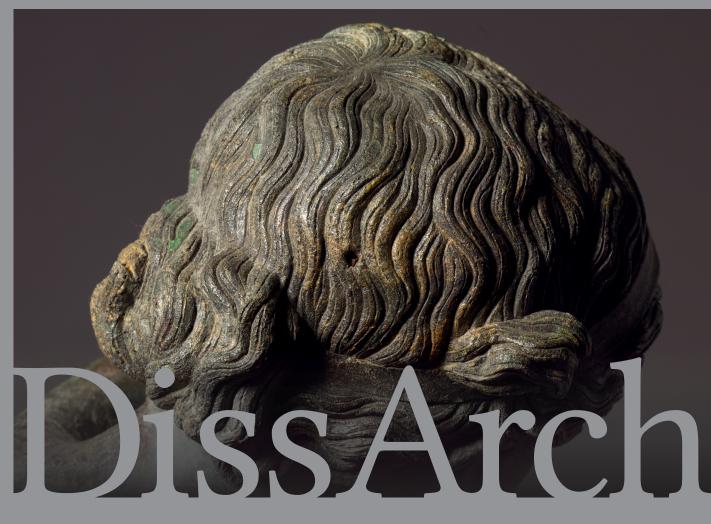
Proceedings of the XXIst International Congress on Ancient Bronzes

edited by Dávid Bartus, Zsolt Mráv and Melinda Szabó

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Budapest 2024











Proceedings of the XXIst International Congress on Ancient Bronzes



Budapest, 20-24 September 2022

Edited by Dávid Bartus – Zsolt Mráv – Melinda Szabó

Budapest, 2024

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The bombing of Pompeii in 1943

New evidence about the bronzes

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Abstract: In 1943, Pompeii was the object of bombing raids by the Allied forces, a sad and forgotten chapter in the history of the ancient city, which is a topical and prominent issue in light of the recent destruction and war damage suffered by many archaeological sites and museums in the Middle East and North Africa. Along with many Roman buildings, the raids also affected the Museo Pompeiano, resulting in the destruction of most of the objects exhibited. The Museum had been set up according to modern and innovative concepts for the time, and the damage proved to be severe and irreparable, as many of the antiquities on display were of known provenance and contextualized, but still unpublished. After the end of the Second World War, a part of the objects recovered from the ruins of the building were considered hopelessly lost and therefore completely neglected. Among them were hundreds of bronzes belonging to different functional categories: an ongoing project aimed at restoring and studying these artifacts has revealed their potential and some unexpected data, illuminating their complex biography(ies). An attempt is being made to recontextualize these objects in order to trace their provenance on the basis of inventories, archival documents and the bibliography concerning the Museum and its last pre-war layout.

Keywords: Pompeii, Museo Pompeiano, war damage, bronze artifacts, restoration

The history of Europe in the 20th century is littered with 'collateral damage' to cultural heritage, in various forms: from exportations and requisitions to the systematic destruction of buildings, museums and monumental complexes due to wars and related events. Unfortunately, our recent history has brought this prominent issue to the forefront again, with the terrorist attacks and conflicts in the Middle East and North Africa. Archaeological sites and monuments have shown their vulnerability, and public opinion has realized that the inviolability of cultural heritage is not a permanent acquisition.¹ Reflection on these dramatic events has found ample space in the press and has become part of the archaeological debate in recent years: the subject of war damage and the protection of cultural heritage in war contexts is now included in archaeology textbooks,² and is the subject of university courses, as well as lectures and exhibitions aimed at a wider audience.³

- 1 Meirano 2018, 239; Pollard 2020a, 7–11.
- 2 E.g. Renfrew Bahn 2012, 235–253.

³ MEIRANO 2018, 239; POLLARD 2020a, 9, and notes 19–21. Among the most recent exhibitions dedicated to this theme is the one held in Rome at the Scuderie del Quirinale in 2022–2023: GALLO – MORSELLI 2023.

In this framework, some forgotten episodes of the Second World War have been brought back to public attention,⁴ including the bombing of Pompeii in 1943 and its consequences. In 2015, the exhibition *Pompei e l'Europa 1748–1943*,⁵ held at the National Archaeological Museum of Naples and at the Archaeological Park of Pompeii, proposed this theme to visitors: the title itself significantly recalls the year of the Allied bombardment as a precise chronological turning point, a watershed in the modern history of the site.

At Pompeii, the bombings on the night of August 24 and from September 13 to 26 caused irreparable damage to buildings, particularly in the *Forum* area and in *Regiones* VI and VII in the western part of the site (Fig. 1).⁶ Damage and ruins are still visible today, particularly in *Insula* 6 of *Regio* VII and adjacent areas. As can be seen from the maps of the time (Figs 2–3), more than 160 bombs hit the site, dropped by aircraft of the British Royal Air Force (RAF), the Royal Canadian Air Force (RCAF), and the United States Army Air Force (USAAF).⁷ Among them were unexploded ordnance which posed, and may still pose, a danger to the staff of the archaeological site and to visitors: this circumstance has led the Management of the Park to start a new monitoring through geophysical prospection in the last few years.⁸



Fig. 1. Pompeii, the House of Tryptolemus (VII. 7. 5) after the bombing (after GARCÍA Y GARCÍA 2006, Fig. 257).

