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Front cover. Cattle and two goats\gazelle from Site GRD-14 in the Wadi Gorgod (photo Hamad Mohamed Hamdeen).

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(Re)examining the tomb of Queen Yeturow at Nuri

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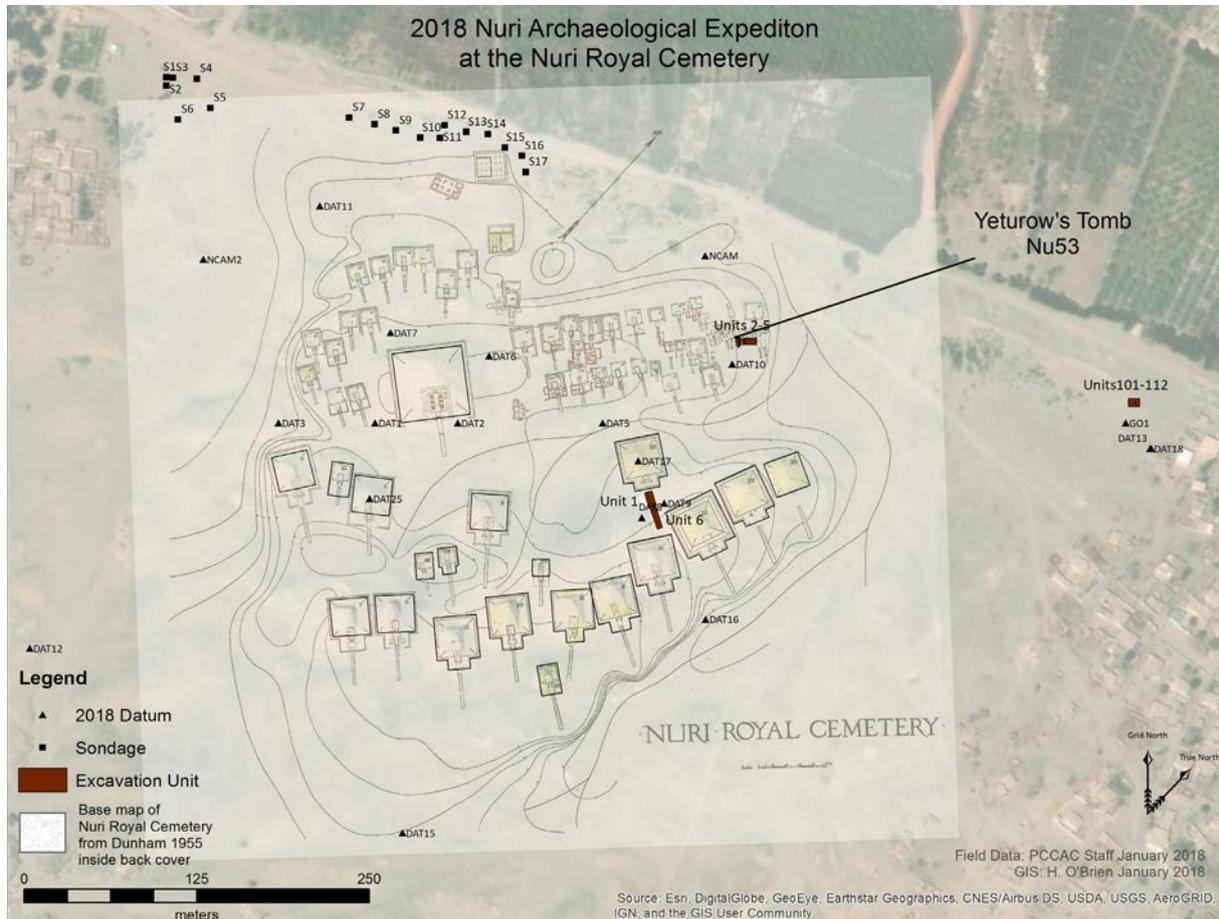


Figure 1. Satellite view of Nuri incorporating Dunham's site map (1955) with the location of Yeturow's tomb (Nu53) indicated.

