

What did people wear at Myos Hormos? Evidence for clothes from the textile finds

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Abstract

The site of Myos Hormos on Egypt's Red Sea coast was an important port involved in the trade to India from the 1st-3rd centuries. Its population consisted of residents and visitors involved in selling, buying, guarding and transporting the precious trade goods, as well as taking part in associated activities to support this trade such as ship repair and provisioning. Its population reflected the extensive trade and transport connections that linked the port to India, the Nile Valley, the east coast of Africa, the Arabian Peninsula, and beyond. The arid conditions and deep rubbish dumps meant there was exceptional preservation of all organic finds including textiles, and these textiles reflect the range of people and activities that went on at the site. This paper presents the fragments of clothes that were left behind in the rubbish dumps at Myos Hormos, which give a valuable insight into the range of garments that people wore.

Keywords

Textiles, clothing, Roman, Egypt, India, trade, Myos Hormos

The Roman port of Myos Hormos, or Quseir al-Qadim as it is known currently, on Egypt's Red Sea coast has been the subject of two major archaeological excavations, by the University of Chicago from 1978-80¹, and from 1999-2003 through a project co-directed by David Peacock². I participated in these later excavations as the textiles, basketry and cordage specialist for materials from both periods of the site, a Roman 1st-3rd century occupation, and a later Islamic settlement from the 11th – 13th centuries. An overview of the textile finds has been published in the excavation report³, and a selection of the Islamic textiles published elsewhere⁴. This paper presents an opportunity to publish more finds from Myos Hormos⁵. It looks at the remains of the garments that people wore which were deposited in large rubbish dumps. The depth of the deposits combined with the arid climate of the desert means that organic finds, including textiles, have been well preserved. These fragments of clothes reveal information about the dress of residents and visitors to the port, with its widespread connections through Egypt, the coastlines of Arabia and Eastern Africa, and further afield to the Middle East and India.

Clothing: an overview

Around half of the Roman textiles (1,136 examples from 2,455) found during the excavations at Myos Hormos were identified as being of suitable quality to have been

¹ Whitcomb and Johnson 1979, 1982.

² Peacock and Blue 2006, 2011a.

³ Handley 2011a.

⁴ Handley 2007; Handley and Regourd 2009.

⁵ Many thanks are due to the reviewers of this paper who offered insightful and extremely helpful comments, and to the excellent work of the editor in supporting the development of the paper

used in clothing⁶. The rest of the examples were fragments of textiles relating to the home (e.g. furnishings, towels), or, mostly, ‘utilitarian’, for example sacking, saddlery, sails, and scraps of coarse fabrics. These divisions are blurred by the reuse of textiles, for example, some of the utilitarian items such as saddle padding included repurposed garment fabrics.

There was a wide variety of people living at Myos Hormos from different cultural and geographic origins, all of whom would have brought textiles in the form of clothes they were wearing and carrying, and possibly trading. There was probably a small resident population involved in more local and regional trade and ship repair work, as well as an indigenous desert population nearby. However, as a seasonal port Myos Hormos must have had many temporary residents. At its busiest times from November/December when the large ocean going ships returned from India, and June/July when they set sail, the port must have been swarming with sailors and traders from India, East Africa and Arabia, mixing with Roman soldiers and merchants arriving from the Nile Valley⁷. Some of these people may have set up home in the port, as there is evidence for an Indian quarter of the port based on pottery finds⁸.

One of the key commodities, alongside exotic spices, that was brought into Myos Hormos were the luxurious textiles, such as silks, from the Far East (e.g. *PME49*)⁹ that were highly prized by the Roman elite. These colourful and highly decorated textiles were destined to be used in clothing and furnishings, however, they passed through the port without leaving a trace in the archaeological record. No examples of this kind of very high quality clothing have survived.

Roman clothing

Luckily, during the 1st to 3rd centuries there is a relatively clear understanding of Roman dress, and plenty of evidence that it was fairly standardised. There are myriad representations of Roman dress through funerary monuments, mosaics and wall paintings, and specialists working in Egypt are particularly lucky to be able to draw upon the assemblage of mummy portraits discovered in western Egypt in the Fayum, which provide a rich body of evidence¹⁰.

Much work has been undertaken into Roman dress using a combination of documentary, pictorial and archaeological sources¹¹. The tunic was the basic article of both male and female clothing. This was a very simple garment, made of rectangular pieces of fabric. During the first and second centuries AD, it was generally made either from two shoulders to knee, or ankle, lengths of fabric sewn across the shoulders and up the sides, or slightly later, one long rectangle of fabric folded in half with a ready-made slit present for the neck hole and sewn up the sides. In both cases, the tunic was decorated with two coloured stripes which ran down the front of the garment, one on either side of the neckline, and usually continued down the back. These stripes ended either in the hem, or in some kind of motif or design, chiefly at

⁶ Handley 2011a.

⁷ Maxfield 1996.

⁸ Peacock and Blue 2011b, p. 346.

⁹ Casson 1989, p. 81.

¹⁰ Walker and Bierbrier 1997.

¹¹ Cardon *et al.* 2011; Croom 2010.

waist height. These contrasted with the background colour of the tunic, which was usually in a range of natural wool colours or white, and made of wool or linen. Archaeological remains demonstrate that these tunics were woven from side seam to side seam, and thus the stripes would be worked horizontally as weft bands, over a very wide warp width, especially if the tunic was made from a single piece that was folded in half at the shoulder. Women also wore a tunic which was always floor length, as well as over garments such as a *stola*, which fell into a 'v' shape around the neckline¹².

Over this garment a variety of mantles, wraps, hoods and cloaks would be worn, depending on the gender and occupation of the wearer, and of course the weather. Mantles or *pallium* were rectangular pieces of fabric worn in a draped fashion in a similar way to togas and had to be held in place by hand. Women in any public situation would always wear a mantle which covered her head and fell to her knees or lower. They were sometimes decorated with woven-in motifs in each of the four corners. Cloaks were distinct from mantles as they were held in place by a brooch, thus leaving the hands free. There were many varieties, and the distinctions are not entirely clear, but the most common were *sagum* which were made in coarse fabrics suitable for the wet and cold weather of northern Europe. These were associated with ordinary soldiers and agricultural workers. They were straight edged, in contrast to other military cloaks such as the *chlamys*, and *paludamentum* which had curved edges. *Lacerna* and *laena* were civilian cloaks, and as such tended to have straight edges. A variety of cloak was the *paenula*, which was partially sewn up to make a cape, often with a hood. Like the *sagum*, they were wet and cold weather wear, made of hardwearing wool fabrics. A shorter version of the *paenula*, the *cucullus* reached down to the elbows¹³.

