

Cleaning the Laundries III. Report of the 2008 campaign

Miko Flohr

After two successful campaigns in 2006 and 2007, the 2008 campaign constituted the third and final season of the 'Cleaning the Laundries' project. The general aim of the project was to come to a better understanding of the recognizable Pompeian fulling workshops by investigating the remains of work installations on or above the AD 79 floor level, which are often hidden below modern deposits, such as sand and debris. The results of the first two seasons had already confirmed that by carefully removing these modern layers and cleaning the ancient remains underneath a lot of additional information about the history and use of these workshops could be gathered and it had also become clear that such data could add significantly to our understanding of *fullones* and *fullonicae* at Pompeii. In 2006, three small *fullonicae* were investigated in *tabernae* I 4, 7, VI 15, 3 and IX 6, a.1; the 2007 season focused on two large *fullonicae* in houses VI 8, 20.21.2 and VI 14, 21.22 and another small workshop in *taberna* VII 2, 41¹. The final season in 2008, the results of which are presented here, served two purposes. On the one hand, there was a number of (possible) fulling workshops left that still needed to be studied – including *tabernae* I 10, 6, V 1 2 and VI 3, 6 and workshop VI 16, 3.4. On the other hand, as the project proceeded, new questions arose concerning some of the workshops investigated in preceding years, and it was decided that additional investigations were necessary in two of these: workshop I 4, 6 and VI 15, 3. This report will first discuss the newly investigated workshops, and will then briefly focus on the reinvestigated *fullonicae*, before concluding with some general remarks on the results of the 2008 season and the project in general.

Newly investigated workshops

Taberna I 10, 6

This small shop (fig. 1), which is thought to have belonged to the property of the neighbouring House of the Menander (I 10, 4), and which consisted of a shop and a back room, was excavated in the early 1930s and a report with a brief description, a list of artefacts discovered and a map was published shortly afterwards.² In subsequent decades, the remains of the work installation in the southwest corner of the shop gradually became covered by modern sediments, and disappeared. Hence, while the workshop was included among the *fullonicae* listed by Moeller, its identification as a fullery was disputed by Ling and Allison³. The workshop had been investigated by a team led by Philippe Borgard in 2004, but despite a brief note mentioning their activities, no results of this work have been published yet⁴.

Surface cleaning was limited to the southwest part of the shop and primarily focused on the presumed

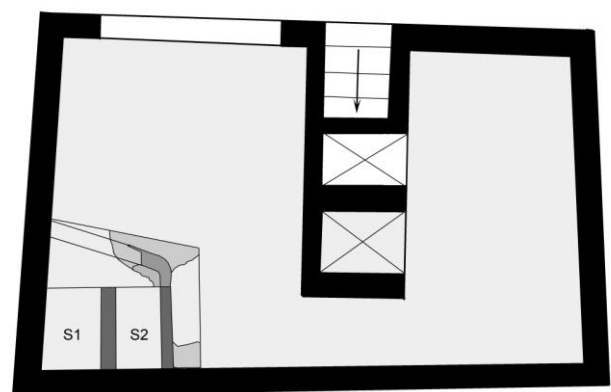


Fig. 1. Fullonica I 10, 6: overview of remains.

¹ 2006 season: FLOHR 2007a; 2007 season: FLOHR 2008.

² ELIA 1934: 276.

³ MOELLER 1976: 43; LING 1997: 146; ALLISON 2006: 335-336.

⁴ MONTEIX *et al.* 2005: 326.



Fig. 2. Fullonica I 10, 6: map.

of pottery. By contrast, the main floor was rather fine and had a smooth surface. As in most other fulleries, the work floor was separated from the surrounding environment by a low rim. Only a small part of the floor has been preserved, but comparing the visible remains with Elia's map, one can reconstruct that it was curved on the east side, started relatively narrow, but became increasingly wider towards the west wall.

If the present remains correspond, more or less, with the state of the workshop in 79 AD, this may be an indication that the *fullonica* had gone out of use, that the fulling tubs and most of the remains above floor level had been removed, and that the shop was used for different purposes. Indeed, if other facilities of wood were placed on top of it, or if the corner was just used for storage, there was no need to completely remove all remains of the fulling installation and to completely redo the shop floor. This interpretation would also make the finds assemblages from the shop and the back room better understandable – Allison rightly concluded that these did not point to fulling at all.⁵ Nevertheless, whatever was the case at the moment of the eruption, the evidence recovered unequivocally suggests that the shop had been involved in fulling during some part of the first century AD.

Taberna V 1, 2

The precise excavation date of this workshop is unknown; no formal reports exist, and the first mention of the shop is found in Fiorelli's *Descrizione di Pompei*, where it is noted that the space contained an installation Fiorelli called a '*fusorium*' and a staircase to the upper floor, both of which had completely disappeared.⁶ Architecturally, it is connected to the shop V 1, 1.29 and 27-28 in the southwest part of the insula, and with the *atrium* of house V 1, 3, which was directly north of it, and which probably was part of the *Casa del Torello* (V 1, 7). The shop consists of an L-shaped main room and a square back room in its northeast corner, which had a door and a window in the wall facing the street side (fig. 3). The visible remains of the *fullonica* consisted of two standing walls which seemed to surround a set of two fulling stalls, some remains of the *opus signinum* presumably surrounding the holes where the tubs had been, and, in the middle of the installation, towards the back wall, a circular hole suggesting the presence of a storage amphora

