relative orientation of the harbours of Trajan and Claudius clearly shown; earlier plans set the two harbours on the same axis, though it is still clear on the ground that the outer harbour of Claudius lies to the north-west of the inner basin. The reproduction of the Claudian harbour on Nero's bronze coinage has also bedevilled crucial problems. It has clearly influenced both descriptions and plans, but, as will be seen, the nature and value of its evidence is far from clear.

There can never have been any serious doubt concerning the shape and size of Trajan's inner basin, but it is doubtful whether, even as early as the sixteenth century, an accurate plan could have been made of the Claudian harbour from what could be seen above ground. From the Renaissance onwards the history of the site of Portus runs for a long time parallel to that of Ostia. The ruins were exploited for building material and for the recovery of works of art. But the evidence for the excavations of the late eighteenth and early nineteenth century is even more meagre than at Ostia.

[1] The account quoted, A. Nibby, *Analisi de' dintorni di Roma*[2] (1848) 634.

[2] For the series of Portus maps, G. Lugli, 'Una pianta inedita del porto Ostiense', *Rend. Pont.* 23-24 (1947-9) 187.
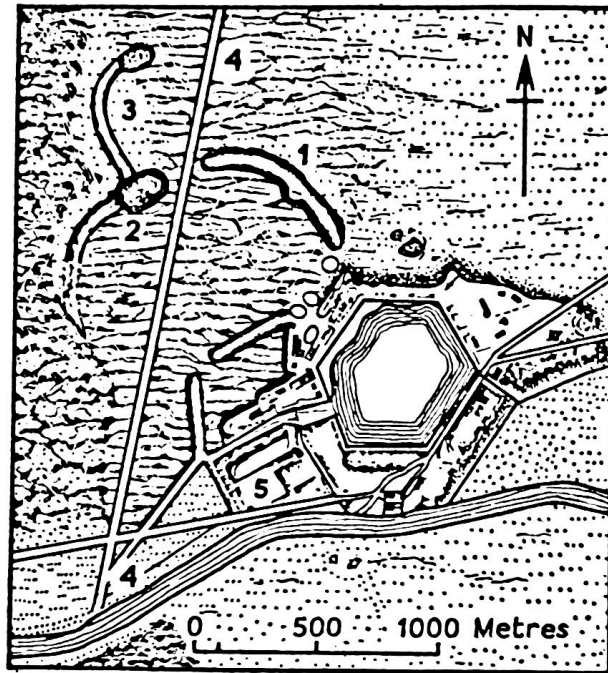
FIG. 3. Existing state, 1829, as seen by Canina. 1. Monte Giulio (right mole). 2. Monte dell' Arena (assumed to mark the site of the lighthouse). 3. Mole added in late Empire (p. 170). 4. Fronzino canal. 5. 'Darsena', basin for rowing-boats (p. 160).
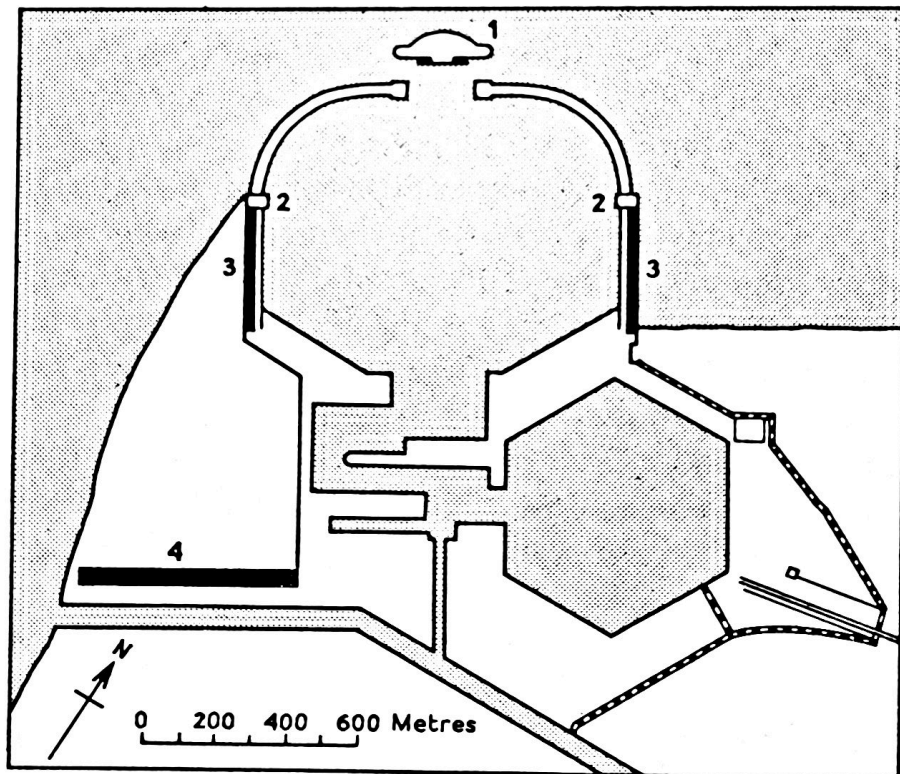

FIG. 4. Plan restored, 1858, by Texier, *Mémoire sur les ports antiques situés à l'embouchure du Tibre*. Details of buildings round Trajan's harbour (schematic) are omitted. 1. Island with lighthouse. 2. Balancing arches on moles (p. 159). 3. Texier assumes buildings on both moles up to the arches, but none on their seaward side. 4. Porticus Placidiana (p. 169). See also key to Fig. 3.

What little we know of them is due to Fea, who published in 1824 his valuable gleanings on the site,[1] and to Nibby, who in 1837 included
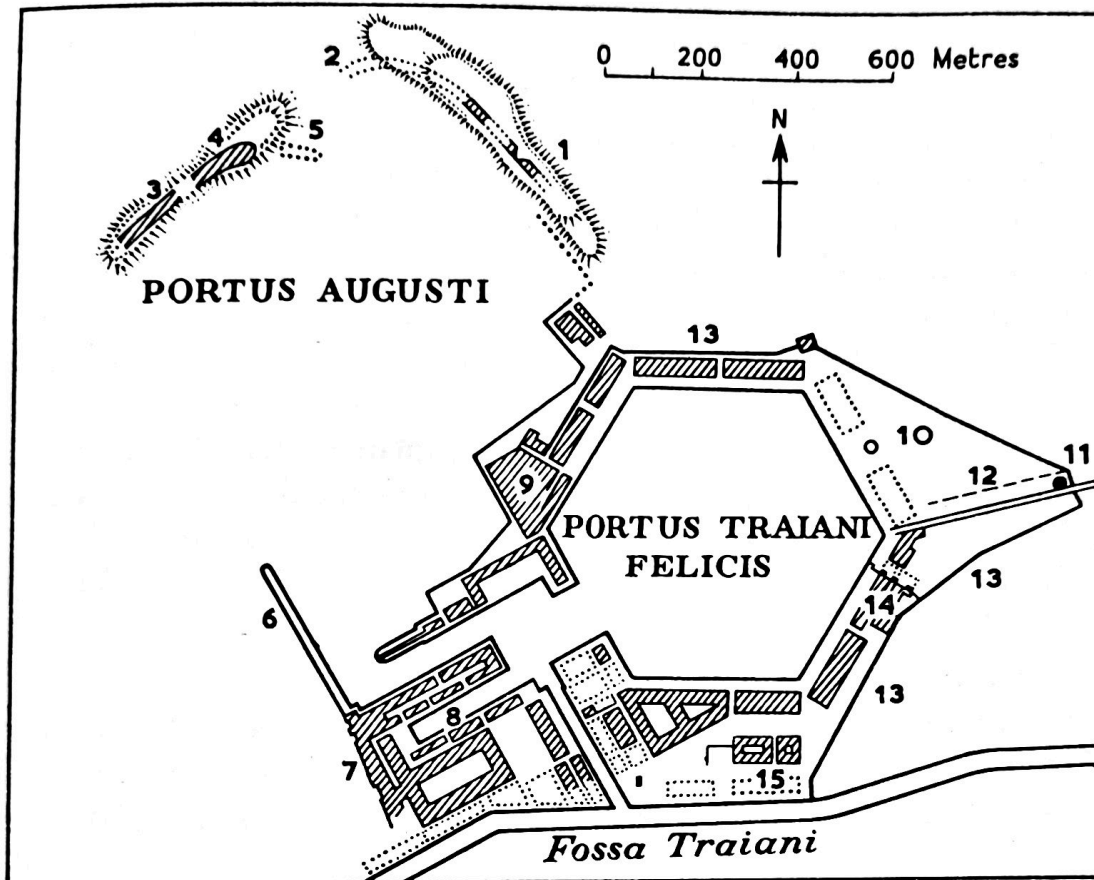

FIG. 5. Modern evidence. Adapted from the plan by Italo Gismondi (1935), reproduced in *Rend. Pont.* 23–24 (1947–9) 195; with additions. 1. Buildings partly excavated by Lugli on right mole (p. 158). 2. Turning-point of right mole towards entrance, traced by Carcopino (*NS* 1907, 735). 3. Parts of left mole, traced by Lugli (p. 155). 4. Widening of left mole from *c*. 50 ft. to *c*. 75 ft., revealed in 1957 (Pl. xix). 5. Wall, *c*. 15 ft. wide, first discovered by Carcopino (*NS* 1907, 736) and thought to be a late addition, at an angle to the left mole. Revealed in 1957 to be the termination of the left mole, almost certainly Claudian (p. 157). It is faced with well-coursed tufa bricks, excellently preserved. 6. Late Empire mole (p. 170). 7. Claudian portico (p. 160). 8. Darsena. 9. 'Imperial Palace' (pp. 163–5). 10. Temple of Liber Pater. 11. Temple of 'Portumnus'. 12. Aqueduct. 13. 'Constantinian walls'. 14. Defensive cross-wall (p. 170). 15. Tower shown in Pl. xxi *b*.

with his history and description of the ruins valuable information concerning what had come to light in his day.[2] Later excavations also followed a different pattern from those at Ostia. When Visconti excavated at Ostia for the Pope between 1855 and 1869 accounts and plans were

[1] C. Fea, *Viaggio ad Ostia* (1802) 30–39.
[2] A. Nibby, *Della Via Portuense e dell' antica città di Porto* (Roma, 1827), incorporated in *Analisi de' dintorni di Roma,* here cited in the 1848 edition as 'Nibby'.

published and the study of the town's history was steadily advanced. When at Portus substantial excavations were undertaken between 1864 and 1867 the contemporary record is virtually confined to a list of sculpture found. Lanciani visiting the site shortly afterwards found the ruins covered again, and, though local workers could give him a general impression of what had been seen, the information was inadequate to provide the basis for a plan. These excavations are particularly tantalizing, because they uncovered a large area between the two harbours and could have resolved important problems in history and topography.

Lanciani's thorough investigation of the site, however, marked a great step forward. Besides checking earlier accounts he was able to collect important evidence that had accumulated since Nibby wrote. Lanciani had a keener eye than his predecessors for the changing styles of Roman construction, and he appreciated the importance of brick-stamps. His account, published in 1868 together with a more detailed plan of Trajan's harbour, for long remained the standard source of reference.[1]

While from 1870 onwards Ostia was being excavated by the state, Portus remained in the possession of the Torlonia family, who had acquired the site in 1856. In the course of agricultural work parts of buildings were occasionally uncovered but no accounts were published. In 1907, however, Carcopino, then Director of the French School in Rome, was authorized to make a limited series of tests in the Claudian harbour. Of the three specific problems which concerned him, the easiest only was satisfactorily resolved. Carcopino traced the line of the right mole to its approximate end, and confirmed the position and rough width of the entrance at this point. His more difficult problems eluded him. He was not able to establish the relation between the lighthouse and the left mole, nor to follow the course of the left mole to its junction with the land. The trial pits to which he was restricted were too limited in scope to resolve the problems, but useful new evidence, positive and negative, was obtained.[2] New evidence was also won from Trajan's harbour when the basin, which had degenerated into a reed-fringed marsh, was cleaned out and restored to its original form in 1923. Calza was able to study the structure of the quayside before the

[1] R. Lanciani, 'Ricerche topografiche sulla città di Porto', *Ann. Inst.* 40 (1868) 144–95 (cited as 'Lanciani').

[2] Carcopino, *NS* 1907, 734.

basin was refilled, and to leave an illustrated record of what can no longer be seen. At the same time he was able to describe and plan a substantial part of a large granary and a group of tombs which had been uncovered when the hydraulic pump used for drawing water into the restored basin was installed.[1]

Finally, in 1935 Lugli did for Portus what Paschetto had done for Ostia in 1912. In a volume handsomely illustrated by revised plans and photographs he collected the evidence available for a history of the site and described in considerably more detail than his predecessors the ruins that can be seen or of which some record has survived.[2] He also hoped to press to a conclusion Carcopino's investigation of the Claudian harbour, but once again, though valuable new evidence was secured, the scale of the digging was too restricted to provide decisive answers to the main questions.

The Claudian harbour was built some two miles north of the Tiber mouth, and the choice of site has been commonly criticized. The rate of coastal advance has been considerably more rapid to the north than to the south of the river, for the coastal current and prevailing winds sweep sand and silt northwards. By the eighth century, and perhaps earlier, the harbour was choked; today it is more than a mile inland. A harbour built to the south of the river, though exposed to the drift of sand, would not have been threatened by Tiber silt.

It has been suggested that Claudius deliberately avoided the more suitable area because he did not wish to expropriate the owners of coastal villas which stretched in a continuous line southwards from Ostia;[3] but such scruples would not have been decisive when Rome's corn supply was at stake. Nor should we lightly condemn his engineers for overlooking what seems to us a decisive factor. If we are right in believing that the coastline was comparatively stable during the Roman period the danger to the new harbour from Tiber silt would have been much less apparent than it became later.[4] The main positive advantage of the site chosen was that it provided the shortest and easiest communication with the Tiber; and there may already have been a small bay at this point on the coast.[5]

[1] Calza, 'Ricognizioni topografiche nel porto di Traiano', *NS* 1925, 54.
[2] G. Lugli and G. Filibeck. *Il Porto di Roma imperiale e l'agro Portuense* (Roma, 1935), a limited edition not available in England, cited as 'Lugli'.
[3] Carcopino, *Ostie*, 9 f.
[4] pp. 125 f.; Le Gall, *Le Tibre*, 129.
[5] Lugli, 9.

The general shape of the Claudian harbour is recorded by Suetonius and Dio, and can be partly confirmed on the ground and from air photographs. Suetonius gives a summary description in his *Life of Claudius*:

He constructed a harbour at Ostia. Two encircling arms were built out to sea: at the entrance where the water was deep a break-water was added. In order to provide more secure foundations for this breakwater he first sank the ship which had brought the great obelisk from Egypt . . . above he set a very high tower on the model of the Alexandrian Pharos, so that ships could steer their course by its burning light at night.[1]

Dio adds a little further detail:

First he excavated a not inconsiderable area of land; he built a retaining wall right round this excavated area and then let the sea come in. Next, in the sea itself he built great moles, one on each side, enclosing a large expanse of sea. He formed an island in the sea and built on it a tower with a beacon.[2]

A visit to the site still gives a vivid impression of the scale of Claudius' harbour. The modern road to Fiumicino runs close by Trajan's harbour. To the north of the road, less than a hundred metres distant, can be seen the hexagonal basin, once again filled with water; around it is an eighteenth-century classical landscape of open woodland and grass-covered ruins. When the road passes beyond this woodland the country is flat and comparatively featureless. But in the distance to the north-east a gently swelling rise can be seen, running in an unbroken stretch for roughly half a mile. This is Monte Giulio; it marks the line of the right mole. To the left of Monte Giulio, nearly a mile from the road, is an isolated hillock, rising up sharp from the ground. This is the sand-hill, Monte dell' Arena, growing good crops; it is generally assumed to hide what remains of the Claudian lighthouse. But from the road it is impossible to detect the line of the left mole; among the low undulations there is no single prominent contour. On the ground, however, its line can be followed westwards from Monte dell' Arena for some 500 metres, until it curves towards the land.[3] Beyond that point it is lost.

Carcopino's report in 1907 presented an intelligible reconstruction of

[1] Suet. *Claud.* 20. 3; 'portum Ostiae extruxit circumducto dextra sinistraque brachio et ad introitum profundo iam solo mole obiecta; quam quo stabilius fundaret, navem ante demersit.'