- 4 E.g. the activities of the Monuments, Fine Arts and Archives Section Unit (MFAA) of the Allied army, known as the *Monuments Men*, who operated in Europe during the Second World War and beyond to defend, preserve and recover cultural heritage (see EDSEL 2009; https://www.monumentsmenandwom-enfnd.org).
- 5 OSANNA et al. 2015. A first selection of the bronze objects affected by the Pompeii bombardment discussed in this paper was displayed in the exhibition held at Venaria Reale, Turin, in 2018: ELIA – MEI-RANO 2018.
- 6 García y García 2006, 36.
- 7 GARCÍA Y GARCÍA 2006, 24–25, and note 15; POLLARD 2020a, 1, and note 1; ANGELONE VITAGLIANO 2000, 67.
- 8 GARCÍA Y GARCÍA 2006, 24, note 15; *Così bonifichiamo Pompei. I georadar del Poli a caccia di bombe.* Dopo la Valle dei Re una nuova sfida per docenti e studenti torinesi (La Stampa, 31 October 2019: https:// www.lastampa.it/topnews/edizioni-locali/torino/2019/10/31/news/cosi-bonifichiamo-pompei-i-georadar-nbsp-del-poli-a-caccia-di-bombe-1.37813868).

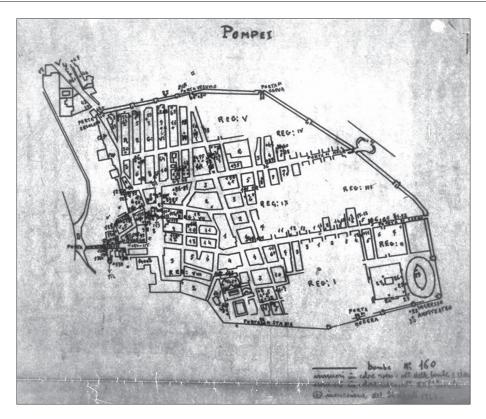


Fig. 2. Pompeii, locations of bomb damage of 1943 in a contemporary plan produced by the Italian staff (after POLLARD 2020a, Fig. 1).

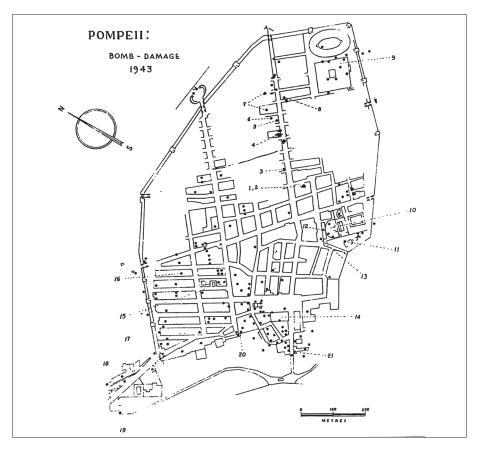


Fig. 3. Pompeii, locations of bomb damage of 1943 in a contemporary plan produced for MFAA Final Report (after GARCÍA Y GARCÍA 2006, Fig. 11).

The momentous events of 1943 and their aftermath have been the subject of rigorous, systematic studies by Laurentino García y García in 2006⁹ and, more recently, by Nigel Pollard.¹⁰ Through a careful analysis of the available sources—from the fundamental documents kept in the Archaeological Superintendency to those in various military archives—both authors have reconstructed the dramatic facts of that period, albeit from different perspectives. Pollard's work, which is an essay in contemporary history, aims to place the bombing of Pompeii in its historical and military context, which leads him to explore more broadly the relationship between cultural heritage and war necessity during the Second World Conflict, taking also into account what was happening in the rest of the peninsula and in other war theatres at the time.



Fig. 4. 1–2 – Little bronze bells once exhibited in the Museo Pompeiano (after GUSMAN 1899, 146; CIARALLO – DE CAROLIS 1999, Fig. 143).

More specifically, his intention is to demonstrate why the archaeological area of Pompeii was subjected to bombings. Rejecting alternative explanations not supported by documentary evidence—namely, those related to the alleged presence of German troops encamped on the site and the use of the archaeological area for the storage of trucks and military materials¹¹—, Pollard argues that ancient Pompeii was not deliberately targeted. Most of the damage was essentially accidental, resulting from the proximity to the actual targets, namely the transportation network and infrastructures (roads, railways, rail marshalling yards, intersections, bridges, etc.) around the modern city of Pompeii, that were hit in order to weaken German counter-attacks against the Allied landings in the Gulf of Salerno in September 1943. Navigational errors and inaccuracies in the bombing tactics of the time¹² would have caused the damage inflicted on the site by aircraft attacking other nearby targets of obvious military interest.¹³

But, even if the attacks on the site were neither indiscriminate nor deliberate, they caused serious damage to objects and buildings, at the origin of a progressive acceleration of decay even after the conflict.

- 9 GARCÍA Y GARCÍA 2006; see also GARCÍA Y GARCÍA 2015.
- 10 POLLARD 2020a; see also POLLARD 2020b. See also the detailed reconstruction of military strategy and events by ANGELONE VITAGLIANO 2020.
- 11 POLLARD 2020a, 92–104; POLLARD 2020a. See also Angelone Vitagliano 2020, 7–13, 67;–68.
- 12 POLLARD 2020a, 54–69.
- 13 POLLARD 2020a, 69: "If anything, given the levels of accuracy achievable at the time, it is surprising that more bombs did not strike the site"; see also GARCÍA y GARCÍA 2006, 24–26. Unfortunately, the MFAA did not play a role in preventing the bombing of Pompeii, since at that time the organization was only active in areas occupied by ground forces (POLLARD 2020a, 158).

In the summer and fall of a chaotic year like 1943, news of the bombings of Pompeii was belated and sparse in the Italian press, and almost absent in the British and American.

