9 | The Bronze Statue of Trebonianus Gallus in the Metropolitan Museum of Art
Restoration, Technique, and Interpretation

Seán Hemingway, Sarah McGregor, and Dylan Smith

Introduction

The subject of this paper is one of the few nearly complete Roman bronze statues of the third century preserved today. It is an imposing portrait of a Late Roman emperor (figs. 9.1a–c), most likely Trebonianus Gallus (r. A.D. 251–253). After its discovery in the first quarter of the nineteenth century and early restoration in Florence, the statue was considered a masterpiece of Roman bronze sculpture and a major acquisition when the Metropolitan Museum of Art, New York, purchased it in 1905. In more recent years, however, because of the statue's damaged state, only partially rectified by a complex history of restorations, its integrity has been questioned by scholars who have wondered how much of it is truly ancient and belongs together. This paper presents an account of the statue's modern history and sequence of restoration campaigns, as

FIGURES 9.1a–c. Trebonianus Gallus, A.D. 251–253. Bronze, H. 241.3 cm (95 in.). New York, Metropolitan Museum of Art, Rogers Fund, 1905 (inv. 05.30). Three views of the statue in its present state.

well as the results of a technical and art-historical examination begun in 2002 in preparation for the statue's reinstallation in the Roman galleries at the Metropolitan Museum, which were reopened in 2007.[1] A primary goal of this recent study was to look beneath the uniform heavy black coating applied during Alfred André's early-twentieth-century restoration and to establish the extent of ancient fragments and whether these fragments were all from a single statue. The investigation also revealed evidence of ancient manufacture and of methods utilized in the statue's nineteenth- and early-twentieth-century restoration campaigns.

Provenience and Ownership History

The statue was excavated, in fragments, in Rome in the early nineteenth century, in a vineyard near the basilica of Saint John Lateran.[2] One gains a general impression of this area in the seventeenth century from a drawing in the Lehman Collection of the Metropolitan Museum (fig. 9.2). The excavations were carried out by Count Nicholas Demidoff (1773–1828), with the authorization of Pope Pius VII (r. 1800–23), likely sometime between 1819 and 1823, when Demidoff was living in Florence as the Russian ambassador to the royal court of Tuscany.[3] At the time it was thought that the area where the statue was found was a large Roman building, and a fragmentary

FIGURE 9.2. Lieven Cruyl (Flemish, 1634–1720), *View of Lateran, Rome,* ca. 1672–73. Pen and brush and gray and brown ink, gray and brown washes, some watercolor and white gouache, on vellum, 8.4 × 14.2 cm (3⁵⁄₁₆ × 5⁹⁄₁₆ in.). New York, Metropolitan Museum of Art, Robert Lehman Collection, 1975 (inv. 1975.1.577)

base was reported to have been discovered with the statue but is no longer preserved. The vicinity of Saint John Lateran was the site of the barracks of the personal horse guard of the emperor, the *equites singulares*, and the statue of Trebonianus may well have been set up for this high-ranking class, who held significant power in Rome in the third century A.D.[4] No precise records of the excavation exist and therefore the details cannot be confirmed with any certainty. Demidoff subsequently had the statue restored in Florence.

Demidoff belonged to one of the richest families in Russia. The family had extensive iron mines and was known for its philanthropy and patronage of the arts. Demidoff lived in a sumptuous villa—designed for him by Giovan Battista Silvestri (1796–1873)—that he had built near Florence, called the Villa di San Donato.[5] This is where the statue of Trebonianus was displayed for decades. Demidoff and his son Anatole Demidoff, who inherited the villa and its contents, including the statue of Trebonianus, when his father died in 1828, amassed a major art collection that was showcased at the villa. The Demidoff family holdings included masterpieces by Rembrandt, Rubens, and Titian as well as antiquities and works by living artists.

In 1848 ownership of the statue passed from Anatole Demidoff to the celebrated French Neoclassical architect and sculptor Count Auguste de Montferrand (1786–1858). Montferrand brought it to his home in Saint Petersburg, Russia. Among his many accomplishments, Montferrand was commissioned to create a bronze equestrian monument to Nicholas I, which stands in Saint Isaac's Square in Saint Petersburg. Considered a technical marvel at the time it was made (1856–1859), it is one of the few bronze equestrian monuments to stand on two feet without any other support. A catalogue of Montferrand's art collection was published in 1852. In the introduction, the collection, which included over one hundred ancient statues, was heralded by the author, Bernhard von Köhne, as one of the most important in Saint Petersburg, second only to the Hermitage.[6] The statue of Trebonianus, identified then as Julius Caesar, was listed first and was considered to be the greatest masterpiece in Montferrand's collection. It was illustrated in four detailed drawings, which make up two of the twenty-two plates in the book. The drawings in Köhne's monograph are valuable documents that provide a good sense of what the nineteenth-century restoration of the Trebonianus looked like (fig. 9.3). Since they are drawings, though, one wonders how accurate they are. Fortunately, there exists a photograph from 1853 of the statue as it was displayed in the courtyard of Montferrand's home in Saint Petersburg (fig. 9.4) and to a large extent it seems to corroborate the restoration presented in the drawings.

After Montferrand died, in 1858, his art collection was sold by his heirs. The statue of Trebonianus was purchased by the Parisian art dealers Rollin and Feuardent in 1896.[7] When the statue was acquired by the Metropolitan Museum in 1905, C. M. Fitzgerald reported in the first issue of the museum's *Bulletin* that the statue had fallen apart when the Parisian dealers bought it. They

FIGURE 9.3. Drawings of the Trebonianus Gallus as restored in the nineteenth century, three-quarter view and back view. From Bernhard von Köhne, *Mémoires de la Société impériale d'archéologie*, vol. 6, *Musée de sculpture antique de Mr. de Montferrand* (Saint Petersburg, 1852), pl. 1

FIGURE 9.4. Photograph of the Trebonianus Gallus in the courtyard of Auguste de Montferrand's home in Saint Petersburg, 1853

brought it to Paris and had it unsuccessfully restored there by a man named Penelli who worked at the Musée du Louvre. Rollin and Feuardent then had it restored by the distinguished Alfred André (1839–1919), who completed a new restoration in eighteen months sometime between 1902 and 1905. Since 1905 the statue has been a permanent fixture in the Metropolitan Museum's Roman art galleries (fig. 9.5).[8]

It seems that after the Metropolitan Museum's acquisition, the statue of Trebonianus began to lose much of the acclaim it had enjoyed in the previous century. The reevalulation can be directly linked to the figure's distorted proportions and André's restoration, which made it difficult to determine which parts were ancient. Critical to the understanding of the statue is the fact that once a bronze statue has been damaged and then corroded during centuries of burial, it can be difficult, if not impossible, to restore it to its original appearance. An extreme example is the irreparably damaged Hellenistic head of a young girl from Olympia, which is displayed next to a restored copy in the Archaeological Museum at Olympia, enabling the viewer to see the dramatic transformation.[9] Early restorers faced technical challenges when assembling a statue with damaged and missing fragments and often had to rely on their own aesthetic judgment to best assemble the work. The statue of Trebonianus is, unfortunately, another example where reassembly from many broken fragments has greatly changed it from its original appearance despite the well-intentioned efforts of the last restoration campaign.

Prior to this study these anomalies led many scholars to question the statue or simply to shy away from it. Even the Metropolitan Museum's former director Thomas Hoving wrote disparagingly about it in 1996 in a book on fakes:

> There's a life-size standing portrait of a man called the emperor Geta which is the ugliest work of art in the Met. It's so unattractive that when I was director I wanted to relegate it to storage for fear that young visitors would have bad dreams. His patina is the color of offal. His anatomy is bulbous, syrupy, soft, waxy, and unconvincing. His pinhead is set incongruously into this ungainly body with too-long legs and the stomach muscles of an octogenarian. I'm convinced this is a phony concocted by that master of masters, Wolfgang Helbig, and made by a team of fakers in Orvieto.[10]

Götz Lahusen and Edilberto Formigli note, in their monumental book on Roman bronze portrait sculpture, that the statue is in need of a thorough technical examination before much more can be said about it, and Christopher Hallett barely discusses it at all in his book on Roman male nude statuary.[11]

FIGURE 9.5. Trebonianus Gallus before treatment in 2002

Technical Examination

To address the questions surrounding the Trebonianus Gallus, an in-depth technical examination and treatment was undertaken in preparation for the statue's reinstallation in the Metropolitan's new Roman galleries. Evidence was collected from the statue using a number of methods, including visual examination, exploration with a videoprobe, radiography, and elemental analysis of the metal. Close visual study revealed many aspects of the construction. The interior of the sculpture was also examined directly after three panels of restoration metal were removed from the neck (see below fig. 9.16), under the left forearm, and the lower back (fig. 9.6). The panel locations were chosen so that complete visual access of the statue could be had with a videoprobe—a digital camera with a high-intensity light mounted at the end of a long, snaking cable.[12]

Radiography using a high-energy gamma source revealed additional details of manufacture and restoration hidden inside the bronze.[13] Fifty-two exposures were taken from various angles to help interpret the particularly complex repairs and restorations. Some radiographs were typical double-walled exposures, produced by placing the film on the exterior of the bronze and shooting through both sides. A series of single-walled radiographs were also produced by inserting narrow strips of film through the opening in the lower back and holding the film in place against the interior wall with foam. After processing, the radiographic-film strips were scanned and digitally assembled into more easily interpreted images of the chest and back (fig. 9.7).

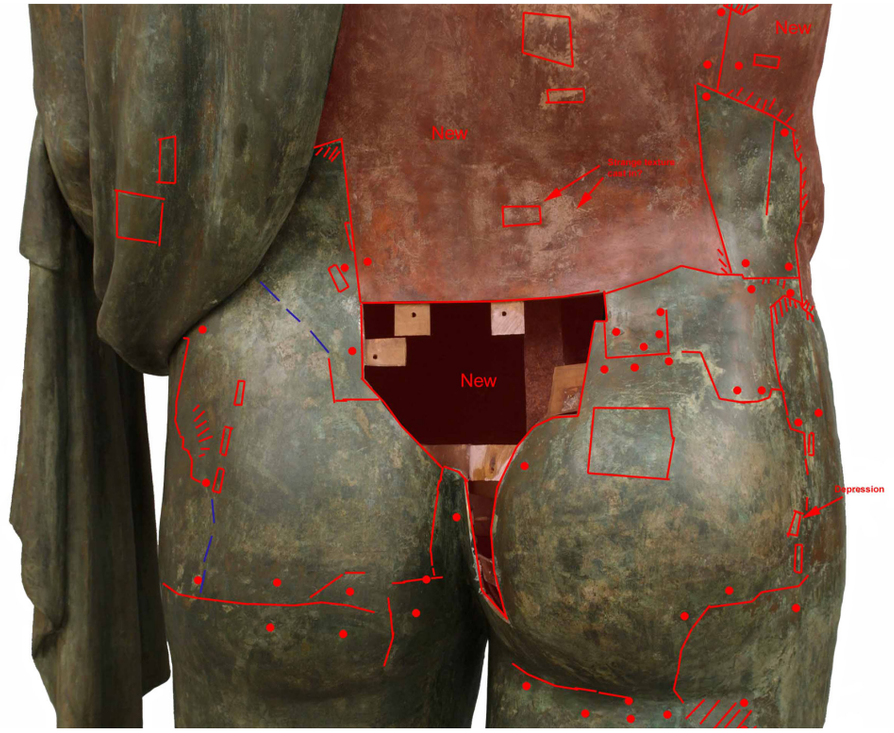


FIGURE 9.6. Lower back, showing the opening after removal of a restored metal panel. Brass straps used in the restoration are visible around the edges of the opening. This image also illustrates the mapping that was done to record areas of restoration, patches, and other points of interest related to manufacture and the restoration.