[2] Dio lx. 11. 4.

[3] J. Bradford, *Ancient Landscapes*, 253.

the main features of the harbour. Monte Giulio concealed the right mole. Between the end of the right mole and Monte dell' Arena was an entrance 120 metres wide. Monte dell' Arena marked the lighthouse and beyond it was a second entrance of approximately the same width. Nibby, however, had already reported that there was no room for such an entrance between the lighthouse and the left mole,[1] and he was confirmed when Lugli exposed a small stretch of the left mole almost immediately below Monte dell' Arena.[2]

Lugli concluded that the lighthouse was built, not on an island, but at the end of the left mole. For this view he found support in a passage from the elder Pliny, who should be a reliable eyewitness. In a catalogue of trees of spectacular size Pliny digresses from the fir which provided the mast to a brief description of the ship which was used for the foundations of the lighthouse: 'longitudo spatium obtinuit magna ex parte Ostiensis portus latere laevo. ibi namque demersa est.'[3] Lugli takes this passage to mean that the ship occupied a large part of the left mole; but since the left mole was at least 800 metres long and the ship's length can hardly have exceeded 50 metres it is extremely difficult to refer 'latere laevo' to the left mole. Like so much in Pliny this passage is too obscure to carry decisive weight.[4] Dio explicitly states that the lighthouse was on an island and Suetonius implies the same.

Nero's bronze coinage is also difficult to reconcile with Lugli's thesis.[5] These coins show two curving moles, and the end of the left mole is occupied by a temple. Between the moles is a colossal imperial statue on a substantial base. The lighthouse itself is not represented, but a relief found by Trajan's harbour, now in the Torlonia Museum, which depicts some of the monuments of the two harbours, shows a colossal statue on the penultimate story of the lighthouse.[6] It has not unreasonably been suggested that the artist of the coin design has chosen to emphasize the statue at the expense of its background. More important perhaps than this uncertain identification is the disposition of the ships in the design. Through all minor variations in the different dies two

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[1] Nibby, 643.   [2] Lugli, 24.   [3] Pliny, *NH* xvi. 202.

[4] In his description of a whale-hunt in the harbour of Claudius Pliny (*NH* ix. 14) provides further ambiguous evidence. Nets were spread to prevent the whale's escape: 'praetendi iussit Caesar plagas multiplices inter ora portus.' This cannot mean 'between the entrances', which would be nonsense. 'At the entrances' seems to me the least unlikely meaning but *ora* might be a poetic plural, implying a single entrance. Cf. Florus, *Epit.* i. 33. 7: 'primusque Romanorum ducum victor ad Gades et Oceani ora pervenit.'

[5] Pl. xviii *a*.   [6] Pl. xx.

ships are seen in the same position; a merchantman in full sail is entering, a trireme is leaving the harbour: the colossal statue comes between them and they naturally suggest two entrances.

Nibby offered a plausible solution to reconcile the evidence of literary sources and of the coinage that the lighthouse was on an island with the archaeological demonstration which allowed no entrance between the Monte dell' Arena and the left mole. He suggested that in the late Empire the western entrance was increasingly threatened by the drift of sand and silt and was therefore closed.[1] He also noted a barely perceptible low ridge stretching for some 600 metres north-east of Monte dell' Arena and ending in a mound where he found scattered Roman material including fragments of marble decoration of a very late date.[2] This, he suggested, was a new lighthouse at the end of a new mole, built as a further protection against the sand, possibly in the time of Theodoric. Of this 'late mole' there is now no sign whatever and Lugli has discounted it; but Nibby was in good company when he visited Porto. Fea, Canina, and Rasi were with him and they discussed the main problems together. Canina showed the 'barely perceptible ridge' in his sketch of the existing state of the site.[3]

Nibby published his account in 1829. Nearly thirty years later the French engineer, Charles Texier, who had considerable experience both of harbours and of ancient construction, spent several days in an intensive study of the site.[4] From the literary evidence he was convinced that the lighthouse was on an island in advance of the moles; he satisfied himself that he had identified its position in remains of massive masonry some 100 metres in front of the harbour entrance. 'There still remain on the ground fragments of marble with mouldings, but the marshy nature of the ground made any attempt at excavation impossible. All I could do was to establish the centre of the mass of masonry.'[5]

The problems raised by these conflicting accounts cannot be resolved in the library, nor by walking over the site. Only excavation can furnish the answers and there are at last strong grounds for hoping that

[1] Nibby, 643.

[2] Nibby, 640.

[3] Lugli, 27. Canina shows this low ridge in the first edition of his plans (reproduced in Fig. 3, p. 150). He omits it in the plan of the Claudian harbour in his third edition. Lugli infers a change of mind. But in the first edition Canina was reproducing what he saw; in his third edition he was reconstructing the original form of the Claudian harbour.

[4] C. Texier, *Mémoire sur les ports antiques situés à l'embouchure du Tibre* (= vol. xv, *Revue générale de l'architecture et des travaux publics*) (Paris, 1858).

[5] Texier, 31.

substantial excavations will be undertaken. The building of a new airport to the west of the Claudian harbour has involved subsidiary work on roads and drainage within the harbour and some tracts of the left mole near Monte dell' Arena have already been exposed. It is hoped that the main lines of both moles will now be traced and that the relation of moles to lighthouse will be established beyond doubt.

It is more discreet therefore at this stage to formulate the main questions that require answers. Was the lighthouse built originally on an island or on the left mole? And, if it was on an island, was this island on the same line as the moles or, as at Centumcellae, on the seaward side of the moles? Recent work has narrowed but not resolved the problem. It can now be seen that a little to the west of Monte dell' Arena the left mole widens from roughly 50 to 75 feet.[1] How long it continues eastwards at this enlarged width is not yet clear, but at some point it narrows to a width of only some 15 feet and so continues to its end. The full length of the narrow end of the mole cannot yet be measured, but it is not less than 60 yards. There is nothing to suggest a late closing of an original entrance to the west of Monte dell' Arena and Nibby's attractive hypothesis should be abandoned. Either the lighthouse was near but not at the end of the left mole, where the width was enlarged, or, more probably, it was on an island. No trace of the massive platform that was expected under Monte dell' Arena has been found.

Until the precise relation of moles to lighthouse is established we cannot be certain which way the harbour faced. It is commonly assumed that the harbour faced north-west to avoid the dangerous south-west wind which often blows with gale force; but a passage in Ammianus Marcellinus, if it can be trusted, indicates that corn ships could enter harbour under full sail with a south-south-west wind behind them.[2]

The design of the right mole also remains in doubt. The left mole, which faced the main force of the storms and the drift of sand and silt, was built in a solid mass. Nero's coinage suggests that the right mole was carried on arches, following the practice adopted at Puteoli.[3] This would have allowed sand and silt drifting into the harbour to be swept out instead of piling up against the mole. The interpretation of the coin

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[1] Pl. xix.

[2] Amm. Marc. xix. 10. 4: 'dum Tertullus apud Ostia in aede sacrificat Castorum, tranquillitas mare mollivit, mutatoque in austrum placidum vento, velificatione plena portum naves ingressae, frumentis horrea referserunt.'

[3] Pl. xviii *a*.

design, however, is controversial and it is unprofitable to speculate when a clear answer can be expected soon from excavation.[1]

The total area of the harbour must also remain uncertain until the full line of the left mole is traced; but Texier's figure of 160 acres is probably not far from the truth.[2] The maximum diameter was perhaps nearly 1,000 metres, and in high storms this large expanse of comparatively shallow water could have been dangerous to shipping.

The lighthouse is the only building connected with Claudius' harbour whose outline we clearly know.[3] It was a spectacular building, the first of its kind in Italy, and it quickly caught the imagination. It is reproduced in mosaics and reliefs, on coins and on lamps: its rough outline is scratched on Ostian walls. It provided the model for the campanile of St. Paul's basilica and was used as a symbol on Christian and pagan sarcophagi. Though individual craftsmen introduced unorthodox variations there is sufficient agreement to confirm the main essentials. It rose in four stepped stories of decreasing height, the first three squared, the fourth, which carried the beacon, cylindrical. It had not the decorative grace of the Alexandrian Pharos, but its massive strength and good proportions made it an impressive building.

Nero's coins show three separate buildings on the left mole. At the seaward end is a small rectangular peristyle temple with a man in front of it sacrificing at an altar. The rest of the mole is occupied by two long buildings which may be porticoes. No buildings are depicted on the right mole, but there is an ample scatter of bricks and tufa on the surface of Monte Giulio, and Lugli in two of his trial trenches found walls of a late set of baths and of an earlier portico.[4]

It is tempting to associate another monument with the Claudian harbour. In the background of the Torlonia relief is a triumphal arch surmounted by an emperor in a chariot drawn by a team of elephants. The emperor is unbearded and should therefore be not later than Trajan. Domitian is the first emperor known to have set up an arch in Rome, surmounted by an elephant chariot.[5] He may be the author of

[1] K. Lehmann-Hartleben, 'Die antiken Hafenanlagen des Mittelmeeres' (*Klio*, Beiheft 14 (1923) 18), interprets the arches of the coin design as *navalia*, berths for ships, but one would expect ships to berth at the landward end of the moles; and the designer would probably have shown a ship berthed.   [2] Texier, 32.

[3] Lugli, 16–20; G. Stuhlfauth, 'Der Leuchtturm von Ostia', RM 53 (1938) 139.

[4] Lugli, 24–26.

[5] F. Matz, *Der Gott auf dem Elefantenwagen*, Ak. der Wiss. und der Lit., Mainz; Abhandlung der geistes. und sozialwiss. Klasse, 1952, n. 10, p. 31.

this arch at Portus and it might be one of a pair; for on a sarcophagus in the Vatican, which probably reflects some features of the Ostian harbours, two arches with elephant-drawn chariots on them are depicted.[1] Texier noted square foundations that would have been appropriate for such an arch at the point where Monte Giulio begins to curve and he claimed to have found corresponding foundations on the left mole exactly opposite, at a distance of 950 metres.[2]

On the landward side of Claudius' harbour, on the peninsula which separated it from Trajan's inner basin, were found at the end of the eighteenth century lead pipes stamped with the name of Messalina, wife of Claudius.[3] The evidence suggests that Trajan or Hadrian later built here a palace;[4] he had probably been anticipated by Claudius.

Claudius' new harbour to be fully effective needed communication by water with Rome. This, however, was a comparatively simple task since the Tiber was less than a mile distant. In a monumental inscription set up on a public building in 46 Claudius commemorated this side of his work: 'Ti. Claudius Drusi f. Caesar Aug. Germanicus pontif. max. trib. potest. VI cos. design. IIII imp. XII p.p. fossis ductis a Tiberi operis portus caussa emissisque in mare urbem inundationis periculo liberavit.'[5] From this inscription it seems clear that Claudius dug more than one canal from the Tiber to the sea, to provide communications for his new harbour: today there is only one canal and it is generally attributed to Trajan.

This problem, which raised considerable controversy in the nineteenth century, has been carried much nearer to a solution by Lugli's review of the critical area.[6] He points out that the Fiumicino canal runs in a roughly straight line from the Tiber parallel to the south bank of Trajan's harbour, but that, after passing Trajan's harbour, it changes direction. In this last stretch it runs parallel to the channel which communicated between the harbours of Claudius and Trajan, and to the so-called 'darsena', which lies between them. Lugli suggests that these three stretches of water are contemporary and Claudian, that Claudius built two canals, perhaps one for ships going upstream, the other for downstream traffic; and that these passed in a roughly straight line through what was later Trajan's harbour to join the Tiber nearly a

[1] Amelung, *Die Sculpt. des Vat. Mus.* ii. 49–62. Attributed to Ostia, K. Robert, *Hermes*, 1911, 249; but some details at least do not seem applicable. More probably a composite picture drawn from various harbours, Lehmann-Hartleben, op. cit. 232; Lugli, 42.

[2] Texier, 31. See Fig. 4, p. 150.   [3] Fea, *Viaggio*, 39.

[4] p. 163.   [5] 85.   [6] Lugli, 29 f.

mile above Capo Due Rami, where the two branches of the river now join. Trajan maintained the end of Claudius' southerly canal but, to have more space for his harbour, cut a new course from the Tiber and oriented his harbour on the new line. The seaward end of the northern canal was used for communication with his new harbour. Apart from these surviving stretches the Claudian canals were swallowed up in Trajan's new basin.

This general thesis, based on alignments, is strengthened by two further points. The so-called 'darsena', though its present walling is late, preserves traces of an earlier wall in a reticulate of large blocks typical of Claudian building. It seems highly probable that this long rectangular basin (45 × 24 metres), with a narrow entrance (9 metres) goes back to Claudius and was intended as a harbour for smaller boats, and in particular for the rowing-boats, *lenunculi*, used for auxiliary services in the harbour.[1] Philostorgius, a late Christian writer, refers to three harbours in his description of Portus;[2] the 'darsena' is included in his reckoning with the main harbours of Claudius and Trajan. It was in this area also between the two canals that substantial traces were found of a monumental portico that is distinctively Claudian. Though it has been largely concealed by incorporation in a later building, the rusticated drums of the travertine columns, recalling at once Porta Maggiore at Rome, proclaim its Claudian origin, as clearly as the new ephemeral letters in a Claudian inscription. Lugli puts forward the very attractive hypothesis that the inscription commemorating Claudius' canals was once set in this portico.[3]

The Claudian harbour was connected by road and river with Rome. Communication by road with Ostia was also essential and must have been provided when the harbour was built or very soon afterwards. This road ran straight across the island contained by the two branches of the river; it left Ostia near the river mouth, opposite Tor Boacciano, and ran in a direct line to a point on Trajan's canal roughly opposite the 'darsena'. A short stretch has been excavated where it passes through the Isola Sacra cemetery. It is considerably wider than the normal Roman road (10·5 metres) and is designed for transport and pedestrians. One side has typical paving blocks of *selce*, deeply rutted by heavy

[1] Lugli, 76.

[2] (τόν Πόρτον) μέγιστον δὴ νεώριον Ῥώμης λιμέσι τρισὶ περιγραφόμενον (*Die christlichen Schriftsteller der ersten drei Jahrhunderte*, 21 (Bidez, Leipzig, 1913) 141).

[3] Lugli, 30 f., 116–18.

traffic; the other side is unpaved. In a late inscription this road is called 'Via Flabia' (Flavia). It was probably so named to honour Constantine, who gave Portus her independence under the title 'civitas Flavia Constantiniana', but Claudius or Nero must originally have been responsible for the road across the island.[1]

There is little evidence for the growth of the harbour area before Trajan's new building. Many of the workers probably lived in Ostia and walked each day to their work; but essential services could not be maintained unless there was from the outset some residential population. A group of pre-Trajanic tombs has been found near the south-east corner of Trajan's basin[2] and the earliest tombs in the cemetery that flanked the road to Ostia may be earlier than Trajan.[3] Both these cemeteries were separated from the harbour by Claudius' canals.

Claudius hoped that he had provided secure harbourage for the shipping that sustained Rome and that he had freed the city from the danger of flood. In 62, according to Tacitus, 200 ships were wrecked within the moles:[4] in 69 Rome suffered one of the worst floods on record![5] The flooding of Rome cannot be attributed to the failure of Claudius' engineers: no canal below the city could save Rome from floods. But the heavy loss of shipping within the harbour is surprising. So far as can be seen the general dispositions of the harbour were sound: under the lee of one of the moles there should have been adequate shelter from whichever direction the wind blew. The expanse of water, however, was large and the centre of the harbour could often have been dangerous. The easiest explanation of the catastrophe is to assume that an unexpected storm broke very suddenly when the harbour was particularly crowded. That the work of Claudius' architects and engineers was not considered a failure is shown by the handsome bronze coinage of 64, or shortly afterwards, publicizing the harbour from the mints of Rome and Lugdunum.[6]

But the danger sharply exposed by the crisis of 62 was probably one

[1] See *Note D*, p. 473.   [2] *NS* 1925, 60.
[3] Degrassi, *Gnomon*, 26 (1954) 104, suggests an earlier date for Thylander, A 60 (tomb 49), a Claudian freedman married to a Julia Heuresis. Tomb 50 (Thylander, A 64) may also be earlier. The first large tombs date from Trajan, but some of the small, scattered tombs (including 49 and 50) may have preceded them.
[4] Tac. *Ann.* xv. 18. 3.   [5] Tac. *Hist.* i. 86.
[6] For the date of this coinage, C. H. V. Sutherland, *Coinage in Roman Imperial Policy*, 162–72.

of the reasons that led Trajan to add to Claudius' harbour a land-locked inner basin. Of Trajan's work there is no clear record in the literary sources, but a restricted issue of coins from his sixth consulship (112) or one of the following years reproduces the harbour with the title 'portus Traiani',[1] and this title is completed by inscriptions, 'portus Traiani felicis'.[2] Trajan's main work was to excavate from the land a hexagonal basin in close relation to the outer harbour. It is possible that the position chosen for this basin was influenced by the development of building round Claudius' harbour and the economy in using in part the Claudian canals; the shape was a useful one for the distribution of shipping and warehouses. The entrance to the harbour was set in the centre of the south-west side. Claudius' northern canal was adapted to provide communication between the two harbours; his southern canal was redirected to run parallel to the south side of the new basin; the smaller canal linking the two Claudian canals was extended to the new line of the southern canal. Claudius' smaller harbour for small boats (the 'darsena') was retained.