Considering the importance of the archaeological site, which since June 1943 had been awarded three stars in the ranking of the 'Harvard list' for the region of Campania,¹⁴ it is surprising that even later these dramatic events received little public and scholarly attention, even in comparison to the bombing of other monumental sites, such as the Abbey of Montecassino, which occurred a few months later.¹⁵



Fig. 5. Bombed bronze basin (Tassinari serie S3110; Photo: D. Elia).

The monograph by Garcia y Garcia is complementary to that of Pollard, since with a different approach, closer to the effects of the bombings on the archaeological and architectural evidence, it provides a detailed narrative of the facts and damage, thanks to a rich iconographic apparatus composed of hundreds of photographs and a thorough analysis of publications and archival documents by the protagonists of the time.

Among them, *in primis*, is Amedeo Maiuri,¹⁶ then Superintendent and Director of the Archaeological Museum of Naples, who did everything in his power in the desperate attempt to protect the site and took measures in order to save the furnishings and artifacts exhibited in the *domus*, *tabernae* and various buildings, as we can infer from his own words referring to the days before the bombardment: "There is no more time to lose at Pompeii: there is now as much to fear from the first shock of the inva-



Fig. 6. Bombed bronze pitcher (Tassinari genere D2300; Photo: D. Elia).

- 14 American Defense-Harvard Group, Committee on the Protection of Monuments: "*** Ancient Pompeii. The most famous ruins of a Roman town, buried during the eruption of Mt. Vesuvius in 79 A.D., now largely excavated. Museum within excavations." (quotation in POLLARD 2020a, 127).
- 15 GARCÍA Y GARCÍA 2006, 18, 21, 28; POLLARD 2020a, 1, note 1; see also Edsel 2009, 44-48.
- 16 The figure of Maiuri and his activities at Pompeii are discussed in ZEVI 2001; GUZZO 2012, with complete previous bibliography; ROWLAND 2014, 248–253; GRIMALDI 2015; PAPPALARDO 2017; OSANNA 2017.

sion as from the gangs of thieves and bandits scurrying about to plunder abandoned or damaged houses. Statuettes and reliefs are removed from the Gardens of the House of the Vettii, of the Amorini, of Marcus Lucretius, of Loreius Tiburtinus, and the portrait-herms of Vestorius Priscus, of Olconius Rufus, and everything is buried and walled up in the hypogeum of the Stabian Baths under the protection of the *mofèta*:¹⁷ and that was good advice. But who will save monuments, houses and paintings from the fury of bombing?"¹⁸ After the attack, Maiuri himself disconsolately admitted: "All my efforts to make Pompeii a neutral zone immune from war offenses have been in vain.";¹⁰ "The inconceivable had now occurred. The blind horror of the war of men destroyed what the most terrible cataclysm on earth had not destroyed."²⁰

But Pompeii also had a museum, the so-called *Museo Pompeiano*, inaugurated by Giuseppe Fiorelli, then renovated by his successors and, between 1926 and 1933, by Maiuri himself, who added several finds from recent excavations and from the Villa della Pisanella at Boscoreale.²¹ The museum was not spared from the bombing and was "badly hit, destroyed in the building and in the objects", as Maiuri wrote,²² during the first raid in August and then on September 20. 1378 objects were destroyed, but the damage affected all the materials on display.



Fig. 7. Bombed bronze bucket (Tassinari genere X1600 or X1800; Photo: D. Elia).

Far from the artistic merits of the Pompeian col-

lections in the Museum of Naples, the exhibition in Pompeii was dedicated to material culture and everyday life, according to modern and innovative approaches. The damage proved to be particularly severe, since the majority of the antiquities were of known provenance and contextualized,²³ but, unfortunately, still unpublished at the time of the bombing: a detailed and analytical catalogue was never edited, and the mentions in publications and guides were very succinct.

After the disaster, Maiuri immediately did his best in order to secure the site and salvage as much as possible. He promptly gave orders for the debris to be removed and for most of the museum's

- 17 Type of fumarole characterized by the emission of carbon dioxide.
- 18 MAIURI 1956, 96–97: "A Pompei non c'è più tempo da perdere: c'è ormai da temere tanto il primo urto dell'invasione, quanto le squadre di ladri e di banditi che scorrazzano per depredare le case abbandonate o sinistrate. Si tolgono statuette e rilievi dai Giardini della Casa dei Vettii, degli Amorini, di Marco Lucrezio, di Loreio Tiburtino e le erme-ritratto di Vestorio Prisco, d'Olconio Rufo, e si seppellisce e si mura ogni cosa nell'ipogeo delle Terme Stabiane sotto la protezione della mofèta: e fu ottimo consiglio. Ma chi salverà monumenti, case e pitture dalla furia dei bombardamenti?" For further measures taken by Maiuri in order to ensure the safety of the antiquities, at Pompeii and in Naples, see: MAIURI 1946 and the remarks in GARCÍA 2006, 19–20, 24; CIARDIELLO 2017; POLLARD 2020a, 185–187.
- 19 MAIURI 1956, 158–161: "Tutti i miei sforzi per fare di Pompei una zona neutra immune da offese di guerra, sono stati vani."
- 20 MAIURI 1946, 134: "L'inconcepibile era ormai avvenuto: il cieco orrore della guerra degli uomini distruggeva quello che il più tremendo cataclisma della terra non aveva distrutto."
- 21 For a vivid description of the museum pre-war set-up, see MAIURI 1946, 134–135. L. García y García provides a detailed outline of the setting of the Museum and of the objects on display, based on the limited sources available (GARCÍA Y GARCÍA 2006, 173–200); see also OSANNA 2016, 153–155; OSANNA 2017, 167–170.
- 22 MAIURI 1946, 134: "... colpito in pieno, distrutto nell'edificio e negli oggetti."
- 23 MEIRANO 2018, 240–241.