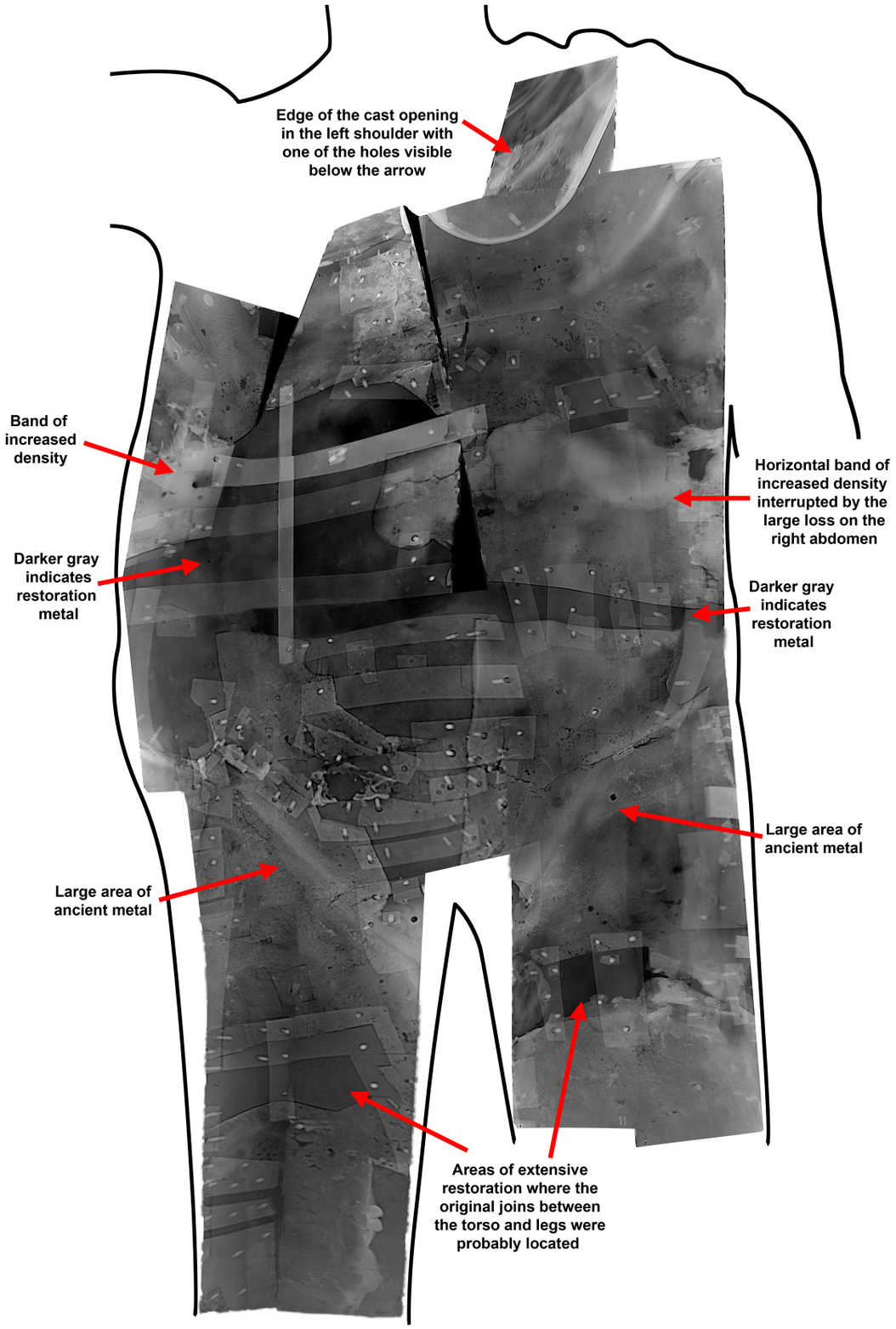


FIGURE 9.7. Composite radiograph of torso

A limited study of the metallic alloys of ancient and restored areas was also undertaken. Thirteen microsamples were analyzed by scanning electron microscopy-energy dispersive spectroscopy (SEM-EDS), primarily from areas of original ancient metal (table 9.1).[14] Additional surface analysis was performed on parts of the restoration metal using X-ray fluorescence spectrometry (XRF).[15]

Considered together, the evidence collected indicates that close to 75 percent of the statue is ancient and that almost all the fragments are associated (fig. 9.8). The original portions include most of the head, the upper back and upper chest and the left side of the torso, the right arm, the left forearm, the entire left leg, and the right leg, except the foot. These sections are assembled from various large and small ancient fragments with relatively small metal fills. Although the left foot is ancient, certain questions remain about its relationship to the rest of the figure. Major areas of restoration include the cape, left shoulder, lower back, right and lower abdomen, and the right foot. The original joins between the individually cast sections were difficult to find because many of the most extensive repairs occur in these areas. Therefore the presence of the repairs complicated the investigation and our ability to determine the relationship of the individually cast sections. In spite of this, there were enough remaining connections and technical associations between ancient fragments to indicate that the statue is not a pastiche and that its stance and the orientation of the limbs are close to the original conception of the figure.

FIGURE 9.8. Front and back view of statue showing in red the areas that are restored. These images were taken after the 2002 treatment.

TABLE 9.1. Elemental Analysis of the Trebonianus Gallus (weight %)

No.	SEM-EDS sample site	Cu	Sn	Pb	Zn	As	Ag	Sb	Fe	Probable date
1	Left hand	76.5	8.2	15.1	bdl	bdl	bdl	bdl	0.1	ancient
2	Right hand	74.1	11.7	13.8	bdl	bdl	bdl	bdl	0.3	ancient
3	Left ear	69.5	7.3	23.0	bdl	bdl	bdl	bdl	0.1	ancient
4	Left buttock	68.5	6.5	24.8	bdl	bdl	bdl	bdl	0.2	ancient
5	Right calf (2)	80.7	7.6	10.7	0.5	bdl	bdl	bdl	0.6	ancient
6	Top of neck opening	78.8	2.3	17.0	1.1	bdl	0.4	bdl	0.3	ancient
7	Front of neck opening	80.0	0.9	18.2	0.4	bdl	0.3	bdl	0.1	ancient
8	Upper back (1)	85.2	9.5	4.8	bdl	bdl	bdl	bdl	0.4	?
9	Cape	77.3	8.3	14.2	bdl	bdl	bdl	bdl	0.1	modern
10	Left foot	80.2	5.4	12.0	1.2	0.3	bdl	0.6	0.2	ancient
11	Right foot	90.8	5.3	3.2	0.3	bdl	bdl	bdl	0.3	restored
12	Right calf (1)	63.7	18.0	17.3	0.4	bdl	bdl	bdl	0.5	w/solder?
13	Upper back (2)	89.0	7.2	3.1	0.3	bdl	bdl	bdl	0.4	?
	XRF surface site									
14	Restoration plate, back	94.5	1.6	3.4	bdl	bdl	bdl	bdl	bdl	restored
15	Restoration plate, neck	95.9	1.9	1.9	bdl	bdl	bdl	bdl	bdl	restored
16	Interior of left arm	57.2	6.2	35.7	bdl	bdl	bdl	bdl	bdl	ancient?
17	Solder, neck plate	3.4	22.8	71.9	1.7	bdl	bdl	bdl	bdl	restored

Note: Elemental analysis was done on seventeen areas on the statue. Thirteen microsamples were analyzed using energy dispersive X-ray spectrometry in the scanning electron microscope (SEM-EDS) to determine alloy composition. Four microsamples were analyzed using X-ray fluorescence spectrometry (XRF). Trace amounts of elements may be present, but at levels below the detection limits for SEM-EDS and XRF under these operating conditions (bdl). The limits are estimated at approximately 0.1 percent for most elements, but slightly higher, approximately 0.3 percent, for silver, tin, antimony, and zinc. Analyses were performed by Mark T. Wypyski, research scientist, Department of Scientific Research, Metropolitan Museum of Art, New York.

The results were not conclusive, but generally split into two groups, high lead and low lead, with the former most likely to be consistent with late Roman alloys. Partial mineralization of the metal from the sample sites may have altered the apparent ratio of the elements detected. Some of the samples were taken near restoration panels, presenting the possibility of contamination from solder and other materials. However, this appears to have occurred only in the sample from the right calf (1), which had a high tin content, probably from tin-lead solder.

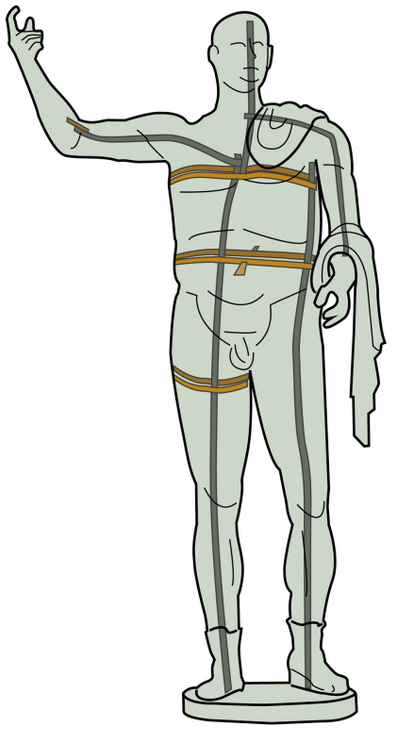


FIGURE 9.9. Diagram of armature. The gray lines represent the iron armature and the orange lines represent the brass straps added by Alfred André for reinforcement.

Restoration History

Before exploring the interrelated technical evidence of the extant ancient fragments, the statue's condition, and how it was originally made, it is necessary to understand its complex restoration history. As described above, at least three complete restorations are known: in Florence, between 1819 and 1823; at the Louvre, sometime after 1896; and by Alfred André, between 1902 and 1905 (see fig. 9.5). As will be explained, the repairs identified appear to be primarily associated with the first and third campaigns. Finally, the most recent conservation treatment, undertaken between 2002 and 2006, is described.

To assemble the fragments and allow the figure to stand, the first restoration must have introduced an armature (fig. 9.9). The iron armature that now supports the Trebonianus Gallus is corroded and may date from the first restoration campaign (fig. 9.10). Display of the statue in the open courtyard of Count Montferrand's home in Saint Petersburg could account for the weathering of the iron. The nineteenth-century restoration of the Apollo Saettante from Pompeii (Naples, Museo Archeolgico Nazionale) utilized a similar kind of iron armature strapped to the body by means of screws.[16]

A number of large cast-metal fills are present on the Trebonianus Gallus, including the cape, the left shoulder and upper arm, the genitalia and panels in the lower back, the right and lower abdomen, and the right ear. The cast fills were probably introduced during the first restoration in Florence or possibly in an undocumented campaign by Count Montferrand himself, given that he was an accomplished sculptor and engineer. Such restorations were a common practice in the nineteenth century and similar examples are discussed elsewhere in this volume.[17] Furthermore, the drawings and photograph produced while the statue was on display in Count Montferrand's home depict it as complete and strongly suggest that the restored cast parts of the Trebonianus were already present and not made by André (see figs. 9.3–9.4). This is further corroborated by Fitzgerald's report of 1905, which states that when André received the work he found that "excepting a few square inches of the torso, nothing of the original was lacking."[18] The restored parts have a smoother, more coppery and uncorroded surface on the interior in comparison with the ancient parts (fig. 9.11). In the radiographs, the restored parts are lower in density and lack the irregularities present in the ancient fragments (see fig. 9.7). Restoration fills on the lower back and neck were analyzed and found to be cast copper with a small amount of tin and lead (see table 9.1, samples 14, 15). Solder from the edge of the restored neck panel was also analyzed and found to be lead-tin solder (see table 9.1, sample 17). A sample from the cape was, surprisingly, found to be a highly leaded bronze (see table 9.1, sample 9), similar to ancient alloys, but it is possible that the sample was taken from an unrecognized ancient part incorporated into the restoration.

