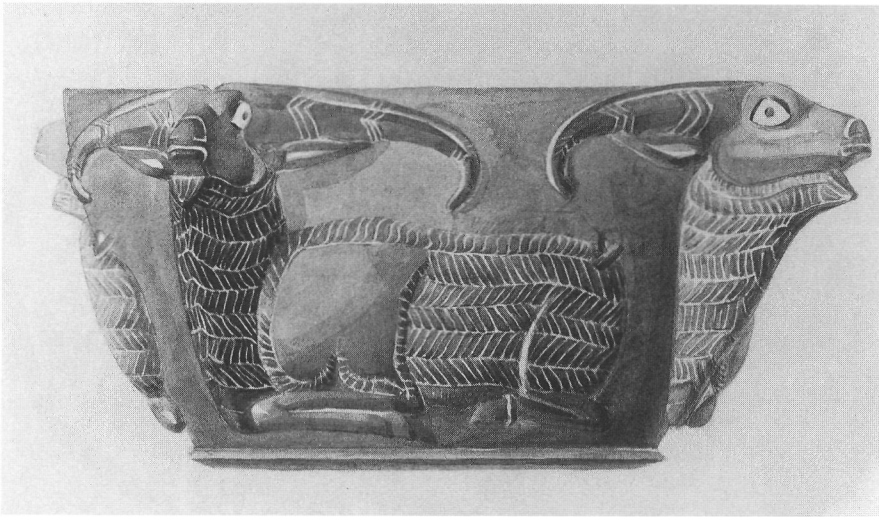


DIYALA OBJECTS PROJECT

Claudia E. Suter and McGuire Gibson

The Oriental Institute's Iraq Expedition of the 1930s produced an extremely important set of data for the cultural history of ancient Mesopotamia from 3200 to 1800 BC. The international team of scholars, which excavated four sites in the Diyala River basin east of Baghdad, was headed by Henri Frankfort and included, among others, Thorkild Jacobsen, Pierre Delougaz, and Seton Lloyd. With the generous financial support of John D. Rockefeller, Jr., the expedition worked six months a year for eight seasons. At a time when Near Eastern archaeology was still in its formative stage, the expedition envisioned and realized the first stratigraphic excavations in that part of the world. Improved techniques of digging and recording allowed the team to establish a chronological framework that became the standard for dating Mesopotamian artifacts. The publication record of the expedition was also extraordinary, with nine of the eleven planned monographs being produced.

The goal of the present Diyala Objects Project is the production of one of the unpublished volumes, the small finds miscellaneous objects. Despite the name, these finds are of great importance for the reconstruction of the function of rooms and buildings in which they were found, as well as for the exploration of the daily life of the people who left them. Included among the miscellaneous objects are clay figurines and plaques with a varied and interesting repertory of images; all the jewelry of metal and stone, including animal-shaped pendants and amulets; stamp seals; lumps of clay with the impressions of cylinder seals; weapons, tools, and other implements of metal; stone and metal vessels; several hundred stone weights of var-



Drawing of stone bowl decorated with three goats. Ishchali, ca. 1800 BC

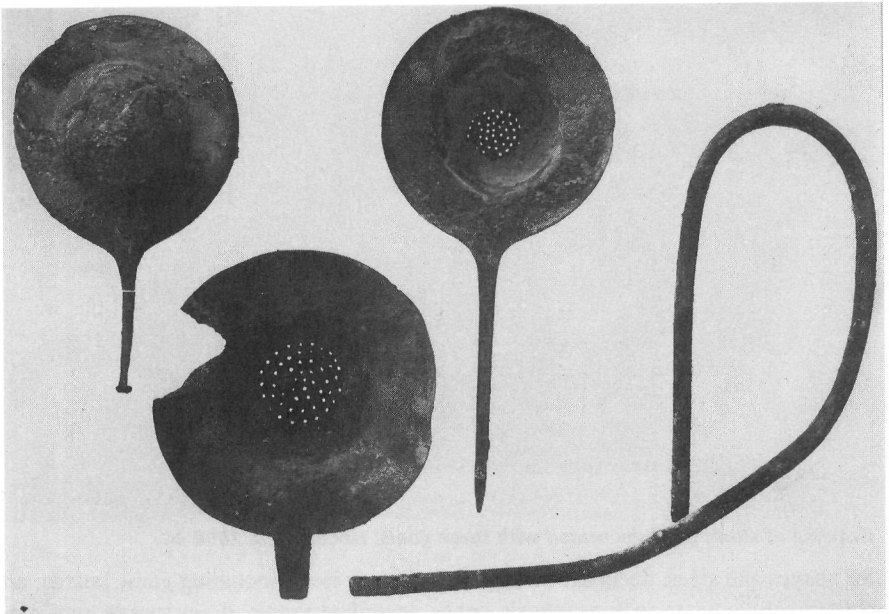
ied shapes and sizes; decorative inlays from luxury items including game boards; architectural elements such as mosaic cones, inscribed bricks, drain spouts, roof gutters, window grills, etc.; and finally, some truly miscellaneous objects such as ostrich eggs that were used as vessels, raw materials, and botanical remains.