These detailed descriptions from the documentary, pictorial and archaeological records are a good starting point for understanding the kinds of garments worn by Romans, especially the Roman soldiers, at Myos Hormos. However, this is complicated by the nature of the fragments found, most of which are simply pieces of wool fabric with no pattern or selvedge, which cover a spectrum of qualities of extremely fine, high quality and lightweight, through to coarse, heavy fabrics. The latter can probably be placed in the categories of wet and cold weather outerwears such as *sagum* and *paenula*, and the lightest and finest as women's *palla*, but in between lie a whole swathe of fabrics that could have been used as cloaks for men, mantles for men and women, and tunic fabrics. In all probability, a poor quality women's *palla* would be in a coarser fabric than a high quality men's tunic, so there was no benefit in recording fabrics by quality to suggest use. Work on the Mons Claudianus material demonstrates the overlap between tunic and mantle fragments¹⁴. There is also the question of reuse, for example a tunic found at Mons Claudianus is made from pieces of a *pallium*, retaining the *pallium*'s gamma motifs¹⁵, and of multiple uses, as while the desert is associated with heat, temperatures fall sharply at night, and for those with the most minimal of possessions a warm cloak would have also served as a blanket¹⁶.

¹² Croom 2010, p. 27.

¹³ Cardon *et al.* 2011.

¹⁴ Bender Jørgensen 2004a, p. 73.

¹⁵ Mannering 2000, p. 289.

¹⁶ Sumner 2002, p. 15.

Clothing worn by other people

The clothes of non-Romans who visited and worked at Myos Hormos are harder to identify. They simply may not have deposited their clothes in the same deep rubbish dumps as the Roman's did, or may have reused fragments of textile until they completely disappeared. The indigenous population of the Eastern Desert may have lived in close proximity to Myos Hormos, and while we cannot identify what they wore, it is likely that they were responsible for the production of a range of hardwearing textiles associated with the transport of goods across the desert, a traditional Bedouin activity across the Middle East¹⁷. Their clothing may have reflected this and be based on animal fibre fabrics and skins such as those of camels and goats. People who worked on boats such as the crew on the large ocean-going ships, fishermen, sailors involved in coastal trade, and boat repairers, probably wore minimal clothing on board, due to poverty and the hot climate. They probably had sets of clothes to wear on land, and these must have reflected their diverse origins from India, the Arabian Peninsula and East Africa. All of these places had traditions of textile production based on vegetable fibres, and climates which suited the lightweight garments that these produced.

The finds from Myos Hormos

Roman tunics and fragments of tunics

Just under 1000 of the textiles found at Myos Hormos were made from a plain, slightly weft-faced tabby sheep's wool fabric. These pieces are probably the remains of tunics or light outerwears.

Almost all the wool tabbies are weft faced, that is, with more weft threads per cm than warp threads, which is typical of wool weaves in Egypt. Almost all of the warp thread counts fell between 9 and 18, with most of the weft thread counts between 11 and 29. Sixty-eight percent of the wool tabbies had thread counts that fell between these two parameters. The remaining 32% were either coarser fabrics with the same proportion of warp to weft threads, or had the same warp counts, but with more weft threads, or in other words, finer, more weft-faced fabrics.

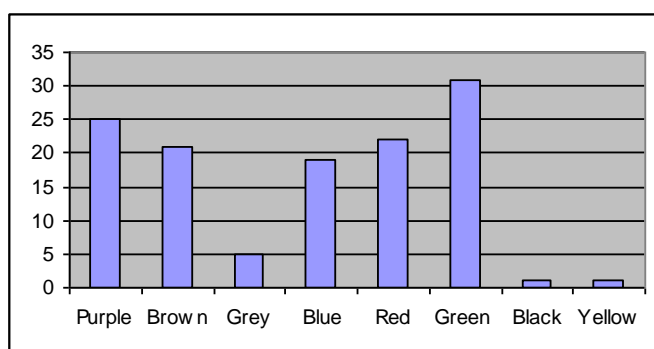
During this period the direction of the spin of the threads making up the textiles gives some indication of origin of production, with Egyptian spinners during this time period spinning in an 's' or clockwise direction. Given that 58% of the fragments had 's' spun threads in both the warp and weft (s/s) (Table 1), it can be surmised that the majority of these fabrics were produced in Egypt.

Spin direction of warp and weft	% total
s/s	58
s/z	21
z/z	16
z/s	2
Sz2/s	2

¹⁷ Sheffer and Granger-Taylor 1994, p. 232.

Table 1 Proportion of wool tabbies, based on the spin direction of the warp and weft threads

About 30% of the s/s wool tabbies had warp thread counts of 10-15, and weft thread counts of 14-26, and while this is a broad range it reflects the quality of an average wool tunic at Myos Hormos, and is similar to the background weaves of the fragments of stripes from tunics. Of the fragments with stripes, 135 fragments survived, with 125 of these examined in detail. These were distinguished from other striped wool fabrics, such as soft furnishings, by qualities such as the background weave, an increased density of weft in the colour stripe, and often the appearance of a ‘shadow’ of denser background weave on either side of the stripe. The most popular stripe colour was green (25%), though closely followed by purple, red, brown, blue, and red at 20, 18, 17, 15% respectively (Graph 1). Other colours were grey, black and yellow, and the total for red included two examples of pink. Almost all of these were on an undyed background, which survives as an off-white or brownish-yellow colour. This undyed background tunic colour is associated with soldiers¹⁸. The range of widths of the stripes was consistent through all of the different colours and measured from about 0.3 cm to 5 cm wide. However, the frequency of widths within this range did vary from colour to colour (Table 2).



Graph 1 Frequency of stripe colours in tunic fragments

Stripe Colour	Average width in cm
Green	1.6
Purple	1.9
Blue	1.7
Brown	2.1
Red	2.3

Table 2 Average width of tunic stripes by colour

Green, the most popular colour¹⁹, is also the narrowest type of stripe, while brown and red are the broadest. Purple is also quite narrow, with a higher average but a smaller range of widths than blue. Dye analysis undertaken on the striped fabrics found in Roman forts in the Eastern Desert and from Quseir²⁰ has found that almost none of the purple was the very expensive ‘true’ purple made from the *murex* species of

¹⁸ Cardon *et al.* 2011, p. 284

¹⁹ In contrast, green was not a numerous colour at Didymoi. Cardon *et al.* 2011 p. 285

²⁰ Cardon *et al.* 2004; Vogelsang-Eastwood 2004.

shellfish, but rather a mixture of blue and red dyes. This is interesting when considered in the context of the background fabrics of the weaves. Taking a weft thread count of 30 or above as a rough indication of a high quality fabric, 46% of purple stripes and 45% of red stripes have high quality background weaves. It may be that there were two sorts of high quality tunic, those with generally broad red stripes, and those with thinner purple stripes. Even though broader purple stripes would have been cheap to produce as they were a mixture of blue and red dyes, the fashion was for thin stripes emulating the stripes made with the more expensive kind of dye.

