

The Pompeii Artifact Life History Project: Conceptual Basis, Methods and Results of First Three Seasons

J. Theodore PEÑA,¹ Caroline CHEUNG²

⁽¹⁾ Department of Classics, University of California, Berkeley, Berkeley, USA

tpena@berkeley.edu

⁽²⁾ Graduate Group in Ancient History and Mediterranean Archaeology, University of California, Berkeley, Berkeley, USA

caroline.cheung@berkeley.edu

Abstract

This article provides an overview of the research goals and methods of the Pompeii Artifact Life History Project and briefly characterizes the work undertaken and results attained during the course of the project's first three study seasons, completed in June and July of 2012, 2013, and 2014. The aim of the project is to elucidate various facets of the life history of portable material culture - including manufacture, acquisition, use, maintenance, reuse, recycling, and discard - at Pompeii during the town's Roman period through the analysis of selected sets of materials recovered in past excavations. To date, the project team has initiated four different sub-projects: the study of the portable material culture from the *Villa Regina a Boscoreale*, a modest farmhouse 1.4 km northwest of Pompeii; the analysis of refuse deposited on the street to the west of the *Insula dei Amanti* and in cesspits underneath the sidewalk along the east side of this street; the analysis of refuse middens deposited against the outer face of the town wall in the *Torre VIII/Port di Nola* area; and the analysis of a set of *dolia* - massive storage jars - recovered in the garden/vineyard in *Regio I, Insula 22*. This work has provided valuable new insights into various facets of artifact life history at Pompeii.

Keywords: Pompeii, artifact life history, Roman material culture

1. Project research goals and methods

The Pompeii Artifact Life History Project (PALHIP) is an archaeological research project being undertaken with a view to elucidating the various factors that affected the life history of portable material culture (ceramic, glass, and metal vessels, bone and metal implements, worked stone objects, metal and ivory fixtures and ornaments, etc.) in and around the town of Pompeii during the ca. 160 years of its Roman period (ca. 80 BCE – 79 CE), with particular emphasis on the post-earthquake years (62-79 CE). It is being carried out by a small (ca. three- to four-person) research team from the Department of Classics/Graduate Group in Ancient History and Mediterranean Archaeology at the University of California, Berkeley under the direction of the first author and with the authorization of the Soprintendenza Speciale per i Beni Archeologici di Pompei, Ercolano, Stabia. To date, the team has completed three five- to six-week study seasons (June-July 2012, 2013, 2014) of a projected five-year research cycle. This contribution explains the project's conceptual background and methods and describes some of the results obtained.

The inspiration for PALHIP derived from a set of research questions that occurred to the first author in the course of writing a book that considered the various factors that affected the life history of Roman pottery [3]. The project's

approach is low-impact, low-cost, and straightforward, entailing the description of selected groups of artifacts excavated at and in the environs of Pompeii in the past by other projects that were recovered in contexts that promise to elucidate the various stages in artifact life history. These include manufacture, acquisition, use, curation (subsuming maintenance, repair, and storage), reuse, recycling, and both provisional (i.e., temporary) and definitive discard. The team employs what are for the most part low-tech methods - careful visual examination, supplemented in some instances with examination under ultraviolet light and/or a Dino-Lite AD413T digital microscope - to characterize the condition of each artifact. We accord particular attention to documenting various kinds of what archaeologists term use alteration, that is, changes to the artifact that are the result of its use. These include abrasion, cutting, chipping, denting, cracking, breakage, and deliberate post-manufacture modification (e.g., the removal of some part, repair by the reattaching of a part that has broken away), as well as the presence on artifact surfaces of staining, content residues, and soot.

PALHIP is a paperless project, with the team employing a MacBook Pro and third-generation iPads networked via a wireless router for all data recording and management tasks. The database software employed, FileMaker Pro 12, has a remote sharing capability that permits the team members to update our databases simultaneously while working with separate devices. For working photographs we employ our iPad-mounted cameras, while final photographs are produced using a Nikon D5100 digital SLR camera. As useful, we employ AutoCad to determine vessel capacity, displacement, and surface area from standard profile drawings utilizing a routine developed specifically for the project, and diagram the sequence of steps involved in artifact manufacture employing Harris Matrix Composer software. Beginning this year, preliminary results and other project-related information will be made available to the public through the website *Res Romanae: The University of California, Berkeley Roman Material Culture Laboratory*.

