First interim report (November 2020)

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PhD project "Pottery in context. Archive material and new finds from the Forum and the Foro della statua eroica in Ostia" (working title)

The first eight months of the Ostia Forum Project's graduate programme have certainly not been the easiest, as the Covid-19 pandemic has shut down one and a half of our two planned fieldwork campaigns in Ostia. The circumstances even prevented us from getting access to the ceramic finds kept in the Deposito of Ostia antica whatsoever. Nevertheless, new insights into the already documented material and the complex stratigraphy of the area TFR2 (Taberna Forum Rooms) could be gained during the last couple of months. This has resulted into a new layout of my PhD-project and Trine Bak Pedersen's PhD-project (Theme 4: Sacrifices and Ritual Deposits). The focus of my dissertation shifted to analysing the entire development of the area TFR2. It is the aim to reconstruct its history with the help of Prof. Dr. Axel Gering's newest results regarding the building history of the area north-east of the main forum¹ and the results of the analysis of the complex stratigraphy of the area TFR2 with a focus on its massive amount of ceramic finds.

Before the Hadrianic building programme changed the whole appearance of the forum and the area around it, the TFR area belonged to a so far undiscovered sanctuary that can be ascribed to Volcanus.² In the course of the Hadrianic building programme, the sanctuary was given up and torn down. In its place, the north-eastern Forum portico 'Main Forum East' (MFE) and the Taberna complex 'Taberna Forum Rooms' (TFR) were erected.

Needless to say, the earliest and the latest phases of the area are of great interest to us: When was the sanctuary founded? Has the area east of the forum always been used as a sanctuary? In which period were the earliest structures built? And when exactly where the sacred structures given up and the area reused as a taberna complex? Other key questions concern the development of the sanctuary and its structures, as it is obvious that not only the temples but also the associated altars had several building phases. These questions can be answered to some extend by analysing the remaining podium structures of the Volcanus temple and its phases. Some are still visible today, as they have not been torn down completely and were integrated in the backwalls of the

¹ Forthcoming: A. Gering, Geophysics and archaeological surface documentation in Ostia, in: Springer-Handbook of Cultural Heritage Analysis (2021)

² Forthcoming: A. Gering, Ostia Forum Project Vol. 1: The first temples of the colony and the 'lost' precinct of Volcanus discovered.

MFE portico, while others are noticeable in excavation photos of the early 20th century. With the help of geophysics, it is possible to get a general idea of the different building phases of the Vulcan temples. In the following months, a thorough analysis of the excavation diaries from 1913 should shed more light on the stratigraphy around the temples.



Fig. 1 & 2: The northern part of Ostia's Forum with the portico MFE and the area TFR to its east (plan: Axel Gering)

East of the portico, the Taberna complex TFR was partly excavated by the OFP team (see fig. 2). The room TFR2 was explored up until its deepest layers, revealing multiple drains belonging to several altar phases. Only a small trench near the threshold of TFR3 was excavated and the digging activities in the room TFR1 remained mainly in late antique strata. In order to answer the abovementioned questions, the focus consequently lies on the trench TFR2. As this area is not directly connected to the Vulcan temple itself but more so to its altar, interpretations regarding the building phases of the temple must be approached with caution. In addition, the stratigraphy in the area TFR2 is extremely complex, so that proposing a chronology even around the area of the altar is a complicated task.

In the following, the complexity of the stratigraphy will be illustrated by examining two floor preparation layers (TFR2 002a and 003b) separated by a sand-clay layer (TFR2 003a). At this

point, all results are to be regarded as preliminary as the analysis of the contexts and their finds is not complete.