In an effort to do justice to this outstanding corpus of material, the project uses cutting-edge computer technology. As reported previously, analyses of the various categories of small finds will be published in traditional book form, while the catalogue of all finds from the Diyala basin will be provided as a set of databases on compact disc or another medium. Use of electronic publishing will not only reduce the cost of production and distribution but will have the great and novel advantage that it allows users to view the material and work with it in entirely new ways. The reader will be able to conduct queries on the entire corpus or any defined portion of the data, and to print both the catalogue and accompanying images. If we can complete this project on schedule in the year 2000, this will be the first publication of its kind in Near Eastern archaeology.

As we near the end of the three-year period that has been supported by a grant from the National Endowment for the Humanities, we can report that we have nearly completed the basic cataloguing of the finds and assemblage of illustrations. We have entered the data and images in the computer and organized and systematized our databases to the point where they can be used for further study of the miscellaneous objects. Although not very exciting to describe, this painstaking work is obligatory and indispensable for the project. Anyone working with large databases will understand and appreciate what it takes to organize the information on 15,000 finds from archaeological digs, using a set of extremely varied and often incomplete data to form a database that must be checked and double checked, corrected, and streamlined.

Our primary source of information consists of the field registers, which contain sketches of the finds, short descriptions including measurements, provenience, and photograph numbers. Without these records, the detailed cataloguing we are pursu-

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Bronze utensils, probably all related to the making of beer. Tell Asmar, ca. 2300 BC

ing would be severely hampered, if not impossible. The field registers were unusually well done for the 1930s. Yet, they reflect work in progress, rather than a finished project, and the records were not conceived for a computer age. Working through the field registers by year, one can observe that the identification of finds improves with experience. But that improvement meant that the records may identify a kind of object under two or more headings, causing problems for someone trying to compile a database. Equally problematic is the fact that the findspots might be recorded differently as the excavations progressed. Thus, for instance, there is one building that is listed in the registers as "the Bilalama Palace," "the Burned Building," and "the southern dig." This inconsistency means that we have to decide what term is more correct and use it, rather than the others, in our database. Furthermore, designations and descriptions in a written catalogue can be spelled and abbreviated in different ways imparting the same basic information, while a computer requires an almost inhuman consistency and rigidity in terminology. Ideally, for the computer, each field of information in our main catalogue should have an entry. Yet, the field register does not provide such complete information for every object. Some finds, however, may require multiple entries for certain types of information, such as objects made of several materials.

