

# Infrastruktur und Herrschaftsorganisation im Imperium Romanum

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# Maritime Infrastructure. Between Public and Private Initiative

*Pascal Arnaud*

## Abstracts

- This article points out the diversity of maritime infrastructure in terms of objects, technical level, costs and size. The examination of the scarce written evidence shows that the intervention of the emperor or cities was the normal case, although a better distinction between *opera publica* and euergetism would be necessary. However, the *Corpus iuris civilis* shows that a large scope was left to private initiative. At least part of this infrastructure could also be privately owned and used. The archaeological evidence seems to confirm these facilities. It is therefore necessary to take a clearer account of the different levels of intervention and use of maritime infrastructure, which must not be considered as a whole.
- Der vorliegende Artikel zeigt die Diversität maritimer Infrastruktur bezüglich Gestalt, technischer Herausforderung, Kosten und Grösse auf. Die Untersuchung der spärlichen schriftlichen Quellen zeigt, dass ein Eingreifen des Kaisers oder der Städte die Regel gewesen zu sein scheint, wenn auch eine genauere Unterscheidung von *opera publica* und Euergetismus nötig wäre. Das *Corpus iuris civilis* zeigt jedoch, dass es einen grossen Spielraum nicht nur für private Bauvorhaben gab, sondern auch für privates Eigentum und private Nutzung zumindest von Teilen dieser Infrastruktur. Die archäologischen Quellen scheinen dies zu bestätigen. Es ist daher nötig, die Ebenen von Bau und Gebrauch der maritimen Infrastruktur genauer zu differenzieren, und diese nicht als Gesamtbauwerke zu betrachten.

The importance of maritime infrastructure in the Roman Empire has been heavily underestimated by modern scholarship, who has paid much more attention to the Roman road-system, than to maritime networking. Among other reasons, the general lack of interest for the survey of the shoreline, the neglect of Rome's maritime dimension in modern historiography and scarce epigraphic evidence may provide sufficient explanation for such a situation. Very little has been written about this topic<sup>1</sup> and we have thought it necessary to have a brief look at the documentation relating to this unexpected level of maritime infrastructure, at a time when many national or international collaborative programs and PhDs do pay attention to harbours and ports, beacons, lighthouses, landmarks and maritime cultural landscape and reveal the extraordinary level of maritime infrastructures of the shores in the Roman Empire.

<sup>1</sup> RICKMAN 2008, 11.

Not every maritime infrastructure was brand new at the beginning of the empire. There was an important heritage from earlier times, mainly in the Greek<sup>2</sup> or Phoenician/Carthaginian world<sup>3</sup> and it must be made clear that many a Roman undertaking actually consisted in renewing rather than in building. Roman maritime infrastructures have neither been built as a whole at one time under Roman rule. Strabo confirms this and probably refers to the increased level of infrastructure when he asserts that the level of easy sailing (*euploia*) had increased by his time in the Straits of Messina in comparison with older times.<sup>4</sup> Nevertheless, it is clear that, for several reasons, including the increasing level of maritime trade and technological progress, the number of such infrastructures as well as the number of maritime settlements increased significantly during the Roman Empire. Eventually, maritime infrastructures, in their diversity seem to have reached the level of development they had never reached before and never were to reach again until very recently.

But who decided on and funded such infrastructure? Only a few documents are explicit. Most of them tend to make the emperor and his family the driving force behind the development of maritime infrastructures. An intuitive answer would tend to make the emperor responsible for any relevant achievement in these matters.

Comparative history tells us that the situation varied: until the 18<sup>th</sup> century, it was in France the king's privilege to build lighthouses, at the same time in England it was mainly the Guilds' affair. In the Roman imperial world state and cities provided two possible levels of "state" intervention, the same officials (including the emperor) were allowed to act on behalf of a state or as benefactors acting in their own name, as individuals, and the limits between private and public spheres were always obscure, when individuals or families started to be involved in public life. A more accurate look at the scarce evidence is therefore needed to understand the nature of the intervention of "public" individuals, and to assess the possible space left to private initiative, generally underestimated by modern historiography of the Roman world.

## 1. Density and Variety of Maritime Infrastructure

Before we turn to the development process of maritime infrastructure, it seems useful to have a look at the density of maritime infrastructure and at the variety of its components, in nature as well as in size.

<sup>2</sup> E.g. Strab. 4,1,8, C 184.

<sup>3</sup> CARAYON 2008, *passim*.

<sup>4</sup> Strab. 8,6,20: ἦν δ' ὡσπερ ὁ πορθμὸς οὐκ εὐπλοὺς ὁ κατὰ τὴν Σικελίαν τὸ παλαιόν, οὕτω καὶ τὰ πελάγη καὶ μάλιστα τὸ ὑπὲρ Μαλεῶν διὰ τὰς ἀντιπνοίας: ἀφ' οὗ καὶ παροιμιάζονται "Μαλέας δὲ κάμψας ἐπιλάθου τῶν οἴκαδε."

## 1.1 Breakwaters and Jetties

The shores of Africa between Sabratha and Hadrumetum provide a good sampling of such infrastructures and show how densely distributed these could be:

- Sabratha: 350 m breakwater, another one, 300 m, on a rock shelf<sup>5</sup>
- Gidiphtha/Ras Segala: two jetties<sup>6</sup> 80 and 37 m with terminal platforms<sup>7</sup>
- Gightis: 67 m jetties with columns and terminal platforms, supposedly belonging to the same stage of town-planning as the forum<sup>8</sup>
- Kerkennah: 100 m breakwater (or quay?)<sup>9</sup>
- Acholla: 500 × 30 m breakwater and terminal platform 100 × 70 m<sup>10</sup>
- Between Acholla and Thapsus: a punic tower, later known as *turris Hannibalis*<sup>11</sup>
- Syllectum: A mole, 260 × 8,7 m<sup>12</sup>
- Thapsus: 1000 × 10 m breakwater and lighthouse<sup>13</sup>
- Leptiminus: 450 × 60 m breakwater and 100 × 80 m terminal platform<sup>14</sup>
- Hadrumetum: 700 m breakwater<sup>15</sup> in addition to the old punic *cothon*

All these structures seem very impressive, but belong to rather minor cities (even if some, such as Syllectum are present at the piazzale delle corporazioni at Ostia) and sometimes to lesser settlements, as this may well be the case at Ras Segala. It is clearly difficult to admit that any of these ports were built by imperial initiative. Apart from the big city harbours, such as at Portus, Carthage, Seleucia Pieria, Leptis Magna, Ephesus, or, at a smaller scale, at Forum Iulii (Fréjus), some of them look very impressive even though belonging to small towns, villages or even villas. *Telo Martius* (modern Toulon, in Provence) used to be a small town on the territory of the ancient city of *Arelate* (Arles). It has a huge sea-front organized as a quay and stretches out to more than two kilometres. In the same area a 100 m Roman breakwater with a terminal platform has been identified at Olbia

<sup>5</sup> YORKE 1967; YORKE 1986.

<sup>6</sup> These “jetties” are not actual jetties, but rather causeways leading to a platform in deeper waters. This kind of structure, also found at Olbia, in Provence, fits with shallow waters and sectors subject to tides such as the Lesser Syrtis.

<sup>7</sup> SLIM/TROUSSET/PASKOFF/OUESLATI 2004, 103–105, no. 23.

<sup>8</sup> SLIM/TROUSSET/PASKOFF/OUESLATI 2004, 105–106, no. 25.

<sup>9</sup> SLIM/TROUSSET/PASKOFF/OUESLATI 2004, 126–128, no. 61.

