

# 1 | Introduction

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Following an agreement signed by the J. Paul Getty Museum and the Italian Ministry of Culture in 2007, a number of fruitful collaborative projects with Italian institutions have been undertaken. The most immediately visible have been the loan of objects, such as the Chimaera of Arezzo (Florence, Museo Archeologico Nazionale), for display in a special exhibition at the Getty Villa and the long-term loan of the Ephebe from the Via dell'Abbondanza (Naples, Museo Archeologico Nazionale).<sup>1</sup> Other projects have utilized the Getty Museum's resources and expertise in the field of antiquities conservation to the benefit of both parties. One of the first of these was the treatment of the bronze Apollo Saettante from Pompeii (Naples, Museo Archeologico Nazionale). Long off display, owing to a failed join at its right ankle, and dangerously burdened by the restored bronze drapery that hung from its arms, this statue came from Naples to the Getty Villa in March 2009 for study and conservation. Over the next eighteen months the Apollo underwent a full analysis in order to ascertain the technique of its ancient manufacture, any alterations due to its destruction and burial at Pompeii, and evidence of restorations after the discovery of its fragments in 1817 and 1818. The findings of this study guided the conservation project at the Getty Museum, which resulted in a new, secure repair to the right ankle, and the removal of the existing drapery ends and their replacement with lightweight modern materials modeled after early drawings of the statue. Following the cleaning of the statue's surface, the Apollo appears today as it was seen in the Real Museo Borbonico in Naples after its early-nineteenth-century restoration.

On completion of the conservation project, the Apollo was the centerpiece in the exhibition, *Apollo from Pompeii: Investigating an Ancient Bronze* (March 2–September 12, 2011), which presented the story of the statue's discovery, its ancient manufacture, and its nineteenth-century restorations (fig. 1.1).<sup>2</sup> Through the generosity of our colleagues in Naples, the exhibition also featured the Apollo's sister piece, the bronze Diana (discovered in 1817), and it was possible to study this figure as we had the Apollo. In the course of examining the statues of the twin gods together, combining research into documentary sources with technical studies and scientific analyses, we found few publications that paid sustained attention to other ancient bronzes that had been



**FIGURE 1.1.** Apollo Saettante and Diana on display at the Getty Villa exhibition *Apollo from Pompeii: Investigating an Ancient Bronze*, 2011



restored in the nineteenth century.<sup>3</sup> This absence was all the more striking when compared to the thorough and detailed studies of bronzes that were discovered at Herculaneum and Pompeii in the eighteenth century.<sup>4</sup> It was to address this gap that a one-day conference, “Restoring Ancient Bronzes in the Nineteenth Century” (May 6, 2011), was organized, bringing together scholars engaged in studying ancient bronzes.<sup>5</sup> The papers presented that day highlighted the special case of Naples, and form the basis of this publication.

### **Studying the History of Restorations**

Extant large bronzes from the ancient Mediterranean are relatively scarce, and the history of restoring antiquities has thus far been written largely in reference to objects that survive in much greater numbers—most obviously, stone sculpture. Some trends can be identified.<sup>6</sup> For centuries it was typical to restore ancient statues so that they would be fit for display, even if this entailed the creation of pastiches, using parts of other figures or adding limbs, heads, and attributes afresh. In time, however, these techniques began to generate criticism, and by the early nineteenth century there was a gradual, though by no means consistent, tendency to limit, or even refrain from, restoring or changing the original integrity of ancient monuments.<sup>7</sup> Emblematic examples are the nonrestoration of the Parthenon marbles in 1816, and Raffaele Stern’s and Giuseppe Valadier’s work on the Arch of Titus (where integrations were left visible) between 1819 and 1821.<sup>8</sup> The development of the study of classical archaeology, together with the Romantic focus on “the fragment,” helped to establish this purist approach to the material remains of the ancient world. In the twentieth century this *modus operandi* could extend even to the removal (and sometimes discarding) of historical restorations to ancient marble statues. In some cases, however, this was to their detriment, and in recent decades the pendulum has swung back in favor of retaining historical restorations, which are seen as an essential chapter of an ancient statue’s biography. Using techniques that are reversible and that risk no further damage, the modern conservator’s work is sensitive to the general appearance of the object, for example, by rendering the area of a join identifiable at a close distance, using materials that can be visually (if subtly) differentiated from the original, and providing documentary illustrations in didactic displays. These measures make any interventions clear but not distracting.