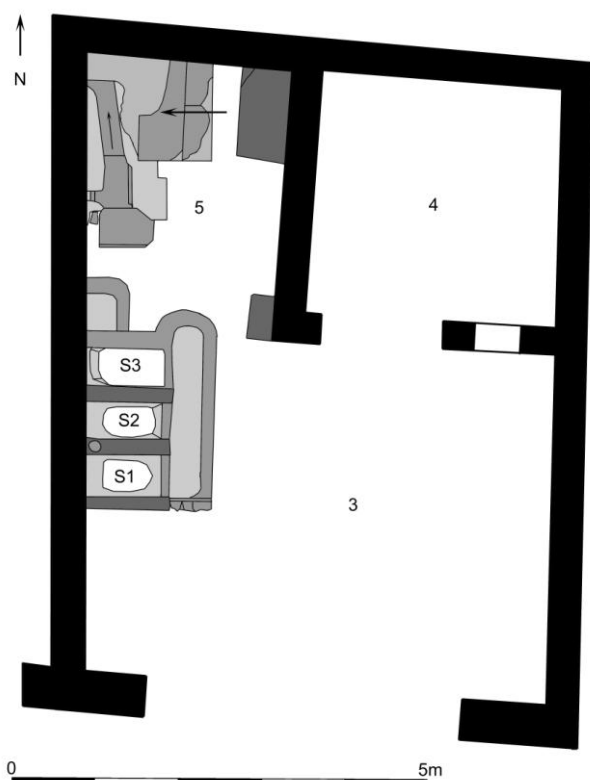


Fig. 3. Taberna V 1, 2: map.

⁵ ALLISON 2006: 335.

⁶ FIORELLI 1875: 419.

between the two stalls. Based on what was visible, identification of the shop as a *fullonica* already seemed secure⁷. Hence, surface cleaning focused on the specific details of the fulling installation, and on understanding its relation with other remains that were visible in the northwest corner of the room. For this purpose, a large rectangular area, including most of the western half of the shop was cleared of modern sand and dust (fig. 4).

Fulling stalls

After removing the uppermost layer of dust and lapilli, it appeared that the two fulling stalls had been filled in with a layer of modern concrete, obviously during restoration works. This was removed, except for parts where it had stuck to the ancient *opus signinum* bed, in order not to damage the archaeological remains. Subsequently, the holes in which the fulling tubs had been placed were emptied to a depth of about 20cm, but no ancient remains were discovered. The cleaning, however, did make it clear that the two stalls had been separated from each other by a wall – as in most fulling installations studied during the project. In cleaning the hole left by the amphora that had been embedded in this wall, no remains of the amphora itself were found. The two stalls slightly differed in the shape of the mortar surrounding the tub (fig. 5): the tub in stall S1 was more rectangular (stall: 52x98cm; tub: 35x60cm), while the tub in stall S2 had a more oval form (stall: 45x96cm; tub: ca. 32x56cm). Both had the characteristic sloping edges on all four sides and a rim in their entrance. In front of the stalls, there turned out to be the usual *opus signinum* work floor, surrounded by a low rim of stones and mortar (walking surface: 202 x 38cm; rim: 20cm). The work floor continued north of S2, but gradually lost its rim there; at the height of the south wall of room 2, it stops. At the north and south side of the floor, fragments of roof tiles have been used in the rim, with the upright side of the roof tile above. In the rim along the east side of the work floor, more than one polished surface is visible, suggesting at least two phases.

The area directly north of the two stalls showed remains that suggested the presence of a small basin, but when it was investigated, it turned out that the remains belonged to a third fulling stall (S3). Compared to the other two, however, the fulling tub was slightly larger and almost completely rectangular (stall: 47x102cm; tub: 40x72cm); moreover, the tub had vertical edges on its two long sides, and a very steeply sloping edge on its back side. The rim in front of the stall, on the other hand, was slightly lower than that in front of the other two stalls, and its mortar had a different composition. Most significantly, the stall had no supporting wall on its north side, but a low *opus signinum* rim, so that the person working in it could not support their left hand. Together, this suggests that the third stall was a later addition to the fulling installation.

Attached to the north side of the stall, against the west wall of the shop, was a rectangular mass of stones and mortar of which the function is not precisely clear (ca. 60x50cm). As its surface seems finely polished and is on a lower level than the sides, it may have been a small basin, but this is not certain. While its function remains unclear, the fact that the mass covers the *opus signinum* surface of the side rim of stall S3 makes it clear that it postdates the third fulling stall, again showing that the history of this workshop was more complex than its shallow remains may suggest at first sight.



Fig. 4. Taberna V 1, 2: overview.



Fig. 5. Taberna V 1, 2: fulling stalls.

⁷ FLOHR 2003: 447; FLOHR 2007b: 140-141.



Fig. 6. Taberna V 1, 2: remains against north wall.



Fig. 7. Taberna V 1, 2: drainage installation.

Drainage installation

The nature of the remains in the north end of the room were mostly covered by modern debris. What was visible, basically, was a rectangular mass of stone in the northeast corner (with its long side along the east wall), and an irregularly shaped mass with one right side parallel to it slightly more to the west. Surface cleaning did not reveal a clearly defined AD 79 floor surface, but it did reveal that the situation in this part of the room was much more complicated than it originally appeared (fig. 6). The stone mass in the northeast corner appeared isolated, and its function remains unclear; yet, the irregular-looking fixture west of it turned out to be the remains of two steps, the lower one of which still had parts of its original covering of *tegulae* preserved; the upper step was largely demolished, yet it was noticed that the part that had disappeared precisely corresponded with an irregularly shaped restoration in the north wall, which had been breached. The shape and size of the hole suggest that it was made by 18th century excavators exploring the site through tunnels, probably departing from the nearby crossroads of the Via del Vesuvio / Via Stabiana and the Via della Fortuna / Via di Nola, which is known to have been excavated as early as 1748⁸. In the light of Fiorelli's claim that the shop contained a staircase, it is reasonable to assume that the two steps gave access to a podium occupying the room's northwest corner, from which a wooden staircase gave access to the upper floor. As this podium was accessed from the east, this staircase must have run along the west wall.

