

# The Ur Digitisation Project: Delving into Woolley's Legacy

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**Abstract:** The Ur Digitisation Project is an ambitious collaboration between the British Museum and the Penn Museum to create a comprehensive online resource of all relevant information from Leonard Woolley's excavations of Ur. Since July 2013, teams at both museums have been digitising objects and archives. The archives are housed in the British Museum and include tens of thousands of pages of excavation notes as well as over 2000 glass negative photographs. All this information is brought together and interrelated in a contemporary and complex web resource that is open to all. This paper includes a very brief history of Ur and highlights some pertinent aspects of its excavation. The Ur Digitisation Project itself is discussed in the last section. The focus in this paper is on the archival part of the project. It was presented at ICAANE in April 2016, referring to the state of the project at that time. The project receives lead support from the Leon Levy Foundation, with additional support from the Kowalski Family Foundation.

**Keywords:** Ur, Leonard Woolley, digitisation

The world's first museum was located in the Sumerian city of Ur according to the interpretation of Sir Leonard Woolley, Ur's main excavator.<sup>2</sup> He uncovered a Neo-Babylonian room with objects from various points in the city's illustrious history:

“The room was a museum of local antiquities maintained by the princess Ennigaldi-Nanna (who in this took after her father [Nabonidus], a keen antiquarian), and in the collection was this clay drum [U.2757, BM 1927,1003.9], the earliest museum label known, drawn up a hundred years before and kept, presumably together with the original bricks, as a record of the first scientific excavations at Ur...”<sup>3</sup>

Ennigaldi-Nanna was not only a princess, but also the High Priestess of Nanna. Her ‘museum’ was located near the temple and next to what Woolley identified as a school, emphasising the location as one of learning and education.<sup>4</sup> This ‘learned’ passion for the history of Ur and the understanding of the city as worthy of such study were revived millennia later with the modern archaeological excavations of the site. They are expressed nowhere clearer than in Leonard Woolley's many publications, including the ten Ur Excavations volumes<sup>5</sup> and his books on the Sumerians<sup>6</sup> and Ur.<sup>7</sup>

Following in these very formidable footsteps, two and a half millennia after Ennigaldi-Nanna created her ‘museum’ and 80 years after Woolley ended his excavations, teams at the British Museum and Penn Museum are collaborating to digitise all germane objects and documents from Ur. The aim is to reunite and digitally publish the finds and archives in an exhaustive and innovative manner. The information produced is incorporated in an extensive online resource<sup>8</sup> that unites the digitised material. This resource is unique in its scope and ambition, is freely available and will

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<sup>2</sup> Woolley – Mallowan 1962, 17; Woolley – Moorey 1982, 251–252.

<sup>3</sup> Woolley – Moorey 1982, 252.

<sup>4</sup> Woolley – Mallowan 1962, 17.

<sup>5</sup> In volume order: Hall – Woolley 1927; Woolley 1934; Legrain 1936; Woolley 1955; Woolley 1939; Woolley 1974; Woolley – Mallowan 1976; Woolley 1965a; Woolley – Mallowan 1962; Legrain 1951.

<sup>6</sup> Woolley 1965b.

<sup>7</sup> Woolley 1938; Woolley – Moorey 1982.

<sup>8</sup> Ur Online.

generate new avenues of research to enable all to explore the finds and records from this extraordinary ancient city.

This chapter starts with a very brief history of Ur, and then highlights some pertinent aspects of its excavation. The Ur Digitisation Project is discussed in the last section. The focus is the digitisation of the archival material. This paper was presented at ICAANE in April 2016, referring to the state of the project at that time.

