



From Excavation to Vitrine

The Afterlife of Late Hellenistic Bovine Terracottas from Niğde Kınık Höyük

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Overview of Operations A and E at the end of the 2020 season. Photograph courtesy of the Kınık Höyük Archaeological Project.

O riginally from a sanctuary that remains unexcavated, a corpus of Hellenistic terracotta bovines from Niğde Kınık Höyük washed down onto a plaza among architectural debris and alluvial soil. To date, the corpus consists of bovine figures ranging from small protomes to medium-sized bull statues to close-to-life-size hoofs and chests. Our ongoing work endeavors to combine data collected through excavation, scientific analysis, conservation, and museum practices to understand this unique body of material and effectively present it to academic and museum audiences. Here we highlight the most complete bovine figure reconstructed to date (cat. no. KIN18E2779f53) in order to introduce the project and illustrate the different skill sets required to address successfully the challenges that each phase of the project entailed. This humped bull is presented from the analysis of the archeological evidence surrounding its discovery, through the conservation treatment that transformed more than twenty ceramic fragments into a coherent figure, to the role the figure played in the redesign of a vitrine at the local Niğde Archaeological Museum.

The Discovery

A large corpus of Late Hellenistic terracotta bovine figures unexpectedly came to light at the summit of the Niğde Kınık Höyük

mound during the course of recent excavation seasons at various trenches in Operations A and E. This material is associated with Late Hellenistic contexts that accumulated predominantly at the eastern end of a paved, open plaza and at the southern face of the fortification walls that were built immediately to the north of the plaza. As presented in an earlier article in this journal (d'Alfonso et al. 2020: 26–28), the terracotta finds were mixed with building debris and were washed down over a portion of the plaza that had already been partly disturbed by pitting activity that predate the flooding events. The terracottas' original context, most likely a sacred complex, must have been located further up the *höyük*, to the south of the excavated trenches. The line of fortification walls that closed the plaza to the north functioned as a physical barrier and restricted the debris from moving farther down the mound, as is attested by the complete lack of pertinent terracotta fragments in any trench excavated to the north of the fortifications.

Scattered among the debris were large quantities of thick, fired-clay fragments from bovine figures. At present these number about one thousand four hundred diagnostic and nondiagnostic fragments and make up the contents of twelve large crates. The study, conservation, and progressive reconstruction of this large corpus started almost immediately after their discovery; however, the most comprehensive conservation and cataloguing campaign took place this past summer with the two-part goal of classifying the material according to its fabric, form, and functions, and of preparing the most complete and significant figures for display in a newly installed vitrine of Hellenistic artifacts at the Niğde Archeological Museum.



Figure 1. Fragments of KIN18E2779f53 found in Operation E's pit. Photograph courtesy of the Kınık Höyük Archaeological Project.

Among the materials are four general categories of objects, starting with bovine figures that are characterized by open mouths, prominent dewlaps, and complex bridle decorations. The largest fragments form parts of close-to-life-size and in-the-round statues, which depict bovine figures lying down with their legs tucked under their belly or fully standing. Smaller and flat bovine protomes were likely used as attachments to large vessels or as small architectural decorations. Finally, architectural fragments with bovine decoration, pertinent to a roof tiling system, indicate that this zoomorphic iconography was a distinctive choice in both sculptural pieces and in the decoration of the buildings that were meant to host them.

Three anthropomorphic terracotta busts were discovered in the same debris layer, notably the Greek god Dionysus who is flanked by a satyr mounted on a mule and carrying a pole with a bunch of grapes on each end. The other two busts portray the goddess Athena with a helmet, aegis, and stylized Gorgoneion, and Ariadne (or a maenad) with the head of a satyr at her side. The most remarkable feature of these latter two busts is that they were attached together at the two sides of the dewlap of a bovine figure. It is possible that Dionysus's bust had a similar placement, and that images of other Hellenistic gods might be attached directly onto the bovine figures. The iconography and style of these three gods find close comparison in similar representations dated to the second century BCE (among others, see Barr-Sharrar 1994; Horn 1994; Kielau 2018: 247–48; Summerer 1998; Waelkens 1999: 194): This affords a clear chronological frame for the entire terracotta corpus, while providing important clues on the religious life of Late Hellenistic Niğde Kınık Höyük.

