[Running title: TWO-NEEDLE KNITTING AND CROSS-KNIT LOOPING]

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TWO-NEEDLE KNITTING AND CROSS-KNIT LOOPING: EARLY BRONZE AGE POTTERY IMPRINTS FROM ANATOLIA AND THE CAUCASUS

Summary. There is ample evidence for the use of prehistoric loom-woven, tabby fabric (made by plain warp and weft technique) in the construction of pottery. Ancient potters from the steppe regions of central Asia through to Anatolia and in some parts of Europe sometimes built their wares aided by old fragments of cloth and basketry, which left impressions on and in the walls of their vessels. In the highlands of eastern Turkey at the site of Sos Höyük and at Chobareti, in Georgia, the impressions on Early Bronze Age pottery include an array of textiles and, notably, what appears to be the earliest known evidence for two-needle knitting and for the continued use of the single-element, cross-knit looping (also known as Coptic 'nalbinding') made using an eyed-needle, a craft which has been found in Pre-Pottery Neolithic contexts of the Levant. Various basketry techniques are also represented.

INTRODUCTION

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/ojoa.12141

Single-element (or one-thread), cross-knit looping, is a method of producing fabric with one needle and a single thread worked repeatedly over itself. The technique is otherwise commonly known as 'Coptic stitch' and sometimes as 'Tarim stitch', a form of 'nalbinding' (from *nålbinding* or *naalbinding*, a Scandinavian term loosely applied to a range of single-eElement stitches using an eyed-needle). Nalbinding itself is variously known as 'encircled looping', 'needle looping', 'looped netting' and 'single-needle' knitting.[1] As cross-knit looping can resemble two-needle knitting, it is generally considered to be the technique used to produce a knit-like fabric in antiquity. Until the last few decades, actual examples of cross-knit looping and two-needle knitting remained elusive in contexts earlier than around the first to second centuries AD, and approximately 1000 AD, respectively.[2] While examples of cross-knit looping can now be dated as early as the ninth millennium BC, evidence presented here suggests that two-needle knitting was present in Early Bronze Age contexts of eastern Anatolia and possibly Georgia as early as the mid-fourth millennium BC.

Although the focus of this paper is on the evidence for these two specific techniques (two-needle knitting and the cross-knit looping), it should be noted that significant evidence for actual textiles survives in Europe from the fourth millennium and in later contexts in Austria, Denmark and Switzerland, and further evidence has been documented in the Levant. The conditions for preservation range from wet, low-oxygen

locations through to dry environments. Such finds include loom-woven fabrics, tablet weaving, twisted cord, matting, basketry, and so on (Bichler *et al.* 2005; Gleba and Mannering 2012; Rast-Eicher and Dietrich 2015). Implements for textile manufacture, notably bobbins, whorls and bone points, also survive in many regions.

Most informative are the mummified remains of the individual referred to as Ötzi, whose better-preserved clothing and possessions included matting and a twisted cord dagger sheath (in a technique of *zwirnbindung* or twining), found in the Ötztal Alps and dated around 3350–3100 BC (Médard 2010). Yarn, cord, cloth bundles, fragments of tabby and also more complex loom-woven fabric, and netting, as well as manufacturing tools (bone points, spindle whorls and loom weights) survived in the pile-dwellings of Molina di Ledro dated to the Italian Bronze Age (Bazzanella and Mayr 2009). Some evidence from Poland from the Early Bronze Age (2200–1500 BC) might warrant further investigation, for instance impressions in pottery from Zielonki near Cracow.[3] An excellent impression of textile made using a 'simple' looped stitch survives on pottery of the Chalcolithic, Cucuteni culture of Romania (Phase A2, *c.*4550–4170 cal BC; Lazarovici 2010; Marian 2008, 327–34).

A remarkable variety of yarn, netting, twined and knotted fabrics came from Pre-Pottery Neolithic B contexts (*c.*7160–6550 BC) in the Naḥal Ḥemur Cave on the southern

reaches of the Judaean Desert, west of the Dead Sea. Significantly, cross-knit looping (i.e. Coptic stitch) also figured among the finds, which indicates that the technique has considerable chronological depth (Schick 1988, 34, fig. 9, pl. XVI.2). While it has been argued that this craft may have faded from the southern Levant in preference for textiles produced on the loom (Shamir and Rosen 2015, 135–6), it does appear to have survived further north in eastern Turkey and the Caucasus, among other locations. Tell Halula on the eastern side of the Euphrates in Syria also yielded mineralized, twined woven textile fragments from mortuary contexts of the Pre-Pottery Neolithic dated to 7600–7300 BC (Giner 2012), although the technique used to produce the fragments was problematic to identify. Aside from loom-produced fabrics, people were certainly experimenting with hand-made and, it should be pointed out, more portable textile techniques from an early date. Whether or not two-needle knitting was developed from the notion of simple-looping or cross-knit looping with the introduction of a second needle remains a moot point (Marian 2008, 331).

