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Textiles and Fleece from 'En Marzev

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During excavations at 'En Marzev in 1977–1978 (see Porath, this volume), 61 textile fragments and 10 small bundles of woolen fibers were uncovered. They were found in an archaeological context dated to the Early Islamic period (seventh–ninth centuries CE), a date confirmed by Carbon-14 analysis (787–896 CE).[1]

Textiles (Table 1)

Of the 61 textile fragments, only 26 were of a size and condition to warrant investigation. The largest textile (No. 2003-9052; Fig. 1) measures 24 × 18 cm.

Fig. 1. Wool textile (No. 2003-9052).

Table 1. ‘En Marzev Textiles (for abbreviations, see Appendix I)

IAA No. (Fig. No.)	Loc.	Basket No.	Material	CON	Size (cm)		SD		ST		TPC		WT	D	Color		Edge	Decoration	S	Other Fragments	Comments
					WA	WE	WA	WE	WA	WE	WA	WE			WA	WE				(cm)	
2003-9025	304	-	W	G	6.0	5.5	Z	Z	M	M	3		Soumak	D	UC	UC					
2003-9043	302	540	C	G	16.0	8.0	Z	Z	M	M	21	17	T	D	UC	UC			+	3.3 × 1.8	Stitched to another piece from the same material
2003-9044	302	540	W	G	10.0	9.0	Z2S	Z2S	T	T	3	3	T	D	Pig. B, UC	Pig. B	SB				Weft threads thicker than warp
2003-9045	305	519	W	G	2.2	17.5	Z2S	Z2S	T	M	10	3	WA.F	D	UC	UC	H	Soumak, stripes	+	3 × 7	Pigmented brown alternating with UC at the soumak; sewing S2Z
2003-9046	302	540	W	G	12.5	7.7	S	Z	T	L	9	14	T	D	LG	DG			+	3.5 × 2	Folded and sewn with UC sewing thread S2Z
2003-9047	302	540	H	M	21.0	17.0	S	Z	T	L	4	13	WE.F	D	Pig. B	Pig. B				12 × 6	
2003-9048	317	590	H	M	18.0	23.0	Z2S	Z	T	M	10	22	WE.F	D	Pig. B	Pig. B	H		+		Hem stitched with linen, S2Z, untidy stitches made in seondary use; mended in one corner with linen threads
2003-9049	302	540	W	G	18.0	21.0	S	Z	T	M	8	9	T	D	UC	UC					

CON = condition; SD = spinning direction; ST = spinning tightness; TPC = threads per cm; WT = weaving technique; D = density; S = sewing; WA = warp; WE = weft

Table 1. (cont.)

IAA No. (Fig. No.)	Loc.	Basket No.	Material	CON	Size (cm)		SD		ST		TPC		WT	D	Color		Edge	Decoration	S	Other Fragments	Comments
					WA	WE	WA	WE	WA	WE	WA	WE			WA	WE				(cm)	
2003-9050	304	552	W	M	14.0	19.0	S	S	T	T	12	7	T	M	BL, O, R, UC	BL, O, R, UC		Checks		5 × 12	
2003-9051a (Fig. 3)	-	-	L	G	19.0	9.0	S	S	M	M	20	14	T	D	UC	UC		Brocade	+		Rectangular; stitched to (b) with S2Z linen thread, untidy stitches; delicate; linen red threads
2003-9051b (Fig. 3)	-	-	L	G	19.0	9.0	S	S	M	M	11	9	T	D	UC	UC					Seround (a) from three sides
2003-9052 (Fig. 1)	-	-	W	G	24.0	18.0	Z	Z	T	L	4	12	WE.F	D	UC	R, Pig. B, LBL, DBL	SB	Bands			Probably a rug
2003-9053	317	590	W	G	11.0	23.0	S	Z	T	M	6	5	T	D	Pig. LB	Pig. B			+		Sewing remains made of UC wool; warp thinner than weft
2003-9054	315	567	W	G	17.0	13.0	S	S	T	L	9	12	T	D	Pig. LB	UC					
2003-9055 (Fig. 4)	-	524	C	G	10.5	15.0	Z	Z	M	M	18	18	BAL.T	M	UC	UC	Fringes	Bands			
2003-9056	-	-	L	G	22.0	27.0	S	S	M	M	18	10	T	D	UC	UC			+		Mending with linen, S2Z, untidy stitches; remains of running stitch

Table 1. (cont.)