It is in this narrative that we seek to situate the restoration of ancient bronzes. Were similar issues at stake? Can the same trends be identified? Where were the centers of activity and expertise? To whom was the work entrusted—specialized bronzeworkers, or sculptors and artists? Did the scarcity of the medium occasion exceptional approaches? How did the material dictate the methods used? Debate over the degree to which antiquities should be restored, and how, has a substantial history, and archival sources reveal conflicting opinions regarding what was more

desirable—that an ancient artifact look complete so as to delight the eye, or that evidence of the restorer’s intervention be clearly visible.

### **The Special Case of Naples**

One field in which this historical debate has been closely investigated in recent years is the restoration of Greek painted pottery, and nineteenth-century Naples has been shown to be a particularly important center for such work.<sup>9</sup> Indeed, it was here that the restorer’s art was memorably termed (by James Millingen) “a dangerous perfection.”<sup>10</sup> Authenticity and integrity were concerns for the market as much as the museum, and Naples had become a nexus for the competing claims of archaeologists and aristocrats, dealers and dilettantes. From the middle of the eighteenth century, the unprecedented finds from the Vesuvian sites prompted innovation and experimentation in their study, display, restoration, and preservation. These themes are amply explored in Andrea Milanese’s essay in this volume, which lays out the museological, archaeological, and intellectual frameworks within which any study of restoration practices in Naples must be viewed. As noted above, much work has been undertaken of late on early vase restorations. The same is true for wall paintings,<sup>11</sup> and these, too, highlight why Naples should stand as a special case in the history of the restoration of ancient artworks. Excavations at Herculaneum, Pompeii, and Stabiae brought to light an unparalleled array of wall paintings, and the frequency with which they were unearthed demanded new thinking to satisfy the diverse desires and needs for their display, storage, preservation, and publication. By necessity (but also through the involvement of those in power), Naples emerged as a leading center for the development of restoration methods and practices.

We can argue a similar case for bronze sculptures. Prior to the first excavations at Herculaneum, in 1738, surviving large ancient bronzes were relatively few. But with the unearthing of the over-life-size portraits from the theater and so-called Basilica, as well as the series of statues and busts from the Villa dei Papiri, Naples became the primary locus for large-scale bronzes, and accordingly for their restoration. As in the case of wall paintings, there was in the mid-eighteenth century little precedent for the pressing need to care for these finds and prepare them for display and publication. Carol Mattusch’s essay addresses the ways in which these restored statues were presented, often with no hint that they were in anything but perfect condition. Indeed, repaired statues were shown to the Neapolitan prime minister Bernardo Tanucci *before* a new patina was applied, in order to demonstrate the extent of the labor that had been required.<sup>12</sup> By implication, this underscores the ultimate goal of the restoration process, for such heavy interventions would in the end not be visible.

Aspects of this work were critiqued by Johann Joachim Winckelmann and others, and study of archival sources, together with technical examinations of many of the statues, has made it