2. Overview of research accomplished to date

Each study of a distinct group of artifacts within the compass of PALHIP is referred to as a sub-project. To date, the team has completed one sub-project and has initiated another three. The subsections that follow describe each of these.

2.1 Sub-Project 1: The study of the portable artifacts from the *Villa Regina a Boscoreale*

During the period 1978-1980 the then Soprintendenza Archeologica di Napoli e Caserta undertook the excavation of the *Villa Regina a Boscoreale*, a modest farmhouse situated 1.4 km northwest of Pompeii's *Porta di Ercolano*. This work, carried out under the direction of Stefano De Caro, involved the exposure of the entire structure down to its 79 CE phase, with the recovery and documentation of all of the portable artifacts found inside it. This was followed dur-

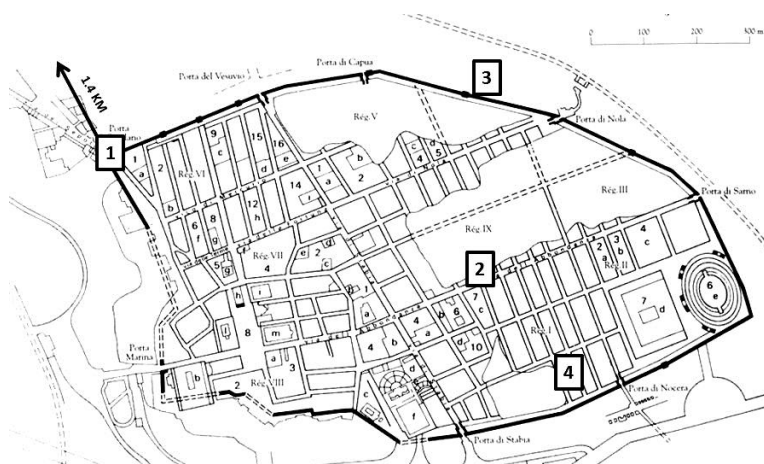


Fig. 1: Plan of Pompeii showing locations of Sub-Projects 1-4.

ing the period 1980-1983 by the excavation of the area around the villa down to the 79 CE ground surface out to a distance of between 7 and 22 m from the structure's exterior walls. The vineyards, garden, open spaces, roads, and other features exposed were subject to careful documentation and a substantial portion of the portable artifacts present on the ground surface was collected and documented. The results of this work were published by De Caro in a 1994 monograph [2] .

Some of the villa's rooms were undergoing remodeling at the time of the 79 CE eruption, while only a limited number of rooms yielded what appeared to be in-use portable artifacts. On the basis of this evidence De Caro concluded that the villa had not been restored and reoccupied as a regular residence following damage inflicted by the Earthquake of 62 CE, and that it was being used in some irregular fashion in 79 CE, perhaps as a base of operations by agricultural workers employed in the surrounding vineyards.

PALHIP chose to begin with a sub-project dedicated to the study of the portable artifacts recovered in and around the villa in use-related, provisional discard, and definitive discard contexts on account of the relatively rigorous artifact recovery protocols under which these materials had been collected and the fact that they had already been subject to regular documentation and publication, with catalog descriptions and drawings for most artifacts included in the 1994 monograph. This work occupied the team for the entire 2012 season and all but the final week of the 2013 season.

A substantial set of portable artifacts in use-related contexts was encountered in just one room, Room 12, a storeroom adjacent to the villa's main entrance. Room 2, the villa's kitchen, was filled to a considerable depth with an ash layer that contained a substantial number of portable artifacts in provisional discard. The ground surface of the vineyards, garden, and open spaces around the villa produced numerous intact and fragmentary portable artifacts in definitive discard.