Only with the intensive 2021 conservation campaign were we finally able to reconstruct the first complete bovine figure (KIN18E2779f53). Beside its artistic impact, the figure presents an interesting case-study in terms of iconography, style, and



Figure 2. Operation E and the fortification wall during the 2019 season. Photograph courtesy of the Kınık Höyük Archaeological Project.



Figure 3. Eastern end of the open plaza and the fortification walls with arrows indicating the debris trajectory. The red dot indicates the 2018 bovine fragments found in Operation E by the pit; in blue the 2018 fragments from Operation A by the fortification walls; in green the 2019 fragments from Operation E. Plan by Leonardo Davighi.

excavation circumstances. It comprises over twenty reattached fragments, the majority of which were found during the 2018 excavations in Operation E. Located to the east of the open plaza in an area of the pavement cut by deep pits, the fragments were uncovered at the upper elevations of the fill of a small circular pit (fig. 1). The conservation allowed us to join this group with other pieces also found in 2018, but in a trench opened in Operation A, close to the line of the fortification walls. Finally, four



Figure 4. Humped bull figure KIN18E2779f53. Photograph courtesy of the Kinik Höyük Archaeological Project.



Figure 5. Conservator Izel Güngör at work in the conservation lab. Photograph by Emily Frank.



Figure 6. Large bovine figure after several campaigns of conservation. Photograph courtesy of the Kinik Höyük Archaeological Project.

additional joining fragments were discovered during the 2019 season in Operation E in a layer of debris immediately to the west of the main deposit (fig. 2). The pattern of distribution of these pieces suggests that the possibly still-intact bovine figure was carried down the mound due to a flooding episode and that it broke into fragments once it landed on a partially filled pit. Most pieces remained in situ, while a few others were carried further in the stream of debris (fig. 3). This is not the only example of joining fragments of bovine figures found dispersed among trenches excavated in different seasons. The resulting and varying degrees of completeness in the documentation, especially for the nondiagnostic pieces, at times has hindered the process of reconstruction and identification.

The 45-cm-tall, reconstructed hollow figure portrays a humped bull with a pronounced, triangular cranial pole (fig. 4). A complex bridle decoration with punched-in roundel motifs adorns its head: Wrapping around the horns, it descends diagonally on the forehead to create a circle from which depart three other straps that reach under the animal's eyes and muzzle, another two below the eyes. The heart-shaped muzzle is formed by two deeply drilled, round nostrils, while the mouth is open and six rectangular teeth are visible. The neck is long and cylindrical with a wavy dewlap running its length, depicting the animal's loose skin. At its two sides are the animal's long, thin forelegs, in low relief. Behind the neck is the large, pointed hump. The tail originates from the center of the back, coils to the left, and reaches to the back right. Below the tail's tip is a round passing hole: Its function is uncertain as the figure is hollow and therefore in no immediate need of a vent hole.

The Conservation

Conservators have had a presence on the excavation since its inception in 2011; they address excavated small finds and site preservation, as well as aiding with projects for the local Niğde Archaeological Museum.

Concerning the terracotta bovine corpus, conservation and technical analysis were aimed at building a typology and understanding the methods of production, neither of which has been addressed at other sites in the region nor for sporadic finds at the museum. The scale of the corpus and its complex excavation and recording history meant that conservation and analysis required continued dialogue among the archeologists in the field, the conservators in the lab, and the art historians involved in its study. Since excavations are ongoing, the forms of the objects have been constructed with the understanding that more fragments could be unearthed at any point in future seasons, thus remaining in flux. More than ever, conservation has involved flexibility, dexterity, and iteration, constantly requiring reevaluation of the approach and adaptation to new information.

