



# ESSEX EGYPTOLOGY GROUP - REVIEW

## May 2022 Meeting

by Margaret Patterson

### “The Narmer Palette” Dr Kathryn E. Piquette

The second in person meeting in 2022 was in May, and the talk was given by Dr Kathryn E. Piquette ( <https://www.ucl.ac.uk/digital-humanities/people/piquette> ). She had visited us at the EEG before back in 2015 (see my write up here: <https://writeups.talesfromthetwolands.org/2015/11/06/new-light-on-the-narmer-palette-with-advanced-digital-imaging-kathryn-e-piquette-eeeg-meeting-talk/>). Her talk then was about the preliminary results of her research on the Narmer Palette – and this talk is an update on what she's done since. In 2018 she had the chance to do further imaging of the palette, and this talk was about the analysis she's done on the more detailed imagery. Piquette said she wanted to present the talk seminar-style with people asking their questions during the presentation, so we went off on some interesting tangents during the meeting.

Piquette began by giving us a bit of context for the project and for the Narmer Palette. The work she'd done in 2015 was a pilot study, and in 2018-2019 she got funding via an ARCE fellowship to do further work on the project. She had 3 months in Cairo to have a much closer look at the palette, and was able to take it out of its museum case more so that she could take more detailed imagery and examine it more closely. This work is part of a wider study where she is looking at the manufacturing process for the 4th Millennium carved palettes as a group. This study includes working towards an understanding of how these objects came into being. She focusing on them as physical objects, not as symbolic pieces of art, and is interested in how the physicality of the objects informs the way the palettes were used and interacted with.

The Narmer palette is a large and intact example of these 4th Millennium carved palettes, and is also the most famous of them so she didn't spend much time introducing it in detail. It is 63.5cm by 42cm, it dates to the time of the unification of Egypt – around 3100 BCE – and was found at Hierakonpolis. Piquette was particularly keen to point out that it is two-sided, and therefore it needs movement of either the palette or the observer to see all the art on it and that this was the case then just as much as it is now.

It's not the only palette that Piquette has been working on in this study, although it was the only one she talked about in detail during this talk. She showed us a list of all the other palettes and pieces of palettes she's looking at (including a fragment at the British Museum and the Two Dog Palette at the Ashmolean Museum). Most of the palettes and fragments are in Egypt, so these were the artefacts that she looked at in her 3 months in Cairo with the ARCE fellowship and they form the core of her work. She was also able to lay out all of the other Cairo palettes on a single table during her work which she thinks was a first. This let her examine them as a group of objects rather than as separate individual pieces. There are similarities between all the palettes, including the material – all are made from siltstone that

has been sourced from the Wadi Hammamat (which is approximately alongside Luxor running towards the Red Sea). Another similarity is that they all have central patch marked out with a circle that is for "grinding".

Piquette said that getting permission to get the Narmer Palette off display four times during her 3 months of work (as well as once before in 2015) was a great privilege. It was found at Hierakonpolis in what is known as the Main Deposit – this represents a sort of "clearing out" of ritual equipment that had got out of date. It probably happened around the end of the 5th Dynasty, and it's all stuff that was once used in the rituals at the site – probably associated with the Early Dynastic temple on the site. Once it was no longer in use it was still sacred so it is buried within the temple grounds rather than being disposed of. Where it lay within the Main Deposit is sadly unknown – the excavators did take notes, but there's not a lot of information on precisely which objects were found where and there are no photos available. She was to come back to this later in the talk as there are some interesting hints on the surface of the palette itself.

Next, Piquette talked us through the art on the Narmer Palette. I only have a photo of the front and that has reflections in the glass case, so for reference you may wish to look at this wikipedia image:

[https://en.wikipedia.org/wiki/Narmer\\_Palette#/media/File:Narmer\\_Palette.jpg](https://en.wikipedia.org/wiki/Narmer_Palette#/media/File:Narmer_Palette.jpg).



Narmer Palette Recto

Margaret Lucy Petterson

The front side (often referred to as the recto) has a central disc delineated by a circle with two intertwined beasts around it. On earlier palettes (not these elaborately carved examples) there is evidence of grinding or crushing of pigments, and the circular disc is assumed to be related to this. However there is no evidence at all for this taking place in the disc on the Narmer Palette. Piquette speculated that perhaps liquids were put on this part? or perhaps it is just a design callback to these earlier objects? One of the themes running through the whole of Piquette's talk was that despite having so much more information she's still at the stage in her analysis where she's generating more (interesting!) questions than answers.

