



# ESSEX EGYPTOLOGY GROUP-REVIEW

## March 2020 Meeting

by Margaret Patterson

### "Bringing the Past to Life: Photographing the Tombs of Ancient Egypt" Paolo Scremin

At the beginning of March Paolo Scremin came to talk to us about his work photographing the Old Kingdom nobles tombs at Saqqara, with the Oxford Expedition to Egypt

(OEE, <http://www.oxfordexpeditiontoegypt.com/about-us.html>). He began by telling us a bit about the OEE - the founding members of the expedition are himself and Yvonne Harpur. They are supported academically (although not financially) by Linacre College, Oxford where they have both been given academic posts, this support helps them to get access to the tombs to photograph as it puts the weight of an academic institution behind them rather than merely being two independent researchers. Although the two of them are the core of the project they do employ other staff to help them when needed in the field.

There are obviously a lot of research teams and expeditions to Saqqara, each of which has a specific focus (we have heard from Ramadan Hussein (part 1 of his talk:

<https://ninecats.org/margaret/blog/2018/02/19/saite-tombs-saqqara-ramadan-hussein-eeg-meeting-talk>

and part 2 of his talk:

<https://ninecats.org/margaret/blog/2018/07/15/tending-dead-rites-texts-and-embalming-workshop-saqqara-part-2-ramadan-hussein-eeg>)

and Vincent Oeters\_ (his talk:

<https://ninecats.org/margaret/blog/2018/09/10/tomb-tatia-saqqara-vincent-oeters-eeg-meeting-talk>) at the EEG in the past). The OEE focuses on the Old Kingdom nobles tombs, recording the chapel wall decorations in the mastabas. He had a cardboard model of the inside of one of these chapels made from his photography as an example for us to look at.

There are two reasons for their documentation of these tombs. The first is to produce books that complement the archaeological tomb reports, with analysis and discussion of the decoration - these are the Egypt in Miniature

( <http://www.oxfordexpeditiontoegypt.com/book-series.html> ) series. Each tomb that they are publishing will be photographed systematically and completely, including high resolution photographs of the interesting small details of scenes. He said that in some cases he might go as small as taking a photograph of a detail that's about 2mm across, although in practice he usually only goes to as small as a 50p piece.

The other reason for documenting the decoration so thoroughly is that the walls are being damaged and so they want to record what is there now before even more vanishes. He showed us several examples of the sorts of damage that is happening. Sadly some of it is damage by people who visit the tombs, some of it just thoughtlessness on the part of the tourists. For instance he showed us two pictures of the hedgehog motif in the tomb of Mereruka where you can see in the more recent one how the stone has turned black due to the number of people who've run their fingers over it. Other damage is more deliberate - chewing gum stuck on reliefs, graffiti scratched over the walls, and even an example where someone has gone in and gouged out the eyes of every single fish on a particular relief! Other damage is environmental - moisture damages the walls (some of it coming from the number of people who enter the tomb), and although it rarely rains when it does there can be an awful lot of water entering the tomb all at once which will damage the stone and any paint present. As well as this bats and birds nest and live in the tombs, and their droppings and feet will damage the reliefs.

Scremin next moved on to tell us about how he does the photography of the tombs. When they started the project in the 1980s it was long before the days of digital photography. The first cameras he used were Pentax cameras, which were completely manual so he didn't need to worry about having enough batteries for what he was planning to photograph. With film cameras you need to put in different film if you want a black & white photograph or a colour one, or if you want prints or slides. Changing film in the field is not a good idea - it takes time, increases the risk of light exposure and lets sand into the camera. So he would take three identical cameras with him to a tomb, each with a different sort of film (black & white, colour, colour slides). Then he would set up one of the cameras and take the shot he wanted, then put the next camera onto the tripod and set all its settings identically and take another shot and then repeat with the next one.

These were not the only cameras he took with him during the days of film photography - he also had another one, Hasselblad, with a larger negative size (which allows effectively higher resolution photography of an area). This camera had another useful feature - the film went into a detachable portion of the camera so was much easier to swap, he could have one camera body set up and then swap in the three films without needing to completely re-set up the shot. And of course he took more than 3 types of film - different conditions require different film types (different ISO etc). Scremin showed us a slide with a list of all the types of film he'd use, there were 14 of them so I didn't try and note them all down! He had to make sure he brought them all with him because he couldn't be sure he'd be able to buy the exact film he needed in Egypt.

Eventually he switched to digital photography - having held out as long as he could, because his workflow with film was one that produced the quality of images they wanted so he didn't want to make changes. They got a grant to buy a Nikon D2X, and at first he used it alongside his film cameras. Once he had his workflow set up, digital was much easier than film - no need for all the different films, each shot could be processed afterwards for the different uses.

