

Pieces of ancient life and The Pompeii Artefact Life History Project

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1 Background

Pompeii and the other Vesuvian sites present unparalleled opportunities for the investigation of artifacts and artifact assemblages due to the distinctive nature of their destruction and abandonment. In recent decades scholars have taken advantage of this circumstance to complete a brace of innovative studies that have employed the characterization of artifact assemblages from Pompeii to elucidate a variety of topics, including the occupational history of specific structures, activity areas and room function, the economic status of households, household consumption, and the material world of women.¹ These studies, however, have accorded only limited attention to documenting and elucidating the various practices—production, distribution, primary use, curation, secondary use/reuse, recycling, discard, recovery—that governed the flow of artifacts through and around the town. These practices, which determined in substantial measure what we may think of as the "life history" of objects, are of considerable interest, both in their own right, and because they substantially shaped the patterning that we encounter in the condition and distribution of artifacts.²

The Pompeii Artifact Life History Project (PALHIP), a long-term research initiative being carried out by a team from the University of California, Berkeley under the authorization of the Parco Archeologico di Pompei (PAP), is being undertaken with a view to addressing this gap in the research record. It is designed to shed light on the operation of the various practices that influenced the life history of portable material culture in the town and certain sites in its environs (henceforth referred to as Life History Influencing Practices, or LHIPs). Towards this end it involves the detailed characterizations of sets of portable artifacts and certain other materials (e.g., furniture fittings) that have been recovered in excavations carried out in the past in contexts that promise to improve our understanding of the operation of one or more LHIP. As a project centrally concerned with investigating aspects of artifact life history, PALHIP represents part of a small, though steadily growing research focus in the archaeology of complex societies in the ancient Mediterranean.³

To date, PALHIP has completed an initial five-year research cycle that consisted of study seasons carried out during the years 2012–2016, and has completed the first two study seasons of a second five-year research cycle that is slated for the years 2018–2022. In the first five-year cycle the project completed the study of six sets of materials selected with a view to learning about the operation of one or more LHIPs. These studies, referred to as sub-projects, included the following:

¹ Allison (2004), (2006), (2009); Armit (1989); Berg (2010), (2017); Berry (1997a), (1997b), Berry (200&), Berry ed. (1998); Ray (2006), (2009).

² Peña (2007). For refuse at Pompeii see Dicus (2014).

³ Banducci et al. (2018); Bernal et al. eds. (forthcoming); Duckworth and Wilson eds. (forthcoming); Lund and Lawall eds. (2011); Schwartz (2006); Taxel (2018); Wilburn (n.d.)

Sub-Project 1: The characterization of the artifact assemblage from the Villa Regina a Boscoreale, a modest farmhouse located 1.2 km northwest of Pompeii.⁴

Sub-Project 2: The characterization of the artifact assemblage from a two test pits excavated into the deposit that accumulated atop the surface of the unnamed side-street running between Pompeii Insula IX.11 and IX.12;⁵

Sub-Project 3: The characterization of the artifact assemblage from three refuse middens deposited against the outer face of Pompeii's fortification wall in the area from Tower VIII to the Nola Gate;⁶

Sub-Project 4: The characterization of a set of *dolia* recovered in an orchard at the rear of the property occupying Pompeii Insula I.22;⁷

Sub-Project 5: The compositional characterization of pottery specimens with manufacturing defects recovered in the Tower VIII/Nola Gate refuse middens that were the subject of Sub-Project 3—apparently wasters likely originating at some nearby pottery workshop—undertaken in collaboration with the archaeometric research unit at the Università Federico II in Naples directed by Vincenzo Morra;⁸

Sub-Project 6: The characterization of a set of transport amphorae from Oplontis Villa B, a warehouse/wine packaging facility/residence located 2.3 km west-northwest of Pompeii.⁹

In the second five-year research cycle the project team is focusing its efforts on the characterization of the portable artifacts recovered in a set of eight residences of modest dimensions located in Pompeii Insula I.11 (Table 1) with a view to elucidating aspects of the operation of certain of the LHIPs and the acquisition/consumption of portable material culture among residential groups in the middle to lower end of the socio-economic range at Pompeii. At the time of writing (January, 2020), the team has completed the characterization of the bulk of the materials from four of these residences: the Casa di L. Habonius Primus (I.11.5.8), the Casa del Piano Superiore (I.11.15), the Casa/Hospitium di Saturninus, (I.11.16), and the Casa Imperiale (I.11.17), and has initiated the characterization of the materials from a fifth, the Casa della Venere in Bikini (I.11.6.7).

⁴ De Caro (1994); Stefani (2010: 82-8). For PALHIP's work with this material see Peña (2014); Peña and Cheung (2015: 2116-19).

⁵ Berg (2008). For PALHIP's work with this material see Peña and Cheung (2015: 2118-19).

⁶ Chiamonte Trerè (1986); Romanazzi and Volontè (1986). For PALHIP's work with this material see Peña and Cheung (2015: 2119-20); Peña (forthcoming).

⁷ Jashemski (1993: 73). For PALHIP's work with these vessels see Peña and Cheung (2015: 2121-2); Cheung and Tibbott (forthcoming).

⁸ For the results of this work see Morra et al. (forthcoming); Guarino et al. (forthcoming).

⁹ Gazda and Clarke eds. (2016: 160-77, 232-54).

Address	Use	Name	Ground Floor 1	Ground Floor 2	Quartile
I.11.1.2	<i>caupona</i> & residence	None	199 m ²	190 m ²	3rd
I.11.3	shop & residence	None	64 m ²	65 m ²	2nd
I.11.4	shop	None	10 m ²	10 m ²	1st
I.11.5.8	residence	Casa di L. Habonius Primus	347 m ²	325 m ²	3rd
I.11.6.7	residence	Casa della Venere in Bikini	181 m ²	170 m ²	2nd/3rd
I.11.10.11	<i>Caupona</i> , residence & vineyard	Caupona of Euxinus and Iustus	776 m ²	400 m ²	4th
I.11.12	residence	Casa di Euxinus		340 m ²	3rd
I.11.13	residence	None	180 m ²	170 m ²	2nd/3rd
I.11.14	residence	Casa del Cherem	416 m ²	400 m ²	4th
I.11.15.9	residence	Casa del Piano Superiore	472 m ²	460 m ²	4th
I.11.16	<i>hospitium</i> & residence	Casa di Saturninus	173 m ²	150 m ²	2nd/3rd
I.11.17	residence	Casa Imperiale	136 m ²	140 m ²	2nd

Table 1. Summary of basic data for the properties in Insula I.11. Figures for Ground Floor 1 are from *Pompeii Bibliography and Mapping Project*. Figures for Ground Floor 2 and Quartile are from Wallace-Hadrill 1994, 194 and 81 Table 4.2, respectively.

The basic data collected by the project—databases containing detailed artifact characterizations, photographic documentation, and certain other materials—will be published in downloadable format on RES ROMANAE—the website of the University of California, Berkeley Roman Material Culture Laboratory.¹⁰ This will be followed by the publication of a monograph consisting of a set of interpretive essays based on the project’s results.

2 Project methods

The nature of the methods employed by PALHIP are governed by practical considerations. Most importantly, the project’s annual budget is small, meaning that the team must be of a limited size (three–five individuals), the annual study seasons short (four or five weeks, offering no more than twenty or twenty-five work days with access to materials), the number of specimens that we can treat in any one season modest, and the methods that we can employ for the most part low tech.

Our work has varied somewhat with each sub-project as a function of the nature of the materials, the work previously done with these by others, and the location and nature of our work site. Our approach in the current five-year phase of the project may be generally characterized as follows: Work with a given set of materials begins with bibliographical/archival research aimed at recovering information regarding the excavation and the post-excavation treatment of the materials and determining the PAP *numero di inventario* (inventory number) of the portable artifacts recovered in the structure in question. Using the *numero di inventario* we then locate the *scheda* (catalog card) for each of the objects in the master artifact catalog housed in the Casa di

¹⁰ <http://resromanae.berkeley.edu/>.

Bacco storage facility, and record the information regarding the basic nature of each object (e.g., material, form, specific provenience). On the basis of this information we draw up an *Excel* spreadsheet with a record for each specimen that we use to plan work flow and to monitor progress. We then work our way through the set of materials in a systematic manner (assigning a unique number to each specimen beginning with the prefix PALHIP; working on sets of similar objects in sequence; assigning objects to individual team members with particular expertise with that class of object to the extent possible) documenting these and recording our observations in a database drawn up for this purpose, followed by the photographing and, in some cases, the drawing or 3D scanning of the specimen. The bulk of the specimens that we have treated to date belong to a limited set of artifact classes, including ceramic vessels, glass vessels, glass tokens and similar items, bronze vessels, and bronze implements and similar items, with more restricted numbers of specimens in iron, lead, gold, silver, copper, faience, marble, limestone, volcanic rock, rock crystal, semi-precious stone, bone, tooth, shell, ivory, or some combination of two or more of these materials.