Introduction

The single-room burial chamber of Queen Yeturow (Nu53; c. 653–643 BC) lies among 80 known royal burials at Nuri, a necropolis near the 4th Cataract in Sudan (Figure 1). This royal cemetery was probably initiated by Taharqa (c. 690–664 BC), king of Kush and a pharaoh of Egypt's 25th dynasty (Emberling 2011; Török 2015; Kuckertz and Lohwasser 2019, 31-44). After Taharqa's burial, four centuries of successors and other royals were buried at Nuri in pyramid tombs, adapting aspects of ancient Egyptian mortuary practices and architecture into their own distinct traditions. Much of the royal necropolis at Nuri, including the burial of Yeturow, was excavated by George Reisner over two seasons (1916-1918). While Reisner published almost nothing of his work, his assistant, Dows Dunham, who apparently did not participate in the excavations, assembled notes, drawings, photographs, and other field records decades later to produce the *Royal Cemeteries of Kush - Nuri* (1955), essentially a catalogue of finds and the only monograph dedicated to the archaeology of the site.

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Despite its grandeur and importance to the understanding of Kushite culture, Nuri was largely overlooked until the launch of the Nuri Archaeological Expedition (NAE) in 2017. A priority for the first field season was exploration of Yeturow's tomb. As described by Dunham (1955, 35), the tomb presented: 'Walls painted and inscribed direct on rock and in poor state of preservation. W. end wall: the queen... worshipping Osiris with Isis behind him... Upper part of S. side wall: heads of five deities (originally eight) facing right with bands of inscription above and between them.' Dunham's report also suggested that water had inundated the tomb and destroyed the lower portions of the paintings. Consequently, it was decided that re-excavation of Yeturow's tomb would advance our understanding of the current state of preservation at the site and present an opportunity to capture the first colour photographs of its decoration and document other unrecorded/unpublished details. Furthermore, the tomb would allow for evaluation of the accuracy of Reisner's and Dunham's measurements, plans, and site descriptions.

Clearance of the tomb in 2018 confirmed that the burial chamber is still in vibrant condition. Much of what Dunham published remains visible. It is what Dunham did not publish, however, that is of interest. The burial chamber was found to contain a previously unpublished fully painted ceiling decorated with stars, remnants of painted figures and a full line of text on the north wall, as well as additional decorative elements on the west and south walls. These new elements are presented here, along with initial results from the first pigment analysis of the paintings. With this new work, the decoration of Yeturow's burial chamber can be analysed and discussed within its archaeological and historical contexts. The relationship between ancient Egypt and the Kingdom of Kush was complex; analysis of the palette, style, and composition of Yeturow's tomb paintings can improve our understanding of the interconnections between these two distinct but closely linked cultures.

Yeturow's burial chamber

Evaluating the quality of Reisner/Dunham's modest records of the immense work conducted at Nuri was a primary motivating factor for the establishment of the NAE. In 2018, the location, identification and recording of three known burial chambers provided the first such opportunity: Nu53 (tomb of Yeturow), Nu73 (undecorated tomb, owner unknown) and the adjoining Nu74 (undecorated tomb, owner unknown) (Dunham 1955, 28–29) (Figure 2).

All three burial chambers, easily located from Dunham's site map, were found to be in conditions similar to that described by Reisner. The NAE mapped all three and focused the majority of its attention on Yeturow's burial chamber (Nu53), because both Nu73 and Nu74 (which will be published elsewhere) are undecorated single-chamber burials. In January 2018, the condition of the walls and floors in all three chambers appeared stable, despite 100mm of standing water, something Dunham did not mention. In January 2019, 300mm of water covered the floor in Yeturow's burial chamber. In January 2020, no water was found on the tomb floor, suggesting variable groundwater levels across the site.

Comparison of the current state of the south and west walls with existing line drawings and black-and-white photographs (Dunham 1955, 36, figs 21; Plate IX, X) revealed no significant changes since the early 1900s. Only portions of these walls had been photographed and drawn, however, making comment on the remainder of the tomb impossible. Investigations during the 2018 and 2019 seasons did show that Dunham omitted many details of the tomb from his publication, so a full account of its wall paintings is now provided.

A stairway cut into the conglomerate sandstone bedrock provides entrance to the single-room burial chamber (Figure 3). At the bottom of the steps, before the south-facing vaulted tomb, is a small landing. Beyond the threshold is a short step down into the burial chamber, which was also cut into conglomerate sandstone containing quartz pebbles of varying sizes. This was undoubtedly a difficult material to cut