<sup>10</sup> SLIM/TROUSSET/PASKOFF/OUESLATI 2004, 138, no. 81.

<sup>11</sup> Liv. 33,48. This is the place whence Hannibal left Africa. It might be *Caput Vada* (Ras Kapudia), where an ancient lighthouse is mentioned by Arabic sources, see DJELLOUL 2010, p. \*\*\*.

<sup>12</sup> SLIM/TROUSSET/PASKOFF/OUESLATI 2004, 145–147, no. 94.

<sup>13</sup> SLIM/TROUSSET/PASKOFF/OUESLATI 2004, 152–153, no. 105; YOUNES 1999, 181–193.

<sup>14</sup> SLIM/TROUSSET/PASKOFF/OUESLATI 2004, 154–155, no. 110; BEN LAZREG/MATTINGLY 1992, 40, 113.

<sup>15</sup> TISSOT 1888 pl. IX.

(Hyères), which was only a village in Roman times.<sup>16</sup> At the “anse des Laurons”, between Fos-sur-Mer and Marseilles, at least two breakwaters protected a bay and an additional quay and jetty are probably linked with the *villa* that is situated nearby.

These are but a few examples. The construction of moles seems to have been rather common as they were technically feasible and not exceedingly expensive, if compared to excavated harbours. We will see below that private individuals often built moles for their own use. Even if Caesar had his army at hand, the way in which he built the moles of the harbour at Ruspina during the winter 47 BC (Bell. Afr. 26) shows that it was quicker, simpler and less expensive than one would imagine, and probably explains why we find so many moles in so many places.

Jetties built in order to protect roads from the sea are also recorded at Naples, and were repaired through the emperor’s initiative, but must not be considered as a part of maritime infrastructure.<sup>17</sup>

## 1.2 Beacons, Towers and Lighthouses

Lighthouses and signal-towers were widely distributed already at the time of the early Roman Empire.<sup>18</sup> By the time of Plato the intuitive way of demonstrating the sphericity of the earth was the fact that from the shore the mast of a ship was visible before the ship herself. According to Strabo (1,120, C 12), the lights of the shore are not visible from the ship’s deck because of the curvature of the earth. One could hardly find a clearer expression of how common the lights on the shore had become. Such towers, often mentioned by the *Stadiasmus maris Magni* were apparently very common and numerous, even before the Roman Empire.

<sup>16</sup> PASQUALINI 2000; LONG/VALENTE 2003, 158–159; LONG/VELLA 2003, 165–173. Olbia was a *vicus* as is attested by a dedication to the *Genius viciniæ castellanæ Olbiensium* (AE 1910, 60), cf. ANDREAU 1997, 464–473.

<sup>17</sup> AE 1893, 84 (Neapolis/Naples): *Imp(erator) Caesar divi M(arci) / Antonini Pii Germ(anici) Sarm(atici) / filius divi Commodi fra(ter) divi Antonini Pii nepos / divi Hadriani pronepos / divi Traiani Parthici / abnep(os) divi Nervæ adnep(os) / L(ucius) Septimius Severus Pius / Pertinax Aug(ustus) Arabicus / Adiabenicus Parthicus) maxim(us) / pontif(ex) max(imus) trib(unicia) potest(ate) X / imp(erator) XI co(n)s(ul) III p(ater) p(atriciae) proco(n)s(ul) et / Imp(erator) Caes(ar) Imp(eratori) L(uci) Septimi / Severi Pii Pertinacis Aug(usti) / Arab(ici) Adiab(enici) Parth(ici) max(imus) filius / divi M(arci) Antonini Pii Germ(anici) / Sarm(atici) nepos divi Antonini / Pii pronepos Hadriani / abnep(os) divi Traiani Parth(ici) / et divi Nervæ adnep(os) / M(arcus) Aurelius Antoninus / Pius Felix Aug(ustus) / tribunic(ia) potest(ate) V / co(n)s(ul) proco(n)s(ul) / molem novam ad defensionem viae / adluvione maris / corruptae f[e]cerunt.*

<sup>18</sup> GIARDINA 2010.



### 1.3 Customs: Stations and Custodiae

According to the customs law of Asia, there was a dense network of *custodiae* in addition to the *stationes portitoris*, located in harbour-cities. According to the dispositions of this law, there were to be no more than 40 stadia, or 5 roman miles (7,5 km) between a *custodia* and a *custodia maior*, and no more than 80 stadia or 10 roman miles (15 km) between two *custodiae* (*maiores?*)<sup>19</sup>. If similar provisions were made in other regions, we must imagine a very dense network of guard-posts along the shores. According to lines 36 sq. of the law, the creation of new guard-posts was the publican's affair. After the collection of custom-taxes was taken over by the state at various periods within the 2<sup>nd</sup> century AD, their building became the matter of the state.

## 2. Public initiative: Emperor, Cities

### 2.1. Epigraphic Tradition and Evidence. The Case of Lighthouses: the Glory of the Architect?

The relationship between the making of monuments and their dedications is very complex. Not only is it difficult to find the building inscriptions of harbours (where are we supposed to look for such inscriptions?) but the relationship between the author of the dedication and its object may be ruled by a complex intertextuality. The case of lighthouses is rather interesting in this respect. Lucian (Hist. conscr. 62) recounts a strange story: the architect, Sostratus, wrote an inscription of his own, and had it covered with plaster, inscribed with a dedication on behalf of king Ptolemy. After a while, the disappearance of the plaster would reveal Sostratos' dedication. This inscription is the only known example of this kind in Roman imperial times. It is difficult to trust the story of the double dedication told by Lucian, but the author gives us one of the two extant versions of Sostratos' inscription: Σώστρατος Δεξιφάνους Κνίδιος θεοῖς σωτήρσιν ὑπὲρ τῶν

<sup>19</sup> COTTIER 2008, ll. 32–36 = § 13: ὃς ἂν τόπος τῆς ἐπα[ρχεία]ς ταύτη[ς] ὑπαρχῆ ὅπου δέη προσφωνῆσαι, εἰ ἐν τοῖς τόποις τ[ο]ύτοις θαλάσσει λιμῆν πρόσκειται, τούτων ἐν ἐκάστῳ λιμένι ἀνά μίαν παραφυλακὴν ἐκ περι[δ]ίου ἐὰν [βούλωνται ἐχέτωσαν τέλους εἰσπράξεως χάρι]ν, καὶ ἐπὶ τῆς ἀγχιθαλάσσου δὲ παραποντίας, καὶ περὶ τοὺς ἐλευθέρους ὄρους τῆς ἐπαρχείας, ἐὰν βούλων[ται, ἐφ' ᾧ ἐποίκιον ὅπου ἂν προσφωνεῖν δέη ±5 ἐγ]γύτερον, ἐνὶ ἐνὸς τόπου, μῆκος ποδῶν τριάκοντα, <πλάτος ποδῶν τριάκοντα>, ᾠκοδομημένον ἢ περιπεφραγμένον ἔχωσιν καὶ ἐφ' ᾧ μῆτε [ᾠκοδομημένον ἢ ἐν ἱερῶι μῆτε ἐν τεμένει μ]ῆτε ἐν τόπῳ ἀνέτωι μῆτε ἐγγυτέρῳι ἐποικίωι ποδῶν ἐνενήκοντα; ll. 36–40 = § 14: ὃ <ἂν> ἐποίκιον πρότερον ὑπάρχῃ ᾠκοδομημένον, [τούτωι χρήσθωσαν· ἐὰν δὲ νέον οἰκοδομῶσι, μῆτε] μὴν ἐγγυτέρῳι τείχει ποδῶν ἑκατὸν ᾠκοδομημένον ἐχέτωσαν μῆτε ἐν ἐκάστῳ sic τῶν παραφυλακῶν τούτων [πλείους ±33]ΝΩΝ ἐχέτωσαν, ἐφ' ᾧ τῶν παραφυλακῶν τούτων τὸ μεταξὺ διάστημα ὀγδοήκοντα σταδίων ἔσται; ll.38–40 = § 15: ἐκτὸς τῶν [προγεγραμμένων τόπων μῆ τις παραφυλακὴ ἔστω μῆ]τε μὴν ἤττων παραφυλακὴ ἀπὸ παραφυλακῆς μείζονος τεσσαράκοντα σταδίων μηδὲ ἀποτέρῳ τῶν τῆς ἐπαρχείας [ἐλευθέρων ὄρων ἐκάστη παραφυλακὴ τεσσάρ]ων σταδίων διεστηκέτω.

