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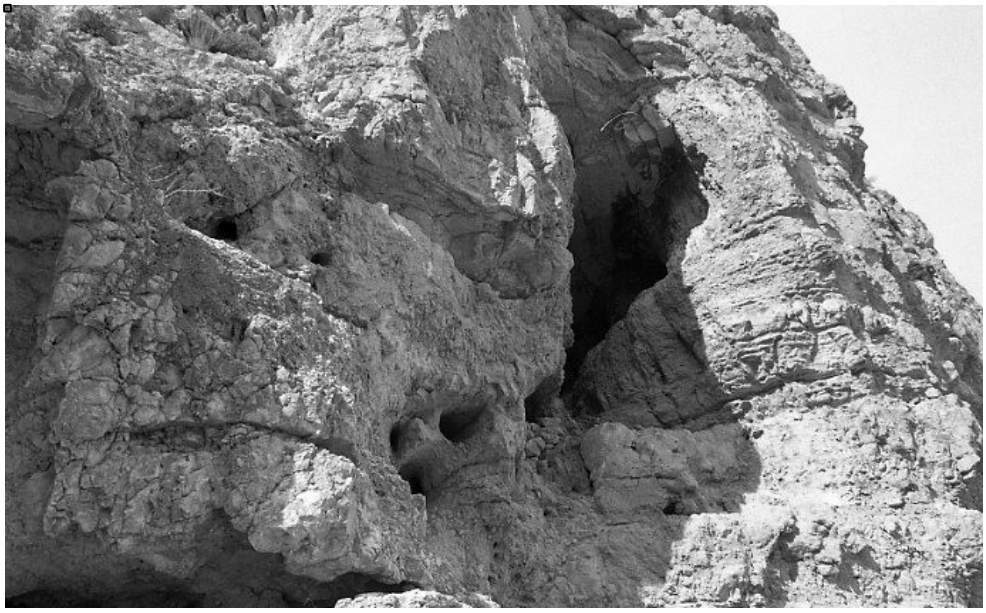


Figure 1. Cave 38.

The artifacts from Cave 38 (Fig. 1) were discovered in the course of excavations conducted in 1993 in the Qarantal cliff above Jericho on behalf of the Israel Antiquities Authority. They will be exhibited at Hecht Museum in Haifa from April 2013.

Preserved by the arid climate of the Judean Desert, the 768 textiles, 34 basketry fragments, and 93 cordage fragments of the Cave display a remarkable variety of materials and techniques, suggesting diverse geographical origins. Most significant are the silk fragments made with various techniques, some of them requiring sophisticated looms. The dating of the material from Cave 38 to the early ninth to late thirteenth centuries CE, based on the archaeological context, has been confirmed by Carbon-14 analysis.

A great deal can be learned from the textiles about the people who used them: about their social, economic, political situation, and about the shapes and materials of their garments.

Many developments in the Early Medieval period can be observed by studying the textiles. Some of these developments took place in foreign countries – in Persia, India, China, and Europe. Others were probably local but are thus far unique to this site, such as the combination of a linen warp and cotton weft.

The cave consists of several connected spaces. The textiles were found only in one space (Area F) which was used as a storage for them.

A few other medieval textile assemblages from the southwestern Levant have been discovered – for example, at ʻAvdat (Baginski and Shamir 2001a), at Kasr el-Yahud (Shamir 2005), in Judean caves, and at Caesarea (Baginski 1996). We have also published textiles from Coral Island (Jazirat Faraʻun; Baginski and Shamir 1998). However, none of these assemblages is as rich and diverse as the one in Cave 38.

The Textiles

A total of 759 textile fragments were analyzed and catalogued. They are torn, cut, and patched, and many have been reused, sometimes more than once. Many are composed of several different textiles or of several pieces of the same materials stitched together. Others were cut into rectangles, odd shapes, or strips. All are small and worn.

Some of the reused textiles are of high-quality materials and designs used, including fragments of once splendid silk fabrics, which only the upper classes could afford. Most of them were reused for decorations. It can be assumed that most of these fragments were parts of clothing such as tunics, although no complete garments were found. Others were cut into strips, rectangles, and triangles, and they may also have been parts of garments. Sometimes several reused fragments and/or materials stitched together to make a new garment or to decorate it. Others could be recognized as bags, wrappers, and strips for tying.

Materials

The largest group of textiles, 285 out of 759, are made of cotton. The spin direction of the cotton is mostly Z, same as in the cotton finds from Fustat, Quseir al-Qadim and Jasirat Fara`un in Egypt.