The length of each side of the hexagonal basin was 357·77 metres, the maximum diameter 715·54 metres, and the total area 321·993 square metres.[3] The function of the harbour was severely practical and this is reflected in the buildings that surrounded it. Early accounts agree that on all sides large *horrea* ran parallel to the banks; they dominate Lanciani's plan and substantial remains have been uncovered at various periods. They conform to a standard pattern, long series of deep rooms of equal size opening on to portico or covered gallery. Space being more restricted than at Ostia, less use seems to have been made of the open central court, with four series of rooms round the four sides: more often two rows of rooms were grouped back to back. These *horrea* had normally at least two floors, and in one case at least the access to the first floor was by ramp. This particular building, at the southern end of the south-east side, was used for the storage of corn, as the raised floors of the ground-floor rooms indicate:[4] the ramp suggests that the first floor was also used for storage.

In the harbour retaining walls were set large blocks of travertine with a hole in the centre through which the mooring-rope could be tied. Their function is admirably illustrated by the harbour relief in the

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[1] Pl. XVIII b.
[2] 90, 408.
[3] Measurements by Texier, recorded by Lanciani, 163.
[4] NS 1925, 58.

Torlonia museum,[1] and similar mooring-blocks can still be seen at Terracina and Aquileia. Calza found the series regularly disposed along the south and south-west sides, twenty-four between the south-east corner and the 'darsena'.[2] They probably ran round the whole basin, except perhaps on part of the north-western side,[3] and will have provided mooring facilities for rather more than a hundred ships. Numbered columns also have been found and reported round the basin:[4] they probably indicated mooring-berths and will have been useful also for the efficient distribution of unloading gangs.

Six metres behind the quayside runs a strong wall, shutting off the *horrea* from the quay. Its construction is not uniform and Lugli has suggested that the original wall was only 3 metres high and that it was strengthened and raised under the Severi.[5] Early accounts report five doorways in each side of this wall, and the width of a measured example was only 1·80 metres.[6] Carts could not have passed through these entrances: all goods must have been carried by the unloading gangs from ship to warehouse. The purpose of this wall was probably to maintain a closer control on customs and cargoes. Only a more thorough examination could show whether it is Trajanic and an integral part of the original plan, or added later when imperial control of trade and shipping was being tightened.

The regular lines of the *horrea* round Trajan's basin were relieved by other buildings and monuments. The craftsman who designed Trajan's commemorative harbour coins was a very inferior artist whose work cannot stand comparison with the Neronian bronzes depicting the Claudian harbour; but he seems to have given special emphasis to the buildings on the north-west side of the harbour. It is here, on the peninsula between the two harbours, that nineteenth-century excavations produced a rich harvest of sculptures for the Torlonia Museum and discovered a series of richly furnished buildings.[7] These buildings included a set of baths, maintained into the late Empire, a temple, a very small theatre, and an 'atrium' with a large series of rooms; the richness of the site is also reflected in the name that was given to it in the Renaissance,

[1] Pl. xx.   [2] *NS* 1925, 55; Lugli, 70.
[3] They may not have been regularly disposed along the frontage of the 'Imperial Palace' on this side (pp. 164 f.).
[4] *NS* 1925, 56; Lanciani, 164. These columns probably stood back from the basin; they were later enclosed in a wall. Illustrated, Canina, *Mon. di Roma*, vi, tav. 134.
[5] Lugli, 68.   [6] *NS* 1925, 57.
[7] Fea, *Viaggio*, 39; Lanciani, 171; Texier, 40–49.

'palazzo delle cento colonne'. Lanciani noted that what seem to be the original walls, in brick with reticulate, were of particularly fine workmanship; their approximate date is confirmed by brickstamps recorded
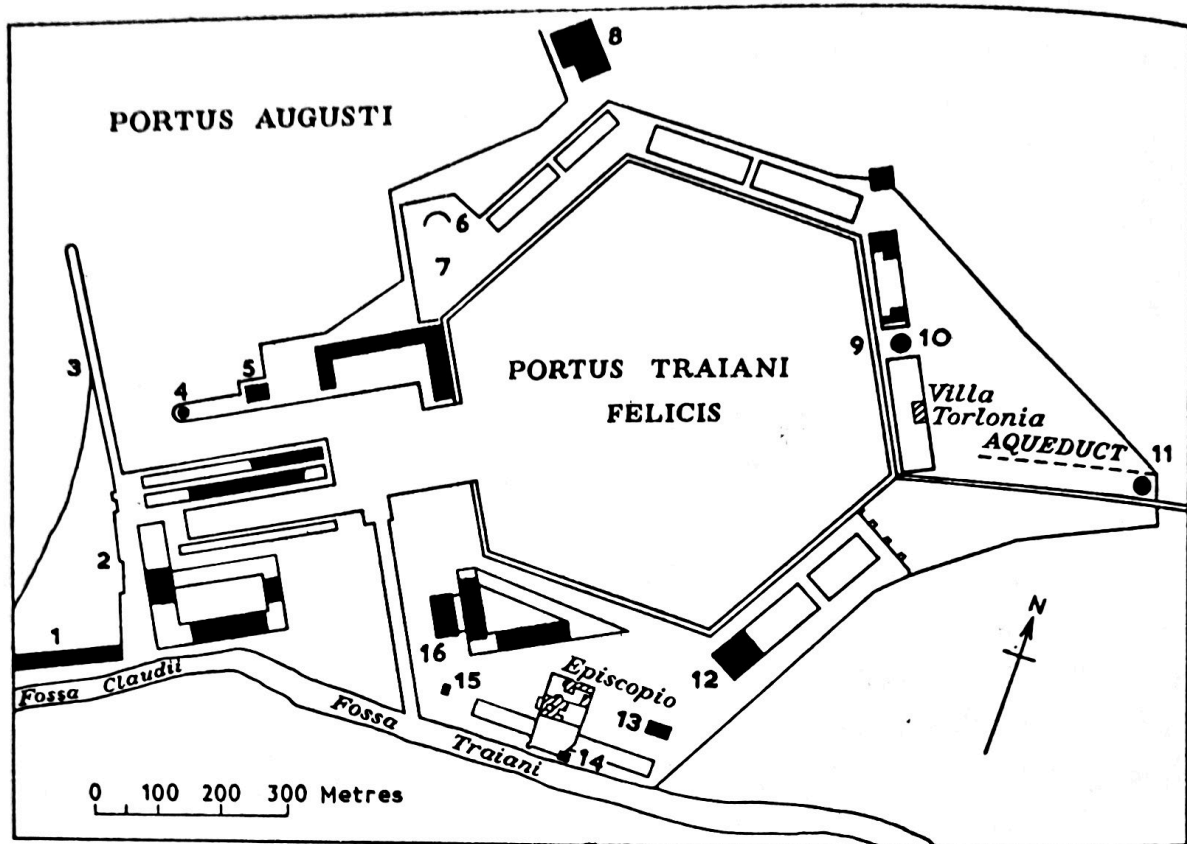

FIG. 6. Trajan's harbour. Blockings show buildings or parts of buildings for which there is reliable evidence. Other outlines show buildings reported or parts of buildings assumed. Post-Roman buildings are hatched. 1. Porticus Placidiana. 2. Porticus Claudii. 3. Late Empire mole. 4. Lighthouse. 5. Baths. 6. Theatre. 7. 'Imperial Palace'. 8. Baths, not included in the circuit of the walls. 9. Colossal statue of Trajan. 10. Temple of Liber Pater. 11. Temple of 'Portumnus'. 12. *Horrea*, partly excavated 1925, with Flavian tomb. 13. ?Barracks of Vigiles. 14. Tower (Pl. xxi b). 15. Unidentified temple. 16. ? Xenodochium of Pammachius.

by Lanciani from the last years of Trajan's principate.[1] Fragments of a dedication to Trajan were also found in this area; in it the new harbour is mentioned ('[port]us Traiani felicis'), though the context is obscure. The inscription was set up when Trajan was cos. VI, between 112 and 117.[2] It may, like the coins, commemorate the completion of the harbour.

In the nineteenth century this group of buildings was known as the 'Imperial Palace'. Lugli suggests instead that it probably marks the area of a Forum, surrounded by baths, basilica, and other public buildings.[3]

[1] Bloch, *Bolli laterizi*, 100. Allowing for a short period between production and use, building may not have begun until the beginning of Hadrian's reign.
[2] 90.
[3] Lugli, 98.

He considers that the peninsula between the two harbours, an area flanked by warehouses, was no suitable place for an imperial palace. Until the area is excavated afresh and the relative dispositions of the various groups of buildings established, caution is discreet, but on the present evidence the more romantic view seems to be nearer the truth. The site was an unrivalled one for seeing both harbours, and a good view of the shipping will have been the emperor's main concern when he visited the harbour. Nor is the site well suited for a civilian Forum. We should expect to find the Forum, if it existed, in one of the two areas where the main living-quarters developed, to the east and to the south of the harbour.

Confirmation of the identification of the area with Trajan's imperial palace may perhaps be found in a description of the boundaries of the diocese of Portus in 1019 which includes in a list of properties: *un palazzo detto Praegesta*.[1] The position of this property in the list suggests that it lay between the two harbours. The pipes already mentioned, bearing the name of Messalina, suggest that Trajan was rebuilding on a site previously used by Claudius for the same purpose. Both theatre and baths were probably attached to the 'Imperial Palace'. But though the buildings were planned for imperial visits they were also probably used by the imperial official, freedman, or equestrian procurator, who was responsible for the supervision of the harbour.

The Trajanic coins also show two tall columns surmounted by statues at either end of the side of the harbour facing the entrance, and possibly at other angles as well. A base, now in the Lateran Museum, probably belongs to this series. It records the restoration by Septimius Severus of a column broken by storm: 'L. Septimius Severus . . . columnam vii tempest[atis] confractam restitui[t].'[2] Other statues are seen in the Torlonia harbour relief, but only one of them can be clearly identified. That is a statue of Bacchus and it may have stood in or near the temple of Liber Pater, which was found in the centre of the north-east side of the harbour.[3] This temple, identified by inscriptions, was a small circular peristyle building. It is not certain that its original construction is Trajanic, but it was built not later than Commodus[4] and restored in the late Empire.

Trajan himself was handsomely commemorated. In the centre of the north side of his harbour were found a base and fragments of a colossal

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[1] Nibby, 631. [2] 113. [3] Lanciani, 181.
[4] 30, a dedication to 'Liber pater Commodianus'.

statue of the emperor in military dress;[1] a life-sized bust was recovered by the harbour entrance.[2] These tributes he richly deserved. By increasing and substantially improving Rome's harbour capacity he had made it possible to maintain regular supplies to the capital and had removed a potential source of insecurity to the emperors that succeeded him. It remained only to ensure regular supplies by efficient administration.

Trajan's inner basin was primarily reserved for the unloading of ships. It is more difficult to say what was the function of the Claudian harbour in the new dispensation. Lugli believed that the left mole had already collapsed under the pressure of south-western gales and that this was the main reason for Trajan's new building.[3] While I have not been able to check all the detailed arguments adduced by Lugli I find the general objections to this thesis overwhelming. If the left mole had collapsed the harbour would have had no protection from the southwest winds and would have been little better than an open roadstead. The collapse of the mole would also have allowed the drifting sand to spread across the harbour; and the logical defence against incoming sand was a mole to protect the entrance to Trajan's inner basin. Such a mole can in fact still be seen, running out for some 300 metres at right angles to the entry canal; but Lugli's investigations have shown almost beyond doubt that this mole is not earlier than the fourth century.[4]

The standard description of the harbours in Ostian inscriptions as 'portus uterque' and the continuation of a cult of the *Lares portus Augusti*[5] would be anomalous if Claudius' harbour was no more than an entrance passage to the inner basin. Nor would this inner basin have been sufficiently large to harbour the shipping of peak periods. It is difficult to believe that Trajan, who was not easily deterred by difficulties, would have allowed a broken mole to threaten the security of Rome's shipping: indeed the scholiast on the passage of Juvenal quoted in an earlier chapter says that Trajan improved the Claudian harbour as well as adding his own: 'Traianus portum Augusti restauravit in melius et interius tutiorem nominis sui fecit.'[6] It is easier to believe that the Claudian harbour was efficiently maintained and that ships continued to unload at the Claudian quays, particularly perhaps on its south-west side.[7]

[1] Fea, *Viaggio*, 35. [2] Ibid. 36. [3] Lugli, 34.
[4] Lugli, 79–81. [5] Thylander, A 19. [6] Schol. Juv. xii. 75.
[7] The hero of Apuleius' fable disembarks in the outer harbour without entering Trajan's basin, Apuleius, *Met.* xi. 26: 'tutusque prosperitate ventorum ferentium Augusti portum celerrime ⟨pervenio⟩ ac dehinc carpento pervolavi'.

The improvements introduced by Trajan probably attracted an increasing number of settlers, but until the area is systematically excavated it will not be possible to tell how rapidly what under Constantine became the independent town of Portus developed. There has always been a tendency in descriptions of Portus to over-simplify chronology, and to divide buildings into Trajanic, Severan, and late Empire. The discovery of brickstamps of Marcus Aurelius' principate in large *horrea* that were assumed to be Severan is a salutary warning against such simplification.[1]

The shape and extent of the town in the fourth century is clear from the line of walls that can still be traced. These walls run parallel to the north-west and north sides of Trajan's basin and then diverge to enclose a large triangle east of the harbour. They return to run parallel to the south-east side until they meet the canal. Two areas give scope for civilian development, the eastern triangle and the area between the south side of the harbour and the canal, where the bishop's palace now stands. At the apex of the eastern triangle was the main gate through which passed the Via Portuensis. This road continued in a straight line to the eastern angle of the harbour; an aqueduct ran beside it to the north. Of the buildings in this area, apart from the temple of Liber Pater, very little is known; but one building in part survives, close to the site of the gate. This is a circular peristyle temple, the brickwork and style of which suggests a date early in the third century.[2] The settlement had presumably already developed to this point. In the second of these two areas the buildings included a late basilica to which a *xenodochium*, a rest-house for pilgrims, was added[3] and an unidentified temple.[4] Lanciani also inferred from a number of inscriptions found on the site that the Barracks of the Vigiles lay to the east of the site of the bishop's palace.[5]

On the south bank of the canal there seems to have been a thin fringe of buildings, shops or warehouses, towards the west,[6] but opposite the bishop's palace and to the east this bank seems to have been reserved as a dumping ground for marble. Melchiorri records that in 1839 more than fifty large blocks of marble were unearthed in this area, mainly Africano with a few blocks of Cipollino and of white

[1] Bloch, *Bolli laterizi*, 279.
[2] Lugli, 93; G. T. Rivoira, *Roman Architecture* (1925) 192.
[3] Lugli, 106.   [4] Lugli, 106; Lanciani, 181.   [5] Lanciani, 183-8.
[6] E. Gatti, *NS* 1911, 410. Walls of what may be a large warehouse have been recently revealed immediately north of the church of St. Hippolytus.

marble.[1] Further such blocks have been from time to time recovered, even as late as the winter of 1951. They are blocks rough cut from the quarry, some with consular date and quarry marks on them. They might lay there a long time: one was dated in A.D. 82, several others had second-century dates. It seems that the marble brought in from overseas and from the Luna quarries was not unloaded in Trajan's harbour but brought to the south bank of the canal to await shipment upstream to Rome or carriage to Ostia.