Directly east of the staircase podium, a circular hole appeared, which was partially overbuilt by the lowest step and thus had lost its function when the staircase was built. The hole had a diameter of 41 cm (i.e. 1.5 oscan foot), and its inner side was covered with plaster; as the hole was below the AD 79 floor level, it was only cleared to a limited extent, so that its final destination and depth remained unclear; its shape and size seem to suggest that it was connected to some cistern; its position near the north wall suggest that this perhaps was the cistern related to *atrium* 2 of house V 1, 3.

South of the staircase podium, a drainage installation emerged (fig. 7). The installation consisted of a small, slightly sloping work floor made of a large roof tile, and a narrow, more steeply sloping channel with a floor of tiles (width: 25cm). The channel ran towards the northeast corner of the room, where it debouched into a larger drain which ran underneath the *atrium* of house V 1, 3. The drainage channel is probably contemporary with the staircase podium, as the walls of the channel and the remains of the podium are connected by mortar. The installation was separated from the surrounding part of the workshop by the standing rim of the tile, so that the drainage waste could not cause pollution in the rest of the establishment. Probably, the drainage channel is to be equated with the '*fusorium*' mentioned by Fiorelli⁹. This would also explain why the fill of the drainage channel almost exclusively consisted of sand: the installation was excavated with the rest of the shop, but then was left to disappear under modern sediments.

The precise functional background of the drainage installation was not directly clear. Significantly, however, the surface of the work floor, the floor of the channel and the walls were partially covered by a whitish sediment. While it was not, unfortunately, possible to sample and chemically analyze the substance, it is worth emphasizing that such whitish sediments are fairly common in *fullonicae* both at Pompeii and Ostia: they often cover the inner sides of fulling tubs, of storage jars, of rinsing basins and parts of the shop floor. While this could be sinter, merely indicating water use, there are indications that the sediment at least partially consists of remains of the alkaline

⁸ ESCHEBACH 1993: 122.

⁹ FIORELLI 1875: 423.

chemicals used to dissolve fats and pollution in the first phase of the fulling process¹⁰. Hence, although the precise nature of the installation cannot be determined, it is logical to assume that it had something to do with the second phase of the fulling process, during which these chemicals were washed out. Perhaps, there was a kind of press or wringing out installation placed in the narrow space between the shop floor and the staircase. Unfortunately, the installation is unique in Pompeii; there may be a possible parallel in *fullonica* VII 2, 41, as Fiorelli mentioned an installation he interpreted as a latrine in the narrow room north of the shop, but for safety reasons, this room could not be investigated during the present project, and Fiorelli did not describe the remains in great detail¹¹.

Discussion

Surface cleaning revealed a lot of new information about this small *fullonica*. Significant, in the first place, is that the workshop appeared to be larger than originally thought and is one of two 'small' Pompeian fulling workshops with three fulling stalls, but without rinsing basins – the other being *fullonica* VII 2, 41, investigated in the 2007 campaign¹². Secondly, surface cleaning made it possible to discern at least three different phases – an initial phase, in which the *fullonica* operated with two stalls, and a subsequent phase, in which a third stall was added – thus enlarging the workshop's maximum production capacity with 50% - and a third phase, in which a basin or some other installation was constructed next to stall S3. This is highly relevant: though it is a principle of sound business to start small and to invest in extensions only subsequently, when the business is doing well, it is very hard to trace this in the archaeological record, especially in the case of such small workshops.

Also relevant is the implication following from the contemporaneous construction of the drainage channel and the staircase podium: if these two indeed were constructed at the same moment, the design of the workshop is closely related to the spatial organization of the *taberna* as a whole – including the connection between ground floor and upper floor. As the building techniques used in the walls suggest that these *tabernae* were not constructed before the first century AD, and quite possibly may be dated to the last years of the city's existence, and as it was neither easy nor cheap to relocate a staircase once it had been built, it is possible that, when the first decisions about the internal layout of this *taberna* were taken when it was being constructed, it was already clear that it was going to host a *fullonica*.

Taberna VI 3, 6

This small shop along the Via Consolare (fig. 8) was excavated in the early 19th century, but has never before been interpreted as a *fullonica*¹³. Its possible relation to fulling was noted during a preparatory visit to the site during which I specifically addressed the areas that had been excavated before the first Pompeian *fullonica* was discovered in 1826 (VI 8, 20-21.2). What was visible – before intervention – were the remains of two rather large vessels that had been embedded in the floor more or less next to each other, both ca. 50 cm from the east wall, their rims separated from each other by some 30cm. In remarkable correspondence with these vessels, there were traces of three small holes in the wall covering of the east wall, all at the height of some 70 cm above the present day floor level. The holes, which had been filled in with modern mortar, were placed to the north of the north vessel, to the south of the south vessel, and in the middle between the vessels. The distances between the holes were comparable: 69cm and 79cm respectively – not an abnormal width for fulling stalls (cf. above, *fullonica* I 10, 6). Significantly, traces of waterproof plaster – clearly different in composition from the plaster on the wall – could be seen around two of the holes, and the

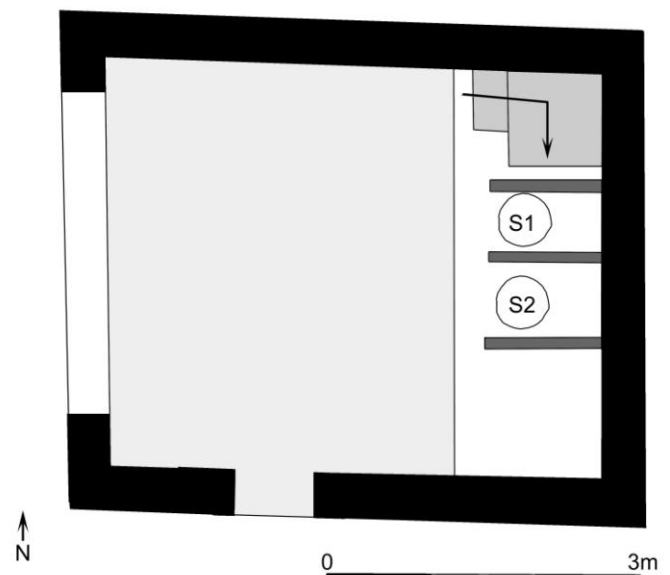


Fig. 8. Taberna VI 3, 6: map.