possible to understand what occasioned Winckelmann's observations. Recent scholarship, particularly that of Carol Mattusch and Henry Lie, and Götz Lahusen and Edilberto Formigli, provides us with a better understanding of the methods, materials, and even personnel employed at the Royal Foundry at Portici, and serves as an important framework for the articles presented in this volume. Like marble sculptures, paintings, and mosaics, the bronzes were initially the responsibility of the sculptor Giuseppe Canart. In contravention of a royal decree, they were stripped of their ancient patina,<sup>13</sup> and fragments that could not be restored were often melted down (in some cases to produce new bronzes to adorn the royal palace). Notably, the Reale Accademia Ercolanese di Archeologia, a committee of scholars who oversaw the research into and publication of finds from throughout the Vesuvian region, bemoaned not only the poor quality of Canart's materials but also the manner of his restorations. In 1760 responsibility for overseeing the work was entrusted to Camillo Paderni, and a number of the earlier restorations were redone. Objects were cleaned using abrasive tools and perhaps acids, and gaps were filled by pouring quantities of molten bronze from within and affixing the metal with pins. Where large parts, such as arms or drapery, were missing, the new pieces were modeled on the statue itself and then cast in situ. Likewise, nine of the bronze heads from the Villa dei Papiri were fitted with new busts (most of them with added drapery) and were then fixed to bases with iron strap mounts. As noted above, the addition of a new patina—made using a mix of plaster and filings obtained from cleaning the ancient surfaces of their corrosion deposits—was a fundamental part of the process, hiding the evidence of the restorer's interventions and rendering the statue presentable.

Our study of the Apollo and Diana from Pompeii indicates that many of the methods employed at Portici in the eighteenth century continued to be used into the nineteenth, but there are also a number of differences from one era to the next. Of special interest in the broader context of the history of restoration practices is a royal decree that sought to restrict the intervention of restorers. Promulgated in 1818, just months after the main fragments of the Apollo had been found, it acknowledged that restorations were an obstacle to understanding, and directed that finds should be left in the state in which they were discovered.<sup>14</sup> The decree took particular notice of the original patina of bronze statues, requiring that this be untreated, as it offered the only secure evidence for a bronze's antiquity. Such exacting regulations were themselves subject to renegotiation, and even in the early twentieth century—in the case of the Ephebe from the Via dell'Abbondanza, discussed here by Luigia Melillo—the ancient surface could still be roughly treated. The use of cement to provide internal support for this statue (and others), and also to serve as a surface on which to secure fragments, suggests that whereas in the eighteenth century bronzes were restored with the methods and materials of the foundry, by the 1920s such work was not the sole domain of bronzeworkers. Yet the treatment of the Ephebe does reveal a certain

sensitivity for the integrity of the ancient metal: a sateen fabric was placed as a barrier between the cement and the bronze.

### **Beyond Naples**

The first half of this publication thus focuses on Naples, and provides a chronological overview of what was—on account of the special situation of the ancient Vesuvian towns—a uniquely concentrated center of activity for the restoration of ancient bronzes. Future studies will add to this picture, and promise to shed light on shifting trends and evolving attitudes. As Milanese's essay notes, however, we should be aware that varying perspectives on proper restoration methods could exist contemporaneously within the same institution, and the condition in which each object was found dictated the decisions regarding reconstruction and display.

The essays in the second half of this volume, which consider bronze statues restored elsewhere in Europe, principally in Florence (the Minerva of Arezzo, the Trebonianus Gallus), Paris (the Child with a Bulla, the Trebonianus Gallus again), and Berlin, underscore this point. Whereas the Neapolitan bronzes were intended for display in the Herculaneum Museum (and later the Real Museo Borbonico), other bronzes investigated here were initially set up in (and thus restored for) private contexts. The Minerva of Arezzo, for example, was originally acquired by Cosimo I de' Medici, and the Trebonianus Gallus (New York, Metropolitan Museum of Art) was installed first in Count Nicholas Demidoff's villa near Florence, then in Count Auguste de Montferrand's home in Saint Petersburg.