### The City of Ur

Ur is located in southern Iraq, about 170km northwest of Basra and about 300km southeast of Baghdad. It is near the Euphrates River. As the Persian Gulf extended much further inland during the period of Ur's settlement than it does today, the city had access to the sea.<sup>9</sup> This region is the Sumerian heartland, where we also find other important cities such as Larsa, Uruk and Eridu. The ruins of the latter are visible from atop Ur's Ziggurat.<sup>10</sup> These sites can arguably be called the world's first cities. The largest among them was Uruk. By the start of the 3<sup>rd</sup> millennium, it had grown to a size of c. 600ha from c. 250ha.<sup>11</sup> In terms of population, it was also in a "...category of its own",<sup>12</sup> with possibly as many as 40,000 inhabitants around 3200 BC.<sup>13</sup> Compared to this Ur was rather more modest in size. Wright writes that it probably grew from about 10ha in the Late Uruk period to 50ha in ED III of the mid-3<sup>rd</sup> millennium BC.<sup>14</sup>

Beyond being amongst the world's earliest cities, Ur was also occupied for a long period, from at least 5500 until about 300 BC. More importantly, it was considered ancient and significant by its inhabitants and their Sumerian contemporaries.<sup>15</sup> Old cities were revered in southern Mesopotamia, with their standing much influenced by the status of their tutelary god and perceived antiquity. Institutions in younger but ambitious settlements would rework theologies to be placed on "equal footing with the older cities".<sup>16</sup> Ur's tutelary god was Nanna-Suen (Sîn), and his most important sanctuary was the é-kis̄-nu-gál Temple located in Ur. This is where the above-mentioned Ennigaldi-Nanna was a high priestess. Nanna was a popular god in Mesopotamia, although always subordinate to the principal gods of the pantheon.<sup>17</sup>

Ur and Nanna's fortunes rose and fell over the millennia; regardless, both remained important throughout Mesopotamian history. Ur grew into a significant city-state during the 3<sup>rd</sup> millennium, and it rose to the rank of imperial capital around 2100 BC. After the fall of the Ur III Empire just a century later, it functioned as a major city within the long series of empires that followed. In most of these periods, construction and restoration work were conducted on Ur's various monuments.

The last significant restorations at Ur were undertaken by Nabonidus, the last Babylonian king, father of Ennigaldi-Nanna and the keen antiquarian mentioned above. His activities in the city had a particular focus, as described by Woolley below:

"The activities of Nabonidus at Ur are easily explained by his fanatical enthusiasm for the Moon god in whose service he had been brought up ... everything that concerned Nannar was of interest to Nabonidus."<sup>18</sup>

<sup>9</sup> Kennett – Kennett 2006.

<sup>10</sup> Woolley – Moorey 1982, 12.

<sup>11</sup> Nissen 2001, 173.

<sup>12</sup> Pollock 2001, 187.

<sup>13</sup> Nissen 2002, 7.

<sup>14</sup> Wright 1981, 326–327.

<sup>15</sup> Tim 2014, 20.

<sup>16</sup> Goodnick Westenholz 2001.

<sup>17</sup> Klein 2001.

<sup>18</sup> Woolley – Mallowan 1962, 1.

Following the Persian conquest (539 BC), Cyrus also undertook some work at Ur.<sup>19</sup> The city's eventual demise is described by Woolley as caused by a combination of factors, particularly the shifting riverbed and changing trading patterns, as quoted below:

“The drying-up of the old river-bed, progressively from the Neo-Babylonian period, meant the stoppage of water-borne traffic, the ruin of the whole elaborate system of irrigation, and the end of agriculture; there was not the energy or the capital for the installation of a new system, and the starving city had no longer any reason for existence. Gradually the inhabitants moved away to other homes, the houses crumbled, the wind sweeping across the now parched and desiccated levels brought clouds of sand which they dropped under the lee of the standing walls, and what had been a great city became a wilderness of brick-littered mounds rising from the waste.”<sup>20</sup>

### The Ur Excavations

Except for the above-mentioned restoration and collecting activities of kings such as Nabonidus, archaeological exploration of the “wilderness of brick-littered mounds”<sup>21</sup> that Ur had become started in 1854. That year the British Museum employed J.E. Taylor, the British Consul at Basra, to investigate southern Mesopotamian sites. Following Taylor's investigations was a hiatus, although the site was not forgotten, and an expedition from the University of Pennsylvania visited Ur towards the end of the nineteenth century.<sup>22</sup> In 1918, there was a renewed effort at the site, first by R. Campbell Thompson, then by H.R. Hall. The main excavation, however, started in 1922. From then onwards, annual seasons took place for the next 12 years. They were led by Sir Leonard Woolley and jointly sponsored by the British Museum and Penn Museum.