From the outset of the 2021 conservation project, a wealth of material needed to be reassessed and organized in order significantly to reconstruct any bovine figure and build a typology, as some fragments from the early stages of the project, before the nature of the material was understood, could have been discarded as nondiagnostic courseware, or recorded as ceramic sherds or unknown, unique fragments. Once the corpus began to emerge,



Figure 7. Group of bovine muzzles from different excavation seasons. Photograph courtesy of the Kınık Höyük Archaeological Project.



Figure 8. Partially complete bovine figure. Photograph courtesy of the Kınık Höyük Archaeological Project.



Figure 9. Bull figure KIN18E2779f53, profile view. Photograph courtesy of the Kınık Höyük Archaeological Project.



Figure 10. Bull figure KIN18E2779f53, back view. Photograph courtesy of the Kınık Höyük Archaeological Project.

the archaeologists adapted their recording and kept bovine material separate for the conservation effort.

The first step in conservation was to assemble the relevant fragments. The conservators systematically reexamined all the finds from the relevant operations stored in the excavation depot, looking for any material that was recorded as something nonbovine previously. Through this effort over thirty diagnostic sherds were added to the collection of fragments for conservation and were moved into the conservation lab (fig. 5).

All fragments were then sorted into two major categories: diagnostic (i.e., known or discernible bovine body parts) and nondiagnostic. These groups were further sorted based on fabric color, surface decoration, thickness, size, and physical indications of firing. A lot of exciting joins were found through this sorting (figs. 6, 7, 8).

A delicate balance was required as excavation, reconstruction, analysis, and archaeological inquiry were all happening in parallel, as opposed to in sequence. It was important to keep track of each fragment's provenience for later distribution analysis (the fruits of which are apparent in the example of the humped bull KIN18E2779f53). This parallel approach to excavation, study, and reconstruction was inevitably complicated by the ever-cumulative nature of joins that yield more joins (in the way that a puzzle comes together in fits and starts), and the risk of joining fragments too fast, thus locking out joins soon-to-be-found.

The same challenges applied to determining an appropriate sample for technical analysis (i.e., petrographic fabric analysis and x-ray fluorescence [XRF] spectrometry, the results of which are still being processed). A representative sample was selected from diagnostic fragments based on color, surface decoration, thickness, and indications of firing. Both the effort to select and analyze a representative sample of the corpus and to reconstruct a typology were iterative and required the conservation team regularly to reassess if they were progressing in a way that accounted for the growing body of fragments.

Even given the challenges of the project, it was not long before complete or quasi-complete profiles began to emerge. In particular, the body of KIN18E2779f53 —initially headless— came together from finds spanning operations and seasons, as described above.

As is standard procedure, special finds are moved to the Niğde Archaeological Museum at the end of each excavation season, where they are placed in storage and eventually put on display. In fact, several diagnostic fragments from the bovine corpus had previously gone to the museum, including the head of KIN18E2779f53. This head, thanks to the collaboration with the museum's administration, was brought back to the excavation lab where it was successfully reattached to the already reconstructed body and resulted in the exciting figure now on view (figs. 4, 9, 10).

In the conservation of this humped bull, and all other material from this corpus, the fragments arrived at the lab clean, from pottery washing, for joining. Beyond the ability to add new fragments easily if found later (in line with the principle of "reversibility" central to the ethic of modern conservation



Figure 11. Niğde Archaeological Museum, artifacts on plinths. Photograph courtesy of the Niğde Archaeological Museum.



Figure 12. Niğde Archaeological Museum vitrine. Photograph courtesy of the Niğde Archaeological Museum.