¹⁰ The layer does also look distinctly different from sinter layers found in, e.g. Roman aqueducts, and the chemicals used in the first phase of the fulling process included fullers' earth, which is a highly calcareous substance.

¹¹ FIORELLI 1873: 36; FIORELLI 1875: 196.

¹² FLOHR 2008: 10-12.

¹³ see for the original excavation reports CAROCCI, DE ALBENTIS 1990: 101.



Fig. 9. Taberna VI 3, 6: overview.

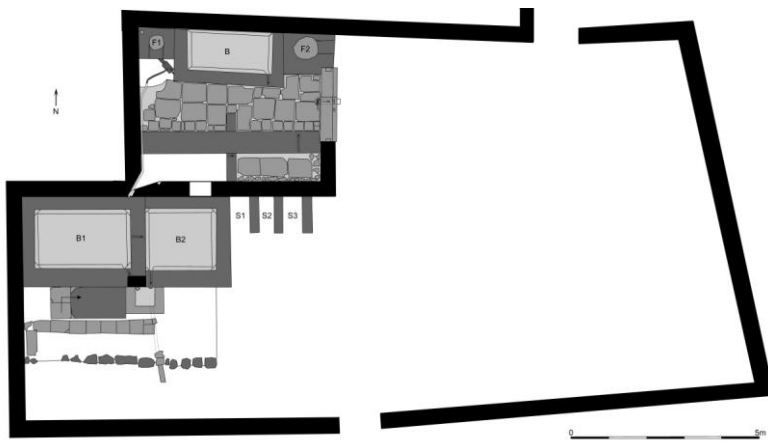


Fig. 10. Workshop VI 16, 3.4: map.

installation are scarce and fragmentary, they do consistently point to an interpretation of the workshop as a *fullonica*. What is remarkable, however, is that the layout of the workshop differs considerably from that of *all* other Pompeian *fullonicae*: no other fulling workshop in the city shows any evidence for tubs made of terracotta – as opposed to *fullonicae* at Ostia, Rome and Florence, where terracotta vessels were the norm. Nevertheless, this is no compelling reason to discard the present interpretation as ‘unlikely’: though certain basic elements always recur, variation is the norm among Pompeian fulling stalls: in several other *fullonicae*, tubs were carved out of travertine. There is no reason to assume that Pompeians could not make fulling tubs from vessels if this happened to be the most easily available option.

Workshop VI 16, 3.4

This work area in the southeast corner of *insula* VI 16 consisted of a large uncovered area surrounded by a wall and a roofed space (I) in the northwest corner (fig. 10). The area was accessible through two doors – one in the south wall, and a second one in the north wall. The walls in the northeast part of the area were structurally related to the adjacent *Casa degli Amorini Dorati* (VI 17, 7.38). The workshop was excavated in the 1890s and relatively accurate descriptions of its remains, including a detailed map and a picture of the *fullonica*, were published shortly afterwards¹⁵. Unfortunately, and contrary to the small *fullonica* in VI 16, 6, this workshop was not included in Seiler’s publication of the *Casa degli Amorini Dorati*¹⁶. It was felt that at several points, more information was needed to fully

plaster around the northernmost hole seems to reveal the outlines of a wall of some 10cm in width. Apparently the holes were used to stabilize three parallel walls that surrounded the two vessels. This suggests that the vessels were fulling tubs, and that the walls were the supporting walls on which the workers could place their arms whilst trampling the clothes.

To see whether more remains of this installation could be traced, the back part of the shop was cleared to its AD 79 floor level, and the two vessels were emptied (fig. 9). No structures were found, and the floor appeared uninterrupted apart from the holes with the two vessels; yet, as the top layer of the floor had vanished completely throughout the room, this was insignificant: the possibility of a structure standing on top of the floor cannot be excluded, and if it had

been made of wood, as is perhaps suggested by the three holes in the plaster of the back wall, it would not easily leave any traces. Moreover, the vessels appeared large enough to provide space for the two feet of a worker, even though they are slightly smaller than the average Pompeian fulling tub, and most tubs found in Ostia were larger as well¹⁴. The northern vessel was best preserved and had a slightly conical shape; the southern vessel showed little more than the bottom. Typically, the walls of both tubs were for a large part covered with the typical white sediment found in many fulling installations, which also strongly suggests that the tubs were used for fulling.

While the actual remains of the work

¹⁴ cf. PIETROGRANDE 1976: 34, 62-63.

¹⁵ SOGLIANO 1906: 348-350.

¹⁶ SEILER 1992.



Fig. 11. Workshop VI 16, 3.4: overview of fullery.



Fig. 12. Workshop VI 16, 3.4: work podium with steps.



Fig. 13. Workshop VI 16, 3.4: drainage channel.

understand the organization and context of the work area. These especially concerned the water system of the rinsing complex, and the workshop facilities in room I, north of the *fullonica*.

Fullonica

To be able to study the *fullonica* in its entirety, a large area was cleaned, starting with the three fulling stalls and the two rinsing basins (fig. 11). Surface cleaning in the fulling stalls yielded no significant results, as no ancient floor level was preserved in this part of the workshop, and there were no remains indicating the nature and position of the tubs. The emptying of the rinsing basins made it possible to measure their capacity and to understand their water system. Basin B1 measured 251x157cm and had a capacity of 3,750 litres ; basin B2 measured 183x168cm (height: 83cm),

which resulted in a capacity of about 2400 litres. Surprisingly, the two basins were not connected on the floor level, but only through an overflow at a height of 95 cm above the floor of basin B1. As this overflow is at a higher level than the walls of basin B2, the water supply must have mouthed in basin B1, and basin B2 could only be filled when basin B1 was completely full. The drain of basin B1 was found in its SE corner, and that of basin B2 in its (adjacent) SW corner; both drains were made of narrow terracotta pipes with a diameter of 5 cm. To understand how the water was transported subsequently, the area in front of this part of the rinsing basins was cleared, and it appeared that the water from the two drains was collected in a small, shallow basin from where it was further transported through an underground channel, the entrance of which was visible in the southeast corner of the basin (fig. 12). Remarkably, as the entrance to the channel was exactly as wide as the two drains, it could only handle the water from one of them at a time: the two rinsing basins could not be emptied at the same moment as it would make the small collection basin overflow. This is fundamentally different from most other rinsing complexes at Pompeii, where it was possible to drain the entire complex at once.