The spin of the background fabric may give some indication of the origin of the different tunics (Table 3). This is not conclusive data, but it suggests that the purple striped tunics are more likely to have been made outside Egypt (i.e. with higher proportions of ‘z’ spun threads), while the green striped tunics are more likely to have been made in Egypt. It may be that green, blue and brown striped tunics were more ordinary tunics, perhaps made and bought in Egypt, while broad red and narrow purple striped tunics were of a higher quality and status and came from further afield.

	% of s/s	% of s/z	% of z/z
black	1	0	0
blue	18	10	8
brown	13	35	17
green	28	15	17
grey	5	5	0
purple	18	20	42
red	16	10	8
pink	0	5	8
yellow	1	0	0

Table 3 Proportions of fabric type based on spin, by the colour of the stripe: i.e. 35% of all the s/z striped fabrics have a brown stripe. Largest percentages are in bold.

The following examples represent some of the more complete tunic fragments found at Myos Hormos. Notably, the most complete example (Figures 1 and 2) is quite small, with a width extrapolated from the remains of about 52 cm, and is probably an adolescent’s. The smaller size of children’s garments meant that there were fewer opportunities for them to be cut up and reused, unlike larger adult clothes. This is a high quality garment and is the only example at Myos Hormos which is obviously constructed to be worn with a cloak, with twined reinforcing, a decorative cord and a tapestry woven swastika motif to support and highlight the brooch. Tunics decorated with short notched *clavi* with arrowheads or swastikas, under a cloak were fastened by a brooch on the right shoulder as characteristic of soldiers²¹. In contrast, the next example (Figure 3) is coarsely made. The substantial reinforcing of the areas around the shoulders suggest that the person wearing the garment was carrying heavy loads on (presumably) his shoulders, perhaps moving goods around the port.

There are two examples that highlight the tailoring techniques used in creating tunics, ranging from fine piped edging to coarse sewing, and two examples which show that some tunics had separate sleeves that were sewn on. Many tunics were simply folded rectangles with a slit for the neck hole, with the sides sewn up leaving gaps for armholes, or woven to shape including sleeves. The remains of these sleeves in wool

²¹ Cardon *et al.* 2011, p. 294-295.

fabric suggests that traditional patterns were modified at Myos Hormos, perhaps through the influence of more tailored garments worn by non-Romans (see Cat. 18). Most tunics would have been held in at the waist with a belt, and many examples of possible belts have been found, though they are hard to distinguish from the many other straps and belts that would have been used in saddlery and at the port, but one is presented here (see Cat. 7).

1. Large fragment of the front of a tunic, for a young person, decorated with red stripes, and a red tapestry-woven swastika motif. The two broader red stripes extend the length of the tunic, and each has two finer stripes on either side which extend about 20 cm towards the waist. Their ends (and therefore any finishing motifs) do not survive. A blue and yellow cord forms at least a section of the neckline, and supports what would have been the brooch attachment. It is placed on top of a line of twined reinforcement, which runs over the top of another reinforcement, probably in supplementary weft. There is another line of twining 2 cm further round the neckline towards the centre of the body. Both these lines of twining extend about 12 cm towards the waist. This combination of cord, and twined and supplementary weft reinforcement creates a clear area (Figure 2) of support for the brooch pin where there is a small hole, and distributes the strain of the weight of the cloak across the tunic fabric. Two further lines of twining run down the weft selvedge on the right hand side of the tunic, ending at the waist. A short fragment of the blue and yellow cord is attached here on the inside of the garment and may have reinforced the support for a belt loop on the exterior of the tunic.

Sheep's wool, tabby weave, 13 warps/cm, 34 wefts/cm (56/cm in stripe and motif).

Spin of warp 's', spin of weft 's', ('s' in stripe and motif)

Size 69 x 36 cm, 6 x 7 cm

Trench 6HX, context 4080, QAQ no. 02T128, 130

Figures 1 and 2.

2. Fragment of a tunic with a broad red stripe running across the shoulder and a thin stripe running down the front and back. The area on both sides of the neckline is well worn with lines of reinforcing which runs in the direction of the warp.

Sheep's wool, tabby weave, 18 warps/cm, 52 wefts/cm (52/cm in stripe). Spin of warp 's', spin of weft 's' ('s' in stripe)

Size 10 x 10 cm

Trench 6J, context 4040, QAQ no. 01T195

Figure 3.

3. Shoulder of a tunic showing that it was made from two pieces sewn across the shoulder, the stripe does not continue down the back. The remains of a sleeve are present and appears to have been sewn on at the same time as the back. The stripe is 0.5 cm wide in grey wool. The fabric is a fairly even weave with a fine feel.

Sheep's wool, tabby weave, 20 warps/cm, 28 wefts/cm (52/cm in stripe). Spin of warp 's', spin of weft 'z' ('z' in stripe).

Size 7 x 11 cm

Trench 6P, context 4100, QAQ no. 02T385.

4. Fragment of a tunic with a piped seam, probably originally in white with blue piping and stitches. It was perhaps a shoulder seam of a tunic or part of a light cloak.

The fabric is in a very fine, weft faced, yellow wool with Zs3 green piping and line of green running stitches.

Sheep's wool, tabby weave, 18 warps/cm, 30 wefts/cm. Spin of warp 's', spin of weft 's'

Size 11 x 3 cm

Trench 6P, context 4100, QAQ no. 02T334

Figure 4.

5. Fragment of a tunic seam. The corded warp ends are sewn together to make the side seams of a tunic and are held together rather coarsely with rough running stitches.

Sheep's wool, tabby weave, 20 warps/cm, 26 wefts/cm. Spin of warp 's', spin of weft 's'

Size 7 x 25 cm

Trench 6DE, context 4015, QAQ no. 00T415.

[INSERT FIGURES 1, 2, 3, 4]

6. Cuff end of a sleeve with run and fell seams. The fabric has a medium feel and quality.

Sheep's wool, tabby weave, 14 warps/cm, 17 wefts/cm

Spin of warp 's', spin of weft 'z'

Size 10 x 20 cm

Trench 6P, context 4105, QAQ number 02T403

7. Two fragments of a woollen broad belt, 8 cm wide, woven in tabby to this width.

One fragment is cut at one end, and at the other end is pulled into a tongue shape with a series of rough stitches, presumably to make it easier to pull through a buckle.

Sheep's wool, tabby weave, 11 warps/cm, 16 wefts/cm

Spin of warp 'Sz2', spin of weft 'z'

Size 25 x 8 cm, 39 x 8 cm

Trench 6J, context 4040, QAQ nos 01T109, 01T110.