Close by was one of the main cemeteries of the harbour settlement, flanking the road to Ostia. A very substantial group of tombs, in excellent state of preservation, was excavated here between the two wars. Calza, who devoted a special book to a record of the excavation, believed that the opening up of this cemetery followed the building of the inner harbour; but the earliest tombs may be earlier than Trajan.[2] The cemetery was a large one, extending far beyond the limits of excavation; tombs had been found in the nineteenth century more than 100 metres to the north. A vague record has been preserved of another cemetery near Capo due Rami where the two branches of the Tiber join.[3] Sufficient remains can be seen in the fields to show that tombs also lined both sides of the Via Portuensis as it proceeded in a direct line from the main gate to the river before turning east. In 1953 a large fragment of a figured sarcophagus in Greek marble lay in the grass of the river bank—but not for long!

The shape of the small town round Trajan's harbour is defined by its walls, but these walls represent a restriction. A large building or complex of buildings at the north-west angle was left outside the circuit[4] and earlier buildings have been incorporated in the wall or destroyed to make way for it, in a manner reminiscent of Aurelian's walls at Rome. It is not certain when the walls of Portus were built. They are commonly attributed to Constantine, who gave independent status to Portus, but they may be earlier, or even later. They were needed continuously from the end of the fourth century and reveal many signs of strengthening and reconstruction.

In spite of the very fragmentary nature of the evidence it seems clear that the building history of Portus in the fourth and fifth century was very different from that of Ostia. While most of Ostia's warehouses were redundant, Rome still depended on the storage facilities of Portus

[1] G. Melchiorri, *Bull. Inst.* 12 (1840) 43; Lanciani, 180; Lugli, 105 f.
[2] p. 161 n. 3.
[3] Nibby, 607 f.
[4] Lugli, 90.

for her supplies, and the *horrea* were maintained. The temple of Liber Pater was restored in the fourth century,[1] but pagan temples were soon overshadowed by Christian churches. A Christian basilica was excavated to the west of the bishop's palace in the nineteenth century, and adjoining it was added an open court with fountain and a series of rooms around: this was the *xenodochium* or pilgrim's rest-house, presented by the patrician Pammachius and praised by St. Jerome.[2] There still stands to the south of the canal the medieval campanile which marks the site of the church of St. Hippolytus, the first recorded martyr of Portus.

The survey of the diocese of Portus in 1019 mentions churches of S. Maria, S. Lorenzo, S. Pietro, S. Gregorio, S. Teodoro, S. Vito;[3] in 849 Leo IV had made gifts to a church of S. Ninfa.[4] Most, if not all, of these churches will have been built in the fourth and fifth centuries. There is evidence also that public baths remained in use into the late Empire, and two of the sets that have been seen seem to be adapted from earlier buildings used for a different purpose.[5]

Though Portus was captured and sacked by Alaric in 408, the dependence of Rome on her harbours ensured a measure of revival when the invader was gone. Within a generation one of the town's most impressive public monuments was erected, the Porticus Placidiana, a colonnade which ran along the north bank of the canal as it approached the sea; it seems to have been some 200 metres long. Part of the inscription from the architrave survives, and the base of a statue set up by a *praefectus annonae*, 'ad ornatum porticus Placidianae'.[6] This monument commemorates Placidia, mother of the emperor Valentian III. It was built in or near 425 and is the last building known to us.

Nibby in his account of Portus emphasized the prevalence of late construction in the district between the south bank of Trajan's harbour and the canal. It was here that he saw a large area paved with great blocks of rough marble, probably taken from the dump on the south bank;[7] it was here too that Calza saw remains of late buildings encroaching on the quayside, and other late walls which followed lines different from earlier constructions.[8] It seems likely that in time of increasing stress

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[1] Lanciani, 181, inferring the date from the poor workmanship.
[2] Lugli, 106. But see Addenda.
[3] Nibby, 631.   [4] Nibby, 628.   [5] Lugli, 82, 90.
[6] Lugli, 119; Lanciani, 182. Inscriptions 140 (statue base), 141 (architrave).
[7] Nibby, 652.   [8] Calza, *NS* 1925, 65.

the population concentrated here for more secure protection. There is indeed a strong wall with towers that runs from the 'Constantinian' wall to the harbour basin near the northern end of its south-east side. This would have served admirably for an inner defence of the south side of the harbour. But though Nibby may be mistaken in calling this cross-wall Severan,[1] its workmanship certainly looks much better than that of the 'Constantinian' walls. If, however, it is substantially earlier it is difficult to see its purpose.

But though it seems likely that there was still a considerable amount of building in the late Empire at Portus the general standard of the work has the same character as at Ostia. Old material is reused, ill-assorted columns from different buildings are brought together for new building; the elementary requirements of coherent planning are ignored.

Meanwhile difficulties developed in the outer harbour. The first hint is an inscription which was found when Trajan's basin was restored. It comes from the base of a statue set up to Lucius Crepereius Madalianus, *praefectus annonae*, by the council and people of Portus and records the offices he had held.[2] At an earlier stage in his career Madalianus had been 'consul(aris) molium fari at purgaturae'. The office is not attested elsewhere in inscriptions nor in literary sources; Calza is probably right in regarding it as a special appointment. At some time between 337 and 341, when Madalianus was appointed, a thorough overhaul of the Claudian harbour seems to have been required, involving moles, light-house, and dredging operations. Not long afterwards the representation of Portus on the Peutinger map shows what seems to be an inner mole with a lighthouse at the end.[3] This may be identified with a line of wall that runs out for some 300 metres into the Claudian harbour at right angles to the communication canal. This line can be seen on the ground and is clear in an air photograph; at its seaward end is a modern building. The nature and approximate date of this line has been established by Lugli.[4] It is a mole with mooring-blocks and a lighthouse probably stood at its end. It is of poor workmanship and seems to be not earlier than the fourth century. Its purpose is to protect the entrance to Trajan's harbour against sand. The natural inference is that the left mole had

[1] Nibby, 651. Lugli, 94, describes the brickwork as good and fairly regular, though some two-thirds of the bricks are taken from earlier buildings.

[2] 13. S 4449; Calza, *NS* 1925, 73.

[3] Fig. 7. But the schematic design might merely be intended to represent the outer and inner harbour, K. Miller, *Die Peutingerische Tafel* (1887) 95.

[4] Lugli, 79 f.

collapsed and that sand was being swept in. Madalianus may in his special office, or later as *praefectus annonae*, have been responsible for the new mole.

Had it been possible to maintain regular dredging operations the harbour might still have had a long life. But wars and raids sapped the
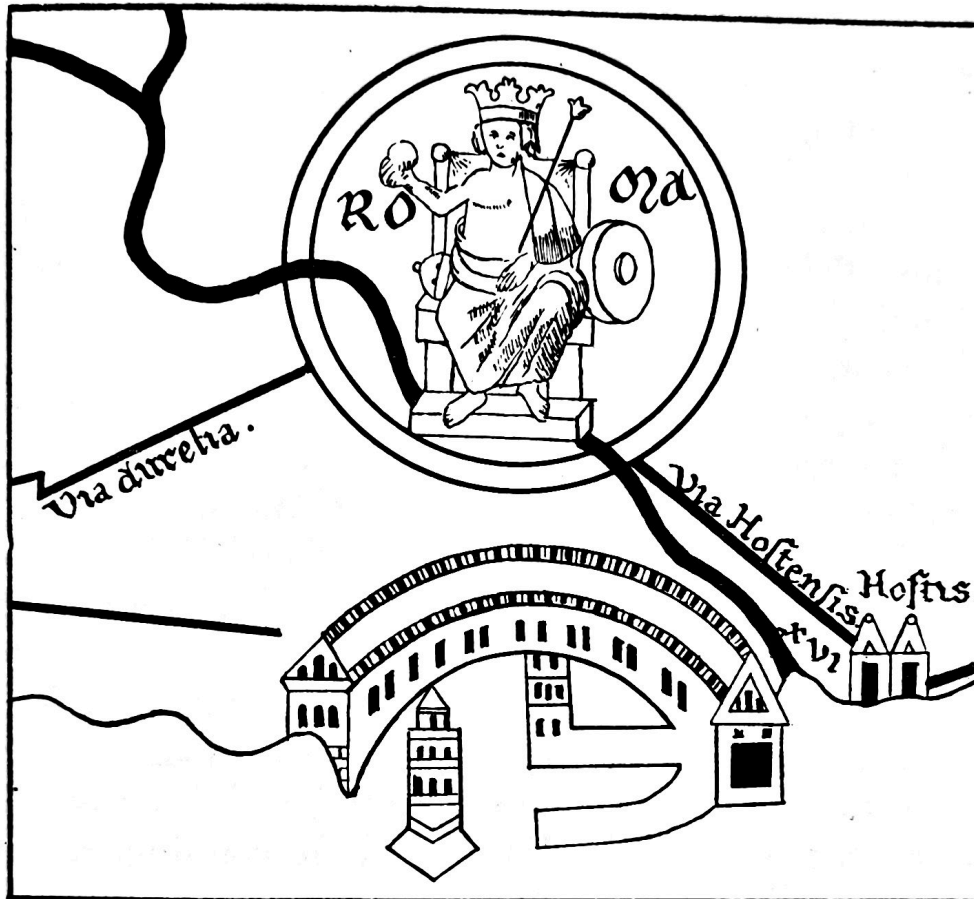

FIG. 7. Portus on the Peutinger map (*c.* A.D. 350).

resources of Rome and weakened the morale of Portus. The sand had probably won by the eighth century. It was easier to keep clear the mouth of the canal, and there is evidence that a ship passed out to sea as late as 1117. From the twelfth century even the canal was unnegotiable until it was reopened by Paul V in 1618.

4

THE IMPERIAL HARBOURS AND PROSPERITY

THE RIVER HARBOUR

IN spite of the prosperity of Ostia in the late Republic and early
Empire, the river harbour was no longer proving adequate to
meet the needs of Rome. The increase in the size of merchantmen
and in the volume of imports emphasized a problem which had
been developing for a long time. The sand bar at the river mouth was
becoming increasingly dangerous. Nor were the sea approaches satis-
factory. To the south there was no good harbour between Gaieta and
the Tiber; similarly the coast to the north was harbourless below Portus
Herculis by Cosa.[1] Until these weaknesses were remedied Rome's ship-
ping faced serious risks.

We have two descriptions of the harbour at the river's mouth.
Dionysius of Halicarnassus, writing at the close of the first century B.C.,
gives the more favourable picture:[2]

The river widens considerably as it reaches the sea and forms large bays,
like the best sea harbours. And, most surprising of all, it is not cut off from its
mouth by a barrier of sea sand, which is the fate even of many large rivers. It
does not wander into changing marshes and swamps, thereby exhausting
itself before its stream reaches the sea, but it is always navigable and flows
into the sea through a single natural mouth, driving back (with the force of its
current) the waves of the sea, though the wind frequently blows from the
west and can be dangerous. Ships with oars, however large, and merchant-
men with sails of up to 3,000 (amphorae)[3] capacity enter the mouth itself

[1] Pliny, *Ep.* vi. 31. 17, emphasizing the value of Trajan's new harbour at Centum-
cellae: 'nam per longissimum spatium litus importuosum hoc receptaculo utetur'; Dio
xlviii. 49. 5, referring to the west coast during Octavian's struggle against Sextus Pom-
peius: 'ἀλίμενα γὰρ καὶ ἔτι τότε τὰ πλείω τῆς ἠπείρου ταύτης ἦν', implying the contrast with
his own day.

[2] Dion. Hal. iii. 44.

[3] μέχρι τρισχιλίων: the unit is not specified; cf. Dio lvi. 27. 3 (restrictions on exiles):
'μήτε πλοῖα πλείω φορτικοῦ τε ἑνὸς χιλιοφόρου.' Volume was normally expressed in amphorae.
3,000 amphorae = 3,000 talents = 9,000 modii = c. 78 tons (capacity).

and row or are towed up to Rome; but larger ships ride at anchor outside the mouth and unload and reload with the help of river vessels.

His younger contemporary Strabo emphasizes the disadvantages:[1]

Ostia is harbourless on account of the silting up which is caused by the Tiber, since the river is fed by numerous small streams. Now although it means danger for the merchant ships to anchor far out in the surge, still the prospect of gain prevails; and in fact the plentiful supply of tenders which receive the cargoes and bring back others in exchange makes it possible for the ships to sail away quickly before they touch the river, or else, after being partly relieved of their cargoes, they sail into the Tiber and run inland as far as Rome.

There is no real contradiction between these two accounts. The river mouth was navigable for ordinary small trading vessels, but large merchantmen and especially the big corn transports had to ride out at sea. The swift-flowing Tiber sweeps down large quantities of silt as it rushes to the coast, and the channel was becoming difficult for ships with a deep draught. There is already a hint of trouble in Ovid's story of the arrival of the Great Mother in the crisis of the struggle with Hannibal. There had been a long drought and the ship which carried the sacred image grounded on the river mud:

> sicca diu fuerat tellus, sitis usserat herbas:
>   sedit limoso pressa carina vado.
> quisquis adest operi, plus quam pro parte laborat,
>   adiuvat et fortis voce sonante manus.
> illa velut medio stabilis sedet insula ponto.[2]

Silting was not the only problem. The river was only some 100 metres wide as it flowed past Ostia. Small merchantmen had ample space for manœuvre, but, when the volume of shipping increased in the late Republic, it must have become increasingly difficult to handle the larger vessels, especially when the corn harvest arrived from overseas. The river harbour was too restricted for the needs of imperial Rome.

The growing inadequacy of Rome's natural port was, like many similar problems of a pressing nature, ignored in the political struggles of the late Republic. But when a strong personal government emerged from the Civil Wars, public works again claimed the attention due to

[1] Strabo, 231–2.   [2] Ovid, *Fasti*, iv. 299.

them. Caesar had been the first to think seriously of building a new harbour, and his plans are described in some detail by Plutarch:

In the midst of the Parthian expedition he was preparing to cut through the isthmus of Corinth, and had put Anienus in charge of the work. He also proposed to divert the Tiber immediately below Rome by a deep canal which was to run round to the Circaean promontory and be led into the sea at Terracina. By this means he would provide a safe and easy passage for traders bound for Rome. In addition he proposed to drain the marshes by Pometia and Setia and so provide productive land for thousands of men. In the sea nearest Rome he intended to enclose the sea by building moles, and to dredge the hidden shoals off the coast of Ostia, which were dangerous. So he would provide harbours and anchorages to match the great volume of shipping. These schemes were being prepared.[1]

With the draining of the Pomptine marshes which would be facilitated by the new canal we are not concerned. The canal, an ambitious project, was to be revived in a different form by Nero. It would have cut out the dangers of part of the west coast passage and, had it been wide and deep enough, would have enabled the largest merchantmen to dock at Rome. The improvements proposed at Ostia are not an alternative but a complement. The canal was intended primarily for shipping from Sicily and the east, perhaps also from Africa; it would not have been used by traders coming from Gaul, Spain, and Sardinia. What exactly Caesar proposed to do at Ostia is not clear from Plutarch's words. Literally interpreted they should mean that Caesar intended to dredge the foreshore near the Tiber's mouth and to provide a series of harbours enclosed by moles. It is possible that Caesar's intention was to provide a series of sheltered anchorages along the coast near the river mouth where ships could lie until conditions were favourable for their entry into the river. But, though this seems to be the literal interpretation of Plutarch, it is not convincing. Suetonius allows a less complicated solution. He speaks of 'portum Ostiensem . . . a Divo Iulio saepius destinatum ac propter difficultatem omissum'.[2] The natural interpretation is a single new harbour, anticipating that of Claudius. Whatever the precise nature of his schemes Caesar had a shrewd insight into the nature of the problem and realized that radical measures and not mere

[1] Plut. *Caes.* 58. 10: τῇ δ' ἔγγιστα τῆς 'Ρώμης θαλάσσῃ κλεῖθρα διὰ χωμάτων ἐπαγαγών, καὶ τὰ τυφλὰ καὶ δύσορμα τῆς 'Ωστιανῆς ἠϊόνος ἀνακαθηράμενος, λιμένας ἐμποιήσασθαι καὶ ναύλοχα πρὸς τοσαύτην ἀξιόπιστα ναυτιλίαν.