For our database work we use a file sharing arrangement, employing a portable router to establish a local area network at our work site and hosting the database on a laptop, with the project members accessing the database via a laptop or tablet to create new or to update existing records. The database, currently in *FileMaker Pro 17*, contains ninety-two fields arranged over seven thematic tabs—*Basic Information, Graphics, Measurements, Manufacture, Condition, Texts, Analyses*.¹¹

As already noted, most of our work with the specimens is low tech, involving simple examination by naked eye. Some aspects of this work are worth noting. For the fields on the *Measurements* tab we employ a digital compass, artist's compass, or ruler to record not only standard linear dimensions (e.g., base diameter, rim diameter, and vessel height for radially symmetrical vessels in various materials), but also dimensions that we believe may have conditioned the functionality of the object (e.g., maximum girth and, for closed vessels, minimum orifice diameter). We also employ a digital scale to record the object's weight, in that this might have conditioned its functionality and played a part in determining its costliness. The fields on the *Manufacture* tab are for recording evidence (often minor surface features that we term "micromorphology") that is informative regarding both the methods and the discreet operations employed in the manufacture of the object and the order in which these operations were executed. The fields on the *Use* tab are for recording information regarding the general condition of the specimen, including its completeness and brokenness and any "use alterations," that is, physical changes to the specimen that it may be inferred were produced by its use, including damage (abrasion, chipping, breakage, denting, warping), the formation of surface deposits (sooting, staining, content macro-remains), or deliberate modification (including repair). This tab also includes a field for the recording of inferences regarding how the object had actually been used in light of the use alterations present on it, which can be contrasted with a field in the *Basic Information* tab, in which we indicate the commonly assumed function(s) for an object of the kind in question.

¹¹ For a clone of this database and a version with a small number of sample records see <http://resromanae.berkeley.edu/node/3572>.

As our description of specimens is unusually thorough and involves a wide variety of items manufactured by many different methods in various materials we employ a set of standard terms that permit the systematic characterization of an extensive array of specimens in, to the extent possible, an internally consistent manner (e.g., long thin artifacts are said to have a "distal end" and a "proximal end"; for artifacts that have an upper side and a lower side we term these the "dorsal" and "ventral surfaces," respectively; to identify the location of a feature on a vessel that is radially symmetrical we employ a clock face approach in which we look down on the specimen from above, with a handle or, if there is no handle, some other feature placed at the 12 o'clock position). For classes that have a well-developed descriptive terminology specific to that class (e.g., bronze bells), we endeavor to adopt this set of terms, adapting it as may be useful. We have also developed methods that allow the convenient, semi-quantitative description of the extent and intensity of the presence of use alterations such as sooting and slip abrasion on the surface of a vessel.¹²

In a limited number of cases we employ a DinoLite AM413T digital microscope to produce low-magnification (c. 10–50X) microphotographs of ceramic fabrics where these are exposed in an unweathered or lightly weathered break and elements of the micromorphology or use alterations present on a specimen where such an image is judged to be informative. In many cases there is already a published drawing of the specimens that we have treated, though in a limited number of cases we have produced a profile drawing or detail drawing of a specimen. We have produced a 3D model of a small number of amphorae and bronze vessels using a Structure Sensor 3D scanner mounted on a third generation iPad running *Skanelect* software, employing the program *Meshlab* to develop the finished model.

Following description all artifacts are subjected to extensive macrophotography to document both their general morphology and details of their micromorphology and use alterations. For this we employ a Nikon D5100 digital SLR camera.

The *Graphics* tab of the database has fields into which we drop an image that displays the specimen's general morphology, a field into which we can drop a drawing of the specimen, and a field into which we can drop a photomicrograph of the specimen's fabric. The *Text* tab has two fields into which we can drop a photograph or drawing of a stamp, graffito, and/or dipinto. The *Analysis* tab has a field into which we can drop a flow diagram that represents the sequence of steps involved in the specimen's manufacture.

3. Sample results

The remainder of this contribution consists of two sections that present some sample results of PALHIP's work. The first of these provides some illustrative examples of our documentation of use alterations. The second presents a preliminary analysis of the artifact assemblages from three residences.

¹² For documents that present PALHIP's terminological system and system for the characterization of use alteration coverage see <http://resromanae.berkeley.edu/node/3572>.

3.1. Use alterations

This section presents brief characterizations of three of the artifacts treated by PALHIP that provide some idea of the nature of the use alterations that we have encountered. These represent the three most common classes of vessels encountered – pottery, glass, and bronze.

The first of the artifacts to be considered is a Campanian cookware casserole with a flanged rim, angled wall, and flat base in a ferruginous, volcanic fabric from the Villa Regina a Boscoreale.¹³ (Figure 1.A-B) This vessel is noteworthy for the evidence that it bears in the form of multiple kinds of use alterations that indicate that it was subject to protracted use for the cooking of food, nearly to the point of catastrophic failure. At the time of its excavation this vessel, which was found sitting in inverted position on a shelf in the villa's storeroom, was missing slightly more than half of its rim flange, which appears to have broken away in as many as seven discreet fragments. Nearly the entirety of the exterior surface of the vessel and its entire interior surface are covered with a layer of medium to dark gray sooting that shows considerable variation in its density and runs over the breaks in the rim flange, indicating that it continued in use for cooking operations following the breaking away of this portion of the vessel. The presence of sooting on the underside of the base and the lower portion of the exterior wall (rather than the powdery, light gray ash transfer attested on these parts of the ceramic cookpots recovered at this residence) indicates that the vessel was normally set on a cooking stand of some sort that elevated it above the burning fuel rather than being placed directly upon this. On the interior of the vessel the lower wall and floor are covered by a dark reddish brown stain that feathers to a reddish brown color near its upper edge that appears to constitute residue of some substance or substances that were heated inside it. The vessel's lower wall and the underside of its base are marked by multiple cracks, which in some cases emanate from large inclusions. These cracks, which in some instances pass completely through the vessel wall, are apparently the result of thermal stress/shock caused by the vessel's heating. This suggests that the vessel was on the verge of breakage of a kind that would have rendered it unusable. In one area on the vessel's interior immediately below the angular juncture between the lower and upper wall the cracks are filled with a white material that appears to be limescale that precipitated from a substance or substances prepared with hard water that was heated in the vessel's interior.

The second of the artifacts here considered is a flask with an (originally tall?) vertical neck with a constriction at its lower end, piriform body, and flat base in transparent blue-green glass from the Casa Imperiale.¹⁴ (Figure 1.C-D) This vessel was subject to modification, apparently to facilitate its continued use after having been subject to breakage. The vessel's neck ends in a somewhat irregular, sub-horizontal break that has a distinct step at one point. A break of this kind is presumably the result of a procedure known as "cracking off," which is used to break away the upper portion of a glass vessel, usually as part of the manufacturing process. This entails the execution of a short horizontal scoring in the vessel with a sharp implement at the level at which one intends to produce the break, followed by the heating of the vessel along the

¹³ PALHIP 0061/PAP *inventario* 24184; Villa Regina, Room 12, Storage Unit Shelf 2; Di Giovanni (1996) Form 221b/2211/e-f; De Caro (1994: 158 no. 102).

¹⁴ PALHIP 2089/ P*AP inventario* 12762; I.11.17, atrium; Isings (1957) Form 28a; Berg (2010: 212); Scatozza Höricht (2012: 124-25).