Roman outerwear: cloaks, capes and mantles

Distinguishing the majority of the fragments of Roman outerwear such as cloaks (held with a brooch on the right hand shoulder), mantles and *palla* (which were draped and had to be held in place by hand) is perhaps impossible, especially as large, unseamed fragments of cloth would be very likely to be reused in other garments or in saddlery padding. However, some outerwear fabrics, especially cloaks, are distinguishable through their heavier weight, decoration, or weave structure.

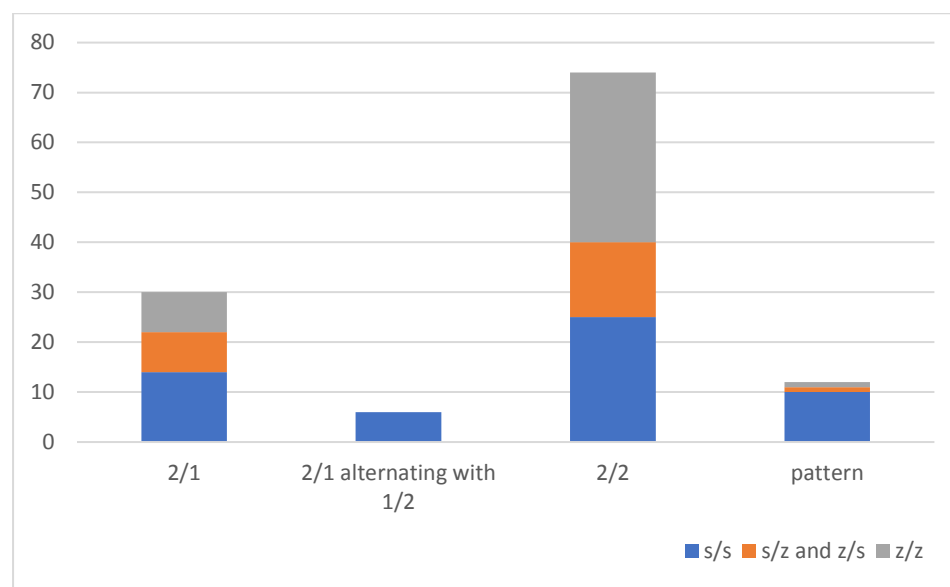
Outerwear in twill weaves

Twill weaves from this period are associated with cloaks worn by soldiers²². The twills are woven in several ways, with variations based on 2/1 twills (under two wefts over one), rows of 2/1 alternating with 1/2 twills to give a striated appearance, and 2/2 twills (under two wefts, over two wefts), and more complicated variations of these known as pattern twills. At Myos Hormos 160 woollen twill fabrics were found and 122 were complete enough to examine in detail. As in the tunic fabrics, the spin of the

²² Bender Jørgensen 2004b; Sheffer and Granger-Taylor 1994.

threads used in creating the twill fabrics can also give some indication of where the textile was produced.

Overall, ‘s’ spun threads were in the majority, suggesting production in Egypt (see Graph 2). However, the most common combination was z/z in an 2/2 twill with 34 examples. The spin direction, and the 2/2 twill structure suggests an origin outside Egypt, and it seems likely that these textiles travelled to Myos Hormos on the backs of soldiers as *sagum*. Of the 34 examples 18 are visually very distinctive, in undyed wool, with an obvious and even diagonal twill pattern due to the thick threads used and a lack of surface felting (see Figure 7, Cat. 13). This type has also been recognised at Mons Claudianus²³ and at Didymoi²⁴. Interestingly, there are six examples of similar even 2/2 twills, but in this case with threads spun in an ‘s’ direction, and this may indicate Egyptian production using the imported examples as a design guide.



Graph 2 Numbers of examples of different types of twill, broken down into warp and weft thread spin direction.

At the high end of the quality spectrum several examples had a very thick feel with well beaten wefts that disguise the twill pattern. The examples are colourful in reds and dark blues, some with fringes shaped into circles (Figures 5 and 6). Similar examples were found at Didymoi²⁵, and these garments would have been worn by higher ranking military personnel or civilians.

Several of the fragments are in the shape of long strips, which reveal something of the lifecycle of cloaks. They tend to drag on the ground and get stepped on or snagged resulting in ragged edges, which were then trimmed to leave long strips. As these were too narrow to be reused, they were thrown away. Several of these have been

²³ Bender Jørgensen 2004b, p. 97 see MC 1068.

²⁴ Cardon *et al.* 2011, p. 340, D98.1431.6

²⁵ Cardon *et al.* 2011.

found at Didymoi, Maximianon, Krokodilô and Mons Claudianus²⁶ and one with evidence of reuse from Xeron²⁷.

[INSERT FIGURE 5 and 6]

8. Fragment of the edge of a dark blue cape with fringed edge. The twill weave is hard to discern as the surface is very felted, however, the fringe runs along a curved edge showing that this was woven to shape. It has been cut off the main garment and discarded. However, a deep fold suggests that this was not a fringe that hung below the garment, but perhaps a way of easily creating a selvedge along the curve, that was first neatened by folding, then later trimmed off. Similar examples have been found at Didymoi²⁸.

Sheep's wool, unknown twill weave, 24 warps/cm, 38 wefts/cm

Spin of warp 's', spin of weft 's'

Size 9 x 6 cm

Trench 6HX, context 4080 QAQ no. 02T117

Figure 5 (top).

9. Fragments of a cloak, constructed in 2/1 twill in red wool with a thick feel. The cloak was woven to a curved shape with the edge secured by twisting about four ends into a Zs4 cord (nb. the corded edge has twisted back on itself and looks like a seam but is not). The three long fragments suggest this was trimmed from a cloak, and the angle at which the warp enters the cord suggests that this would have hung at the sides of the wearer in the original garment. One of the fragments ends with a large self-knot. Cardon *et al.*²⁹ have suggested that densely woven red cloaks are a distinctive type, and these fragments would support this. Comparators with corded edges are found at, e.g., Didymoi³⁰ and held in the British Museum³¹.

Sheep's wool, 2/1 twill, 16 warps/cm, 61 wefts/cm

Spin of warp 's', spin of weft 'z'

Size 14 x 4 cm, 25 x 6, 5 x 3 cm

Trench 6HX, context 4080, QAQ nos 02T139, 140, 141

Figure 6.

10. Fragment of a cloak edge in bright red well-felted 2/1 twill. This section appears to have been cut off and discarded. See comments for no. 9, above.

Sheep's wool, 2/1 twill, 16 warps/cm, 24 wefts/cm

Spin of warp 's', spin of weft 's'

Size 3 x 12 cm

Trench 6L, context 4075, QAQ no. 01T251.

[INSERT FIGURE 7]

²⁶ Cardon *et al.* 2011, p. 324.

²⁷ Cardon *et al.* 2010, Xeron.506.07.1, p. 7.

²⁸ Cardon *et al.* 2011, p. 323-329, D99.3327.1A, D99.4319.5, D2000.1553.15, D99.1418.1.A+B+C, D99.1547.7A+B+C+D, D99.4415.1.