All cotton fragments are woven in various forms of tabby. Most are undyed There are some patterns of blue and undyed checks, bands and selfbands.

The second largest group, almost equal to cotton, 261 out of 759, is made of linen. Most of them are S-spun. This is in accordance with the Fustat linens and those of Qasr Ibrim in Egypt but contrary to the finds from Quseir al-Qadim and Jasirat Fara`un where most of the linen was Z-spun.

The most frequent weaving technique of the linen fragments is tabby. Most are undyed; others are decorated with various patterns, techniques and materials.

We will focus especially on the silk textiles.

Linen Decorated with Silk Tapestry Bands

Nine linen textiles are decorated with colored silk tapestry bands of brown, beige, gold, red, green, black, blue, and yellow. The motifs are swimming birds (ducks?) and (Figs. 2–3), birds' heads (Fig. 4), Others have unrecognizable devices in cartouches of scrolls. Many such textiles originating in Egypt have been dated to the tenth and eleventh centuries CE.

Figure 2, left. Linen tabby and silk tapestry depicting swimming birds (ducks?), No. 719/1.
Figure 3, right. Linen tabby decorated with silk tapestry; repeating pattern of swimming birds (ducks?) cut into a rectangle (752/1).

Figure 4. Linen decorated with silk tapestry, with stylized devices in cartouches flanked by bands bearing an inscription (or pseudo-inscription?). The high letters are topped with stylized bird heads on a gold and blue ground (tiraz?), No. 719/9.

Silk Textiles

Unlike at other medieval sites in the region, where only a small number of silk textiles have been found, this cave has a relatively large group (38) of silk fragments. They appear in undyed ivory, gold, and various shades of blue and red.

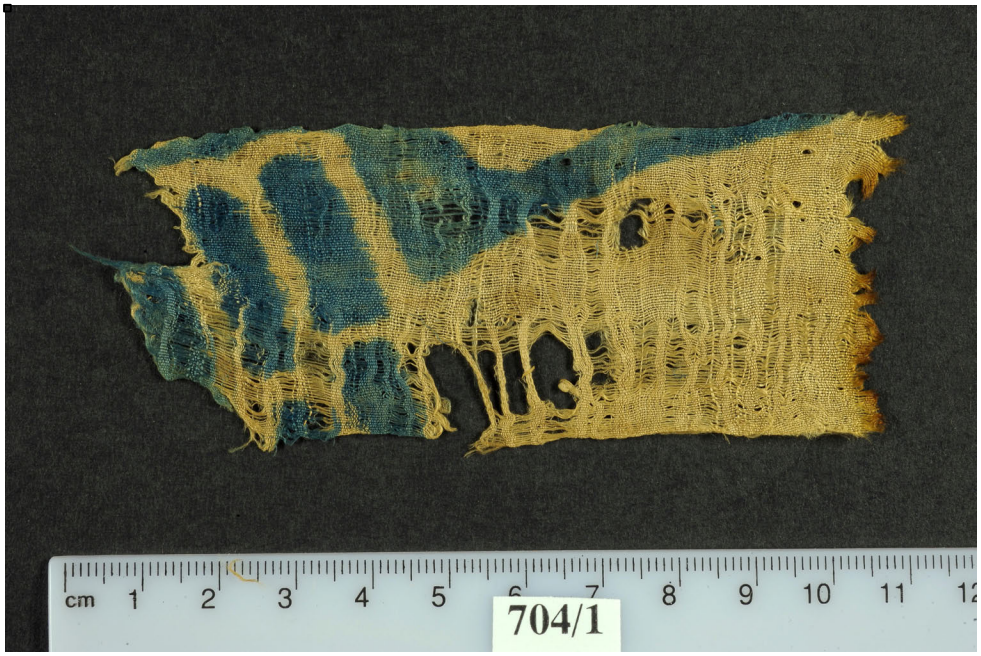


Figure 5. Silk tabby with blue geometric motifs printed on ivory ground, No. 704/1.

Most silk tabbies are monochrome undyed ivory or gold. One is brown. Two have blue geometric patterns printed on undyed ground (Fig. 5). Three are brocaded ivory or gold.

