Economic Activities and the Streetscape of Roman Cities in Central Italy (Lazio and Abruzzo)

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Introduction

At the end of the 1st century AD, Martial compared Rome with a huge shop (*magna taberna*), suggesting that shopkeepers had dramatically encroached on urban thoroughfares before Domitian got the streets in order.¹ This negative description does not overemphasize the pervasiveness of economic activities in the streets of Roman cities, as some pieces of evidence show. Some kinds of trade are hard to fully grasp, such as street traders, because neither textual nor archaeological evidence is conclusive about this very widespread business in preindustrial societies.² Archaeological records, however, provide much information about economic activities that require significant facilities. Some enquiries have shown that a lot of craftsmen and traders were set in *tabernae*, predominantly located alongside urban thoroughfares,³ whereas domestic production and large-scale production facilities are frequently set back from the street. As a result, economic facilities located in *tabernae* have special connections with this public space.

This paper aims to shed new light on this issue and focuses on some cities in central Italy between the very start of the late Republican period until the middle Imperial period in order to show whether Pompeii could be considered as the paragon of the Roman streetscape in Italy. So far, archaeologists have focused their investigations on civic centres or significant landmarks of the Roman townscape, such as theatres, amphitheatres, baths, temples, or wealthy *atrium* houses; the other places of the daily life have rarely been investigated in depth, the streets in particular. Since building typology plays a key role in constituting the frontages and the street, in particular for identification of the presence of shops, I assume that the evolution of the architectural form used by the Romans can be viewed as a proxy to understand the great part played by economic premises in shaping the ancient streetscape. This short article is not exhaustive and additional research will have to be carried out in the near future.

Streets Flanked by Atrium Houses in the Late Republican Era

Few Roman cities in central Italy provide the opportunity to scrutinize the republican streetscape because of later constructions. Norba, a little city overlooking the Pomptine Marshes, is an exception, and can improve our knowledge of the cityscape of a small town during the late Republican period. This city was set up in the "Monti Lepini" and was held by the Romans since the very beginning of the 5th century BC. In 82–81 BC however, this town was burnt by its inhabitants while under siege by Sulla's troops

and was definitively abandoned thereafter. The urban fabric remains buried to a large extent but the archaeological investigations carried out over the last few years provide a convenient insight into the street design of a Republican city on a micro-scale level. In fact, recent excavations have revealed a section of the street network of Norba – about one kilometre – along one of the main thoroughfares, the "asse di attraversamento urbano" linking the "Acropolis minor" to the western gate of the city, the "Porta Serrone di Bove". In all likelihood, this section was planned at the beginning of the 2nd century BC and the roadway paved in the mid-2nd century BC.

The buildings excavated by S. Quilici Gigli and S. Ferrante alongside that major thoroughfare are mostly *atrium* houses, which might have been erected after the Hannibalic war, at the very end of the 3rd century or at the start of the 2nd century BC.⁵ Except for one of them,⁶ the houses were not fitted with a four-aisled portico and *tabernae* are scarce. Moreover, some of those premises opened onto the side streets and not onto the main street. Consequently, the space of this major street is heavily segregated from the inside of the adjacent buildings. In sum, the streetscape of this part of the city is hardly shaped by economic premises. Contrary to Pompeii, the case of Norba suggests that the main streets of Roman cities leading to the city gate are not necessarily surrounded by a great number of *tabernae* in the late Republican period.

The case of Fregellae, knocked down in 125 BC, is quite similar. Many *atrium* houses were unearthed by F. Coarelli⁷ along the decumanus maximus during the excavations of an area close to the civic centre. Like Norba, most of these buildings were erected in the first half of 2nd century BC, probably just after the struggle with Hannibal.⁸ Some of the largest houses were fitted with a single taberna, such as the Domus 2, whereas the smallest do not have any shops, as Domus 11 and 17 suggest.⁹ In the mid-2nd century BC, most of these upper-class houses were abandoned and converted into *fullonicae*, but it does not seem that new *tabernae* were built in the frontage.