Height ASL	Date	Context	
2,43 m	post 130 AD	Opus spicatum floor in TFR1	
		(removed in TFR2)	
2,11 m	post 130 AD	Mortar layer with ceramic	
		inclusions	
2,10 m	post 130 AD	Cocciopesto surface	
2,01 m	Terminus a quo: 130 AD	002a: preparatio for taberna	
		flooring	
2,00 m	pre 130 AD	TFR2: Mortar layer	
		TFR3: 2,01 m: opus spicatum	
		(removed in TFR2)	
1,87 m	?	003a: sand-clay layer (flood	
		layer? battuto?)	
1,75 m	Around the middle of 1st c BC	003b: preparatio for the	
		sanctuary's flooring	
1,70 m		Tuff pavement	
1,54 m		Tile pavement	
0,92 m – 1,12 m	(finds from the 2 nd half of the 4 th	Sand layer, possibly natural	
	$-3^{\rm rd}$ c BC)		

Tab. 1 Segment of the complex stratigraphy of the area TFR2

TFR2 002a:

The layer TFR2 002a is a 9 cm thick layer (2,01-2,10 m ASL) consisting mainly of fragmented pottery vessels, mostly amphora fragments. It was sealed with a layer of brown mortar and a smooth cocciopesto surface (TFR2 001d) and seems to function as a floor preparation layer for either the pavement of the latest (Trajanic) phase of the Volcanus precinct or for the first floor of the Hadrianic taberna complex. As the latter seems to be the case, it will be used as a working hypothesis for now.

As mentioned above, with 83 diagnostic fragments, amphorae pose the bigger part of the finds from the layer TFR2 002a. In Tab. 2 the occurring amphora types are listed sorted by date in ascending order.

Туре	Quantity	Origin	Date Range
Greco-Italic (van der	2	Central Italy	4^{th} c BC -1^{st} half of 3^{rd}
Mersch V simile)			c BC
Ancient Tripolitanian	2	Libya (Tripolitania)	Middle of 2 nd c BC –
			end of 1st c BC
Dressel 1	7	Misc.	Middle of 2 nd c BC –
			end of 1st c BC
Dressel 1B	8	Italy / mostly	Last quarter of 2 nd c BC
		Tyrrhenian coast, some	– last decade of 1st c
		Bay of Naples	BC
Dressel 1C	8	Italy / mostly	End of 2 nd c BC – 2 nd
		Tyrrhenian coast	quarter of 1st c BC
Van der Werff 2/3	1	Tunisia	End of 3 rd c BC – 1 st c
			BC
Van der Werff 2	1	Tunisia	2 nd half of 2 nd c BC –
			1st c BC
Van der Werff 1	1	Tunisia	Middle of 3 rd c BC –
			2 nd c BC
Lamboglia 2	1	Italy / Adriatic coast	1st c BC – middle of 1st
			c AD
Lamboglia 2 / Dressel	1	Italy / Adriatic coast	1st c BC – middle of 1st
6A			c AD
Pascual 1	1	North-eastern Spain	2 nd half of 1 st c BC –
			Trajanic
Tripolitana I	7	Libya (Tripolitania) Tunisia?	Ostia: mainly 1st c AD
Carthage Early Roman	3	Tunisia?	1st c AD – beginning of
IV (Martin-Kilcher A9)			2 nd c AD
Carthage Early Roman	5	Tunisia?	1st c AD – beginning of
IV (Martin-Kilcher			2 nd c AD
A10)			
Beltrán 2A	12	Spain / Baetica	Beginning of 1st c AD –
			middle of 2 nd c AD
Pseudo-Dressel 2-4	1	Egypt	$1^{st} c AD - 2^{nd} c AD$
Dressel 20	3	Spain / Baetica	1st c AD – early 3rd c
			AD
N. Keay 34j? (misc.	1	Tunisia	1st c AD – end of 4th c
Tripolitanian			AD
amphorae)			
Ostia LIX?	1	Tunisia?	2 nd half of 1 st c AD –
			middle of 2 nd c AD
Carrot Amphora?	1	Levant	Late 1st c AD – early
			2 nd c AD
Uzita 52,10	1	Tunisia	End of 1^{st} c AD -2^{nd} c
			AD
Leptiminus 1	1	Tunisia	End of 1st c AD –
			beginning of 3 rd c AD
Leptiminus 1 (A2)	1	Tunisia	End of 1st c AD –
			beginning of 3 rd c AD
Hammamet 1/2	1	Tunisia	2 nd c AD – beginning
			of 3 rd c AD
Tripolitana II	6	Libya (Tripolitania)	Ostia: 2^{nd} c AD -1^{st}
			half of 3 rd c AD
Africana 3C	1	Tunisia	$4^{th} c AD - 5^{th} c AD$
Non-identified	5		