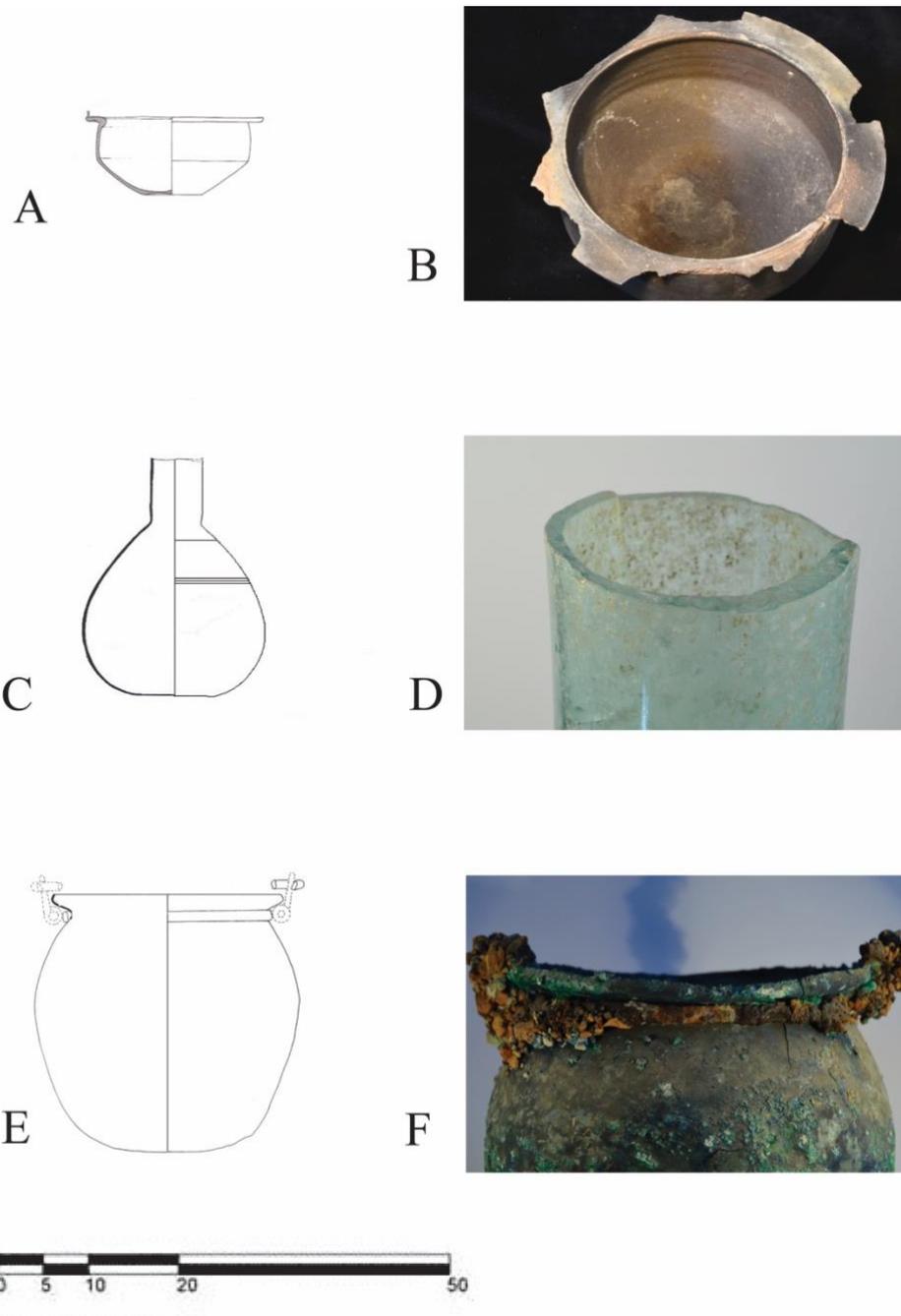


Figure 1: Profile drawing and photograph documenting use alteration of three artifacts discussed in text. A-B: PALHIP 0061/*inventario* 24184; C-D: PALHIP 2089/*inventario* 12762; E-F: PALHIP 2029/*inventario* 12851. (A: after De Caro 1994 Fig. 31.102; C: after Scatozza Hörich 2012 Tav. XXII.12762; E: after Tassinari 1993, p. 386 Fig. 12851).

line of the scoring until it splits along this line.¹⁵ This operation often produces a step at the point where the break comes around the vessel to the point at which it initiated. This modification suggests that this vessel was subject to breakage in the area of its rim/upper neck, after which the remaining portion of the rim and upper neck were detached in order to restore the vessel to a condition in which it could be retained in use.

The third and last of the artifacts to be considered is a raised, sheet bronze bucket with an iron neck collar and basket handle from the Casa di L. Habonius Primus.¹⁶ (Figure 1.E-F) This vessel displays pronounced damage apparently caused by its use to carry water or some other liquid or liquids. Most notably, the vessel's rim displays considerable distortion, with the points at which the two ends of the basket handle are attached to the collar distinctly higher, with areas between these two points displaying a sagging profile. This was clearly caused by the use of this vessel to carry some sort of heavy content – presumably in many or all cases water - with the flexible, sheet-bronze vessel being distorted by this practice despite the iron collar meant to stiffen the vessel's rim area. There are also several dents of various sizes on the vessel's rim, body, and base, presumably caused by impacts that occurred during filling, transport, and/or use.

3.2. Residential artifact assemblages

This section presents a preliminary analysis of the artifact assemblages from three of the residences that the project has treated—the Villa Regina a Boscoreale, and two residences in Insula I.11—the Casa Imperiale, and the Casa di L. Habonius Primus—with a view to providing an idea of the nature of our results and the information that these provide regarding the acquisition/consumption of portable material culture.

The Villa Regina a Boscoreale (VRB) is a modest farm villa (ground-floor area *c.* 450 m²/twelve ground-floor rooms and unidentified number of second-story rooms) situated 1.4 km to the northwest of Pompeii's Herculaneum Gate. (Figure 2.A) This structure was excavated in its entirety during the period 1979–1983 by the then Soprintendenza Archeologica di Napoli under the direction of Stefano De Caro. This initiative was intended to represent a model excavation, which, among other things, involved the complete recovery of the artifacts encountered. The results of the excavation were published in a monograph, which included an extensive catalog of the artifacts.¹⁷ The fact that some parts of the villa were in the course of restoration at the time of the 79 CE eruption suggests that it was damaged in the Earthquake of 62 CE (and the seismic events that followed on from this) and was not being occupied as a residence at the time of the eruption. It is nonetheless clear that some parts of the villa were in use at this time, leading De Caro to suggest that the structure was perhaps being used during the day by laborers working in the vineyards that surrounded it.

¹⁵ For a video illustrating this procedure see Cornell Museum of Glass <https://www.youtube.com/watch?v=E4yovEi7j7E>.

¹⁶ PALHIP 2029/ PAP inventario 12851; I.11.5.8, atrium; Tassinari (1993) Form X1613; Tassinari (1993: 146 n. 2); Vuat (2000: 146 Tab. A).

¹⁷ De Caro (1994: 131-219).

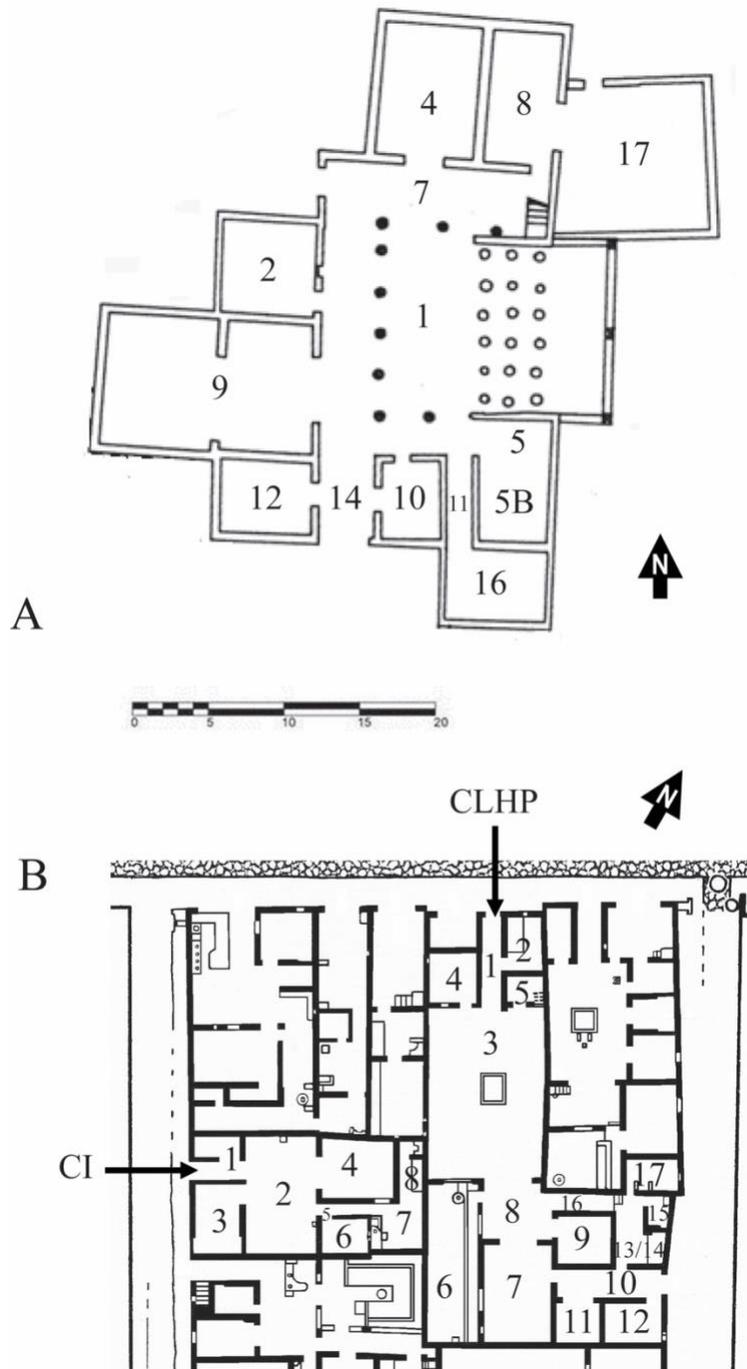


Figure 2: Plans of three residences discussed in text. A: Villa Regina a Boscoreale (VRB); B: northern end of Insula I.11, including Casa Imperiale (CI) and Casa di Lucius Habonius Primus (CLHB). Room numbers for the VRB are from De Caro 1994 and those for the CI and the CLHP are from Puglisi Caratelli and Baldassarre, 1990, pp. 666 and 522, respectively. (A: after De Caro 1994 Fig. 28. B: after Van der Poel 1986 p. 21).

PALHIP characterized all of the portable artifacts from the villa recovered in what were judged to be use-related contexts. These come to a total of eighty-eight objects, including seventy specimens of pottery, two of terracotta, two in blown glass, two in glass paste, one in basalt, one in leucitite, one in limestone, one in marble, two in iron, two in iron and wood, one in iron and ivory, one in bronze, one in bronze with iron fittings, and one in bronze with silver inlay.

The Casa Imperiale (I.11.17) (CI) is a small residence (ground-floor area *c.* 135–140 m²; eight ground-floor rooms and unidentified number of second story rooms) situated on the west side of Insula I.11, with an entrance on the east side of the unnamed side street that defines the west side of the block.¹⁸ (Figure 2.B) The structure was excavated in its entirety in 1960 under the direction of Amedeo Maiuri, who did not publish any record of this work. The structure appears to have been occupied at the time of the 79 CE Eruption, although at least one of its rooms was in the process of having its wall decoration restored.