The drainage installation appeared to be surrounded by a large working platform, which, rectangular in shape, extended over the entire length of the rinsing complex and had a width of 200-220cm; the south side of the platform consisted of a more or less regular border of stone blocks, but the east side was less clearly delineated. Besides the drainage basin, the only fixture found on the platform were the steps to the podium from which basin B1 could be reached, which had already been visible. Most of the platform appears to have been covered by water-proof plaster, of which fragmentary remains were found at several places, especially in the NW corner between the steps to basin B1 and the wall. Yet, in front of the small drainage basin started a row of *pedales* which continued straight to the west wall of the workshop and then bended southward to the border of the platform (fig. 13). While it was originally thought that these tiles covered a drain, this turned out not to be the case: the drainpipe transporting the water from the basin towards the street went in southeast direction, and ended at the height of the platform border; from there, it seems to have continued uncovered towards the south wall of the area, but it was impossible to



Fig. 14. Workshop VI 16, 3.4: discharge basin.



Fig. 15. Workshop VI 16, 3.4: room I, overview.



Fig. 16. Workshop VI 16, 3.4: room I, floor.

follow it further, or to trace its end on the street side of the wall (fig. 14). The drainpipe had a rather improvised character: the first part near the rinsing complex consisted of a terracotta pipe, the part near the south end of the platform was made of the lower part of an amphora, and the subsequent canal consisted of an *imbrex* turned upside down. This illustrates how in the construction of workshops, people made the most of whatever material was available – a phenomenon that can be seen in many *fullonicae*.

Room I: a wool processing workshop

The work area in room I was completely cleared from all modern pollution. Based on the original excavation report, it was already known that there were two furnaces and a basin (B) along the room's north wall, a central area which served for circulation, and some work installations along the south wall¹⁷.

It appeared that the central area had a floor of *pedales* and *bipedales* (fig. 15). In the east half of the room, the floor shows a number of small rectangular holes (ca. 3.5 x 7 cm each), all near one of the corners of the tile in which they had been carved out (fig. 16). The floor surface was some five cm below the threshold, and directly in front of the threshold was the entrance to a drainage channel of which a short part was found on the other side of the thresholds as well. Basin B had a floor sloping towards its southeast corner (115x225cm; 65cm deep; capacity: ca. 1600 litres) where there was a small drain consisting of a terracotta pipe (diameter: 3.5 cm). Remarkably, this drain opened in the main floor of the room, indicating that the floor served as a central node in the water system of the workshop. This makes it attractive to see the rectangular holes in the floor as related to some kind of wooden construction that had been placed on top of the floor – allowing the workers to keep their feet dry.

Of the two furnaces, the one in the northeast corner of room I (F2) was almost completely destroyed, but surface cleaning revealed the floor level was more or less intact; the fire-hole, which had a terracotta tile in the opening, was oriented towards the east side, so that the worker operating the fire actually would have been standing outside the room in the workshop's main area (fig. 15). The furnace in the northwest corner (F1), on the other hand, was almost completely preserved, and had a circular cauldron with a flat bottom above the fire; with a diameter of 45 cm and a depth of 78 cm, it had a capacity of ca. 125 litres (fig. 17). On the lintel of the fire-hole, burning traces are still visible. Just like most furnaces, the installation had a vent in the northeast corner,

¹⁷ SOGLIANO 1906: 348.

behind the cauldron, to facilitate air circulation.

While the northern half of the room was already relatively well-understood through the visible remains and the descriptions of Sogliano, the layout of the southern half of the room was more puzzling. Sogliano, and after him Moeller, had interpreted the visible remains as belonging to two rectangular basins¹⁸. Yet, this proved unlikely: there were no traces of waterproof covering on the inside, and the wall that separated the supposed basins from the rest of the workshop was, at 71 cm, remarkably wide to have served mainly as a basin border. Surface cleaning also revealed that the two spaces behind this wall had floors of plaster and tiles, but not of a quality allowing them to serve as basin floors. The two spaces did, however, have a drainage facility: there was a floor-level connection between the two spaces in the wall separating them, and a drain pipe near the east end of the separation wall, which, like the drain from the basin, mouthed on the shop floor. However, most significant for the interpretation of the entire installation was the discovery that the narrow wall separating the two spaces from each other actually continued for some 45 cm on the north side of the broad wall in front of them. There is a close parallel for this in workshop I 8, 19, where there are two similar working areas separated by a high wall. In this workshop, the broad wall separating the working areas from the rest of the room serves to support two travertine working platforms. In front of this installation is a large basin, and a furnace. Indeed, the facilities in this workshop are completely identical to those in room I, the only difference being that our present workshop had two furnaces instead of one.

Besides the present workshop and workshop I 8, 19, there were two other workshops with a similar set of installations. One is in house VII 14, 5, and was recently studied by Borgard¹⁹. Like in I 8, 19, the establishment in this house was related to a dyeing workshop. The other workshop of this kind is in house VIII 4, 4, and was recently investigated and published by Dickmann and Pirson²⁰. Borgard, though noticing only two of these workshops, has rightly observed that these establishments constitute a hitherto not formally noticed Pompeian workshop type that, as the evidence suggests, must have been closely related to wool processing: of the four workshops of this type, two are related to a dye works, and one to a fullery²¹.