²⁹ Cardon *et al.* 2011, p. 332.

³⁰ Cardon *et al.* 2011, p. 330, D99.3329.8.

³¹ Granger-Taylor 2007, p. 31, British Museum EA68977.

11. Fragment of a cloak in indigo wool in a 2/1 twill weave. The fabric has a medium to thick feel, and has been woven with a curved edge.

Sheep's wool, 2/1 twill, 16 warps/cm, 22 wefts/cm

Spin of warp 's', spin of weft 's'

Trench 6D, context 4070, QAQ no. 01T248

Figure 5 (bottom).

12. Fragment of a cloak in 2/1 twill in an unevenly spun thick brown wool. The fabric has a medium to thick feel. There is cord reinforcement in two places which, when the fabric was folded, probably acted as a brooch attachment.

Sheep's wool, 2/1 twill, 10 warps/cm, 7 wefts/cm

Spin of warp 'z', spin of weft 'z'

Size 10 x 24 cm

Trench 6J, context 4040, QAQ no. 01T164

Figure 7 (bottom left).

13. Fragment of a cloak in a thick natural coloured wool in a distinctive even 2/2 twill with an attachment of a 'tab' of the same material. This is probably a fragment of a *sagum*.

Sheep's wool, 2/2 twill, 6 warps/cm, 7 wefts/cm

Spin of warp 'z', spin of weft 'z'

Size 9 x 6 cm

Trench 6H, context 4030, QAQ nos 00T334-337

Figure 7 (top left).

14. Fragment of a brown wool cloak in a 'striated' twill. There are the remains of a roughly sewn attachment in 's' spun bast fibre. The attachment reinforces a fold in the fabric, and one edge may have been an unseamed one that was folded under and held in place by the knot, which was presumably also the support for a brooch.

Sheep's wool, 'striated' twill (3 wefts of 2/1 twill alternating with 3 wefts of 1/2) 15 warps/cm, 24 wefts/cm

Spin of warp 's', spin of weft 's'

Size 5 x 10 cm, 4 x 7 cm

Trench 5, context 3024, QAQ nos 00T104, 105

Figure 7 (bottom right).

15. Fragment of a natural-coloured wool cloak in a 2/2 very weft-faced twill. The fabric has a fine feel with a tab coarsely sewn on.

Sheep's wool, 2/2 twill, 24 warps/cm, 40 wefts/cm

Spin of warp 's', spin of weft 's'

Size 7 x 9 cm

Trench 6J, context 4040, QAQ no. 01T206

Figure 7 (top right).

Other outerwears

Mantles (*pallium* and *abolla*) were outerwears that were draped around the body.

During this period they were often decorated with woven-in patterns. These include a range of standardised motifs, including 'L' shaped gammas with or without notched ends, and six of these were found at Myos Hormos. The remains of one substantial piece of mantle had been reworked into a hooded cape. This was the largest piece of

Roman textile excavated at Myos Hormos that, although fragmentary, measured over 110 cm in length. It was recycled from two pieces of one mantle, with an extra piece probably in the same fabric, added as a hood. Although it was formed from quite a large piece of fabric, it would have made a short cape, reaching down about 40 cm from the neckline where it was attached to the hood, all the way round. While the edges are very fragmentary it is possible to see where the square corners of the mantle were rounded off to make a shape that draped better. The schematic diagram of a hooded cloak in Cardon *et al.*³² shows this for a cape that would hang further down the arms, and additional examples of hooded semicircular cloaks have also been published³³, drawing on Hero Granger-Taylor's work³⁴. As in the Mons Claudianus example of a mantle reworked into a tunic³⁵, no attempt appears to have been made to place the gamma decoration symmetrically in the reworked garment; one was placed near to the neck, the other half way round the body under the arm.

The other example of a mantle is a much lighter weight wool fabric with broad stripes and a fringe comparable to a scarf in the Whitworth Gallery³⁶. Its narrower width and lighter weight would make it suitable for a head covering, so may have been worn by a woman.

[INSERT FIGURES 8 and 9]

16. Hooded cape, constructed from three fragments of one mantle decorated with notched gamma mantle and reassembled into a cape, sewn together in coarse stitches. The two gamma decorations are in green wool, woven with a paired warp which extended into the background weave to create a shadow effect. There are no intact edges or hems, but it appears that the square corners of the recycled mantle have been shaped into a curve, and there are two coarsely sewn repairs.

Sheep's wool, tabby weave with tapestry decoration, 19 warps/cm, 20 wefts/cm (14/cm in decoration)

Spin of warp 's', spin of weft 's' ('s' in decoration)

Size 110 cm x 40 cm

Trench 8, context 8000, QAQ no. 01T40

Figure 8.

17. Fragment of a mantle, in wide red and blue stripes, fringed, medium quality. The weft is paired in the background weave and single in stripe, producing a denser colour.

Sheep's wool, tabby weave, 9 warps/cm, 20 wefts/cm

Spin of warp 'z', spin of weft 'z' ('z' in stripe)

Size 15 x 13 cm

Trench 6H, context 4030, QAQ no. 00T325, also referred to as T0039 in the excavation archive

Figure 9.

³² Cardon *et al.* 2010, figure 7.

³³ Cardon and Cuvigny 2011.

³⁴ Granger-Taylor 2007 NO PAGE or FIG REF NEEDED

³⁵ Mannering 2000, p.289.

³⁶ Pritchard 2006, p. 117, T.9869.

Non-Roman clothing

There are a few examples of clothing that the non-Roman visitors and residents of Myos Hormos wore. Some of them would have been wearing garments made of blue and white checked or plaid linen and cotton fabrics. Two pieces were found in the Chicago excavations at the site³⁷, but they are more frequently found at the port site of Berenike³⁸ further south than Myos Hormos (and not at all at the inland sites in the Eastern Desert). It may be that these represent a shift in local clothing style in progressively warmer climates. However, they would also be suitable as clothing worn by sailors, and thus could be the clothing worn by people from further down the East African coast, or from the Arabian Peninsula, or India. The 'z' spun cotton fabric suggests that the origin of the textile may have been India³⁹, although the garment need not have been worn by an Indian.

18. Fragment of a fitted upper body garment, from either the shoulder area or possibly from under the arm. It is seamed with neat run and fell stitches.

Cotton fibre, tabby weave, 26 warps/cm, 16 wefts/cm

Spin of warp 'z', spin of weft 'z'

Size 21 x 15 cm

Trench 6P, context 4105, QAQ no. 02T410.

19. Fragment of a garment fabric in blue and white plaid, four shots of blue and four shots of natural in both directions. The fabric is of poor quality.