Tab. 2 Amphora finds from the layer TFR2 002a (diagnostic fragments; campaigns 2017 and 2019)

In this context, there are five different amphora types with a commencement date around the end of the 1st c AD or the beginning of the 2nd c AD present: *Uzita 52,10, Leptiminus 1, Leptiminus 1 (A2), Hammamet 1/2*, and *Tripolitana II*. These ten fragments represent the types with the latest commencement date from the context (with one exception of a single Late Antique *Africana 3C* amphora base). The most common Imperial age amphora types are the Baetican *Beltrán 2A* (12 diagnostic fragments), *Carthage Early Roman IV* (8 fragments), *Tripolitana I* (7 fragments) and *Tripolitana II* (6 fragments).

Interestingly enough, there are also 30 fragments of Republican amphora types in this context, 23 of which belong to the *Dressel 1* type (middle of 2^{nd} c BC – end of 1^{st} c BC). Two rims of a Greco-Italic amphora type similar to *van der Mersch V* amphorae pose the earliest finds from the context dating to the 4^{th} c BC – 1^{st} half of the 3^{rd} c BC.

This substantial difference dating-wise is also to be found regarding the other ceramic find groups from TFR2 002a. Following are some examples, listed from earliest to latest finds.

- 1 base and 1 middle or upper section of a *thymiaterion* or a cylindrical terracotta *arula* with residual light red paint (4th or 3rd c BC?).
- 19 fragments of black gloss pottery, the earliest dating to the 2nd half of the 4th c BC 3rd c BC (plate Morel 2771 or 2772), the latest dating to the 1st half of the 1st c BC (plate Morel 2235b).
- 3 Olla rims type olla con orlo a mandorla (last decades of 3rd c BC 1st c BC), 1 Olla rim type olla con orlo a mandorla inclinato (2rd c BC 1st c BC).
- 1 handle of a thin-walled hemispherical-shaped cup type Ricci 2/210 (Beginning of 1st c BC 3rd quarter of 1st c BC).
- 3 **Augustan Tiberian** terra sigillata vessels (a Conspectus 11-plate, a Conspectus R1 R7-chalice and a so-called *Sarius Cup /* Conspectus R13).
- 1 incense burner / tribula type Ostia II 468 (2nd half of 1st c AD).
- Metal finds: 5 coins (Trajanic and Hadrianic?) and two groups of multiple bronze fishing hooks.³

The layer TFR 002a seems be the levelling layer after the altar was given up and torn down. It was probably laid out after the Hadrianic taberna walls were erected, as it seems to cover their refilled building pits. As the western wall of the room TFR2 is the back wall of the portico MFE

³ As we know, on the *ludi piscatorii* fishermen offered fish to the personified river god Tiber at the Vulcan temple by throwing them into a fire. Could these tied up and molten groups of bronze fishing hooks be connected to such rituals? Could they be votives to Volcanus or the Tiber? See interim report N. Daviddi (Theme 3: Small finds and coins).

(built around 130 AD), the taberna complex TFR must have been built after the portico, posing a *terminus a quo* of 130 AD for the walls and consequently for the layer 002a.