Figure 13. Niğde Archaeological Museum Hellenistic vitrine before reinstallation. Photograph courtesy of the Niğde Archaeological Museum.

practice), there were two main concerns in choosing materials for reconstruction. First, the joins should be done in a way that mitigated the risk of the friable fabric cracking adjacent to the join; and, second, the joins should remain intact in the depots without climate control during the hot Turkish summers. To address the first concern, break edges were further dry brushed and consolidated with ~5 percent Paraloid B72 (a clear, colorless, stable thermoplastic acrylic resin) in ~85 percent:~15 percent acetone:ethanol (the ethanol slows the evaporation of the adhesive during treatment: Koob 1986, 2009). Small, tight joins were made with ~40 percent Paraloid B72 in ~85 percent:~15 percent acetone:ethanol. Larger, heavier, and looser joins were made with ~40 percent 3:1 Paraloid B72: Paraloid B48N in ~85 percent:~15 percent acetone:ethanol (Riccardelli et al, 2014). The choice to use a 3:1 ratio was intended to combat the low glass transition temperature of Paraloid B72, which might not hold such joins at summer temperatures (Strahan and Korolnik 2014: 525). Furthermore, where necessary, large, heavy joins at angles challenging to gravity were bridged with UHU quick-set (5-minute) Epoxy and/or Paraloid B72 and gauze backing (on the inside surface), in each case with a Paraloid B72 barrier layer.

As of the end of the 2021 excavation season, the approach to compensation (the filling of losses) and integration (the inpainting of fill materials) remained conservative due to the still growing collection of bovine fragments from excavation. Objects for the museum vitrine, including KIN18E2779f53, were compensated with plaster to address structural needs. In cases where the joins require bulked adhesive (but not actual fills) Paraloid B72 with glass microballoons have been used with success. All fills were integrated with pigment and matte acrylic medium so that the fills are less obvious, though still distinct from the original material.

Conservation efforts will continue in a similar fashion in future seasons. With any luck, this effort will yield more complete figures that could aid in the understanding of the corpus and contribute to the emerging typology.

Design and Installation

Awareness of the finds from the site's sacred area has grown following the continuous expansion of the terracotta corpus. Recently, the Niğde Archaeological Museum expressed an interest in displaying such votive objects as part of their permanent collection. This past summer, our team, in collaboration with the museum interim director, has studied and implemented a new design so that the material could be displayed following current museum practices. Specifically, modern exhibition techniques were employed in selecting, arranging, researching, presenting, and interpreting the excavated finds in relation to the museum collections. This strategy allowed us to identify the drawbacks of the existing display and to propose a new blueprint for the reinstallation, as reflected in the final installation design, the choices of cases and mounting materials, and the didactic texts.

The Niğde Archaeological Museum houses a broad range of finds that dates from the Neolithic to the Ottoman period. The vast majority of these artifacts are the results of excavations at sites within the region and at other major limitrophe centers such as Aksaray

and Konya; some are stray finds brought in by locals or acquired by the museum. Large stone artifacts are mainly on display in the external garden, while the other finds are exhibited inside the building in chronological order. Visitors experience all historical periods following an uninterrupted path that brings them from one hall to the next, the color-coded walls and showcases being the only elements that separate one unit from the one following. Blue is used for the earliest finds; green for the Hellenistic and Roman periods; pink for the Seljuk and Ottoman eras. These colors bounce off the natural hues of the construction materials, most notably the light brown of the travertine bases and the white gypsum of the board panels.

Objects in the galleries are either displayed on plinths or short bases (i.e., pithoi, stone sculptures) or within vitrines (i.e., ceramics, coins, glasses), according to their size, medium, and conditions (figs. 11, 12).

Both the plinths and the showcases are lined against the galleries' perimeter walls, so that the visitor is in the center of the

space at all times. Hence, by following along the continuous walking path, the audience's gaze moves from wall to wall, and from vitrine to vitrine, uninterruptedly.

The artifacts are presented according to a series of grouping strategies based on proximity, different elevations, and separated nuclei. These groupings are achieved by placing prismatic painted wooden boxes in the vitrines and monolithic stone bases below the sculptures, generating an overall cubic organization of the environment.

The material dated to the Hellenistic period (fourth to first centuries BCE) is displayed within one vitrine. Before our reinstallation, ceramic bowls and vases, *rhyta*, anthropomorphic figurines, bull head fragments, alabaster, and bone tools were arranged according to the strategies described above (fig. 13).