FIGURE 9.10. Interior photograph taken with a hand-held camera showing the iron armature and Alfred André's added brass straps

FIGURE 9.11. Interior photograph of torso taken with a hand-held digital camera showing the difference between the ancient metal and the restoration metal

There was no evidence of restoration material found within the statue that could be directly attributed to the second campaign. To date, the only documentation about this restoration appears in the Metropolitan Museum's *Bulletin,* in its mention of Penelli, the restorer at the Louvre, who reassembled the statue but whose restoration fell apart shortly after. Although the documentation of André's restoration of the Trebonianus Gallus is limited, records of his other restorations provide additional insight. In 1901, André had been chosen to restore the Antikythera Youth, a Greek bronze statue of the fourth century B.C. and one of the most important works that came to light in the first underwater excavation of an ancient shipwreck in Greece, in 1900. André was brought to Athens and over the course of forty days he put the statue back together at the National Archeological Museum (fig. 9.12).[19] It is interesting to note that the restoration done by André was later questioned and the statue was taken completely apart under the direction of the Greek archaeologist Christos Karousos in the late 1940s and 1950s.[20] It is essentially Karousos's restoration that can be seen today in Athens. Although André's restoration was not dramatically different from Karousos's, in André's Youth there is a slight shift in the head and the torso is also slightly elongated. These subtle differences highlight how a restoration can affect the look of a statue.

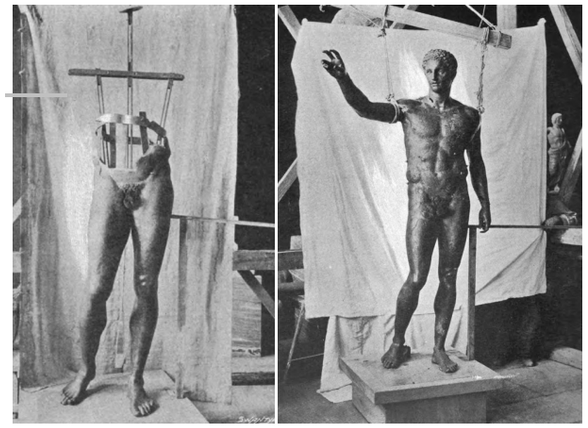


FIGURE 9.12. Two photographs of the Antikythera Youth during its first restoration. The image on the left shows the lower half of the statue assembled on the armature using metal straps. The image on the right shows the statue fully assembled. From Edward Vicars, "A Rescued Masterpiece: The Finds at Anticythera," *The Pall Mall Magazine* 29 (1903), 558–59

One of the main reasons André's restoration of the Antikythera Youth was questioned was because he applied an opaque black coating over the entire surface that masked details of the ancient bronze surface as well as modern joins and restorations. André applied a similar coating, a mixture of wax and paint, to the statue of Trebonianus, which raised the same doubts about what was ancient and what was not (see fig. 9.5). Unlike the Antikythera Youth, the Trebonianus had no clearly documented archaeological context, making this determination even more critical.

Besides the opaque surface coating, the clearest evidence of André's restoration is his characteristic technique of utilizing brass straps and threaded rods to unite the ancient fragments. Rolled sheet brass was cut in various sizes and shaped to conform closely to the contours of the interior (see fig. 9.11). The brass straps were held tightly to the interior of the bronze wall so that the threaded rods could be twisted from the exterior through predrilled holes in the bronze wall and into the straps. André rarely added a fastener such as brass nuts to the rod. Only in a few areas did he apply lead solder and brown putty in addition to the straps and threaded rods to hold fragments together. The heads of the rods were then cut flush to the exterior surface and concealed with putty followed by the black coating. The final filing to remove the rods from the exterior surface may provide at least one explanation for the absence of burial corrosion around the perimeter of most of the ancient fragments (fig. 9.13). In addition to the brass straps and rods, André attached horizontal brass bars to brace large repaired sections of the statue wall to the iron armature for additional reinforcement (see fig. 9.10).[21]

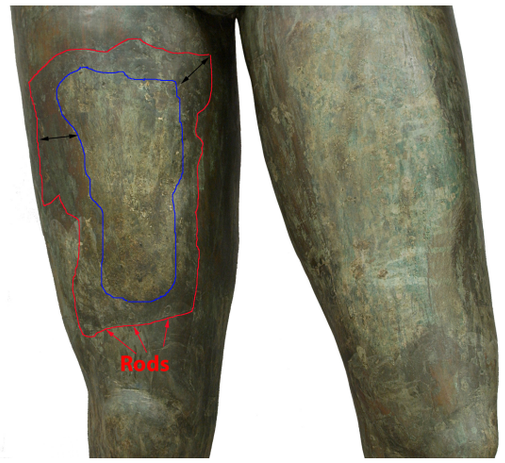


FIGURE 9.13. Detail of right thigh. The red outline indicates the actual size of a large ancient fragment, and the area between the red and blue lines is where the patina has been removed.

The most recent campaign of conservation treatment, begun in 2002, did not alter the existing armature or placement of any of the restored sections. Rather, the focus was to establish the condition of the sculpture and how much of it is ancient. The opaque black coating was removed from the statue except for an inconspicuous area on the top of the statue's right shoulder that is preserved for possible future analysis. Considerable inpainting of the modern restoration metal was then undertaken to present a uniform appearance but without obscuring the patches and modern joins. Finally, a thin coating of wax was applied to protect the surface (see figs. 9.1a–c).

Ancient Fragments

Removal of André's black surface coating during this investigation allowed the actual size and extent of ancient fragments to be more clearly understood. In addition to the surface examination, evidence on the interior of the sculpture seen through the videoprobe and radiographic images helped us interpret the relationship between the various ancient fragments in the head, arms, torso, legs, and feet.

The small size of the head relative to the body has long raised doubts about whether it is original to the statue. However, ancient Roman sculptures are known to exhibit what now seem to be jarring juxtapositions of heads and bodies. Two good examples are the bronze statue of Claudius from the so-called Basilica at Herculaneum (Naples, Museo Archeologico Nazionale) and the statue of a Flavian woman in the guise of Venus in the collection of the Ny Carlsberg Glyptotek in Copenhagen.[22] However, such discrepancies in scale can also result from the efforts of eighteenth- and nineteenth-century restorers, who strove to present complete statues. Terrible pastiches were created, such as two works in the Lansdowne collection: the Discobolus torso that was turned into a Diomedes Stealing the Palladion by the restorer Bartolomeo Cavaceppi (Wiltshire, Bowood House) and a statue of Tyche-Fortuna (now at the Metropolitan) that has an incongruous head of a Flavian lady from a restoration in the late eighteenth century (fig. 9.14).[23]

On the statue of Trebonianus, the extensive restoration at the neck, including trimming of the ancient break edges, added to the difficulty of establishing the relationship of the head to the torso (fig. 9.15). In the radiograph of the neck there are two horizontal breaks at the bottom and top of the neck. Numerous brass straps bridge the breaks to secure the head to the neck and the neck to the torso. Although interrupted with these breaks, the metal through the head and neck and into the torso is ancient. In the radiograph, the density of the ancient fragments on either side of the repaired neck break is consistent, and the diameter and shape of the isolated neck fragment matches the opening of the head and that of the torso. Analysis of a sample from the left ear was found to be highly leaded bronze consistent with ancient Roman alloys (see table 9.1, sample 4). Two samples from the right side of the neck were also highly leaded but with much lower levels of

FIGURE 9.14. Marble statue of Tyche-Fortuna restored with the portrait head of a woman, ca. A.D. 85–90. 190.5 × 66 × 58.4 cm (75 × 26 × 23 in.). New York, Metropolitan Museum of Art, Fletcher Fund, 1961 (inv. 61.82.1, .2)

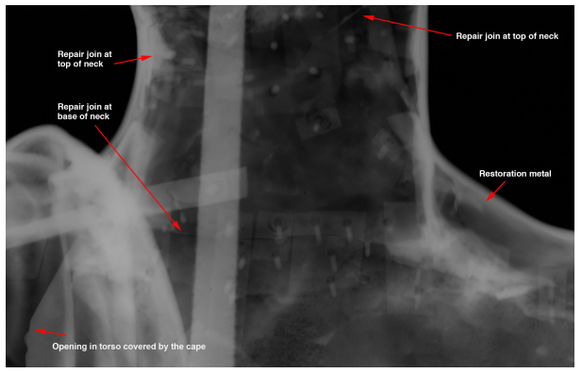


FIGURE 9.15. Radiograph of back of the neck showing the trimmed break line at the base of the neck with the straps bridging this break. There is another repaired break line at the top of the neck. The red arrow in the lower left-hand corner indicates the straight cast edge of the torso opening on the back.

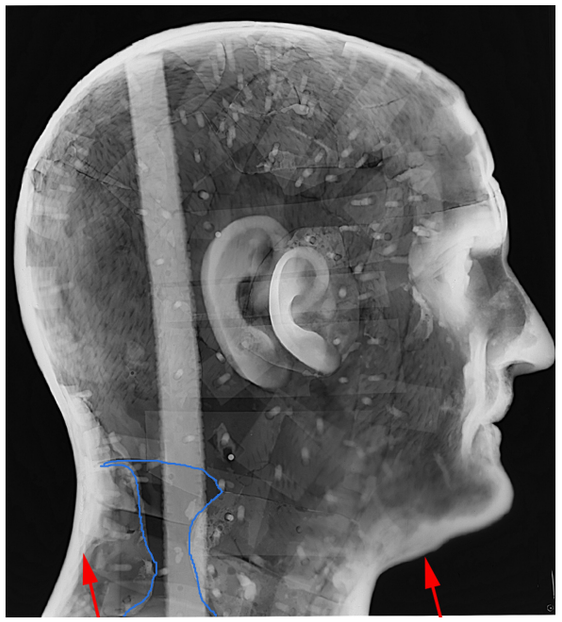


FIGURE 9.16. Radiograph of head, right profile. The red arrows point to the areas where the metal appears slightly thicker and more irregular, which could be the remains of excess metal from a flow weld at the neck. The blue outline shows where the panel of restoration metal was removed for access into the head with the videoprobe.

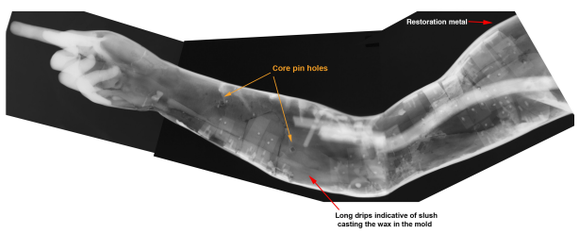
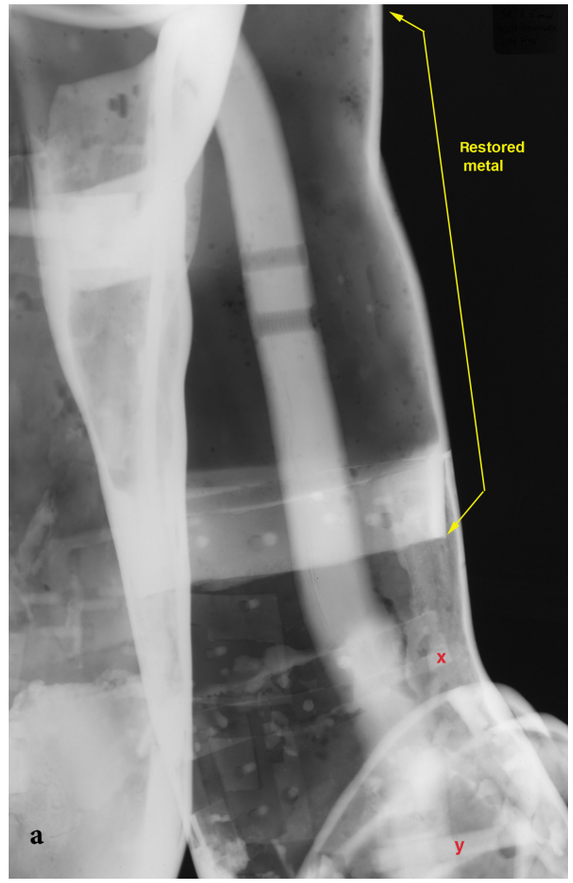


FIGURE 9.17. Composite radiograph of right arm. A red arrow points to the runs of wax seen along the length of the forearm. The second red arrow indicates an area of restored metal on the top of the shoulder. The yellow arrows show the smaller-sized core-pin holes, approximately three millimeters square.

tin (see table 9.1, samples 6, 7). The sampled fragments appear to be ancient; it is possible that the difference in alloy reflects a distinct pour of metal used to join the head to the neck. Although evidence of the original join has been obliterated by the restoration, there appears to be excess metal at the base of the neck and under the chin, which could indicate excess metal from an original join (fig. 9.16). Thus our conclusion is that the head does belong to the body.