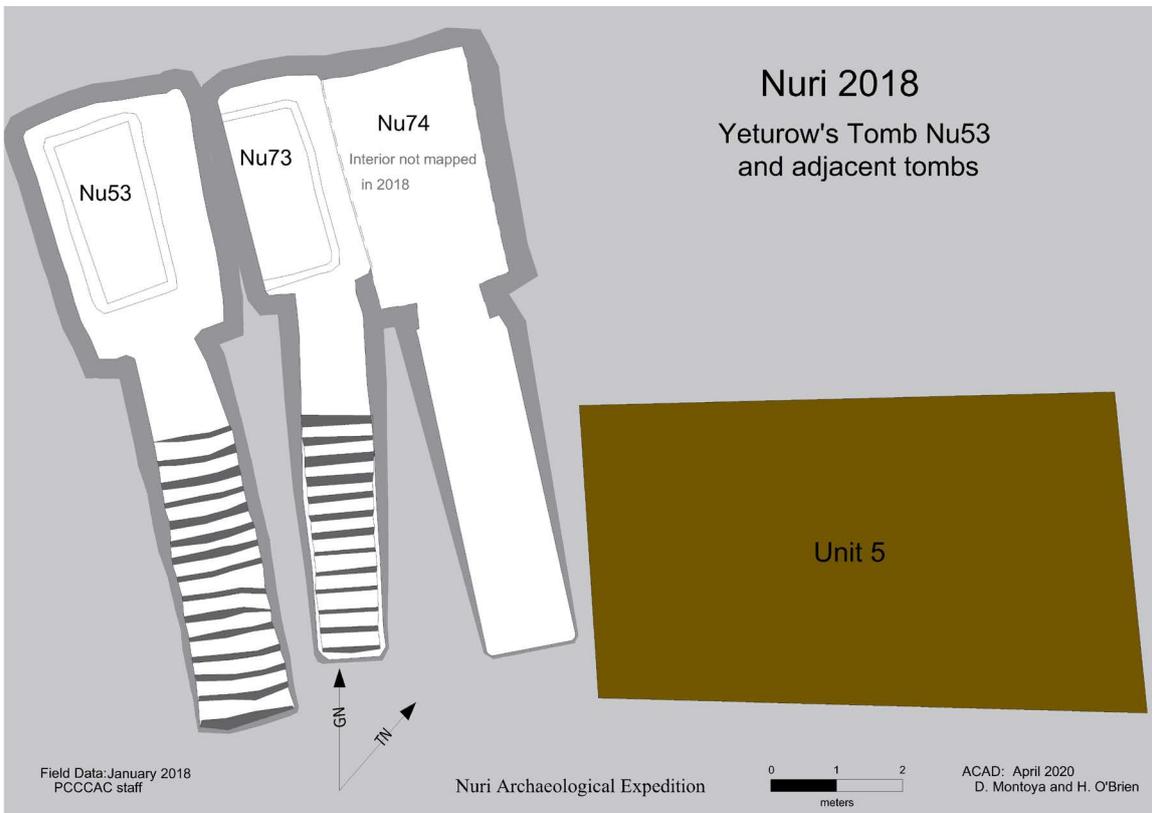


Figure 2a (above). Kite photograph of the area of Nu 53, 73, 74 excavated in 2018 (photograph by Kathryn Howley).

Figure 2b (below). Plan of 2018 excavation area including Nu 53, 73, and 74 (plan by Daniel Montoya and Helen O'Brien).