The ceramic finds pose a *terminus a quo* of the beginning of the 2nd c AD, although the dating span of at least 300 years is astounding. The earliest material from the layer 002a so far seems to coincide with the earliest material from the area TFR2 in general. It also includes a few objects corroborating the idea that the levelling was done with 'sacred rubbish', rubbish from the sanctuary: the miniature vessels (fig. 4), the *thymiaterion*/brazier or *arula* (fig. 3), the *tribula*/incense burner, and the possible fishing hooks as votives. The finds dating to the 4th and 3rd c BC could have been brought up when the building pits for the Hadrianic walls were dug out or due to constant lowering and raising of the walking levels (see conclusion). The other possibility would be for the ceramic material to stem from a rubbish dump within the sanctuary.

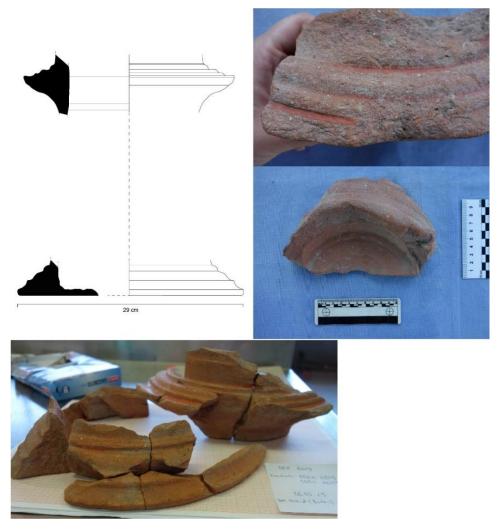


Fig. 3 The thymiaterion/brazier or terracotta arula (fragments from campaigns TFR2 2017 060c and TFR2 2019 002a)

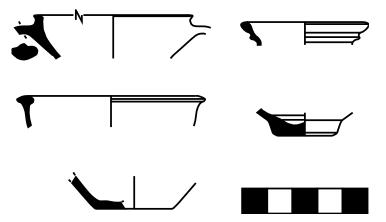


Fig. 4 The miniature pottery from TFR2 002a (campaign 2017)

TFR2 003a:

The layer TFR2 003a is a difficult to characterise earth layer of 13 cm (1,87 – 2,00 m ASL). It consists of a solid earth layer with a layer of clay-like sediments at its surface. It could be interpreted as a beaten-earth floor (*batutto*) compromised by a flood. The thin layer of clay-like sediments on top could be residues of a cleaned-up flood layer. All of this is to be regarded as hypothetical at this point, though. Between 60 BC and Hadrian's reign alone there are 16 mentions of Tiber floods in ancient literary sources, it would thus not be uncommon to find residues of such events in that period. In the coming months, I will try to find comparisons to flood layers in Ostia in that time frame.

There were only very few finds in this layer and the spectrum seems similar to the layer TFR2 003b, although they have not been properly drawn and analysed yet.

On top of this layer, there is a thin mortar layer, separating it from the layer TFR2 002a. In the adjoining room TFR3, there was an *opus spicatum* floor on that level (2,01 m ASL), suggesting the removal of the *spicatum* in TFR2.

TFR2 003b:

The layer TFR 003b was excavated in its entirety in the campaign of 2019. It is 12 cm thick (1,75 – 1,87 m ASL) and consists mainly of layers of mortar and soil mixed with ceramic objects, a lot of which are not drawn yet, due to the Covid-19 restrictions in place. In the 2020 campaign, it was possible to get a general overview of the material, the following observations are to be regarded as preliminary, though.