The scenes on the palette are overridingly about the king being victorious, either over enemies or over chaos. It's not clearly if it's documentary (this king defeated these enemies and this palette records the event)

or if it's aspirational (a king is one who is victorious and this palette reminds you of that). There are cow heads at the top on both sides, representing the goddess Bat or Hathor. On the recto in the register below them is a procession including the king which is walking towards a group of 10 headless figures who represent the defeated enemies. Below this scene are entwined serpopards – long-necked beasts often seen in Mesopotamian art. Their necks have collars and leads that are held by men, and this may perhaps have something to do with the unification of Egypt (in form the motif is a bit reminiscent of later unification motifs). Beneath these captured beasts the king is represented as a bull attacking or overcoming a man sprawled in front of him.

On the verso (the back of the palette) there are more scenes of the king being victorious. The main image is instantly recognisable as a scene of the king smiting an enemy, of the sort that is repeated throughout ancient Egyptian history. Above the enemy is a motif that might refer to the Delta, another piece of evidence to suggest this records the unification of Egypt. And at the very bottom are two individuals sprawled on the ground, under control and under the king's feet.

Previous research on the tablet has often focused on the art motifs and the symbolism – the palette is seen as a source of information on things like linguistic and writing development, art development and state formation. Egyptologists also often look at later motifs (which have texts to go with them, so are explained to at least some degree), and then use these to explain similar looking older motifs like those on the Narmer Palette. Piquette said she's trying hard to avoid this in her work, she wants to look at the object on its own terms. As such her questions include things like: how was it made? how was it planned? what tools were used? who commissioned it? She was looking at the whole of the life of the artefact before it became a part of the archaeological record.

Piquette said her main technique is Reflectance Transformation Imaging (RTI), which was very new and high tech when she started using it in 2015 but now it's rather more commonplace. In fact when she did her first imaging 7 years ago she had to jury rig most of her equipment & set up – she brought in a bedsheet to lay the palette on for a white background, and propped her tripod up on buckets to get the camera far enough away to photograph the whole thing. It was even a bit touch and go as to whether the museum would let her do the work – they hadn't really grasped what was necessary and I think thought she'd just take some photos through the case and that was it!

The basics of the technique are that you take a lot of photos where the camera and the object remain in exactly the same place but the lighting is different in every image. The software then stitches them together into a single file. It lets you move the light source around, and different details pop out under different lighting conditions. It's the same effect as if you hold an object and angle it back and forward to catch the light just right.

The images Piquette got on that day in 2015 were really only of two areas on each side of the palette. It was, however, a good proof of concept, and demonstrated what sorts of information could be gained from using this technique. And that is why she was then able to get more funding and permissions for the larger project.

As part of the wider project she's imaged about 20 fragments of palettes in the Cairo Museum. As with her study of the Narmer Palette the broader study focuses on questions about the objects as physical and artificial items. What sort of tools were used, and how were they actually used? How did you manipulate the object as you were carving it? Were they made in workshops and was there any formal training with apprentices learning their craft from masters? In later work she also intends to go on to how these physical constraints and processes affect the iconography.

At this point we had a question from the audience (but I didn't catch who it was) – did Piquette think the shape of the palettes was symbolic or due to the physical qualities of the stone? She said she doesn't have enough data points yet to have a good grasp on this question, but she does think the needs of the stone affect the shape of the finished artifact.

During the study in 2018 Piquette used other techniques as well as RTI. One of these was photogrammetry which she used to get 3D information to let her study things like the depth and direction of the tool marks. Another technique she used was pXRF which is portable X-ray fluorescence. And she said that a key part of the study was getting input from people who have knowledge and skills that she

doesn't. One of these people was Michael Oakley, from the Sussex Egyptology Society – he is an amateur stone carver who has worked on trying to replicate Egyptian objects. This gives him a very practical sense of how the physical materials affect what you can do with them. Another person Piquette mentioned was Ruth Siddell, who is a geologist and who also specialises in pigments.