πλοῖζομένων. Strabo (17,1,6, C 791) gives only the substance of the inscription: τοῦτον δ' ἀνέθηκε Σώστρατος Κνίδιος, φίλος τῶν Βασιλέων, τῆς τῶν πλοῖζομένων σωτηρίας χάριν, ὡς φησιν ἡ ἐπιγραφή.

Whatever the real text was, both versions were considered as the dedication of the Pharos in Roman imperial times. This has influenced most mentions of lighthouses, generally referring to the lighthouse at Pharos.<sup>20</sup> The editors of the text of Patara's lighthouse dedication have seen in its text a direct imitation of the Pharos island's inscription.<sup>21</sup> Both dedications of the lighthouse itself on behalf of Nero, and to the legate who, in addition to Nero's lighthouse, had built an "antipharus", use the same expression πρὸς ἀσφάλειαν τῶν πλοῖζομένων. This is the first known use of φάρος as an appellative<sup>22</sup> and it explicitly links this building to the lighthouse at Pharos. Nero is described as [αὐτοκρ]άτω[ρ γ]ῆς καὶ θαλάσσης and his legate (later Vespasian's) as σωτήρ καὶ εὐεργέτης.

The discrepancy between the phraseology and the modesty of the building is striking, for this round tower is far from being a lighthouse, both in height and in architectural structure. The staircase was not large enough, and there was not enough space at the top to bring and burn significant quantities of wood, so that we must probably imagine a mere torch at the top, making this tower a beacon (a "lantern" in medieval terminology) or a signal tower, rather than a real lighthouse.

Only a small number of lighthouses have been explicitly attributed to emperors. We do not know who built the lighthouses at la Coruña, Cadix, or Dover. At la Coruña only one inscription is preserved, a modest one, found engraved in the rock besides the monument.<sup>23</sup> It is an *ex voto* to the god Mars, whose author, a Roman citizen, was an *architectus*. The context makes it likely that he was the architect of the lighthouse. The emperor's names are preserved essentially when they were supposed to be "bad" emperors: Nero

<sup>20</sup> Strab. 3,1,9, C 140, about the *turris Caepionis* (built after 140 BC by the proconsul Quinto Servilius Caepio after his conquest of Lusitania): ὁ τοῦ Καιπίωνος ἴδρυται πύργος ἐπὶ πέτρας ἀμφικλύστου, θαυμασιῶς κατεσκευασμένος, ὥσπερ ὁ Φάρος, τῆς τῶν πλοῖζομένων σωτηρίας χάριν. ἢ τε γὰρ ἐκβαλλομένη χοῦς ὑπὸ τοῦ ποταμοῦ βραχέα ποιεῖ καὶ χοιραδῶδης ἐστὶν ὁ πρὸ αὐτοῦ τόπος, ὥστε δεῖ σημείου τινὸς ἐπιφανοῦς. Cf. Suet. Claud. 20,3 about the lighthouse at *Portus*: *superposuit altissimam turrem in exemplum Alexandrini Phari, ut ad nocturnos ignes cursum nauigia dirigerent.*

<sup>21</sup> ECK/ISKAN-ISK/ENGLMANN 2008, 93: Dedication of the lighthouse: Νέρων Κλαύδιος (...) [αὐτοκρ]άτω[ρ γ]ῆς καὶ θαλάσσης τὸ [...], ὁ πατήρ πα[τριδ]ος, τὸν φάρον κατεσκεύασεν πρὸς [ἀσ]φάλ[ει]αν [τῶ]ν πλοῖζομένων διὰ Σ[έ]ξτου Μαρκί[ου] Πρεῖς[κου] πρεσβ[ευτ]οῦ [καὶ] ἀντ[ιστ]ρατήγου [Καίσαρ]ος [κτι]σα[μένου] τ[ὸ] ἔργον. Dedication to Sex. Marcus Priscus (ibid. p. 94): [Σέξ]τον Μάρκιον Πρεῖσκον, πρεσβευτὴν Αὐτοκράτορος Οὐεσπασιανοῦ Καίσαρος Σεβαστοῦ, ἀντιστρατήγου καὶ πάντων αὐτοκρα[τ]όρων ἀπὸ Τιβερίου Καίσαρος Παταρέων ἢ Βουλή καὶ ὁ δήμος δικαιοδοτήσαντα τὸ ἔθνος ὀκτετῆσαν ἀγνώως καὶ δικαί[ω]ς, κοσμήσαντα τὴν πόλιν ἔργοις περικαλλεστάτοις, κατασκευάσαντα δὲ φάρον καὶ ἀντίφαρον πρὸς ἀσφάλειαν τῶν πλοῖζομένων, τὸν σωτήρα καὶ εὐεργέτην.

<sup>22</sup> It is later used by Strato of Sardis, probably under the reign of Hadrian, cf. Anth. Pal. 9,671; 11,117.

<sup>23</sup> CIL II 2559 = 5639: *Marti / Aug(usto) sacr(um) / G(aius!) Seuius / Lupus / architectus / Aeminien-sis / Lusitanus ex vo(to).*

at Patara, Gaius at Gesoriacum<sup>24</sup>. Something like a convention seems to have prevented most emperors (or earlier, proconsuls) from associating their name to an inscription on the lighthouses, unless the latter were considered as commemorative of victories, as in the case of Caepio or Gaius, or even of Nero, acting as ἀυτοκράτωρ γῆς καὶ θαλάσσης. A similar modesty would have led Herod to dedicate Caesarea's lighthouse to Drusus and to make it the Druseum.<sup>25</sup>

## 2.2 Harbour Construction, ἔργον μέγα ἢ βασιλείον?

One of the major differences that occurred in the meaning of harbours between the Greek and the Romans is that it became a positive display of the Roman cities. Once a cosmopolitan antithesis to the city, the port eventually became part of its eulogy among the rhetors and geographers as early as Strabo, while the image of the harbour came to adorn the reverse of some local coinage. Some of these pictures, such as a well known painting from Stabia<sup>26</sup> or the Torlonia-relief from Portus<sup>27</sup>, help us understand how city-harbours in Roman times were not only places for trade and commerce, but also architectural scenographies where, as for example on the *forum*, the intrinsic or dreamed importance of the city, found its monumental expression, as well as its devotion to gods, to Rome, and to the emperor: colonnades, triumphal arches, honorary columns and their statues, shrines and *nymphaea* were common features of sea-front harbour architecture. It would be a mistake to reduce Roman ports to their commercial function. They were also a place of public presentation of communities and individuals, mainly those who had intervened as euergetists. It would also be a mistake to conceive harbour building in a holistic way. If some impressive constructions have led to the creation of entirely new harbours, such as *Caesarea Maritima* or *uterque Portus* at Ostia, in most cases, many interventions may have affected only parts of a harbour.