Water provision

A highly relevant discovery was made while examining the AD 79 floor level in front of the furnace in the NW corner of the room. While the floor level appeared disturbed and could not be traced, a large water-division box was discovered on a slightly lower level (fig. 18). It was fed from the northeast by a wide pipe coming from underneath



Fig. 17. Workshop VI 16, 3.4: furnace 2.



Fig. 18. Workshop VI 16, 3.4: water division box.

¹⁸ SOGLIANO 1906: 348; MOELLER 1976: 49.

¹⁹ BORGARD *et al.* 2003: 22.

²⁰ DICKMANN AND PIRSON 2000: 454-455; DICKMANN AND PIRSON 2002: fig. 3.

²¹ BORGARD, PUYBARET 2004: 57-58.



Fig. 19. House VI 16, 7.38: water pipe in Peristyle.

the furnace, and from it sprang three narrower pipes. One of these continued straight in a westerly direction underneath the basin, but it could not be traced further. Its destination is unknown, but it is unlikely to have been within room I. The second pipe started from the top, but was not preserved at all. It is unclear whether it served the cauldron (as was the case in workshop I 8, 19) or the basin directly west of it, or, perhaps, both. The third, interestingly, was preserved for a length of some 65cm, and ran southwest towards the wall. From there, it seems to have run along the wall and after crossing over the large wall of the working tables in the south part of the room, it went through a hole in the south wall, and ended on the upper rim of the basin B1 of the rinsing complex of the *fullonica*.

There are two issues related to this water pipe installation that are worth mentioning.

In the first place, the situation has implications for the internal chronology of the complex: the water pipe feeding both the workshop in room I as well as the *fullonica* was overbuilt by the furnace and the basin belonging to the former workshop, and the water pipe feeding the *fullonica* was – at least partially – covered by the tiles of the floor of room I. This more or less excludes the possibility that the *fullonica* antedated the workshop in room I and suggests that the two workshops were in fact contemporary; otherwise, the water pipe to the *fullonica* would probably have run along the wall as much as possible, and on top of the floor of room I instead of underneath it. Secondly, the provenance of the water pipe is highly significant. As it reached room I from the northwest, its only possible provenance is the peristyle of the adjacent Casa degli Amorini Dorati (VI 16, 7.38). Fortunately, this water pipe could also be traced: it ran along the east side of the peristyle garden of this house, bending west precisely at the height of room I (fig. 19)²². The workshop was thus provided with water from the house next door.

Discussion

Our activities in workshop VI 16, 3.4 greatly enhanced our insight into this workshop and emphasized its unique character: this is the only *fullonica* in the Roman world of which we can be absolutely sure that it was constructed as part of a larger wool-processing establishment. The water pipe system also showed that Seiler had been wrong to omit the workshop from his discussion of the *Casa degli Amorini Dorati*: house and workshop were closely related. The fact that the workshop complex in the southeast corner of the *insula* received its water directly from the house strongly suggests that it belonged to the property of the house, and that the owners of the house played a decisive role in the workshop's construction. Moreover, as there was no living space related to the workshop, some, or even all, of the people involved in operating it are likely to have been living in the house.

What is remarkable, is that it was thought necessary to supply the workshop with water from the peristyle instead of from the water tower on the southwest corner of the *insula*, which was both closer by and easier to reach. It seems as if the water pipe entered the house through the front door at VI 16, 7 and then went through the atrium to the peristyle. Given the high price of lead, this seems an awkward detour. Yet, there are two possible explanations: either, there already was piped water in the house that was easier to access, or, the owners of the house took advantage of the need to construct a water pipe to embellish their private environment with some ornamental water features, as was also done in e.g. *fullonica* VI 14, 21-22²³. The number of water features in the house, however, is rather limited: the only identifiable water feature that suggests the use of piped water is the basin in the middle of the peristyle garden, but this was found without connection to piped water²⁴. It is uncertain whether this basin antedates the *fullonica* and the wool-washing workshop; yet, its relatively modest scale would suggest that this basin, in itself, was not enough reason to construct a water pipe, and that the need to acquire piped water when the two workshops were constructed was taken as an opportunity to enhance the peristyle garden as well.

A further advantage of the discovery of the water pipe is that it makes it possible to date the workshop. As Seiler observed, the water pipe did not leave traces in the floors of any of the rooms between the peristyle and the

²² SEILER 1992: 39.

²³ FLOHR 2005: 58.

²⁴ SEILER 1992: 39.

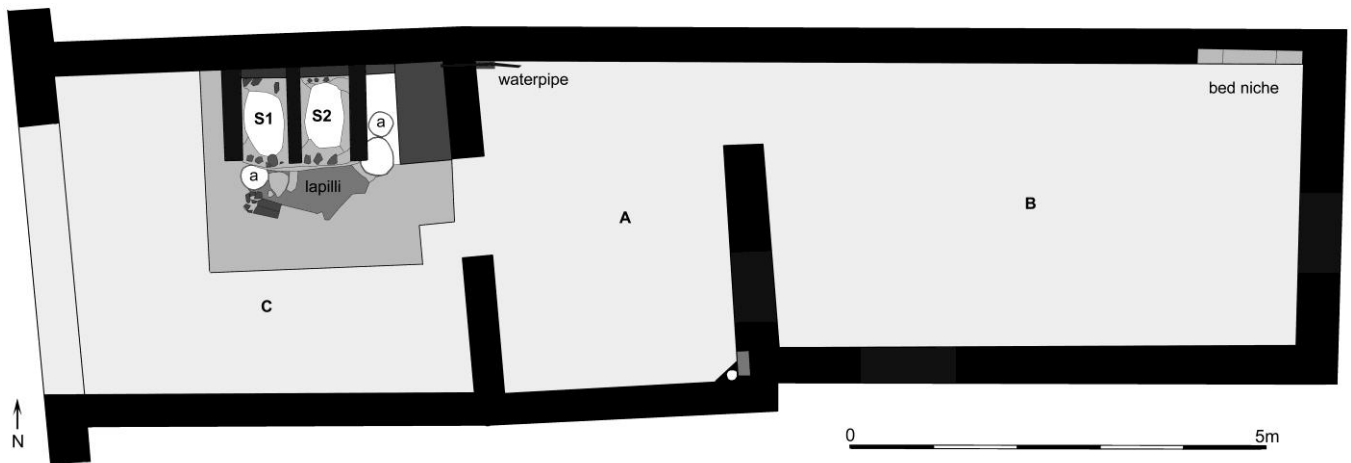


Fig. 20. Taberna I 4, 7: map.