The Trebonianus Gallus was later acquired by art dealers in Paris, in whose custody it was restored between 1896 and 1905. After an initial attempt had proved unsuccessful, they called in a specialist, Alfred André, who had just completed a restoration of another large bronze, the Antikythera Youth, in Athens.<sup>15</sup> His treatment was primarily dictated by circumstance—the Trebonianus Gallus had reportedly fallen apart after its purchase—but may well have been undertaken with an eye to the market. That mercantile factors could have consequences for the manner of a restoration recalls the situation in early-nineteenth-century Naples, where much of the concern regarding the nature of restorers' work was occasioned by objects on the art market. The Child with a Bulla (Paris, Musée du Louvre), discussed here by Sophie Descamps-Lequime and her colleagues, presents a different case. It was sold in fragments and its new owner made arrangements for the restoration, which probably took place in a foundry (the Delafontaine Workshop) where a variety of architectural adornments and sculptures were produced.

The study of the bronzes from Herculaneum and Pompeii illustrates the ways in which restorers dealt with finds from the ongoing excavations. In a number of cases, however, Paderni and his associates worked on bronzes that had been treated in previous decades. In our study

of the Apollo Saettante, we offer another example, noting that the statue's drapery was replaced around forty years after its initial restoration, and that an earlier repair to the right foot had to be rectified. The non-Neapolitan case studies presented here shed further light on the ways in which restorers negotiated previous restorations, and accordingly extend this volume's scope beyond our initial focus on the nineteenth century. The Child with a Bulla, for example, though recorded in Paris in 1809 in fragments (it entered the Louvre in 1825), had already undergone two phases of restoration in previous centuries. The Minerva of Arezzo, discussed by Salvatore Siano, witnesses a similar situation. Evidence suggests that it was first restored in the sixteenth century. It received a new right arm (in plaster) in the early eighteenth century, but by 1785 that arm—having been removed—was replaced with one in bronze made by Francesco Carradori. In this case the restoration seems to have been informed by the context of the statue's display. For in 1782 the Minerva had been moved to the Corridoio di Mezzogiorno in the Uffizi, where it stood alongside other famous ancient bronzes. Among them was the Arringatore (Florence, Museo Archeologico Nazionale), which Siano suggests was an inspiration for the orientation of the Minerva's new right arm added by Carradori. Notably, the Arringatore is also mentioned by Descamps-Lequime and her colleagues in their discussion of the Child with a Bulla, and its recurrence highlights the way that certain preeminent statues may have been models, unconsciously or not, for restorers.

The Minerva, the Trebonianus Gallus, and the Child with a Bulla are all considered here as individual case studies. Uwe Peltz's essay returns to the issue of antiquities restored and conserved in a museum. Of the four statues of youths that he investigates, however, three had already been worked on elsewhere before they entered the collection of the Altes Museum in Berlin: the Hypnos from Jumilla (which was displayed in Madrid as a dancer), the Youth from Salamis, and the Praying Boy from Rhodes, whose discovery goes back to the late fifteenth century. Peltz's first focus is a specific intervention tailored to display requirements—rotating bases (a device that Milanese also records in Naples), which seem to have been popular in the nineteenth century but had fallen out of fashion by the beginning of the twentieth. Peltz next highlights the varying approaches to surface treatment—not only the methods used to clean the surfaces of corrosion but also the philosophies that were brought to bear on such work. Particularly compelling is the role played by contemporary conceptions of what an ancient bronze should look like, most vividly embodied in the case of the Xanten Boy (Berlin, Neues Museum). Its gleaming surface resulted from the unusual conditions of its burial in the freshwater riverbed of the Rhine, yet the statue prompted skepticism from those who thought that it was the product of excessive cleaning.