Scremin told us that even though there are now very large memory cards available he still uses small cards with 1Gb of storage on them. This is for a couple of reasons - firstly if you lose one or it gets damaged then you haven't lost very many photos. And it meant he didn't need to alter his record system. For every shot he takes he records all the details of what it is, where it is and for film cameras he'd also record all the settings he used on the camera but a modern digital

camera stores all of that in the metadata of the image. As part of his workflow when using a film camera he had a standard record sheet size that held all this information for a single film, and when transitioning to digital he found that a 1Gb card held a similar number of photos so he could keep using the same record sheets.

Another thing that digital makes much easier is working out if you've successfully taken the photo you want - on a digital camera you look on the screen on the back of the camera and know immediately. In the days of film he couldn't tell until he'd processed the film. Obviously this would be much easier to do once he'd left Egypt (better facilities, less sand!) but then he wouldn't be able to reshoot if he hadn't quite got the shot. So as a compromise he processed the black & white film in Egypt and then assumed that if those photos had worked then the rest would be OK too. Scremin showed us a photo of how he used to dry the film after processing - at first he used a jury-rigged polythene tube suspended from the ceiling to keep the sand and dust out. Later he got a grant for a heated drying tube which was much quicker.

Scremin said that he always uses a tripod when taking photographs in the tombs, nothing is hand held. Because of the space constraints flexible legs on the tripod are important, plus he needs extra accessories to get into tight spots. As with films he takes many tripods and tripod heads with him. He has tiny little tripods that let him take photos of scenes very close to the ground, as well as very tall tripods. Scremin told us of having got a new tripod that would go up to 4m, and then needing to search around trying to find himself a new ladder as the one he'd been using wasn't tall enough now! As he has to take every chance he can to take photos, because it's never clear that he'll get access again, he often ends up jury-rigging platforms or other things (like tables with planks sticking off them to support a tripod leg!) to get a shot right then rather than wait till he can find proper scaffolding etc. A bit later in the talk he returned to this theme, and told us a bit more about how he makes sure the photographs are properly oriented and the camera is stable. He uses a spirit level when setting up the camera on the tripod - even now when cameras have built in indicators of whether or not they're level he double checks with his spirit level. And he sets the camera to have the mirror go up 30 seconds before the photograph is taken. This means that he presses the button and the mirror goes up, then everything has a chance to settle down and stop vibrating before the photograph is taken.

Lighting is key to getting good detailed photographs of the scenes. The depth of raised relief is 0.5 to 3mm deep, and using raking light will make it stand out well in a photograph. But this brings its own problems - the wall he's photographing will be dark at one side, and any lines that are in line with the light (as opposed to perpendicular) will seem to vanish. At first he used a normal handheld flash unit, but this wasn't really good enough. What he needed was some sort of light source that was tall so that he could evenly light a large portion of a wall - and in what seems to be a theme with Scremin's discussions of equipment he wasn't able to find a commercially made solution, so he built something himself. Nowadays he has more modern lights which give him more options to change how he is lighting an area. And he's looking into battery powered LED lights which will make him less dependent on mains power when he's photographing in tombs. A little later in the talk Scremin showed us a photograph of one of his Egyptian colleagues sorting out a power supply for his lights - by splicing together live wires into an existing line! He said taking this photo he kept trying to get the man to look up

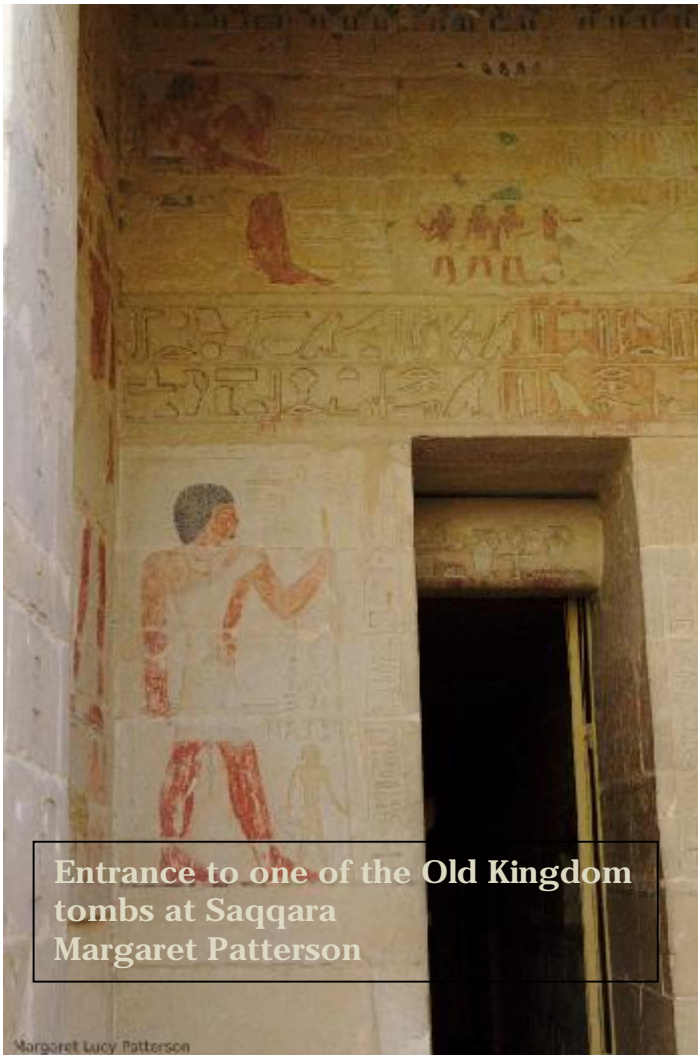
and smile, totally forgetting that he was handling live mains electricity so he wanted to keep his concentration on not electrocuting himself!

