

Discussion and Conclusions

It is clear that the plasters investigated fall into very distinct groups. The vast majority of samples are clearly distinctive, and there is generally no problem in placing them into specific groups, determined by macroscopical observations. These groups of plasters are always found in the same sequence, wherever a sequence of plasters is visible. Eight different groups of plasters have been identified and are listed in chronological order from A to H. The earliest plaster type is not necessarily the same in all buildings, though this was sometimes the case.

Not all phases are represented in every house, probably because the owner did not need or have any wish to redecorate. Plasters in group C, for example, were used for 2nd style decorations in three houses in *insula* I 9. At the Forum, such a plaster was found only in the cella of the Temple of Jupiter. On the other hand, plasters in group E, connected with the 3rd style, were found in all houses in the *insula* and was common also at the Forum, used in all buildings except for the Basilica, where only earlier plasters were found, and the Macellum, which had only later decorations.

The chronological order of groups and phases is clear, but what do we know about the correlation between plasters and styles? This is more problematic, not least of all since there is no unconditional agreement on their dating. When discussing with myself, I think of plasters in terms of “1st style”, “2nd” and so on, since the typologies are clear and I know this kind of definition is not explicit. It is just a quick way of characterising a sample. On the other hand, formally I avoid this simple way of indication, since it might be misunderstood. This has to be explained.

Plasters in group B were used for 1st as well as 2nd style decorations, appearing as the second phase in buildings in the *insula* as well as at the Forum. Consequently, plasters in group A represent the early phase of the 1st style. Group B represents the later, but in addition, it was used also during the early period of the 2nd style. Group C is clearly related to the 2nd style. Plasters in the two groups D and E were used for 3rd style decorations, D possibly representing the initial phase; this has to be judged by art historians or other experts. Furthermore, plasters in group F might belong to the 3rd as well as the early 4th style.

My explanation for these variations in the plaster's composition is that the constituents within a filler reflect the supply from where it was extracted, and that this source was delivering material during a specific, delimited period. The fact that one kind of plaster was used for two successive styles, may be explained as depending on the taste of the commissioner, who could be traditional or open for new solutions. Otherwise it might be explained as one workshop continuing to use some remaining stock of material when other workshops brought materials from new sources. We also have to consider that the Pompeian's were not aware of the four different styles, and therefore did not consider our need of establishing facts about their decorations. Below is a brief summary about my considerations of plaster groups, their phases and the connected styles.

Plaster groups, phases and styles

Group A

Plasters in group A are immediately recognizable; they have a fine-grained filler with many crystals, especially long, black ones. Towards the end of this research period I realised that group A is not homogeneous and there are variations that need to be further

investigated. These variations regard the presence of crystals; some contain almost exclusively black particles. Others have inclusions of yellow and/or green crystals. At present these petite variations are being identified as *Aa*, *Ab*, and *Ac*.

Type Aa was found in Casa del Frutteto, Casa di Amarantus, the Temple of Jupiter and in the Temple of Apollo. It contains almost exclusively black particles. It represents the earliest phase in these buildings.

Type Ab was found in Casa del Bell'Impluvio and Casa del Puer Successus. It represents the earliest phase in these buildings. The filler contains some transparent olive green and yellowish particles.

Type Ac was found in Casa di Cerere, in the Basilica, the Temple of Apollo and in the Casa di Pansa. It represents the second phase in the Temple of Apollo and the first phase in the Basilica, Casa di Cerere and Casa di Pansa. This filler contains many olivegreen, yellow and bright yellow crystals. It is extremely fine-grained.

This makes *Aa* the earliest plaster in the group. *Ac* is later than *Aa*, because it covers the earliest phase in the Temple of Apollo. At present, I do not know where to place *Ab*; it might be a middle phase or the latest chronologically. I also want to point out that further studies must be carried out in order to, possibly, ascertain any existing chronological order between these early 1st style plasters. Further, having received the results of the ICVBC investigation, the necessity of a deepened study becomes evident. Subgroups in group A have been identified independently of my research method. The ICVBC have identified four groups; 1.1, 1.2, 1.3, and 1.4 (see appendix) and I found the three mentioned above. It is far too early to draw any conclusion or even to make valid suggestions on this issue: I just wish to point out that subgroups were identified.