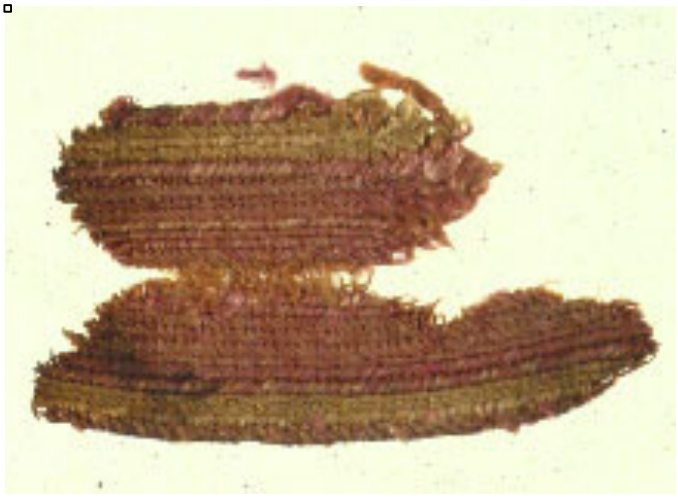


Figure 6, left. A red silk tabbyhas golden 3/2 twill. The fabric was folded in the middle and sewn at the bottom and on one side to form a pocket, No. 286/1.
Figuure 7, right. Red and gold silk soumak, No. 438/1.

A unique textile is a red silk tabby which has golden 3/2 twill bands (Fig. 6). It was folded in the middle and sewn at the bottom and on one side to form a pocket. One small red and gold silk fragment was done in the soumak technique (Fig. 7).

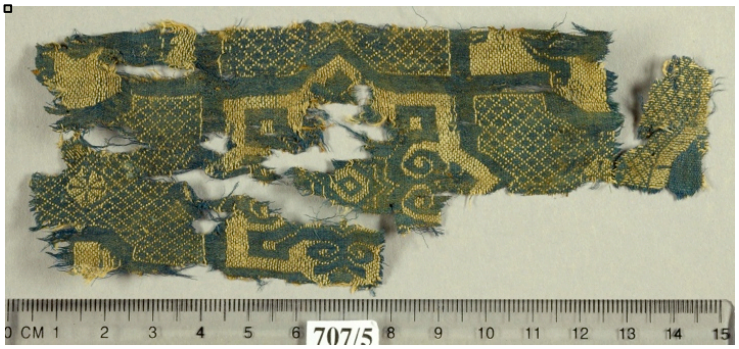
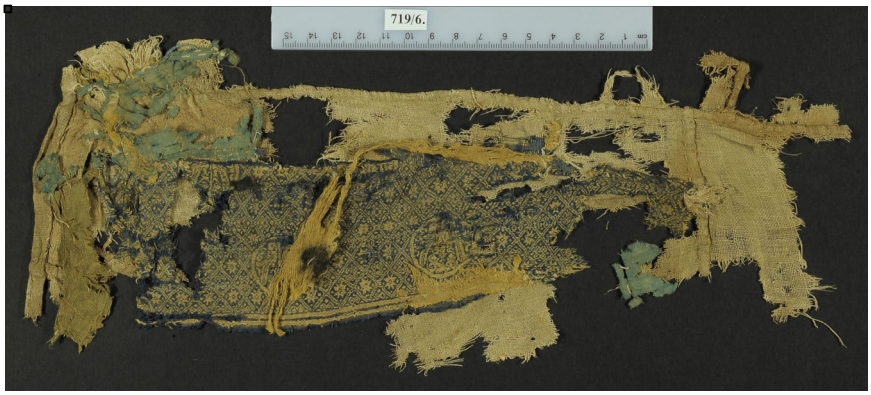


Figure 8, left. Weft-faced silk compound tabby, octagon with stylized plant and geometric motifs, No. 707/5. Figure 9,right. Weft-faced silk compound tabby with Arabic inscription or pseudo-inscription, bird's legs and claws, No. 765/4.



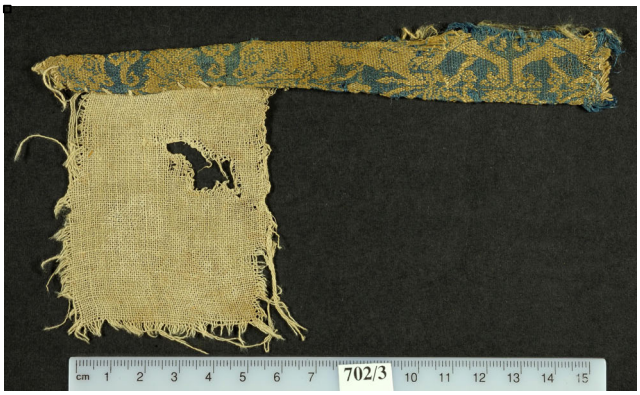


Figure 10. Five textiles stitched together. The main fragment is silk weft-faced compound tabby In cartoushes, pairs of birds facing each other, between them a branch with leave (No. 719/6).
Figure 11. Weft-faced silk compound tabby with stylized vegetation and heart-shaped devices, No. 702/3a.