objects to be recovered, even if only in fragments. A very useful list of the destroyed artifacts was drawn up, which is still kept in the Archives, and the mention "destroyed by the bombs" was recorded with a special stamp in relation to the lost antiquities in earlier Inventories.²⁴ Unfortunately, Maiuri was wounded in his left leg during the Allied air raid on September 15, while trying to reach Naples by bicycle. He was hospitalized at Torre del Greco, then went to Naples for convalescence, and was not able to return to Pompeii until mid-November.²⁵

On November 22, he wrote a first letter to Major Joseph Paul Gardner of the MFAA Subcommission of the Allied Command, now kept in the State Archives in Rome, in which he listed the priorities for the restoration of the archaeological area, including the "Recovery of archaeological materials still buried under the ruins of the Museum and Antiquarium of the Forum".²⁶ The Museum was then rebuilt and reopened to the public on June 13, 1948, on the occasion of the second centenary of the Pompeian excavations.²⁷

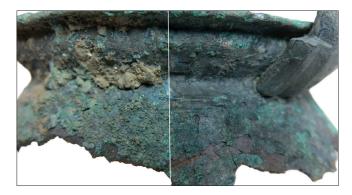


Fig. 8. Bombed bronze bucket (Tassinari genere X1600) under restoration (Photo: W. Basilissi).

In spite of the incomparable richness of the Pompeian collections exhibited at the Museum of Naples, the loss of a considerable part of the materials once in the *Museo Pompeiano* remains irreparable, because it has depleted several archaeological contexts. As far as the bronzes are concerned, the Museum housed a wide range of objects, mainly displayed in Rooms II and IV. In his *Guida*, Fiorelli mentioned 165 bronzes,²⁸ belonging to different functional categories: numerous vessels of various shapes, braziers, food warmers, pastry molds, capacity measures, tools such as funnels, lamps, lanterns, *candelabra* and lamp stands, scales and steelyards, a compass, strigils, tweezers, surgical instruments, nails, needles, fish hooks, horse equipment, elements of furniture, door-locks and keys. In his 1899 work, Gusman reproduced two small bronze bells that were on display in the Museum (Fig. 4).²⁹ In the very brief account given by Bertarelli in his *Guida* in 1927,³⁰ the bronze finds from the Villa della Pisanella (vases, *simpula*, pastry molds, mirrors, seals, etc.)³¹ are mentioned, as well as other objects missing from Fiorelli's detailed list (e.g. mirrors), which were probably also added to the exhibition by Maiuri.

- 24 GARCÍA Y GARCÍA 2006, 201; OSANNA 2017, 168.
- 25 MAIURI 1946, 138; GARCÍA Y GARCÍA 2006, 28; POLLARD 2020a, 34, 186.
- 26 "Ricupero dei materiali archeologici ancora sepolti sotto le rovine del Museo e dell'Antiquario del Foro" (GARCÍA Y GARCÍA 2006, 207).
- A description of the new set-up is given by Maiuri himself in postwar guides: e.g. MAIURI 1954, 98–105; see also GARCÍA y GARCÍA 2006, 203–205; GRIMALDI 2015, 27–28.
- ²⁸ FIORELLI 1877, 100–103 (the same list, which includes a few iron items, is also in later editions of the guide: e.g. FIORELLI 1897, 104–106).
- GUSMAN 1899, 146 (possibly corresponding to two of the specimens cited in FIORELLI 1877, 101, notes 63–69); see also Anonymous 1876, 225; Pagano 1883, 16; CIARALLO DE CAROLIS 1999, 148, note 143.
- 30 BERTARELLI 1927, 409. Other guides give far less attention to bronzes, ceramics and other small finds (see ANONYMOUS 1876, 224–226; PAGANO 1883, 16–17; MAIURI 1931; 16–17; DELLA CORTE 1932, 10) or do not mention them at all (Sogliano 1901), in favor of the impressive casts of human and animal bodies.
- 31 Pasqui provides a detailed list of the antiquities from the villa given by Vincenzo De Prisco to the Museum (Pasqui 1897, 409, 525–554), among which are numerous bronze objects. For the De Prisco collection, see: García y García 2006, 197, note 107.

The mechanism of door-locks was shown by modern replicas exhibited in Room I,³² while two *librae* on display had been reconstructed with wood integrations.³³

After the end of the Second World War, the fragmentary or simply damaged bronzes recovered from the ruins of the building were perceived as hopelessly lost and therefore completely neglected. They were collected and stored in crates in one of the archaeological storerooms of the site. They had never been the subject of any attempt of restoration or recomposition, nor of any study or recovery aimed at giving, at least to some of them, a new opportunity for exhibition. They were the victims of a deep and widespread sense of consternation that had gripped the staff who had worked in vain to limit the damage to the site and the museum, and so they were considered definitively 'lost' and irrecoverable.



Fig. 9. 1-3 - Bombed bronze pitcher (Tassinari tipo B1222) with holes and modern cuts (Photo: D. Elia).

In the last few years, a new project has been launched to recover, study and possibly recontextualize the bronze finds, a rescue operation in order to give them another chance.