Piquette next gave us a bit more of an in depth explanation of her primary technique, Reflectance Transformation Imaging – as a reminder before she showed us the images it generates. The basics, as she'd said earlier, are that you take multiple photos where the camera and subject remain in the same place but the light source changes with every shot. You can do this with a handheld flash but there are also dedicated pieces of equipment to make this easier – a sort of hemisphere of flash bulbs that go off in turn synchronised with the shutter. In each photo there are two extra objects – two small shiny balls, like ball bearings. These record the angle of the light, because their reflectance properties are known the software can work out from just the photo where the light source was at the time it was taken. The software then combines all these photos together and the resulting composite image can be manipulated to angle the light from different directions.

The next part of the talk was Piquette showing us first the front and then the back of the palette in the RTI software and demonstrating both what she could do and what she has seen. She started off with the front of the palette and demonstrated the amount you can see just by playing with the light angle (and other settings like contrast). You can see scratch marks pop out at just the right light angle, and also the tool marks as well as the texture of the surfaces (rough & unfinished looking, or smooth, etc). The big challenge is working out which of these marks are part of the manufacture of the object and which are accidental or later markings! Some of the markings look intriguingly like the composition of the piece was altered after it was begun (and Piquette discussed this in more detail later in the talk).

At this point Hannah Pethen asked if the images let one see the circumcision status of the decapitated figures or not – this is used as a way of othering foreigners in the art of later periods and she wondered if it let us know if these defeated enemies of the king were Egyptians or others. I don't think Piquette came to a conclusion about that, but did now move on to look at those figures (and their genitalia) in more detail. The reason she couldn't answer the question was that actually all the decapitated figures (except one) have had their penises removed as well as their heads, and their genitalia are stacked on top of their heads between their feet. Even if their penises had been attached they would not have been visible – the foot position of 8 of the figures suggests they were lying on their bellies. The other two (including the figure who still has his penis attached) seem to have been placed on their backs or sides. This looks like a very definite choice of depiction and Piquette speculated that this may indicated that those two were worthy of more respect, particularly the man who was less mutilated.

Piquette also noted the clear pick marks across the back of one of the figures on his belly. These look deliberate, rather than accidental damage, and Piquette returned to consider their significance later in the talk.

The image Piquette had shown us thus far was one of her overview shots. She's also done several interesting segments in higher resolution as well. Sadly the software can't stitch all of these together into one image to get a seamless higher resolution look at the whole thing. And it would probably use too much memory for the computer to handle it! She didn't show us much more of the front of the palette at this point, but did return once again to the decapitated figures and pointed out that next to those are signs of another figure standing in between the king and the defeated enemies which has been erased. This is an intriguing puzzle to which she has no answers (yet?) – when was it done? why was it done? who might've been represented there?

Piquette now turned to the back of the palette. She pointed out that the king is very detailed – his musculature is drawn in, for instance. He's much more detailed than the other figures – so Piquette speculates that perhaps the king is the commissioner, the person that the carver wants to please the most. There are also signs that the sandal bearer has been re-carved and re-posed at least once. Some adjustments are also visible at the king's back heel.

The tool marks (and properties of the stone) give some indication of what sort of tools were used in production of the palette. This is one of the areas that Michael Oakley contributed to. Piquette said it seems most likely that the tools were made of flint or chert – stone rather than metal, as the copper and bronze that the Egyptians had access to would have been too soft to make the marks that she sees. They also would've used quartzite rubbers to smooth down the surface. The stone tools must have been very fine and precise – to illustrate this necessity Piquette showed us a close up look at the falcon at the top right of the back of the palette. The detail on the plumage of the feathers is astonishing!

Piquette wrapped up this part of the talk by pointing out that what she had just shown us demonstrates very clearly how much more information you can get by looking at these images. More than what you can see just by looking at the object, and much much more than you can find out by looking at the line drawings that Egyptologists are often working from.

After our break for coffee & cake Piquette first put her Director of the Bloomsbury Summer School (<http://www.egyptology-uk.com/bloomsbury/>) hat on to plug their summer courses for this year – I've not done one of the week long courses (<http://www.egyptology-uk.com/bloomsbury/summer-school-programme-2022.htm>) myself but I've done a few of their study days (<http://www.egyptology-uk.com/bloomsbury/study-days.htm>) and I do recommend them, they've always been very interesting and in depth looks at the topic in hand and I'm sure the courses are too.