In both Norba and Fregellae, *tabernae* did not play a significant role in the development of the urban economy and street life. Only the wealthiest *atrium* houses contained *tabernae*. This situation suggests a different economic pattern in these Republican cities and we ought to assume, until further discoveries, that the inhabitants of these towns bought foodstuffs and wares from street traders selling countryside productions and that some goods were produced in domestic areas. In Norba for instance, street traders could set up their stalls on the small square at the junction with the "via della porta Ninfina" or on the paved spot along the "via di Porta Maggiore" (fig. 1), both situated a short distance from the city gates. However, it should be noted that a limited portion of the urban fabric of both these cities has been investigated so far and we cannot be sure that the other streets were not surrounded by numerous *tabernae*.

In addition, another part of the economic life of these little towns should have taken place in the civic centre, where periodic markets could be held.¹⁰ The forum of some Republican cities was also fringed by rows of *tabernae*, just like the *forum Romanum*.



Fig. 1: Norba. The paved spot along "via di Porta Maggiore".

From the 4th century BC onwards, the forum of some Italian cities also boasted this architectural form, such as Pompeii or Paestum.¹¹

The Spread of tabernae alongside the Streets

At some point in the late Republican period, the forum of certain cities was probably too restricted for the needs of the population, and the *tabernae* spread out throughout the urban fabric as evidence from Alba Fucens, for example, seems to suggest. This Latin colony is located at the base of the "Monte Velino" in Abruzzo and has been excavated by Belgian and Italian teams for many years. This city was founded at the very end of the 4th century BC, but most of the structures that can be seen today date back to the 2nd century and to the early 1st century BC.¹²

The major thoroughfares excavated until now, namely the "via del Miliario" and the "via dei Pilastri", were probably paved and fitted with pavements in that time. The streetscape of the city centre is quite different from Norba or Fregellae. In fact, only one typical *atrium* house was identified along the "Via del Miliario" beneath the later "Domus della via del Miliario". The former should be contemporaneous with the urban renewal of Alba in the 2nd century and early 1st century BC, but it was restructured and

redecorated later, during the late 1^{st} century BC as the marble floor of the *tablinum* suggests, and then again during the 2^{nd} century AD.¹³

In such clear contrast with Norba or Fregellae, the major roads of late Republican Alba Fucens were chiefly fringed by rows of shops opening onto porticoes on each side of both the main streets situated south of the Basilica (fig. 2).¹⁴ To the north, the western side of the "via del Miliario" may still be bordered by *tabernae* for the first time. However, some of them were transformed afterwards into public premises during the Julio-Claudian era, as demonstrated by the excavations carried out by the "Université Libre de Bruxelles".¹⁵ The eastern side opened directly onto the open square of the forum. In the first half of the 1st century BC, some shops situated in the central city block set between both of the main streets were pulled down to make way for the baths,¹⁶ but the rows of *tabernae* remained the main architectural form flanking these streets.

This kind of building also spread in Ostia over the Republican period. Tufa blocks unearthed under the eastern portico of the Capitolium might have been part of *tabernae* built along the cardo of the so-called Castrum. This structure could date from the first phase of the settlement in the 4th or 3rd century BC, but the dating evidence remains unclear.¹⁷ Sometime after, another row of *tabernae* was constructed with a masonry consisting in ashlar blocks that leaned against the eastern wall of the Castrum. The evidence suggests that this construction could date back to the 3rd century BC. Indeed, the first course of ashlar blocks was situated a few centimetres above sea level, like the first one of the doorjambs of the Castrum gates.¹⁸ Similar walls in ashlar blocks were excavated south of the eastern decumanus, near the junction with the "Semita dei cippi".¹⁹ They are perpendicular to the street and might be the remains of *tabernae* existing contemporary with these ones flanking the "via dei Molini". This possible dissemination of *tabernae* beyond the Castrum in the 3rd century BC can be explained by the lack of a forum until the 1st century BC.