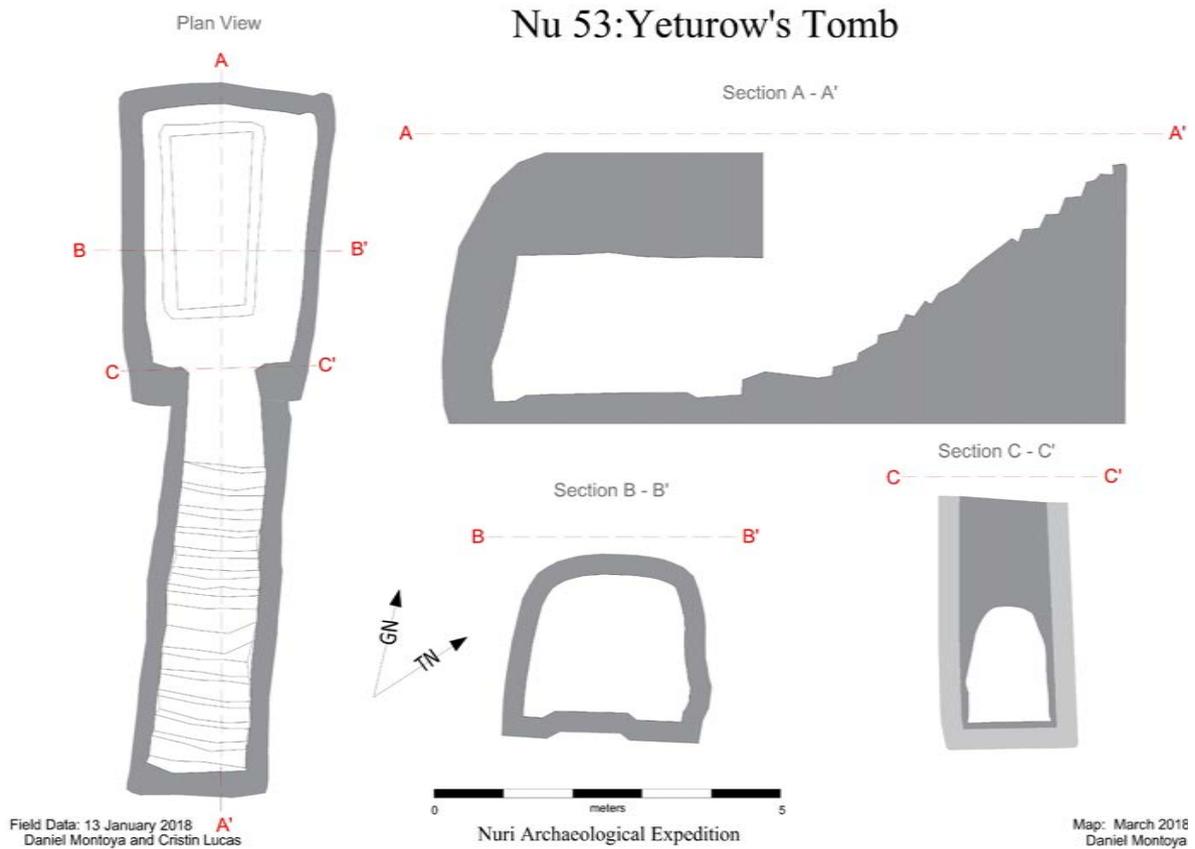


Figure 3. Yeturow's burial chamber (plan by Daniel Montoya).

through and provided an uneven surface for painted decoration. There is some evidence of a preparatory layer applied to the sandstone, but it appears to be neither very thick nor evenly applied, as in many places paint was brushed directly on the quartz pebbles. The chamber (3.75x2.25m) is roughly rectangular with a rounded ceiling and a low coffin bench attached to the floor adjacent to the west wall.

North wall

On the north wall, directly across from the entryway, is a painted scene of Yeturow worshipping Osiris and Isis (Figures 4, 10). The queen, painted with red skin (rather than yellow, which was the usual Egyptian convention for women), stands on the right side of the scene, her hands raised to adore the divine couple. She wears the double-feathered crown with a sun disk in the middle atop a short modius. Her head is further adorned with a yellow-and-black vulture headdress fitted over a short black wig. Traces of two small red tassels fall from the back of the queen's headdress to the top of her shoulder. She wears a tight-fitting, white, three-quarter-length sleeve dress with a black sash draped over her left shoulder. Unfortunately, the painting is badly damaged below Yeturow's elbows and completely lost at about the level of her waist. No jewellery or other adornment is visible apart from a pectoral with faint traces of green pigment. Due to the loss of the green paint, a yellow central guideline is visible within the pectoral. Two lines of hieroglyphic text before Yeturow designate her as 'the royal wife, woman of Egypt, Yeturow, justified, the venerable one'. It is important to note that the spelling of Yeturow's name is identical to a popular Late Period Egyptian name, *Irtiru* (Ranke 1935, 42.10). Her name, coupled with her title of *rmꜥ n kmꜥ* 'woman of Egypt', implies that she was from Egypt, although the significance of this title is unclear (Lohwasser 2001, 46-47, 156, 202-203). This, along with 'royal wife' are the only two titles used in her tomb and are also the only two recorded on her heart scarab, found in the adjacent tomb, Nu74 (Dunham 1955,



Figure 4. Painted scene of Yeturow offering to Osiris and Isis on the north wall of her burial chamber (photograph by Martin Uldriks).