This is, among others, a key for the understanding of the complex nature of the intervention of the emperor's intervention, of the state or other individuals or groups in the making of maritime infrastructure such as harbours.

The intervention of the sovereign is at the crossroads between two traditions: the *epimeleia* of the sovereign, and euergetism. Describing the emperor Gaius' activity in matter of harbour building, Josephus<sup>28</sup> considers harbour building to be an “ἔργον μέγα ἢ βασιλείον”, “a great or royal work”. This expression is echoed by Suetonius (Claud.

<sup>24</sup> Suet. Cal. 46: *et in indicium uictoriae altissimam turrem excitauit, ex qua ut Pharo noctibus ad regendos nauium cursus ignes emicarent.*

<sup>25</sup> VANN 1991.

<sup>26</sup> PEKÀRY 1999, 180, I–N36.

<sup>27</sup> VISCONTI 1884, no. 430.

<sup>28</sup> Ios. ant. Iud. 19,205: ἔργον δὲ μέγα ἢ βασιλείον οὐδὲν αὐτῷ πεπραγμένον εἶποι ἂν τις ἢ ἐπ' ὠφελείᾳ τῶν συνόντων καὶ αὐθις ἀνθρώπων ἐσομένων, πλήν γε τοῦ περὶ Ῥήγιον καὶ Σικελίαν ἐπινοηθέντος ἐν ὑποδοχῇ τῶν ἀπ' Αἰγύπτου σιτηγῶν πλοίων: [206] τοῦτο δὲ ὁμολογουμένως

20,1), who speaks of Claudius' *opera magna*, having Lake Fucinus and the harbour at Ostia in mind. According to recent calculations,<sup>29</sup> the making of the harbour at Caesarea maritima meant the transportation across more than 1,000 nm of sea of some 17,000 m<sup>3</sup>, equal to 13,000 tons of *pulvis puteolanus*. Scholarship has estimated that a minimum number of 45 (and more likely 70) voyages had been necessary, on the ground of ships of 400 tons of burden, or 100 to 150 voyages using smaller ships, and probably significantly more using even smaller ships. 11,000 m<sup>3</sup>, equal to 5,500 tons of timber imported from closer (if not close) areas had also been necessary, in addition to stone whose volumes and origin have not been estimated with the same accuracy ... The making of new artificial harbours was obviously a *magnum opus* whose realization was probably not accessible to cities nor to their elites ... Harbours were part of the *opera publica* entrusted to the censors during the Republic. Livy, recording the *opera* entrusted to the *censores* of 179 BC, mentions the construction of the moles at Tarracina by M. Aemilius Lepidus and that of another port on the Tiber by M. Fulvius on behalf of the state.<sup>30</sup> As authors of publicly funded *magna opera*, the emperors acted as the successors of the republican censors, as in other fields of their activity (e.g. the *cura morum*). It is worth mentioning that the porticoes built by M. Fulvius all are situated in Rome's fluvial port's area, and can be considered as a part of harbour-building activity. On the other hand, it is interesting that Lepidus had been suspected to make the public pay for his private interests.

For several reasons, including the hellenistic tradition as well as the republican duties of the censors, it is not surprising that the construction of harbours was considered by ancient Roman historiography as a part of the emperor's duties, and that the number, quality and usefulness of such work provided a main key to the evaluation of the quality of the sovereign's activity. Josephus not only had the harbour at Rhegium in mind but also similar relating initiatives in several ports of Sicily. Even in Josephus' hostile record it is clear that Caligula's intention was not to act as a *patronus* with regards to a particular city, but to secure sailing in the complex and dangerous sector of the straits of Messina – a fact completely misunderstood by A. Barrett<sup>31</sup>. At that point, we must clearly distinguish

μέγιστόν τε καὶ ὠφελιμώτατον τοῖς πλέουσιν: οὐ μὴν ἐπὶ τέλος γε ἀφίκετο, ἀλλ' ἡμίεργον ὑπὸ τοῦ ἀμβλυτέρως αὐτῷ ἐπιπονεῖν κατελείφθη.

<sup>29</sup> GIANFROTTA 2009, 103–105; VOTRUBA 2007, 327; HOHLFELDER/BRANDON/OLESON 2007, 414

<sup>30</sup> Liv. 40,51: *Censores fidei concordia senatum legerunt. princeps lectus est ipse censor M. Aemilius Lepidus pontifex maximus: tres eiecti de senatu; retinuit quosdam Lepidus a collega praeteritos. opera ex pecunia attributa diuisaque inter se haec confecerunt. Lepidus molem ad Tarracinam, ingratum opus, quod praedia habebat ibi priuatamque publicae rei impensam inseruerat; theatrum et proscaenium ad Apollinis, aedem Iouis in Capitolio, columnasque circa poliendas albo locauit; et ab his columnis, quae incommode opposita uidebantur, signa amouit clipeaque de columnis et signa militaria adfixa omnis generis dempsit. M. Fulvius plura et maioris locauit usus: portum et pilas pontis in Tiberi, quibus pilis fornice post aliquot annos P. Scipio Africanus et L. Mummius censores locauerunt imponendos; basilicam post argentarias nouas et forum piscatorium circumdatis tabernis quas uendidit in priuatum; et forum et porticum extra portam Trigeminam, et aliam post naualia et ad fanum Herculis et post Spei ad Tiberim et ad aedem Apollinis medici.*

<sup>31</sup> BARRETT 1989, 185.

between two approaches of the king or emperor since the hellenistic period: the euergetist and the epimeletes.

On the other hand, the *epimeleia* of the sovereign is involved. The emperor has to act in order to provide for his subjects or the whole mankind a better life, thanks to his special capacities and to his power upon nature itself. He has the power to give his subjects any kind of welfare. To bridge the gap between peoples and countries, and to facilitate travel and trade was the duty of the emperor. In his *Panegyric of Trajan*, Pliny the Younger celebrated the emperor as such, with powerful images making him appear stronger than nature.<sup>32</sup> This was the scope assigned to Gaius' enterprise at Rhegium as well as that of the construction of *Portus* by Claudius, or the building of the *pharus* and *antipharus* at Patara. It was the sovereign's duty to increase safety. This was a huge task, left uncompleted at the emperor's assassination. The importance of harbour construction was such in terms of technical challenge, time, costs and manpower that it could rightly be considered as the king's or emperor's task *par excellence*. It is difficult to appreciate how expensive the construction of a breakwater was. The port at Ostia had been such a huge task that according to Cassius Dio<sup>33</sup> the emperor's entourage had advised him to abandon the enterprise. But this is partly a *topos*, and breakwaters were such a trite feature that it is so far difficult to place the line between the "norm" and the "exception".

It is also difficult to establish to what extent the construction of artificial harbours (*portus Ostiensis Augusti*, *portus Traiani*, Centumcellae) or huge infrastructures such as the excavation of the Isthmus at Corinth, – once a project of emperor Gaius, later initiated by Nero –, Nero's great works between Misenum and the lower Tiber, or Vespasian's canal at Seleucia Pieria, were undertaken because they were prestigious rather than useful. To oversize constructions was a common practice because it confirmed the *epimeleia* of the sovereign and his power over nature, as a *Kosmokrator*.