The Casa di L. Habonius Primus (I.11.5.8; also known as the Casa di Lollius Synhodus) (CLHP) is a moderately-sized residence (ground-floor area *c.* 325–350 m²; fifteen or sixteen ground floor rooms and unidentified number of second story rooms) situated on the north side of Insula I.11, with a main entrance on the south side of the Via dell'Abbondanza and a secondary entrance on the unnamed side street that defines the east side of the block.¹⁹ (Figure 2.B) The rooms fronting on the Via dell'Abbondanza were excavated under the direction of Vittorio Spinazzola in 1913, with the remainder of the structure excavated in 1953, 1954, and 1960 under the direction of Amedeo Maiuri. Della Corte published brief preliminary reports for Spinazzola's excavations,²⁰ though no account was ever published of those conducted by Maiuri. Vuat published a short study of the architecture of the house in 2000, which also provided brief characterizations of many of the artifacts recovered in its excavation.²¹ The structure appears to have been occupied at the time of the 79 CE Eruption, although some areas—including the atrium and the structures western wall—were in the process of being restored.²²

Nearly all of both the glass vessels and bronze vessels from both the CI and the CLHP in the collections of the PAP were published in the studies of these artifact classes produced by Scatozza-Höricht and Tassinari, respectively.²³ Some of these artifacts and a small number of additional items from these two residences have been described in various other publications.

¹⁸ Van der Poel (1986: 20-1); Wallace-Hadrill (1994: 196); Puglisi Caratelli and Baldassare (1990: 666-83); PompeiiinPictures <https://pompeiiinpictures.com/pompeiiinpictures/R1/1%2011%2017.htm>.

¹⁹ Van der Poel (1986: 20-1); Wallace-Hadrill (1994: 194); Puglisi Caratelli and Baldassare (1990: 522-5); PompeiiinPictures <https://pompeiiinpictures.com/pompeiiinpictures/R1/1%2011%2005.htm>.

²⁰ Della Corte (1913a), (1913b), (1913c), (1913d), (1913e), (1913f).

²¹ Vuat (2000).

²² Stefani (2006: 151).

²³ Scatozza-Höricht (2012: 116-19, 124-9); Tassinari (1993: 146, 148-50).

To date PALHIP has completed or initiated the characterization of effectively all of the portable artifacts from both the CI and the CLHP in the possession of the PAP. For the CI these come to a total of 233 objects, including nine specimens of pottery, forty-eight in blown glass, twenty-five in glass paste, forty-eight in faience, one in bone, two in boar's tusk, one in marble, one in calcite with gilding, four in rock crystal, one in iron, one in iron and bone, one in iron and bronze, one in lead, seventy-one in bronze, one in bronze and wood, sixteen in bronze with iron fittings, and two in silver. For the CLHP these come to a total of seventy-seven objects, including ten specimens of pottery, twenty-eight in blown glass, seven in glass paste, one in wood, one in iron, one in iron and wood, fifteen in bronze, three in bronze with iron fittings, one in bronze with silver and copper inlay, one in semi-precious stone, eight in silver, and one in gold.

From our work with these sets of materials (complemented with the evidence provided by archival materials) it is evident that the archaeologists responsible for the excavation of both of these residences recovered and inventoried the portable artifacts from only some of the rooms that they emptied (Table 2), and that when they did recover and inventory artifacts this included what was probably only a minor portion of the pottery, limited for the most part to intact or nearly intact lamps and gloss-slipped tablewares, often bearing a maker's stamp.²⁴ The evidence further suggests that this included all or nearly all of the intact and highly complete artifacts manufactured in other materials, although there is no way to confirm this impression.

This set of circumstances, combined with the apparently irregular nature of the occupation of the VRB prior to its destruction, clearly raise problems for any effort to analyze and interpret the artifact assemblages from these three residences or to undertake a comparative analysis/interpretation of these three sets of materials. For the CI and the CLHP the assemblage is, in effect, the reverse of that normally encountered in Roman archaeology (as, for example at the VRB), in that it is composed primarily of objects manufactured in a set of inorganic materials that were commonly subjected to recycling (glass and various metals), with relatively few ceramic objects. Also worth noting is that in each of the three residences the assemblage available for analysis is dominated by a set of objects recovered from a single room that was being employed to a significant extent for storage—for the VRB a dedicated storeroom modified for use also as a kitchen (Room 12) and for both the CI and the CLHB, an atrium (Rooms 3 and 2, respectively)—with only a modest number of items recovered in other locations within the structure.

In order to bring out structure in the data generated by this work we first assigned the various artifacts evaluated to groupings on the basis of material/manufacturing technique and assumed function/form/size, resulting in a total of 105 groupings, with these grouped and ordered according to the assumed function/form/size attribute. (Table 3) We assigned each of these groupings a notional costliness score on a scale of 0–10 taking into account the cost of the material(s) of which it was manufactured, the amount of material involved, the complexity of the manufacturing processes employed, and the item's durability. Limitations of space preclude an exposition here of the complex procedure involved in the generating of these values. It should be

²⁴ Puglisi Caratelli and Baldassarre (1990: 682, 683) Fig. 23 and Fig. 24 are drawings of the CI Room 7 (court) made shortly after its excavation. The former, a view of the room's southwest corner, shows eight amphoras, one storage jar, and one ceramic cookpot; the latter, a view of the room's northeast corner offering a view into Room 8 (kitchen), shows a small dolium and what may be an amphora bottom. These items, presumably found on the premises, were not inventoried.

Context	Type/Function	Artifact Summary	Notes
Villa Regina a Boscoreale (VRB)			
Rooms 1/7	peristyle/ <i>cella vinaria</i>	17, 55, 58:2, 64, 67, 70, 103	
Room 2	kitchen	9, 12, 13, 15, 33, 81	Not in use
Room 4	dining room?		Not in use
Room 5	cistern room	52	
Room 5 bis	bedroom?	2:2, 9, 26, 35, 36, 39:3, 43:2, 52	In restoration
Room 8	storeroom?		
Rooms 9/9bis	press room		
Room 10	bedroom?	9, 58:2, 62:2	
Room 11	corridor	19, 27	In restoration
Room 12	storeroom	1, 2:3, 5, 7:6, 9:8, 12:3, 19, 29, 30, 33:2, 36:2, 39, 40, 43:5, 46, 52:2, 53, 55:3, 56:2, 58, 59, 64, 66, 68, 81, 102	Adapted as kitchen
Room 14	vestibule	40	
Room 16	bedroom?	19	In restoration
Room 17	threshing floor	55	
Casa Imperiale (I.11.17) (CI)			
Room 1	entry corridor/vestibule		Room X?
Room 2	atrium (with stairs)	2:3, 4:2, 8, 10, 11, 14, 16, 20:3, 21, 22, 28, 30, 31:5, 32, 34, 36, 37:6, 40:2, 41, 42, 44, 49, 50:7, 56:2, 59:25, 61, 63:2, 65, 69, 71, 72:3, 73, 75, 76, 77:20, 81:25, 82, 84, 87:4, 88, 93:3, 95, 97	Roofed
Room 3	living or dining room	16, 21, 47, 48, 59:5, 69:2, 72, 74, 84, 85, 101	
Room 4			In restoration
Room 5	corridor		
Room 6			
Room 7	court		Open air
Room 8	kitchen and latrine		
Room X		10, 21, 23, 37, 42, 45:3, 56, 85:10, 92:40, 101	ID uncertain; Room 1?

Unidentified		25, 30:2, 45, 86, 90:2, 92:8, 96	
Casa di Lucius Habonius Primus (I.11.5.8) (CLHP)			
Room 1	entry corridor		
Room 2	doorman's room?		
Room 3	atrium	1, 2:3, 3, 4, 6, 18, 21, 22, 30:2, 31:3, 34:2, 38:2, 40:2, 51, 53:6, 56:8, 59:2, 60:2, 64, 73, 77, 80, 83, 85, 91:6, 99, 100, 104:2, 105	Compluviate
Room 4	bedroom?	1, 2:4, 4, 40:2, 78:4, 79, 89, 97, 98	
Room 5	stairwell?		
Room 6	garden		Open air
Room 7	living room?		
Room 8	passage room?		
Room 9	bedroom?		
Room 10	corridor		
Room 11	storeroom?		
Room 12	storeroom?		
Rooms 13/14	kitchen		
Room 15	latrine		
Room 16	entry corridor		
Room 17	pantry?		Belongs to I.11.6.7?
Unidentified		77, 94:2	

Table 2: Artifacts by property by room for VRB, CI, and CLHP. Room numbers are those indicated on the plans in Figure 2. Numbers in Artifact Summary refer to the numbers of the artifact groupings indicated in Table 3, with cases in which there are multiple examples of an artifact grouping attested in a room indicated by placing a colon after the grouping number and then the number of examples. (e.g., 58:2= two artifacts belonging to Artifact Grouping 58)

acknowledged, however, that this was an approximate and impressionistic undertaking, with the operation intended simply to permit a rough ordering of these groupings of items in terms of the likely relative cost of their acquisition. The data can be interrogated with some profit both in the order in which they appear in the initial table and after the reordering the artifact groupings by descending costliness value. (Table 4)

We may begin with a brief characterization of each of the three assemblages. For this we have divided the costliness values into ranges as follows: very low cost: 0–1.5; low cost: 2.0–4.5; medium cost: 5.0–6.5, high cost: 7.0–7.5; and very high cost: 8.0–10.0.