There are other considerations with lighting as well, for instance to get the raking effect the light needs to be pointed a little away from the wall so the camera needs shielding from this light - again a jury-rigged solution is to use a piece of cardboard. Another problem is that using raking light means that one side of the wall is brighter than the other. He uses a graduated filter to correct for this as much as he can, but there will be some work needed in post production to even out the light. To minimise this work he tries to have a difference of it being a maximum of twice as bright from one side to the other. In the question & answer session Scremin elaborated on this a bit. He used to have to take meter readings from all around the area he was photographing once he'd set his lighting up - and then adjust it slightly and repeat the process until he had both the raking effect he needed and as even light as possible. This is another thing that digital makes a lot easier - with his experience he can look at the back of the camera and see by eye if the brightness difference is within the range he wants.

Sunlight can interfere with his lighting - particularly if the sun is shining from the opposite side to the one he wants to put his light source. Sometimes this doesn't matter as the ambient light is dim enough that his bright light source drowns it out. But other times, particularly when photographing the reliefs outside tombs, he needs to block out the sunlight somehow. Sometimes a piece of cardboard positioned just right is enough, but sometimes he needs to build a tent around his camera out of black cloth. This does mean it can take a lot of time to set up a shot, so he tries to do it as little as possible.

There isn't just one angle of light or set up that works for every photo, either. For instance, not all reliefs in tombs are carved, some are just painted onto the wall so photographing these needs a different technique. If he used raking light then the texture of the wall would distract from the lines of the relief. So when he photographs these he angles the light source away from the wall and reflects it back on to get a softer more diffuse light which is more direct. And even when using raking light he will try several angles to make sure he's picking out the details in the photograph that Yvonne Harpur particularly wants to discuss in the accompanying text. Just moving the light a bit or lighting from the other side can make a big difference to which bits of the carving stand out and which are less obvious.

Colour is another consideration when taking the photographs. Each shot he does he takes one photograph with a colour scale in the picture and then another immediately after with the same settings without the colour scale. This lets him process all the photographs to look identical and then any differences in colour are real representations of a difference in the reliefs themselves. In the question and answer session at the end he said that one of the problems with this having been such a long running project is that he's used so many cameras over the years and each one produces differently colour balanced photographs. Having all his photographs with colour scales in is the only way he can produce a seamless set of photos for a publication.



Entrance to one of the Old Kingdom tombs at Saqqara  
Margaret Patterson

Margaret Lucy Patterson

After our break for coffee and cake Scremin moved on to telling us about the problems he's encountered over the years photographing tombs, and the solutions he's come up with. The environment of the tombs can provide problems. Often the reliefs are dusty or have spiderwebs on them, so they have to get feather dusters and tidy up before they start. He had a couple of humorous examples of spiderwebs which made the people in the reliefs look like they had beards or underarm hair. Obviously if there's any flaky paint they'll call in conservators rather than touching it themselves. Sand is also a problem, and if too much is blowing into a tomb they'll have to stop work before it gets into the camera or if it's blowing across the area he's trying to photograph. But he said sometimes he doesn't really notice until he's cleaning his equipment bags (which needs doing a lot) and sees

how much sand is getting into them. The floors can also be sandy and full of rubbish. That's a particular problem if he's photographing the reliefs on the outside of a tomb - the doorways can be pretty grim, he was saying they're not just full of rubbish but have also sometimes been used as toilets.

Wildlife can also pose problems. Fleas and other insects are a big constant problem, but there are other more unusual things he's encountered. For instance once when he was setting up to get some photographs he spotted that there was a snake in a piece of grating under a skylight above him! After a bit of inspection they decided that it was trapped and unable to get out, so he took his photographs with this snake above him. Afterwards they did carefully move a bit on the outside of the skylight so the snake could escape. Birds can also nest in parts of the tomb, and he had a rather less tense story about a bird that had nested in the hole above a tomb doorway. It would come and sit while he was taking photographs waiting till he moved so it could get to its nest. So at first he was stopping every so often to let it do this, but after a while it got used to them and would come and go while he was still there.