The main goal of the reinstallation was to reorganize the existing material and to integrate the new votives from Kınık Höyük, thereby creating a display that focuses on four main regional Hellenistic *höyüks* (mounds): Acemhöyük, Tepebağları Höyük,

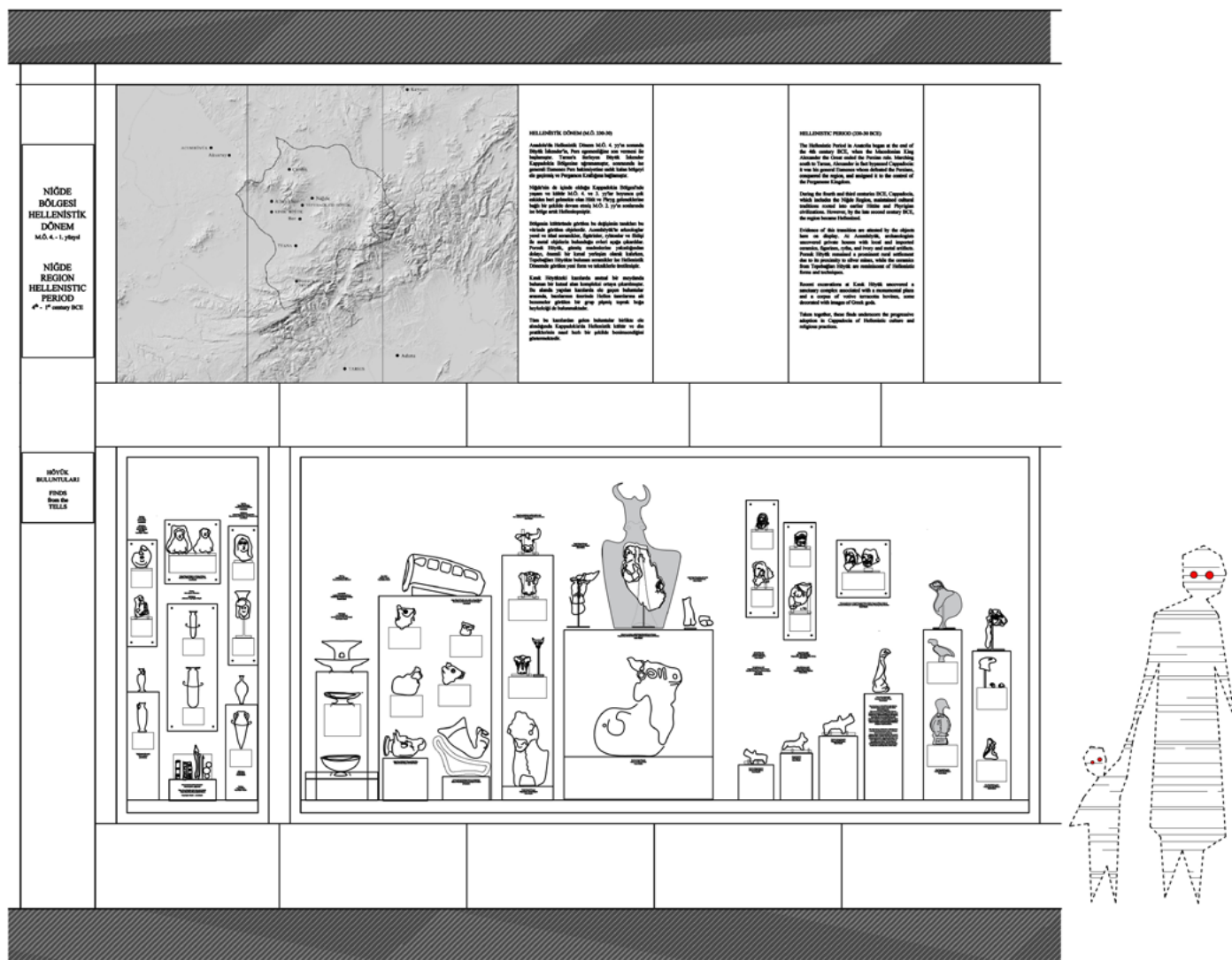


Figure 14. Design for the reinstallation. Design by Deniz Üçer.