The work on the site consisted first of all in the removal of the superficial deposits, since the objects were covered with a very fine and insidious dust that had accumulated over the decades; a preliminary classification was made, which proved very difficult due to their fragmentation and to the haphazard way in which they had been placed in the cranes, without any morphological or functional associations; then, a first search for joints and connections was carried out. In addition to the bronzes, the cranes contained other archaeological materials (ceramics, glasses, lead and iron artifacts), as well as modern metal objects that had also been involved in the bombing of the building, including some supports being part of the Museum's pre-war furnishings. When observing the bronzes, one of the most impressive aspects is the very peculiar state of conservation of some of them. While the surfaces show decay phenomena common to archaeological metal artifacts, the fragmentation and deformation traces are unusual (Figs 5–6). Perforations, folds, holes and lacerations, caused by the bomb explosions and the collapse of the building, have distorted the shape of many of them and left very deep wounds.

In collaboration with the Centro Conservazione e Restauro 'La Venaria Reale' (CCR) and the Archaeological Park of Pompeii, a conservation plan has been developed for a series of selected finds.

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32 Gusman 1899, 292; Sogliano 1901, 2; Bertarelli 1927, 408.
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33 Della Corte 1912; Ciarallo – De Carolis 1999, 302, note 375; Stefani 2000, 15, Figs 9–11.

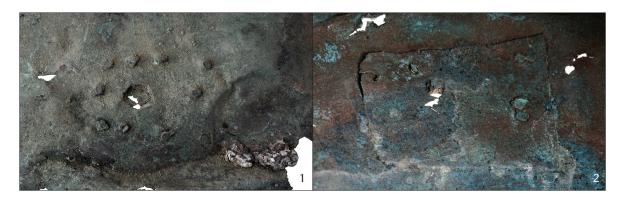


Fig. 10. 1-2 - Bombed bronze cooking pot (Tassinari serie U2120): ancient repairs (Photo: D.Elia).

Several groups of bronze vessels have thus been moved for restoration to the laboratories of the CCR, where the Master in Conservation and Restoration of Cultural Heritage of the University of Turin is based.³⁴ The bronze sheets are generally badly deformed due to the fall of debris and bomb explosions (Fig. 7, Fig. 9.1–3). As a result of their long storage, the surfaces usually show thick deposits of incoherent or partially compacted atmospheric particles. On the other hand, the earthen incrustations are limited, due to the cleaning at the time of the pre-war exhibition, and the objects do not appear to have ever undergone extensive restoration, so that the surfaces still retain the original varied archaeological patinas.

Before beginning the interventions on the artifacts, a preliminary cleaning is carried out by suction and brushing, in order to ensure a correct reading of the surfaces (Fig. 8). The objects, intact or partially fragmented, have been buried for centuries, and this has produced corrosion patinas on the surfaces that characterize them according to the type of sediment surrounding them and the humidity conditions; this process now makes it possible to differentiate the various fragments and to group them according to the colour of the patinas, their thickness, stratification, and morphology. Unfortunately, the 1943 event caused much greater damage; however, even in this case, it is possible to group the fragments according to the type of deformation they suffered and, in particular, the pattern of the holes left by the bombs (entry and exit: Fig. 7, Fig. 9.1–3). Among the corrosion phenomena, there are also active processes determined by the presence of chlorides, but the state of



Fig. 11. Restorers working on the bombed bronzes at the CCR Laboratories (Photo M. Demmelbauer).

degradation does not appear to be particularly advanced, given the specific conservation history. In fact, despite the uncontrolled environmental conditions and the lack of protective coatings, only a relatively small number of artifacts show worrying forms of corrosion, while many sheets, albeit thin, are still in their metallic state. Several aspects are analysed using a variety of approaches, including visual observation, graphic and photographic documentation in diffuse and oblique light, optical stereomicroscopy, and scientific analysis (XRF).

In addition to traces of use, these artifacts often show signs of repairs carried out in antiquity in order to preserve their functionality, mainly through the application of reinforcing elements, usually copper-alloyed sheets. These were fixed by a riveting process in housings carved in the bronze, or superimposed on the original ones and fixed with various mechanical retention systems (bronze or iron rivets) or, more rarely, soldered (Fig. 10.1–2).

The restoration intervention (Fig. 11) is aimed at eliminating the corrosion products that are detrimental to the conservation of the artifacts, while promoting their correct aesthetic perception. Mechanical cleaning of the surfaces is carried out in order to eliminate or reduce the corrosion products mixed with carbonaceous or earthy surface concretions. Acrylic resin combined with microcrystalline wax is used to ensure good protection and, at the same time, the possibility of easy periodic maintenance by simply removing the waxbased sacrificial layer.³⁵

The study of these artifacts also revealed an unexpected chapter in the history of modern conservation practice in Pompeii. After the destruction of the Museum, at some unspecified time in the second half of the 20th century, the bombed bronzes in the storeroom served as a source of metal for modern restoration.³⁶ As a result, bronze sheets belonging to large open



Fig. 12. Ring foot of a bronze basin (Tassinari serie S4210) showing modern cuts (Photo: D. Elia).



Fig. 13. Foot of a bronze pitcher (Tassinari serie E5110) showing modern cuts (Photo: D. Elia).



Fig. 14. Foot of a bronze pitcher (Tassinari serie E5110): modern cut (Photo: D. Elia).

³⁵ For further details, see DEMMELBAUER 2018, 249–250.

³⁶ MEIRANO 2018, 246.



Fig. 15. Cooking pot (Tassinari serie U2140): modern cut (Photo: D. Elia).

forms, as well as heavy, massive ring-shaped feet of basins, casseroles, *paterae*, pitchers and jugs (Figs 12–13), show clear signs of the removal of entire pieces. Scissors or similar tools left irregular edges on the surface of the objects (Figs 14–15): they were used to cut and mutilate the vessels, leaving gaps with triangular or square limits in the belly, but also in the neck of jugs and closed forms (Fig. 9.1); the feet lack slices in their profile. The past use of bronze sheets to restore objects and fill gaps is a known practice before the introduction of synthetic resins,³⁷ but usually modern materials were used: this anomaly further testifies to the attitude of desolate renunciation that affected the bombed bronzes after the war.