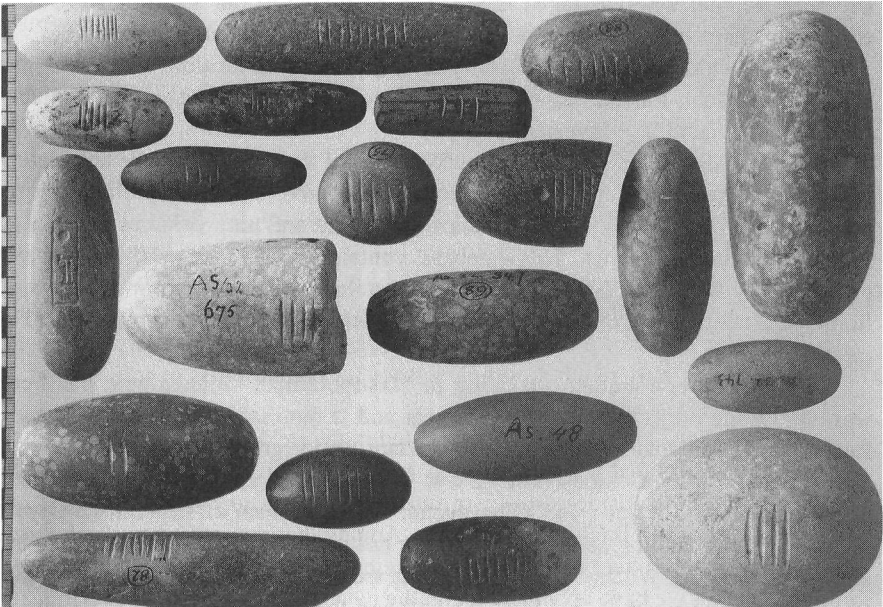
We now have a record for all finds listed in the field register as well as for some classes of objects that were not entered when they were excavated. Although these objects were not considered to be of museum quality, they were saved and put in study collections in Baghdad or Chicago. Among these unregistered objects are numerous items of pottery and some of the items found in graves. Another large class of objects that we have now included in the database consists of cuneiform texts. In the 1930s, it was usual for tablets to be treated separately from the other objects. In

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the Diyala, the inscribed material was put in a Tablet Catalogue and given numbers with a T-prefix. Ancient seal impressions with an inscription were often put in the Tablet Catalogue, thus splitting them off from the rest of the seal impressions and from the cylinder seals that were in the Object Register. The unfortunate result of the decision to split the seal impressions was that when Frankfort was publishing his ground-breaking book, *Stratified Seals from the Diyala Region*, he did not have access to all of the sealings. Therefore, our work will make it possible to supplement and improve even that great book.

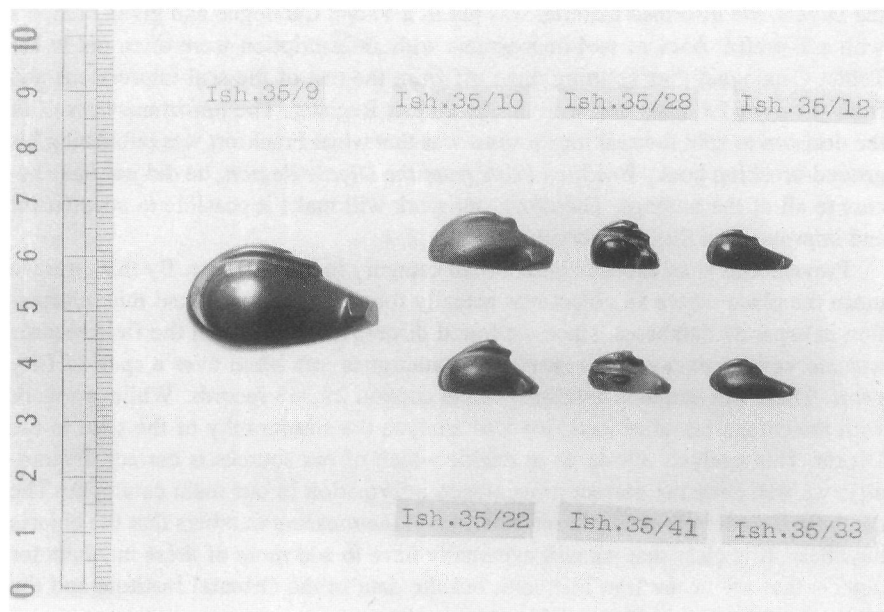
Provenience is an extremely important category in the database. By this term we mean the place where an object was actually found. We have entered this information in separate databases, since we found discrepancies between the field records and the various excavation reports and catalogues published over a span of fifty years. These provenience databases alone contain 29,353 records. While we work with the categories of objects, we also analyze the stratigraphy of the sites in the Diyala. This analysis allows us to decide which of our sources is correct. Eventually, we will have the correct provenience information in our main catalogue. The database includes all available information on the museum numbers that the objects now bear. It is clear that we will eventually have to add more of these numbers for objects that are in the Iraq Museum, but the data in the Oriental Institute and the University Museum in Philadelphia are complete.