The success of the excavations was not only due to the splendour of the ancient city's remains; it also started at an auspicious time. Woolley's expeditions between 1922 and 1934 encapsulate the moment when early large-scale explorations gave way to the advent of modern scientific excavation techniques. By this time, he had also developed his methods with an increased emphasis on recording. This is evident in the letter quoted below that he wrote to G. B. Gordon (Director of the Penn Museum) concerning his new assistant Max Mallowan:

“My new assistant, Mallowan, is shaping well and is very keen on his job: he is of course quite inexperienced and lacks certain qualifications which he will have to acquire before he can rank as really competent - foe [sic] one thing, he has not the remotest idea of drawing, which is a serious handicap.”<sup>23</sup>

This emphasis means that the vast scale of the finds he recovered is contextualised by an abundance of documentation, including notes, drawings and photographs. The British Museum houses most of these records. As part of the Ur Digitisation Project these indispensable resources are being digitised, indexed and cross-referenced.

The timing of Woolley's excavations also meant that it was the first archaeological exploration in Iraq that under the terms of the new Antiquities Law (1924) divided its finds between the Iraq Museum and the excavators. It initially involved Gertrude Bell travelling to the site to select objects for the Iraq Museum.<sup>24</sup> Today about half the objects are housed in the Iraq Museum, with the other half shared equally between the British Museum and Penn Museum. There are also smaller collections in other institutions. An unfortunate consequence of the distribution of the excavated material, however, is that corpora of objects are divided and often found across three or more museums.

<sup>19</sup> Woolley – Moorey 1982, 259.

<sup>20</sup> Woolley – Moorey 1982, 263.

<sup>21</sup> Woolley – Moorey 1982, 263.

<sup>22</sup> Woolley – Moorey 1982, 13.

<sup>23</sup> Woolley 1925.

<sup>24</sup> Asher-Grev 2004, 173–174.

Although the excavations unearthed much that was already familiar, an abundance of riveting and unique finds was also unearthed. Woolley's team uncovered Ur's famous Ziggurat complex as well as urban areas with streets, alleys and densely packed private houses. They also excavated over 2000 graves from several periods. Amongst them are the c. 16 royal graves with rich inventories of masterfully crafted artefacts created using a variety of precious materials. These monuments also contained macabre evidence of large-scale human sacrifice. They are entirely without parallel, and evidence of such practices has not been found elsewhere in Mesopotamia. Here were kings and queens buried with what Woolley described as "ghastly pomp".<sup>25</sup> The graves included oxen-driven carts, jewellery, musical instruments such as those in figs. 4 and 5, weapons and as many as 72 individuals interred with the primary royal occupant. These monuments provide key insights into core aspects of Sumerian life and society, including crucial information about the period's warfare, music, food, drink, customs and institutions.

The graves together with the other areas of the site provided a mass of information, and their co-occurrence in a city is exceptional. Also, the many thousands of cuneiform tablets found at Ur further improve our understanding of the city and its inhabitants. Covering a period of about two millennia, these fascinating ancient documents enable a broader understanding of society and concomitantly provide very focused glimpses into life in the city.

Having so much diverse material from such an expanse of time presents a wealth of research opportunities. Such research, however, is dependent upon availability, which is what the Ur Digitisation Project provides, enabling investigations hitherto impossible. The resource created by the project not only provides the core data but also interrelates and contextualises information from across corpora.