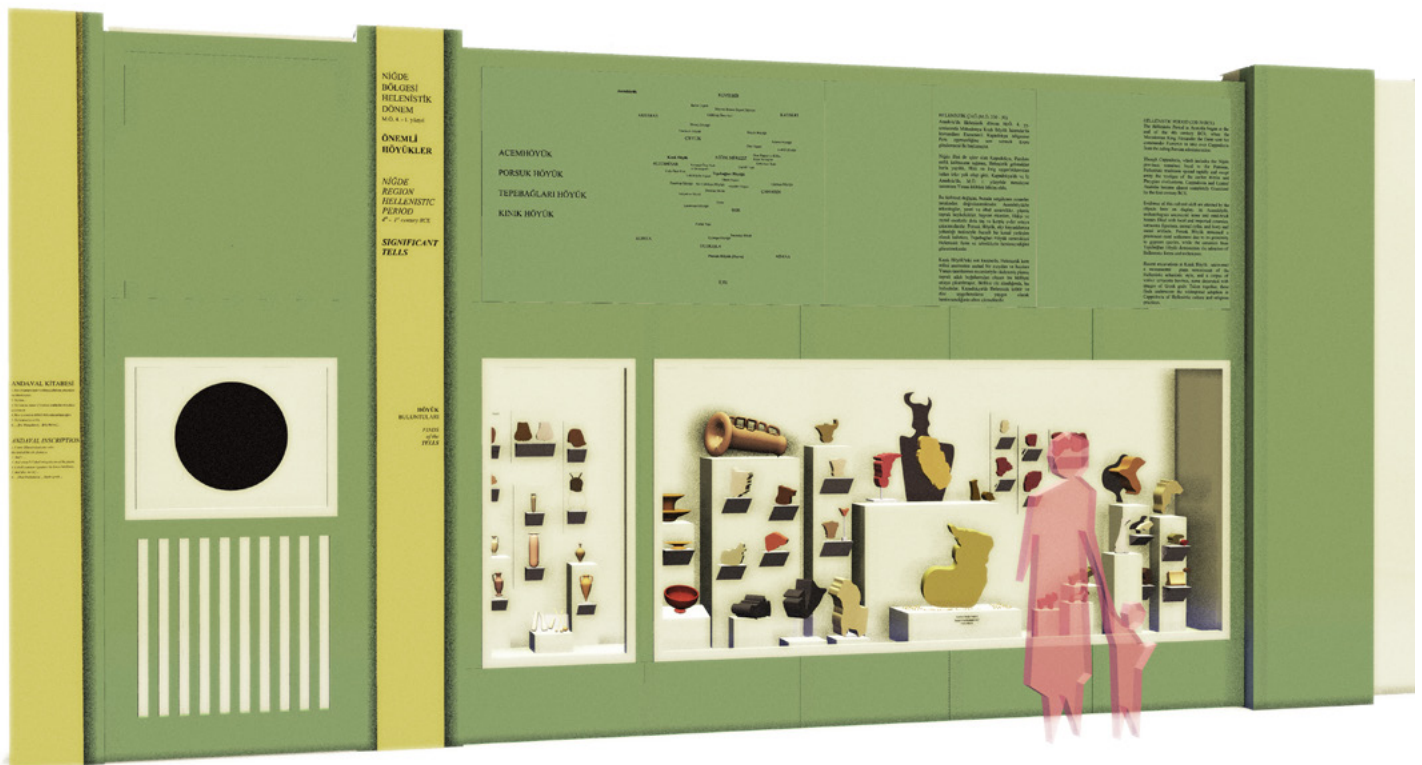


Figure 15. Design for the reinstallation. Design by Deniz Üçer.