[2] Suet. *Claud.* 20. 1.

palliatives were needed. As in so many of his social and economic conceptions he anticipated the work and plans of later emperors.

Augustus was by temperament more cautious and, unlike Caesar, he determined to build the new order securely before tackling public works that could wait. His large-scale building in Rome was essential to his social policy; for the corn supply he was content to provide the basis of a more effective administration. When his main tasks were done he was getting old, and his own financial resources and those of the state were strained. His successor Tiberius was not the man to initiate bold and expensive schemes; he concentrated on financial consolidation. It was left to Claudius to begin the work.

THE CLAUDIAN HARBOUR

The project of Caesar may have played a part in influencing Claudius,[1] but more compelling was the threat of famine when he succeeded Gaius. According to Seneca there was only eight days' corn in reserve;[2] Claudius realized that the satisfaction of the mob at Rome was essential to his security. The immediate crisis could perhaps have been met by emergency measures, but Claudius took a long-term view. It was dangerous for the corn transports to ride at sea off the river mouth even in the summer; in winter it was impossible. Dio emphasizes the need for maintaining imports through the winter if necessary and there is no reason to discredit his emphasis.[3] Winter sailing was not popular, but if summer shipments proved inadequate to meet Rome's needs it was essential that some corn ships at least should continue in service when the normal sailing season was closed. This was particularly important if the ships available were barely adequate to carry the quantities needed, and Claudius' further action shows that there was indeed a shortage of transport. He offered incentives to shipowners who maintained their ships in the service of the corn supply, and by guaranteeing state insurance against losses by storm he removed one of the main deterrents to winter sailing.[4]

The building of a new harbour at Ostia was a considerably more difficult undertaking than the draining of the Fucine lake or the building of an aqueduct; and the proposal seems to have met with opposition from experts and amateurs. Dio reports that the architects tried to dissuade the emperor by exaggerating the expenditure that would be

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[1] Suet. *Claud.* 20. 1.　　[2] Sen. *De brev. vit.* 18. 5; cf. Orosius vii. 6. 17.
[3] Dio lx. 11. 3.　　[4] Suet. *Claud.* 18. 2; Gaius, *Inst.* i. 32 c.

necessary,[1] and the discussion found its way into the textbooks. Quintilian cites as a typical example of a *coniectura*: 'an portus fieri Ostiae possit';[2] and in his manual of oratory there seems to be a hint of amateur interference: 'when the building of a harbour at Ostia was debated it was not for the orator to give his opinion, it was the calculation of the architect that was needed'.[3]

Claudius overrode the opposition and in A.D. 42 work was begun on a completely new harbour some two miles north of the Tiber. Two curving moles were built out into the sea, and between them an island was formed by the sinking of the huge merchantman which Gaius had used to transport from Egypt the obelisk that was erected in the circus on the Vatican hill.[4] It had taken in ballast 120,000 bushels of lentils and was large enough to serve as the foundation of a four-storied lighthouse:

> tandem intrat positas inclusa per aequora moles
> Tyrrenhamque pharon porrectaque bracchia rursum
> quae pelago occurrunt medio longeque relinquunt
> Italiam.[5]

The building of the harbour was accompanied by a closer centralization of the corn administration under imperial control. The senatorial quaestor was withdrawn from Ostia and replaced by a procurator responsible to the *praefectus annonae*.[6]

The cutting of an outlet to drain the Fucine lake required, according to Suetonius, the labour of 30,000 men for eleven years;[7] the work involved in completing the Ostian harbour and its ancillary services was more extensive and more difficult. Considerable progress had already been made by 46, for a monumental inscription of that year which can still be seen near the site of the Claudian harbour records the cutting by Claudius of canals from the Tiber to the sea, to connect his new harbour directly with Rome and, at the same time, by providing a secondary outlet for the river, to save Rome from flood.[8] By 62 at the latest, when Tacitus records the loss of 200 vessels within the moles, the harbour must have been in regular use.[9] But it was not until 64 that a commemorative coinage was issued from the mints of Rome and Lugdunum depicting the new harbour.[10] It is possible that these coins

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[1] Dio ix. 11. 3.   [2] Quint. *De inst. or.* iii. 8. 16.   [3] Ibid. ii. 21. 18.
[4] The relation of the lighthouse to the left mole is disputed: p. 155.
[5] Juv. xii. 75–78.   [6] Suet. *Claud.* 24. 2; Dio lx. 24. 3 (A.D. 44).
[7] Suet. *Claud.* 20. 2.   [8] 85.   [9] Tac. *Ann.* xv. 18. 3.
[10] C. H. V. Sutherland, *Coinage in Roman Imperial Policy*, 168.

commemorated the important part played by the harbour in saving
Rome from famine after the great fire; it is much more likely that they
mark the formal completion of the work. We infer that the moles and
lighthouse were built and that the harbour was already in use before
Claudius died, but that work continued on the harbour buildings for
the first ten years of Nero's rule.[1] The coins give the official title of the
new harbour, 'portus Augusti Ostiensis';[2] *portus Claudius* would have
been a fairer name.

It is generally assumed that Claudius hoped, by providing a larger
and safer harbour at Ostia, to make Rome independent of Puteoli. If
this was his intention it was not realized. Seneca, in a letter written
between 63 and 65, describes the scene of general excitement on the
sea front at Puteoli when the Alexandrian corn fleet is signalled.[3] He
implies that this is the end of their voyage, and that it is a regular event
in the town's life. Similarly when Statius' friend, Maecius Celer, sets
out for his legionary command in the east he sails on an Alexandrian
corn ship from Puteoli and not from Ostia.[4] St. Paul, appealing as a
Roman citizen to the emperor, lands at Puteoli,[5] as does Titus returning
to his Jewish triumph.[6] Mucianus reported that he had seen elephants
walking backwards down the gangway from their ship at Puteoli
because they were terrified of the distance from the shore;[7] the elephants
were probably bound for Rome. The evidence of Pliny the elder,
writing under Vespasian, points the same way. In recording fast sailing
times he quotes voyages from Spain, Gaul, and Africa to Ostia; Alexan-
dria is linked with Puteoli.[8]

The continued attention paid by emperors to Puteoli confirms the
impression drawn from these scattered sources. Claudius sent an urban
cohort to Puteoli as well as to Ostia to act as a fire service;[9] the reason is

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[1] Since no bronze coinage was issued under Nero until 64, the harbour might
have been completed earlier in the reign. See Addenda.

[2] The harbour may not have been called *portus Augusti* until its completion under
Nero. A Claudian procurator, in an inscription which should give the official title, is
proc. portus Ostiesis, 163. On Neronian coins roughly contemporary with the harbour
issues attention is drawn to the corn supply with the legend *Annona Augusti Ceres
s.c.* (BMC Emp. Nero, 126–9).

[3] Sen. *Ep.* 77.   [4] Statius, *Silvae*, iii. 2. 21–24.   [5] Acts xxviii. 13.

[6] Suet. *Tit.* 5. 3. An interesting exception is the arrival at Ostia rather than Puteoli of
Alexandrian envoys bound for Rome in the early Julio-Claudian period, H. A. Musurillo,
The Acts of the Pagan Martyrs, iii, p. 13, l. 4 (P. bibl. univ. Giss. 46). This, however, is not
a contemporary record and may reflect later conditions.

[7] Pliny, *NH* viii. 6.   [8] Pliny, *NH* xix. 3–4.   [9] Suet. *Claud.* 25. 2.

surely that Roman corn from Egypt was stored in the town. Domitian's rebuilding of the branch road that left the Via Appia near Sinuessa and rejoined it at Puteoli, cutting out the detour through Capua, implies that speed of travel between Puteoli and Rome was still important.[1]

Claudius was not intending to divert shipping from Puteoli; his main concern was to provide security for the corn from Africa, Sicily, Sardinia, and the western provinces. There remained the problem of Egyptian supplies. The emperor Gaius is praised by Josephus for beginning the enlargement of the harbour at Rhegium for the benefit of the Alexandrian corn fleet;[2] Claudius presumably completed the work. It provided shelter at a dangerous point on the voyage. But safe arrival at Puteoli was not the end of the matter. The Egyptian corn stored in Puteolan granaries had to be moved to Rome either by road or by sea. The quantity involved would have made land transport, by mule or wagon, extremely uneconomic; the sea route along the west coast, poorly provided with harbours, was dangerous.[3]

This problem Nero hoped to solve when he revived a plan that Caesar had first formulated. Caesar had intended a canal from Rome to Terracina; Nero's engineers designed a route from Lake Avernus to Ostia, and it may be significant that work was begun in 64, the year in which the harbour commemorative coinage suggests that work on the Ostian harbour was completed. Tacitus hardly takes the project seriously.[4] The object of Nero's architects was 'to fool away the resources of an emperor'; to him it was a scheme as extravagant and egoistic as the building of the Golden House. Suetonius is no more favourable.[5] He links it with Nero's personal extravagance; like the Golden House and the pleasure pool stretching from Misenum to Avernus it is mad expenditure, 'impendiorum furor'.

But, even if the scheme had not been thoroughly and practically prepared, there was a serious purpose behind it.[6] Caesar had thought some such scheme worth while, and in such matters Caesar was neither a fool nor a dreamer. Nero's projected canal, like Caesar's, would cut out part of the stormy passage up the west coast of Italy and bring the

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[1] Statius, *Silvae*, iv. 3. Domitian commemorated by Puteoli, *AE* 1941, 73.

[2] Jos. *Ant.* xix. 205.

[3] Tac. *Ann.* xv. 46. 3, describes the loss of a large part of the Misenum fleet in a storm on its way from Formiae to Campania.

[4] Tac. *Ann.* xv. 42.   [5] Suet. *Nero*, 31. 3.

[6] For a more serious estimate of Nero's canal, B. W. Henderson, *The Life and Principate of the Emperor Nero*, 247.

corn along a sheltered waterway to Ostia and so to Rome by river or by a further canal. At the same time it would contribute effectively to the draining of the coastal marshes, an important problem created by the neglect of the Republic.

Tacitus, ignoring the motive, has also exaggerated and misrepresented the difficulties. He pictures the canal passing through a waterless waste until it came to the Pomptine marshes; but there is little doubt that the engineers intended to make use of the numerous coastal lagoons, and the canal could also have been fed from the Volturnus, the Liris, and other small rivers that flowed into the sea along its route. In this respect it presented less difficulty than Caesar's project. Nor were the hills an impassable obstacle. Agrippa had shown that the crater of Avernus could be successfully pierced, and the only other high ground in the way was the promontory of Caieta and the hills above Terracina. Indeed work was begun at several points and traces of 'the scheme that came to nothing' could still be seen when Tacitus wrote: Pliny the elder even attributed to it the main responsibility for the decline in the famous Caecuban wine.[1] But before long it was abandoned. The work may have proved more difficult, especially near Terracina, than was expected. Nero may have become discouraged by the increasing difficulties of the political situation.

TRAJAN'S POLICY

The scheme for a southern inland waterway to the Tiber, envisaged by Caesar and Nero, was never revived; a different solution of the problem was found by Trajan. Though this emperor's interests and abilities were primarily those of a soldier, he showed also a keen and intelligent interest in the agricultural and commercial prosperity of Italy. At Ostia he excavated a large land-locked inner basin of hexagonal form behind the Claudian harbour:

> sed trunca puppe magister
> interiora petit Baianae pervia cumbae
> tuti stagna sinus, gaudent ibi vertice raso
> garrula securi narrare pericula nautae.[2]

The fierce storm of 62 which had wrecked 200 ships within the Claudian moles had emphasized the danger of anchoring in mid-harbour; shelter could always be secured in the lee of one of the moles, but a sudden gale

[1] Pliny, *NH* xiv. 61.   [2] Juv. xii. 79–82.

would quickly whip up the wide expanse of shallow water. In 62 the harbour was probably particularly crowded, and the ships were taken by surprise. The new basin offered complete security and even the largest corn transports could now anchor in safety.

Trajan's work at Ostia had wider consequences. The increased harbour area and the security of the inner basin made it possible to bring the large merchantmen of the Alexandrian corn fleet, which had hitherto docked at Puteoli, to Ostia. The earliest specific evidence that their Italian headquarters had been transferred comes from the end of the second century;[1] but it is probable that the change of policy followed directly the completion of the new basin and that it was in fact one of Trajan's main motives in undertaking the work. Henceforward Ostia becomes the main reception port for merchantmen from the east as well as from the west.

The new Ostian harbour should be seen as the central feature of a comprehensive plan to set the maintenance of Rome on a more secure and economic basis. The dangers of the west coast passage from the south required points of shelter on the route. Nero had already built an artificial harbour at Antium;[2] it was probably Trajan who added a new harbour at Terracina.[3] To the north of the Tiber there was no good harbour between Cosa and Ostia; Trajan built a new harbour at Centumcellae.[4] This new harbour followed the Ostian model on a much reduced scale, having an inner basin entered from the main harbour, which was protected by moles and an island which was deliberately built as a breakwater on the seaward side of the entrance.[5] The new harbour at Centumcellae had a double purpose. It provided safe shelter for ships bound for Ostia or returning from Ostia in bad weather and served as an auxiliary port for goods dispatched from Gaul and Spain to Rome. The increase in shipping during the early second

[1] *IG* xiv. 918, a statue base in honour of Commodus, set up by οἱ ναύκληροι τοῦ πορευτικοῦ Ἀλεξανδρείνου στόλου. Probable evidence under Antoninus Pius, Pl. xviii *d*, description.   [2] Suet. *Nero*, 9.

[3] Lugli, *Forma Italiae, Regio I*, i. 126. There is no specific evidence that Trajan was responsible for the harbour, but it was certainly Trajan's engineers who cut through Pesco Montano to lead the Via Appia from the harbour along the coast. Lugli also interprets (p. 128) a relief, now in the National Museum, as illustrating Trajan supervising the construction. The genuineness of the relief, however, is with good reason disputed, W. H. Gross, 'Römisches Relief aus Terracina', *Arch. Anz.* 53 (1938) 148.

[4] Pliny, *Ep.* vi. 31. 15–17.

[5] S. Bastianelli, *Centumcellae, Castrum Novum* (*Italia romana; municipi e colonie*, ser. 1, vol. 14, 1954).

century would have overcrowded even the enlarged Ostian harbour at peak periods; Centumcellae, only thirty-five miles distant by the Via Aurelia from Rome, gave useful relief. Meanwhile in Rome itself the river embankment of the docks below the Aventine was rebuilt; Trajan was almost certainly responsible.[1]

By attracting eastern shipping to Ostia the building of Trajan's harbour marked a decisive stage in the decline of Puteoli's importance and prosperity. A letter addressed to the senate of Tyre on 23 July A.D. 174 by the Tyrian traders at Puteoli gives a lively illustration of the change.

By the gods and by the fortune of our lord emperor. As almost all of you know, of all the trading stations at Puteoli, ours, in adornment and size, is superior to the others. In former days the Tyrians living at Puteoli were responsible for its maintenance; they were numerous and rich. But now we are reduced to a small number, and, owing to the expenses that we have to meet for the sacrifices and the worship of our national gods, who have temples here, we have not the necessary resources to pay for the rent of the station, a sum of 100,000 denarii a year; especially now that the expenses of the festival of the sacrifice of bulls has been laid on us. We therefore beg you to be responsible for the payment of the annual rent of 100,000 denarii . . . We also remind you that we receive no subscriptions from ship owners or traders, in contrast to what happens with the station of the sovereign city of Rome. We therefore appeal to you and beg you to take thought of our fate and of the affair.[2]

In the Republic Puteoli had been of first importance to the Tyrian trader, but his ships could now pass on to the imperial harbours, and the main station was transferred to Rome. Similarly in the second century an Egyptian recruit for the fleet bound for headquarters at Rome to report for duty and learn to what unit he was to be attached sails on to Trajan's harbour, where he finds a man to take a letter to his mother. 'I am now writing to you from Portus for I have not yet gone up to Rome and been assigned.' A second letter tells us that he arrived in Rome on the same day.[3]

But though the Alexandrian corn fleet no longer discharged at Puteoli, the storage capacity designed for Egyptian corn was still available and it was sound sense to use it. That Puteoli was still con-

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[1] G. Gatti, *BC* 64 (1936) 55.
[2] *BGU* 27; Dittenberger, *OGIS* 595; Dubois, *Pouzzoles antique*, 83.
[3] *Michigan Papyri*, viii (Youtie and Winter, 1951) 490, 491.

cerned with Rome's corn supply is clear from inscriptions. The finding
of a dedication to the *genius* of the colony at Rusicade,[1] an important
export centre for African corn, is inconclusive, for the corn exports
implied could have been for local distribution from Puteoli; but
Puteoli's inscriptions include records of two junior officials in the
Roman corn department, a paymaster[2] and a clerk,[3] and the paymaster's
duties covered Ostia as well, *disp(ensator) a fruminto Puteolis et Ostis*;
these men were concerned with Rome's corn. The natural inference is
that Roman corn was still stored at Puteoli. There was a limit to the
storage capacity that could be provided at Ostia, and it was a wise
insurance against widespread fire to distribute Rome's reserves. But a
secondary role in the provisioning of Rome was poor compensation for
the loss of the greater part of Rome's eastern trade. When Ostia was at
the height of her prosperity in the middle of the second century Puteoli
was being supervised by curators imposed by the central government,[4]
a sure indication that the town's economy had lost its buoyancy.