IAA No. (Fig. No.)	Loc.	Basket No.	Material	CON	Size (cm)		SD		ST		TPC		WT	D	Color		Edge	Decoration	S	Other Fragments	Comments
					WA	WE	WA	WE	WA	WE	WA	WE			WA	WE				(cm)	
2003-9057a	311	557	H	G	22.0	23.0	Z	Z2S	T	T	4	7	T	D	Pig. B	Pig. B			+		Four pieces (a-d) stitched together with S2Z goat hair and linen S2Z sewing thread
2003-9057b	311	557	W	G	19.0	26.0	S2Z	S2Z	T	T	4	6	T	D	UC	UC			+		
2003-9057c	311	557	W	G	20.0	21.0	S	Z	T	L	4	6	T	D	UC	UC			+		
2003-9057d	311	557	W	G	9.0	7.0	S	S	M	L	7	9	T	D	UC	UC			+		
2003-9058	-	-	L	G	52.5	11.0	S	S	L	M	20	10	WA.F	D	UC	UC					Three pieces from the same material stitched together. All over 54 × 22 cm
2003-9059	302	508	H	G	36.0	36.0	S2Z	S2Z	T	T	3	12	WE.F	D	UC, Pig. B	UC, Pig. B		Diamonds pattern			Probably a rug
2003-9066 (Fig. 2)	315	601	W	M	2.5	4.5	Z	Z	M	T	8	17	WE.F	D	G	G				Few more pieces	Warp is very thin, almost disintegrated
2004-9074	306	43	W	G	3.0	3.0	S	S	T	L	6	16	WE.F	D	G	G				Many more pieces	
2004-9075	306	43	W	G	5.0	5.0	Z	Z	T	L	10	7	T	D	B	B				Few more pieces	
2004-9076	305	42	W	M	24.0	12.0	S	Z	T	M	7	6	T	D	BE	BE				10 × 12	Crude thick threads

Wool (N = 50) *and Fibers* (N = 10)

The woolen textiles exhibit varying spin directions; S-spun and Z-spun textiles are almost equally represented. The number of threads per centimeter in the warp ranges from 3 to 12, and in the weft, from 3 to 17, in different variations of plain weave (tabby). One is made in soumak technique—a weft-wrap weave, in which the weft does not pass through a shed, but is carried manually over a group of warp ends and then passed under and around part of the group (Burnham 1980:127). The threads of the warp are tight to medium spun, while those of the weft are tight to loose.

Most of the woolen textiles are undyed cream, a few are pigmented brown and three are green (e.g., No. 2003-9066; Fig. 2). One textile (No. 2003-9050) is decorated with blue, orange-red and undyed cream checks; another (No. 2003-9045) has soumak of pigmented brown alternating with undyed cream and stripes. Two are decorated with bands; one (No. 2003-9052; Fig. 1) is red, pigmented brown, light blue and dark blue.

Edges were preserved on two textiles: two have a starting border (Nos. 2003-9044, 2003-9052; Fig. 1), one (No. 2003-9045) has a hem.

Three different wool textiles and one goat hair textile (No. 2003-9057a-d) are stitched with S2Z goat hair and linen S2Z sewing threads. One (No. 2003-9046) is folded and sewn with S2Z sewing thread.

Goat Hair Textiles (N = 4)

Goat hair textiles are largely undyed pigmented brown, with different spin directions (Table 2), weft faced or tabby. The number of threads per centimeter varies in the warp from 3 to 10, and in the weft, from 7 to 22.

One (No. 2003-9059) has a pattern of diamonds in undyed cream and pigmented brown. Fragment No. 2003-9048 has a hem stitched with linen, S2Z, untidy stitches made in secondary use; it is mended in one corner with linen threads.

Linen Textiles (N = 5)

The linen textiles are undyed, S-spun, with a plain weave. The number of threads per centimeter varies in the warp from 11 to 20, and in the weft, from 9 to 14. Fragment No. 2003-9051 (Fig. 3) is rectangular and delicate, made of two different textiles stitched together with a S2Z linen thread; the stitches are untidy. One of the textiles (No. 2003-9051a; Fig. 3) is brocade, made with linen red thread. Fragment

Table 2. Spin Direction of Goat Hair Textiles

Warp	Weft	N
S	Z	1
Z	Z2S	1
Z2S	Z	1
S2Z	S2Z	1

0 1

Fig. 2. Wool green textile (No. 2003-9066).