The Revolution caused fewer problems that one might expect - Scremin told us that they were photographing in Saqqara not long after, and while people had broken into the tombs mostly they'd just stolen things like fire extinguishers and hadn't damaged the reliefs. He did mention a little later in the talk that the statue in the serdab of the tomb of Ty was stolen at this time - but thankfully that was a replica and the real one is safe in a museum. During the immediate aftermath the doors of the tombs were welded shut to make it harder for the looters to get in - of course this made access for Scremin harder as well, but he said that they had

the best co-operation they've ever had when it came to getting the doors opened. The people looking after the tombs had a fresh understanding of how vulnerable they are and so were keen for them to be photographed and documented just in case disaster did strike.

In the 90s and 2000s there were so many tourists that this caused Scremin problems - and also has caused damage to the tomb decoration. Much of the damage is due to the difficulties of large groups of people manoeuvring in the small spaces, and inevitably bags rub up against walls. Scremin showed us some examples where he has taken photos years apart and you can see the blackening of the walls clearly. Tourists also just get in the way, but Scremin said that he is always aware that this might be someone's once in a lifetime chance to see the tombs and so he does his best to accommodate and keep out of the way of tour groups. But given he needs to use scaffolding or ladders and cabling that could be quite difficult - often they had to stop and wait for the tourists to finish their visit. Sometimes he would have permission to close part of the tomb to visitors so that he could get the shots he wanted, but he found that the obvious way of closing off the space with a physical barrier of some kind was counterproductive. In fact the more physical the barrier the more likely people were to push through it to see what was there. On the other hand he found that if he draped a bit of red & white tape across the entrance then it would put people off immediately and they wouldn't come barging in and disrupt his photographs. For the tombs that are particularly big attractions he wouldn't be able to close sections, and so the Tomb of the Birds, for example, took him 8 years to properly photograph because of having to stop and move equipment to let people see the reliefs. And for the Tomb of Mereruka he would take his chance to get some shots in the 20 minutes each morning that he could be there before the tourists - planning his shot out in advance so all he had to do was set up, take it, and clear up.

The physical structure of the tombs also poses its own problems. Scremin said that corners are particularly hard to work with. There are limited places he can put his lights, so it takes more fiddling around with the angles etc to get the effects he wants. You also obviously can't light the whole of the wall from the same angle, which means yet more fiddling with the lights and work in photoshop afterwards so that an entire scene will look the same. Light can also reflect off the wall and bounce back across the scene he's photographing spoiling his raking light effect - that one he solves using black card to absorb rather than reflect the light (attached to modern bits of reconstruction not the original decoration!). As well as light issues, corners also cause him problems with camera stability - the tripod legs can't be opened as wide so it's not as stable and vibrations propagate through his set up more easily.

Photographing statues in serdabs is also difficult - by eye we see both the decoration on the wall and the statue through the slit in focus. But in a photograph the depth of field means that you can have one in focus, or the other, but not both. Scremin told us that in the days before digital he did this by double exposing the film. He'd take one photo with light on one bit but not the other (i.e. light on the wall & not the statue), then take the film off and wind the camera forward and put the film back in. This meant the same piece of film was waiting to be exposed again, so at that point he changed the lighting so the other part was lit and took the other half of the screen on top of the existing shot. He didn't actually say what he does in digital, but it's a lot easier to overlay things in photoshop than on film!

Most of this talk had been about the single photographs of sections of scenes or small details, but Scremin finished up by telling us about the larger scale photographs that he takes in the tombs. These photographs of sections and details need to be contextualised in the eventual publication. They used to do this with epigraphic line drawings - in the past they traced the decoration onto acetates and used those to make the drawings, but they can't do that now. So instead he needs to make overview photographs of the entire tomb to use for this. He does this by taking a lot of overlapping photographs and then stitching them into a single large scale panorama on the computer. As the project operates on a small budget he doesn't have the fancy equipment (like lasers to scan the walls) that other teams have to create these sorts of images and has to do it all by hand/eye himself. The shapes of the tomb can make this difficult - all the photographs need to be taken from the same distance away from the relief so if one wall is irregular he must measure it all up then take care not to move his camera further back than the narrowest point. Each photograph he takes also has a slight but noticeable light gradient due to the raking light (as he discussed earlier in the talk), so that needs to be edited out before he makes his panorama.

Scremin is an engaging speaker and his talk was a really interesting look into how those beautiful photographs that one sees in books are actually produced. The part of the talk on the problems he faces was in some ways quite reassuring - if even the professionals have to spend a lot of time tweaking the precise details of lighting and set up to get a good photograph, then having one's own photos turn out a bit rubbish from time to time isn't unexpected!