Ostia was now not merely the harbour of the world's largest con-
suming centre, but an important link also in the great trade route from
east to west. During the Republic there was no real unity between the
two halves of Rome's empire. On land there was a large block of un-
conquered territory between Macedonia and Gaul, and when on the sea
Rome successively took over the heritage of Carthage in the west and
of the Hellenistic kingdoms in the east, she made no continuous attempt
to control the Mediterranean effectively. Piracy shadowed the water-
ways and, apart from Pompey's well-organized campaign, nothing was
done to bring east and west together. To Augustus belongs the credit
of seeing this need and satisfying it. By the incorporation of Noricum,
Rhaetia, and Pannonia as provinces he postponed the danger of a parti-
tion of the empire which the Civil War had threatened, and, by laying
down the basis of a permanent naval organization for the policing of
the seas, he increased the volume and widened the limits of trade. There
was now free movement from Syria and Egypt to Gaul and Spain.
Eastern traders settled in Arles and Bordeaux, and penetrated to the
Rhine; the harbour system of Claudius and Trajan, the largest and most
efficient on the west coast of Italy, became of primary importance as
a port of call and possibly of exchange.

[1] *CIL* viii. 7959.   [2] *CIL* x. 1562.
[3] *CIL* x. 1729: 'Aug(usti) lib(ertus) prox(imus) comm(entariorum) ann(onae).'
[4] *CIL* x. 1814 (A.D. 161); x. 1791 (A.D. 181).

The new harbours were connected by canal with the Tiber and so with Rome. The Via Campana had from the early Republic led to the salt-beds. It may have been extended to reach the harbour; but at some time a new road, the Via Portuensis was added.[1] It might be thought that the logical sequel was to develop a new town, transferring the storage capacity of Ostia to the harbour area and providing adequate accommodation for the working population to live near their work. Such a transfer could not have been made immediately, but the deliberate rebuilding of Ostia in the first half of the second century suggests that it was not then contemplated. The council and magistrates of Ostia controlled the site, and the Claudian harbour was not yet *portus Romae*, but *portus Ostiensis*. Ostia remained the centre of the trading guilds and still for a long time housed the greater part of the working population. A number of ferry services provided easy transport across the river and a road must have been laid across the island between river and canal. Trajan's harbour was surrounded with *horrea* but the new storage capacity built in the old town was more than was needed for her own population. Ostian *horrea* still held a reserve for Rome.

OSTIA'S DEVELOPMENT UNDER CLAUDIUS AND NERO

The new harbours brought increasing prosperity to Ostia, but it is more than a generation before clear signs of a dramatic development are seen in the excavated area. That the town benefited, however, from Claudius is highly probable. Certainly none of the early emperors was a more familiar figure in the town. It was from Ostia that he sailed to take the honours of the conquest of Britain[2] and the stiff rebuke to the town for not giving him an adequate reception, which Suetonius records, may mark his return.[3]

Later the building of his harbour probably brought him frequently down the river. Pliny records a picturesque and typically Claudian incident on one of these visits. A whale had been attracted into the harbour by the wreck of a cargo of hides imported from Gaul, and had stuck fast in the shallows. Claudius embarked his praetorians in small boats and directed the attack. Nets were stretched across the harbour

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[1] For the Via Campana and Via Portuensis, T. Ashby, *The Roman Campagna in Classical Times*, 219. The Via Portuensis, not recorded before the fourth century, cannot be dated. Another road on the right bank remains a mystery, the Via Vitellia, which ran 'from the Janiculum to the sea' (Suet. *Vit.* 1. 3), Ashby, op. cit. 226 f.

[2] Dio lx. 21. 3.

[3] Suet. *Claud.* 38. 1.

entrances to prevent escape and the men hurled their spears. 'We saw one of the boats go down,' says Pliny, 'waterlogged from the spouting of the monster.'[1] It was at Ostia also that Claudius heard of Messalina's dangerous excesses. He was paying a state visit accompanied by his corn-supply prefect, the commander of the praetorian guard, his secretary Narcissus, and his main counsellors. His advisers took the news seriously and Claudius was rushed back along the Via Ostiensis. Vettius Valens, climbing a tree at Rome, saw 'a fierce storm coming from Ostia'.[2]

Claudius stationed at Ostia an urban cohort from Rome to provide a fire service for the granaries and warehouses.[3] The Grandi Horrea probably date from his principate,[4] and the baths that can be seen under the Via dei Vigiles are roughly contemporary.[5] A handsome mosaic depicting winds and provinces from one of the pavements in these baths may reflect the benefits to trade which were to come from the new harbour.[6] But it is doubtful whether new building at Ostia under Claudius was extensive; Ostian labour was probably diverted largely to the construction of the harbour.

Suetonius speaks of Nero's trips down the Tiber as though they were not infrequent,[7] but his principate has left no recognizable mark. It might have been very different if his imaginative ambitions had been tolerated longer. Suetonius records that he had conceived the plan of extending Rome's walls to Ostia and of bringing the sea from Ostia by canal to the old city.[8] This note follows in Suetonius a summary description of Nero's innovations in the rebuilding of Rome after the great fire in 64, and the association is plausible. The scale on which a large part of central Rome was converted into parkland for the Golden House makes the proposal for the inclusion of Ostia within Rome's bounds less incredible. This would have been a very new type of imperial city; but Nero was a very new type of emperor. A canal from Ostia to Rome, however, was a serious project, for the Tiber between Rome and Ostia follows a very winding course and the current is strong. It would have considerably eased the shipment of cargoes from

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[1] Pliny, *NH* ix. 14. Cf. Dio lxxii. 4. 6. [2] Tac. *Ann.* xi. 26. 7 ff.
[3] Suet. *Claud.* 25. 2. [4] *NS* 1921, 360 (for the date, p. 380).
[5] *NS* 1912, 204; brickstamps, Bloch, *Bolli laterizi*, 219. [6] p. 448.
[7] Suet. *Nero*, 27. 3: 'quotiens Ostiam Tiberi deflueret aut Baianum sinum praeter-navigaret.'
[8] Suet. *Nero*, 16. 1: 'destinarat etiam Ostia tenus moenia promovere atque inde fossa mare veteri urbi inducere.'

the coast, and had a precedent in the canal dug in Narbonese Gaul by Marius' army to avoid the difficulties of the lower Rhône.[1]

The Civil War which accompanied the death of Nero did little harm to Ostia. She was not on the path of invading armies and, though the corn of Africa might have been withheld if Clodius Macer's bid for power had not been quickly stifled, there is not likely to have been any serious interruption in trade. A hoard of coins in Ostia, which was sealed at the very outset of Vespasian's principate, includes rebel issues of 69 from Gaul and Africa which presumably came over in merchantmen.[2] If Vespasian had been able to control the strategy of his supporters there would have been a crisis in Ostia, for it was his intention to force surrender by blockade; and Vespasian was at Alexandria from which the Egyptian corn fleet sailed—a good base for the purpose. But Antonius Primus did not wait for instructions, and Italy was won before the double-edged weapon of starvation was tried.

THE REBUILDING OF OSTIA

How much was built at Ostia under the early Flavians we do not know, but Vespasian's financial policy and encouragement of trade and above all his restoration of stability after the quixotic hellenism of Nero and the upheavals of 69 must have profited Ostia; the cult of Vespasian and Titus was long maintained in the colony.[3] Domitian received no such posthumous honours, for his memory was publicly damned by the Roman senate; but Ostia probably had good reason to be grateful to him.

Ostia was so intimately bound up with Rome and so vital to her economy that it is reasonable to see imperial policy in major developments in the city. It was probably under Domitian that the building level was sharply raised in all new construction. Hitherto there had been no drastic change, though, with successive rebuilding, the level had slowly risen. The new buildings were now raised by at least a metre above the old, involving enormous quantities of earth and rubble for the fills. The practice, in such clear contrast with earlier custom, is deliberate policy and is so uniformly applied that it may well have been controlled by statute.[4] The purpose was probably twofold:

[1] Strabo, 183; Plut. *Mar.* 15. 3–4.
[2] M. F. Squarciapino, *NS* 1948, 326.
[3] Later *flamines*, 400, S 4664.
[4] Suggested by F. H. Wilson, *BSR* 13 (1935), 53.

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THE DECLINE OF OSTIA

THIRD-CENTURY DISINTEGRATION

THE period that followed the Severan dynasty was nearly fatal to the Empire. Revolt or assassination became normal means to power, and emperors succeeded with bewildering rapidity. There was little continuity in policy, central authority was inadequate to check centrifugal forces; the resources of empire were frittered away. This half-century of imperial disintegration brought acute distress to Ostia.

To trace the third-century history of Ostia in its buildings is peculiarly difficult, for with the breakdown of centralized power the brick industry collapsed. By the Severan period the emperors had secured a virtual monopoly of production, and the emperors also by their building programmes had for long created the main demand. Emperors whose position was precarious were too preoccupied to be great builders in Rome, and the complex organization of the brick industry needed a skill and continuity in administration which was now lacking. With the drying up in the supply of new bricks we lose the criterion of the dated brickstamp which established the chronology of the buildings of the second century, and it is doubtful whether a closer study of later walls will ever provide a certain typological sequence. The facing that normally replaced brick in this period is perhaps best described as brick and block; it combines bricks, which are often taken from older buildings, with tufa blocks. Normally rows of brick and of tufa blocks alternate: sometimes there are two rows or more of tufa to one of brick: occasionally, and perhaps this is an early sign, tufa courses appear in a predominantly brick surface. This style can be seen occasionally in subsidiary walls in the second century, perhaps even in the first. It is only in the third century that it is generally employed; but it lasts on into the fourth century, interrupted by a short phase of brick revival. We can distinguish good and bad work of this type, but not yet with confidence early and late.[1] In reviewing this phase of Ostia's development it is wiser to begin with other evidence.

[1] See Appendix IX, p. 544.

A comparison between the epigraphic evidence of the second and third centuries is revealing. There is a striking contrast between the rich harvest of public inscriptions from the second century and the lean crop from the third. Since in general the chances of survival increase with the lateness of the inscription the contrast is a fair indication of a decline in prosperity. This inference is strengthened by the increasing use of old material. Even a commemorative tablet set up by the whole town, 'universi cives Ostienses', in honour of the emperor Gallienus in 262 was inscribed on the back of a similar inscription set up officially, 'decreto colonorum', to Septimius Severus.[1]

The deterioration in the health of local government which probably began towards the end of the second century is sharply accentuated in the third. Ostia had in the early Empire received special attention from the imperial government, but the city had been controlled by her own magistrates and council, and local office was highly prized. In the third century imperial control becomes more direct and explicit. Honorary dedications had been set up earlier to the *praefectus annonae*, the official at Rome who controlled the corn supply and to the procurator who served at Ostia under him. It is not until after the middle of the third century that we find a *praefectus annonae* who is *curator* of the town, appointed by the central government to regulate the town's management directly.[2] In the late Empire this official's authority is paramount and permanent. Most of the old families that had served Ostia well for two centuries and perhaps more cannot be traced beyond the Severan period. We have no evidence in the late Empire of private bequests that benefited the city.

This change in the character and spirit of local government is not confined to Ostia; it is a reflection of wider and deeper tendencies that are seen throughout the Empire. *Curatores* had been appointed by the imperial government to manage the affairs of other Italian cities even before the end of the first century; centralized control of local government had increased throughout the second century, and was accompanied by a growing reluctance to undertake the financial responsibilities of local office. Such symptoms are not apparent in the

[1] *S* 5334, 5330. A dedication to Salonina, wife of the emperor Gallienus (*S* 5335) reuses a dedication to an imperial freedman of the late second century (*S* 5375). The base of a statue of P. Flavius Priscus, duovir and town patron, set up near the middle of the third century, was reused before the death of Constantine to provide an altar to Hercules and the original inscription was only partly erased (Bloch, 29).
[2] p. 186.

first half of the second century at Ostia, because the city had never been more prosperous. They emerge when the local profits of trade decline.

The decline in prosperity was almost certainly accompanied by a decline in population. When the large bakery east of the House of Diana, which had ample housing accommodation above its working premises, was destroyed by fire soon after the middle of the third century, it was not rebuilt. The ruins were left where they had fallen and a path was built over them.[1] The House of the Paintings also seems to have been abandoned shortly afterwards,[2] and another large block, which can no longer be identified, was reported by Visconti in the nineteenth century to have been similarly abandoned after a fire.[3] The explanation must surely be that there was now too much accommodation in Ostia. It was no longer possible to fill the big blocks that had been built against a much more prosperous background. The profits of trade had swollen Ostia's population: when trade declined Ostia was not a good place to make money though, as we shall see later, it could still be congenially spent there. The decline in prosperity is due primarily to the general shrinkage of trade, partly to special causes that deepened the crisis.

That Rome imported much less from overseas in the third century than the second is certain though the decline cannot be even approximately measured. The loss of life through the plague, brought back from the east by the army of Lucius Verus and recurring under Commodus, may be exaggerated in our sources, but it was heavy enough to reduce for some time the population and therefore the demand for corn, imported oil, wine, and other goods substantially. The marble trade which had grown to extravagant proportions in the second century must virtually have collapsed, because the main demand had come from the lavish building programmes of the emperors, and the post-Severan emperors of the third century built very little indeed. Ostia's difficulties were sharpened by a shift of emphasis to the imperial harbours.

THE GROWTH OF PORTUS

There is no reason to believe that the old Tiber harbour had been abandoned when Trajan's new basin gave complete security to shipping.

[1] *NS* 1915, 249.　　　　　　　　　　　　　　[2] *MA* 26 (1920) 338.
[3] *Bull. arch. crist.* 1870, 77. Similarly when the House of the Sun was burnt down, probably in the fourth century, the ruins were not cleared away, but concealed by a new wall along the street front: Becatti, *Topografia*, 162.

The larger merchantmen would naturally go to the new harbour, but while smaller trading vessels could negotiate the sand-bar at the river mouth without difficulty, as they could when Dionysius of Halicarnassus wrote, many of them will have preferred to avoid the congestion of the crowded imperial harbours and to berth at the river bank. But the cutting of a canal to link the new harbours with the Tiber, by providing two outlets for the river, slowed down the current. The sanding-up at the river mouth is likely as a result to have been accentuated.

More serious was the development of the harbour area. How much living accommodation was provided near the Claudian harbour we cannot know, but it is clear that at least a small nucleus must have lived on the spot to guard the warehouses and attend to emergency needs in the harbour. Traces of them survive in a small group of tombs that was discovered near the south-east corner of Trajan's basin.[1] Most of these tombs were destroyed to give place later to a large granary, but one was deliberately preserved and incorporated in the new building; it had been built for the freedman of a Flavian emperor, a *tabularius*, engaged on checking cargoes.[2] It has been suggested above that the majority of the harbour workers continued to live in Ostia and walk each day to their work. The centre of gravity, however, gradually shifted.