The 1st century BC row of *tabernae* unearthed on the southern side of the eastern decumanus beneath the Horrea di Hortensius (V, XII, 1) was built with concrete masonry (*opus incertum*); it is much closer to those identified in Alba than the previous ones. In addition to the row of *tabernae*, some *atrium* houses with economic facilities were erected from the end of 2nd century BC until the Augustan period, such as the Casette Repubblicane (I, IX, 1bis), or the Domus con Portico di Tufo (IV, VI, 1bis). The rows of *tabernae* spread further across the Ostian urban fabric from the Augustan period onwards, especially across the western district of Ostia.²⁰ In fact, a row of *tabernae* with a portico seems built along the "via del Pomerio" (I, X, 2) and another along the "via Epagathiana", beneath the later Terme di Buticosius (I, XIV, 8). At the same time, a similar building was constructed under the "Caseggiato delle Trifore" (III, III, 1). Moreover, another architectural form with local premises opening into the street is well documented at the mouth of the Tiber. It basically consists of rooms surrounding an internal courtyard or corridor, like the Mercato III, I, 7 (fig. 3). The frontage of this kind of building usually presents a front door flanked by two *tabernae* so that it would have been quite similar to the *atrium* house facades.



Fig. 2: Alba Fucens. Tabernae and portico along the "Via dei Pilastri".

The development of rows of *tabernae* in Alba Fucens and Ostia played a significant part in shaping the streetscape of both these towns beginning in the Republican period. In the first case, the topography of the site could partly explain the construction of this architectural form; in the second, however, the explanation probably lies in the economic role of Ostia in the supply of Rome from the 3rd century BC onwards. Such independent rows of *tabernae* brought together a lot of commercial premises in one building and fostered economic interactions between shopkeepers and passers-by. In Ostia however, other architectural forms containing *tabernae* on their frontage, such as *atrium* houses, or buildings with a central courtyard or corridor also flanked the streets. If upper-class houses were destroyed to a large extent, the other forms developed further into tall and complex multi-storey buildings during the 2nd century AD.²¹

The Impact of Multi-Storey Buildings on the Roman and Ostian Streetscape

We do not know how the streetscape of Norba and Fregellae would have moved forward during the empire if they had not been destroyed suddenly, but it is likely that their townscape would not have changed dramatically, as the case of Alba Fucens suggests. In contrast, the townscape of Ostia definitively changed during the so-called 2nd century "boom" period and *tabernae* played a key role in shaping the urban thoroughfares.²²

Most of the ancient *atrium* houses were abandoned in the Hadrianic period and were replaced by multi-storey buildings,²³ except for a few.²⁴ Nevertheless, the shape of the building plots did not change and forced the architects to design buildings organized around an alley perpendicular to the thoroughfares or around a courtyard, such as the "Caseggiato delle Taberne Finestrate" (IV, V, 18).²⁵ However, the reduced frontage of these buildings involved a rather low density of shops opening onto the street. This architectural form may have its origins in the late Republican and early Imperial buildings centred on an internal corridor or courtyard surrounded by many rooms (*tabernae*?). On the contrary, some plots gave the opportunity to erect very elongated buildings fitted with numerous shops alongside the major thoroughfares, like the "Portici di Pio IX" (I, V, 2 – I, VI, 1) located on each side of the "Cardo settentrionale", which were fitted with