As for the rest of the bombed material, the interest of these bronzes lies, of course, in being a historicized document of the conflict, but also in their complex biography, articulated in several steps. In this case, the reconstruction of the conservation history of the

objects is particularly interesting because it reflects their troubled vicissitudes: first, their ancient life: their production and traces of use and repair; then, the 79 AD eruption and its consequences; the centuries-long burial; the discovery by archaeologists; the exhibition in the Museum; the wounds caused by the bombing in 1943; the long storage and reuse as metal sources for restoration in the second half of the 20th century; and, finally, their current study and restoration.

Even if many of the pieces exhibited in the *Museo Pompeiano* were destroyed and could not be recovered after the war, so that the record of bronzes is less extensive than it used to be, the categories represented among the bombed material are many and more numerous compared to what we know from the few documents referring to the prewar set-up.

The larger group corresponds to vessels and *instrumenta domestica* from which the project of study and restoration started. They are representative of the large and articulated repertoire that Suzanne Tassinari illustrated in her 1993 outstanding publication (Fig. 16),³⁸ which remains a fundamental tool for the knowledge of Pompeian and Roman bronze vessels in general. She studied the materials in Pompeii storerooms,³⁹ which, unlike many of the finds housed in the Archaeological Museum of Naples,⁴⁰ have the advantage of being of known provenance; this has allowed her to deal with find spots, contextualization, and sometimes the reconstruction of original sets and assemblages. This approach is also being pursued for the bombed material, as far as inventories and archival documents allow.

However, among the numerous bombed vessels used for various purposes—from cooking to bathing—new forms and varieties are attested, as well as new decoration systems and combinations, which broaden our knowledge of Pompeian bronze vases and of the output of the workshops of ancient Campania, one of the most renowned areas for the production of metal vessels in the Roman period.⁴¹

The other categories of artifacts that survived the bombardment are also being the object of a reappraisal. They belong to carpentry (nails, joints and frames), wooden furniture (e.g. feet of beds,

- 37 Demmelbauer 2018, 248.
- 38 TASSINARI 1993; see also TASSINARI 1996.
- 39 Except for the finds recovered from the bombing: TASSINARI 2009b, 12, note 10.
- 40 TASSINARI 2009a; Rocco 2017 (based on the Author's 1954 typewritten catalogue).
- 41 MEIRANO 2018, 244–245.

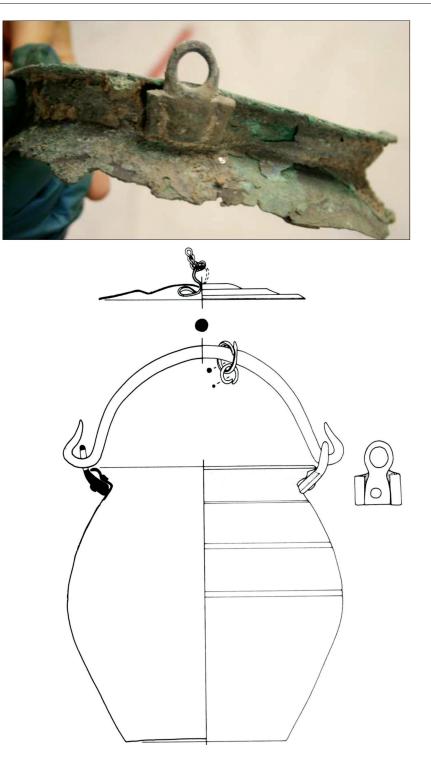


Fig. 16. Rim of a bombed small bronze bucket (Tassinari tipo X1621 and parallel after TASSINARI 1993, X1621, n. 18678, 111).

couches and benches: Fig. 17;⁴² handles, appliqués), lighting and heating devices (braziers, lamps, lamp stands and *candelabra*), musical instruments, personal care and ornaments (strigils, mirrors, tweezers, buckles, pins), etc. In addition, a very heterogeneous group, generally better preserved compared to other artifacts, is made up of closing devices: locks, hinges, knockers, as well as studs,

⁴² Cfr. Ransom 1905, Pls 8, 17; Richter 1966, 105–109, Figs 530, 532; Mols 1999, 100–101, Figs 2, 26–27, 34; De Carolis 2007, 80–93, 129–130, Pls 1–3, 24–25.



Fig. 17. Bronze element belonging to the foot of a bed or couch, probably a *lectus triclinaris* (Photo: D. Elia).



Fig. 18. 1–2 – Bronze door-lock plates (Photo P. Giagheddu).

bolts, knobs, gears, and of course keys (Fig. 18.1–2). Pompeii and the sites destroyed by the Vesuvius offer the richest and most varied range of objects of this *genre* in the Roman world. In the past, this material aroused great interest, as evidenced by publications of the 18th and 19th centuries (Fig. 19), but in recent research and bibliography these finds are generally neglected: new information could come from the systematic study of this assemblage, and the results of new diagnostic approaches and restoration.⁴³

In conclusion, this project aims to contribute to the knowledge of Pompeian material culture and to the history of the musealization of the site, giving these forgotten antiquities a new 'life' after decades of oblivion in dusty storerooms.