<sup>32</sup> Plin. paneg. 29,2: *reclusit uias portus patefecit, itinera terris litoribus mare litora mari reddidit, diuersasque gentes ita commercio miscuit, ut quod gentium esset usquam, id apud omnes natum uideretur.*

<sup>33</sup> Cass. Dio 60,11: Λιμοῦ τε ἰσχυροῦ γενομένου, οὐ μόνον τῆς ἐν τῷ τότε παρόντι ἀφθονίας τῶν τροφῶν ἀλλὰ καὶ τῆς ἐς πάντα τὸν μετὰ ταῦτα αἰῶνα πρόνοιαν ἐποίησατο. Ἐπεσάκτου γὰρ παντὸς ὡς εἰπεῖν τοῦ σίτου τοῖς Ῥωμαίοις ὄντος, ἡ χώρα ἢ πρὸς ταῖς τοῦ Τιβέριδος ἐκβολαῖς, οὔτε κατάρσεις ἀσφαλεῖς οὔτε λιμένας ἐπιτηδεῖους ἔχουσα, ἀνωφελές σφισι τὸ κράτος τῆς θαλάσσης ἐποίει· ἔξω τε γὰρ τῶν τῆ τε ὥραια ἐσκομισθέντων καὶ ἐς τὰς ἀποθήκας ἀναχθέντων οὐδὲν τὴν χειμερινὴν ἐσεφοῖτα, ἀλλ'εἴ τις παρεκινδύνευσε, κακῶς ἀπήλλασσε. Τοῦτ'οὖν συνιδὼν λιμένα τε κατασκευάσαι ἐπεχείρησεν, οὐδ'ἀπετράπη καίπερ τῶν ἀρχιτεκτόνων εἰπόντων αὐτῷ, πυθομένῳ πόσον τὸ ἀνάλωμα ἔσοιτο, «ὅτι οὐ θέλεις αὐτὸν ποιῆσαι»· οὕτως ὑπὸ τοῦ πλήθους τοῦ δαπανήματος ἀναχαιτισθῆναι αὐτόν, εἰ προὔθοιτο αὐτό, ἤλπισαν· ἀλλὰ καὶ ἐνεθυμήθη πρᾶγμα καὶ τοῦ φρονήματος καὶ τοῦ μεγέθους τοῦ τῆς Ῥώμης ἄξιον καὶ ἐπετέλεσε. Τοῦτο μὲν γὰρ ἐξορύξας τῆς ἠπείρου χωρίον οὐ μικρόν, τὸ περίξ πᾶν ἐκρηπίδωσε καὶ τὴν θάλασσαν ἐς αὐτὸ ἐσεδέξατο· τοῦτο δὲ ἐν αὐτῷ τῷ πελάγει χώματα ἐκατέρωθεν αὐτοῦ μεγάλα χώσας θάλασσαν ἐνταῦθα πολλὴν περιέβαλε, καὶ νῆσον ἐν αὐτῇ πύργον τε ἐπ'ἐκείνη φρυκτωρίαν ἔχοντα κατεστήσατο. Ὁ μὲν οὖν λιμὴν ὁ καὶ νῦν οὕτω κατὰ γε τὸ ἐπιχώριον ὀνομαζόμενος ὑπ'ἐκείνου τότε ἐποίηθη·

### 2.3 A Modest Set of Inscriptions, all Relating to the Emperor

In this context, it is rather strange that so few inscriptions mention the construction of harbours by emperors. Even when we are sure that the emperor was the actual author of the project, his name is not often mentioned or mentioned for other purposes. Such is the case for emperor Claudius. Although he had decided on and financed the harbour, any preserved inscription fails to mention the harbour. Both Claudius' and Trajan's preserved inscriptions only relate to the use of canals in order to prevent the capital from the threat of flooding.<sup>34</sup>

But the emperor is clearly mentioned by inscriptions as a harbour-builder or restorer. The activity of Trajan at Centumcellae<sup>35</sup>, Portus<sup>36</sup> and Ancona<sup>37</sup> is well documented. The inscription from Ancona is the only explicit dedication to an emperor who has restored a harbour at his own expense. This is probably an indication that he actually did not have to do so but chose to, and illustrates the difference between an eponym port, such as *portus Traiani* (or earlier a *portus Augusti*) and a restoration made by an euergetist, who is rewarded by a public dedication, between *epimeleia* of the sovereign and euergetism. Hadrian made some restoration at the harbour of Byblus, probably during his travels, and in some other cities.<sup>38</sup> Septimius Severus rebuilt a mole to protect the road from the sea at Naples.<sup>39</sup> In the later Roman Empire, Constantius is celebrated in an inscription which records the reconstruction of Albingaunum (modern Albenga) on a new site, including

<sup>34</sup> CIL XIV 85 (Ostia): *Ti(berius) Claudius Drusi f(ilius) Caesar / Aug(ustus) Germanicus pontif(ex) max(imus) / trib(unicia) potest(ate) VI co(n)sul design(atu)s III imp(erator) XII p(ater) p(atriciae) / fossis ductis a Tiberi operis portu[s] / caus[us]a emissisque in mare urbem / inundationis pericylo liberavit.* CIL XIV 88 (Ostia Antica): *[Imp(erator) Caes(ar) divi] / Ne[rv]ae fil(ius) Nerva] / Tra[ianus] Aug(ustus) Ger(manicus)] / Dac[icus] trib(unicia) pot(estate) --- / im[perator] --- co(n)s(ul) --- p(ater) p(atriciae)] / fossam [restitui iussit] / [q]ua inun[dationes] Tiberis] / [a]dsidue u[rbem] vexantes] / [in] peren[ne] arcerentur[ur].*

<sup>35</sup> Plin. epist. 6,31; CIL XI 6675,5 (Civitavecchia/Centumcellae): *Port(us) Trai(ani).*

<sup>36</sup> Iuv. 12,75 and Schol. *ad loc.* CIL XIV 408 and CIL XIV 90 both mention the *portus Traiani Felicis*. The restoration *[--- portum(?) c]oloniae Osti[ensium] dedit(?)* in CIL XIV 4342 (Ostia Antica) is to be excluded, for the *portus Traiani* did not belong to Ostia (unless we should imagine the construction of a third harbour by Trajan at the mouth of the Tiber): *[Imp(erator) Caesar divi] Nerva[e] f(ilius) Nerva T[raianus] Germanicus Dacicus] / [pon]t(ificus) max(imus) trib(unicia) pot(estate) VI im[perator] --- co(n)s(ul) IIII p(ater) p(atriciae)] / [--- portum(?) c]oloniae Osti[ensium] dedit(?)*.

<sup>37</sup> CIL IX 5894 (Ancona): *Plotinae / Aug(ustae) / coniugi Aug(usti) // Imp(eratori) Caesari divi Nerva[e] f(ilio) Nerva[e] / Traiano Optimo Aug(usto) Germanic(o) / Dacico pont(ifici) max(imo) tr(ibunicia) pot(estate) XVIII imp(eratori) IX / co(n)s(uli) VI p(atri) p(atriciae) providentissimo principi / senatus p(opulus)q(ue) R(omanus) quod accessum / Italiae hoc etiam addito ex pecunia sua / portu tutiorem navigantibus reddiderit // Divae / Marcianae / Aug(ustae) / sorori Aug(usti).*

<sup>38</sup> CIL III 6696 (Jubayl/Byblus): *----- / [---] d(ivi) Traiani f(ilius) cons(ul) IV [---] maris ubiq[ue] ---] omnes [---] portu[---] restaur[avit] (?) ---].* Several ports seem to be mentioned. Cf. Cass. Dio 69,5,3.