Beginning with the VRB, the assemblage consists of eighty-eight items assigned to thirty-six artifact groupings. Of these, seventy-two are specimens of pottery assigned to twenty-two groupings and sixteen non-pottery specimens assigned to fourteen groupings. All but one of the pottery specimens is a very low cost item that presumably served for the packaging, storage, preparation, serving, or consumption of food or drink. (The exception is a plastered and painted low-cost incense burner that presumably served a religious function.) This suggests that the distortions introduced into the assemblages from the CI and CLHP by the recovery of what was probably only a small portion of the pottery present in these residences likely lie in large measure in these areas of function and costliness. The remaining items in the very low-cost to low-cost ranges are three items in inexpensive stone, two items in glass paste, and two items in blown glass. The paucity of items in blown glass is noteworthy. Of the nine items of medium cost and higher, four are medium-cost iron agricultural or craft tools. The remaining five items include another three of medium cost, two of high cost, with no items of very high cost. One of the medium-cost items is a broken piece of marble garden sculpture bearing a bust of Bacchus that was presumably used for its original purpose at some other location and here had been repurposed as a cult figure at the villa's *lararium*. One of the very high-cost items is a bronze table-top lampstand that had had two of its three legs wrenched off, rendering it unusable. This had been placed on a wooden shelf in the storage room and was perhaps (acquired and was) being held for eventual recycling. Thus, only three items in the medium cost and higher range may have been artifacts in use for their original purpose—an iron and ivory knife, a bronze and iron bucket, and a bronze pitcher with silver inlay.

The CI assemblage consists of 233 items assigned to fifty-four artifact groupings. For our purposes, a more useful set of figures can be obtained by counting as a single item sets of items that probably represent components of a single compound artifact (a set of forty faience beads that probably belonged to a single necklace; ten bronze and iron bells that probably belonged to a single *tintannabulum*) or formed part of a group of small objects used together (a set of twenty-five glass paste disks/tokens; a set of twenty bronze coins). With these adjustments the figures come to 142 items assigned to fifty-four groupings. The non-ceramic items comprise 133 specimens belonging to fifty-one groupings—both numbers very substantially higher than those attested for the equivalent elements of the VRB assemblage. These consist in large measure of forty-nine very low-cost to low-cost vessels in blown glass (of which twenty-seven are *balsamaria*) and sixty-one medium- to high-cost raised or cast bronze or bronze with iron fittings vessels. There are two very high-cost items in silver that functioned in one case for personal adornment (a pair of ear-rings) and in the other for grooming (a mirror). Worth noting is the presence of a set of five hemispherical cups in blown glass identical in form and size, although made in glass of three different colors, and a set of five blown-glass plates of three different

NO.	VALUE	MATERIAL/TECHNIQUE	FUNCTION/Form/Size	ITEM	VRB	CI	CLHP
1	6.5	bronze with iron - raised	water acquisition/storage	bucket	1		2
2	0.5	ceramic - mold-made	lighting	lamp	5	5	7
3	1.5	ceramic - mold-made	lighting (large)	lamp (compound)			1
4	7	bronze - cast	lighting	lamp		2	2
5	7	bronze - cast	lighting support (small)	lampstand (tabletop)	1		
6	7.5	bronze - cast	lighting support (large)	lampstand (floor)			1
7	1	ceramic - thrown	cooking - closed	cookpot	6		
8	6	bronze - raised	cooking - closed	cookpot		1	
9	0.5	ceramic - thrown	cooking - closed lid	cookpot lid	11		
10	6	bronze - raised	cooking - deep open	casserole		3	
11	6.5	bronze with iron - raised	cooking - deep open	casserole		1	
12	1	ceramic - thrown	cooking - deep open	casserole	4		
13	1	ceramic - thrown	cooking - deep open lid	casserole lid	1		
14	5.5	bronze - raised	cooking - shallow open (small)	small pan with horizontal handle		1	
15	1	ceramic - thrown	cooking - shallow open	pan	1		
16	6	bronze - raised	cooking - shallow open	pan		2	
17	1	ceramic - thrown	cooking - shallow open lid	pan lid	1		
18	6.5	bronze - raised	cooking - closed - water boiling	cauldron with lid			1
19	1	ceramic - thrown	food preparation/serving (or other - chamber pot?)	basin	3		
20	6	bronze - raised	food preparation/serving (or other - chamber pot?)	basin		3	
21	5.5	bronze - raised	food preparation/serving (or other - chamber pot?) (small)	small oval basin		3	1
22	6	bronze - raised	food preparation/serving (or other - chamber pot?)	large oval basin		1	1
23	5	bronze - raised	food preparation/serving (or other - chamber pot?)	large oval basin lid		1	
24	7.5	bronze - cast	food preparation/serving (or other - chamber pot?)	bilobe basin		1	
25	5	iron and bone	food preparation/consumption (or other?)	knife		1	
26	6	iron and ivory	food preparation/consumption (or other?)	knife	1		
27	4	lava stone	food grinding	hand mill	1		
28	6	marble	food grinding	mortar with pestle		1	
29	1	ceramic - thrown	food consumption	plate/dish/bowl	1		

30	1.5	ceramic with gloss slip - thrown	food consumption	plate/dish/bowl	1	3	2
31	2	glass - blown	food consumption	plate/dish		5	3
32	7	bronze - cast	food consumption	plate/dish/bowl		1	
33	1	ceramic - thrown	drink consumption (tall)	beaker, frittulus	3		
34	2	glass - blown	drink consumption (tall)	beaker, flagon		1	2
35	1	ceramic - thrown	drink consumption (short)	cup	1		
36	1.5	ceramic with gloss slip - thrown	drink consumption (short)	cup	3	1	
37	2	glass - blown	drink consumption (short)	cup		7	
38	9.5	silver	drink consumption (short)	cup			2
39	1	ceramic - thrown	drink serving (small)	small pitcher, juglet	4		
40	1.5	glass - blown	drink serving (small)	askos, juglet, small cylindrical bottle, small globular bottle	1	2	4
41	3	glass - blown - mosaic	drink serving (small)	juglet		1	
42	7	bronze - cast	drink serving (small)	juglet		2	
43	1.5	ceramic - thrown	drink serving (large)	bottle, pitcher, jug	7		
44	2	glass - blown	drink serving (large)	flask		1	
45	7	bronze - cast	drink serving (large)	pitcher, table amphora, jug		4	
46	7.5	bronze with silver - raised	drink serving (large)	lagoena	1		
47	6.5	bronze - raised	drink serving accessory - straining	colander		1	
48	5.5	bronze - raised	drink serving accessory - decanting	funnel		1	
49	2	glass - blown	drink serving accessory - disbursal	deep dipping vessel		1	
50	7	bronze - cast	drink serving accessory - disbursal	deep dipping vessel, ladle		7	
51	9	silver	drink serving accessory - disbursal	ladle			1
52	1	ceramic - thrown	food/drink storage/packaging (small)	small jar, very small amphora	4		
53	0.5	ceramic - thrown	food/drink storage/packaging (small)	small jar lid	1		
54	1.5	glass - blown	food/drink storage/packaging (small)	medium cylindrical bottle, small square bottle, small square jar			6
55	1	ceramic - thrown	food/drink storage/packaging (medium)	jar, amphora bottom, small amphora	5		
56	0.5	ceramic - thrown	food/drink storage/packaging (medium)	jar lid	2		
57	2	glass - blown	food/drink storage/packaging (medium)	large cylindrical bottle, large square bottle, large square jar			9
58	1.5	ceramic - thrown	food/drink storage/packaging (large)	amphora	5		

59	1	glass - blown	high unit value substance storage/packaging	balsamarium, minature jar	1	30	2
60	1.5	glass - blown into relief mold	high unit value substance storage/packaging	balsamarium			2
61	7	rock crystal	high unit value substance storage/packaging	balsamarium		1	
62	0.5	ceramic - hand modelled	craft production - textile - weaving	loom weight	2		
63	5	bronze - cast	craft production - textile - sewing	needle		2	
64	5	iron and wood	craft production/agriculture - chopping	hatchet	2		1
65	5.5	iron and bronze	craft production/agriculture - cutting	knife		1	
66	2	basalt?	craft production/agriculture - tool sharpening	hone	1		
67	5	iron (and leather?)	agriculture - grabbing/moving	hook tool - short-handled	1		
68	5	iron (and wood)	agriculture - trimming	bill hook	1		
69	6	bronze - cast	weighing (small-scale)	balance (steelyard, pans, pendant weight)		3	
70	2	limestone	weighing (large-scale)	weight	1		
71	5	bronze - cast	writing - incision in wax	stylus		1	
72	7.5	bronze with iron - cast	writing - ink	ink well with lid		4	
73	6.5	bronze - cast	sealing	seal ring		1	1
74	5	lead	storage small objects/quantities	pyxis with lid		1	
75	7	bronze - cast	storage small objects/quantities	pyxis with lid		1	
76	7.5	calcite with gilding	storage small objects/quantities	pyxis with lid		1	
77	5.5	bronze - struck	payment/storage wealth	coin		20	1
78	8	silver - struck	payment/storage wealth	coin			4
79	6	bronze (and leather?) - cast	equine transport	pair blinders, bit			2
80	6	iron	slave restraint	shackles			1
81	0.5	glass paste	entertainment? (other?) - glass paste	disk (token?)	2	25	
82	4.5	iron	exercise	strigil ring		1	
83	6.5	bronze - cast	exercise (small)	miniature strigil			1
84	7	bronze - cast	exercise	strigil		2	
85	7	bronze with iron - cast	sound production	bell		11	1
86	1	bone	grooming	spatula		1	
87	5	bronze - cast	grooming	tweezers, probe		4	

88	9	silver	grooming	mirror with cover	1	
89	2	wood and other	personal comfort	fan		1
90	2	tooth	personal adornment	boar's tusk pendant	2	
91	0.5	glass paste	personal adornment	bead, pendant		6
92	3	faience	personal adornment	bead	48	
93	4	rock crystal	personal adornment	bead, pendant	3	
94	5	bronze - cast	personal adornment	finger ring, brooch		2
95	6.5	bronze and wood - cast	personal adornment	staff?	1	
96	6.5	bronze (and leather?) - cast	personal adornment	buckle	1	
97	8.5	silver	personal adornment	earring, finger ring	1	1
98	10	gold	personal adornment (?)	band		1
99	1.5	glass paste	religion - talisman	scarab		1
100	7	semi-precious stone	religion - talisman	amulet		1
101	7	bronze - cast	religion - rite activity - pouring libation	patera	2	
102	2.5	ceramic and painted plaster- thrown	religion - rite activity - burning incense	incense burner	1	
103	6	marble	religion - representation of divinity	small statue	1	
104	7	bronze - cast	religion - representation of divinity	statuette		2
105	8	bronze with silver and copper - cast	religion - representation of divinity	statuette		1
				TOTAL	88	233
						77

Table 3: Artifact groupings determined on the basis of material/technique and assumed function/form/size. Each grouping assigned a notional costliness value on scale of 0-10 as described in the text. Artifact groupings grouped and ordered by assumed function.