The best evidence for the growth of population by the harbours during the second century comes from the cemetery that developed southwards towards Ostia from Trajan's canal. From the seventeenth to the nineteenth centuries individual tombs and their inscriptions were recovered from the neighbourhood of the church of S. Ippolito. In 1925 agricultural operations revealed that these tombs were part of a large cemetery stretching for some 400 metres southwards from the canal.[3] More than a hundred tombs were excavated, some of them in excellent state of preservation, and a much larger number still lie buried. Most of the excavated tombs date from the first half of the second century.

In one case we can trace a transfer from the old centre to the new. C. Torquatius C. f. Quir(ina) Novellus built a tomb for his wife

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[1] *NS* 1925, 72.
[2] *S* 4483.
[3] G. Calza, *La Necropoli del porto di Roma nell' isola sacra* (Rome, 1940). Inscriptions collected, H. Thylander, *Inscriptions du port d'Ostia* (Lund, 1952). Their chronology and the development of the cemetery discussed, Thylander, *Étude sur l'épigraphie latine* (Lund, 1952), ch. 1.

Valeria Chelido at Ostia.[1] After her death he seems to have moved to the harbour, for, when he died at the age of seventy-six, his ashes and those of his son were laid to rest in the harbour cemetery.[2] Similar movement may be inferred from other names on inscriptions from these tombs. The majority of them are common in Ostia and probably represent younger generations of Ostian families or their freedmen. It is also significant that local trades are represented in this cemetery before the death of Antoninus Pius. Terra-cotta reliefs on the face of tombs include a maker and seller of tools, a water-seller, marble-workers, a doctor and midwife.[3] Those who lived by the harbours did not have to go to the old town for essential services.

That the harbour settlement was fast becoming a self-contained community is confirmed by other evidence. Most revealing is an incidental reference in Galen's discussion of the limits of Hippocrates' medical experience. He is discussing dislocated shoulders. Hippocrates only saw the commonest form; abnormal forms of dislocation are very rare. He himself has seen five cases, one as a student in Smyrna, four only at Rome, though all Roman doctors bring him their special cases. He adds that no cases in his time have been known at 'the harbour or the city near the harbour which they call Ostia'. He can vouch for this, for 'all the doctors in those places are my friends, and both are populous centres'.[4] Already, in the second half of the second century, a man at Rome can think of the harbour before Ostia and regard them as independent centres.

When the Claudian harbour was built its official title was 'portus Augusti Ostiensis', but Pliny the elder called it 'portus Ostiensis'[5] and this usage is confirmed by the title of a Claudian freedman, 'proc(urator) portus Ostiesis'.[6] No trace of this usage is found after the building of Trajan's harbour. The standard description thereafter on inscriptions is *portus uterque*,[7] occasionally set out more explicitly, *portus Augusti et Traiani felicis*.[8] But by the end of the second century men already spoke simply of 'Portus', and they meant not only the harbour itself but the settlement around it. A similar mark of growing independence is the adoption of the cognomen Portuensis, balancing Ostiensis, which remains common in the old town.

[1] Thylander, A 249.
[2] Ibid., A 249, 250.
[3] Calza, op. cit. 249–57.
[4] Galen (Kuhn), xviii. 348.
[5] Pliny, *NH* ix. 14; xvi. 202.
[6] 163. It is possible, as suggested above (p. 56), that this was the original title under Claudius.
[7] 125, 170.
[8] 408.

The harbour settlement had also its own temples, many of them dating from the second century; by the Severan period the Serapeum, reflecting the close association with the Egyptian corn fleet, was attracting handsome benefactions.[1] Harbour guilds were also established. In some trades the two centres combined. The bakers were *pistores coloniae Ostiensium et portus utriusque*,[2] the tanners were *pelliones Ostienses et Portuenses*.[3] But already before the end of the second century the shipbuilders were divided. There were *fabri navales Portuenses*[4] as well as *fabri navales Ostienses*.

In the early fourth century the mature status of the settlement was publicly recognized. Between 337 and 341 a statue was set up near the harbours to a *praefectus annonae* by the council and people of Portus, 'ordo et populus (civitatis) Fl(aviae) Constantinianae Portuenses'.[5] Constantine had made the harbour settlement an independent community. A more precise date has been inferred from ecclesiastical evidence. At a Council held in Rome in 313 the bishop of Ostia was present, but there was no representative from Portus.[6] The Council of Arles in the following year was attended by the bishop of Portus as well as by priests from Ostia.[7] The conclusion that Portus received its charter between these two dates is, however, not compelling. The Council at Rome was not a large gathering and the bishops of Centumcellae, Aquileia, and Arpi, who were present at Arles, were not included. It cannot therefore be safely inferred that Portus had no bishop in 313. And, even if the bishopric of Portus was first instituted at this time, it would not necessarily date the granting of a charter. Civil and ecclesiastical administration did not always coincide.

It is better to leave the date of the change open but, whenever it occurred, it marked the end rather than the beginning of a process. In economic importance Ostia had already been eclipsed by Portus. As the total volume of overseas trade declined it was natural that the Ostian warehouses which had been only a supplementary reserve should be increasingly neglected. No new *horrea* from the third century have yet been found, and there are no traces of large-scale repairs in the old. Probably the third century saw a sharper drift of workers from the old town to the imperial harbours. Business was still transacted by wholesale merchants and shippers in the Piazzale delle Corporazioni

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[1] For the cults of Portus, p. 384.   [2] 101, 15.
[3] S 4549².   [4] 169.   [5] 13.
[6] Duchesne, *Histoire ancienne de l'église*, ii⁴ (1910) 110.   [7] Ibid. 213.

where some of the latest mosaics are certainly not earlier than the third century, and perhaps in the Forum Vinarium, but the goods unloaded by the river bank were probably confined to Ostia's own reduced needs. When men wrote or spoke of 'Portus' or 'Portus Romae' they no longer thought of Ostia.

LATE EMPIRE FASHIONS

There is no important new building or reconstruction at Ostia in areas once vital to her trade, east of the Forum between the Decumanus and river and west of the Forum between the river and the Via della Foce; but that it was not a period of complete stagnation is shown by two passages in the imperial biographies. The emperor Tacitus presented to the colony 100 twenty-foot marble columns of Giallo Antico from Numidia;[1] Aurelian had a new Forum built to take his name.[2] Aurelian's Forum was by the sea coast; it is probable that Tacitus' columns were also used on this side of the town; no traces of them have been found in the excavated area. These chance references provide an important clue. They suggest that tendencies which were fully developed in the fourth century go back to the third. The centre of gravity was shifting away from the river to the sea coast.

Minucius Felix, in the Severan period, referred to Ostia as a most attractive town, 'amoenissima civitas'.[3] The epithet is not one that Cicero would have applied to the Ostia of his day. Republican Ostia had looked to the river and its trade and had expanded first on this side. When the Sullan walls were built they stood well back from the sea. It was probably not until the early Empire that the seaward side of the town claimed serious attention and perhaps not until the prosperity period that it was fully developed. It was in this area that an impressive set of baths was built near the Porta Marina in the early second century and a smaller set was added later farther to the west.[4] It was from buildings near the old coastline that excavators exploiting the ruins for the art collections of the nobility in the late eighteenth century reaped their richest rewards in sculpture and inscriptions, the greater part of them going back to the second century.

Minucius Felix gives an attractive picture of the sea-front in his day. In his dialogue a group of friends come down from Rome to Ostia in September. Early in the morning they make their way through the

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[1] SHA, *Tacitus*, 10. 5. [2] SHA, *Aurelian*, 45. 2.
[3] Minucius Felix, *Octavius*, 2. [4] p. 417.

town to the shore and then stroll at leisure along the sand southwards. Returning to the point from which they started they sit down on a breakwater and settle to a serious discussion of Christianity. Small boats are drawn up on the sand near by, and children play ducks and drakes in the sea.[1]

There were two sides to Ostia's life. With the busy trading of a harbour town was combined the more leisurely life of a seaside resort. For that reason the sharp decline of trade though serious was not fatal. Provided that amenities were maintained Ostia with a reduced population could still be an attractive town to live in. From the third century onwards the theatre and the baths are more important than the warehouses.

This new Ostia is fully developed in the fourth century, but we can see the transition in the third. In contrast with the lack of utilitarian building in the areas devoted mainly to trade we find, during the late period, a positive mania for public fountains or nymphaea; many of them probably date from the third century. Changing tastes are also seen in architecture. Until the middle of the second century curving lines were extremely rare in Ostian buildings except where they were functionally required, as in the theatre. Houses, shops, and warehouses were built in straightforward rectangular form. The Forum Baths, from the end of Antoninus Pius' reign, are the first known large building to break with the rectangular tradition in the curving ends of their southward-facing hot rooms. There followed the semicircular Severan 'emporium' at the west end of the town, and the round temple west of the Basilica. This change of taste is reflected also in private buildings. It becomes the fashion to reconstruct the most important room of the private house with an apsidal end as in the House of Fortuna Annonaria. The freedmen *Augustales*, as we might expect, are among the first to follow the new fashion. In most cases the building of these apses involves encroachment on other buildings, which would have been difficult when land values were high. But in the third century shopkeepers were having a lean time and the large house-blocks were not fully occupied. Only the men who are still rich enough to have independent houses can afford to expand.

INTERNAL STRAINS

The third century was a period of transition. As trade declined, the adjustment must have been painful to the workers at the Tiber docks

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[1] See also Appendix iv, p. 490.

who no longer had sufficient employment, to shopkeepers competing for a much reduced demand, and to builders who had more labour available than was needed. Against this depressing background two new religions competed for men's allegiance. The rise of Christianity in Ostia is still very obscure. Ostian Christians there surely must have been during the Antonine period, but the absence of surviving evidence before the end of the century suggests that the Christian community was small and weak. In the third century Ostia has her Christian bishop and later tradition recalls an Ostian martyrdom shortly after the middle of the century. But to the literary tradition archaeology adds little. A considerable number of Christian lamps earlier than the fourth century have been found at scattered points and a small number of Christian tombs. Two small buildings on the north side of the Decumanus east of the Forum have been identified as Christian meeting places, but the evidence is slight, and late. So far as our evidence goes at present Christianity had not made a strong impression on Ostia before the middle of the third century.[1]

The evidence for Mithraism on the other hand is widespread and unmistakable. The earliest dated Mithraic inscription is from 162; the main development of the cult comes in the late second and in the third century. No less than fifteen Mithraea have been found at Ostia, and, though the shrines are small, the total number of adherents implied and their distribution throughout the town shows that Mithraism was in the third century a vital element in the town's religious life. But the worshippers seem mainly to have come from the lower classes and from freedman stock; there is no sign of the patronage of the local governing class. It was not on behalf of Mithraism that the aristocracy was to resist when the challenge of Christianity was more clearly and officially formulated.

When the imperial harbours became 'civitas Flavia Constantiniana' the main shift of population from Ostia had probably been completed and the most painful phase of adjustment was over. Moreover, the strong rule of Diocletian at the end of the third century, and later of Constantine, restored a measure of imperial stability and of public confidence. For Ostia, it is true, the general benefits of Constantine's rule were probably less appreciated than in other towns of Italy. For it was Constantine who had given independence to the harbour settlement and it was probably this newly recognized town that received the

[1] p. 388.

main benefit of imperial subsidies, though there is no reason to discredit the record that Constantine endowed a Christian basilica at Ostia.[1] Moreover, Ostian sympathies before the decisive battle at the Milvian bridge may have rested with Constantine's rival Maxentius; for in 312 Maxentius, when Aquileia was threatened, had transferred its mint to Ostia.[2] Ostia was probably selected for the purpose not only because it was near Rome but because with the town's decline there were ample premises available, and suitable labour to supplement the skilled craftsmen who would be transferred to the new site.[3] The imperial mint, besides giving much-needed employment, added to the town's prestige. Early in the reign of Constantine it was closed.

If we confined our attention to a selection of private houses and to inscriptions we might imagine that a real prosperity had returned to Ostia in the fourth century. At various points in the large area most recently excavated can be seen houses that show a striking display of apparent wealth. They include old houses that have survived from the late Republic and been readapted to new tastes, second-century houses, such as the house of Fortuna Annonaria, and houses adapted later from shops and commercial premises, such as the House of Psyche and Eros. These houses, though differing widely in origin and plan, have clearly marked common features. They make lavish use of marble to pave floors and to line walls; they have elaborate fountains or nymphaea; unlike the insulae, they have their own heating systems for selected rooms.[4]

These signs of wealth seem at first sight from the inscriptions to be accompanied by a revival in public prosperity; for, in contrast with the dearth of public inscriptions from the third century, the number of Ostian inscriptions recording the emperors of the fourth century is strikingly large, and many of them are associated with building work. We should not, however, take the fulsome language of these inscriptions too seriously. Trajan, who had added Dacia to the Roman Empire, was commemorated by his official titles alone: Valentinianus, Theodosius, and Arcadius, ruling in uneasy partnership while the frontiers weakened and Germans and Goths broke into the provinces, are 'victores ac triumphatores semper Augusti'.[7] They are honoured

[1] p. 395.

[2] Maurice, *Numismatique Constantinienne*, 263.

[3] Wilson, *BSR* 14 (1938) 161.

[4] Becatti, *Case Ostiensi del tardo impero* (Rome, 1949). Below, p. 258.

[5] S 4410.

'[pro felicita]te ac beatitudine clement[iaque tempo]rum', though the economy of the Empire was breaking down. This is the official language of the day, and such honours are dictated by imperial officials. The initiative for expressing the town's wishes no longer comes from the council, but from the *praefectus annonae*. The contrast of the times is seen not only in the empty vanity of the language, but in the deterioration of the craftsman's work. He was not attempting to express the spirit of a new age in a new style but doing his best to turn out a good piece of work. The irregularity of his lines, the crowding and lack of form of his letters, are a measure of the decline in standards from the days of Trajan and Hadrian.

Ostian sculpture of the day wins more respect. The life-size portrait statue of a fourth-century dignitary has a striking individuality and dignity;[1] and the late imperial portraits have an impressive strength. But if we wish to obtain a more balanced view of the fourth century at Ostia we must return to the excavations. From them it is clear that the sense of planning which informed the rebuilding or most of the rebuilding in the first half of the second century has been lost. Architects and builders no longer care to harmonize their new buildings with their surroundings.

At the west end of the excavated area on the north side of the Via della Foce can be seen a small set of baths built throughout in brick.[2] A Hadrianic stamp was found in the construction but that should deceive no one. These baths replace shops which formed the southern end of a line built not earlier than the third century and probably under Diocletian. The predominance of short lengths of brick in the baths shows without doubt that this is late work, reusing old material. These baths back on to the Via della Foce, but no attempt is made to conform to the line of the street. Similarly on the west side of the Cardo to the south of the Forum a handsome nymphaeum was built, probably in the fourth century.[3] Its walls and floor are lined with marble and three niches are reserved for sculpture; but it projects in front of the buildings on either side and destroys what had been a graceful curve. At the northern end of the Semita dei Cippi a large semicircular exedra of inferior and late workmanship was built; it crossed the street and blocked its outlet on the Decumanus.

[1] R. Calza, *BC* 69 (1941) 113; *Museo*, 55.
[2] Becatti, *Topografia*, 155; brickstamps, Bloch, *Topografia*, 219 (i. 19.5).
[3] Becatti, *Topografia*, 158. Below, Pl. xiii b.

Several inscriptions speak of restorations to public baths during the
fourth century and it is clear from what remains that efforts were made
to maintain the amenities of the town; but the character of the restora-
tions shows only too clearly the poverty of the times. When marble
paving has to be restored gaps are filled by inscriptions from cemeteries
or public places.[1] Where mosaics have been worn away no attempt is
made to preserve the design; odd pieces of marble are reused for the
purpose.[2] When, towards the end of the century, the central entrance to
the theatre from the Decumanus was remodelled, statue bases were
dragged from the public gardens to the north and clamped together as
a substitute for new walling.[3] Indeed, the reuse of old material is one
of the chief characteristics of the fourth century. Statue bases are cut
down to provide thresholds; walls are even repaired with fragments of
reliefs. Many of the fragments of the town Fasti have been found lining
the pavements of private homes: a new latrine, built probably in the
fourth or early fifth century, at the south end of the Forum, uses for its
marble seats inscribed stones rifled from cemeteries. Heavy penalties
had been imposed for the violation of tombs. These sanctions no longer
held.