What became quickly apparent, was the different composition of the context. In relation, there were less diagnostic amphora fragments than in the layer TFR 002a, where they represent the largest find group (see tab. 2). Instead, the layer was filled with wall fragments of cooking ware, jugs and amphorae, and with (roof) tiles and animal bones. There was also a noticeable amount of metal finds (mainly iron and bronze nails), two *unguentaria*, a miniature *olla*, a few clams and one oyster shell, one complete oil lamp, some lamp fragments, two loom weights, two ceramic amphora 'corks', a few cooking ware lids, a rim fragment of a *bacino* and also a slightly larger amount of black gloss pottery than in TFR2 002a present. One find is particularly interesting: a so-called *'focaccia'*, a ceramic imitation of a sacrificial bread or cake with mouldings or pierced-in holes (fig. 5). Comparable objects were found for example in Gabii (Lazio), dating to early Iron Age to early Republican times.⁴



Fig. 5 so-called 'focaccia' (ceramic imitation of bread or cake)

Type	Quantity	Origin	Date Range
Greco-Italic (van der	1	Italy (Bay of Naples?)	Middle of 3 rd c BC / 2 nd half of 3 rd c
Mersch V/VI simile)			BC
Van der Werff 1	4	Tunisia?	Middle of 3 rd c BC – 2 nd c BC
Van der Werff 2	3	Tunisia	2 nd half of 2 nd c BC – 1 st c BC
Dressel 1A	4	Italy (Tyrrhenian coast?)	2 nd half of 2 nd c BC – 1 st c BC
Dressel 1B	2	Italy (Tyrrhenian coast?)	Last quarter of 2 nd c BC – last decade
			of 1st c BC
Brindisian amphora?	1	Italy (Apulia)	Late 2 nd c BC – late 1 st c BC
Haltern 70	1	Spain (Baetica?)	80/60 BC – Antonine period

Tab. 3 Amphora finds from the layer TFR2 003b (diagnostic fragments; campaign 2019)

As shown in Tab. 3, all the amphora types present in the layer TFR 003b date mostly from the Republican era until early Augustan times, except for one *Haltern 70* rim fragment dating from 80

⁴ G. Zuchtriegel, Gabii. Das Santuario Orientale im Zeitalter der Urbanisierung (Venosa 2012): f. ex. Kat. 33/2.

BC to the Antonine period. In general, the other find groups represent the same time span. In the following, a few examples, listed from earliest to latest finds:

- 1 bacino a listello (4th c BC 3rd c BC)
- 1 olla minituaristica o balsamario con collo svasato (4th c BC 3rd c BC)
- 1 brocco con orlo estroflesso ingrossato (4th c BC 1st c BC)
- 1 brocca con orlo a fascia (2nd half of 4th c BC 1st c BC)
- 1 fusiform unguentarium type Camilli B12 or B32 (3rd c BC 1st c BC)
- 1 clibanus con orlo ingrossato (3rd c BC 1st c BC)
- 1 olla con orlo sagomato (end of 3rd c BC middle of 1st c BC; in Ostia, Taberna dell'Individioso: end of 2nd c BC beginning of 1st c BC)
- 1 black gloss plate Morel 1531c? (**probably 2nd c BC**)
- 1 black gloss bowl type Morel 2842a (middle or 2nd half of 2nd c BC)
- 1 black gloss plate type Morel 1414a or 1415b (**150 50 BC**)
- 1 brocca con orlo estroflesso (late Republican)
- 1 glass unguentarium (terminus a quo: around the middle of 1st c BC)

A terminus a quo for the creation of the layer 003b is defined by the Haltern 70 amphora (from 80 - 60 BC onwards) and especially by the presence of a glass unguentarium (from around the middle of the 1^{st} c BC onwards). It is obvious, that, as in the layer TFR2 002a, there are ceramic types present that are a lot older than the creation of the levelling layer / the floor preparatio, although the gap between the oldest (like the bacino a listello or the olla minituaristica) and youngest objects is not as enormous as in 002a. Another commonality of the two layers is that both their earliest finds seem to coincide with the earliest finds from the very lowest layers of the trench TFR2 dating to the $4^{\text{th}} - 3^{\text{rd}}$ c BC.