The set of portable artifacts in Room 12 is of exceptional interest. This room, outfitted to serve as a storage space, appears to have been in regular use for this purpose in 79 CE, with a small hearth inserted in its southeast corner, perhaps as a consequence of the abandonment of the villa's kitchen, as evidenced by the ash layer noted above. A wooden cupboard with at least two and perhaps as many as four shelves was set against the western end of the north wall, there was a single wooden shelf attached to the wall above it, and at least one and perhaps two wooden shelves attached to the wall to the east of it. The excavators were able to reconstruct these elements through the plaster casting method and to document the items being stored inside and on top of the cupboard and on the shelves. There were, in addition, several items set upon the floor along the north wall to the east of the cupboard, and along the whole of the south wall. The set of items recovered in the room included the following: copper alloy: one pitcher, one bucket, one fragmentary lamp stand; iron: one hatchet, one bracket; glass: one bottle, one ampule, one small disk; stone: one hone; ceramic: two complete and two fragmentary lamps, two Italian *sigillata* cups, one complete and one fragmentary thin-walled ware beaker, one complete and one fragmentary jar, one bowl, one slipped bowl with an internal handle, one bottle, two pitchers, one dice cup, and one complete and one fragmentary lid all in carbonate fabrics, six cookpots, three casseroles, three jugs, one jar, one basin, one plaster-surfaced incense burner, and nine lids all in ferruginous fabrics, one Schöne 1 table *amphora*, one Schöne 6 table *amphora*, 1 Cretan 1 *amphora*, 1 flat-bottomed Dressel 2/4 *amphora* with its upper portion removed, and the base and lower wall of a *dolium* being reused as a basin.

The analysis of these items permits numerous interesting observations regarding the ways in which they were utilized. While there is not the space to develop such an analysis here, suffice it to say that collectively the items being stored in this room display a notably high degree of use alteration pointing to prolonged employment. How typical this circumstance might be of Pompeii or of the Roman world more generally is impossible to say, given the lack of similar analyses of analogous sets of items in the literature. We will here offer a brief characterization of just one of these items in order to give some idea of the kind of results obtained. The item in question is an example of a flanged casserole with a carinated wall and a flat bottom in a ferruginous fabric. It was found stored upside down on one of the shelves of the cupboard. This vessel was intact, except for a substantial portion (52 percent) of the rim/flange,



Fig. 2: Sub-Project 1: Casserole. Left: cracks on exterior. Right: residues on interior.

with the missing areas consisting of at least seven fragments. It displays patterns of exterior sooting and interior incrustation that are typical of examples of this form from the *Villa Regina*. The exterior shows heavy sooting over all surfaces, including the fracture surfaces left where the fragments of the rim/flange broke away. This indicates that this vessel was employed on multiple occasions for the heating of foodstuffs in a position elevated above the heat source, and continued to be used even after a substantial portion of the rim had been lost. On the exterior the lower wall and base display a well-developed network of cracks that in some cases propagate outward from large inclusions erupting on the surface. In some cases these cracks - the result of thermal stress and/or thermal shock - appear to pass completely through the wall, suggesting that this vessel was on the verge of catastrophic failure (i.e., breakage) when last used. The interior bears a zone of light- to dark-reddish brown incrustation on the floor that extends up onto the lower wall, apparently residue from the substances cooked in it. Above this, near the junction of the lower and upper wall, are irregular linear patches of a whitish incrustation. These are particularly notable along the lines of the cracks referred to above, and are presumably calcareous deposits left by the liquid portion of the substances cooked in the vessel, which must have contained hard water. It should be noted that the examples of the other major cooking form represented at the *Villa Regina*, the cookpot, display a completely different pattern of sooting and interior incrustation, pointing to a different method of use.

2.2 Sub-Project 2: The study of refuse deposits from the street to the west of the *Insula dei Casti Amanti*

Since 1987 the Soprintendenza Speciale per i Beni Archeologici di Pompei, Ercolano, Stabia has been excavating in the *Insula dei Casti Amanti* (Regio IX, *Insula* 12) under the direction of Antonio Varone. During the period 2003-2004 this work involved excavation in the area of the unnamed street that separates this block on its west from Regio IX, *Insula* 13 [1]. These operations saw the excavation of two test trenches that removed the refuse deposits on the 79 CE street surface. These were *Saggio* D, which was situated in the street beginning at a point ca. 2 m north of the intersection with *Via dell'Abbomdanza*, and *Saggio* C, which was situated in the street beginning at a point ca. 18 m north of this intersection. This work also involved the excavation of the contents of three septic pits situated underneath the sidewalk that ran along the eastern side of the street, designated, from south to north, *Fossa* I, II, and III. During the final week of the 2013 season the PALHIP team undertook a preliminary analysis of the refuse deposit recovered on the street surface in *Saggio* D and the fills from all three cesspits, none of which material had been examined since the time of its excavation. It was anticipated that these sets of materials would provide interesting insights into the kinds of refuse deposited on a minor side street at two different points - one close to the intersection with a major thoroughfare and one somewhat farther from this - as well as the nature and condition of the artifacts being deposited in provisional discard in domestic cesspits. Our intention was to devote a substantial portion of the 2014 season to the more detailed analysis of these materials, but, in the event, logistical difficulties precluded us undertaking this work at that time, and at present all we possess are the preliminary data collected in 2013.