<sup>39</sup> AE 1893, 84: *molem novam ad de/fensionem viae / adluvione maris / corruptae f[e]cerunt.*



the construction of moles, but this is only part of the reconstruction of the whole city.<sup>40</sup> Later, in visigothic Spain, the king rebuilt the protecting moles of a road,<sup>41</sup> and the Vandal Hunerix built a mole at Carthage.<sup>42</sup> These are very few attestations, and they display different levels of intervention.

## 2.4 Public Initiative or Euergetism?

The emperor often acted as a benefactor. Building harbours was quite a common gift to populations as early as the Roman Republic.<sup>43</sup> Then harbour building or restoration was nothing but a proof of the protection granted by the emperor to a city and a sign of his affection towards its citizens. We have seen that the dedication to Plotina, Trajan and the divine Marciana was to honour them for their euergetism. There was no specificity of harbour building, this being one among other gifts such as aqueducts or any other buildings often offered to towns by emperors.<sup>44</sup> We have no certain information about private euergetism in the field of harbours so far,<sup>45</sup> but it would not be surprising to find private

<sup>40</sup> CIL V 7781 (Albenga, Ital. reg. IX): *Constanti virtus studium Victoria nomen / dum recipit Gallos constituit Ligures / moenibus ipse locum dixit duxitque recenti / fundamenta solo iuraque parta dedit / cives tecta forum portus commercia portas / conditor extractis aedibus instituit / dumque refert orbem me primam protulit urbem / nec renuit titulos limina nostra loqui / et rabidos contra fluctus gentesque nefandas / Constanti murum nominis opposuit*; cf. DELLA CORTE 1980, 89–103.

<sup>41</sup> CLE 900 (Merida): *Solberat antiquas moles ruinosa vetustas / lapsum et senio ruptum pendebat opus / perdiderat usum suspensa via p(er) amnem / et liberum pontis casus negabat iter / nunc tempore potentis Getarum Eruigii regis / quo deditas sibi pr(a)ecepit excoli terras / studuit magnanimus factis extendere n(o)m(e)n / veterum et titulis addit Salla suum / nam postquam eximiis nobabit moenib(u) s urbem / hoc magis miraculum patrare non destitit / construxit arcus penitus fundabit in undis / et mirum auctoris imitans vicit opus / nec non et patri(a)e tantum cr[e]are munimen / sumi saerdotis Zenonis suasit amor / urbs Augusta felix mansura p(er) s(ae)c(u)la longa / noba(n)te studio ducis et pontificis (a)era DXXXI.*

<sup>42</sup> MONCEAUX 1906, no. 157 (Carthage): *Rex Hunerix manifesta fide quem fama perennis / incitat ordinibus spargit memorabile factum / quod verbo divisit aquas molemque profundi / discidit iussis semel [et] nudata natantum / iugera calcat homo pelagus fodisse ligones / expavit natura maris subducitur unda / tortilis anfractu liquidus contergitur imber / oceanumque movent manibus mare cochlea sorbet.*

<sup>43</sup> Cf. Liv. 40,51 for public expenses.

<sup>44</sup> Cass. Dio 69,5,3 (= Xiph. 244, 1–245, 6 R. St., Exc. Val. 294 (p. 713), Suda s.v. Ἀδριανός): πολλὰς μὲν γὰρ καὶ εἶδεν αὐτῶν, ὅσας οὐδεὶς ἄλλος αὐτοκράτωρ, πάσαις δὲ ὡς εἰπεῖν ἐπεκούρησε, ταῖς μὲν ὕδωρ ταῖς δὲ λιμένας σίτον τε καὶ ἔργα καὶ χρήματα καὶ τιμὰς ἄλλαις ἄλλας διδούσας. The same idea is expressed by the dedication of Patara (ECK/İŞKAN-İŞİK/ENGELMANN 2008, 94) to the legate Sextus Marcius Priscus, see above note 21.

<sup>45</sup> So far only one inscription may refer to the significant restoration of a harbour by an individual. This metric text (*IBulgarien* 74 = *CLEMOes* 41 = AE 1927, 48 = AE 1948, 54 = AE 1951, 251), probably dated late IIIrd of IVth century AD (after the use of the sole *signum*), has been found at Vojvodino (Moesia Inferior), far from the sea and from any harbour. It is supposed to refer to some unidentified harbour in the Black sea, but is too mutilate to make it absolutely certain whether the restoration of a harbour was actually meant. The vocabulary of the preserved parts of the text may

benefactors involved in the restoration of certain parts of harbours. The current state of documentation provides no evidence for such interventions. Given the high number of texts relating to euergetism, it seems likely so far that funding harbour construction was something like an imperial – or at least public – privilege.

This “public” privilege would mainly involve cities. There used to be imperial euergetism when great works were funded by the emperor *sua pecunia*, instead of *pecunia publica*, and when the work should have been funded by the beneficiary, in other words the city. This is probably a confirmation that cities were usually responsible for the construction of their own maritime infrastructure. If the column capital found near the jetty of Gightis, which looks exactly the same as the capitals found on the forum, actually belongs to the architecture of the jetty and not the forum (situated rather far away from the place of discovery), the jetty and the forum may have been part of the same building program, and the initiative would have come from the city.

### 3. The Legal Context: Public Status of Waters and Private Initiative

So far, maritime infrastructure appears to be closely related to the power of the state, though at different levels and in different forms. Roman jurisprudence may also reveal the place left for private initiative.

#### 3.1 Roman Jurisprudence

Strictly speaking, the sea was considered (at least since the Severan jurisprudence) as *res nullius* according to the *ius gentium* and *ius naturale* and therefore belonged to no one and to everybody. Its use (mainly for sailing and fishing) was defined as *communis usus*.<sup>46</sup> As a consequence, being part of the sea, the waters of a port or harbour were considered

also belong to a funerary context. The restored text reads as follows: ----- *fragilem [po]stquam rate[m] agens ---] / [ve]nerat ad portum vitata pericula cred[ens] / [a]missam classem saepe in statione defl[ebat] / [i]ncusansque deos talia est fortasse [locutus] / [q]uid pelagi trucid profuit evasis[se peric(u)la] / [s]i mihi in portu pelagus naufragia [pergit] / [ha]nc cladem inspiciens factis nomen [superavit] / [cond]oluit miseris obiectaque scrup[ea tollens] / [transtu]lit in melius hanc Eusebi cura r[uinam] / [urbi no]men amissum et reddidit usu[i] portum] / [invida pos]teritas ne haec oblivisc[at inique] / [stet lapis hic longum] mansurus [longe per aevum].*

<sup>46</sup> Dig. 1,8,2 pr.: *Quaedam naturali iure communia sunt omnium, quaedam universitatis, quaedam nullius, pleraque singulorum, quae variis ex causis cuique adquiruntur. 1. Et quidem naturali iure omnium communia sunt illa: aer, aqua profluens, et mare, et per hoc litora maris. Dig. 18,1,51: Litora, quae fundo vendito coniuncta sunt, in modum non computantur, quia nullius sunt, sed iure gentium omnibus vacant: nec viae publicae aut loca religiosa vel sacra. Itaque ut proficiant venditori, caveri solet, ut viae, item litora et loca publica in modum cedant. Dig. 43,8,3,1: Maris communem usum omnibus hominibus, ut aeris, iactasque in id pilas eius esse qui iecerit: sed id concedendum non esse, si deterior litoris marisve usus eo modo futurus sit.*



by nature to be public. The almost systematic presence of fishermen in the iconography of harbours is a clear illustration of the public status of the ports' waters.<sup>47</sup> The rule was apparently as follows: *flumina paene omnia et portus publica sunt* ("Almost all rivers, and the harbours are public").<sup>48</sup> These provisions were extended to the shores. It was actually admitted by Celsus that where the power of Rome was established, the shore was to be the property of the Roman people.<sup>49</sup>