### The Ur Digitisation Project

The most exiting aspect of the Ur Digitisation Project is the rare opportunity it provides to reunify dispersed information. Not only are the collections from the three museums, the British Museum, Penn Museum and Iraq Museum, integrated in one digital resource, but also the different categories of objects are consistently recorded to produce a coherent dataset. The broader aim is to store data on all pertinent objects from Ur, and this reunification is the primary purpose of the project. It makes possible the exploration of all information from Ur in one location and provides access to entire corpora located in multiple museums. This includes everything from the cuneiform tablets mentioned above to the many thousands of pottery sherds from Ur. The teams at the British Museum and Penn Museum work in collaboration, though with differing approaches as appropriate for the respective institutions. The computer programmer is managed collectively and spends time at both museums. This loose organisation has proved very flexible, ensuring that each team has been able to capture the data they deem most relevant. Collaborations with additional institutions also incorporate information from their collections.

Besides the information from modern museum records, the same resource also incorporates archival data from the excavations. The three main types of such data are the excavation notes (Fig. 1), catalogue (Fig. 3) and photographs (Figs. 2, 4–8). The documents in the first two categories include both written descriptions as well as illustrations. There are also different types of photographs. These categories include excavation photographs with context labels (Fig. 2), photographs of excavators at work (Fig. 7), the various activities surrounding the excavations (Fig. 6), portraits and object photographs with excavation number labels. Another interesting category is photographs of streets with local workers posing as if they were still in use, such as in Fig. 8. Woolley also named them based on the familiar streets of Oxford and placed signs along

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<sup>25</sup> Woolley 1938, 28.

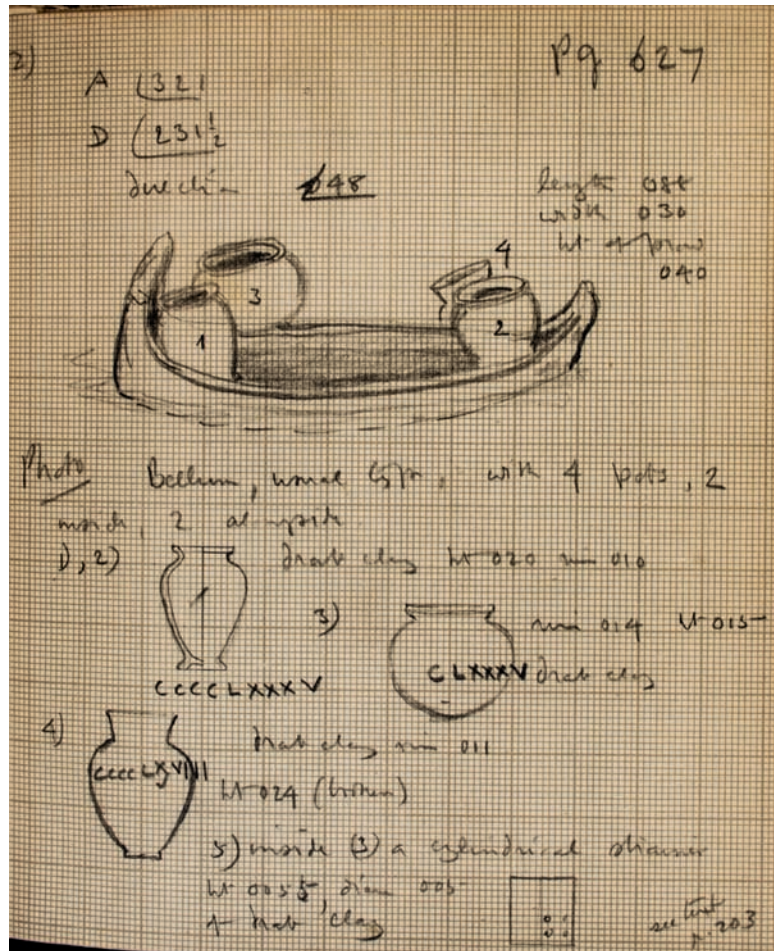


Fig. 1 Excavation-note entry for the bitumen-boat and vessels found in PG/627, shown on photograph Fig. 2 (© Trustees of the British Museum)



Fig. 2 A model boat made of bitumen (bellum) with ceramic vessels in situ in grave PG/627, see drawing Fig. 1 (© Trustees of the British Museum)