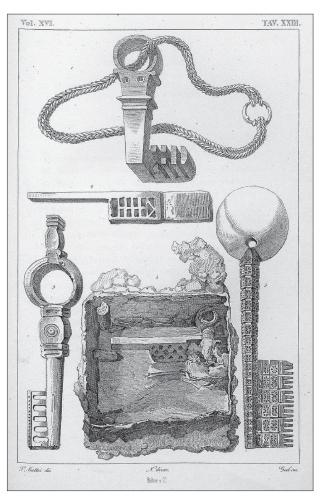


Fig. 19. Door lock and keys from Pompeii (after *Real Museo Borbonico* XVI, Naples 1857, Pl. 23).

43 See Rocco 2017, 179–186; Corvi 2018; PALLADINO 2020; for the study of doors and partitions in domestic spaces in the Vesuvian area, see: LAURITSEN 2010; LAURITSEN forthcoming.

References

- ANGELONE, G. VITAGLIANO G. 2020: Just West of Pompeii. Il sito archeologico e i bombardamenti dell'estate 1943. Lecce.
- ANONYMOUS, 1876: Les ruines de Pompéi par un thouriste, illustrées de nombreuses gravures, guide opportun pour les visiteurs, et qui montre à tous les fameuses ruines dans leurs curieux détails. Scafati.
- BERTARELLI, L. V. 1927: Guida d'Italia del Touring Club Italiano. Italia meridionale, secondo volume. Napoli e dintorni. Milano.
- DE CAROLIS, E. 2007: Il mobile a Pompei ed Ercolano. Letti, tavoli, sedie, armadi. Contributo alla tipologia dei mobili della prima età imperiale. Roma.
- CIARALLO, A. M. DE CAROLIS, E. (eds) 1999: Homo Faber. Natura, scienza e tecnica nell'antica Pompei. Milano.
- CIARDIELLO, R. 2017: Il Museo Nazionale di Napoli. In: Pappalardo, U. (ed.): Amedeo Maiuri. Una vita per l'archeologia. Catalogo della Mostra, Museo Archeologico Nazionale. Napoli, without page numbers.
- CORVI, L. 2018: Serrature ed elementi di chiusura in bronzo e ferro a Pompei. In: Elia, D. Meirano, V. (eds): Pompeiana Fragmenta. Conoscere e conservare (a) Pompei. Indagini archeologiche, analisi diagnostiche e restauri. Torino, 233–236.
- Симво, C. 2018: Amedeo Maiuri e il Taccuino napoletano: memorie e azioni di un archeologo durante i tragici anni della Seconda Guerra Mondiale. *The Journal of Cultural Heritage Crime*, 1–11. https://www.journal-chc.com/2018/11/30/ (last accessed: 18. 07. 2023).
- DELLA CORTE, M. 1912: Librae pompeianae. Ricostruzione di duee grosse bilance in legno a bronzo. *Monumenti antichi dei Lincei*, 21, 5–42.
- DELLA CORTE, M. 1932: Piccola guida di Pompei. Pompei.
- DEMMELBAUER, M. 2018: Interventi conservativi sul vasellame bronzeo bombardato. In: Elia, D. Meirano, V. (eds): Pompeiana Fragmenta. Conoscere e conservare (a) Pompei. Indagini archeologiche, analisi diagnostiche e restauri. Torino, 247–250.
- EDSEL, R. M. 2009: *The Monuments Men: Allied Heroes, Nazi Thieves and the Greatest Treasure Hunt in History.* New York–Boston–Nashville.
- ELIA, D. MEIRANO, V. (eds) 2018: Pompeiana Fragmenta. Conoscere e conservare (a) Pompei. Indagini archeologiche, analisi diagnostiche e restauri. Torino.
- FIORELLI, G. 1877: Guida di Pompei. Roma.
- FIORELLI, G. 1897: Guida di Pompei con aggiunte di Antonio Sogliano. Napoli.
- GALLO, L. MORSELLI, R. (eds) 2023: Arte liberata. Capolavori salvati dalla guerra. 1937/1947. Catalogo della mostra (Roma, Scuderie del Quirinale, 16 dicembre 2022 10 aprile 2023). Roma.
- GARCÍA Y GARCÍA, L. 2006: Danni di guerra a Pompei. Una dolorosa vicenda quasi dimenticata. Con numerose notizie sul «Museo Pompeiano» distrutto nel 1943. Studi della Soprintendenza archeologica di Pompei 15. Roma.
- GARCÍA Y GARCÍA, L. 2015: Pompei: i bombardamenti del 1943. In: Osanna, M. Caracciolo, M. T. Gallo, L. (eds): Pompei e l'Europa 1748–1943. Catalogo della Mostra (Napoli, Museo Archeologico Nazionale Pompei, Anfiteatro, 27 maggio 2 novembre 2015). Milano, 371–376.
- GRIMALDI, M. 2015: Amedeo Maiuri e gli ultimi scavi nell'area sud-occidentale di Pompei. In: Pappalardo, U. Del Verme, L. – Manzo, P. (eds): Amedeo Maiuri da Rodi a Pompei. Una vita per l'archeologia. Guida della mostra. Pompei, 22–30.
- GUSMAN, P. 1899: Pompéi. La ville, les mœurs, les arts. Paris.
- Guzzo, P. G. 2012: Amedeo Maiuri. In: *Dizionario biografico dei Soprintendenti Archeologi (1904–1974)*. Bologna, 442–448.
- LAURITSEN, M. T 2010: Doors in Domestic Space at Pompeii and Herculaneum: A Preliminary Study. In: Mladenović, D. – Russell, B. (eds): TRAC 2010: Proceedings of the Twentieth Annual Theoretical Roman Archaeology Conference. Oxford, 59–75. https://doi.org/10.2307/j.ctv13nb9dm.8
- LAURITSEN, M. T. forthcoming: *Rethinking the Pompeian House: Doors, Closure Systems, and the Organisation of Space.* Studies in Roman Space and Urbanism. Cambridge, MA.
- MAIURI, A. 1931: Pompei. I nuovi scavi e la villa dei misteri. Roma.
- MAIURI, A. 1946: Pompei e la guerra. La Rassegna d'Italia 1.1, 134–140.