Although fragmentary, the majority of the right arm, including the hand, is ancient; the exception is a large section on top of the shoulder that has been restored (fig. 9.17). There is an intact ancient fragment that continues from the underside of the arm, through the armpit, and into the chest, confirming that the upper arm belongs to the torso and that its position is generally correct. A sample from the right hand was found to be leaded bronze and is generally consistent with the head (see table 9.1, sample 2).

The left shoulder and upper arm comprise a single piece of restored metal that tapers into a collar. The collar was made as a method of attachment to the ancient forearm (fig. 9.18a). Radiography revealed that the left forearm, including the hand, is ancient. This section is almost completely intact and consists of large ancient fragments. The one area of loss is located on the underside of the forearm. The repaired panel for this loss was removed to allow exploration with the videoprobe, which revealed an unusual feature. Within the forearm there is an irregular U-shaped fragment and elemental analysis suggests that it is ancient (figs. 9.18b–d; see table 9.1, sample 16). The presence of this fragment is not completely understood. It is possible that it was part of the original construction of the statue, with some type of mechanical purpose to support the left forearm from the original cape. Or it may have been incorporated during one of the restoration campaigns. The left forearm does appear to belong to the statue, though it is now



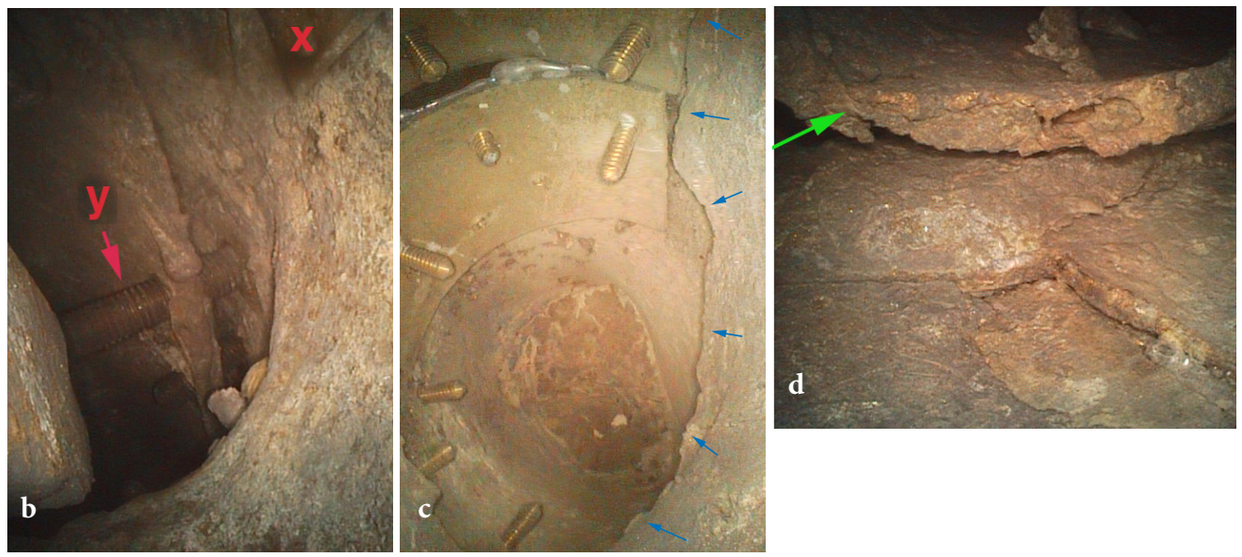


FIGURE 9.18a–d. Radiograph of left shoulder and upper arm showing the modern restoration of the upper shoulder and arm indicated in yellow (a). Three videoprobe images show different views of the internal fragment (b–d). Figures 9.18a and 9.18b are marked with the letters *x* and *y* to show where the location of the same threaded rod and plate is in each image. Figure 9.18c is an image looking into the core material in the base of the hand and the top of the forearm. The internal metal fragment is marked with arrows. Figure 9.18d is an image showing the edge of the internal fragment.

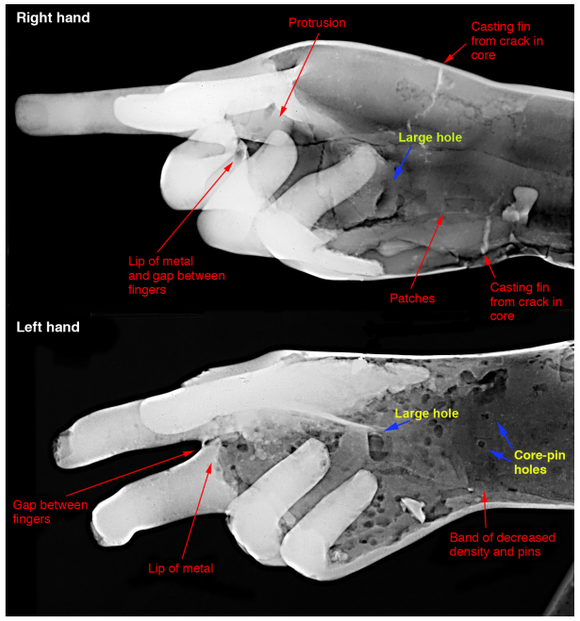


FIGURE 9.19. Radiographs of right and left hands. The radiographs have been enhanced with Lucis Pro 6.0 software.

separated from the torso by restored elements. A sample taken from the left hand was found to be a very similar alloy to that of the right—highly leaded bronze (see table 9.1, sample 1). Radiography and images captured with the videoprobe also revealed that features found in the interior of the left forearm are comparable to those in the right (fig. 9.19; see also fig. 9.27) and that the fabrication of both hands is strikingly similar.

Based on the character of the metal and the corrosion on the interior, the bulk of the torso is clearly ancient (see figs. 9.7, 9.8). Significant repairs have been made to the right side of the stomach and the center of the lower back. Analysis of two samples from the upper back were found to be bronze with a lower level of lead (see table 9.1, samples 8, 13), distinct from the head and, surprisingly, also different from the neck. A remarkable discovery with the videoprobe in the torso was a symbol inscribed in the wax before the figure was cast in bronze (fig. 9.20; see also fig. 9.23d). This mark, cut in the wax working model, is located in the wall directly below the opening into the left shoulder. The symbol looks like an *X*, possibly the Greek letter *chi*, surrounded by circular depressions. A similar letter, a Greek *alpha*, was noted on the interior of a portrait head of a young man in the collection of the J. Paul Getty Museum in Los Angeles (figs. 9.21a–b).[24]

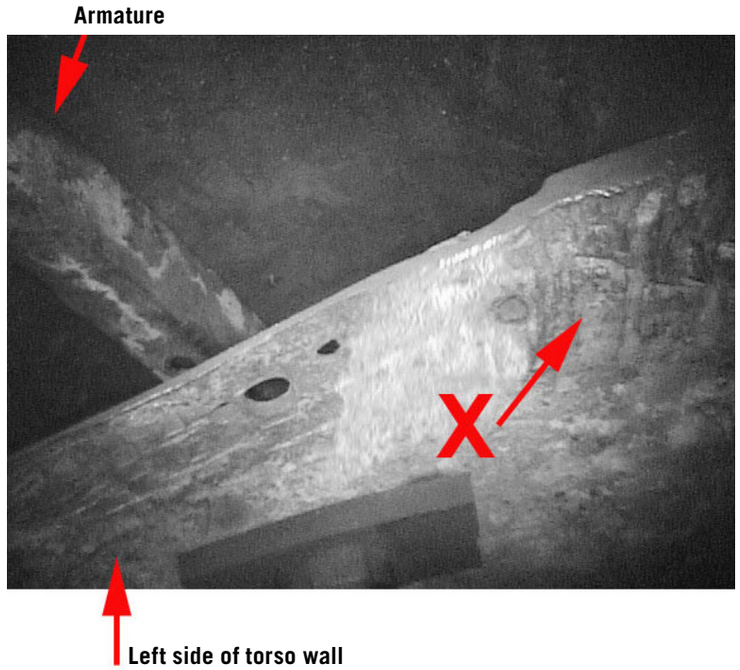
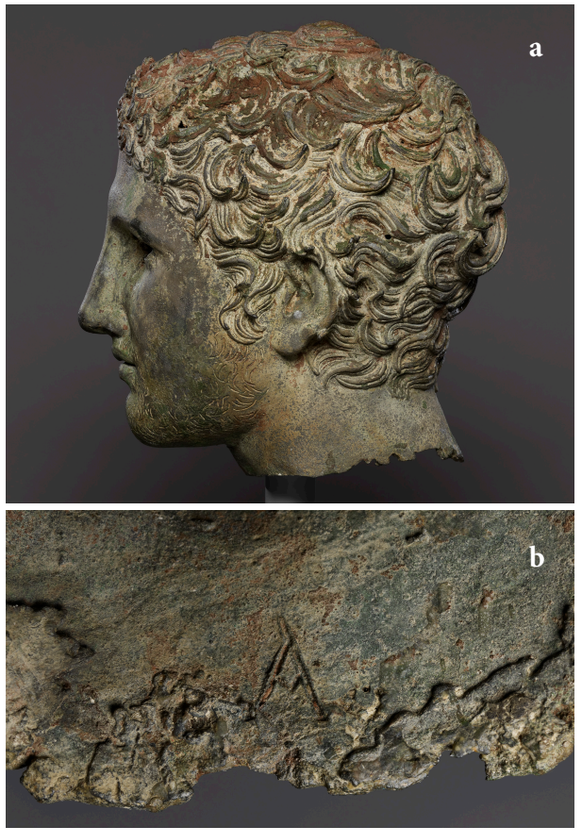