Cotton fibre, tabby weave, 11 warps/cm, 10 wefts/cm

Spin of warp 'z', spin of weft 'z'

Size 6 x 2 cm

Trench 6P, context 4105, QAQ no. 02T394

20. Fragment of a garment fabric in blue and white plaid. The fabric has a medium feel, and is of medium-poor quality.

Cotton fibre, tabby weave, 8 warps/cm, 14 wefts/cm

Spin of warp 'z', spin of weft 'z'

Size 9 x 3 cm

Trench 6P, context 4105, QAQ no. 02T395.

There is one very interesting example of a tailored cotton garment at Myos Hormos. It is a fragment of a pair of trousers, consisting of an ankle cuff, one side of a leg extending to the groin, where the tailoring around the crotch can be seen (Figure 10). It is made from a good quality white cotton, with a slightly thick, soft feel. Its dimensions show that this was an article of children's clothing. It is so strikingly different from Roman garments that it is worth repeating the differences here: it is in cotton (not linen or wool), it is extremely well tailored to a complex design (rather than simply seamed or shaped on the loom) and created a garment which fell in baggy folds to be caught at the ankle.

[INSERT FIGURE 10]

³⁷ Vogelsang-Eastwood 2004, p. 282 Cat.no. 78/23, p.523 Cat. No.82/32.

³⁸ Wild and Wild 2005.

³⁹ Wild 2013.

Tailored trousers of this type are associated with residents of the Middle Eastern Parthian Empire who were well known for their baggy, flowing trousers inspired by Central Asian traditions. They were held by decorated cuffs at the ankle and wrist⁴⁰, and short jackets tailored with vents on the bottom edge. Both the trousers, which could be combined with boots, and the jacket style, were developed to facilitate mounting and riding horses⁴¹.

Traders from Palmyra, located on the boundary of the Roman and Parthian empires were active in the Eastern Desert in Egypt, even creating a foreign colony in Coptos, the key port on the Nile⁴², and Palmyrene soldiers were garrisoned at the fort at Didymoi⁴³. They can be traced on the coast through the two Palmyrene inscriptions found at Berenike, and a sherd of Palmyrene pottery with an inscribed in Palmyrene Aramaic script found at Myos Hormos⁴⁴. This fragment suggests that merchants were travelling away from colonies with their families, including children. The garment fabric (a 'z' spun cotton) may have originated from several places that the Palmyrenes were in contact with, including India, where cotton fabrics of this quality are known to have been produced.

[INSERT FIGURE 11]

21. Fragment of loose fitting trousers, comprised of gusset, leg and ankle cuff from one leg. As shown on Figures 10 and 11, Pieces 1 and 2 were sewn together, then 3, which is slightly gathered, was added. Four was sewn to this block with a new thread. Next it was stitched to 5 along the length of the trouser leg. Five was then sewn to the side of 2. The cuff (6) was added to pieces 4 and 5. Note that in the figures the cuff is inside out. The raw edges of the trouser and cuff were turned and attached and sewn flat with a double row of running stitches. The other raw edge of the cuff was then turned and oversewn. This appears as a row of diagonal stitches on the right side of the cuff in Figure 10.

The preservation of the fragment shows that the trouser was worn with a boot, which protected the cuff. There is a coarsely sewn repair along the line of the seam near to the cuff. The fragment has been knotted, suggesting some form of reuse before it was discarded.

Cotton fibre, tabby weave, 30 warps/cm, 18 wefts/cm

Spin of warp 'z', spin of weft 'z', spin of sewing thread 's'

Size approximately 35 cm x 23 cm

Trench 6D, context 4070, QAQ no. 01T237

Figures 10 and 11.

Headwear

There are only two identifiable examples of headwear in the textile assemblage, as well as a previously published example of a straw hat⁴⁵. One is a fairly coarse example of the remains of a simple hood (Figure 12), possibly just two squares of fabric sewn together on two edges. The other piece is more interesting. The shaping of

⁴⁰ Curtis 2000; Goldman 1994; Widengren 1956.

⁴¹ Beck *et al.* 2014.

⁴² Casson, 1989, p. 34.

⁴³ Cardon *et al.* 2011, p. 294,

⁴⁴ Tomber *et al.* 2011.

⁴⁵ Handley 2011b, Cat. No. 105.

two crescents (Figure 13 for one example) suggests that they were ear flaps from a hat, while their preservation suggests, unusually, that these crescents were protected rather than hanging free. This points to these fragments being part of a protective padded hat that went under a Roman helmet⁴⁶. A much more elaborate cap found at Didymoi shows similar patterns of wear⁴⁷. The distinctive basket weave of the fabric (paired threads in both warp and weft) highlights a use for this fabric, usually identified as a packaging or saddle packing textile.

[INSERT FIGURES 12 and 13]

22. Two fragments of what may have been a ‘hood’, with under-chin ties at the corners.

Sheep’s wool, tabby weave, 10 warps/cm, 18 wefts/cm

Spin of warp ‘s’, spin of weft ‘s’

Size 14 x 10 cm, 12 x 8 cm

Trench 6J, context 4031, QAQ nos 01T279, 280

Figure 12.

23. Fragments of a hat worn under a helmet. Two crescent shapes, each ending in a small tassel. Each shape is made from one piece of fabric, folded and seamed along the long edge of the crescent shape, then reversed, with the fabric pushed through to make the pointed end, which was reinforced with a small tassel.

Bast fibre, full basket weave, 10 warps/cm, 18 wefts/cm

Spin of warp ‘s’, spin of weft ‘s’

Size 8 x 11 cm

Trench 6HX, context 4085, QAQ no. 02T161

Figure 13.

Underwear

Two examples of underwear were found, both of them very simple long triangles (Figure 14). The larger piece, which presumably belonged to an adult, is made from a ‘z’ spun cotton, suggesting that the origin of the fabric was India. Other ‘z’ spun cotton fabrics found at Myos Hormos are generally sails⁴⁸, which have a slightly coarser texture than this example, so this may be a fabric designed to be used as a garment, rather than a repurposed scrap of sail. The other example is much smaller, half the size, and is more likely to have been worn either by a woman as sanitary protection, or by a child as a nappy. Again this is a slightly higher quality of fabric than other bast fabrics at the site, and the remains of both a seam and a decorative stripe in a denser weave of the original fabric suggest that this was a reused piece of fabric such as a towel. Granger-Taylor suggests that a much-mended fragment of towel found in a cache of women’s personal possessions at the Cave of Letters was used as a sanitary towel⁴⁹.

[INSERT FIGURE 14]

⁴⁶ Sumner 2003, p. 37.

⁴⁷ Cardon *et al.* 2011, p.345, D99.2511.4.

⁴⁸ Handley 2011a.

⁴⁹ Granger-Taylor 2006, p. 124.

24. Loincloth. This is a very long triangle shape, and a suitable size to be worn by an adult. The fabric is an even weave in very fluffy cotton thread, with a medium to thick feel, that is well beaten. It is roughly sewn together with Sz2 cotton thread. There is a small piece of twine attached which may be the remains of the waist cord.