Fig. 3: Sub-Project 2: Pottery fragments (some joined with tape) with red and yellow pigment on interior surface.

In order to provide some idea of these results we will provide a brief description of the refuse deposit recovered on top of the street surface in *Saggio D*. This consisted of a wide variety of materials, including fragments of pottery and vessel glass, complete and fragmentary artifacts in iron, copper alloy, and worked bone, and architectural materials, including sherds with mortared surfaces, mosaic tesserae, and fragments of stucco, marble revetment slabs, marble architectural elements, fired clay, and roof tiles, as well as animal bone and shell. There was a noteworthy number of objects in copper alloy (49, weighing 118 grams), and surprisingly few fragments of vessel glass (8, weighing 1 gram), suggesting that broken glass was assiduously recycled, whereas objects in copper alloy were not. The pottery was notably comminuted, with sets of sherds belonging to the more fragile classes (Campana B black gloss ware, Italian *sigillata*, South Gallic *sigillata*, thin-walled ware, lamps) averaging between 1 and 3.5 grams each. In some cases, several very small sherds joined, suggesting that the reduction of vessel fragments to very small pieces occurred after they had been deposited onto the street. There was a substantial presence of highly residual material (Campana A, B and C black gloss ware), and a small, but significant presence of materials dating to the final years of the life of the town (South Gallic *sigillata*, including the marbleized variety, Eastern *sigillata* B, *Firmalampen*). Also present were small fragments of several ceramic vessels that had an incrustation of red or yellow pigment on their interior surface that may have been employed in connection with the frescoing operations underway in the nearby *Casa dei Pittori al Lavoro* at the time of the 79 CE eruption.

2.3 Sub-Project 3: The study of refuse middens outside the wall in the *Torre VIII/Porta di Nola* area

During the period September-November 1978 a team from the Università Statale di Milano under the direction of Cristina Chiamonte Trerè undertook the excavation of three large refuse middens that had been deposited against the outer face of the town's fortification wall in the area of *Torre VIII*. Two of these, termed *Cumulus I* and *II*, were deposited to either side of *Torre VIII*, while the third, termed *Cumulus III* was deposited against the outer face of the wall ca. 55 m further along the curtain to the southeast in the direction of the *Porta di Nola*. The team also excavated three small test trenches against the outer face of the wall between *Torre VIII* and the *Porta di Nola*, termed *Saggio I*, *II* and *III*. One of these, *Saggio II*, located between *Cumulus III* and the *Porta di Nola*, excavated a portion of another such refuse midden. These features were presumably produced by the dumping of refuse from the tower/wall. In 1986 Laura Romanazzi and Anna Maria Volontè, who were part of the excavation team, published a study of the materials from the four middens belonging to what were at that time the better known classes of pottery, along with the small number of glass objects recovered [4]. On the basis of this work these two scholars concluded that ca. 90 percent of the materials in these deposits dated to the Julio-Claudian and early Flavian periods, and that the dumping that led to the formation of the middens may have occurred in connection with cleanup operations undertaken

following the earthquake of 62 CE. The remainder of the materials from these deposits were never studied or published.

When it proved impossible to continue the team's work with the *Insula dei Casti Amanti* materials in 2014 we shifted the focus of our attention to the study of the four *Torre VIII/Porta di Nola* midden deposits, anticipating that the evaluation of the materials from these features - extramural definitive discard contexts - would provide an interesting contrast with the sets of materials from the provisional and definitive discard contexts studied at the *Villa Regina* and the *Insula dei Casti Amanti*. We completed a large portion of this work during the 2014 season and plan to finish our study of these deposits in 2015.