As the 1818 Naples legislation (noted above) highlights, the presence of a patina has long played a key role in the judgment of an ancient bronze. Many of the sculptures discussed in this

volume justify the concern about patination: consider the Ephebe from the Via dell'Abbondanza, which Amedeo Maiuri mistakenly interpreted as having been gilded rather than overcleaned, or the Trebonianus Gallus, whose surface was obscured by the thick black layer (a mixture of wax and paint) applied by André. A number of the essays here testify to the importance of scientifically analyzing the materials used to produce a new patina. Milanese tantalizingly concludes his essay with a reference to the famous Neapolitan restorer Raffaele Gargiulo, who devised his own recipe for a patina,<sup>16</sup> as well as an adhesive for restoring bronzes. Further research will shed light on these and other materials utilized by restorers, which can sometimes assist in fixing a terminus ante or post quem for their application. More broadly, they help us to understand the context of the restorations, for some (the use of chemicals or heat to bring about patination in a controlled manner, for example) presuppose knowledge of and familiarity with bronzeworking, whereas others (such as electroplating, overpainting, or lacquering, which employ other substances to mimic the appearance of a patinated surface) do not. With this in mind, the volume concludes with Luisa Fucito's essay on patination techniques employed by the Fonderia Chiu-razzi—one of the main exemplars of the nineteenth-century foundry tradition in Naples.

The essays in this publication describe the wide array of techniques used by restorers of ancient bronzes, and the circumstances in which they were employed. The bronzes discovered at Herculaneum in the eighteenth century were restored in a foundry, and the methods and materials that were used are often particular to that setting. Many other bronzes discussed here, however, reveal techniques from outside the foundry, such as joining fragments with straps and screws rather than soldering, the pouring in of cement to stabilize a figure, and additions of other materials. In many cases these methods were occasioned by pragmatism and circumstance. This is true even at Naples, arguably the one place where we might be able to construct a narrative history, given the concentration there of ancient bronzes as well as archives and publications that record contemporary attitudes and workshop practices. We hope that this collection of essays prompts further cross-disciplinary research that will advance the study of the restoration of ancient bronzes and their place in the history of conservation. Intertwining archival, technical, and scientific data is a prerequisite of current conservation practice. At a time when other restored bronzes are being reassessed and conserved, the issues that recur throughout this volume—how an ancient bronze should appear, and the means by which this is accomplished—remain profoundly pertinent.