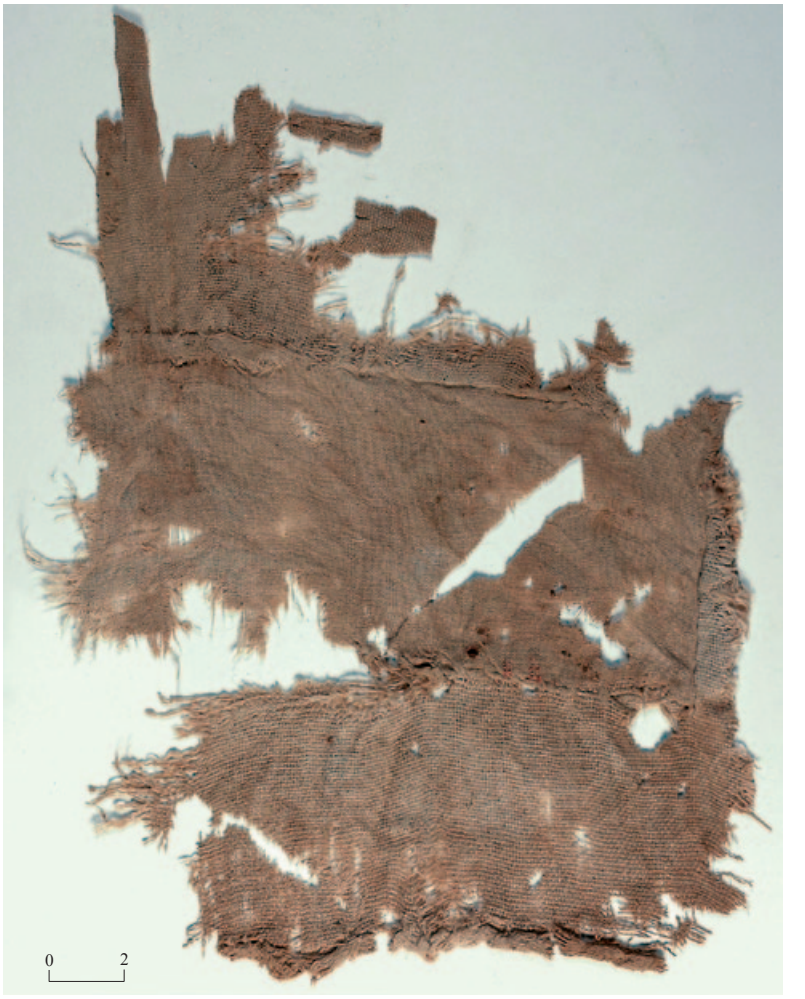

Fig. 3. Linen textile (No. 2003-9051) made of two different fragments stitched together.

No. 2003-9058 comprises three pieces of the same material, stitched together (54 × 22 cm).

Cotton Textiles (N = 2)

The cotton textiles are Z-spun with a plain weave. One (No. 2003-9055; Fig. 4) is very delicate with thin threads and an open weave. It is white, decorated with red cotton bands (each 0.8 cm wide) alternating with shiny silk, S-spun threads wound with metal strips—probably silver that disintegrated. Each band consists of two threads. Fringes (4 cm long) were preserved twisted to Z2S2Z.

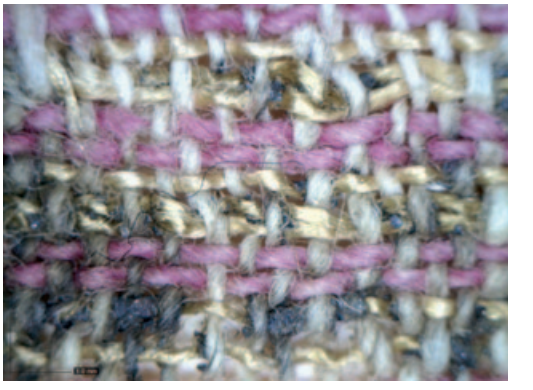

Fig. 4. Cotton textile (No. 2003-9055) decorated with red cotton bands alternating with shiny silk S-spun threads wrapped with metal strips.

Fragment No. 2003-9043 is stitched to the remains of another piece from the same material, with a linen sewing thread, S-spun.