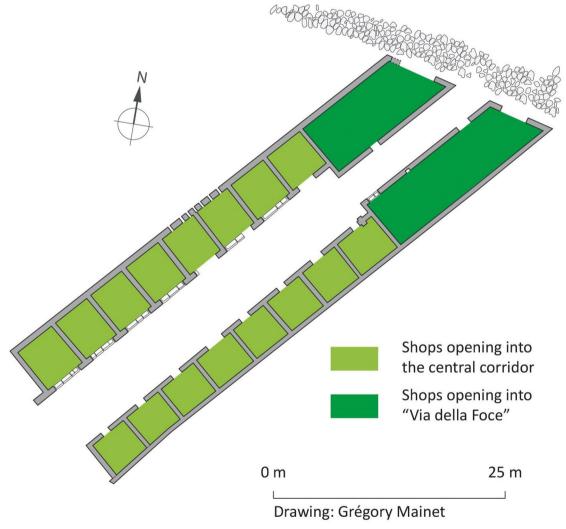


Fig. 3: Ostia. Tabernae flanking the internal corridor of the "Mercato" III, I, 7.



Fig. 4: Ostia. Portici di Pio IX and the "Cardo settentrionale".



Fig. 5: Ostia. The western decumanus in late Antiquity.

an impressive portico (fig. 4). Basically, this architectural form is close to the rows of *tabernae* built previously, but the scale of the mid-imperial building is much larger.

The construction of multi-storey buildings resulted in *tabernae* spread across the whole urban fabric, as the Ostian western decumanus suggests for instance (fig. 5). Even if most of the *tabernae* were still situated alongside the major thoroughfares, a significant part flanked the less trafficked roads, such as the "via dei Balconi" for example. The new tall architecture, characterised by an increased use of concrete masonries, enabled the construction of larger *tabernae* on the ground floor, with a back room in some cases, and apartments on the upper floors. The new constructions could bring different functions together within a single complex building, such as bathing, shopping, living, and



Fig. 6: Ostia. The so-called "Quartiere della Caserma dei Vigili" in Hadrianic period.

working. Most of them were fitted with one or two rows of *tabernae* on the ground floor, but they provided additional functions. The Baths of Neptune (II, IV, 1-2), for instance, combined baths, a long portico with *tabernae*, and probably some apartments on the upper floors (fig. 6).²⁶ The porticoes associated with *tabernae* are numerous in Ostia and played a key role in constituting the economic streetscape of this city.²⁷

Some fragments of the *Forma Urbis Romae* and archaeological records unearthed in Rome, such as the multi-storey buildings uncovered along the Via Lata, show this kind of building as well. The construction along the Via Lata is very similar to Ostian buildings constructed under the reign of Hadrian. These architectural similarities underline the close connections between Rome and its port-town.²⁸ Indeed, Ostia, in such clear contrast with the earlier towns, followed the new architecture developed

after the great fire of 64 AD, and its economic streetscape definitively stands out from that of the other Italian towns.

Conclusion

Since the first excavations carried out in Pompeii, the deep ruts cut into the roadway, the impressive pavements on each side, the great number of *graffiti*, and the numerous shops surrounding the major thoroughfares have left a lasting impression in archaeologist's minds. However, this picture does not fully reflect the streetscape of the other Italian cities over the Roman period. The cases of Norba and Fregellae, for instance, show that major streets were not consistently surrounded by *tabernae* in the 2nd century BC, and there is no indication that the situation would have changed greatly if those towns had not been destroyed in 125 and 81 BC.

In the same way, the close association between *tabernae* and porticoes is infrequent along the streets within the walled area of Pompeii, whereas this structure commonly bordered the streets of Alba Fucens and Ostia from the late Republican period onwards. There is no basis for claiming that the streets of the Campanian town would have been enlarged and surrounded by porticoes if it had not been buried under the ashes of Vesuvius in 79 AD. The economic streetscape of this city heavily differs from other contemporaneous cities in Italy, and we should certainly not consider the Pompeian case as a paragon of the Roman late Republican and early Imperial street life. The same is true for Ostia, which cannot be a model for the middle Imperial towns. Indeed, the 2nd century Ostian townscape was greatly shaped by its significant connections with Rome. Even though both of these cities are pretty well preserved, we must also investigate the smaller towns in order to improve our picture of Roman townscapes in Italy and the role of economic activities in shaping the streetscape.