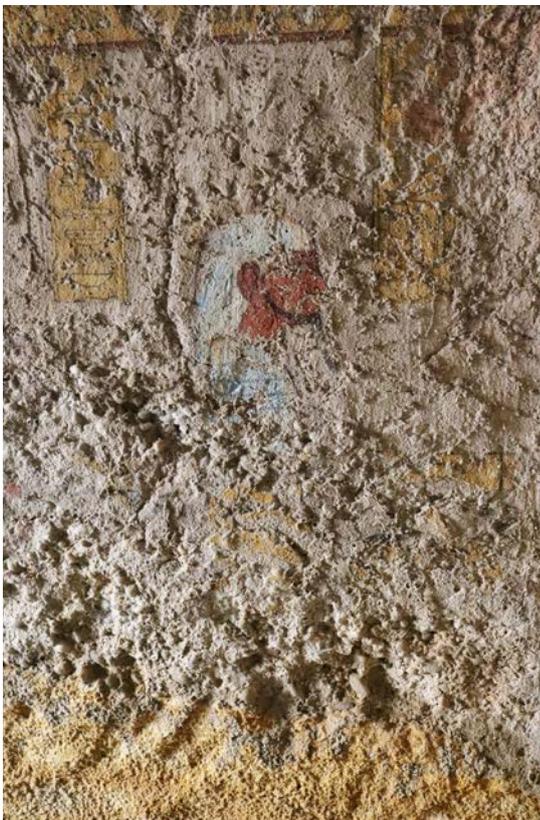


Figure 5. One of the mummiform offering gods on the west wall of the burial chamber (photograph by Meghan E. Strong).

29, 37, fig. 22).

Before Yeturow is a floral bouquet, with traces of blue petals and green leaves, and several loaves of yellow-painted bread, which she offers to Osiris and Isis. Presumably, these offerings stood on some form of table or offering stand, but this section of wall has been lost. An enthroned Osiris sits facing Yeturow, fists drawn up to the centre of his chest, holding the traditional crook and flail. Wearing a tight-fitting red-and-golden-yellow garment, he sits on a low-backed throne. The wall is badly damaged, but the seat back appears to be red with a blue cushion; yellow was used for the frame and legs. Osiris is adorned with a yellow pectoral and the *atef*-crown. Traces of ram horns are visible in the yellow underdrawing of the crown, but the final composition omits these. Small remnants of green are visible in the crown's feathers and was used for the god's skin. Behind Osiris, a yellow-skinned Isis extends her bent left arm towards the god's right shoulder. She wears a red sleeveless dress with straps knotted at the shoulders, a blue tripartite wig, yellow armbands and bracelets, and a large Hathor crown with white horns and a red sun disk. A uraeus extends down from the disk, its tail trailing off behind the goddess' wig.

The underdrawing indicates that the crown was originally meant to be much larger, but was reduced in the final rendering. Inscriptions before each deity provide their name and offer a ‘perfect burial’ to the deceased queen. What appears to be white borderlines and perhaps an elongated *pt*-sign with remnants of blue paint enclose the entire scene.

East and west walls

The east and west walls originally would have been mirror images of each other. Unfortunately, the east wall has lost nearly all of its painted decoration, probably from water inundation and wicking. Nevertheless, a large amount of the west wall’s paintings remains, which allows reconstruction of both walls’ decorative schemes. Originally, the long walls of the burial chamber were lined with two rows of mummiform offering figures, six (rather than Dunham’s eight) on each wall. Most of the six figures remain on the west wall; on the east wall, only the tops of the heads of two are extant. Each figure has a red face, curled black false beard and chin strap, and a blue wig. The bodies of the figures exhibit an alternating colour scheme: blue shoulder wrap and yellow body or yellow shoulder wrap and red body (Figure 5). In front of each figure is a line of text providing an abbreviated offering formula and a small offering table piled high with various bread loaves (Figure 8). It is clear from the texts preserved on the north, east, and west walls that each line of text was delineated with a blue border, most of which has fallen away. Similarly, a number of the individual hieroglyphs retain traces of blue indicating that many, if not all, of the signs were filled in with this colour after being outlined in black. The loaves on the offering tables also bear traces of blue used for details.

A single line of hieroglyphic text runs along the tops of both the east and west walls (Figures 6, 7). Dunham partly recorded the text on the west wall, but the east wall text is entirely missing from his publication. Both are *ḥtp di nsw* formulae invoking Osiris as the lord of Djedu (Busiris in the Nile Delta) on the east wall and Abdu (Abydos in Upper Egypt) on the west wall. The west wall text references bread, beer, meat, and fowl, while the eastern inscription provides for incense, precious oils, milk and wine.

Ceiling

An additional element not in Dunham’s publication was the remarkable painted star ceiling (Figure 9). Each star, painted on a blue background, is executed in Egyptian Old Kingdom style, with yellow spokes emanating from a large central red dot, outlined in grey.