As the pottery layer TFR2 003b is sitting on top of a tuff pavement, it is quite certain that it functions as an elevation of the area, creating a new walking level. As mentioned above, it is not quite clear if the corresponding flooring has been removed before the Hadrianic taberna complex was built or if the earth layer on top (TFR2 003a) was is a beaten-earth floor disrupted by a flood event.

Conclusion: Issues concerning the stratigraphy of the area TFR2

As a fast-growing city dealing with frequent Tiber floods, the accumulation of material and soil in Ostia's center was enormous. Especially in an area around an altar, a lot of rubbish must have had collected in relatively short amount of time. It is thus logical, that pavements and

corresponding layers have been removed from time to time, especially as the podium of the oldest Volcanus temple has been reused for its successor temples, resulting in the need to prevent the walking level within the sanctuary from rising endlessly.

Before a new pavement or any other flooring is laid out, the ground below it must be levelled and prepared. In the area TFR2, this is achieved with the help of a layer of soil, mortar, crushed ceramics and a mortar layer or beaten earth on top. When a new building project was initiated (in our area TFR f. ex. a new altar), sometimes the old floor and its bedding have been removed before laying out a new pavement. This explains phenomena like the difference in dating of the layers TFR2 002a and 003b. The layers are only separated by the layer TFR2 003a which is max. 13 cm thick and still, there are at least 150 years between their respective creation. TFR2 003b has most probably been created as a floor preparation layer around the middle of the 1st c BC, while TFR2 002a, the preparation for the Hadrianic taberna floor, has been created after 130 AD. This stratigraphic situation can only be explained by pavements, floor preparation and mortar layers from the > 150 years in between the creation of TFR2 002a and TFR2 003b being removed at some point. Of course, such phenomena render it extremely difficult to treat layers in this area as a fine stratigraphy dating specific building phases. It is not quite clear if several layers of old flooring were removed at once when the Hadrianic taberna complex was built or if it was a continuous process of raising and lowering of the levels.

One specific example of the removal of floor layers is to be seen just below the layer TFR2 002a: As we know from small trench in the adjoining room TFR3, the area had an *opus spicatum* floor at 2,01 m ASL. In the area TFR2 only the mortar layer belonging to the *spicatum* was preserved, proving that the tiles were removed before laying out the layer 002a. In late antiquity, when the area was reused as a marble deposit for a lime kiln, another *opus spicatum* floor (at 2,43 m ASL) was removed in TFR2. In the neighbour room TFR1, at the exact same height, the *spicatum* was still preserved. Interestingly enough, not all of the pavements were removed. In lower Republican strata, the tuff pavement below TFR2 003b, as well as a tile pavement situated below said tuff pavement were still intact.

A look at the stratigraphy in the *Domus di Giove e Ganimede*, which is situated north of the forum, also supports my assumption of walking levels being removed in the area TFR (see Tab. 4).

In the *Domus di Giove e Ganimede*, there is a difference in elevation of 1,95 m - 2,66 m between the late Republican to Augustan levels and the foundations of the insula walls (128 - 138 AD). Between TFR2 003b and 002a (middle of 1st c BC - 2nd quarter of 2nd c AD) are only 14 cm of soil (TFR2 003a), proving the constant removal of layers in the sacred area. As mentioned above,

this phenomenon is certainly caused by the need to keep the walking level from raising indefinitely because of the permanent reuse of the old temple podium.