NO.	VALUE	MATERIAL/TECHNIQUE	FUNCTION/Form/Size	ITEM	VRB	CI	CLHP
98	10	gold	personal adornment (?)	band			1
38	9.5	silver	drink consumption (short)	cup			2
51	9	silver	drink serving accessory - disbursal	ladle			1
88	9	silver	grooming	mirror with cover		1	
97	8.5	silver	personal adornment	earring, finger ring		1	1
78	8	silver - struck	payment/storage wealth	coin			4
105	8	bronze with silver and copper - cast	religion - representation of divinity	statuette			1
6	7.5	bronze - cast	lighting support (large)	lampstand (floor)			1
24	7.5	bronze - cast	food preparation/serving (or other - chamber pot?)	bilobe basin		1	
46	7.5	bronze with silver - raised	drink serving (large)	lagoena	1		
72	7.5	bronze with iron - cast	writing - ink	ink well with lid		4	
76	7.5	calcite with gilding	storage small objects/quantities	pyxis with lid		1	
4	7	bronze - cast	lighting	lamp		2	2
5	7	bronze - cast	lighting support (small)	lampstand (tabletop)	1		
32	7	bronze - cast	food consumption	plate/dish/bowl		1	
42	7	bronze - cast	drink serving (small)	juglet		2	
45	7	bronze - cast	drink serving (large)	pitcher, table amphora, jug		4	
50	7	bronze - cast	drink serving accessory - disbursal	deep dipping vessel, ladle		7	
61	7	rock crystal	high unit value substance storage/packaging	balsamarium		1	
75	7	bronze - cast	storage small objects/quantities	pyxis with lid		1	
84	7	bronze - cast	exercise	strigil		2	
85	7	bronze with iron - cast	sound production	bell		11	1
100	7	semi-precious stone	religion - talisman	amulet			1
101	7	bronze - cast	religion - rite activity - pouring libation	patera		2	
104	7	bronze - cast	religion - representation of divinity	statuette			2
1	6.5	bronze with iron - raised	water acquisition/storage	bucket	1		2
11	6.5	bronze with iron - raised	cooking - deep open	casserole		1	
18	6.5	bronze - raised	cooking - closed - water boiling	cauldron with lid			1
47	6.5	bronze - raised	drink serving accessory - straining	colander		1	
73	6.5	bronze - cast	sealing	seal ring		1	1

83	6.5	bronze - cast	exercise (small)	miniature strigil		1
95	6.5	bronze and wood - cast	personal adornment	staff?		1
96	6.5	bronze (and leather?) - cast	personal adornment	buckle		1
8	6	bronze - raised	cooking - closed	cookpot		1
10	6	bronze - raised	cooking - deep open	casserole		3
16	6	bronze - raised	cooking - shallow open	pan		2
20	6	bronze - raised	food preparation/serving (or other - chamber pot?)	basin		3
22	6	bronze - raised	food preparation/serving (or other - chamber pot?)	large oval basin		1 1
26	6	iron and ivory	food preparation/consumption (or other?)	knife	1	
28	6	marble	food grinding	mortar with pestle		1
69	6	bronze - cast	weighing (small-scale)	balance (steelyard, pans, pendant weight)		3
79	6	bronze (and leather?) - cast	equine transport	pair blinders, bit		2
80	6	iron	slave restraint	shackles		1
103	6	marble	religion - representation of divinity	small statue	1	
14	5.5	bronze - raised	cooking - shallow open (small)	small pan with horizontal handle		1
21	5.5	bronze - raised	food preparation/serving (or other - chamber pot?) (small)	small oval basin		3 1
48	5.5	bronze - raised	drink serving accessory - decanting	funnel		1
65	5.5	iron and bronze	craft production/agriculture - cutting	knife		1
77	5.5	bronze - struck	payment/storage wealth	coin		20 1
23	5	bronze - raised	food preparation/serving (or other - chamber pot?)	large oval basin lid		1
25	5	iron and bone	food preparation/consumption (or other?)	knife		1
63	5	bronze - cast	craft production - textile - sewing	needle		2
64	5	iron and wood	craft production/agriculture - chopping	hatchet	2	1
67	5	iron (and leather?)	agriculture - grabbing/moving	hook tool - short-handled	1	
68	5	iron (and wood)	agriculture - trimming	bill hook	1	
71	5	bronze - cast	writing - incision in wax	stylus		1
74	5	lead	storage small objects/quantities	pyxis with lid		1
87	5	bronze - cast	grooming	tweezers, probe		4
94	5	bronze - cast	personal adornment	finger ring, brooch		2

82	4.5	iron	exercise	strigil ring	1		
27	4	lava stone	food grinding	hand mill	1		
93	4	rock crystal	personal adornment	bead, pendant		3	
41	3	glass - blown - mosaic	drink serving (small)	juglet		1	
92	3	faience	personal adornment	bead		48	
102	2.5	ceramic and painted plaster- thrown	religion - rite activity - burning incense	incense burner	1		
31	2	glass - blown	food consumption	plate/dish		5	3
34	2	glass - blown	drink consumption (tall)	beaker, flagon		1	2
37	2	glass - blown	drink consumption (short)	cup		7	
44	2	glass - blown	drink serving (large)	flask		1	
49	2	glass - blown	drink serving accessory - disbursal	deep dipping vessel		1	
57	2	glass - blown	food/drink storage/packaging (medium)	large cylindrical bottle, large square bottle, large square jar			9
66	2	basalt?	craft production/agriculture - tool sharpening	hone	1		
70	2	limestone	weighing (large-scale)	weight	1		
89	2	wood and other	personal comfort	fan			1
90	2	tooth	personal adornment	boar's tusk pendant		2	
3	1.5	ceramic - mold-made	lighting (large)	lamp (compound)			1
30	1.5	ceramic with gloss slip - thrown	food consumption	plate/dish/bowl	1	3	2
36	1.5	ceramic with gloss slip - thrown	drink consumption (short)	cup	3	1	
40	1.5	glass - blown	drink serving (small)	askos, juglet, small cylindrical bottle, small globular bottle	1	2	4
43	1.5	ceramic - thrown	drink serving (large)	bottle, pitcher, jug	7		
54	1.5	glass - blown	food/drink storage/packaging (small)	medium cylindrical bottle, small square bottle, small square jar			6
58	1.5	ceramic - thrown	food/drink storage/packaging (large)	amphora	5		
60	1.5	glass - blown into relief mold	high unit value substance storage/packaging	balsamarium			2
99	1.5	glass paste	religion - talisman	scarab			1
7	1	ceramic - thrown	cooking - closed	cookpot	6		
12	1	ceramic - thrown	cooking - deep open	casserole	4		
13	1	ceramic - thrown	cooking - deep open lid	casserole lid	1		
15	1	ceramic - thrown	cooking - shallow open	pan	1		

17	1	ceramic - thrown	cooking - shallow open lid	pan lid	1		
19	1	ceramic - thrown	food preparation/serving (or other - chamber pot?)	basin	3		
29	1	ceramic - thrown	food consumption	plate/dish/bowl	1		
33	1	ceramic - thrown	drink consumption (tall)	beaker, frittulus	3		
35	1	ceramic - thrown	drink consumption (short)	cup	1		
39	1	ceramic - thrown	drink serving (small)	small pitcher, juglet	4		
52	1	ceramic - thrown	food/drink storage/packaging (small)	small jar, very small amphora	4		
55	1	ceramic - thrown	food/drink storage/packaging (medium)	jar, amphora bottom, small amphora	5		
59	1	glass - blown	high unit value substance storage/packaging	balsamarium, minature jar	1	30	2
86	1	bone	grooming	spatula		1	
2	0.5	ceramic - mold-made	lighting	lamp	5	5	7
9	0.5	ceramic - thrown	cooking - closed lid	cookpot lid	11		
53	0.5	ceramic - thrown	food/drink storage/packaging (small)	small jar lid	1		
56	0.5	ceramic - thrown	food/drink storage/packaging (medium)	jar lid	2		
62	0.5	ceramic - hand modelled	craft production - textile - weaving	loom weight	2		
81	0.5	glass paste	entertainment? (other?) - glass paste	disk (token?)	2	25	
91	0.5	glass paste	personal adornment	bead, pendant			6
				TOTAL	88	233	77

Table 4: Artifact groupings as in Table 3 ordered by descending costliness value.

forms, which together suggest that the residence may have been equipped to serve the dining needs of five persons.