This second part of the talk covered some of the same ground as the first part but in more depth and in a more formal fashion (rather than Piquette panning around the RTI images showing us the interesting parts in a more informal fashion as she had before our break). She began by giving us an overview of the main points she was going to discuss. Firstly, from her data she is building up a sense of the stages of production of the Narmer Palette, as well as the alterations made to the piece. She has evidence of differences in style, and as she'd said before the break in answer to a question this might be down to having multiple people involved in the production or it might be one person working at different times. She has some indications that there was breakage, and has also found traces of colour! There are also indications of percussive marks – the purposeful striking of the palette during it's life as a used artifact. And she has looked at geological features of the piece of stone it is made from.

Piquette next showed us a photo of the Narmer Palette being handled while her work was going on. Her colleague who was holding it was cradling it almost like a baby. She wanted to emphasise again that this was not a light object – not something you could pick up easily or casually. She quoted Whitney Davis talking about the palette, and saying something like "and then you flip it over and look at the other side" (this is a paraphrase, I didn't copy the quote down verbatim). Piquette said that this is nothing like the actual experience of handling the palette – no "just flipping" going on here at all, it's a substantial and weighty piece. And this is something that most people working on the Narmer Palette haven't been able to directly experience as they are working from photographs and line drawings, and considering it only in terms of the art motifs on the surfaces.

Next Piquette moved on to show us some of the interesting details that she has been able to see on her RTI images. On the front side (with the entwined serpopards) the figure of the king is wearing the red crown. Piquette showed us marks to the left of the crown that look like the figure has been reworked – either his head position was moved or he was originally carved to the left of where he was. There are other marks around this figure that also suggest alterations, and all of these are to the left of the figure. Piquette's interpretation is that the carving process started on the left hand side of the figure. Once it was begun she thinks that the artist showed it to the commissioner and they discussed the composition and negotiated over the details, and then the artist went back to work and altered it.

There are disparities in how "finished" the carving looks. In some places the background and the figures are very smoothed and polished, with rounded edges – looking properly "finished". But then in other areas look much more rough – she showed us a small triangular shape at the top left of the front, which is sometimes interpreted as representing a trap. It still had noticeable chisels mark around it which hadn't been polished out, and the whole thing looked like it hadn't been properly finished off. This raises more questions than Piquette currently has answers for – was it actually unfinished? was it just that this part wasn't terribly important? From her perspective it's also rather useful – from these unpolished tool marks she get can an insight into how the artist actually manipulated the palette while they were working.

The arm of the king (again on the recto side) has a tracery of carefully carved lines across it. These could represent several different features – were they tattoos? or some sort of garment? or is this the details of his musculature? Piquette thinks the latter is the most plausible explanation, and it certainly seems to be the case on the larger figure on the other side. Again she pointed out how much more detail there is on the king than on any of the other figures – he is clearly the most important person on the palette as far as the artist & commissioner are concerned.

Piquette returned now to the decapitated figures we'd spent a while discussing earlier. She pointed out that some of the ones that are probably lying on their bellies have two grooves on their backs. This might be a way of indicating they're on their bellies (alongside the foot position) by delineating the edges of the spine. Or it might be incisions, further mutilations of these defeated enemies. Currently Piquette doesn't have an answer to those questions – as I said earlier it was a theme of her talk, how much her examination of the palette had opened up all sorts of avenues for further work and analysis. Some of these figures also have what might be depictions of clothing – these are the figures who are also less mutilated and laid out differently, so perhaps this is intended as a mark of higher status? Or perhaps it emphasises the ethnicity of the individuals (in the same way that later Egyptian art uses stereotyped clothes and hair styles to indicate where a person originates).

Next Piquette showed us a close up of the tool marks around the jaw & mouth of one of the bovine heads at the top of the palette. These look quite different to the little "trap" motif she'd shown us earlier on – a different style of working, and the marks have been polished out afterwards. She also thinks that the palette was moved between the carving and polishing parts of the process – presumably to get a better angle to work at.