Notes

¹ Mart. 7.61

²On street traders, see Holleran 2012, 194–231.

³ Basically, *tabernae* are defined as premises with a large door opening onto the street or a courtyard fitted with a grooved threshold for wooden shutters. Unfortunately, both these components are not conserved in a systematic way and numerous premises are identified as *tabernae* because of their door opening, whereas some economic premises do not have large doors or grooved thresholds. On the identification of *tabernae* from the archaeological record, see Monteix 2010, 41–87.

⁴Quilici Gigli 2016, 177.

⁵ Quilici Gigli 2014, 70.

- ⁶ The Domus X is the only atrium houses fitted with a four-aisled portico and three *tabernae* opening onto a side street ("terza traversa dell'asso di attraversamento urbano"). However, these rooms were not designed in the first phase. The *tabernae* in the frontage showed that the houseowner was wealthier than the other ones. Indeed, only the Domus VII and X were also equipped with a single taberna, whereas the other atrium houses were built without any taberna. For the Domus IV, V see Quilici Gigli Ferrante 2013; for the Domus VI, see Quilici Gigli Ferrante 2014; for the Domus X, see Quilici Gigli Ferrante 2015; for the Domus VII, XII, see Quilici Gigli Ferrante 2016.
- ⁷Coarelli 1998, 54.
- ⁸ Coarelli 1998, 62-66; Battaglini Dioniso 2010, 225.
- ⁹Battaglini Dioniso 2010, 219–221.
- ¹⁰ The forum of Norba has not been excavated so far, but it might be situated north of the republican baths and south to the "Acropoli Maggiore". A magnetometer survey covered the area around the forum of Fregellae and some anomalies flanking the eastern side of the long open square might be identified as *tabernae*. See Ferraby et al. 2008, 129.
- ¹¹ For republican *tabernae* built around the open square of fora in Italy, see Baratto 2003, 68–70. We must add to this enquiry the case of Falerii Novi. See Keay et al. 2000, 79–82 fig. 56. In Cosa, the forum is not surrounded by rows of *tabernae*, but by houses fitted with *tabernae* from the 2nd century BC onwards. See Fentress 2003, 21–23 fig. 9.
- ¹² Mertens 1991, 102 f.; Liberatore 2004, 110; Di Cesare Liberatore 2017. See also the contribution of R. DiCesare and D. Liberatore in this volume.
- ¹³ Balty 1985, 23-25 fig. 2; Salcuni 2012, 19 f.
- ¹⁴ Mertens 1988, fig. 21.
- ¹⁵ Evers Massar 2012-2013, 312 f. 3.
- ¹⁶ Alba Fucens I. 71.
- ¹⁷ Scavi di Ostia I, fig. 19. 74 fig. 22.
- ¹⁸ Scavi di Ostia I, 98.
- ¹⁹ See PAOST, Archivio disegni, n°. inv. 699-699bis.
- ²⁰ Scavi di Ostia I, fig. 29. fig. 30.
- 21 For a brief survey of Ostian multi-story buildings in the 2^{nd} century AD, see for instance Meiggs 1973, 235-262.
- ²² Schoevaert 2018, passim.
- ²³ Scavi di Ostia I, 146. According to this author, the development of multi-storey buildings at the mouth of the Tiber in place of the atrium houses reveals a deep transformation in Ostian society after the construction of the harbour of Trajan. The ancient aristocratic upper-class left the city and were replaced by a class of merchants. In the same time, the shopkeepers would have increased significantly.
- ²⁴ Mainet 2018a.
- ²⁵ Mainet 2018b.
- ²⁶ Schoevaert 2018, 89.
- ²⁷ Schoevaert 2018, 209-232.
- ²⁸ Montalbano 2016, 29 fig. 15.