In addition to these provisions, as early as the age of Augustus, Vitruvius, though not a juriconsult, considered that harbours were by nature public infrastructures, just as other public places, such as baths, theaters, forums and porticoes, and for that reason they belonged to all, and were of public use.<sup>50</sup> Being part of the sea, whose property and use was common to all, ports were supposed to be public and were subject to the same praetorian rules as the sea or rivers themselves,<sup>51</sup> and public places in general. As a public space, ports were protected by the interdict *ne quid in loco publico*,<sup>52</sup> and by a set of specific interdicts whose scope was the preservation of the conditions of sailing. They prohibited any transformation that would endanger the use of this public space or place. As early as Labeo and the age of Augustus, ports and the shores were protected against any human action which would have made a *portus* (denomination for commercial purposes), *statio* (for any technical context) or *iter* (sailing) less accessible to any kind of ship than previously. The praetor's edict had introduced the interdict *ne quid in flumine publico ripave*

<sup>47</sup> Cf. amongst others, Nero's Sestertii minted at Rome and showing the *portus Augusti Ostiensis* RIC 178 (BMC 131). 181, or a bronze coin struck at Side by Maximinus, SNG Aul. 4828. Cf. also, amongst other documents, the mosaics from the so-called "villa of the Nile" at Leptis Magna (NOGUERA CELDRAN 1976, 229; MAILLEUR 2012, pl. VIII, fig. 49) and another mosaic from Apamea (BALTY 1970; MAILLEUR 2012, pl. IX, fig. 51); the Stabia painting (PEKÀRY 1999, 180, I-N36; MAILLEUR 2012, pl. XXIII, fig. 91); *opus sectile* from Kenchreai (IBRAHIM/SCRANTON/BRILL 1976, pannel XIX; MAILLEUR 2012, pl. XV, fig. 70); affresco from the Esquiline (GOLVIN 2010; MAILLEUR 2012, pl. XXII, fig. 93) and a large collection of 1<sup>st</sup> century lamps (e.g. DENEAUVE 1969, 212 & pl. XCV; MAILLEUR 2012, pl. IV-V, fig. 30–41).

<sup>48</sup> Dig. 1,8,4,1.

<sup>49</sup> Dig. 43,8,3 pr.: *Litora, in quae populus Romanus imperium habet, populi Romani esse arbitror.*

<sup>50</sup> Vitruv. 1,3: *opportunitatis communium locorum ad usum publicum dispositio, uti portus, fora, porticus, balinea, theatra, ambulationes ceteraque, quae isdem rationibus in publicis locis designantur.*

<sup>51</sup> Dig. 43,12,1 pr.: *Ait praetor: "Ne quid in flumine publico ripave eius facias neve quid in flumine publico neve in ripa eius immittas, quo statio iterve navigio deterius sit fiat". 43,12,1,17: Si in mari aliquid fiat, Labeo competere tale interdictum: "ne quid in mari inve litore" "quo portus, statio iterve navigio deterius fiat". 43,12,1,20: Superius interdictum prohibitorium est, hoc restitutorium, ad eandem causam pertinens. 43,12,1,21: Iubetur autem is, qui factum vel inmissum habet, restituere quod habet, si modo id quod habet stationem vel navigium deterius faciat. Dig. 43,8,2,5: Ad ea igitur loca hoc interdictum pertinet, quae publico usui destinata sunt, ut, si quid illic fiat, quod privato noceret, praetor intercederet interdicto suo. 43,8,2,8: Adversus eum, qui molem in mare proiecit, interdictum utile competit ei, cui forte haec res nocitura sit: si autem nemo damnum sentit, tuendus est is, qui in litore aedificat vel molem in mare iacit.*

<sup>52</sup> Dig. 43,8,2 pr.: *Praetor ait: "Ne quid in loco publico facias inve eum locum immittas, qua ex re quid illi damni detur, praeterquam quod lege senatus consulto edicto decretove principum tibi concessum est. De eo, quod factum erit, interdictum non dabo".*

*eius facias neve quid in flumine publico neve in ripa eius immittas, quo statio iterve navigio deterior sit fiat.*<sup>53</sup> Labeo mentions a maritime version of this interdict: *ne quid in mari invelitore quo portus, statio iterve navigio deterius fiat.*<sup>54</sup> This provision protected the shore and the sea from dumps and (or) constructions. To the provisions of the *ne quid in flumine publico* interdict, this added the notion of *portus*. This included any infrastructure made necessary for landing and unloading.

This would suggest, as maritime harbours were public, that their construction was therefore carried out by the public. Things were actually a bit more complicated. This interdict was *prohibitorium*,<sup>55</sup> not *restitutorium*. In other words, it was used to prevent someone from constructing anything that would affect the previous quality of sailing, mooring or harbour facilities, but it could not be used to force the builder to give the place its former aspects and conditions back.<sup>56</sup>

It was the affair of other users, not the state's to have an eye on the work and on its possible impact on the public use of the sea: it is difficult to have a clear idea to what extent the *restitorium interdictum* was actually efficient. An *actio iniuriarum* was possible, but this opened the way to compensation, not to restoration to the previous status.<sup>57</sup> In other words, what had been done had little chance to be made undone.

### 3.2 *Res necessariae and Private Infrastructure*

A number of other dispositions show that the actual protection could be weaker than the provisions of the praetorian edict seem to indicate, especially when there was a social asymmetry between the builder and the beneficiary of the public use. The latter had to be able to successfully sue the former. A rescript of Antoninus<sup>58</sup> sent to the fishermen of Formiae and Capua stipulated that the only exception to their right to access the shore were buildings (probably maritime *villae*) on the shore, because these were not subject to the *ius naturale*. According to juriconsults, the sea and its shores were undoubtedly public, but anything built there was private if built by private initiative, and it was legal to build there if the public use was preserved, at least at first sight.<sup>59</sup> In other words, the basin had

<sup>53</sup> Dig. 43,12,1 pr.

<sup>54</sup> Dig. 43,12,1,17.

<sup>55</sup> Dig. 43,8,2.

<sup>56</sup> Dig. 43,12,1,20–21, quoted above note 51.

<sup>57</sup> Dig. 43,8,2,9: *Si quis in mari piscari aut navigare prohibeatur, non habebit interdictum, quemadmodum nec is, qui in campo publico ludere vel in publico balineo lavare aut in theatro spectare arceatur: sed in omnibus his casibus iniuriarum actione utendum est.*

<sup>58</sup> Dig. 1,8,4 pr.: *Nemo igitur ad litus maris accedere prohibetur piscandi causa, dum tamen ullius et aedificiis et monumentis abstinenceatur, quia non sunt iuris gentium sicut et mare: idque et divus pius piscatoribus formianis et capenatis rescripsit.*

<sup>59</sup> Dig. 43,8,4: *Respondit in litore iure gentium aedificare licere, nisi usus publicus impediretur.*

to be public, but the moles or *pilae* could be private, when realized at private expense for private use.<sup>60</sup> These are often mentioned in the *Digest* even in early juriconsults such as Aristo.<sup>61</sup> Declarations of public interest, by *Senatus consultum* or imperial decision could allow actions even when they could induce some *damnum*.<sup>62</sup> Even when such decisions could not be produced, it seems that it had become possible to invoke, to some extent, *utilitas* or *necessitas* as an excuse. Labeo, who considers that *utilitas* (*Dig.* 43,12,1,12) could open the way to some exceptions to the preservation of public waters – if and only if navigation was not affected – places *necessitas* above *utilitas*, and among private *necessariae impensae* counts *moles in mare vel flumen proiectas*.<sup>63</sup> These were obviously common, and referred to the necessity. Among such buildings was probably the mole built along the sea-facing façade of the maritime *villa* at Seneymes-les Laurons.<sup>64</sup>

Although the right of fishing was, according to the *ius gentium*, granted to the public, one could appropriate this right against the law. Once mentioned in a sale contract (e.g. that of a *villa*, including the shore and the stretch of sea along it), the appropriation was legal, so that even a public space devoted to public use could be legally restricted to private use.