There is evidence on the sprawled figures at the bottom of the reverse side of sketch marks which haven't been smoothed out or finished off. This is one of the pieces of evidence that leads Piquette to propose that the palette as a whole is unfinished. It was clearly "done enough" for the commissioner and for the purposes it was put to afterwards. But she thinks that it ran into a deadline before it was as

finished as the carver must have intended to finish these bits off to make it look as they had envisioned.

Piquette returned to the bovine heads on either side of the top of the palette to look at them in a lot more detail. She used a technique called (I think) Normal Visualisation to help look at the detail on these. I am not 100% sure I got this written down properly in the lecture, but I think the following is right. This technique uses red/green/blue values to visualise the angle of the surface normal at every point on the surface. The surface normal is a line that is perpendicular to the surface, sticking straight up from a point on the surface with a right angle between it and the plane of the surface at that point. As the surface curves the angle of the surface normal changes so if you colour code these right (which the software does) then what you end up with is an image that your brain parses as 3D but has no shadows because it's not actually lit from anywhere.

All four bovine heads on the palette are different, and Piquette took us through them in turn. The cow's head on the right hand side of the verso (the back, with the large smiting scene) of the palette looks quite rough, and its mouth is open and looks much the same as the almond shaped eyes. On the left hand side of the verso the mouth is closed and the line that makes this so looks like it was added after the initial carving. The brow is more detached from the nose and more sculpted, and the line at the top of the brow is polished out. On the recto (the front, with the serpopards) the left hand cow's head looks if anything a bit surprised. The horns are separated from the brow with lines, and the mouth is in a different style to the ones on the back. The brow also looks doubled, suggesting it's been altered. And finally on the right hand side of the recto the brow and eyes are more refined, and the mouth was clearly carved as closed from the beginning.

Piquette said she has so many questions about these cow heads and their differences – she's at the point in her analysis where she can point out and enumerate the differences but has no answers to why they are different. To start off with why are there differences, if this was a piece of work for the king (as other things indicate) then we'd expect it to be planned out carefully in advance and thus consistent. Is it a sign of one person who started on the back and over time got better at representing the motifs? Does this tell us which side they thought of as the back? Piquette said that she leans towards it being one person getting better over time, but it's also possible it's a sign that it was done by two people – a master craftsman doing the two on the front and an apprentice copying those on the back. Or maybe the commissioner looked at the first one and asked for changes like closed mouths! Hannah also suggested that possibly some of the lines on the brows – particularly the one where the horns are distinctly separated off from the head – might be intended to represent a headdress rather than being alterations.

The next feature Piquette discussed was the peck marks on the palette – she'd pointed out these on some of the decapitated figures earlier in the talk and there are also some on the horns of the bovine figures. She thinks these are a deliberate striking of the palette during the time which it was in use. It's possible that they are related to similar marks on smaller palettes – Matt Szafran suggests that these palettes can be used like a bell. He has a video demonstrating this on youtube: <https://youtube.com/shorts/VICq8P2Kg5A?feature=share> . Of course the Narmer Palette is too heavy to be suspended from a string like that, but perhaps there is some similar auditory function even if not the same.

And the last motif we looked at was the large smiting scene on the verso. Piquette pointed out that the king is flat-footed in this scene, and in every other example she's found throughout the sweep of Egyptian history the king is poised on the ball of his back foot as he prepares to swing the mace. It's a noticeably less dynamic image the way it is on the Narmer Palette, and not as powerful a composition. Behind the back foot of the king are marks which suggest that he was

originally carved as up on the ball of his foot but the composition was then changed. If this were the case then it's not clear where his body would've fitted – there isn't space for it to be tilted forward, and it would run into and overlap the other motifs. Piquette wonders if this is evidence that the piece of stone broke after the original composition – so then after the edges had been re-shaped all the motifs would have to be moved to the left and the king re-positioned to fit.

As well as details of composition and changing ideas Piquette's work has also demonstrated what a wide array of techniques the carver(s) used in creation of this piece. She listed them out: chiselling, shaving, filing, scratching, coarse polishing, smooth polishing, striking (post-production?), (deliberate?) breakage. One of the things she's still thinking about in her analysis is what these show about things like how the piece was handled while it was made and what tools were used etc.