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References

Alba Fucens I

J. Mertens, Alba Fucens I, Rapports et études (Brussels 1969).

Balty 1985

J.-Ch. Balty, Une frande maison urbaine d'Alba Fucens: contribution à l'étude de l'architecture domestique en Italie centrale, ActaArchLov 25, 1985, 19–37.

Baratto 2003,

Ch. Baratto, Le tabernae nei for a delle città romane tra l'età repubblicana e il period imperial, RdA 27, 2003, 67–87.

Battaglini - Dioniso 2010

G. Battaglini – Fr. Dioniso, Le domus di Fregellae: case aristocratiche di ambito colonial, in: M. Benz – Chr. Reusser (eds.), Etruskisch-italische und römisch-republikanische Häuser, Studien zur antiken Stadt 9 (Wiesbaden 2010) 217–231.

Coarelli 1998

F. Coarelli, La storia e lo scavo, in: F. Coarelli – P. Giorgio Monti (eds.), Fregellae. 1. Le fonti, la storia, il territorio (Rome 1998) 29–68.

Di Cesare - Liberatore 2017

R. Di Cesare – D. Liberatore, Le Taberne di Alba Fucens, in: FOLD&R 2017.

Evers - Massar 2012-2013

C. Evers – N. Massar, Découvertes archéologiques récentes à Alba Fucens. La zone sud-occidentale du forum, AttiPontAcc 85, 2012–2013, 295–313.

Fentress 2003,

E. Fentress, Cosa 5. An Intermittent Town. Excavations 1991–1997, Suppl. MemAmAc 2 (Ann Arbor 2003).

Ferraby et al. 2008

R. Ferraby – S. Hay – S. Keay – M. Millet, Archaeological Survey at Fregellae 2004–2005, in: C. Corsi – E. Polito (eds.), Dalle sorgenti alla foce. Il bacino del Liri-Garigliano nell'antichità: culture contatti scambi, Atti del Convegno, Frosinone – Formia 10–12 novembre 2005, 125–131.

Gesemann 1996

B. Gesemann, Die Strassen der antiken Stadt Pompeji. Entwicklung und Gestaltung (Frankfurt am Main 1996).

Hartnett 2017

J. Hartnett, The Roman Street. Urban Life and Society in Pompeii, Herculaneum and Rome (New York 2017)

Helg 2018

R. Helg, Frontes. Le facciate nell'architettura e nell'urbanistica di Pompei e di Ercolano (Bologna 2018).

Holleran 2012

Cl. Holleran, Shopping in Ancient Rome. The Retail Trade in the Late Republic and the Principate (Oxford 2012).

Kaiser 2011

A. Kaiser, Roman Urban Street Networks, Routledge Studies in Archaeology 2 (New York 2011).

Keay et al. 2000

S. Keay – M. Millett – S. Poppy – J. Robinson – J. Taylor – N. Terrenato, Falerii Novi. A New Survey of the Walled Area, PSBR 2000 68, 1–93.

Laurence 2007

R. Laurence, Roman Pompeii. Space and Society (London 2007).

Liberatore 2004

D. Liberatore, Alba Fucens. Studi di storia e di Topografia, Insulae Diomedeae 3 (Bari 2004).

Mainet 2018a

G. Mainet, Maintaining an Atrium House During the Principate in Ostia, in: I. Wouters – St. Van de Voorde – I. Bertels – B. Espion – K. De Jong – D. Zastavni (eds.), Building Knowledge, Constructing History (London 2018) 13–20.

Mainet 2018b

G. Mainet, Comprendre le Caseggiato delle Taberne Finestrate en fonction de la parcelle de la Schola del Traiano. Nouvelle lecture d'un édifice méconnu, in: Cl. De Ruyt – Th. Morard – Fr. Van Haeperen (eds.), Ostia Antica. Nouvelles études et recherches sur les quartiers occidentaux de la cité, Actes du colloque international, Rome-Ostia Antica 22–24 septembre 2014 (Rome 2018) 191–200.