DISCUSSION AND SUMMARY

The textiles uncovered at ‘En Marzev are an important contribution to the study of textiles dating from the Early Islamic period. These well-preserved textiles were retrieved from a single-period site dated with certainty to the Early Islamic period.

Spinning (Table 3)
S-spun wool is usually a local trait, while Z-spun woolen textiles are rare, both in Israel and in Egypt. Z-spun textiles were always common in Syria, Mesopotamia and Iran, and therefore might have originated there. Artisans originating from Mesopotamia (Bellinger 1962) produced such textiles in highly professional workshops operating in Egypt under the auspices of the government (Marzouk 1955). S-spun linen threads are common in this region. Z-spun cotton textiles are typical of India, contra to S-spun cotton textiles which are typical of Nubia and Yemen (Thurman and Williams 1979; Shamir 2015).

Weaving (Table 4)
The textiles are of plain weave and its variations. One (No. 2003-9025) is soumak.

Loom
There is no data at ‘En Marzev that can point to the type of loom used. However, ten tangles of woolen fibers that were found at the site might indicate that at least some spinning and weaving was carried out on-site. Features, such as a starting border, could have been worked on any type of loom (Sheffer and Tidhar 2012:292).

The use of warp-weighted looms in the country ceased almost completely by the end of the first century CE (Shamir 1996). Therefore, the two remaining possibilities are a ground loom or a vertical loom. The ground loom is still used by Bedouins in this region to produce goat-hair textiles with a tight warp, similar to those found at ‘En Marzev. The vertical loom is known to have been employed in Egypt during the Early Islamic period.

Table 3. Spin Direction

Warp	Weft	N
S	S	8
Z	Z	6
S	Z	6
S2Z	S2Z	2
Z2S	Z2S	2
Z	Z2S	1
Z2S	Z	1

Table 4. Weaving Technique

Weaving Technique	N
Tabby	17
Weft face	6
Warp face	2
Soumak	1

Use
The goat hair textiles were not used for clothing. Similar textiles from Wadi ed-Daliyeh were identified as tent cloth, sacks or bags (Crowfoot 1974; Sheffer and Granger-Taylor 1994:177–181). At ‘En Marzev, they were probably used as rugs, e.g., No. 2003-9059.

The linen textiles are delicate and are probably remnants of garments. Two are made of thick threads and were probably used as rugs: one (No. 2003-9059) is goat hair with a pattern of diamond; the other, a wool textile (No. 2003-9052; Fig. 1), is decorated with colorful bands.

Origin
Most of the textiles are very simple, in contrast with contemporaneous textiles from Naḥal ‘Omer (Baginski and Shamir 1995), Egypt (Marzouk 1955) and Iran (Ackerman 1938). The finds from Naḥal ‘Omer include

a substantial number of largely imported Z-spun textiles, mostly of cotton and some of silk, which were produced in complex weaving techniques and decorated in a variety of colors. The linen textiles from ‘En Marzev were imported either from Galilee or the Jordan Valley. The Z-spun cottons were probably imported from India or Yemen.

The most fascinating find is the cotton textile decorated with a few silk threads wrapped with metal strips, probably silver (Fig. 4). Silk textiles are very rare in Israel during this period, and were found only at Naḥal ‘Omer (Baginski and Shamir 1995). Precious metals have been used in combination with fibers in order to produce luxury fabrics for political and religious elites (Weiner and Schneider 1989:1).

The difference in quality between the textile finds from the two ‘Arava sites—Naḥal ‘Omer and ‘En Marzev—may be attributed to their findspots. While the finds from ‘En Marzev originated in structures that were abandoned in an orderly fashion, the finds from Naḥal ‘Omer originated in a waste dump, thus representing an accumulation of objects discarded over years of habitation.

Appendix I. Abbreviations Used in Tables

Material: W = wool; H = goat hair; L = linen; C = cotton
Condition: G = good; m = medium
Color: B = brown; BE = beige; BL = blue; C = cream; G = green; O = orange; R = red; Pig. = Pigmented; U = undyed + unpigmented; D = dark; L = light
Density of Weaving: D = dense; M = medium
Edge: H = hem; SB = starting border
Spinning Tightness: L = loose; M = medium; T = tight
Weaving Technique: BAL = balanced tabby; T = tabby

Note

[1] The finds were photographed by Naama Sukenik. The Carbon-14 analysis was conducted by Prof. Israel Carmi and Dror Segal, on behalf of the Weizmann Institute of Science, Reḥovot.

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