Porsuk-Zeyve Höyük, and Kınık Höyük. Case studies of recent reinstallations at museums in Turkey and other neighboring countries were used as inspiration for this redesign. In particular, we looked at the use of colors, shapes, and materials for blocks and mounts as adopted by the National Archeological Museum of Athens and the National Archeological Museum of Venice, and, within Turkey, the Museum of Anatolian Civilizations (Ankara) and the Troy Museum (Çanakkale). These institutions predominantly chose neutral tones for their supports, mostly whites and grays, and inconspicuous mounts, with a marked preference for plexiglass where appropriate. These data and the mandate from the Niğde Museum to maintain the structure of the vitrine, the internal and external lighting and color palette, and the overall geometry of the bases, resulted in a new design that relies on higher and wider boxes, some of which were fitted with integrated stainless-steel shelves, and flat backings attached to the background wall. Additionally, all objects, both those already on display and the new additions, were individually measured and studied in order to design unique mounts that addressed their individual size, weight, and display orientation, thus providing the viewer with the most significant vantage point for each object. Individual stainless-steel mounts were designed for large bull or bird figures, whereas smaller objects are presented on less conspicuous plexiglass bases and mounts. The choice of material was dictated by the resources available in the region while keeping at the forefront the artifacts' integrity and conservation.

Our initial assessment revealed that the vitrine's existing organization was very dense and depended on a display that insisted

on a purely horizontal presentation. This lack of specific focal points prevented the visitor from moving from one conceptual nexus to the next, translating into a very flat and still installation. Taking into consideration the limitations mandated by the museum, the new design identified discrete thematic nuclei that are now immediately discernible, and it articulates a visual path with thematic landmarks that guide the viewers and provide a visual rhythm to the visiting experience. In order to achieve such articulation of the space, the design heavily relies on horizontal and vertical groupings combined with background to foreground gradation. For example, figurines are elevated at eye-level and placed on the background backings, while small containers are displayed at a lower elevation and closer to the front so that their rims, decorations, and handles are clearly visible both to an adult and a child visitor.

In order to make space for finds from Kınık Höyük and to reorganize the material thematically, the existing checklist of objects on display was revised for redundancies with the museum administration's approval. Considering the overabundance of ceramic vessels, it was decided to eliminate almost exclusively duplicates from this group. The remaining artifacts were reorganized into three sections, from the left end of the vitrine toward its center, each addressing a theme relevant to the Hellenistic period: beauty in the female sphere, household implements, and sacred bovine terracotta figures. The objects within each group were laid out to create vertical, self-contained columns, one next to the other. The first theme includes female figurines, cosmetic bottles, and bone objects; household implements include ceramic

vessels; and the sacred bull artifacts are both in the shape of terracotta figures and rhytha (figs. 14, 15). The third group serves as the visual and conceptual linchpin between the three above-mentioned Hellenistic sites and Kınık Höyük, which is represented in this display through the sacred material excavated at the Hellenistic open plaza and the earlier North-West Sanctuary.

Central to the vitrine is the large terracotta bull statue KIN18E2779f53, which constitutes the focal point of the whole showcase. To its left is a selection of variously sized bull figures and head appliques, showing the different types and uses of this iconographic motif. Above it and to its right are appliques in the shape of Greek gods, many of which were meant to be attached to the bovine figures. Farther to the right, at the end of the vitrine, bird sculptures introduce the visitor to the complex religious vocabulary of Achaemenid and Hellenistic Anatolia as attested in the finds from Kınık Höyük (figs. 16, 17). In this installation, the large bull statue is simultaneously an object on display and a fundamental design element, visually framed by the tall background box behind it that further emphasizes the vertical quality of the display. Moreover, the neck of a bull sculpture decorated with applied images of deities placed above the bull statue, one of the largest objects in the vitrine, is complemented by a bull silhouette attached to the background behind it. This provides the visitor with the visual tools needed to reconstruct how the original artifacts might have looked when complete. Some of the bird figurines have received the same treatment, adding touches of color to the display while also providing much needed interpretation assistance (all drawings by Paola Vertuani).

Another fundamental focal point in the vitrine includes three small bull figurines and a stone bird of prey that are placed on the foreground, close to the glass vitrine, and grouped in close proximity to each other, on a diagonal. These four objects were found in a closed context predating the Hellenistic period and provide additional evidence about the religious continuities and differences at the site. In order to identify clearly this group from the rest of the display, the objects are accompanied by an extended label that presents the excavation facts and their interpretation.