- 1 “The Chimaera of Arezzo,” J. Paul Getty Museum, <http://www.getty.edu/art/exhibitions/chimaera/>; “Roman Ephebe from Naples,” J. Paul Getty Museum, [http://www.getty.edu/art/exhibitions/naples\\_ephebe/](http://www.getty.edu/art/exhibitions/naples_ephebe/).
- 2 “Apollo from Pompeii: Investigating an Ancient Bronze,” J. Paul Getty Museum, [http://www.getty.edu/art/exhibitions/apollo\\_pompeii/](http://www.getty.edu/art/exhibitions/apollo_pompeii/).
- 3 Note, however, W. A. Oddy and I. M. McIntyre, “The Conservation of a Hellenistic Life-Size Bronze Statue in the British Museum,” in *I bronzi di Riace: Restauro come conoscenza*, ed. A. Melucco Vaccaro and G. De Palma (Rome, 2003), pp. 77–83, on the Hellenistic bronze from Zifteh acquired by the British Museum in 1840; K. Gschwantler, “Der Athlet von Ephesos: Ein Projekt zur Restaurierung und Konservierung der Bronzestatue,” *Jahrbuch der Kunsthistorischen Sammlungen in Wien* 91 (1995), pp. 287–93, on the Ephesian Apoxyomenos found in 1896; S. Descamps[-Lequime], B. Mille, and D. Robcis, “L’Enfant à la bulle: Histoire moderne d’un bronze antique,” *Technè* 27–28 (2008), pp. 11–20, on the Child with a Bulla (further discussed by Descamps-Lequime et al. in the present volume); and U. Rohnstock [Peltz], “Die Odyssee des ‘Betenden Knaben,’” *Restauro: Zeitschrift für Kunsttechniken, Restaurierung und Museumsfragen* 3 (May–June 1998), pp. 172–79, and “Adorante da Rodi: Le metallotecnice applicate sul bronzo antico dal XVI al XX secolo,” in *I grandi bronzi antichi: Le fonderie e le tecniche di lavorazione dall’età arcaica al Rinascimento*, ed. E. Formigli (Siena, 1999), pp. 401–26, on the Praying Boy (discussed by Peltz in this volume).
- 4 Primarily C. C. Mattusch, *The Villa dei Papiri at Herculaneum: Life and Afterlife of a Sculpture Collection*, with H. Lie (Los Angeles, 2005); G. Lahusen and E. Formigli, *Grossbronzen aus Herculaneum und Pompeji: Statuen und Büsten von Herrschern und Bürgern* (Worms, 2007). See also L. A. Scatozza Höricht, “Restauro alle collezioni del Museo Ercolanese di Portici alla luce di documenti inediti,” *Atti della Accademia Pontaniana*, n.s., 31 (1982), pp. 495–540; U. Pannuti, “Ritratto di Epicuro in bronzo, dalla ‘Villa dei Papiri’ di Ercolano,” *Atti della Accademia Nazionale dei Lincei*, 8th ser., 39, nos. 3–4 (1984), pp. 101–16; T. Caianiello, “Restauro di sculture antiche a Portici: Dai ‘primi errori si decantati da più gente’ all’acquisizione di un metodo di intervento (1739–1781),” *Dialoghi di storia dell’arte* 6, (June 1998), pp. 54–69 (we are grateful to Delphine Burlot for this reference); and G. Prisco, “Restauro per via di mettere, restauri per via di togliere: Alla ricerca di un metodo nelle officine di Portici,” in *Herculanense Museum: Laboratorio sull’antico nella Reggia di Portici*, ed. R. Cantilena and A. Porzio (Naples, 2008), pp. 189–207.
- 5 “Restoring Ancient Bronzes in the Nineteenth Century,” J. Paul Getty Museum, [http://www.getty.edu/museum/symposia/restoring\\_ancient\\_bronzes.html](http://www.getty.edu/museum/symposia/restoring_ancient_bronzes.html).
- 6 See, for example, the essays in J. B. Grossman, J. Podany, and M. True, eds., *History of Restoration of Ancient Stone Sculptures* (Los Angeles, 2003). For a focus on a specific collection, see A. Fendt, *Archäologie und Restaurierung: Die Skulpturen-ergänzungen in der Berliner Antikensammlung des 19. Jahrhunderts* (Berlin, 2012).
- 7 See O. Rossi Pinelli, “From the Need for Completion to the Cult of the Fragment,” in Grossman, Podany, and True, *History of Restoration* (note 6), pp. 61–71, who presents Rome as a locus for the discussion of these issues. Comparable attitudes can be found elsewhere in Europe: B. Bourgeois, “Le laboratoire de l’antique: Luigi Brocchi, restaurateur de vases au Musée Napoléon,” *Technè* 32 (2010), p. 64, cites Aubin-Louis Millin, who in his *Dictionnaire des beaux-arts* (1806) demanded that a restorer, borne by a “keen love of truth,” needs to “fill worn features with care” and to “recover only the parts that are damaged.” Bourgeois (p. 69) also quotes Gilbert Romme, a deputy of the National Convention in Revolutionary