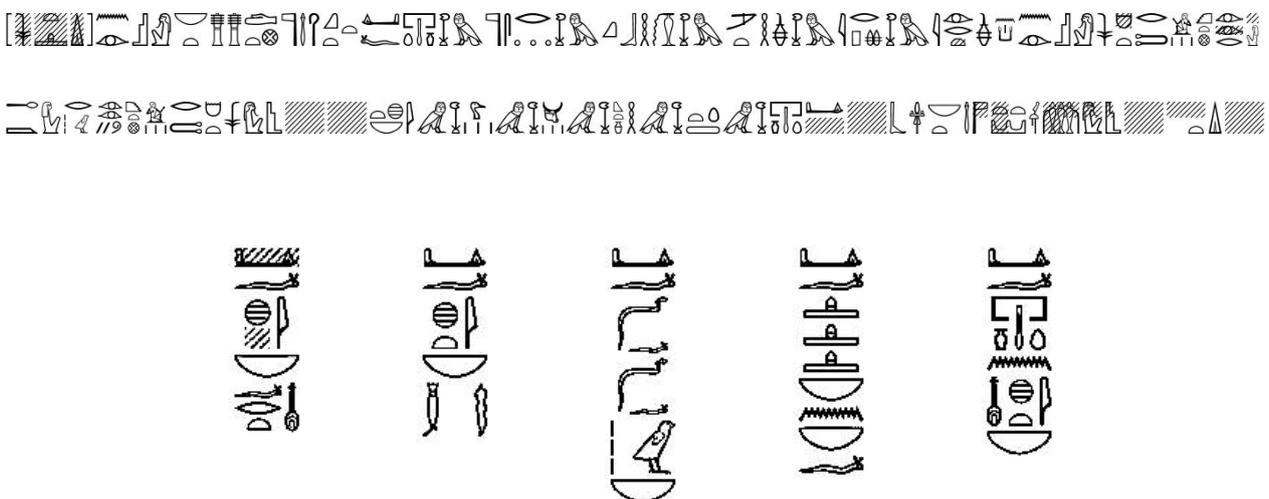


Figure 8. Transcribed hieroglyphic text from in front of the offering figures.



Figure 9. Painted ceiling with star decoration (photograph by Martin Uldriks).

Preliminary analysis of tomb painting stages

Decoration comprised several distinct stages. After a thin, white background was applied, the artists initially drew figures in yellow. Next, they better defined the figures or made compositional changes in red. At this stage, it appears that the figures were filled with paint, although the artists seem to have taken great care to stay within the red lines, as these are clearly visible in most figures. Finally, black paint was used for a third outline of the figure and to add details. With the exception of the figures on the west wall, no guidelines or grid system is evident. The north and south wall scenes, and the star ceiling, appear to have been freehand. Examination of the individual hieroglyphic signs suggests that there were two different hands working on the texts: a more experienced, refined hand is evident on the west and south walls, while a less accomplished hand was responsible for the north wall, where, for example, signs are widely spaced and elongated at the beginning and then, at the end of the line, squeezed together to accommodate the queen's name.



Figure 10. Close-up of the head of Isis from the north wall with three stages of outline: the yellow underdrawing shows that the headdress was originally much larger, later reduced in size with red and black outlines (photograph by Meghan E. Strong).

Analysis of tomb iconography

The tomb of Yeturow is a typical Kushite monument. The first impression is that its creator compiled a randomised selection of Egyptian-style figures and text and put them together without much concern for the sense of the results. However, the ingenuity and creativity shown in other funeral monuments of the 25th dynasty King Tanutamani (Doll in preparation) and the

early Napatan kings buried at Nuri (Doll 1978; Doll 2014) also appear in Yeturow's tomb.

The standing mummiform figures on the north and south walls function much like Middle Kingdom shabtis with *hꜥtp di nsw* formulae (Scalf 2017, 320; Lacovara 1988, 130). Asking for items of food and drink to sustain the deceased, Yeturow's figures may represent such shabtis, which, in Egypt, participated in food production. It should be noted that Reisner did find a number of actual shabtis in Yeturow's tomb. The offering scene on the north wall is seen as supplemental, not specifically related to the shabtis. Two later queens' tombs at Begrawiya, S503 and 010 (Dunham 1957, pl. 13, 15; Riedel *et al.* 2016; Wolf *et al.* 2018), have a similar row of mummiform figures on the long walls, also associated with sustenance-related texts. Thus, there appears to have been some knowledge of Yeturow's tomb, or at least knowledge of the decorative scheme it employed, in a period significantly removed in time and place.