While the complete absence of materials such as South Gallic *sigillata* and *Firmalampen* confirm Romanazzi and Volonte's inference that the dumping operations that led to the formation of these deposits did not continue into the final years of the town's life, the robust presence of black gloss ware calls into question their assertions about the overwhelmingly imperial dating of the materials that they contain. Perhaps the most interesting result of our work was the large amount of material that we were able to document in these deposits relating to craft production. In the area of textile manufacture, we encountered no fewer than 12 pyramidal ceramics loom weights - for the most part extensively chipped - a bone spindle, a broken bone spindle whorl, and a large (at least ca. 12 cm long) copper alloy needle that had been bent and had one end of its eyelet broken off. In the area of bone working, we documented five complete or fragmentary bone rings that had been sawn from cattle long bones, presumably as a preliminary step in the manufacture of bone items of some kind. Finally, in the area of pottery production, we documented fragments from several different vessels that displayed firing defects, some substantial enough to make it clear that the vessels from which they derived were wasters - that is, vessels with manufacturing defects so substantial as to render them unusable - some indicative of irregular firing, though not extreme enough to make it clear that the vessels in question were wasters. These fragments belonged to a variety of forms and fabrics, including a lid and an *olla perforata* (flower pot) in a coarse ferruginous fabric, a thin-walled ware beaker with a vertical wall in a ferruginous fabric, and a two handled jar with a lid seating in a carbonate fabric. These materials suggests that both textile manufacturing and bone working took place at no great distance from *Torre VIII*, presumably somewhere in *Regio IV* and/or *V*, and, perhaps most interestingly, point to the presence of a pottery workshop somewhere in this area. PALHIP is currently collaborating with Vincenzo Morra's archaeometric research group in the Dipartimento delle Scienze della Terra at the Università di Napoli Federico Secondo in a program of compositional analysis aimed at establishing the characteristics of the three distinct fabrics represented and determining the raw materials and paste preparation practices involved in their production.



Fig. 4: Sub-Project 3: Craft production materials. Top: copper alloy needle. Bottom: bone rings.

2.4 Sub-Project 4: The study of *dolia* from Regio I, Insula 22

Beginning in 1955 and continuing into the early 1990s the then Soprintendenza Archeologica di Napoli e Caserta undertook the excavation of nearly the entire area of Regio I, Insula 22, a block located along the southern edge of the town. The northern ca. one-eighth of the block was taken up by a modest residence known as the *Casa di Stabianus*. The remainder of the block consisted of a large garden space annexed to this house, with the southern ca. two-thirds of the *insula* given over to a vineyard. The excavations uncovered a set of nine intact *dolia* (singular *dolium*) – massive jars employed for the storage of wine, olive oil, or other foodstuffs – sitting on the 79 CE ground surface in an open area between the residence and the vineyard. Also in this area was a large mound of roof tile and *dolium* fragments, and it appears that redevelopment work of some kind was being carried out in this part of the block in 79 CE. None of the *dolia* or *dolium* fragments from this area were ever studied or published.

Dolia were commonly set into the ground, with just their shoulder and rim exposed – so called *dolia defossa* – and the set of containers in Regio I, Insula 22 presented an excellent opportunity to examine both the lower and upper portions as well as the interiors of a substantial number of examples, potentially elucidating aspects of their manufacture and use. The PALHIP team accordingly arranged to carry out a study of these containers – at the upper margins of the realm of portable material culture in the Roman world – during the 2014 season. We completed the bulk of this work during this season, though plan to make some follow-up observations and analyze the containers' fabrics in 2015.

The *dolia* were all found lying on their sides. They may have been standing on their bases and been knocked over by the force of the first pyroclastic surge to reach this part of the town during the eruption of 79 CE. What they might have contained at this time – if anything – remains unknown. They consisted of six large containers grouped at the western side of the open area, and three small containers grouped in its central/eastern part. The large *dolia* were for the most part only partially excavated, rendering it impossible to obtain measurements of the overall dimensions for all but one of these. The heights of the three small *dolia* were 79, 81, and 94 cm, while that of the sole large *dolium* that could be measured was 135 cm. Preliminary calculations of the volumes of these containers made on the basis of their profile drawings yielded figures of ca. 133, 192, and 229 l for the three small *dolia* and 734 l for the large one.