All houses in *insula* I 9, and the "old" buildings at the Forum, have remains of a plaster belonging to group A. The 1st style in Pompeii is generally dated to between *c.* 180-80 BC, and the houses in *insula* I 9 to *c.* 120 BC. The plasters in group A represent the earliest phase.

Group B

Plasters in group B have a large-grained filler, mainly containing black and grey particles. This kind of plaster was used for 1st style decorations in Casa del Bell'Impluvio, the Basilica and the Temple of Jupiter and for the early 2nd style decorations in the Casa di Cerere. In all cases it represented the second decoration phase.

Group C

Plasters in group C have fine-grained fillers containing many brown grains. The famous 2nd style decorations in the Casa di Cerere were painted on this type of plaster, and the same kind was used for the decorations in the cella of the Temple of Jupiter. Plasters in group B are different to those in groups A and C, being large-grained, and containing few crystals. In Casa di Cerere two kinds of plaster, groups B and C, were used for the 2nd style decorations, indicating that part of the house was decorated at one time and the remaining rooms at another.

Group D

Plasters in group D have a multi-coloured filler with extremely fine grains. This type was found only in the Casa del Bell'Impluvio, where it was used for some 3rd style paintings. It is distinctly different from plasters in group E, but rather similar to plasters

in group C. I would regard this as an intermediate phase between the late 2nd and the early 3rd style.

Group E

Plasters in group E were identified in all houses in the *insula* and in many of the buildings at the Forum. It was used for 3rd style paintings in Casa del Frutteto and in Casa del Bell'Impluvio. It was also used at the Temple of Jupiter, the Temple of Apollo, the Eumachia and the Temple of Vespasian, indicating a general and intense decoration period in Pompeii during the period of the 3rd style.

Group F

Plasters in group F are fine-grained and contain many red particles. Such plasters were found in only a few buildings: in the Edifice of Eumachia it had been used, for example, in space 221, applied upon a plaster of type E. In Casa di Cerere this kind of plaster was used in room 9 covering an earlier phase (C) and in room 14. These decorations have been considered to be the 3rd or early 4th style.

Group G

4th style paintings in Casa di Amarantus and the original decoration in the Macellum were made on this kind of plaster. It is sandy and dark but none the less a well-made plaster. It is, so far, the last phase found with painted decorations. The 4th style is dated to between c. 45-79 AD. This plaster probably belongs to the period between 45 and 62, i.e. before the earthquake.

Group H

Plasters in group H belong to redecorations made during the last years of Pompeii. These are reused, made of crushed material from earlier decorations with the addition of fresh lime. Group H is not a homogeneous group due to the variations in the filler. On the other hand, the common feature is that they are being reused and hastily made, even containing materials, such as ceramics, marble, glass and paint flakes from earlier decorations. Two different kinds of reused plaster appeared in stratigraphical order in Casa di Amarantus. I have considered these as two types but still belonging to the same group. This plaster type was used for redecorations and repairs considered as post-earthquake, such as at the Temple of Jupiter and the Macellum, as well as in *insula* I 9. Consequently, these plasters belong to the period 62-79 AD.

Variables studied

There are some grey areas when it is not so clear as to which group a particular plaster belongs. Ambiguities are often due to one of a few factors, mainly linked to technology, i.e. the mixing of natural materials and the plastering technique, both of which allow minor differentiations in the composition of the plaster. These variations may be due to the craftsmanship, and/or economic circumstances and limitations, i.e. they are related to specific workshops or commissioners. Another variable is the plaster's actual state of preservation, which has an impact, not least of all on its stability.

In spite of the very small size of the samples they mostly contain all information related to their type. A well-mixed plaster with a small grained filler is much the same over a large area, while, on the contrary, a carelessly mixed plaster with inclusions of large grains is less uniform. Also, layers with clean plasters may have been applied at the

beginning of the day's work, while the same type but dirty, may have been the mixture that remained at the end of the day.

Insula I 9 and the Forum

The plaster groups that were identified within *insula* I 9 are the same as those sampled elsewhere in the city, notably from the more datable public buildings at the Forum. The technology differs between houses in *insula* I 9. Not less significant is the difference in craftsmanship perceptible at the *insula* and at the buildings at the Forum, where many decoration phases seem to illustrate the recommendations of Vitruvius on how to make durable preparations for wall painting.