France, who rejected the complete restoration of fragments of ancient sculpture, in order to leave a clear demarcation between the ancient and the modern. Similar views were expressed by R. P. Knight in *Specimens of Ancient Sculpture* (1809); see B. Redford, *Dilettanti: The Antic and the Antique in Eighteenth-Century England* (Los Angeles, 2009), pp. 146–47 and, more generally, on British attitudes, see V. Coltman, *Classical Sculpture and the Culture of Collecting in Britain since 1760* (Oxford, 2009), pp. 84–116. In Berlin in 1830, Wilhelm von Humboldt condemned modern completions because they changed the nature of the ancient piece; see J. Paul, “Antiken-ergänzung und Ent-Restaurierung,” *Kunstchronik* 25, no. 4 (April 1972), p. 95.
- 8 On the Parthenon marbles, see, among others, Pinelli, “Need for Completion” (note 7), pp. 66–68, and “The Surgery of Memory: Ancient Sculpture and Historical Restorations,” in *Historical and Philosophical Issues in the Conservation of Cultural Heritage*, ed. N. Stanley Price, M. K. Talley Jr., and A. Melucco Vaccaro (Los Angeles, 1996), pp. 294–96. On the Arch of Titus, see A. Conti, *Storia del restauro e della conservazione delle opere d’arte*, new ed. (Milan, 2002), p. 235.
- 9 See B. Bourgeois and F. Matz, eds., “‘Une perfection dangereuse’: La restauration des vases grecs, de Naples à Paris, XVIII<sup>e</sup>–XIX<sup>e</sup> siècles,” special issue, *Technè* 32 (2010); M. Bentz and U. Kästner, eds., *Konservieren oder Restaurieren: Die Restaurierung griechischer Vasen von der Antike bis Heute*, Beihefte zum Corpus Vasorum Antiquorum 3 (Munich, 2007). On the special case of Naples in general, see C. M. Mattusch (ed.) *Rediscovering the Ancient World on the Bay of Naples, 1710–1890* (Washington, D.C., 2013).
- 10 *Peintures antiques et inédites de vases grecs tirées de diverses collections, avec explications par J. V. Millingen* (Rome, 1813), p. xi.
- 11 See P. D’Alconzo, “Naples and the Birth of a Tradition of Conservation: The Restoration of Wall Paintings from the Vesuvian Sites in the Eighteenth Century,” ed. G. Ceserani and A. Milanese, special issue, *Journal of the History of Collections* 19, no. 2 (2007), pp. 203–14, and *Picturæ excisæ: Conservazione e restauro dei dipinti ercolanesi e pompeiani tra XVIII e XIX secolo*, Studi della Soprintendenza Archeologica di Pompei 8 (Rome, 2002); G. Prisco, ed., *Filologia dei materiali e trasmissione al futuro: Indagini e schedatura sui dipinti murali del Museo Archeologico Nazionale di Napoli* (Rome, 2009); and L. Melillo, “Dai cunicoli ercolanesi al Museo di Napoli: Conservazione e restauro dei ‘quadri’ dall’area vesuviana,” in *Rosso pompeiano: La decorazione pittorica nelle collezioni del Museo di Napoli e a Pompei*, ed. M-L. Nava, R. Paris, and R. Friggeri (Milan, 2007), pp. 36–41.
- 12 Lahusen and Formigli, *Grossbronzen* (note 4), p. 159.
- 13 Lahusen and Formigli, *Grossbronzen* (note 4), p. 157.
- 14 Naples, Archivio Storico della Soprintendenza per i Beni Archeologici di Napoli e Caserta, XXI D 8, fasc. 10, cc. 3–4. Quoted in full by A. Irollo, “L’Officina dei restauri dei marmi del Real Museo Borbonico: Spunti per la storia, le figure professionali e i metodi,” in *Gli uomini e le cose*, vol. 1, *Figure di restauratori e casi di restauro in Italia tra XVIII e XX secolo*, ed. P. D’Alconzo (Naples, 2007), pp. 59–79, and discussed further both in Andrea Milanese’s essay in this volume and in ours.
- 15 On which, see E. S. Myers, “The Antikythera Youth in Its Context” (master’s thesis, Louisiana State University, 2006), pp. 1–82. Further references are provided by Hemingway, McGregor, and Smith in this volume. Notably, the first bronze specialist considered to restore the Antikythera Youth was Wilhelm Sturm, who had just reassembled the Apoxyomenos from Ephesos to great acclaim (on which, see Gschwantler, “Athlet von Ephesos” [note 3]).
- 16 See also E. Martino, “Il Professor Raffaele Gargiulo e il Real Museo Borbonico,” *Cronache Ercolanesi* 35 (2005), p. 234, on Gargiulo’s account of how to eliminate a false patina.

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Fig. 1.1: J. Paul Getty Museum