The CLHP assemblage consists of seventy-seven items assigned to thirty-five artifact groupings. Applying the approach employed above with the CI assemblage we can consider a group of four silver coins found together and a set of six glass paste beads found together as representing a single item, resulting in revised figures of sixty-nine items and thirty-five artifact groupings. The substantially smaller numbers of both items and groupings with respect to the CI assemblage likely results to a substantial extent from the fact that artifacts were collected and inventoried in perhaps only two or three of the fifteen or sixteen ground-floor rooms in this residence. The non-ceramic component consists of fifty-nine items belonging to thirty-two groupings—figures substantially higher than those attested for the equivalent elements of the VRB assemblage and substantially lower than those attested for the equivalent elements of the CI assemblage. These include twenty-eight very lost-cost to low-cost vessels in blown glass (of which fifteen are small to large square or cylindrical bottles or jars) and seven medium- to high-cost raised or cast bronze or bronze with iron fittings vessels. There is a notable presence of very high-cost items, including a cast bronze statuette with silver inlay, a group of four silver coins, a silver finger ring, two silver cups, one silver ladle, an intaglio in an unidentified type of semi-precious stone, and a fragment of one small sheet of gold that presumably served for fixing hair or was sewn onto a garment.

Turning to comparisons between the three assemblages, it is unclear to what extent the pronounced differences between, on the one hand, the VRB assemblage and, on the other, the CLHP and the CI assemblages should be interpreted as representing differences between an assemblage from a modest rural residence and assemblages from two modest town residences, although it seems reasonable to assume that this is to some extent the case. In general terms, these differences take the form of a paucity of items relating to functions other than the packaging, storage, preparation and consumption of food, a paucity of items of medium cost and higher aside from agricultural/craft tools, and a paucity of items in glass and bronze at the first of these residences in comparison to the other two. In more specific terms, when we examine the groupings of items associated with specific functions, we can note that there are no items relating to bathing at the VRB whereas there are *strigiles* at both the CI and the CLHP; that at the VRB all lamps are in ceramic, whereas at both the CI and the CLHP there are lamps in both ceramic and cast bronze; all vessels for the cooking of food at the VRB are in ceramic, whereas both the CI and the CLHP had vessels for the cooking of food in raised bronze; and all vessels for the consumption of food and drink at the VRB are in ceramic, whereas at the CI there are also vessels in both ceramic and blown glass and at the CLHP there are vessels in ceramic, blown glass, and silver.

In comparing the assemblages between the CI and the CLHP, it seems reasonable to consider that the differences between the two should be interpreted as representing differences between an assemblage from, in the former case, a residence of low socio-economic level and, in the latter, an assemblage from a residence of somewhat higher (medium?) socio-economic level. Not only is the CLHP *c.* 2.25 times the size of the CI in terms of ground-floor area, with twice the number of ground-floor rooms, but this residence also includes architectural features associated with high socio-economic level residences that are absent from the CI, including a compluviate atrium, a decorative garden, a *lararium*, and a secondary entrance. It should be pointed out, however, that

at the time of the eruption one of the rooms in the CI (Room 4) was in the process of receiving substantially more elaborate wall decoration than that documented in any of the rooms in the CLHP. In comparing the two assemblages it is important to keep in mind the partial recovery and inventorying of the artifact assemblages at both residences. In particular, it seems that this was less extensive at the CLHP than at the CI, meaning that qualitative comparisons based on the absence of items belonging to one or more grouping or functions at the former residence should be treated with caution.

Consonant with the suggestion that the CLHP represented a residence of higher socio-economic level than the CI is the more substantial presence of very high-cost items at the former, including three associated with a basic activity—the consumption of drink (two cups and a ladle)—and the presence there of silver coinage, and the presence of an item associated with the ownership of a slave (a set of iron shackles), two items associated with the ownership of a horse (a pair of bronze blinders and bronze item that was likely an element of a bit), and perhaps also three items (a set of bronze or bronze with copper and silver inlay statuettes, including a Genius, a Lar, and an *agathodaemon*) relating to domestic cult practice. Perhaps also worth noting in this regard is the fact that whereas all twenty-seven glass *balsamaria* from the CI are free-blown containers of very low cost, two of the four glass *balsamaria* from the CLHP are slightly more costly containers made by blowing into a fruit-shaped mold.

There are other notable differences between the two assemblages from the CI and the CLHP. That from the CI includes a striking number of items relating to the composition of writing—including four inkwells and a stylus—all in bronze—and to small-scale weighing—two steelyards, a pair of balance pans, and a pendant weight—all again in bronze, whereas there are no items relating either to the composition of writing or to weighing from the CLHP. The assemblages of glass vessels from these two residences are also strikingly different, with that from the CLHP comprised in large measure of square and cylindrical bottles and jars—some likely representing sets of four identical containers—and that from the CI consisting primarily of *balsamaria*. Whether these reflect the consumption at these two residences of different substances, different approaches to the storage of the same substance or substances, or different commercial activities being engaged in by their inhabitants remains unclear.

A more definitive evaluation of the data from these three residences will be undertaken at the conclusion of the data collection phase of PALHIP, employing both an expanded and more nuanced set of artifact groupings and a more rigorously constructed and applied costliness scale in comparison with those employed here for this preliminary analysis. For this purpose we will employ an approach that utilizes the creation of Guttman scales (also known as scalograms).²⁵ This method has been widely employed by social scientists to characterize a household's wealth as a function of the set of durable goods that it possesses and to rank sets of households (e.g., those in a specific community) by wealth as expressed in the sets of durable goods that they possess. It is grounded in the fact that there tend to be strong regularities in various cultures in the extent to which/order in which households acquire specific kinds of durable goods as a function of their cost. Standard sets of durable goods can be arranged in a ranked order, running from relatively low-cost goods that will be possessed by effectively all households, to progressively more costly goods that will be owned by fewer and fewer households as one

²⁵ Lusch et al. (1978). For an archaeological perspective on Guttman scales see Smith (1987: 303-4).

moves up the scale. A household that possesses a particular good will generally also possess all of those goods ranked at a lower order. The use of this method to investigate structure in artifact assemblage data from residences at Pompeii and its environs will require the adoption of specific features that take into account the distinctly imperfect nature of the data at our disposal.²⁶ The effective absence of ceramics should not represent a particular obstacle, as most pottery would have been a low-cost item at or near the bottom of the scale that would not have delineated differing levels of wealth between residences. More problematic will be the inconsistent way in which portable material culture was collected and inventoried by the excavators on a day-by-day and thus room-by-room basis, as this will have failed to register entire categories of durable goods that to some extent will represent particular activities/functions. In order to lessen the impact of this effect we will develop multiple scales comprised of artifact groupings relating to specific activities and materials, with each residence scored on several separate scales and ranked relative to other households on the basis of the patterning embodied in the full suite of these, thereby containing the influence on the overall evaluation produced by specific instances of missing data. The evidence recorded regarding the quantities of artifacts and the various LHIPs—the use and repair of specific artifacts and categories of artifacts in particular— will be mobilized to supplement and amplify the results obtained by this method.

4 Conclusions

In the seven study seasons carried out to date PALHIP has collected a wealth of information relating to the operation of the various LHIPs at Pompeii and some of the sites in its environments. At the project's conclusion we will be able to evaluate the nature of these and to draw some inferences regarding their impact on the nature of artifact assemblages at both the Vesuvian sites and elsewhere. As part of our work we will have developed and applied methods for the description and documenting of artifacts and the interpretation of artifact assemblage data that can be adopted (with or without modification) by other projects with a view to building more extensive sets of intercomparable data that can be employed to further our understanding of portable material culture in the Roman world.

Sources cited

Allison, P. 2004. *Pompeian Households: An Analysis of the Material Culture*. *Cotsen Institute of Archaeology, University of California, Los Angeles Monograph 42*, Los Angeles.

Allison, P. 2006. *The Insula of the Menander at Pompeii. Vol. 3, The Finds: A Contextual Study*, Oxford.

Allison, P. 2009. "Understanding Pompeian Households Practices through their Material Culture." *Facta* 3: 11-33.

Armitt, M. 1989. "The Casa della Venere in Bikini (I.11.6-7) at Pompeii: Its Decoration and Finds." PhD diss., University of Adelaide.

Banducci, L., R. Opitz, and M. Mogetta. 2018. "Measuring Use Wear on Black Gloss

²⁶ For the construction of Guttman scales see Guest (2000).

Pottery from Rome through 3D Surface Analysis.” In *Big Data on the Roman Table*, eds. P. Allison and M. Pitts. (Special Issue of *Internet Archaeology* 50).
<https://doi.org/10.11141/ia.50.12>.

Berg, R. 2008. "Saggi stratigrafici nei vicoli a est e a ovest dell'Insula dei Casti Amanti (IX, 12). Materiali e fasi." In *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, eds. P.G. Guzzo and M.P. Guidobaldi, 363-75. Rome.

Berg, R. 2010. "Il mundus muliebris nelle fonti latine e nei contesti pompeiani." PhD diss., University of Helsinki.

Berg, R. 2017. "Toiletries and Taverns. Cosmetic Sets in Small Houses, Hospitia, and Lupanaria at Pompeii." *Arctos* 51: 13-39.

Bernal, D., M. Bonifay, and A. Pecci eds. forthcoming. *Roman Amphora Contents: Reflecting on Maritime Trade of Foodstuffs in Antiquity. Roman and Late Antique Mediterranean Pottery* 9, Oxford.

Berry, J. 1997a. "The Conditions of Domestic Life in Pompeii in AD 79: A Case-Study of Houses 11 and 12, Insula 9, Region I." *Papers of the British School at Rome* 65: 103-125.