There are two ways to 'read' Yeturow's tomb, and the first follows from the above remarks. In this interpretation, we regard the figures on the side walls as shabtis, related to the custom of lining up three-dimensional figures along the walls of burial chambers. There is ample evidence of this at Nuri: shabtis were distributed along the walls, arranged several rows deep (Dunham 1955, pl. XII a, b). The decoration on the long walls of Yeturow's tomb looks as if shabtis were instead painted there and protectively surround the coffin. Texts traditionally found on the front of shabtis have instead been placed between the figures to make these two-dimensional shabtis readable. Many Middle Kingdom shabtis bearing *hꜥtp di nsw* formulae wish for good things for their owners, and in Yeturow's tomb they do the same. Another example of this arrangement, with an entirely different purpose, also shows shabtis speaking texts placed in a column before them. These are in the famous shabti rooms of Ramesses IV (Carter and Gardiner 1917, 130-158), which pre-date this queen by centuries.

There is a second, more complicated, explanation for Yeturow's burial chamber layout that is more likely to be the primary inspiration for her chamber (*pace* Occam), although it should be read using both interpretations. This derives from the fact that Yeturow's chamber and the near contemporary burial chamber of Karakhamun (TT 223) in the Asasif near Luxor, Egypt, are essentially identical (Pischikova 2014, 58). The tomb of Karakhamun, who was probably Nubian, also features standing mummiform figures with an offering scene, although there are more figures (a reflection of the available space) and the text is that of the Negative Confession from Book of the Dead Chapter 125 rather than a *hꜥtp di nsw*. Karakhamun's figures represent the divine judges present at the confession. Above them is a long horizontal text, with one pendant before each judge, giving the divinity's name and one of Karakhamun's declarations to have not committed some transgression in life. The offering scene on the west wall shows him entering into the company of Osiris, having been judged worthy.

Another parallel to the decoration of Yeturow's tomb is the coffin of Ditankh in Cairo (CG 41.060) (Gauthier 1913, plate 28). It also uses the text of the Negative Confession and has standing figures around the box, separated by columns of text. Ditankh's coffin is slightly earlier than Karakhamun's and Yeturow's burial chambers, but exhibits similar elements, including the reception into Osiris's company.

An additional shared element between the tombs of Karakhamun and Yeturow could explain differences in the texts. According to the principle of *pars pro toto*, images of the judges and offering scene are sufficient to represent the whole Negative Confession, even without any text. This principle would have enabled Yeturow to benefit from the entire process of the Negative Confession, the Weighing of the Heart, and the Reception into the Company of Osiris without cramming every scene and text into her tiny burial chamber. Few representations of the Judgment Hall in the Book of the Dead include all the texts or scenes of Chapter 125, especially in the Late Period, when texts were abbreviated. Incomplete representations were considered sufficient to guarantee food from the gods' tables for the deceased. *Pars pro toto* is well known before and after, including Tutankhamun's burial chamber, where space was similarly limited.

The connection between the Negative Confessions of Karakhamun and Ditankh and Yeturow's requests for food become clear. We may wonder why the queen omitted the popular moral element of the Osirian judgment in favour of mundane requests for sustenance. The answer lies partly in *pars pro toto*, which makes it possible to benefit from the entire Judgment, and partly in the role of the judges themselves. Besides possibly influencing ritual performance and serving protective function through their images, the judges render the crucial positive verdict that, when announced to Osiris, enables the deceased to receive food rations from the gods' offering tables. In a fuller example of the trial process in the papyrus of Ani, Horus tells Osiris that Ani stands acquitted of wrongdoing and is now eligible to receive 'the bread and beer which are distributed in the presence of Osiris' (Faulkner and Goelet 1998, pls 4-5). Ani is immediately given access to a large table of offerings. Therefore, if the function of the judges is ultimately to grant sustenance via Osiris, it is quite appropriate for Yeturow to ask them for food and drink. The Kushite designer was not confused by Egyptian originals and, in fact, adapted them with their original meaning for a distinct purpose. The solution produced by innovative tomb decoration with the principle of *pars pro toto* ensured the queen provisions and added a popular moral element of responsibility. It was a typically ingenious Kushite method of fulfilling Yeturow's needs and wishes.