Technology and craftsmanship may differ, but the plaster groups are the same within each house, right across the *insula* and, seemingly, across the city. It is clear that these buildings have different histories. The houses in *insula* I 9 were the properties of different owners and were not decorated as part of the same programme, nor are these of the same standard. It is clear that the preparations for painting in the Casa del Bell'Impluvio are of a different, and better quality than those at the Casa di Amarantus and Casa di Cerere. In addition, the latter are generally more deteriorated than the layers in the three houses at the north part of the *insula*. One possible explanation is that the south part is situated at a lower level and possibly more exposed to dampness from the ground. The decorations in the official buildings at the Forum are of superior quality to those of the private houses investigated, comparable to those at the Torre di Prima Porta and the Villa of Livia at Prima Porta, which are outstanding.

Plaster analyses

Plaster analysis at the CNR-ICVBC confirm that there are links between plaster types and periods. There is a clear correspondence between the results achieved with these different methods. There are some variations in our results, mainly depending on the different criteria that are used for petrographical and technical analyses and those used in the present study, as described above. One decisive common criterion regards the granulometry, a detail where I have had the advantage of studying many more samples of each kind in each house, making me aware of the natural variations in grain size at the same layer, the same wall. I have given attention to questions regarding specific plasters in different chapters of this report and integrated important aspects from the petrographical and chemical investigation in my discussions. It seems, however, fair to present the synthesis of observations made by Drs. Susanna Bracci and Fabio Fratini at ICVBC as an introduction to their vast and detailed documentation (see appendix).

Preservation considerations

One of the things I first noted at the site was that a frail plaster, in many cases, was covered by a layer that was more solid. My first explanation was that a poor or lean plaster had first been applied and that this layer was protected by a fatter one with more lime. But, it seems more likely that the first layer eventually lost its solidity in the process of decay, and specifically due to capillary suction and the transportation of humidity and salts within the walls, causing the first layer to break down and gradually pulverise and finally fall. When falling, the rather undamaged decorated layer falls as well. Consolidation of the first layer and the elimination or at least reduction of standing water and dampness at the ground level may save a lot of decorations. As long as the

decorations are relatively well-protected and not exposed to excessive humidity, Portland cement, or modern conservation materials, the plaster is in a surprisingly good condition, often solid and with a hard stucco layer. Detaching decorations could be given a first-aid treatment. One way of doing this is to use suitable lime plaster to fill the cavities, “gluing” the lifting areas to the structures. In my opinion it is better to use a traditional lime plaster and save the decorations, than to lose them in attendance of a perfect solution or, spending a huge amount of money for a total conservation project. Colours fading, salt efflorescence, decorations falling from the walls, mosaics disintegrating, and so on – these problems concern the preservation of any excavated site. Decay starts and continues. Mosaic decorations gradually disintegrate, colours fade on the wall paintings, or they are being “eaten” by salts. These problems, necessary to discuss, do not concern only Pompeii, but all archaeological sites where mosaics and wall paintings remain. Maybe it is time to question some restoration doctrines that have dominated for almost half a century. Maybe security repair and maintenance is a good solution. Maybe traditional technology is not so bad after all.

Summing up

The preliminary results indicate that analysis of plaster types may prove to be a powerful tool for dating decorative plaster. The results achieved do not contradict the broad outlines of the stylistic analysis of decorated plaster surfaces of the, so-called, Four Pompeian styles, which has been the standard criterion until now. The great advantage of the present method of investigation is that it is scientifically controllable, and offers the possibility of analysing the numerous plasters where the decorative surface is either invisible (in seams) or insufficiently preserved to allow dating by stylistic means. There seems to be a clear correlation between the status of a building and technology, indicating that decorations in public buildings or ordered by wealthy families are of superior quality to those exposed in more simple buildings. In spite of the indisputable differences in technological quality in Pompeian buildings, the fillers within each group are, at macroscopical observation, of the same composition. Therefore, it seems that filling materials were delivered from specific deposits, or caves, during specific periods. However, 1st style stuccowork seems to be generally of an excellent quality. More work is needed to build up a comprehensive basis of plaster types, especially with regards to the variations in the early plasters.

Thinking ahead

I want to mention that even earlier plasters from levels below those of the second century have been found. Examinations of such plasters should be placed in relation to the plaster groups identified so far. There are indications of different characteristics of these early plasters, which might, therefore, offer suggestions as to the development of technology at the beginning of the 1st style.