A major challenge was provided by the number of photographs, whether taken in the field or at the Oriental Institute. Many of them were unlabeled or were preserved only as cutouts. The identification of the objects on these photographs was a monumental undertaking that was accomplished largely this year. Our invaluable volunteer, Joyce Weil, who worked for years in the University's computing facility, has



Stone weights, some with marks indicating weights. Tell Asmar and Khafajah, 3rd mill. BC

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Stone weights in shape of ducks. Ishchali, ca. 1800 BC

been the key person in scanning all available photographs of the finds, and all available drawings of the profiles of ceramic, metal, and stone vessels. Where photographs were not available, we scanned negatives. The negative scanning was accomplished with the cooperation of the University's Digital Media Laboratory, and the results were high-resolution images. In the scanning operations, it has been Clemens Reichel who has taken the lead in each step of our learning to use the equipment. Thus far, we have approximately 3,000 images in our database.

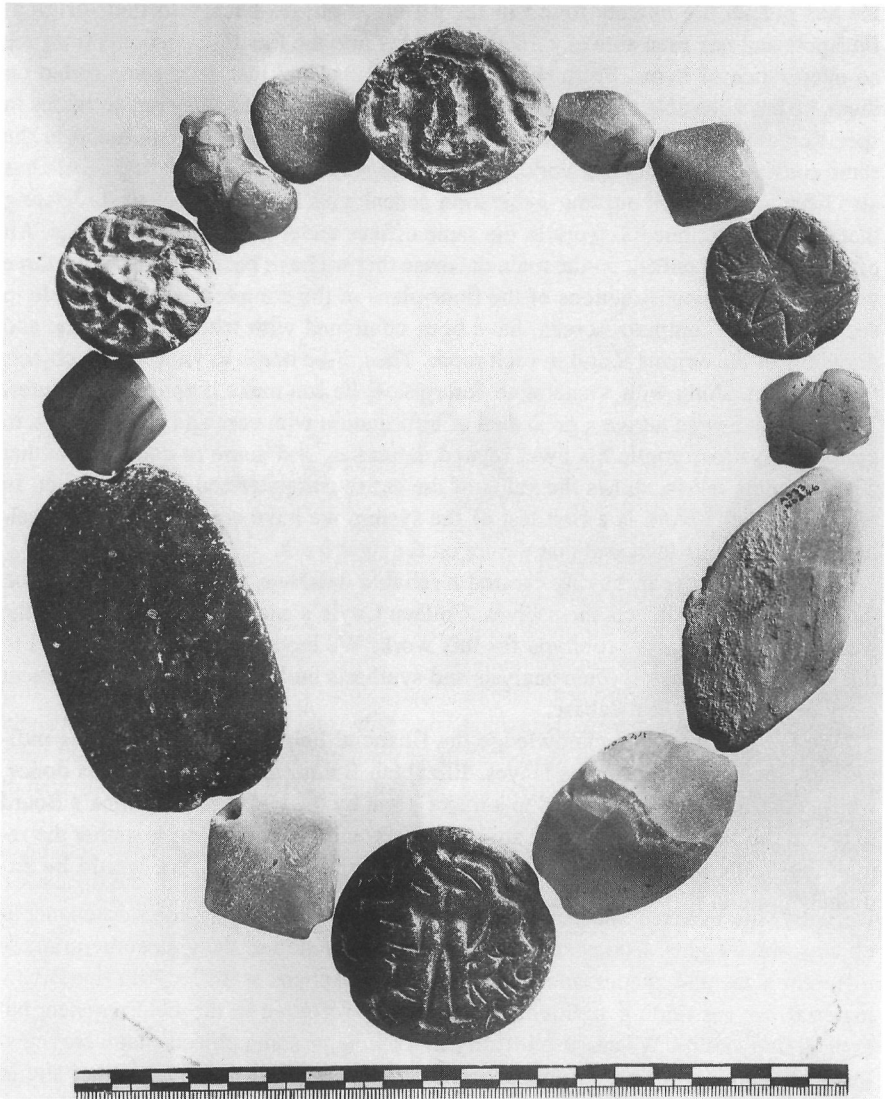
Carole Yoshida, another volunteer, was of great help in locating and sorting the material, and John Larson, the Oriental Institute archivist, has generously collaborated with the handling of the negatives.