Inside the vitrine, the didactics are limited to basic labels in Turkish and English. A longer panel placed on the perimeter wall above the showcase together with a large grayscale



Figure 16. Niğde Archaeological Museum Hellenistic vitrine after reinstallation. Photograph courtesy of the Niğde Archaeological Museum.



Figure 17. Niğde Archaeological Museum Hellenistic vitrine after reinstallation. Photograph courtesy of the Niğde Archaeological Museum.

topographical map of the region, introduces Hellenistic Anatolia and the four archeological sites represented by the objects within the vitrine. All these didactics were designed on transparent adhesive vinyl to achieve an unobtrusive look. Finally, a computer kiosk placed next to the vitrine provides the visitors with more in-depth information on the Hellenistic history of the region.

Following the design phase, three local workshops (woodworking, steelworking, and a digital advertisement workshop) based in the city of Niğde were contracted to implement the reinstallation. This choice was made to further the connection between the historical past of the region and its current population, as well as to prove that smaller museums with limited resources can conduct fairly extensive renovations utilizing local workmanship while still maintaining quality standards. The production phases required the designer's close monitoring to ensure that the design was properly interpreted and executed, and successfully brought to fruition. We are happy to report that the reinstallation was successfully completed in early August 2021: The museum hosted an opening ceremony with the participation of all those involved in the works, local citizens, politicians, and the press, thereby marking the beginning of a new approach to museum display in this region of Turkey.

Religion at Hellenistic Niğde Kınık Höyük

The careful excavation and conservation of the terracotta bovine corpus and its display among other contemporary religious finds from neighboring sites have allowed us to draw some preliminary conclusions about its functions. Specifically, the study of the depositional contexts has been crucial in recognizing the circumstances behind the accumulation of broken bovine figures in well-defined areas of Operations A and E. This study has led to the identification of a possible location of the sanctuary complex for which the figures were produced, a hypothesis that could be confirmed only by future excavations. In turn, the conservation effort has proven fundamental in reconstructing some of the largest figures as well as in organizing the material by diagnostic characteristics, which has been clarifying for the ongoing cataloging process. Finally, the addition of this material to the museum display of comparable Hellenistic finds from other local sites has enhanced our understanding of the religious practices and technological achievements of Niğde Kınık Höyük in relation to the greater Cappadocian region.

In terms of these figures' ritual relevance, the presence of Greek divinities depicted according to a markedly hellenized visual language brings into question the religious traditions present at the site. The hellenization of Cappadocia as promoted by the first *basileus* Ariarathes III (d. 220 BCE) and his successors seems to be reflected in the dramatic stylistic changes of the Kınık zoomorphic figures that date to the second and first centuries BCE. While the subjects remain overall similar to those of earlier periods (i.e., birds of prey and cattle), the techniques, scale, and iconographic motifs take on a distinctive hellenized flavor. Additionally, anthropomorphic figures depicting Greek divinities or inspired by Hellenistic motifs appear on site at this later Hellenistic phase. We are still in the early stages of the study

of these contexts, but it seems evident that changes in religious imagery reflect changes in the divinities venerated at the site and their related cults. The subject of religious syncretism in Hellenistic Anatolia and Cappadocia has been of interest in recent scholarship, and the general consensus is one where preexisting Anatolian gods are reinterpreted into Greek divinities with whom they share similar characteristics (Lebrun 1999; Trameri and d'Alfonso 2020). The corpus of material from Niğde Kınık Höyük offers the unique opportunity to test these theories vis-à-vis fully documented archeological contexts. Currently, while it is still premature to identify the iconographic shift recognized in the late Hellenistic finds as the immediate result of religious syncretism, the data are extensive enough to interpret this change as an act of religious accommodation. Furthermore, the quality and craftsmanship of the material excavated at Operations A and E points at a sponsorship or at least influence from the ruling family, thus opening interesting scenarios on the role of Niğde Kınık Höyük in late Hellenistic Cappadocia.

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