The most significant group consists of 18 compound-weave silk fragments. Four of them are monochrome; the others have colored patterns – blue (Fig. 8), green, red, and brown on undyed ground or vice versa. They have geometric, floral, or interlaced patterns or show birds, animals, or remains of Arabic inscriptions (Fig. 9). The compound tabbies and lampases are mostly bicolor with recognizable motifs. They feature remains of Arabic inscriptions (Fig. 9) or pseudo-inscriptions and bands with stylized vegetation, birds (Fig. 10), animals, and heart-shaped (Fig. 11) or geometric devices.

These are all luxury fabrics woven on sophisticated looms such as the drawloom, a technical apparatus for mechanical patterning. Such products have been discovered in Egypt, for example at Antinoë (Geijer 1982: 100). One was even found at 'Avdat in Israel originated from Egypt (Baginski and Tidhar 1978).

During the Byzantine period and after the Islamic conquest, textile centers in Syria already produced such textiles (King 1987: 44–45; Otavsky 1995: 137); some have been preserved as relic covers in the treasuries of European churches. A few were found in excavations near Rayy (Iran) together with other compound silk fragments attributed to Byzantium, Egypt, Mesopotamia, and Iran. They are of very fine craftsmanship, indicating that they were once expensive luxury silks affordable only by the upper classes.

There is a relationship between the design and techniques of the compound silk fragments. The weft-faced compound twills are mostly monochrome with no patterns or motifs, or with unrecognizable motifs. Monochrome, weft-faced compound twills were made in Byzantium in the tenth and eleventh centuries. tenth and eleventh centuries.

Wool

There are relatively few wool fragments; only 25 out of 758. Most are S-spun in the warp and Z-spun in the weft; a few such fragments were also discovered in Fustat. Most are undyed. One is a fragment of a carpet with a colored pile.

Linen Warp and Cotton Weft

A large group of textiles, 134 out of 759 have an S-spun linen warp and Z-spun cotton weft. All are woven in various forms of tabby. Most of these textiles are undyed cream.

Linen fibers are longer, stronger, and smoother than cotton ones, so they were used for the warp while the softer and more elastic cotton fibers were used for the weft. Because linen and cotton were both available, local weavers tended to use both materials in the same fabric in order to produce soft but strong weaves.

This phenomenon is not known to us in such a quantity from any other site in the nearby region nor in other medieval textile finds; only a few such fragments are reported from Quseir al-Qadim; Nubia and Qasr Ibrim.

What was the Use of these textiles?

Some fragments could be identified as parts of garments, such as tunics (Fig. 12). The tunics resemble those from Kasr al-Yahud (Shamir 2005), a nearby site. These tunics are with a gore and narrow panels stitched together.

Kasr al-Yahud is situated near Jericho along the Jordan River near the Monastery of Saint John the Baptist, believed to be the traditional site of the Baptism of Jesus and has a centuries-long tradition of ‘washing of the lepers’.

A mass grave of around 300 to 400 men, women and children was discovered at the site, 90% of which had been destroyed by road construction; however thirty-four skeletons were retrieved, probably representing a hospital population of tuberculosis, leprosy and facial disfigurement cases. Such individuals traveled enormous distances, attracted to the site in the hope of washing away their

illness. Anthropological evidence indicates that the individuals were probably Egyptian in origin, while structural analysis of the skulls proved that some were Nubian.

Figure 12. Fragment of a tunic with a gore and narrow panels stitched together (No. 303/3).

Carbon dating of the textiles placed the date at the eighth to ninth centuries CE. With the help of a computer, it was possible to match fragments according to material, spin direction, weaving techniques etc.: for example, matching a separate sleeve with the front of a tunic. We were left with two hundred and fifty textiles, which were analyzed and described. We have sorted them by fiber: linen and cotton.

Others from Cave 38 are trousers (Fig. 13) and coifs. These were made of various materials. In some cases, several reused fragments and/or materials had been stitched together to make a new garment or to decorate one. Other pieces were recognized as wrappers and small bags (Fig. 5).