Piquette now moved on to tell us a bit about the geological features of the stone that the Palette is made from. Ruth Siddell had pointed out to her the significance of the flaws of lighter coloured material in the stone. These are formed by heat and geological processes that twist and break the stone as well as oxidising parts of it, generating these light spots. Because a whole area of stone will have undergone the same processes then Piquette said she might be able to work out where in the Wadi Hammamat the stone was quarried. She hasn't yet had the chance to do a proper study of this, but she, Ruth Siddell and Michael Oakley had what turned out to be a rather adventurous trip to the Wadi Hammamat to have a first look at the site. They ended up having to drive across the desert, but just in a normal car not a 4x4 – I think she said they had to replace the tyres for the driver afterwards! And then partway there they met a lorry that had got stuck turning a corner and his wheels had sunk into the ground. They left a lot of their food & water for him and promised to call for help once they were somewhere that they could. By the time they got to the site they didn't have much time to do anything in the way of detailed work, but they had a chance to get a feel for the place and see what the stone was like *in situ*.

One of the flaws in the stone the Narmer Palette is made of may've influenced the composition of the piece. There's a light spot right in the middle of the torso of the captive in the large smiting scene. So Piquette wonders if this was a deliberate choice on the part of the carver – it would seem thematically appropriate to have a flaw or defect in the heart of the enemy. And this leads into another question she's interested in – did the stone carvers go to the Wadi Hammamat themselves and choose the piece of stone? Or were they handed a piece and told to use it?

Another avenue for investigation of the materiality of the Narmer Palette is looking at the surface accretions and Piquette told us about a couple of interesting finds. The first of these is that there is yellow pigment in the grooves in the tail of the Nar fish (at the top of the verso side, writing Narmer's name in the *serekh*). She's had some analysis done on this – looking for arsenic, and because there wasn't any then it's not orpiment which means yellow ochre is the most plausible pigment. This is another feature that opens up more questions than it answers – does this mean the palette or at least this part of it was painted? or was it something that was rubbed against it later? was that deliberate or is it just something it was sat next to in the ground for millennia?

The second sort of surface accretion looks like there was termite activity around the palette. Obviously the termites were not eating siltstone, so this suggests the Narmer Palette was in close proximity to something organic which the termites were eating. Piquette wonders if that means that it was kept in, or buried in, a wooden box. And if so, is this why it's in such good condition after millennia of being underground?



Piquette returned again to the weight of the Narmer Palette, which had been one of the themes holding the talk together. It's 14.6kg, which is 2st 4lb – I googled around trying to come up with a comparison because I'm no good at judging weights from just the numbers, and the one that helped me visualise it is that this is the weight of a 3 or 4 year old child (the average three year old is lighter, the average 4 year old is heavier). I know what it was like picking my nephews up at that age, and I wouldn't want to carry them for long even if they weren't wriggling! This was a point that Piquette really wanted to emphasise – the Narmer Palette was a heavy and unwieldy object and that needs to factor into any hypotheses about how it was used and what its purpose was.

This concluded Piquette's detailed look at the evidence and analysis of the palette that she's done so far. We were running quite far over time by this stage so she only gave us a brief taste of the way that this detailed analysis fits into the broader picture. As part of her larger study she is trying to pull together the whole life cycle of these decorated palettes. She showed us a detailed flowchart of what she is putting together of the chaîne opératoire for the palettes – including the quarrying of the stone, the carving, the use of the object (including things like a use/break/repair cycle), the deposition or afterlife of the piece (some palettes are reused much much later in Egyptian history, in the 18th Dynasty, rather than being buried). She's building up a model of how they were produced and used, and then will be looking at what that says about the culture that produced and used them. And then this new knowledge based in the materiality and physicality of the palettes can feed back into other work on the symbolism and motifs of the art – knowing what physical constraints there are on the production means that one can look at the art in terms of how much freedom of choice there was for the placement of motifs.

It was really interesting to get an update on Piquette's work on the Narmer Palette. Seven years ago we really only got a taster for the project, and since then she's done so much more interesting work. I was particularly struck by the discussion of how the Narmer Palette may not have been properly "finished", it humanises it somehow – this ancient carver had a deadline and made something that was good enough, rather than labouring away to make something perfect no matter how long it took.