Fig. 21. Taberna I 4, 7: overview.

fullonica, but due to the amount of modern sediment in the room and its rather compact nature, the area in front of the installation had not been investigated to the AD 79 floor level.²⁶ While this was not essential then, our discoveries in 2007 and during the 2008 campaign raised questions about the facilities surrounding the fulling stalls. Hence, it was decided to reinvestigate the workshop specifically focusing on the relation between the fulling stalls and the central part of the shop (fig. 20).

The picture that emerged was both significant and confusing. What was significant was that, as in most other *fullonicae* investigated during the project, evidence could be found for a work floor in front of the fulling installation: there were the remains of a rim in the form of an *imbrex* attached to the floor ca. 35 cm south of stall S1 (fig. 21). The rim was not parallel to the border of the fulling installation, but slightly angled towards the southeast, so that the work floor became slightly wider towards the back of the shop. Yet, what was strange, was that the floor remains between the rim and the fulling stalls were scarce, and appeared to have been broken off. Indeed, most of the area southeast of the fulling installation consisted of little more than *lapilli*, which, remarkably, even continued *underneath* the rim marking the entrance of stall S2. The holes left by the fulling tubs in both stalls also were filled with remains of the AD 79 eruption. This suggests that there had been structures of wood that had disappeared and subsequently had been filled up with *lapilli*, perhaps through the holes left by the fulling stalls.

In the narrow space between stall S2 and the large stone block in the northeast corner of the shop, remains of an amphora had already been identified in 2006. It could now be established that it had been fixed, though only

street, which practically means that it antedates all of them²⁵. As Seiler dated the floors in rooms A, B, E and G in the Augustan period, the implication is that both workshops in the southwest corner of *insula* VI 16 are Augustan in date and thus, in 79 AD, had been in use for at least 70 years, if not more. This is highly relevant, as it is actually the only place in Pompeii where it is possible to date a *fullonica* back to this period, even though *fullonica* VI 8, 20-21.2 seems to date back to a relatively early period as well.

Reinvestigated workshops

Taberna I 4, 7

The 2006 investigations in this *taberna* had allowed us to identify the installation along the shop's north wall as a

²⁵ SEILER 1992: 81.

²⁶ FLOHR 2007a: 131-132.

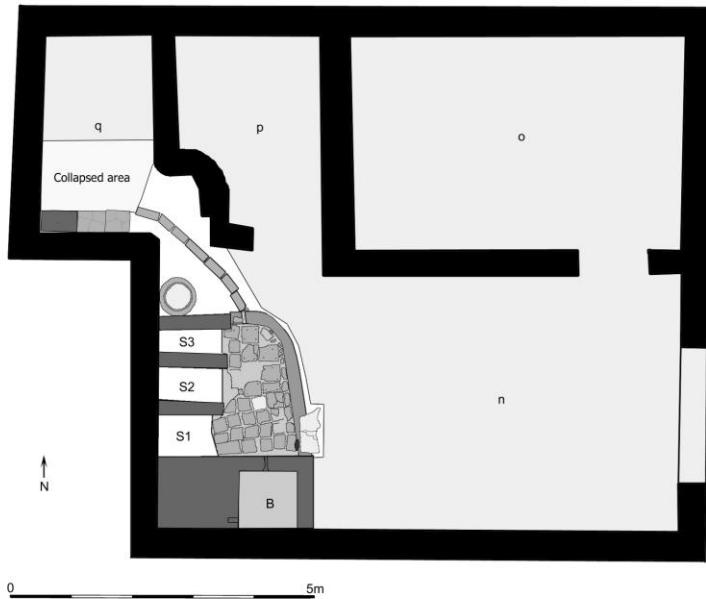


Fig. 22. Taberna VI 15, 3: map.



Fig. 23. Taberna VI 15, 3: overview of room Q.

79 pavement (fig. 23). Unfortunately, it turned out that traces of the floor and fixtures associated with it had only been preserved in a narrow strip of some 20cm along the south wall of the room: the rest of the remains that could reveal anything about the ancient use of the room had collapsed into a hole underneath it, which subsequently had filled up. As the size and the structural properties of the hole remained unclear, it was uncertain how much time it would cost to excavate it properly, and how safe this would be, especially considering the height of the walls surrounding the room. Since the remains found did not suggest that proceeding would return results that would significantly add to the project, it was decided not to proceed. The northern half of the room was cleared to a level of some 20cm above the floor level, to check whether there were any remains of larger installations, but this turned out not to be the case.

The remains found along the south wall consisted of a low pillar, in the southwest corner of the room, which marked the end – and was partially placed on top – of a sloping floor of two tiles, which were all heavily damaged, and had partially disappeared in the collapse; notably, the pillar seemed to be completely preserved *in situ* (fig. 24). While it is hard to be completely sure because of the damage to the structure, what was found had all the properties of a small

the lowest part of the structure in which it had been fixed had been preserved. Directly next to it, on a lower level, were the remains of a second, much larger vessel, with a diameter of 41cm. While this is partially overbuilt by the reconstructed east wall of stall S2, it does not seem to have been out of use in antiquity, indicating that there were not one (as presumed in 2006) but two storage jars related to stall S2. The situation with the storage jar related to stall S1 also appeared more complex than was thought: the small jar identified in 2006 turned out to be completely fragmented, and on removal, the remains of an amphora appeared. This amphora had been embedded into the floor between the *imbrex* and the rim of stall S1. It seems that the jar had not been part of a fixed structure but just happened to be placed on top of the amphora, and then had been pressed into it, breaking the upper part of the *amphora*.