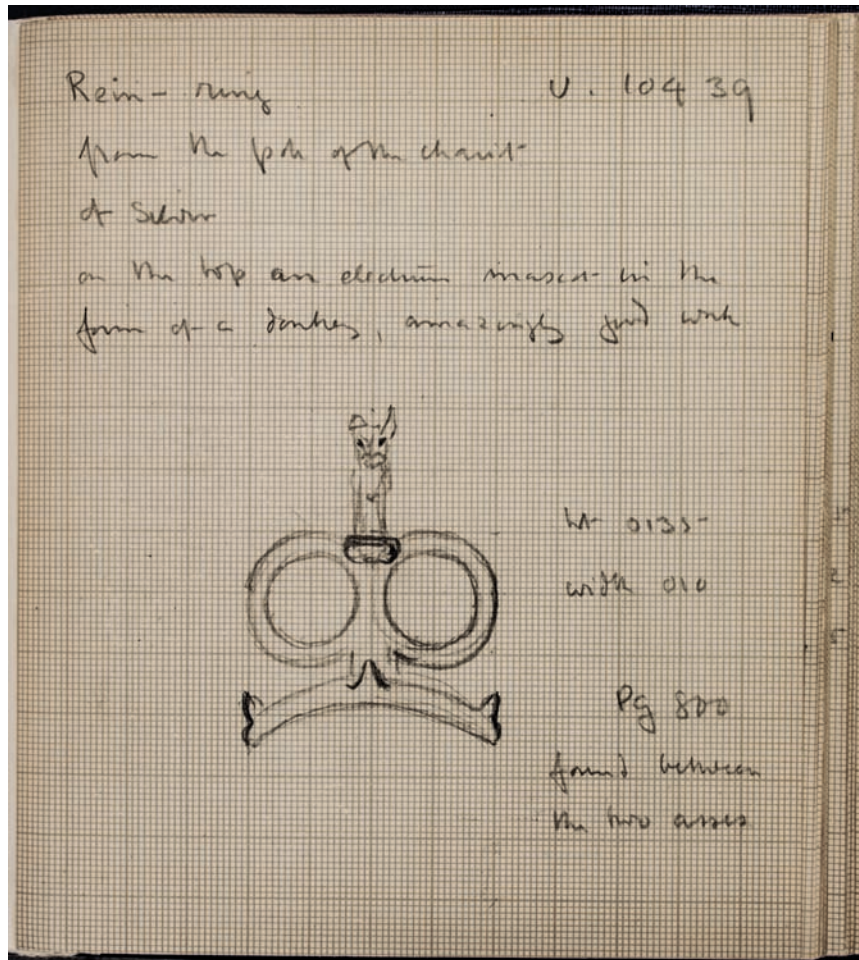


Fig. 3 Excavation-catalogue entry for U-10439 (British Museum 1928,1010.122) a silver rein-ring (© Trustees of the British Museum)



Fig. 4 Leonard Woolley holding the plaster cast of the lyre from grave PG/1151. Woolley pioneered a technique where plaster was poured into the hollows left by the decayed wood, preserving the original shape of the object – here the sound-box of the instrument – whilst also keeping parts made of non-perishable materials in place such as the copper cows head. (The Plaster Lyre – Iraq Museum number IM8695) (© Trustees of the British Museum)



Fig. 5 Three lyres in situ in what Sir Leonard Woolley named “the Great Death Pit” (PG/1237) where five male and 68 female retainers were laid out in rows. (The Gold Lyre – Iraq Museum number IM8694; The Silver Lyre – British Museum 1929,1017.2; The Boat Lyre – Penn Museum 30-12-253) (© Trustees of the British Museum)



Fig. 6 Leonard and Katharine Woolley recording finds brought by the workers (© Trustees of the British Museum)



Fig. 7 The excavation of the Mausoleum. The carts in the background were used to remove soil  
(© Trustees of the British Museum)



Fig. 8 'Street scene' with posing workers (© Trustees of the British Museum)

the streets and outside houses. These signs combined with the actors make the city really come alive in the photographs. They also highlight Woolley's considerable skill as a communicator.