MAIURI, A. 1954: Pompeii: the new excavations, the "Villa dei Misteri", the Antiquarium. (10th reprint) Rome.

MAIURI, A. 1956: Taccuino Napoletano: giugno 1940 – luglio 1944, Napoli.

MEIRANO, V. 2018: I bronzi bombardati: un progetto per il recupero dei reperti metallici esposti nel 'Museo Pompeiano'. Il vasellame. In: Elia, D. – Meirano, V. (eds): *Pompeiana Fragmenta. Conoscere e conservare* (a) Pompei. Indagini archeologiche, analisi diagnostiche e restauri. Torino, 239–246.

Mols, S. T. A. M. 1999: Wooden Furniture in Herculaneum. Form, Technique and Function. Amsterdam.

- OSANNA, M. 2016: Rapiti dalla morte: i primi calchi delle vittime di Pompei ralizzati da Giuseppe Fiorelli. In: Osanna, M. – Cioffi, R. – Di Benedetto, A. – Gallo, L. (eds): *Pompei e l'Europa. Atti del Convegno 'Pompei nell'archeologia e nell'arte dal neoclassico al post-classico'*. Milano, 144–161.
- OSANNA, M. 2017: Amedeo Maiuri a Pompei, tra scavi, restauri e musealizzazione. In: Camardo, D. Notomista, M. (eds): Ercolano: 1927–1961. L'impresa archeologica di Amedeo Maiuri e l'esperimento della città museo. Roma, 159–178.
- OSANNA, M. CARACCIOLO, M. T. GALLO, L. (eds) 2015: Pompei e l'Europa 1748–1943. Catalogo della Mostra (Napoli, Museo Archeologico Nazionale - Pompei, Anfiteatro, 27 maggio – 2 novembre 2015). Milano, 371– 376.

PAGANO, N. 1883: Guida di Pompei. (10th edition) Scafati.

- PALLADINO, G. 2020: *Studio e restauro di due serrature in ferro dal Parco Archeologico di Pompei.* Tesi di Laurea Magitrale, Corso di Laurea in Conservazione e Restauro dei Beni culturali, Università di Torino.
- PAPPALARDO, U. 2017: Da Rodi a Napoli. In: Pappalardo, U. (ed.): Amedeo Maiuri. Una vita per l'archeologia. Catalogo della Mostra, Museo Archologico Nazionale. Napoli, without page numbers.
- PASQUI, A. 1897: La Villa Pompeiana della Pisanella presso Boscoreale. *Monumenti Antichi dei Lincei* 7, 397–554.
- POLLARD, N. D. 2020a: Bombing Pompeii. World Heritage and Military Necessity. Ann Arbor. https://doi. org/10.3998/mpub.11377428
- POLLARD, N. D. 2020b: "Bombing Pompeii!!! Why Not the Pyramids?" Myths and memories of the Allied bombing of Pompeii, August–September 1943. In: Apaydin, V. (ed.): Critical Perspectives on Cultural Memory and Heritage: Construction, Transformation and Destruction. London, 239–251. https://doi. org/10.2307/j.ctv13xpsfp.20
- RANSOM, C. L. 1905: Couches and Beds of the Greeks, Etruscans and Romans. Chicago.

RENFREW, C. - BAHN, P. 2012: Archaeology: Theories, methods and practice. London.

RICHTER, G. M. A. 1966: The Furniture of the Greeks, Etruscans and Romans. London.

Rocco, A. 2017: Catalogo della suppellettile bronzea di uso domestico del Museo Nazionale di Napoli. Napoli.

 $Rowland, I. D. 2014: From Pompeii. \ The After life of a Roman Town. London. \ https://doi.org/10.4159/9780674416529$

SOGLIANO, A. 1901: Guida di Pompei. (2nd edition) Milano.

- STEFANI, G. 2000: La villa del fondo Acunzo a Boscoreale. Sylva Mala 12, 11-16.
- TASSINARI, S. 1993: Il vasellame bronzeo di Pompei. Roma.
- TASSINARI, S. 1996: Bouillir, mijoter et cuire, porter et mesurer: le rôle de la vaisselle métallique dans les cuisines de Pompéi. In: Bats, M. (ed.): 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'études, Naples 27–28 mai 1994. Naples, 113–120. https://doi.org/10.4000/books.pcjb.1907
- TASSINARI, S. (ed.) 2009a: Vasi in bronzo. Museo Archeologico Nazionale di Napoli. Brocche, askoi, vasi a paniere. Napoli.
- TASSINARI, S. 2009b: Introduzione. In: Tassinari, S. (ed.): *Vasi in bronzo. Museo Archeologico Nazionale di Napoli.* Brocche, askoi, vasi a paniere. Napoli, 11–22.
- ZEVI, F. 2001: Aspetti dell'archeologia napoletana del Novecento: gli scavi del Maiuri a Pompei. In: Guzzo,
 P. G. (ed.): Pompei Scienza e società. 250° Anniversario degli Scavi di Pompei, Convegno Internazionale,
 Napoli 25–27 novembre 1998. Milano, 73–89.

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