1. Three views of a modern “Hacilar” figurine, proven to be a forgery through a combination of scientific and technical analysis. Accession number 64.90

An “inconspicuous mound” at Hacilar in southwestern Turkey yielded extraordinary finds that were anything but inconspicuous from the very first excavating season, 1957, through the last, 1960, four campaigns later. The quantity and quality of architectural remains, painted pottery, and other artifacts at this neolithic site amazed archaeologists and laymen alike. Of more historical and artistic value than any other objects excavated at Hacilar, however, are the many solid terracotta figurines of women found within the houses. They are usually represented standing but sometimes sitting or lying on their stomachs, with both hands either holding the breasts or held at the sides; sometimes they are shown with animals. Most of the figurines are steatopygous (that is, they have great concentrations of fat in their buttocks), and they all exhibit
exaggeration of the breasts, stomach, and thighs; the genitalia, however, apparently were never marked off. In size the figurines vary from about five and a half inches to twelve inches. The painted decoration is usually burnished red and cream slip, while sometimes it is plain monochrome.

Male figurines were not found at Hacilar, although there are several examples of a boy clinging to a woman (at least these “youths” are smaller than the females). They apparently represent either children or young lovers of the females they accompany. At a site to the east of Hacilar called Chatal Hüyük, however, excavators found not only similar female figurines but also male ones, usually made of stone rather than terracotta. We do not know whether the occurrence of males at one site and their absence from another is culturally significant or is simply an archaeological accident.

With the help of comparative archaeology and carbon-14 analysis of other material found at Hacilar, it has been concluded that most of the figurines were manufactured sometime in the sixth millennium B.C., that is, over 7,000 years ago. In addition, the figurines are an important source of information about neolithic religion. Even with conservative interpretation – which is mandatory when one is dealing with material that has no written accompanying texts and that originated in a time and culture so far removed from one’s own – we are impressed by the exaggerated attributes of “womanness” in these little figures. And it is reasonable to assume that they represent some abstraction of female attributes or power, power over love, fertility, and birth. Indeed, most scholars consider the figurines to be portrayals of fertility or mother goddesses, and I see no reason to disagree, but none of the experts will hazard a guess as to whether the figurines all represent one particular goddess or many different goddesses. Nor are we able to know whether steatopygy was a typical feature of southwest Anatolian ladies during the neolithic period. But even if steatopygy was prevalent, I doubt that the figurines were simple dolls or toys, merely depicting local women. In any event, the terracotta ladies are beautiful works of art, and they illustrate for us the high technical and aesthetic level of neolithic artists.

Because of the great interest aroused by the first publication of the figurines in 1958, antiquities dealers began to acquire and sell them. Many museums and private collectors in Europe and the United States bought figurines and the lovely painted pottery vessels allegedly from Hacilar, and they exhibited and published them. Within a short period of time, however, some scholars realized that many of the objects offered for sale or already in collections were forgeries. Some were crudely made, others less so, and every knowledgeable curator had a private list of forgeries, the dealers that sold them, and the collections that exhibited them. But “Hacilar” objects did not come on the market only from dealers – people with Turkish names living in Europe offered figurines they claimed they found personally at Hacilar, which, because there was no middleman, they could sell cheap. I saw a letter supposedly from a Turk living in Paris who was “working his way through college”: he was willing to part with his valuable Hacilar collection found, of course, by him and his family. His photographs showed badly made forgeries, some in crudely rendered erotic situations, not one of which looked like any figurine excavated at Hacilar.

As a result of the onslaught of forgeries, curators, collectors, and honest dealers were on guard. But the forgers were not to be outwitted: they became quite skilled after some time, and more natural and better-made figurines were put on the market – and bought. One of these found its way into the collection of The Metropolitan Museum of Art in 1964 (Figure 1).
The purchase was made in good faith from a reputable dealer after careful examination, and all concerned in its purchase accepted the figurine as genuine. Fortunately, in the last few years — since the time the figurine was purchased — two sources of information have developed that now enable us to know whether a Hacilar ceramic figurine is authentic. One is the notes taken by an archaeologist, David Biernoff, who worked at Hacilar and there made a study of the excavated figurines. Thanks to his study, we have been able to learn something about the technique used to manufacture the Hacilar figurines, about which nothing had been published up to the time of this writing (February 1971). The second, and ultimately more important, development was the application of thermoluminescent analysis (starting in the early sixties) to baked clay objects, which has become a reliable dating method. To this point I will speak first, and only briefly.

All clays contain certain minerals that absorb and store energy when exposed to radiation. This radiation comes from the decay of radioactive elements that are always present in small concentrations. When the clay is originally fired, its stored energy is released — erased, as it were — but immediately after firing, energy is again gradually stored up. This accumulated energy can be measured: upon heating, it is released in the form of light, whose intensity is proportional to the number of years since the clay was fired (among other factors). Simply stated, a small sample of recently baked terracotta would yield a low light intensity when measured for thermoluminescence (indicating a short time period for the storage of energy), but clay baked centuries ago would yield a high light intensity. The accuracy of thermoluminescent dating is approximately ten per cent, and although research is still going on, this method has already established itself as reliable for dating and authentication.

In 1967, we first became interested in testing our figurine by the new thermoluminescent process. When we learned in August 1969 that Dr. Martin Aitken of the Research Laboratory for Archaeology and the History of Art at Oxford was interested in testing objects, we asked him to examine our piece to determine its authenticity. At this time we believed the piece to be ancient but we wanted corroboration from the
scientific community. He accepted our request and gave detailed instructions about getting a sample for testing.