Giove e Ganimede: Height	Giove e Ganimede: Date	Giove e Ganimede: Context	TFR2: Height ASL	TFR2: Date	TFR2: Context
ASL	Date	Context	11012		
3,30 m	128 – 138 AD	Wall foundations for the <i>insula</i>	2,43 m	post 130 AD	Opus spicatum floor in TFR1 (removed in TFR2)
2,56 m	120 – 130 AD	Threshold destroyed in fire	2,11 m	post 130 AD	Mortar layer with ceramic inclusions
1,89 m	Late 1st c – early 2nd c AD	Mosaic floor	2,10 m	post 130 AD	Cocciopesto surface
			2,01 m	Terminus a quo: 130 AD	002a : preparatio for taberna flooring
1,54 – 1,63 m	50 – 100 AD	Wall foundations	2,00 m	pre 130 AD	TFR2: Mortar layer TFR3: 2,01 m: opus spicatum (removed in TFR2)
1,35 m	Augustan	Beaten-earth floor	1,87 m		003a: sand-clay layer (flood layer? battuto?)
0,64 m	Late 2 nd c – 1 st c BC	Floor pavement	1,75 m	Around the middle of 1st c BC	003b: preparatio for the sanctuary's flooring
			1,70 m 1,54 m		Tuff pavement Tile pavement
-0,30 m	Late 4 th c – early 3 rd c BC	Sand layer, possibly natural	0,92 m – 1,12 m	(finds from the 2 nd half of the 4 th – 3 rd c BC)	Sand layer, possibly natural

Tab. 4 Levels in the Domus di Giove e Ganimede (DeLaine – Wilkison, The House of Jove and Ganimede (1999) compared to the levels in the area TFR2

It also becomes apparent, that the initial rising of the levels in Republican times was not differing as much as in the Imperial strata. In the *Domus di Giove a Ganimede*, there is a difference of 0,94 m in between the lowest sand layer from the late 4th – early 3rd c BC and the late Republican layer, in the area TFR2 it is 0,83 m in between those levels. Only after the late Republican period, the development seems to diverge drastically. Below the late Republican layer TFR2 003b, at least two different pavement levels are preserved, above 003b, all floorings have seemingly been removed at some point to avoid the walking level from continuing to rise.

This phenomenon shows explicitly how differently the area within the precinct of Volcanus has been treated compared to a residential complex close by. The walking levels of the *Domus di Giove e Ganimede* and its underlying structures did not react to a relatively fixed walking level determined by a specific building, like the area around the Vulcan temple did. Reusing the podium of the first temple for its successors created the necessity of the walking level in the sanctuary to always correspond with that structure. Similar phenomena are documented in other Ostian sanctuaries, such as the Cybele sanctuary and the Hercules temple. In these two cases, it even seems as if the sanctuaries' levels were lower than the street level after a general raising of the levels in Ostia in the 1st c AD.⁵

The comparison of the absolute heights of the two sites also illustrates another particularity of the area TFR2: the lowest layer consisting of *sabbia marina* and a few singular finds from the 2^{nd} half of the 4^{th} c BC – 3^{rd} c BC is on a height of 0.92 - 1.12 m ASL, while a similar context in the *Domus di Giove e Ganimede* is on -0.30 m ASL. Does that mean that the area of the altar of the Vulcan sanctuary possibly lies on a natural elevation, for instance a small hill or a dune? That would propose an additional explanation to the comparatively high levels in the lower strata of the area TFR2. Already the old excavations in the north-eastern forum portico indicated higher levels then elsewhere in Ostia.

Another reason for the necessity of keeping the walking level relatively low is the proximity of the sanctuary to the main forum itself and hence to the *Decumanus* and the *Cardo*. It is a common phenomenon in Roman cities that the further away from the two main roads a site is located, the less inhibited is the rising of the levels, whereas the walking levels connected to building complexes near the main streets are kept at a certain absolute height as the road level usually stays unaltered for a long period of time.

Level raises ('rialzimenti') are well-documented in Ostian research, while the discussion around the lowering of levels ('abbassamenti') is lacking.⁶ In the following months, it is my aim to compare the sanctuary's stratigraphy to those of other sites in Ostia, as well as other Roman cities, focussing on the area around their main streets.

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⁵ Mar – Nolla – Ruiz de Arbulo – Vivó, Cambios de nivel en las callas de Ostia. Los datos de la excavación arqueológica en el santuario de Cibeles. MededRom 58 (1999), 83.

⁶ For the discussing on level raises in Ostia: MededRom 58 (1999), chapter II.