Cotton fibre, tabby weave, 12 warps/cm, 12 wefts/cm

Spin of warp 'z', spin of weft 'z'

Size 50 x 7.5 cm

Trench 6P, context 4100, QAQ no. 02T350

Figure 14 (bottom).

25. Loincloth. This is a long triangle shaped piece of cloth, probably child sized. The fabric is warp faced, with a medium to fine feel, and is high quality. There is a self stripe of 4 weft shots. It has been reused from another garment as it incorporates a seam of 2 simple weft selvages sewn together. The piece has been folded to make it narrower.

Linen fibre, tabby weave, 30 warps/cm, 20 wefts/cm

Spin of warp 's', spin of weft 's'

Size 8 x 27 cm

Trench 6P, context 4105, QAQ no. 02T412

Figure 14 (top).

Footwear

[INSERT FIGURE 15]

The one small sock published here (Figure 15) is the only example of single needle knitting or *nålebinding* and the only sock found at the site. Other footwear found include a child's shoe, a fragment of a boot, and numerous leather parts of sandals⁵⁰, as well as two examples of rope sandals, and coarsely sewn rope sandal soles, probably used to protect feet in the long march across the hot desert sand⁵¹.

26. Child's sock constructed in *nålebinding* finished at the opening with a multiple thread. It is constructed in yellow, brown, red, and green stripes. The yellow wool is 's' spun, 0.06 cm wide; brown 'Zs2' 0.05 cm; red 's', 0.06 cm; green 's' 0.06 cm. In two pieces but complete.

Sheep's wool, *nålebinding*, 5 rows per cm, 7 stitches per cm

Size 11 cm x 5 cm

Trench 6GH, context 4095, QAQ no. 02T61

Concluding discussion

So what did people wear at Myos Hormos? In terms of Roman dress, there is a picture from the archaeological remains of a standardised soldier's outfit based around a pale coloured tunic decorated with green, brown or blue stripes, combined with a fairly poor quality twill-woven cloak. Other Romans, including women, would have had higher quality tunics with red or purple stripes, and better quality, and more brightly coloured cloaks and mantles. In contrast, those involved in more physical labour were wearing Roman tunics that were heavily worn and reinforced to make them substantial enough to be used in carrying heavy loads around the port, and their smarter outfits, if they had them, were perhaps recycled items of clothing.

⁵⁰ Phillips 2011.

⁵¹ Handley 2011b

These Roman outfits of wool cloth contrasted with the lighter fabrics and tailored garments of others at the port. The cotton trousers whose stylistic origins are in the horse riding communities of Central Asia are a very clear reminder of how visually distinct different groups of people were. Trousers of a similar style worn by adults would have been made from more richly decorated, higher quality fabrics than the white cotton pair discovered. In contrast, many inhabitants would have been distinct by their lack of clothing. Sailors probably did not wear much beyond a loincloth or waist wrap while on ship, and probably had minimal further garments to wear on land. It seems likely that shirt-like blue and white garments in coarse cotton fabrics would have been part of these outfits, and similar quality fabrics were perhaps used as waist wraps in combination with these.

The trousers, small size garments, and tiny sock are also an indication of the presence of children at Myos Hormos. The possibility remains that some of these fragments arrived as packing material in saddles rather than as clothing, and perhaps some were worn by adolescents travelling with adults, but it is hard to believe that the tiny sock was not lost at Myos Hormos from a tiny foot. The town may have been filled each year with temporary residents drawn from a wide geographic area, but this small discovery highlights the role of family life amongst this transient population.

References cited

Beck *et al.* 2014 = U. Beck, M. Wagner, X. Li, D. Durkin-Meisterernst, P. Tarasov, *The invention of trousers and its likely affiliation with horseback riding and mobility: A case study of late 2nd millennium BC finds from Turfan in eastern Central Asia*, “*Quaternary International*”, 348, 2014, pp. 224-235.

Bender Jørgensen 2004a = L. Bender Jørgensen, *Team Work on Roman Textiles: the Mons Claudianus Textile Project*, in C. Alfaro, J.P. Wild, B. Costa, eds., *Purpureae Vestes*, Valencia, 2004, pp. 69-75.

Bender Jørgensen 2004b = L. Bender Jørgensen, *A Matter of Material: Changes in Textiles from Roman Sites in Egypt's Eastern Desert*, “*Antiquité Tardive*”, 12, 2004, pp. 87-99.

Bender Jørgensen 2011 = L. Bender Jørgensen, *Clavi and non-clavi: Definitions of various bands on Roman textiles*, in C. Alfaro, ed., “*Purpureae Vestes*”, III, Naples, 2011, pp. 75-82.

Cardon and Cuvigny 2011 = D. Cardon, H. Cuvigny, *New Evidence and comparative study on fragments of hooded semicircular cloak found in the Eastern Desert of Egypt*, “*Archaeological Textiles Newsletter*”, 52, 2011, pp. 21-29.

Cardon *et al.* 2010 = D. Cardon, A. Bülow-Jacobsen, H. Cuvigny, *Recent textile finds from Dios and Xeron*, “*Archaeological Textiles Newsletter*”, 50, 2010, pp. 2-13.

Cardon *et al.* 2011 = D. Cardon, H. Granger-Taylor, W. Nowik, *What did they look like? Fragments of Clothing Found at Didymoi: Case Studies*, in H. Cuvigny, ed., *Didymoi. Une garnison romaine dans le desert Oriental d’Egypte I. Les Fouilles et le Materiel*, Cairo, 2011, pp. 272-395.

Cardon *et al.* 2004 = D. Cardon, J. Wouters, I. Vanden Berghe, G. Richard, R. Breniaux, *Dye Analysis of Selected Textiles from Maximianon, Krokodilô and Didymoi (Egypt)*, in C. Alfaro, J.P. Wild, B. Costa, eds., *Purpureae Vestes*, Valencia, 2004, pp. 145-154.

Casson 1989 = L. Casson, *The Periplus Maris Erythraei*, Princeton, 1989.

Croom 2010 = A. T. Croom, *Roman Clothing and Fashion*, Stroud, 2010.

Curtis 2000 = V. S. Curtis, *Parthian Culture and Costume*, in J. Curtis, ed., *Mesopotamia and Iran in the Parthian and Sasanian Periods*, London, 2000, pp. 23-34.

Goldman 1994 = B. Goldman, *Graeco-Roman Dress in Syro-Mesopotamia*, in J. L. Sebesta, L. Bonafante, eds., *The World of Roman Costume*, Madison, 1994, pp. 163-181.