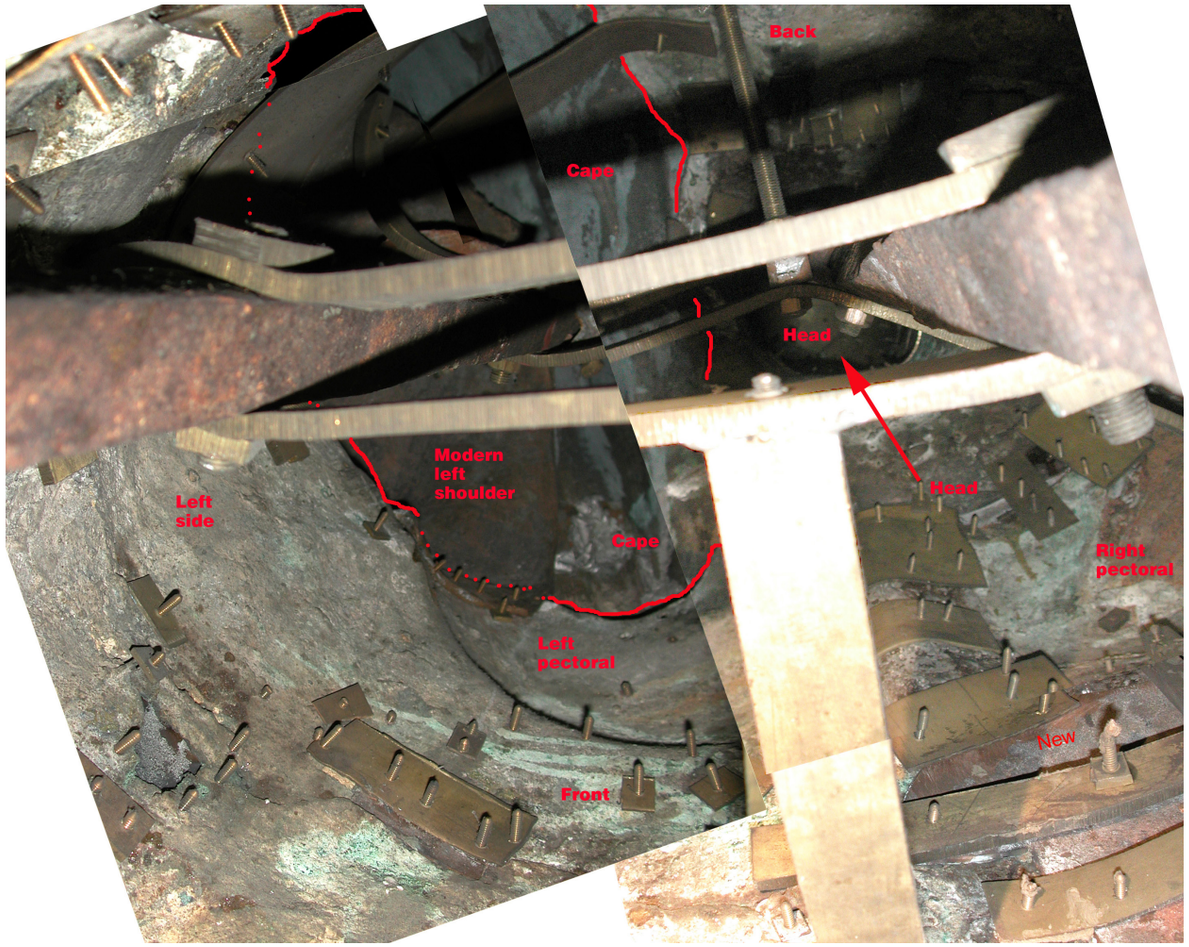
FIGURE 9.20. Videoprobe image showing the *X*, possibly the Greek letter *chi*, surrounded by four circular depressions. In this view, the armature bends over into the left shoulder.



FIGURES 9.21a–b. (a) Bronze portrait head of a young man, 175–300 A.D., H. 26 cm (10¼ in). Los Angeles, J. Paul Getty Museum (inv. 71.AB.458). (b) Detail (interior of neck) showing possible Greek *alpha*

Although the cape now present on the statue is restored, evidence suggests that a cape was present originally. Examination in the upper left side of the chest with the videoprobe revealed an original opening that has a cast edge with what appears to be traces of ancient patina (fig. 9.22). The edge has a smooth surface and an undulating quality along with a slight lip, which is consistent with a cut made through the wax during preparation of the wax working model (figs. 9.23a–b; see also fig. 9.15). The presence of this opening would be expected if a separately cast cape was originally present. Parts of the figure hidden by the drapery would not have been cast—a common practice that was economical in terms of both material and labor.[25] Distributed around the perimeter of the opening, eight circular holes, slightly less than one centimeter in diameter, are found in the metal wall of the torso (see figs. 9.20; 9.23a–b). (Similar holes were found along the draped covered opening in the arms of the Apollo Saettante from Pompeii.)[26] Although their function is not clear, they seem most likely to have been drilled in one of the earlier restoration campaigns to hold the cape.

FIGURE 9.22. A composite of digital photographs that shows the opening in the left upper torso (outlined in red)



FIGURES 9.23a–b. Detail videoprobe images showing some of the holes found along the opening of the torso wall. Figure 9.23a shows three holes found along the vertical line of the torso opening in the back. The interior wall of the modern cape is visible on the right side of the image. Figure 9.23b shows the curved opening behind the lappet of the cape that drapes over the left pectoral. Two additional holes can be seen in Figure 9.20 to the left of the letter X.

FIGURE 9.24. Videoprobe image looking into the interior of the left thigh, where brass straps and rods repair a long break down both the inseam and outer seam of the leg

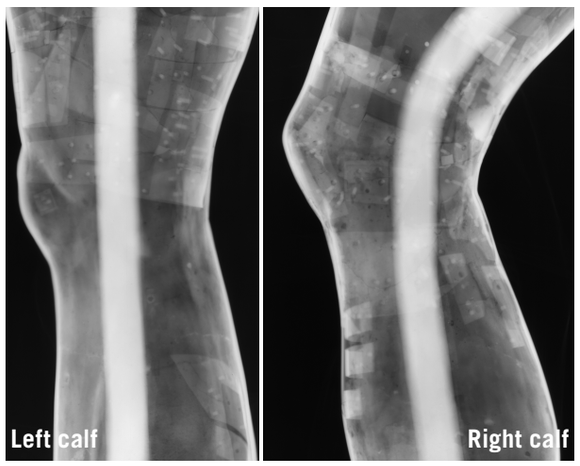


FIGURE 9.25. Radiographs of left and right knees and calves. The iron armature is visible as a wide white line in the center of each leg. The lighter rectangular shapes visible in both legs are brass straps from André's restoration.

A large ancient fragment also connects the lower torso to the thighs, indicating that the positioning of the legs is approximately correct (see fig. 9.7). The groin is extensively repaired and the genitals were found to be entirely restoration. Both thighs consist mainly of ancient metal; the left side consists of a few larger fragments, the right has many smaller fragments. A broad repair is present across the front of both legs where they meet the torso, which probably coincides with the position of original joins that failed (see fig. 9.7). The left thigh is basically split into large intact fragments of the front and back with repairs going down the inseam and outer seam of the leg (fig. 9.24; see also fig. 9.30). Each calf is composed of a large ancient fragment completed with the addition of a few modern patches (fig. 9.25).

The feet of the statue have been questioned based on their relatively small size and because it is unusual for a Roman male figure in heroic nudity to wear shoes. Radiography revealed that the left foot is fitted over the end of the calf, a technique that does not appear consistent with ancient practice (fig. 9.26). A metal sample from the left foot was identified as a leaded bronze, similar to ancient alloys found elsewhere in the figure (see table 9.1, sample 10). The right foot is also fitted onto the calf, but is additionally joined using an interior collar of metal, clearly of modern fabrication (fig. 9.27).[27] The right foot is bronze, but contains much less lead than the left (see table 9.1, sample 11). A seam was noted running down the front and back of the right foot, a feature that would not be expected to remain on an ancient bronze. Unfortunately, plaster poured into the lower legs and feet, probably used to secure the armature during André's restoration, prevented an examination of the interiors that might have resolved the relationship of the left foot to the statue. At present, it appears that the left foot is ancient and that the right foot has been restored using the left foot as a guide. Since the left foot does not join the leg there remains the possibility that it does not belong.

Ancient Manufacture

The Trebonianus Gallus was cast using a copper-tin-lead alloy with a relatively high lead content, consistent with Roman practice, though the alloys identified vary considerably in different parts of the figure (see table 9.1).[28] Distinct alloy compositions can indicate that the statue was cast in as many as eight sections: head, upper torso, lower torso, arms, legs, and the original cape. Large Roman bronzes were cast in sections to keep the amount of molten bronze manageable for handling while it was heated and poured into molds.

The statue was made by the indirect lost-wax casting method. Developed so that the original, full-scale model would not be compromised in the casting process, this method entails multiple stages and was very useful when creating an over-life-size statue in bronze.[29] The original model was sculpted in a pliable medium, such as clay. Then sectional molds or piece molds were made

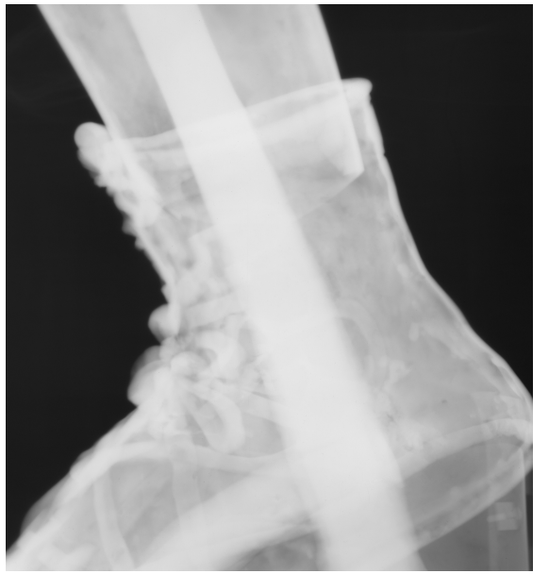
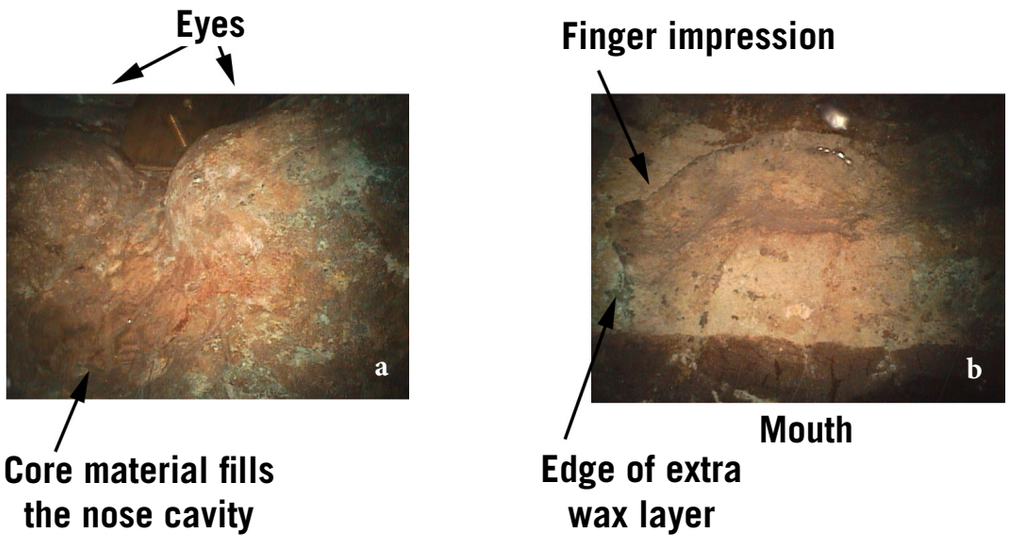


FIGURE 9.26. Radiograph of the left foot. The iron armature is visible as a wide white line in the center of the foot. The bottom of the calf is inserted into the top of the shoe.

FIGURE 9.27. Radiograph of the right foot. The iron armature is visible as a wide white line in the center of the foot. A metal collar (indicated with an arrow) joins the calf to the shoe.

around the different body parts to be cast separately. The piece molds were removed from the original model of the statue and reassembled to create a single, complete mold of each body section. Depending on the accessibility to the interior of each mold, different techniques were used to coat the interior with wax. Sheets of wax were applied to line the interior cavities of molds that had larger openings, such as the torso, or molten wax was poured into molds that had limited access to the interior. In this approach, called slush casting, the mold was turned while the molten wax was poured, so that a uniform coating could be achieved. To produce a hollow bronze casting and maintain the shape of the wax lining, the molds were filled with a clay core. Once the core material had dried, the piece molds were removed to reveal the wax copy of each body section. The craftsman could make further refinements to the wax model by either adding wax or incising additional features. At this stage, core pins, often made of iron, were inserted through the wax into the core material and then the wax model was invested with a heat-resistant clay mixture. This assembly was then heated to high temperatures to dry out the clay core and investment while the wax melted out, leaving a void into which the molten bronze would be poured.