Dolia were far too large to throw on a wheel, and were normally formed either by slab or coil building on a turntable. From cracks, seams, and breaks on several of the *dolia* examined it is evident that the containers in question were coil built. The potter began by forming the base from a thick disk of clay, then added a series of coils on top of this, smoothing the seams between these elements. The rim was formed by adding a coil to the outer face of the topmost coil and then molding this to shape.



Fig. 5: Sub-Project 4: *Dolium* forming. Left: seam at juncture of basal disk and first coil on exterior. Right: seam between two coils on interior near rim.



Fig. 6: Sub-Project 4: *Dolium* repair. Left: lead crack filling and tenons on large *dolium*. Right: iron crack filling and filling of cut for cross piece of staple (?) on small *dolium*.

Dolia were susceptible to cracking on account of the techniques employed for their forming combined with the notable thickness of their walls, and commonly show evidence of repair. This typically involved the filling of a crack with a lead compound of some kind (sometimes after regularizing the crack by cutting into the vessel wall) and binding the two sides together by executing a shallow double dovetail cut astride the crack and filling this with a lead compound to form a tenon. Three of the large *dolia* display repairs executed with lead. One of these simply has a crack filled with lead, lacking any tenons. The other two have both crack filling and tenons. Interestingly, one of these two also has a row of tenons that bracket an incipient crack too insubstantial to require filling. One of the small *dolia* was also repaired. In this case, an examination of the inner surface of the vessel indicates that the crack was initially filled with a lead compound, with the two sides bound together not by a tenon but rather by a staple that had its legs anchored in narrow holes drilled completely through the vessel wall to either side of the crack. On the exterior of the vessel the edge of this same crack and the cuts made to accommodate the cross pieces of the staples are notably flaky and irregular, and display what appears to be a ferruginous filling that is uneven and sloppily applied. This may perhaps represent a follow-up effort to stabilize the break. Whatever the explanation, the differences between the methods employed to repair this container and those utilized for the three large *dolia* raise interesting questions regarding the moment or moments during the life of these vessels when cracks were subject to repair (sometimes as part of the manufacturing process, when these might already be in evidence, or only after acquisition by the user?) and the identities of the craftsmen who undertook these interventions.

3. Conclusion

PALHIP has now completed three study seasons at Pompeii. Through the careful characterization of previously excavated sets of materials - some published, some partially published, some entirely unpublished - the project team has been able to collect much valuable information regarding various facets of the life history of portable material culture at Pompeii, including manufacture, use, curation, reuse, recycling, and discard. We anticipate that it will be possible to undertake additional sub-projects over the final two seasons of the planned five-year research cycle, adding to the already rich array of evidence that the PALHIP has been able to assemble, providing new insights into the lives of things in the Roman world.

Bibliographical References

[1] BERG, Ria. Saggi stratigrafici nei vicoli a est e a ovest dell'Insula dei Casti Amanti (IX, 12). Materiali e fasi. In GUZZO, Pietro Giovanni, GUIDOBALDI, Maria Paola. *Nuove ricerche archeologiche nell'area vesuviana (scavi 2003-2006). Atti del Convegno Internazionale, Roma 1-3 febbraio 2007. Studi della Soprintendenza archeologica di Pompei* 25. Rome: "L'Erma" di Bretschneider, 2008, p. 363-375.

[2] DE CARO, Stefano. *La villa rustica in Località Villa Regina a Boscoreale. Pubblicazioni Scientifiche del Centro di Studi della Magna Grecia dell'Università di Napoli Federico II Terza Serie Volume I*. Rome: Giorgio Bretschneider, 1994.

[3] PEÑA, J. Theodore. *Roman pottery in the archaeological record*. Cambridge: Cambridge University Press, 2007.

[4] ROMANAZZI, Laura, VOLONTÈ, Anna Maria. Gli scarichi tra Porta Nola e la Torre. In CHIARAMONTE TRERÈ, Cristina. *Nuovi contributi sulle fortificazioni pompeiane. Quaderni di Acme 6*. Milan: Cisalpino-Golidardica, 1986, p. 55-113.