Granger-Taylor 2006 = H. Granger-Taylor, *Textiles from Khirbet Qazone and the Cave of Letters, Two Burial Sites near the Dead Sea: Similarities and Differences in Find Spots and Textile Types*, in S. Schrenck, ed., *Textiles in Situ: Their find spots in Egypt and neighbouring countries in the first millennium CE*, (Riggisberger Berichte 13), Riggisberg, 2006, pp.113-130.

Granger-Taylor 2007 = H. Granger-Taylor, *Weaving Clothes to Shape in the Ancient World 25 years on: Corrections and Further Details with Particular Reference to the Cloaks from Lahun*, *Archaeological Textiles Newsletter*, 45, 2007, pp. 26-35.

Handley 2011a = F. Handley, *The Textiles: A preliminary report*, in D. Peacock, L. Blue, eds., *Myos Hormos - Quseir al-Qadim. Roman and Islamic Ports on the Red Sea. Volume 2: Finds from the excavations 1999-2003*, (University of Southampton Series in Archaeology 6/BAR International Series 2286), Oxford, 2011, pp. 321-334.

Handley 2011b = F. Handley, *Matting, basketry and cordage*, in D. Peacock, L. Blue, eds., *Myos Hormos - Quseir al-Qadim. Roman and Islamic Ports on the Red Sea. Volume 2: Finds from the excavations 1999-2003*, (University of Southampton Series in Archaeology 6/BAR International Series 2286), Oxford, 2011, pp. 289-320.

Handley 2007 = F. Handley, *"I have bought cloth for you and will deliver it myself": Using documentary sources in the analysis of the archaeological textile finds from Quseir al-Qadim, Egypt*, in M. Hayward, E. Kramer, eds., *Textiles and Text: Re-establishing the Links between Archival and Object-based Research*, London, 2007, pp. 10-17.

Handley and Regourd 2009 = F. Handley, A. Regourd, *Textiles with Writing from Quseir al-Qadim – Finds from the Southampton excavations 1999-2003*, in L. Blue, J. Cooper, R. Thomas, J. Whitewright, eds., *Connected Hinterlands. Proceedings of Red Sea Project IV Held at the University of Southampton September 2008* (BAR International Series 2052), Oxford, 2009, pp. 141-153.

- Mannering 2000 = U. Mannering, *Roman Garments from Mons Claudianus*, in D. Cardon, M. Feugère, eds., *Archéologie des Textiles des Origines au Ve Siècle*, Montagnac, 2000, pp. 283-290.
- Maxfield 1996 = V. Maxfield, *The Eastern Desert forts and the army in Egypt during the Principate*, in D. Bailey, ed., *Archaeological Research in Roman Egypt. The Proceedings of the Seventeenth Classical Colloquium of The Department of Greek and Roman Antiquities, British Museum, held on 1-4 December 1993*, Ann Arbor, 1996, pp. 9-19.
- Peacock and Blue 2006 = D. Peacock, L. Blue, eds., *Myos Hormos - Quseir al-Qadim. Roman and Islamic Ports on the Red Sea. Volume 1: Survey and Excavations 1999-2003*, Oxford, 2006.
- Peacock and Blue 2011a = D. Peacock, L. Blue, eds., *Myos Hormos - Quseir al-Qadim. Roman and Islamic Ports on the Red Sea. Volume 2: Finds from the excavations 1999-2003, (University of Southampton Series in Archaeology 6/BAR International Series 2286)*, Oxford, 2011.
- Peacock and Blue 2011b = D. Peacock, L. Blue, *Overview: The trade and economy of Myos Hormos and Quseir al-Qadim*, in D. Peacock, L. Blue, eds., *Myos Hormos - Quseir al-Qadim. Roman and Islamic Ports on the Red Sea. Volume 2: Finds from the excavations 1999-2003, (University of Southampton Series in Archaeology 6/BAR International Series 2286)*, Oxford, 2011, pp. 345-351.
- Phillips 2011 = J. Phillips, *The Leather*, in D. Peacock, L. Blue, eds., *Myos Hormos - Quseir al-Qadim. Roman and Islamic Ports on the Red Sea. Volume 2: Finds from the excavations 1999-2003, (University of Southampton Series in Archaeology 6/BAR International Series 2286)*, Oxford, 2011, pp. 135-153.
- Pritchard 2006 = F. Pritchard, *Clothing Culture: Dress in Egypt in the First Millennium AD*, Manchester, 2006.
- Sheffer and Granger-Taylor 1994 = A. Sheffer, H. Granger-Taylor, *Textiles from Masada*, in J. Aviram, G. Foerster, E. Netzer, eds., *Masada IV, the Yigael Yadin Excavations 1963-1965 Final Reports*, Jerusalem, 1994, pp. 149-282.
- Sumner 2002 = G. Sumner, *Roman Military Clothing (1) 100 BC - 200 AD*, Oxford, 2002.
- Sumner 2003 = G. Sumner, *Roman Military Clothing (2) AD 200-400*, Oxford, 2003.
- Tomber *et al.* 2011 = R. Tomber, D. Graf, J.F. Healey, C. Römer-Strehl and G. Majcherek, *Pots with writing*, in D. Peacock, L. Blue, eds., *Myos Hormos - Quseir al-Qadim. Roman and Islamic Ports on the Red Sea. Volume 2: Finds from the excavations 1999-2003, (University of Southampton Series in Archaeology 6/BAR International Series 2286)*, Oxford, 2011, pp. 5-10.
- Vogelsang-Eastwood 2004 = G. Vogelsang-Eastwood, *The Quseir al-Qadim Textiles 1978-1982*, Unpublished manuscript, Leiden, 2004.

Walker and Bierbrier 1997 = S. Walker, and M. Bierbrier, *Ancient Faces. Mummy Portraits from Roman Egypt*, London, 1997.

Whitcomb and Johnson 1979 = D.S. Whitcomb, J.H. Johnson, *Quseir al-Qadim 1978. Preliminary Report*, Cairo, 1979.

Whitcomb *et al.* 1982 = D.S. Whitcomb, J.H. Johnson, *Quseir al-Qadim 1980. Preliminary Report*, Malibu, 1982.

Widengren 1956 = G. Widengren, *Some Remarks on Riding Costume and Articles of Dress among Iranian Peoples in Antiquity*, “*Studia Ethnographica Upsaliensia*”, 1956 11 pp. 228-276.

Wild 2013 = J.P. Wild. The First Indian Carpets – a View from Berenike, in A. De Moor, C. Fluck, P. Linscheid, eds., *Drawing the Threads together: Proceedings of the 7th conference of the Research Group ‘Textiles from the Nile Valley’*, Tiel, 2013, pp. 74-85.

Wild and Wild 2005 = J.P. Wild and F. Wild, *Rome and India: Early cotton textiles from Berenike, Red Sea coast of Egypt*, in R. Barnes, ed., *Textiles in Indian Ocean Societies*, London, 2005, pp.11-16.