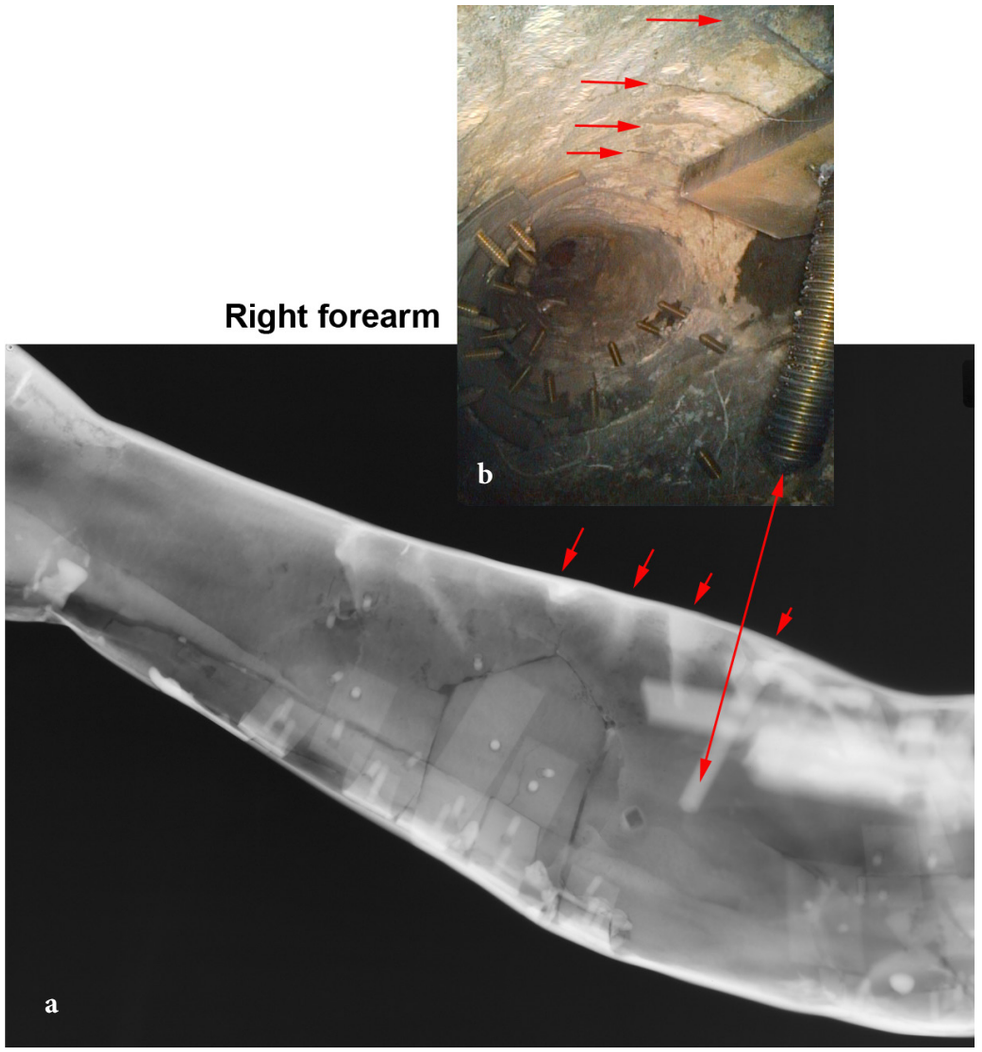
Despite the fragmentary state of the sculpture and the extensive repairs, it is still possible to recognize features that indicate how the wax working models were made. Videoprobe images of the interior face reveal that the backs of the eyes and mouth were reinforced with wax strips applied by hand (figs. 9.28a-b) and also capture an impression of the craftsman's finger (fig. 9.28b). Wax sheets were used to line the mold of the torso. This is apparent in the radiograph, where adjacent wax sheets overlapped, creating a line of increased opacity (see fig. 9.7). Slush casting was used to prepare the waxes for the arms. Drip marks running the length of the right forearm are visible in the radiograph and are indicative of this process (see fig. 9.17). Another feature, found

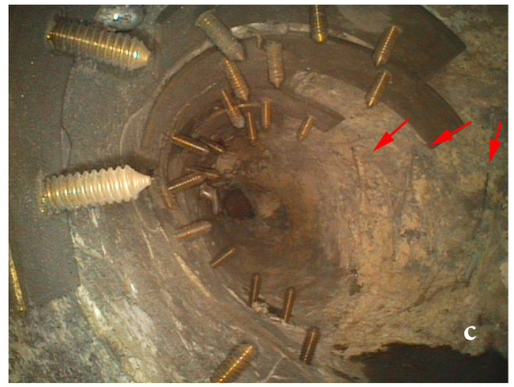


FIGURES 9.28a–b. Videoprobe images of the interior of the face showing the areas where extra wax was added behind the eyes (a) and the mouth (b). The finger impression of the craftsman is preserved in the metal where wax was added to the mouth (b).

in both forearms and evident in the radiographs and videoprobe images, may also be indicative of slush casting. Within each forearm, there is a row of short, parallel ridges perpendicular to the length of the forearm (figs. 9.29a–c).[30] It is likely that several pours of molten wax were needed to evenly coat the entire interior cavity of the molds. Therefore, in addition to the longer drips seen in fig. 9.17, the short ridges could perhaps represent a subsequent pour of wax where the mold was turned in a different direction from the slushing action used in the first coating.

The wax working model of the arms included the palms of the hands, but it may not have included all the fingers (see figs. 9.17, 9.19). This is suggested by features seen in the radiographs.





Interior of left forearm

FIGURES 9.29a–c. Radiograph of right arm, with videoprobe images of interior of both right and left arms. The long red arrow (a) indicates the same rod and strap seen in the radiograph and the videoprobe of the right forearm (b). The short red arrows in both videoprobe images and the radiograph point to the ridges found in the right (b) and left (c) forearms.

In the radiograph of the right hand, there is an elongated solid-metal protrusion in the index finger that extends below the base of the other fingers, along with what appears to be a narrow gap between the index and the middle finger. This may indicate that the index finger was sculpted separately in wax and added to the larger, wax working model of the arm. The core could have been dug out to receive the wax finger or the finger could have been inserted into the wax working model of the arm before the core was filled in. From the evidence of the radiograph of the left hand, it is possible that the gap between the index finger and the middle finger may also suggest that these fingers were sculpted separately and added to the wax working model of the arm. Preparing separate wax fingers would have simplified the process of making sectional molds around the extended fingers on the original sculpture and allowed the craftsmen some flexibility to position the fingers on the wax model.

Elemental analysis of a sample of the core taken from the left hand suggested a combination of approximately equal parts of clay and a calcium-rich component—possibly lime—with a small amount of a siliceous material—probably sand.[31] Such a mixture is plausible for a highly refractory core and is consistent with Roman practices.[32] Thermoluminescence dating analysis was also carried out on a sample of this core material.[33] The results indicate the last date of firing—most probably the moment the bronze was cast—was between 40 and 720 A.D. or about A.D. 380, plus or minus 340 years.[34] The date of the bronze is therefore consistent with manufacture during Trebonianus Gallus's rule between A.D. 251 and 253.[35]

The presence of metal core pins used to support the core in place on the statue of Trebonianus is evident from the many square holes seen in the radiographs. They occur in two basic sizes: five to six millimeters square and three millimeters square. Larger holes, up to twelve millimeters square, were found on the palms (see fig. 9.19) and thighs (fig. 9.30) and could indicate the use of another method of support, such as trunnions or core extensions. Similar large patched holes have been documented on the bronze statue of a victorious youth in the collection of the J. Paul Getty Museum and have also been considered trunnions.[36]

One of the methods used to join the separately cast sections was flow welding, an ancient Roman technique and the technique most likely employed to permanently assemble the statue of Trebonianus Gallus.[37] The repairs to major breaks are located where one might expect to find the original joins on the statue, such as where the upper legs meet the torso. The vestiges of a join in the upper torso may be indicated by a band of slightly denser metal that extends across the chest and continues onto the back (see fig. 9.7).[38] A fragmentary late Roman torso of similar size from a private collection has also been described as being cast in two sections.[39] However, the band of metal in Trebonianus Gallus is somewhat wider and more irregular than expected and could instead be an original cast-in repair.

FIGURE 9.30. Radiograph of left thigh showing the larger square opening that may be a result of a trunnion or core extension. The wide white line is the iron armature, and the brass straps can be seen along the sides of the thigh.

After the bronze was cast, metal patches were inserted to cover the imperfections in the casting and the holes left by the core pins and core extensions. There are numerous patches found on the abdomen (fig. 9.31), whereas the head (fig. 9.32) appears to have only one. This difference may be indicative of the greater care taken to cast the head of an emperor. One patch on the lower abdomen is raised, most likely from the crushing pressure of burial or reshaping of the torso during subsequent repair (fig. 9.33). It is interesting to note that some of the modern restored sections exhibit patches that either cover modern casting flaws or imitate the appearance of the ancient patches.

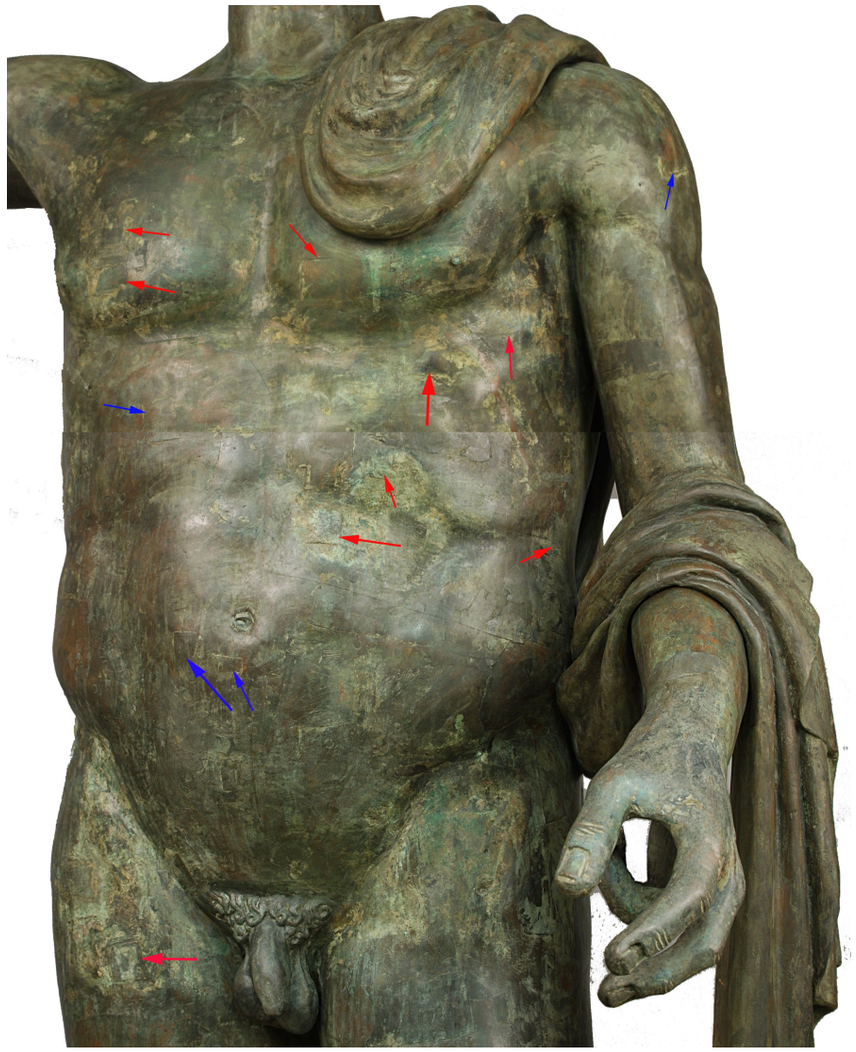


FIGURE 9.31. Photograph of torso showing the numerous patches of different shapes and sizes. The red arrows point to the ancient patches and the blue arrows point to the patches made in the restoration metal.