### 3.3 Private Harbours?

If moles could be private as well as their use, and if entire areas of sea could be devoted to private use, one may wonder, whether harbours or parts of harbours could be reserved to private use, whatever the apparent provisions of *ius gentium*. Could private moles be reserved for private use and define a private harbour or for private use of sections of the port? There is enough evidence to support this idea. An inscription from ancient Nemausus, modern Nîmes, mentions the legacy gift of a port situated somewhere on the banks of the Rhône.<sup>65</sup> The name of the *portus* is unfortunately mutilated. It was apparently composed of two names. The second is clearly an adjective whose suffixation (*-anum*) is typical of private estates.<sup>66</sup> The same association of *portus* with personal names in the genitive is

<sup>60</sup> *Dig.* 43,8,3,1, quoted above note 46.

<sup>61</sup> *Dig.* 1,8,10: *Aristo ait, sicut id, quod in mare aedificatum sit, fieret privatum, ita quod mari occupatum sit, fieri publicum*; *Dig.* 19,1,52,3: *Ante domum mari iunctam molibus iactis ripam constituit et uti ab eo possessa domus fuit, Gaius Seio vendidit: quaero, an ripa, quae ab auctore domui coniuncta erat, ad emptorem quoque iure emptionis pertineat. Respondit eodem iure fore venditam domum, quo fuisset priusquam veniret*; *Dig.* 43,8,3,1, quoted above note 46.

<sup>62</sup> *Dig.* 43,8,2 pr., quoted above note 52.

<sup>63</sup> *Dig.* 25,1,1 pr.: *Impensarum quaedam sunt necessariae, quaedam utiles, quaedam vero voluptariae*; 25,1,1,3: *Inter necessarias impensas esse Labeo ait moles in mare vel flumen proiectas*.

<sup>64</sup> XIMÉNÈS/MOERMAN 1988; LAFON 2001, 459, 462; LEVEAU 2002, 77–81.

<sup>65</sup> CIL XII 3313: ----- / [---] mortem su[am] / [---] IXXI itemq[ue ---] / [---] praedia fundos [---] / [---] portum Crindavi[um ---] / [---] num ad ripam flu/minis Rhodani / dedit.

<sup>66</sup> ARNAUD 1998.

typical of the lower Tiber area. The *Portus Licinii*<sup>67</sup> and *Portus Parrae*<sup>68</sup> are the most illustrious examples, besides at least eleven others known from stamps within the same area.

Although we are still waiting for an exhaustive publication with absolute chronologies of the excavations at the ancient port of Marseille, the preliminary results have led the excavators<sup>69</sup> to establish a link between the building of a new segment of quay, which supports a *dolia* warehouse, and the development of *dolia*-ships during the 1<sup>st</sup> century. The wine contained in the *dolia* was supposed to be pumped to those of the warehouse and/or vice-versa. This new way of transporting wine would have necessitated the reorganization of the entire area. The important thing is that the *dolia* borne by these wrecks all bear stamps of the same Campanian family: the Pirani. Stamps from eleven wrecks give us the names of C. Piranus Cerdo, C. Piranus Felix, C. Piranus Philomusus, C. Piranus Primus, C. Piranus Sotericus.<sup>70</sup> The pattern of this commerce (or ship-building only?) was probably family-based and it is highly probable that the refitting of the area had some direct link with the warehouse and the ships of the Pirani (if not just built by the Pirani) and that it was of private nature. It would be hazardous to draw any further conclusions at the current state of information.

We can provide two other examples of impressive elements of port architecture of which the use was most likely private. We know that the public use of harbour-waters meant a high level of protection of their water column against human dumps. At Marseilles, casual losses are well documented, but dumps were outside the harbour, in the “Digue des Catalans” area. Dumps may be the indication of areas not considered as harbours or of private use.

At Toulon, important remains of quays have been reported along more than 2 km.<sup>71</sup> The impact of dumps was such that the wharves were regularly moved towards the sea, when the previous ones were not accessible any longer. To think of a public harbour seems quite difficult here: to speak of a huge landing area would fit the extant remains much better. Further reflexion would be needed about the relationship between these areas and the firm ground.

At Port-la-Nautique, in the laguna of Narbonne, a nice jetty of large blocks has been excavated.<sup>72</sup> As in Toulon, it appears that its entrances were entirely silted by human dumps after about one century (–40 / +70). During the augustan period, their composition is clearly that of urban dumps while becoming more typical of industrial dumps under the reign of Nero. This is probably an indication that it was not considered part of a public harbour. The recent discovery of a large circular fishery around a central triclinium,

<sup>67</sup> STEINBY 1981, 239, 237–245. CIL XV 139. 226. 408. 630; Cassiod. var. 1,25: *propter moenia civitatis (...) portum Licini (...) reparari iussio nostra constituit, ut XXV milia tegularum annua illatione praestaret, simul etiam portibus iunctis, qui ad illa loca antiquitus pertinabant (...).*

<sup>68</sup> CIL XV 409–411.

<sup>69</sup> HESNARD 1999.

<sup>70</sup> SCIALLANO/LIOU 1985; SCIALLANO/MARLIER 2008 (with recent bibliography).

<sup>71</sup> BRUN 1999.

<sup>72</sup> FALGUÉRA 1995; FALGUÉRA 1996; FALGUÉRA 2002.

whose use is strictly coetaneous of the jetty, strongly suggests that, as Seneymes – Les Laurons, the jetty was actually part of a private estate.

In a similar way, the destiny of the augustan (rather than hellenistic) harbour<sup>73</sup> at Khoms, sometimes considered as the first harbour of Leptis Magna, a couple of miles west of the town, and sometimes identified with the *hormos* mentioned by the *Stadiasmus* (94. Ἀπὸ Λέπτεων ἐπὶ τὸν Ἑρμαῖον στάδιοι ε' · ὄρμος ἐστὶ πλοίοις μικροῖς), is probably illustrative of its private status. During the 2<sup>nd</sup> century, it was entirely destroyed for the building of a private villa. This could have occurred after the silting of the harbour, if it was not deliberately filled up.

## 4. Conclusions

This quick survey shows how unsatisfactory the available evidence is. There is unfortunately little probability that the number and quality of written sources will change soon. The overview nevertheless allows us to point out the diversity and complexity of maritime infrastructure. The different levels of involvement of the public and private spheres in its realization need to be emphasized not only in terms of objects, but also in terms of intervention. Large constructions were clearly the emperor's privilege, and to a lesser extent, the cities'. This is not surprising. As often, it is more puzzling, with respect to the current state of historiography, to see that quite a large scope was left to private initiative. The re-evaluation of this private initiative in that field as well as in the more general field of trade is one of research's current challenges. It seems that archaeological evidence is needed for a better understanding of the privatization that took place in sectors of maritime infrastructure.

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<sup>73</sup> DI VITA 1974; MATTINGLY 1995, 118 notes rightly that at Leptis the use of the white limestone starts with Augustus and that it is hard to conceive that it would have been used at Khoms earlier than at Leptis.

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