Some had probably been reused as wicks. Others were knotted and had probably been used for tying, including one knotted around a lump of asphalt, most likely for medical purposes (Amar 1996: 52–54). Similar strips have been found at Jaziret Fara‘un (Baginski and Shamir 1998: 51).

Textiles were too costly to throw away. When a garment reached the state where patching was no longer feasible, it was cut into pieces and either remade into another garment or used as patches (Mannering 2000: 15) or in decorations (as a majority of the reused ones in Cave 38 were).

Sewing

The textiles were sewn carefully, hems as well as seams. Various kinds of seams were used to join the parts together. The patches were also made by various techniques. Some were simply folded in

and sewn on top of the damaged areas, while in others (sometimes on the same fragment) the damaged piece was cut out and the patch was felled on.

Figure 13. Three pieces of the same material stitched together, probably trousers (No. 303/4.)

Origins

The textiles originate in various places. Presumably, some of the cotton fragments were woven in Palestine or Lebanon, since cotton was cultivated there at least since the ninth century CE. Some of the other cotton fragments were probably imported from the eastern parts of the Middle East, from which cotton was exported along routes crossing Palestine. The cotton fragments with S-spun warps and Z-spun wefts may have been made from local or imported yarns.

No linen was grown in Palestine after the Islamic conquest because it could be imported more cheaply from Egypt, which was now part of the same political unit. The large group of textiles with S-spun linen warps and Z-spun cotton wefts – a type unique to this site – were probably woven locally from cotton grown in nearby areas and linen imported from Egypt. Linen decorated with silk tapestry bands – probably originating in Egypt – have been dated to the tenth and eleventh centuries.

The silk fragments were not locally produced either, since silk was not cultivated in Palestine or nearby regions. Nor were they likely imported from China, as the designs and spin direction are different.

Compound-weave silk textiles have been discovered in Egypt, for example, at Antinoë (Geijer 1982: 100). One such textile, probably from Egypt, was even found at ‘Avdat. During the Byzantine period and after the Islamic conquest, textile centers in Syria were already producing such textiles.

The silk fabrics could have been imported from Syria, Byzantium, Mesopotamia, or Persia.

Figure 14. Wool pile-carpet (No. 719/5).

The few wool and goat-hair fragments were locally made. Only one (Fig. 14) – a fragment of a pile carpet – was probably imported from Anatolia or Egypt.

Also unique to the site are the two block-printed silk fragments (Fig. 4), although printed textiles made from cotton are known from medieval-period sites at ‘Avdat and in Egypt (Baginski and Shamir 2001). One silk textile made with the soumak (Fig. 6) technique probably came from Asia Minor (Grenander-Nyberg 1992: 125).

Conclusions

Given that no other artifacts from this period except a few ceramic shards were found in this room of the cave, we can assume that the room was not used for dwelling.

There is no indication that spinning and weaving were done at the cave, and no textile repairs or tailoring was carried out at the cave.

During this period the country was occupied by different Moslems rulers such as
Egyptians, Fatimids and the Seljuks who were fighting against each other until the arrival of the Crusaders in 1099; Then came another period of unrest until the establishment of Mamluk rule in the middle of the thirteenth century.

Why were so many used textiles stored in the cave? Presumably, they were stored there by rag collectors or by merchants who collected them for the paper-making industry. Paper had been

introduced by the Arabs from China via Central Asia in the eighth century CE and had become popular in the region (Amar 2002:120; Hunter 1978); linen, cotton, and date-palm leaves and fibers were used as raw materials.

The paper was made by breaking down different organic materials into fibers. These fibers were soaked in water and separated using a fine netted sieve. The Arabs' massive use of cotton as a raw material in the paper-making industry was one of the most important changes in this industry. It utilized the waste products of the local cotton-based textile industry (Amar 2002: 119, 123, 133).

The large number of textiles in one cave contrasts with the few medieval-period textiles found in other individual caves in the Judean Desert (Shamir and Baginski 2002). Presumably, the fugitives carried their goods with them and hid the textiles in the cave.

The frequent occurrence of dyed blue-colored fragments indicates local production, since indigo was grown in the area for local use as well as for export (Amar 1996: 51; Shamir and Baginski 2002).

Through the textiles we can see the changes along 400 years in the economic, social and political events.

A great deal can be learned from these discarded fragments about the shapes and materials of garments and other textiles in daily use in the ninth through thirteenth centuries CE.

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