Maiuri 1973

A. Maiuri, Alla ricercha di Pompei preromana (Naples 1973).

Mertens 1988

J. Mertens, Alba Fucens, DialArch 6.2, 1988, 87–104.

Mertens 1991

J. Mertens, Alba Fucens: à l'aube d'une colonie romaine, RTopAnt 1, 1991, 93-112.

Montalbano 2016

R. Montalbano, La via Lata meridionale. Contributo alla Carta Archeologica di Roma (Rome 2016).

Monteix 2010

N. Monteix, Les lieux de metier. Boutiques et ateliers d'Herculanum (Rome 2010).

Monteix 2017

N. Monteix, Urban Production and the Pompeian Economy, in: A. Wilson – M. Flohr (eds.), The Economy of Pompeii (Oxford 2017) 209–240.

Poehler 2017a

E. Poehler, The Traffic Systems of Pompeii (Oxford 2017).

Poehler 2017b

E. Poehler, Measuring the Movement Economy: A Network Analysis of Pompeii, in: A. Wilson – M. Flohr (eds.), The Economy of Pompeii (Oxford 2017) 209–240.

Quilici Gigli, 2014

St. Quilici Gigli, Edilizia private medio-tardo repubblicana: documentazione da Norba, in: J. M. Álvarez Martínez – T. Nogales Basarrate – I. Rodà de Llanza (eds.), Centro y periferia en el mundo clásico: CIAC XVIII Congreso internacional arqueología clásica (Merida 2014) 67–70.

Quilici Gigli 2016

St. Quilici Gigli, Strade e marciapiedi carri e pedoni a Norba, in: E. Mangani – A. Pellegrino (eds.), για το φίλο μας. Scritti in ricordo di Gaetano Messineo (Rome 2016) 177–186.

Quilici Gigli - Ferrante 2013

St. Quilici Gigli – St. Ferrante, Organizzazione urbana ed edilizia private in epoca medio-tardo repubblicana: ricerche in un isolato a Norba, ATTA 23 (Rome 2013) 211–279.

Quilici Gigli - Ferrante 2014

St. Quilici Gigli - St. Ferrante, Norba. Domus e materiali, ATTA Suppl. 19 (Rome 2014).

Quilici Gigli - Ferrante 2015

St. Quilici Gigli - St. Ferrante, Norba. Strade e domus, ATTA Suppl. 20 (Rome 2015).

Quilici Gigli - Ferrante 2016

St. Quilici Gigli - St. Ferrante, Norba. Edilizia private e viabilità, ATTA Suppl. 21 (Rome 2016).

Salcuni 2012

A. Salcuni, Pitture parietali e pavimenti decoratio di epoca romana in Abruzzo, FArS 19 (Bonn 2012).

Scavi di Ostia I

G. Calza – G. Becatti – G. de Angelisd'Ossat – H. Bloch, Topografia generale, Scavi di Ostia 1 (Rome 1953).

Schoevaert 2018

J. Schoevaert, Les boutiques d'Ostie: l'économie urbaine au quotidien Ier s. av. J.-C. – Ve siècle ap. J.-C., CEFR 537 (Rome 2018).

Spinazzola 1953

V. Spinazzola, Pompei alla luce degli scavi nuovi di via dell'abbondanza: anni 1910–1923 (Rome 1953).

Stöger 2011

H. Stöger, Rethinking Ostia: A Spatial Enquiry into the Urban Society of Rome's Imperial Port-town, Archaeological Studies Leiden University (Leiden 2011).

van Nes 2011

A. van Nes, Measuring Spatial Visibility, Adjacency, Permeability and Degrees of Street Life in Pompeii, in: R. Laurence – D.J. Newsome (eds.), Rome, Ostia, Pompeii. Movement and Space (New York 2011) 100–117.