It should also be noted that Reisner identified no trace of an offering chapel associated with Yeturow's burial, nor has the NAE found any. As Reisner and Dunham suggested, later occupants of the site probably destroyed it. Perhaps, however, Yeturow's burial did not originally include one, which would mean that whoever designed the tomb needed to find a creative solution for Yeturow's eternal provisions. This would be an additional explanation for the choice of decorative scheme for her burial chamber.

Pigment analysis and identification

Although recent studies have greatly added to our understanding of the pigments employed in wall paintings from Napata (Emberling *et al.* 2015; Fulcher 2017; Dann 2018; Fulcher *et al.* 2020), research into the Kushite palette remains minimal. To better understand Yeturow's tomb paintings, pigment samples were collected during the 2019 field season and analysed at Cleveland State University and the Cleveland Museum of Natural History. Particular attention was paid to blue and green pigments. Green is particularly rare in tomb paintings from this region, and the blue appears much more vibrant and pastel in colour when compared to Egyptian blue. Analysis is still ongoing, so only early results of pigment identification are included here.

Sample preparation

The samples consisted of red, yellow, white, blue, or turquoise (green) microscopic grains mixed with light yellowish-to-white particles in small conglomerates between 1-10mm across. The conglomerates were fragile and easily broken apart into smaller masses under slight pressure with tweezers. From these more robust masses, samples with exposed pigment grains ranging in size from 10 µm to 500 µm were selected using a zoom stereo microscope for Raman, SEM, and EDS analyses. All the samples were inspected and photographed with a Nikon E400 Eclipse microscope.

Results and discussion

Raman analysis of the Nubian additives revealed the presence of gypsum, quartz, and carbonate minerals (e.g. calcite). These compounds were probably added to produce lighter shades and also used as ingredients in the plaster foundation of paintings. Additionally, in white pigment samples taken from the west wall of the tomb, crushed shell was identified. In the blue and green samples, the amount of blue or green pigment present is small compared to the additives, which often contain small flecks of darker minerals possibly introduced during the grinding or crushing phase of their preparation. The red and

yellow samples contained large amounts of iron and are probably made from ochres. Analysis by SEM and EDS show that the blue pigment from Yeturow's tomb consists primarily of a calcium-copper silicate, consistent with Egyptian blue ($\text{CaCuSi}_4\text{O}_{10}$). Minor amounts of carbon and aluminium were present in some samples. These elements probably originated from carbonates and silicates on the surface of the pigments.

Of particular interest was that the green pigment samples, as revealed by EDS, differed from the Egyptian green reported by Pagès-Camagna and Colinart (2003). Both the SiO_2/CuO and CaO/CuO ratios are approximately one-tenth of Egyptian green. The primary mineral component in Egyptian green is wollastonite (CaSiO_3) and its polymorphs, parawollastonite and pseudowollastonite. These cannot be excluded from the Nubian pigment based on EDS but are probably present along with tin, lead, and iron, which were also detected. A common use for copper in Nubia was to manufacture bronze, an alloy of copper and tin sometimes containing elements such as lead and iron. Given the presence of these elements in the green samples from Yeturow's tomb, it is likely that the source of copper was at least partially from recycled bronze. Intriguingly, bronze artefacts from the 25th dynasty typically have copper/tin ratios between ~9 and ~14 percent by weight (Phillips 1922). The average copper/tin ratio of Yeturow's green pigment is 13.25 ± 5 , supporting the notion that bronze was the primary source of copper in the green pigment. Although more analysis is needed, the green in Yeturow's tomb might represent a new pigment that makes use of recycled bronze. In contrast to Egyptian green, this may be a pigment unique to the Napatan region, so we have termed it 'Nubian green'.

Conclusion

Though her tomb was modest compared to neighbouring kings' tombs, Yeturow was a significant historical character and participant in a vibrant tapestry of Nilotic culture(s) in the mid-first millennium BC. The research presented here – the first complete recording and comparative treatment of Yeturow's burial chamber and its artistic corpus – highlights the ingenuity of the Kushites. Applying methods of scientific inquiry unavailable a century ago during the tomb's initial excavation has revealed some potentially remarkable practices. While reuse of material culture seems a core characteristic of humanity, and has been documented elsewhere in the Nile valley, this distinctive reuse, transforming bronze objects/manufacture into pigment is otherwise unknown in the Nile region. Analysis of the palette used in Yeturow's tomb is ongoing and will undoubtedly add to future discussion on the production of pigments and their use in the Napatan region. Similarly, Yeturow's tomb is only one part of the larger ritual landscape at Nuri and will require further consideration as work at the site progresses.

Acknowledgements

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