As all this information is fully integrated in the digital resource, a search for a specific object will hence not only produce a modern up-to-date museum record and a recent photograph but also any pertinent archival resources. The latter includes any mention of the object in the excavation notes, a catalogue entry and any photographs taken in the field or at the excavation house. With a single search, finding documentation for, or 'tracking', an object from the moment it was unearthed through registration in the excavation catalogue to the current museum record is possible. The inclusion of descriptions from multiple sources, drawings and photographs both modern and archival, presents a visitor with a mass of interrelated data that otherwise would have been very time-consuming and logistically impractical or even impossible to collate. This information also provides context such as find spots revealed only in photographs or relationships highlighted in group photographs. Archaeological context is also described in the excavation-notes and catalogue.

As the notes and catalogue primarily were written with pencils on frequently smudged millimetre paper (Figs. 1 and 3), the exact wording of a record is often open to interpretation. It was decided to include photographs of all pages, and not only transcriptions, or indices of their pertinent data to facilitate such interpretations. In essence, if there was any mark made by a pen or pencil on a page, it was photographed. Blank verso pages, however, were not included, whilst simple sketches, lines and doodles were. Also, illustrations are often included in both the notes and catalogue and exist in complex relationships to the text. These relationships can frequently not be reproduced without photographs of the entire document. For example, illustrations often contain numbered objects with references to these numbers in the text (e.g. Fig. 1). A visitor to the web resource will hence be able to personally investigate digital copies of all original archival material rather than just transcriptions and interpretations of this material. It is essential, however, to also produce indices to make the information searchable and correctly relate a record to other data. This means that the information from various archival sources must be indexed in a consistent manner so that the different museum registration systems correspond with that of the archives. The most basic such relationship is between the excavation numbers (u-numbers) that were given to objects in the field and the museums' registration numbers. Only with an extensive set of indices is it possible to fully integrate archival and museum object information. For example, archival material such as Figs. 4 and 5 can be displayed when someone searches for the museum numbers of these instruments corresponding to their current display in the respective collections.

It was decided at the start of the project to conduct also all archival digitisation internally. Three of the advantages of this approach are listed below.

1. The archives do not leave the museum. The project hence avoids the many administrative and logistical challenges related to moving items as well as ensuring that storage and treatment outside the museum are satisfactory.
2. Skills and knowledge are developed internally. Also, equipment can be reused, or new equipment can be acquired for future re-use. The Ur Digitisation Project also provides an opportunity to involve students from various universities.
3. The project staff maintains full control over the process and can amend and improve it as the project evolves. Also, the digitisation process remains fully integrated with the other aspects of the project.

The two primary archive digitisation tools used are a photography setup and a flatbed scanner. The former is a simple copy stand with four lamps and a standard Nikon digital single-lens reflex camera. The setup also includes a piece of perspex held by the operator and used to flatten the page being photographed. A remote control for the camera has also proved crucial. This equipment is cost efficient and easy to use, and new operators can be trained quickly. It does, however, require two people to work together, as operating it singlehandedly is difficult. All the paper records are digitised in this manner.

For the digitisation of glass negative photographs, we use a flatbed scanner. The only customisation we have made is constructing a frame for the negatives. As with the paper digitisation setup, the scanner with frame is easy to use so that operators can be trained quickly and uniform results can be achieved.

The project fully integrates data collected from our current museum records with that captured from digitised excavation notes, catalogues and photographs, as well as other sources. This creates opportunities for comparative studies otherwise made difficult by a lack of access. Entirely new sets of information are also produced when the data included are successfully indexed, and relationships are auto-generated. A simple search for an object has the potential to present material never before seen together. All this material, including the images, is freely downloadable in standard formats so that it can be used by anyone. The images are published under a creative commons license, enabling free use for non-profit purposes. Even the code for our resource is openly available, and we hope other projects will be able to use this code and further develop it. The project's web resource should hence provide unique opportunities for new original research, enabling researchers from any location to investigate digital copies of all original archival material as well as comprehensive information on all the relevant museum objects and the relationships that exist among them.

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