While the results in this *taberna* present only a modest addition to those of the 2006 campaign, it makes the position of the fulling installation in its context much clearer, and makes it much easier to compare this small *fullonica* with the other workshops studied in the project.

Taberna VI 15, 3

The main working installations of *taberna* VI 15, 3 were all investigated in 2006 (fig. 22). Yet, one of the most puzzling remains discovered then was a narrow drainage channel made of *imbrices* that ran from somewhere in room Q to the work floor in front of the fulling stalls in the main room.²⁷ Unfortunately, room Q was partially backfilled, and it was not possible to follow the channel further than the entrance of the room in 2006. Hence, it was necessary to go back and see to which facilities it was connected. During the 2008 campaign, the southern half of the room was cleared to, approximately, the height of the AD

²⁷ FLOHR 2007a: 133-134.

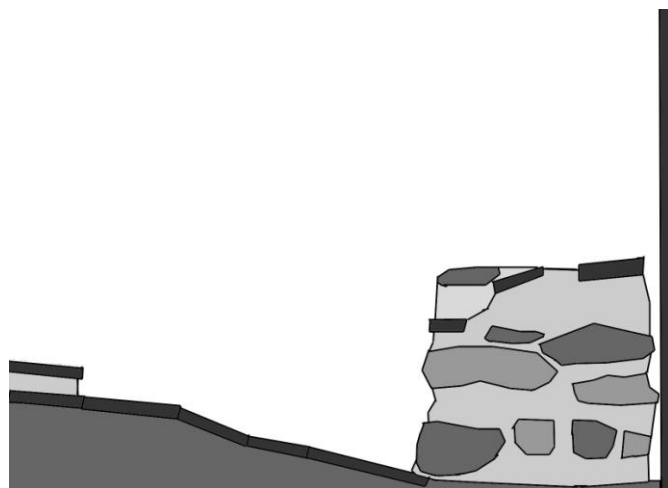


Fig. 24. Taberna VI 15, 3: drawing of remains in room Q.

toilet: Pompeian toilets generally had sloping floors in front of them, and they often had wooden seats resting on corresponding supports of stone, which surrounded the entrance to the cesspit or drain.²⁸ While the second, corresponding seat support here is lacking, it may easily have fallen into the hole when it collapsed. If the remains indeed were related to a toilet, it is attractive to suggest that what collapsed was the cesspit related to it.

The drainage channel connected to the fulling installation in the main room may also have been related to this toilet in some way, but this is of course not necessarily the case – and would also be without parallel in Pompeii; in fact, while two subsequent *imbrices* appeared *in situ*, and while there is evidence suggesting that the channel was covered by the floor tiles of the room, the rest of the channel also seems to have fallen into the collapsed floor; indeed, part of an *imbrex* could be seen projecting from the collapse

debris. Thus, unfortunately, the riddle is bound to remain unsolved.

Nevertheless, despite this slightly unsatisfactory outcome, the investigation did fill in some details about the functioning of the *taberna* as a whole: in the excavation report, Sogliano ascribed some of the remains found in the *taberna* to ‘the room where the kitchen was’, but the text does not make entirely clear whether he was referring to room Q or to room P directly next to it. The presence of a toilet – often closely associated with kitchens – would make this room the most logical candidate, and in any case the situation shows, once more, how closely related living and working were in Pompeian *tabernae*.

Discussion

With the results of the 2008 season, the ‘Cleaning the Laundries’ project has made it possible to build up a more or less complete inventory of the remains of the excavated and identifiable *fullonicae* of Pompeii: the two *fullonicae* of the city that were not studied in the project, *fullonica* I 6, 7 and VI 16, 6, were already relatively well-documented, and workshop I 6, 7 of course does not need to be cleaned in order to be studied as its remains are plainly visible²⁹.

The project as a whole has shown that the remains of Pompeian fulling workshops, many of which were very small, are highly indicative of the production process and its spatial organization. Significant is the discovery of a rimmed work floor in front of the fulling installations in all *fullonicae* where remains of the ancient floor surface had been preserved: this effectively separated the area where workers dealt with alkaline chemicals and liquids from the rest of the workshop, thus subdividing the *fullonica* in a ‘wet’ (or ‘dirty’) part and a ‘dry’ (or ‘clean’) part, which must have enhanced the efficiency of the production process. Equally relevant was the fact that in many more workshops than was expected, evidence for storage jars could be found; these made it possible for fullers to add more chemicals to the mixture in the tub without having to walk around the workshop, which also enhanced the efficiency of the production process.

Another issue that became particularly clear during the project was that the history of many of the fulling workshops was much more complex than has generally been assumed in the past: especially that of many small workshops. It has often been thought that they had only one phase – the one directly following their construction. Yet, many workshops show evidence of subsequent adaptations, repairs or even, as was the case with *fullonica* V 1, 2, extensions. This was of course to be expected, but it emphasizes, all the more, that archaeologists should pay careful attention to the microhistory of the workshops they study, and perhaps more than they often have tended to do in the past, when workshops were often simply presented as ‘static’ structures that were, perhaps, constructed at some moment, but had no subsequent history of their own³⁰.

Miko Flohr
 Assistant Director Faculty of Classics,
 University of Oxford
 miko.flohr@classics.ox.ac.uk

²⁸ JANSEN 2002: 59-61, esp. fig. II.82.

²⁹ SEILER 1992: 70-72; SPINAZZOLA 1953: 765-785.

³⁰ See e.g. MOELLER 1976; MAYESKE 1979.

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