FIGURE 9.32. Photographic detail of chin showing a patch that was finely done

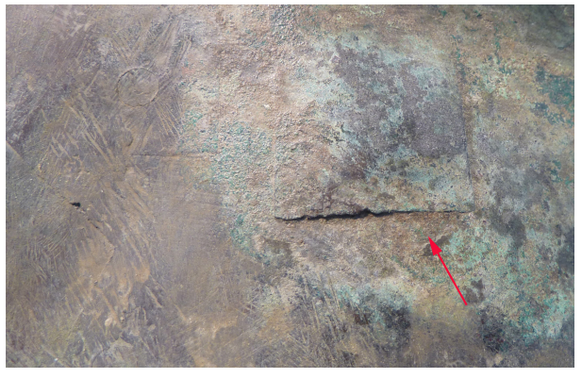


FIGURE 9.33. Photographic detail of raised patch on lower abdomen. In this image one can also see the numerous file marks that were made by the restorers during cleaning on the exterior perimeter of surviving ancient sections like this one.

Iconographic and Stylistic Analysis

When the statue was first published it was identified as a posthumous portrait of Julius Caesar and dated to the Hadrianic period.[40] A large laurel wreath was restored on the head after images of the Divine Julius Caesar (fig. 9.34) and a fig leaf was positioned over the penis. Although the head does exhibit realistic traits, as the veristic portraits of Julius Caesar do, there is not much resemblance. This is clear when one compares the head to portraits of Julius Caesar such as one dredged from the Rhone River in 2007.[41] Much better are comparisons with Roman portraiture of the third century A.D. The head (fig. 9.35) clearly follows the stern realism of portraits of Caracalla, as evinced in a fine example from the Metropolitan's collection (fig. 9.36).[42] The technique in which the hair is rendered, known as *a penna*, was developed by sculptors working in marble and can be seen on earlier portraits of the third century, such as portraits of Severus Alexander (fig. 9.37). There are no large-scale portraits of Trebonianus Gallus that are identified by inscriptions. The identification of the Metropolitan's statue is based on close comparison between the

FIGURE 9.34. Detail drawing of head as restored in nineteenth century with laurel crown. From Bernhard von Köhne, *Mémoires de la Société impériale d'archéologie*, vol. 6, *Musée de sculpture antique de Mr. de Montferrand* (Saint Petersburg, 1852), pl. 2

FIGURE 9.35. Frontal view of head of the Trebonianus Gallus

FIGURE 9.36. Marble portrait of the emperor Caracalla, A.D. 212–217. H. 36.2 cm (14¼ in.). New York, Metropolitan Museum of Art, Samuel D. Lee Fund, 1940 (inv. 40.11.1a)

FIGURE 9.37. Marble portrait bust of the emperor Severus Alexander, ca. A.D. 230–235. Overall 74 × 75 cm (29⅛ × 29½ in.). New York, Metropolitan Museum of Art, Purchase, Lila Acheson Wallace and Philodoroi Gifts, 2011 (inv. 2011.87)

FIGURE 9.38. Profile view of head of the Trebonianus Gallus

FIGURE 9.39. Bronze sestertius of Trebonianus Gallus, A.D. 251–253. H. 2.7 cm (1 1/16 in.). New York, Metropolitan Museum of Art, Gift of William M. Laffan, 1905 (inv. 05.47)

head (fig. 9.38) and coin portraits from the emperor's reign (for example, fig. 9.39). The identification is therefore not absolutely certain but probable.

Indeed, there is not widespread agreement on the identification of large-scale sculptural portraits as Trebonianus Gallus.[43] Drawings of the profiles of six of these portrait heads differ enough for one to question if they represent the same person.[44] Among all the portraits identified as Trebonianus, the Metropolitan's statue seems the best candidate because of the realistic features and the close comparison to the coinage. The sheer monumentality of the statue, which stands nearly eight feet high, and its heroic nudity also strongly suggest that the figure represents a Roman emperor.

The right arm has been damaged and consequently its restoration does not accurately reflect its original position. The right forearm should be slightly higher. The pose with the raised arm has been identified as a gesture of oration, like that of the Arringatore (Florence, Museo Archeologico Nazionale), as if the emperor were addressing his troops.[45] A better comparison, however, is the statue of Alexander with the Lance, by Lysippos, which is echoed in a number of small statuettes among the finest of which is in the Louvre's collection.[46] Heroic nude statues inspired by Alexander's image as the military leader par excellence were popular in Hellenistic and Roman times.

The statue type that appears closest to the Metropolitan's statue is that of Antoninus Pius, represented in a number of marble copies. One is now located in the Palazzo Braschi in Rome, and another is in the Palazzo Massimo, also in Rome.[47] This statue type features the emperor standing in heroic nudity with a short cloak (with a prominent pin, now lacking in the restored drapery of the Trebonianus Gallus) and cradling a short sword, and has been identified as echoing a Classical statue of Diomedes. This statue type was popular in the Roman imperial period and variations of it were used for portraits of important public figures and emperors such as Pompey, Agrippa, Augustus, Trajan, Hadrian, and Antoninus Pius. The association of an emperor with a hero from the mythic foundation of Rome following the fall of Troy would have had potent connotations of leadership and valor. It is clear from the position of the fingers that the Metropolitan's statue held attributes in each hand. The raised right hand likely held a spear, and the left hand most likely cradled a *parazonium*, or short sword. The position of the fingers of the left hand on the Metropolitan's statue is distinctive and very close to that of a third-century A.D. large-scale standing male portrait in the Louvre, which grasps a short sword.[48]

The strangest iconographic feature of the statue is the open-toed half boots, which are elaborately decorated with a mask surmounted by a shell (figs. 9.40–9.42). The right foot appears modern and seems to have been cast from the left, which has an alloy distinct from the other samples taken from cast sections of the statue (see table 9.1). Nonetheless, that the left foot's alloy

FIGURE 9.40. Front detail of left foot of the Trebonianus Gallus

FIGURE 9.41. Profile detail of left foot of the Trebonianus Gallus

FIGURE 9.42. Drawings of feet and shoes from the statue. From Bernhard von Köhne, *Mémoires de la Société impériale d'archéologie*, vol. 6, *Musée de sculpture antique de Mr. de Montferrand* (Saint Petersburg, 1852), pl. 2

is dissimilar is not reason enough to dissociate it from the statue. Different cast sections of large-scale statuary can have differing alloys, and it is necessary to exercise caution when interpreting the meaning of alloy results. Maxwell Anderson suggested that the boots are those of a wrestler, with whom Trebonianus Gallus identified himself, and it is true that the massive chest of the statue recalls a *pankratiast*'s figure.[49] However, a similar type of open-toed half boot appears on a representation of the god Mars on a coin minted during Trebonianus Gallus's reign.[50] If the shoes do belong they may represent an elaborate form of military parade boot, which would have enhanced the image of heroic military leadership that is cultivated in this eclectic statue of the emperor.

A close examination of Montferrand's early drawings (see figs. 9.3, 9.4) in comparison with the current restoration (see figs. 9.1a–c) is instructive. The essence of the representation is similar, but there are some differences aside from the laurel crown and fig leaf. In the drawing, the figure stands on a tilted base and the right hand is raised higher. Judging from the 1853 photograph (see fig. 9.4), the hand was not as high as in the drawing, though it may have been originally. From the back, the figure seems to have greater torsion in the drawing. This is a more naturalistic rendering. In the current restoration, the body is too static for the way that the right arm is raised. It is also too broad. Details of the drapery are different as well.

Conclusion

Prior to this investigation an opaque black coating made it impossible to distinguish between ancient and restored parts by visual examination of the sculpture, and the unusual proportions of the figure led many scholars to question its authenticity or dismiss it as a modern pastiche. The careful technical examination undertaken recently at the Metropolitan Museum made evident that approximately three-quarters of the statue is ancient (see fig. 9.8). Although restorations are present—notably the cape, the left upper arm, and the right foot—the reassembled statue is almost complete, and its stance appears to be close to its original conception. The head, despite its apparent difference in scale, belongs to the body. Although the drapery on the left shoulder and arm is completely restored, the remains of an open cast edge indicate that similar drapery was located there. The left forearm is ancient, and although no longer directly connected to any of the other fragments, appears to be consistent with the rest of the figure. Questions remain about the left foot, because of its small size, though it also appears to be ancient. The statue is, in fact, one of the best preserved large-scale Roman bronze statues that we have from the third century A.D. Its nineteenth-century restoration, as illustrated in drawings, may have given the figure more of the vitality that it surely originally had. While the statue's damaged state and the ungainly restoration of the body make it difficult to appreciate its original appearance, it is possible to identify the type quite securely as a heroic nude emperor, most likely Trebonianus Gallus.

THE BRONZE STATUE OF TREBONIANUS GALLUS IN THE METROPOLITAN MUSEUM OF ART | NOTES

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A preliminary account of results from the technical examination appeared in 2003: S. E. McGregor and D. Smith, "Examination of a Third-Century Roman Bronze," *MetObjectives* 5, no. 1 (Fall 2003), pp. 1–4. See also C. A. Picón et al., *Art of the Classical World at the Metropolitan Museum* (New York, 2007), pp. 497–98, no. 471, ill.

2 The first known publications of the statue are from 1852: B. de Köhne, *Mémoires de la Société impériale d'archéologie*, vol. 6, *Musée de sculpture antique de Mr. de Montferrand* (Saint Petersburg, 1852), pp. 2–9, pls. 1, 2; an excerpt from Köhne's book published as *Description des objects les plus remarkables de la collection de M. A. de Montferrand* (Saint Petersburg, 1852); and a brief mention in "1. Wissenschaftliche Vereine," *Archäologische Zeitung* 10 (1852), col. 187. For accounts of the statue's history before its acquisition by the Metropolitan Museum, see also C. M. Fitzgerald, "Bronze Statue of Trebonianus Gallus," *Bulletin of the Metropolitan Museum of Art* 1 (1905), pp. 12–13; F. J. Mather Jr., "A Statue of Trebonianus Gallus," *The Burlington Magazine for Connoisseurs* 8, no. 32 (November 1905), pp. 148–49, 151; and G. M. A. Richter, *The Metropolitan Museum of Art: Greek, Etruscan and Roman Bronzes* (New York, 1915), pp. 154–56, no. 350.

3 Köhne, *Mémoires* (note 2), p. 3, notes that the excavations were carried out with Pope Pius VII's permission. This is a significant detail that lends credence to the account.

4 See E. R. Varner, *Mutilation and Transformation: Damnatio Memoriae and Roman Imperial Portraiture* (Leiden and Boston, 2004), pp. 208–9; I. Mennen, *Power and Status in the Roman Empire, A.D. 193–284* (Leiden and Boston, 2011), esp. chap. 3 on the *equites singulares*.

5 Nineteenth-century paintings, engravings, and daguerreotypes provide a sense of what the villa looked like. It was severely damaged during World War II. For an image of the Demidoff's villa at San Donato, see A. Vezzosi, ed., *Il Giardino d'Europa: Pratolino come modello nella cultura europea* (Florence, 1986), p. 134; pp. 124–57 feature essays on the Demidoffs and Pratolino.

6 Köhne, *Mémoires* (note 2), p. 1.

7 The year of this acquisition is given as 1896 in "23492: Statue eines Mannes mit Portrait des Traianus Decius oder Trebonianus Gallus?," German Archaeological Institute and Archaeological Insitute of the University of Cologne, http://www.arachne.uni-koeln.de. Mather, "Trebonianus Gallus" (note 2), p. 148, suggests it was acquired by the Parisian dealers about 1883.

8 See G. M. A Richter, *The Metropolitan Museum of Art: Roman Portraits* (New York, 1947), no. 109, ill., and "The Department of Greek and Roman Art: Triumphs and Tribulations," *Metropolitan Museum Journal* 3 (1970), pp. 73–95, esp. p. 73, fig. 3.

9 See S. Hemingway, *The Horse and Jockey from Artemision: A Bronze Equestrian Monument of the Hellenistic Period* (Berkeley, 2004), p. 21, figs. 12.1, 12.2.