In order to document all previous publications of the objects that we are analyzing, we have created another related database that covers the five preliminary reports in the Oriental Institute Communications series and nine volumes of Oriental Institute Publications series. This database, containing 4,857 records, was brought up to date by Brett McClain, a student in Egyptology who worked for us last year. In the painstaking work of proofreading, our volunteer Helaine Staver has proved of inestimable help.

Colleen Coyle, a student majoring in Mesopotamian archaeology, has been working on the project for more than a year and is familiar with all the databases. Recently, she initiated analysis on an important, major group of the miscellaneous objects: the weights. Composed of various imported stones, weights come in many different sizes and shapes, including ducks. As happens so often with the Diyala material, we are finding additional examples not recorded in the field registers but kept as study items. We are also identifying as weights some objects that were registered as "gaming pieces," "rubbing stones," and the like. Hardly any other site in Mesopotamia has produced an equally large number of weights, and with few ex-

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ceptions, these have not been accurately published; ironically, the actual weight, for instance, is often not indicated in site reports. Even in the Diyala, where Frankfort indicated in registration procedures that all weights must be weighed, this information was rarely recorded in the field. We assume that the absence of the information resulted from difficulty in obtaining in the field a balance of adequate refinement. In view of the inadequate state of present knowledge of Mesopotamian weights, the Diyala material will prove of great importance in establishing a clear typology and in relating actual finds to texts. We know, for instance, that king Shulgi of Ur (2094–2047 BC) standardized the weight system in his empire. As Colleen weighs and analyzes the material, it will be interesting to see how the actual objects com-



Stone beads, some of which may have been used as seals. Tell Asmar, ca. 2350 BC and earlier

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pare to the units implied by the texts, and whether there were regional differences in certain periods.

As both a member of the Diyala Objects staff and as a doctoral student, Clemens Reichel has continued his research on the Shu-sin Temple and the Palace of the Rulers at Tell Asmar (ancient Eshnunna), the most important of the Diyala sites. This religious and administrative complex underwent several rebuildings over a two hundred year period. Frankfort and Jacobsen published this complex but did not make a full account of the 1,124 clay tablets and 219 clay sealings found there. Only a selection of the tablets has been published and the sealings are only now being treated by Reichel. His work has, thus far, resulted in some redating of the phases of the architecture, with the earliest building pushed decades earlier than previously thought. He has put all the objects found in the different phases back into their original findspots and has been able to gain new insights into the function of rooms from the co-occurrence of items. From the clay sealings that had inscribed seals rolled on them, he has been able to show that specific officials tended to carry out activities in specific parts of the building. A comparison of information on tablets found in the same contexts elucidates the workings of the administration to a high degree. He has also been able to work out four-generation genealogies for these officials, indicating that families continued to work in the same offices under a succession of kings. All of his work is dependent on the main database that we have been compiling for three years. His new reconstructions of the floor-plans of the complex, made available in seconds on the computer screen, have been combined with text, photographs, and drawings of the objects found in each room. Thus, if he needs to view all the objects from a room, along with a catalogue description, he can make it appear in minutes. The fact that he can derive a great deal of information with ease and manipulate it in various ways to compile his own, related databases, and come to conclusions that help to redate levels, shows the value of the entire computerized Diyala project. In effect, Reichel's work is a first test of the system we have created, and the excellence of his results indicates that we are on the right track.

In the coming year, having created a reliable database, we will concentrate on the analysis of the objects themselves. Colleen Coyle's analysis and write-up of the weights can serve as a prototype for this work. We have been looking forward to this stage of the project, when analysis and synthesis build upon the years of patient entry of items into the database.

We are delighted to acknowledge the financial help of several generous individuals, including Mrs. Alice Hayes, Elizabeth Baum, and an anonymous donor, whose contributions were joined to a major grant by the University Women's Board to match the NEH funding. There are still several months remaining to gather the remaining funds that could still be matched by the NEH grant. We would be extremely grateful for any aid to reach that goal.