We separated the figurine along a break that had been repaired across its middle to get a sample from the interior. It was at this point that I became worried. For the first time we were able to see how the figurine had been made: it was modeled in one piece – sculpted rather than formed from separate lumps of clay (Figure 6). As we know from Biernoff’s Hacilar notes, the figurines excavated there were made by first fashioning a core to which pieces of clay were added until the desired body shape was achieved. (Fragments of female figurines found years ago at neolithic Thespiai in Greece exhibited the same construction. ) Subsequently arms, legs, thighs, buttocks, breasts, and head were added as separate units. In cross section the body has a spiral-like effect (Figure 5). This effect, of course, would be visible only on fragments. Thus, when we saw that the cross section of the Museum figurine formed a solid unit, I was prepared to hear from Aitken that it was not ancient. In January 1970 we received Aitken’s report, which frankly stated that the figurine “was fired during the last 200 years and probably much more recently.”

During the year in which we bought the first figurine, 1964, a friend of our department gave us two others. One was a fragment consisting of the torso and upper thighs of a female; the head, arms, and legs were missing (Figures 2, 3). We considered this fragment to be genuine. It exhibited the technical characteristics of the excavated examples from Hacilar – it was built up from pieces, not sculpted from a single lump of clay (Figure 5). The second figurine had been bought from a dealer as a forgery, that is, both the buyer and seller knew it was not genuine, and we gladly accepted it as a study piece (Figures 4, 7).

At the same time that samples were taken for thermoluminescent testing from the figurine we had purchased, we decided to take a sample from the spiral-like core of the torso fragment as a check on our conclusion that it was genuine. (We did not take a sample from the second complete figurine, as we already knew it to be false and did not wish to clutter up Aitken’s laboratory.) The results of this test came in the same letter that condemned the first lady: our fragment passed the test and was indeed ancient, thus justifying our observations about technique.

Now that we had a confirmed ancient figurine in our collection, albeit a fragment, we decided to exhibit it. First we had to clear away the earth that encrusted its surface. A surprise awaited us: there was a join along the upper belly and, in fact, the upper and lower fragments did not fit neatly together. Moreover, the cleaned surface showed conclusively that we actually had fragments of two figurines of slightly different color that had been joined together – the earth encrustation was applied in modern times to mask the join (Figure 3). On separating the fragments, we found that the cores of both had been filed smooth by a modern workman to make the join fit better; and adhesive was then applied, followed by the application of the earth. Because of the filing, we were not able to see if the upper fragment exhibited the spiral-like effect denoting great age. Yet I am inclined to think it is genuine and that the person who joined the fragments together had two odd but authentic pieces in his collection. He thought that a larger fragment would look better than two small ones and so put them together. If he had wished to create a new top for the genuine belly and thigh fragment, I think he would have added a section with a head. In any event, the upper part has not been analyzed so we cannot be certain.

One more test remained. This would be to cut or, better, to break our known
5. View of the interior of our authentic Hacilar figurine (Figures 2, 3), showing the spiral-like core that proves it was built up from pieces of clay in the ancient technique. The gouging in the center resulted from acquiring a sample for thermoluminescent testing.

forgery in half at the belly in order to see what technique was used to make it. I consulted members of the Conservation Department, who had worked with me on all matters discussed in this article. Master Restorer Ed Rowe agreed to break the figurine - cutting with a saw would make a smooth surface and probably render the spiral-like effect, if it existed, invisible. The figurine was broken in half and its core, in cross section, documented the fact that the figurine had been sculpted (Figure 7), just like the other forgery (Figure 6), verifying our observation that genuine figurines and modern ones are not made in the same way.

Thermoluminescent testing has justified and supported conclusions based on observations of artistic technique. It is important to stress the fact that with technical information at hand, we were able to make judgments that were not forthcoming through art-historical analysis alone. Art historians are more aware now than they were even five or ten years ago that studying the technique of the artist or artisan is essential if one wishes to understand a work of art. It is certainly crucial for detecting forgeries. Fortunately, art historians and scientists are cooperating more than ever before to solve problems of manufacture and of authenticity, and thermoluminescent testing is only one of many analytic tools now available.

The Museum has lost one of its favorite objects, an object considered to be one of the earliest works of art in the collection. But at the same time it is pleasing to remember that another lady - at least her belly and upper thighs - takes its place. And we may now confidently refer to our Hacilar lady from the sixth millennium B.C., one of the earliest objects in the Museum.
Views of the interiors of the two forgeries (Figures 1, 4), which were sculpted in one piece, an indication of their recent manufacture.

Notes
It was James Mellaart of The Institute of Archaeology, London, who led the Hacilar expeditions and who found the male stone figures at Chatal Hüyük, not far from Hacilar.

In the course of our discussions concerning the Metropolitan’s figurine, Dr. Martin Aitken of Oxford and I agreed to share the publication of his tests in the August issue of Archaometry (a magazine in which the method and several applications have been described since 1962) and in this Bulletin. I wish to thank him publicly for his cooperation and achievements.

At first I was inclined not to publish all the observations set forth here concerning the techniques of the ancient and modern manufacturers of Hacilar figurines lest it help the forger. But it seems to me that it would have been hard to discuss the problem of forgeries on the basis of scientific testing alone. Furthermore, with the existence of thermoluminescent analysis, terracotta forgery now becomes more difficult, perhaps even impossible. It is doubtful that forgers will be encouraged to change their manufacturing techniques in order to fool sophisticated clients. No one should buy a terracotta object without getting it tested. Better still, no one should buy objects unless they have been scientifically excavated and passed on by the local authorities. The only good object is an excavated one.