10 T. Hoving, *False Impressions: The Hunt for Big-Time Art Fakes* (New York, 1997), pp. 328–29. Despite Hoving's misidentification of the figure as Geta, the brother of the emperor Caracalla, it is clear he is referring to the Trebonianus Gallus.

11 G. Lahusen and E. Formigli, *Römische Bildnisse aus Bronze: Kunst und Technik* (Munich, 2001), p. 294, no. 183, figs. 183.1–183.4; C. Hallett, *The Roman Nude: Heroic Portrait Statuary, 200 B.C.–A.D. 300* (Oxford, 2005), p. 322, no. 167.

12 The videoprobe was generously lent to the museum by the company EverestVIT. The model was VIT PLS 500D, with a remotely steerable camera and the ability to capture digital video or still images. Images could be viewed in real time on a small hand-held monitor included with the device, or with an external monitor that allowed several people to observe at once. For further information, see http://www.everestvit.com.

13 At nearly eight feet high, the bronze could not be accommodated in the Sherman Fairchild Center's usual X-ray facility. Gamma radiography using an iridium source contracted from JANX was performed in a subbasement overnight. For additional information, see http://www.janx.net/index.html.

14 SEM-EDS analyses were performed by Mark T. Wypyski, research scientist, Department of Scientific Research, Metropolitan Museum of Art.

15 XRF analysis was performed by Dylan Smith using a Jordan Valley EX-6600 XRF unit.

16 See Erik Risser and David Saunders in this volume.

17 The practice of using metal for restored parts continued well into the twentieth century, as, for example, on the Artemision Jockey restored in 1928. The horse, restored in the early 1970s, uses a similar kind of armature with metal straps and pins but has an epoxy resin instead of metal for the restored areas of the body. See Hemingway, *Horse and Jockey from Artemision* (note 9), esp. pp. 43–49.

18 Fitzgerald, "Trebonianus Gallus" (note 2), pp. 12–13.

19 For an account of André's restoration of the Antikythera Youth, see E. Vicars, "A Rescued Masterpiece: The Finds at Anticythera," *The Pall Mall Magazine* 29 (1903), pp. 551–62, esp. p. 555. See also H. E. Tzalas, "Bronze Statues from the Depths of the Sea," in *Great Moments in Greek Archaeology*, ed. P. Valavanis (Los Angeles, 2007), pp. 342–63, esp. pp. 344–48.

20 See C. Karousos, "Chronikon tis anastaseos tou chalkinou Neou tôn Antikythêrôn," *Archaiologikê Ephêmeris* (1969), pp. 59–79. See also E. S. Myers, "The *Antikythera Youth* in Its Context" (master's thesis, Louisiana State University, 2006), pp. 1–82.

21 A photograph taken in the late 1920s of another famous Greek bronze statue, the God from Artemision, at the time it was being restored in the National Archaeological Museum in Athens, evokes the pioneering nature of these early restorations. See Tzalas, "Bronze Statues" (note 19), p. 350, fig. 18. In the image, a man standing in the center is working a hand drill to make a hole in the ancient bronze to receive a pin like those used to secure metal straps to bind the broken parts of the Trebonianus Gallus together.

22 For the statue of Claudius in the Museo Archeologico Nazionale, Naples, inv. 5393, see G. Lahusen and E. Formigli, *Grossbronzen aus Herculaneum und Pompeji: Statuen und Büsten von Herrschern und Bürgern* (Worms, 2007), pp. 70–72, no. S7, esp. p. 72, fig. 5. For the marble statue of Marcia Furnilla, Roman, Flavian period, A.D. 79–81, in the Ny Carslberg Glyptotek, Copenhagen, see F. Johansen, *Roman Portraits: Catalogue, Ny Carlsberg Glyptotek*, vol. 2 (Copenhagen, 1995), pp. 50–53, no. 14, ill.; S. Hemingway, "Roman Erotic Art," *Sculpture Review Magazine* 53, no. 4 (2004), p. 12, ill.

23 On Cavaceppi's restoration of the Discobolus as Diomedes, see N. H. Ramage, "Restorer and Collector: Notes on Eighteenth Century Recreations of Roman Statues," in *The Ancient Art of Emulation: Studies in Artistic Originality and Tradition from the Present to Classical Antiquity*, ed. E. Gazda (Ann Arbor, 1992), pp. 61–77, esp. p. 66, fig. 3.3. For the marble statue of Tyche-Fortuna restored with the portrait head of a woman, New York, Metropolitan Museum of Art, Fletcher Fund, 1961 (inv. 61.82.1, .2), see J. Parker, "Patrons of Robert Adam at the Metropolitan Museum," *Metropolitan Museum Journal* 1 (1968), pp. 109–24, esp. pp. 123–24, fig. 17.

24 Los Angeles, J. Paul Getty Museum, inv. 71.AB.458. See C. C. Mattusch, *The Fire of Hephaistos: Large Classical Bronzes from North American Collections* (Cambridge, Mass., 1996), p. 311.

25 It can be compared, for example, to the Apollo Saettante from Pompeii, which preserves part of the cast edge of the back left open beneath the drapery (see "Apollo Saettante from Pompeii Interactive," J. Paul Getty Museum, http://www.getty.edu/art/exhibitions/apollo_pompeii/interactive/index.html).

26 See Risser and Saunders in this volume.

27 A similar sleeve was used in the restoration of one leg of the Apollo Saettante (see Risser and Saunders in this volume). This sleeve does not belong to the early-nineteenth-century restoration; it is a later, nineteenth-century repair. We are grateful to David Saunders for this information.

28 On alloys, see D. Haynes, *The Technique of Greek Bronze Statuary* (Mainz, 1992), p. 88; Lahusen and Formigli, *Römische Bildnisse aus Bronze* (note 11), pp. 471–78; C. C. Mattusch, *The Villa dei Papiri at Herculaneum: Life and Afterlife of a Sculpture Collection*, with H. Lie (Los Angeles, 2005), pp. 136–39, table 3.3a.

29 For a description of the indirect lost-wax method, see Mattusch, *Fire of Hephaistos* (note 24), pp. 15–43; S. Hemingway, *How Bronze Statues Were Made in Classical Antiquity* (Cambridge, Mass., 1996), pp. 1–8.

30 A similar-looking feature appears on the bronze herm of Dionysos in the J. Paul Getty Museum, inv. 79.AB.138. See Mattusch, *Fire of Hephaistos* (note 24), pp. 186–89, esp. fig. 3e. Also see D. A. Scott and J. Podany, "Ancient Copper Alloys: Some Metallurgical and Technological Studies of Greek and Roman Bronzes," in *Small Bronze Sculpture from the Ancient World* (Malibu, 1990), pp. 31–59, esp. fig. 13b. The ridges seen in the videoprobe and radiographs of the forearms of the Trebonianus Gallus do not have corresponding chaplet holes and therefore are not flash lines created from the cracking of the core when a chaplet was hammered. This explanation is given by Scott and Podany for the lines seen in the Getty herm (p. 53).

31 Analysis by Mark Wypyski, using SEM-EDS (CaO: 35.89, SiO_2: 27.52, Al_2O_3: 7.93, FeO: 4.58, SO_3: 8.10, NaO: 0.83, MgO: 2.52, TiO_2: 0.84). XRF analysis carried out on a sample of the core also indicated the presence of phosphorus.

32 See D. A. Scott, *Copper and Bronze in Art: Corrosion, Colorants, Conservation* (Los Angeles, 2002), p. 396, n. 18.

33 Daybreak Archaeometric Laboratory Services. For further information, see http://www.daybreaknuclear.us.

34 This result is likely to be slightly later than the actual firing date as a result of gamma radiography exposure of the core inside the arm prior to sampling. Victor Bortolot of Daybreak (see note 33 above) indicated that five years per exposure was a general rule of thumb. There was only one direct exposure of this area during radiography, but numerous exposures were taken in the near vicinity, and the higher energy of gamma radiography should also be taken into account.

35 It should be noted that this result confirms the ancient date of the left arm only, because of the absence of a direct physical connection between this arm and the body. However, it is reasonable to accept this date for the sculpture as a whole, based on strong similarities in material, manufacture, condition, and style between the other ancient fragments and the left arm.

36 Los Angeles, J. Paul Getty Museum, inv. 77.AB.30. See Haynes, *Technique of Greek Bronze Statuary* (note 28), p. 70. See also C. C. Mattusch, *The Victorious Youth* (Los Angeles, 1997), pp. 73–74.

37 On flow welds, see S. Hemingway, "Bronze Sculpture," in *Making Classical Art: Process and Practice*, ed. R. Ling (Stroud, Gloucestershire, 2000), pp. 37–46, esp. p. 44.

38 A bronze statue of Lucius Verus in the Shelby White and Leon Levy Collection, inv. 267, exhibits a similar midtorso flow-weld join. See Mattusch, *Fire of Hephaistos* (note 24), p. 336, figs. 50l–m.

39 Mattusch, *Fire of Hephaistos* (note 24), p. 349.

40 For the earliest references to the statue, see note 2 above. See also J. J. Bernoulli, *Römische Ikonographie* (Stuttgart, 1882), p. 165, no. 60; S. Reinach, *Répertoire de la statuaire grecque et romaine*, vol. 3 (Paris, 1897), p. 571, fig. 3; and F. S. Scott, *Portraitures of Julius Caesar* (New York, 1903), pp. 176–77. Scott relies on earlier scholars' dating because he was unable to see the piece himself.

41 See L. Long and P. Picard, eds., *César: Le Rhône pour mémoire; Vingt ans de fouilles dans le fleuve à Arles* (Arles, 2009), pp. 58–77, ill.

42 See S. Wood, *Roman Portrait Sculpture, 217–260 A.D.: The Transformation of an Artistic Tradition* (Leiden, 1986), pp. 43–45, 91, 133, figs. 11a–b; A. M. McCann, "Beyond the Classical in Third Century Portraiture," *Aufstieg und Niedergang der römischen Welt* 2, 12.2 (1981), pp. 623–44, esp. pp. 630–32, pls. 5, 6.

43 Scholars who do not identify the statue as Trebonianus Gallus include M. Bergmann, *Studien zum römisch Porträt des 3. Jahrhundert n. Chr.* (Bonn, 1977), p. 45, n. 142; M. Wegner, *Das römische Herrscherbild: Gordianus III. bis Carinus* (Berlin, 1979), pp. 89–90.

44 See Wegner, *Römische Herrscherbild* (note 43), pp. 83–91, esp. the drawings of portrait profiles on p. 86.

45 See, for example, McCann, "Third Century Portraiture" (note 42), p. 632.

46 Paris, Musée du Louvre, Br 370. See D. E. E. Kleiner, *Roman Sculpture* (New Haven, 1992), pp. 371–72, fig. 336.

47 For the statue of Antoninus Pius in the Palazzo Braschi and its relation to other statuary of similar type, including the bronze statue discussed in the present paper, see M. Papini, *Palazzo Braschi: La collezione di sculture antiche* (Rome, 2000), pp. 131–57, figs. 73–76, esp. p. 148. For the statue of Antoninus Pius in the Palazzo Massimo, inv. 135845, and discussion of the use of the Diomedes type in imperial statuary, see A. La Regina, *Museo Nazionale Romano Palazzo Massimo alle Terme* (Milan, 1998), p. 98, ill.

48 Paris, Musée du Louvre, inv. Ma 1059. See Hallett, *Roman Nude* (note 11), pp. 192, 326, 372, no. B230.

49 M. Anderson, cited in J. R. Mertens, *The Metropolitan Museum of Art: Greece and Rome* (New York, 1987), pp. 152–53.

50 For an image of this bronze sestertius from a private New York collection, see between no. 114c and no. 115a in "Trebonianus Gallus Bronze Coins," Richard Beale, http:// www.sonic.net/~marius1/mysite/Trebonianus.htm.

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