Berry J. 1997b. "Household Artifacts: Towards a Re-interpretation of Roman Domestic Space.” In *Domestic Space in the Roman World: Pompeii and Beyond. Journal of Roman Archaeology Supplement Series* 22, eds. R. Laurence and A. Wallace-Hadrill, 183-95. Portsmouth.

Berry, J. 2007. "Instrumentum Domesticum: A Case Study." In *The World of Pompeii*, eds. J. Dobbins and P. Foss, 292-301. London and New York.

Berry J. ed. 1998. *Unpeeling Pompeii: Studies in Region I of Pompeii*, Milan.

Cheung, C. and Tibbott, G. forthcoming. "The Dolia of Regio I, Insula 22: Evidence for the Production and Repair of Dolia." In *Fecisti Cretaria. Produzione e circolazione ceramica a Pompei: Stato degli studi e prospettive di ricerca*, eds. L. Toniolo and M. Osanna, 165-75. Rome.

Chiaromonte Trerè, C. ed. 1986. *Nuovi contributi sulle fortificazioni pompeiane. Quaderni di Acme*, Milan.

Corning Museum of Glass. "Cracking off." YouTube video, October 18, 2007.
<https://www.youtube.com/watch?v=E4yovEi7j7E>.

De Caro, S. 1994. *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.

Della Corte, M. 1913a. "VIII. Pompei—Continuazione dello scavo di via dell'Abbondanza." *Notizie degli scavi dell'antichità Serie Quinta Volume X*: 249-56.

- Della Corte, M. 1913b. "VIII. Pompei—Continuazione dello scavo sulla via dell'Abbondanza." *Notizie degli scavi dell'antichità* Serie Quinta Volume X: 307-10.
- Della Corte, M. 1913c. "IX. Pompei—Continuazione degli scavi sulla via dell'Abbondanza." *Notizie degli scavi dell'antichità* Serie Quinta Volume X: 356-60.
- Della Corte, M. 1913d. "X. Pompei—Continuazione degli scavi sulla via dell'Abbondanza." *Notizie degli scavi dell'antichità* Serie Quinta Volume X: 411-16.
- Della Corte, M. 1913e. "VI. Pompei—Continuazione dello scavo sulla via dell'Abbondanza." *Notizie degli scavi dell'antichità* Serie Quinta Volume X: 450-5.
- Della Corte, M. 1913f. "V. Pompei—Continuazione dello scavo sulla via dell'Abbondanza." *Notizie degli scavi dell'antichità* Serie Quinta Volume X: 476-80.
- Dicus, K. 2014. "Resurrecting Refuse at Pompeii: The Use-Value of Urban Refuse and its Implications for Interpreting Archaeological Assemblages." In *TRAC 2013: Proceedings of the Twenty-Third Annual Theoretical Roman Archaeology Conference, London 2013*, eds. H. Plattis, C. Barron, J. Lundock, J. Pearce, and J. Yoo, 65-78. Oxford.
- Di Giovanni, V. 1996 "Produzione e consumo di ceramica da cucina nella Campania romana (II a.C. – II d.C.)." In *Les céramiques communes de Campanie et de Narbonnaise (Ier s. av. J.-C. IIe s. ap. J.-C.) La vaisselle de cuisine et de table. Actes des journées d'étude organisées par le Centre Jean Bérard ed la Soprintendenza Archeologica per Le Province di Napoli e Caserta. Naples, 27-28 mai 1994. Collection du Centre Jean Bérard* 14. ed. M. Bats, 65-103. Naples.
- Duckworth, C., and A. Wilson eds. forthcoming. *Recycling and Reuse in the Roman Economy. Oxford Studies on the Roman Economy*, Oxford.
- Gazda, E., and J. Clarke, eds. 2016. *Leisure & Luxury in the Age of Nero: The Villas of Oplontis near Pompeii. Kelsey Museum Publication* 14, Ann Arbor.
- Guarino, V., I. Arienzo, M. D'Antonio, A. De Bonis, J.T. Peña, G. Tibbott, M. Verde, and V. Morra. forthcoming. "A Multi-Analytical Investigation of Pottery from Porta di Nola in Pompeii with Sr-Nd-Isotope, Chemical, Petrographic and Mineralogical Analyses."
- Guest, G. 2000. "Using Guttman Scaling to Rank Wealth: Integrating Quantitative and Qualitative Data." *Field Methods* 12: 346-57.
- Isings, C. 1957. *Roman Glass from Dated Finds*, Groningen.
- Jashemski, W. 1993. *The Gardens of Pompeii, Herculaneum and the Villas Destroyed by Vesuvius. Volume II: Appendices*, New Rochelle.
- Lund, J., and M. Lawall eds. 2011. *Pottery in the Archaeological Record: A View from the Greek World. Acts of the International Colloquium at the Danish Institute at Athens, June 20-22, 2008. Monographs of the Danish Institute at Athens* 1, Aarhus.
- Lusch, R., E. Stafford, and J. Kasulis. 1978. "Durable Accumulation: An Examination of Priority Patterns." *Advances in Consumer Research* 5: 119-25.

Morra, V., G. Aiello, O. Amore, I. Arienzo, D. Barra, L. Cavassa, M. d'Antonio, A. De Bonis, C. Germinario, C. Grifa, V. Guarino, A. Langella, and M. Mercurio. forthcoming. "Indagini archeometriche di carattere minero-petrografico su ceramiche da Pompei." In *Fecisti Cretaria. Produzione e circolazione ceramica a Pompei. Stato degli studi e prospettive di ricerca*, eds. L. Toniolo and M. Osanna, 33-9. Rome.

Peña, J.T. 2007. *Roman Pottery in the Archeological Record*, Cambridge.

Peña, J.T. 2014. "The Pompeii Artifact Life History Project: Conceptual Background and First Season's Results." *Rei cretariae romanae fautorum acta* 43: 297-304.

Peña, J.T. forthcoming. "Evidence for Pottery Production from the Torre VIII/Porta di Nola Refuse Middens at Pompeii." In *Fecisti Cretaria. Produzione e circolazione ceramica a Pompei. Stato degli studi e prospettive di ricerca*, eds. L. Toniolo and M. Osanna, 23-32. Rome.

Peña, J.T., and C. Cheung. 2015. "The Pompeii Artifact Life History Project: Conceptual Basis and Results of First Three Seasons." In *Heritage and Technology. Mind, Knowledge Experience. Le Vie degli Mercanti XIII Forum Internazionale di Studi. Fabbrica della conoscenza* 56, 2115-23.

"Pompeii Bibliography and Mapping Project." Accessed January 15, 2020.
<https://digitalhumanities.umass.edu/pbmp/>.

"PompeiiinPictures." Accessed January 15, 2020.
<https://pompeiiinpictures.com/pompeiiinpictures/index.htm>.

Puglisi Caratelli, G., and I. Baldassarre. 1990. *Pompei pitture e mosaici Volume II Regio I parte seconda*, Rome.

Ray, N. 2006. "Consumption and Roman Archaeology: Beyond Pompeii." In *TRAC 2005: Proceedings of the Fifteenth Annual Theoretical Roman Archaeology Conference*, eds. B. Croxford, H. Goodchild, J. Lucas, and N. Ray, 25-41. Oxford.

Ray, N. 2009. *Household Consumption in Ancient Economies: Pompeii and the Wider Roman World*. PhD diss., University of Leicester.

"RES ROMANAE. University of California, Berkeley Roman Material Culture Laboratory." Accessed on January 15, 2020. <http://resromanae.berkeley.edu/>.

Romanazzi, L., and A.M. Volontè. 1986. "Gli scarichi tra Porta Nola e la Torre." In *Nuovi contributi sulle fortificazioni pompeiane. Quaderni di Acme* 6, ed. C. Chiaramonte Trerè, 55-113. Milan.

Scatozza Höricht, L. 2012. *L'Instrumentum vitreum di Pompei. Scienze dell'antichità, filologico-letterarie e storico-artistiche* 868, Rome.

- Schwartz, J. 2006. "'Reduce, Reuse and Recycle' Prolegomena on Breakage and Repair in Ancient Jewish Society: Broken Beds and Chairs in Mishnah *Kelim*." *Jewish Studies on Internet Journal* 5: 147-80.
- Smith, M. 1987. "Household Possessions and Wealth in Agrarian States: Implications for Archaeology." *Journal of Anthropological Archaeology* 6: 297-335.
- Stefani, G. 2006. "Domus I, 11, 5." In *Argenti a Pompei*, ed. P.G. Guzzo, 151-3. Milan.
- Stefani, G. 2010. *Man and the Environment in the Territory of Vesuvius: The Antiquarium of Boscoreale*, Pompeii.
- Tassinari, S. 1993. *Il vasellame bronzeo di Pompei. Soprintendenza Archeologica di Pompei Cataloghi* 5, 2 volumes, Rome.
- Taxel, I. 2018. *Fragile Biography: The Life Cycle of Ceramics and Refuse Disposal Patterns in Late Antique and Early Medieval Palestine*, Leuven, Paris, and Bristol, CT.
- Van der Poel, H. B. 1986. *Corpus Topographicum Pompeianum, Part IIIA*, Austin.
- Vuat, F. 2000. "La casa I, 11, 5-8 e le sue fasi edilizie." *Rivista di studi pompeiani* 11: 133-151.
- Wallace-Hadrill, A. 1994. *Houses and Society in Pompeii and Herculaneum*, Princeton.
- Wilburn, A. n.d. "Karanis Housing Project." Accessed January 14, 2020.
<http://karanishousingproject.org/>