A late-fourth-century inscription records the transfer of a statue to
the Forum from a site that was no longer fit for it, 'ex sordentibus
locis';[4] parts of the town were apparently falling into decay. Already
in the third century, as we have seen, the ruins of large blocks had been
left where they fell. The active rebuilding in the houses of the rich is
not matched in the large insulae. In this contrast we can see the collapse
of the middle class. It had grown rich on the profits of trade; there was
no longer an active trade to sustain it. The colours, however, should
not be made too sombre. Rich men still found it sufficiently attractive
to live in Ostia.

Some of the well-furnished houses of this period were probably
occupied by imperial officials. The *praefectus annonae*, who exercised
direct control over the town, perhaps lived in Ostia for part of the year,
and some of the rich traders and travellers whose main business was at
Portus may well have preferred to stay in Ostia away from the noise

[1] Good examples can still be seen in the west wing of the Baths of Mithras. Many
inscriptions were also recovered from the pavement of the main hall of the Forum Baths,
Wickert, S (2), p. 845.
[2] e.g. The Neptune mosaic in the Baths of Neptune, NS 1910, 9.
[3] pp. 424 f.
[4] S 4721. The approximate date is inferred from the script.

and bustle of the harbour. That is perhaps why Augustine with his mother Monica lodged at an Ostian home while waiting to return to his native Africa.[1] But the majority of these houses will have belonged to the local aristocracy or to rich men who chose to live, perhaps not for the whole year, at Ostia. Ownership stamps on water-pipes show that Roman senators were among them, or at least owned properties in Ostia.[2] The collapse of the middle class had produced a gap between rich and poor as wide as in the late Republic and early Empire, when the government of the town was controlled by comparatively few families and the spreading houses of the rich contrasted so strongly with the cramped quarters of the poor. But in that earlier period the rich had the responsibility of office and the feeling that the future of Ostia lay largely in their hands; the honours of office were repaid by public benefaction. In the fourth century this feeling of responsibility had long been sapped; it was the imperial officials in whose hands the maintenance of the city lay.

The total absence of fourth-century inscriptions recording the public careers of local magistrates and the activities of the guilds is a sign of the times. From the Theodosian Code we can see that throughout the Empire the duties of office outweigh the privileges; *munera* loom larger than *honores*. A long series of imperial enactments is needed to prevent town councillors escaping from their responsibilities. Men no longer boast publicly of the number of offices they have held; their main anxiety is to hold as few as possible. 'Decurio splendidissimae coloniae Ostiensium' is the language of the second century not of the fourth. The guilds were no longer free institutions; men were tied to their work and essential trades became hereditary.

The earlier growth of prosperity in Ostia had strengthened a common loyalty and pride; disintegration produced cleavages. There was certainly tension between Christians and pagans, and we shall find reason to believe that the local aristocracy was dominantly pagan, perhaps until the end of the fourth century. Religious differences may have widened the gulf between the rich and the poor.

The nature of the evidence and, in particular, the difficulty of dating late building work has compelled us to speak of the general character of the fourth century. In a sense this is misleading. The shortage of

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[1] Augustine, *Confessiones*, ix. 10. 23: 'illuc apud Ostia Tiberina, ubi remoti a turbis, post longi itineris laborem instaurabamus nos navigationi'.

[2] p. 212.

evidence does not reduce the length of time and in no period of a hundred years can we expect a steady rhythm of development or decay. If we were better informed we should see a more complex picture. In religion at least there were special periods of stress. The pagan reaction of Julian must have led to more open conflict at Ostia between pagan and Christian, and we hear in fact, in a Christian source that may be of some value, of the persecution of Ostian Christians. Later, when official policy became less tolerant towards pagan cults, the Christians doubtless had their revenge.

In what from a distance seems a period of steady economic decline there may have been temporary revivals. Already in 1910 Vaglieri drew attention to what seemed to be one such revival towards the end of the fourth century;[1] subsequent study has confirmed his judgement. No fourth-century official has left a more conspicuous mark on Ostia and Portus than Vincentius Ragonius Celsus, though he was *praefectus annonae* for less than four years. The measurers of Portus set up a statue in his honour in August 389 when he had laid down his office, and on the base they paid a handsome tribute to his qualities, particularly his fairness as a judge.[2] A similar tribute was paid on a second base, which commemorated his adoption as patron by Ostia or Portus: 'hinc denique factum est ut ordo noster consensu totius civitatis, ut meruit, patronum sibi perpetuum libenter optaret'.[3]

An inscription from Portus records new building or rebuilding under his authority;[4] further records survive from Ostia. He set up on behalf of Ostia a statue to the city of Rome.[5] He supervised restorations of the Forum Baths[6] and, probably, of the theatre.[7] A further building inscription refers to his immediate predecessor in office:[8] a little earlier, under Valens, Gratianus, and Valentinianus (375–8), the Maritime Baths were restored.[9] The survival of so many records from such a short period, contrasted with the small number preserved from the previous fifty years, is significant. But the building activity of this revival does not mark a return to old standards.

The statue of Roma was set up at the south-east corner of the theatre, on the Decumanus. The base had once carried a statue of a second-

[1] Vaglieri, *NS* 1910, 106.   [2] *CIL* vi. 1759.   [3] 173.
[4] 138.   [5] *S* 4716.   [6] 139, *S* 4717, 4718.
[7] For the restoration, p. 424. A clue to the date may be seen in the base reused for the statue of Roma set up by Celsus outside the theatre. It was probably taken from the Piazzale delle Corporazioni at the same time as other bases used in the theatre reconstruction.   [8] *S* 4410.   [9] 137.

century Ostian magistrate, and his inscription was not even erased.[1] Probably the base was taken from the Piazzale delle Corporazioni when other statues in the series were used to remodel the central corridor of the theatre. The restoration of the Forum Baths was less shoddy, but the tall arches that emphasize the newly created north entrance almost completely block what had once been two shops; they were probably no longer in use. The architectural decoration on the block of marble which carries a building inscription of Celsus' predecessor is of fair quality, but it is not contemporary. The formless and thinly cut inscription does not conceal a series of holes, which show where the bronze letters of the original inscription were once fixed.[2] This, like so much in the late Empire, is reused material.

During the fourth century Ostia was an attractive residential town for those who could afford the amenities of a comfortable life. From the beginning of the fifth century conditions became increasingly insecure, for, when invasion threatened, there was little hope of protection. The Sullan walls had been built for defence; the gates were flanked by strong towers. But the security of the early Empire seemed to make fortifications redundant. Before Augustus died a large building, possibly a tomb, had been constructed against the wall immediately to the south of the Porta Romana, destroying its defensive function. Later, at various points, other buildings abutted on the wall. The Sullan tower on the west side of the Porta Laurentina was converted for religious use in the first or early second century;[3] in the second century a Mithraeum was built against the Sullan tower which, on the east side of the town, was intended to guard the Tiber.[4] In the trial pits that were sunk to trace the line of the walls some later work could be seen, but it is virtually certain that in the fifth century when the crisis came the walls could offer no serious defence.

In 410 Alaric with his Goths, Huns, and Alans sacked Rome. He had first captured Portus, but Ostia he could afford to ignore, and her life was not seriously disturbed. Restorations of two public buildings are recorded in the early fifth century[5] and some of the restorations in the larger houses of the wealthy are probably roughly contemporary. But fifth-century Ostia was a decaying city.

[1] S. 4621.
[2] NS 1913, 175; S 4410.
[3] Calza, *Mem. pont.* 6 (1943) 197.
[4] Calza, NS 1924, 69; Becatti, *Mitrei*, 39.
[5] S 4719 (Macellum); 4720 (? Curia).

In the temporary lull that followed Alaric's death Rutilius, writing of his return from Rome to his native Gaul, dismisses Ostia briefly:

> tum demum ad naves gradior qua fronte bicorni
> dividuus Tiberis dexteriora secat.
> laevus inaccessis fluvius vitatur arenis.
> hospitis Aeneae gloria sola manet.[1]

Little remained but the barren pride of having once welcomed the legendary Aeneas. The silting up of the Tiber mouth had now become acute. Ostia was no longer of consequence to Rome.

Coastal raids decisively quickened the process of disintegration. In 455 the Vandals under Gaeseric attacked Italy. They sacked Portus and a record of their passage survived on the island between the two branches of the Tiber:

> Vandalica rabies hanc ussit martyris aulam
> quam Petrus antistes cultu meliore novata(m).[2]

The Vandals had crossed Trajan's canal and burnt the church of St. Hippolytus; it is unlikely that they ignored Ostia, an easy prey. Conditions in the impoverished community rapidly grew worse, but for 400 more years Roman Ostia was still inhabited. It was probably in the late fifth century that the public water supply broke down. It is unlikely that the aqueduct was cut by invaders; the will and organization were no longer adequate to maintain it. Once again the population relied on wells; old wells were reopened, new ones sunk. In a very late well in the Semita dei Cippi the well-head is formed of wine jars; another, in the middle of the Decumanus opposite the theatre, reuses old brick; in both the workmanship is crude. No less crude is the work where old buildings are readapted to provide living quarters for the much reduced population. Probably many of the buildings that they occupied had already partially collapsed. Doorways were blocked up, corridors partitioned to make homes in the ruins.[3] And when they died many of these Ostians were buried at scattered points within the town.[4] It was an impoverished society, left to its own resources, growing enough food to sustain itself and no more.

While Ostia relapsed, Portus maintained a vigorous life; for Portus remained vital to Rome so long as Rome depended on imports.

[1] Rutilius, *De reditu*, i. 179.
[3] *MA* 26 (1920) 335-8; Paschetto, 90, fig. 18.
[2] Cantarelli, *BC* 24 (1896) 67.
[4] e.g. *NS* 1909, 199 and 201.

Though it was occupied and sacked by Goths and Vandals it recovered. Towards the end of the fifth century or early in the sixth Cassiodorus recorded that the harbour was full of shipping: 'illic enim copiosus navium prospectatur adventus: illic veligerum mare peregrinos populos cum divina provinciarum merce transmittit.'[1] The picture drawn by Cassiodorus of the duties of the *comes portus*, who had replaced the procurator in charge of the harbours during the fourth century, is too rosy. He implies a steady flow of supplies and abundant shipping. Sidonius Apollinaris in a letter of 488, when he was *praefectus urbis*, suggests that the position was often precarious.[2] A friend had recommended to him the *praefectus annonae*. Sidonius is more concerned that the corn-supply prefect, his subordinate, should help him out of a crisis. 'I am afraid that the theatre crowd will raise the cry of famine and blame me for the shortage. In fact I am preparing to send him down at once to the harbour, because I have just heard that five ships from Brundisium with cargoes of wheat and honey have reached the Tiber mouth.'[3]

In his account of the war against the Goths, Procopius provides material for comparison between the two centres. In 573 the Gothic leader Vitigis found that he could not reduce Rome so long as Belisarius was able to introduce food by land and river. Like Marius before him he realized that to blockade Rome successfully he must possess Rome's harbour. But it is not against Ostia that he marches: his objective is Portus. There the harbour is full of river craft and the town strongly fortified. Ostia is little more than a memory, 'once of great account, but now completely defenceless'.[4]

Portus had strong walls, and it is clear from what remains of them today that they were long kept in repair; Procopius even believes that Belisarius could have held the town with 300 men. Ostia's walls had long since passed out of use. But when Portus was occupied by an enemy, entry by the river's natural mouth was the only hope of vessels bound for Rome. That Belisarius made an effort to hold and use Ostia shows that the river was not yet completely unnegotiable. But the town's newly rewon importance was short-lived; the war over, she was again neglected and relapsed into decay.

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[1] Cassiodorus, *Variar.* vii. 9.   [2] Sid. Apoll., *Ep.* i. 10.
[3] 'ostia Tiberina tetigisse'. The phrase, normally applied to the natural mouth of the river, is used of Trajan's canal in the late Empire. Cf. Prudentius, *Contra Symmachum*, ii. 937, referring to corn supplies from Africa: 'respice, num Libyci desistat ruris arator | frumentis onerare rates et ad Ostia Thybris | mittere triticeos in pastum plebis acervos', Symmachus (Seeck), x. 9. 7.   [4] Procopius, *De bello Goth.* i. 26. 7–13.

The rise of the Saracens in Africa hastened the end. Sweeping down on the western coast in the ninth century they found Ostia an easy prey. It is probable that in this last phase the surviving population withdrew from the coast and made some attempt to defend itself at the eastern end of the town. In his excavations near the Porta Romana in the nineteenth century Visconti was struck by the widespread evidence of insubstantial building that seemed to be very late.[1] Between the Decumanus and the Tiber in this area he noted at several points a late wall of very poor workmanship designed for defence.[2] Perhaps a wall that still survives immediately to the south of the tombs of the Via dei Sepolcri was part of this system; its level is significantly high. A massive sarcophagus was found on the Via dei Sepolcri with a hole in the back through which the cover had been levered off by a raider hoping for treasure.[3]

An attempt was now made by the Pope to give protection. Gregory IV (827–44), 'fearing that the people entrusted to him by God and the blessed apostle Peter who lived in the towns of Portus and Ostia might suffer tribulation and depradation from the impious Saracens, sighed deeply in his heart and began to think wisely how he might help Ostia and be able to free her'. Roman Ostia was in ruins; Gregory built a new town with high walls and deep ditch and strengthened it with artillery.[4] The long dispute whether Gregoriopolis, as the new town was first called, was to be found within or without the old city is now of academic interest only, for recent excavations have shown conclusively that the fifteenth-century walls that can now be seen in the centre of modern Ostia follow the line of and use as foundations the original walls of the ninth century. This site was probably chosen because it was here that a church had been built to commemorate Aurea, who was martyred for her Christian faith in the third century. The size of the new settlement shows the level to which the population of Ostia had sunk. Gregory's walls enclose an area not quite as large as the settlement of the fourth century B.C.; both were little more than a stronghold of defence.

But without continuous support from Rome the settlement could not defend itself. When in the middle of the ninth century the Saracens

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[1] *Ann. Inst.* 29 (1857) 309.

[2] Ibid. 312. Visconti attributed these defences to Gregoriopolis, now known to have been built outside the Roman town.

[3] Ibid. 298. The sarcophagus was found at a much higher level than the street paving.

[4] *Lib. Pont.* ii. 81.

came again, the inhabitants shut the gates and fled. The Saracens occupied the site and made it a base for plundering expeditions as far as Portus. And by now not even Portus resisted; the Saracens found it deserted. Under Nicholas I (858–67) the fortifications of Ostia were restored, and new gates and towers built,[1] but there can have been little vitality in the town. By the later Middle Ages Ostia's story has gone full circle, and we are reminded of the settlement of Ancus Marcius. The imperial harbour has in its turn become silted up and is no longer used: such ships as come upstream to Rome enter precariously by the Tiber mouth. The old salt-beds are being exploited, now by the Pope;[2] agriculture and salt are again the main basis of Ostian life. But even for these occupations conditions are much worse. The plain to the east, which at its lowest point is below sea-level, was always in danger of flood. Even in the early Empire it was marshland; by the Middle Ages a large lake had developed, and there were fish in it. The effective working of the salt-beds depended on the canal that brought the sea-water in and helped to drain the marsh; fishing interests required the maintenance of the lake and the blocking of the canal. Litigation was continuous and ineffectual, for authority was not sufficiently strong to control. The breakdown of effective drainage added malaria to the hardships of the population and further reduced its number.

By the twelfth century there was only a handful of people living in Ostia. A revival can be seen in the fifteenth century when the present walls and church were built and Bacio Pontelli designed for Cardinal Giuliano della Rovere the imposing castle that dominates the modern village. This castle was intended to guard the Tiber passage to Rome against raiders, but the change of the Tiber's bed in the great flood of 1557 left the river fort nearly half a mile from the river, and robbed it of its most important function. But even had the river continued to flow along its old channel there could be no real security at Ostia until the causes of malaria were eliminated. It was not until the second half of the nineteenth century that systematic steps were taken, at first by the Pope, and later by the new Italian government, to drain the *stagno di Ostia* and restore the land to agriculture; and then only after a protracted debate by experts. It is strange, now that the origin of malaria is known, to read the protests of serious men who opposed all drainage plans on the ground that the disease came from the land and would become more active if the water were carried away.

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[1] *Lib. Pont.* ii. 164. [2] C. Fea, *Storia delle saline* (Roma, 1823).