The Evidence from Eastern Anatolia

In the absence of actual textiles, fabric impressions are valuable survivals that bear witness to the development of hand crafts otherwise lost to the archaeological record. Textile impressions in pottery presented here come from two sites of the Kura-Araxes cultural tradition, representing the remains of village communities of stock-breeders and

farmers, which in terms of social complexity may be best described as tribal societies or simple chiefdoms (Sagona 2014). This complex of small farmsteads, mostly 1.5 hectares in size, is one of the Near East's most spatially expansive archaeological cultures. It stretched from the banks of the Euphrates River across the east Anatolian highlands to the Caspian Sea and north-west Iran; a regional variant extends from the Amuq Plain down the Levant to the Sea of Galilee. The longevity of this tradition is equally impressive, reaching from about 3500 to 2500 BC, and even a few centuries later in certain regions. One pottery impression from the earliest levels at Sos Höyük (Period VA, 3500/3300–3000 cal BC; Sagona and Sagona 2000; Sagona 2014) in the Pasinler Plain, Erzurum, has all the hallmarks of genuine two-needle knitting – the earliest evidence of this craft in existence. This impression, preserved between layers of clay from fabric that had been used in the construction the vessel, indicates that at Sos Höyük some textiles were not loom-woven, but rather were fabrics made by hand. A possible second fragment came from Chobareti, some 218 km due north-north-east of Sos Höyük.

POTTERY TECHNOLOGY AND THE MECHANISMS FOR PRODUCING TEXTILE IMPRESSIONS

Fractured Early Bronze Age pottery can reveal flattened coils and slabs of clay in the section and, occasionally, the impressions of textiles, basketry and matting used to build

the pottery. As Paula Doumani and Michael Frachetti (2012, 368) recently suggested, potters probably included quantities of old textiles scraps among their tools for constructing pottery. A process referred to as paddling or jacketing the wet surfaces of vessels has been proposed for warp-weft cloth marks and what may be cordage impressions (respectively, impressions made by a cloth- or string-wrapped paddle or hand) on wares in central Eurasia. Loom-woven fabrics, as well as the durable weights, spindle whorls and other implements of textile production, have already been discussed at length, and indicate the considerable antiquity of this form of cloth production in Anatolia and elsewhere (Schoop 2014; Laurito *et al*. 2009; Pullen 2011; Barber 1991; Gleba 2008).

Textile impressions in Early Bronze wares, however, were sandwiched between clay layers *within* the walls of the vessels. This layered technique for building pottery appears only in the early stages of the Early Bronze and possibly involved a few pot-building methods: (a) slabs of clay were rolled out on textiles then lifted into place on the pot under construction, locking the textile impression into the wall; (b) clay was initially moulded over a rigid basket or textile bags (perhaps filled with sand), which were later removed before further thick clay layers were applied to finish the pot; (c) the wet clay was packed into a textile bag or basket and left to reach the leather-hard stage, and the bag/basket was taken away from the outside before the outer clay layer was applied.[4]

Layering is a common feature of Kura-Araxes pottery construction and when present, the most frequent impressions are of loom-woven tabby cloth (Fig. 1.1), but flat coil-mats (Figs. 1.2–1.3, 2.1), braided- and wrapped-warp basketry (Figs. 2.2–2.3, 3.1–3.2) have also been illustrated here.

Basketry straw and textile yarns

Although the focus of this discussion is on fabric production, it is worth pointing out impressions of straw crafts that are clearly distinct from fabric textiles. Some exceptionally well-preserved impressions of matting and basketry have been identified. Pottery fragments can carry the impression of coil basketry, especially on the base. One shows the beginning point – the central part of a circular mat with three to four wide warp stems crossing over each other at 90° angles, but with some signs of damage (Fig. 2.1) – from which tightly bound coils spiral out. The resting surface of a small andiron also has the imprint of a coil basket, but this example demonstrates the ragged outer edges and missing central section, clearly indicating that a remnant was used (Fig. 1.2–1.3). The mats may have facilitated the turning of the pots under construction, especially of hand-made wares, and the handling and moving of the newly formed vessels while they were wet (Özdemir 2007). Bone points are well represented at Sos Höyük (Fig. 4.1–4.4, 4.6), some with fire-hardened tips (Fig. 4.1–4.2), which are the type of tool used to

make holes for the passage of the binding straw repeatedly over the core of the coil and into the preceding coil row (Vogt 1937, 8, fig. 4; Mason 1904, fig. 40).

One body fragment from a pot with a partly flaked exterior wall has a basketry impression showing two techniques: two exposed lower horizontal rows appear to be wrapped or twined together (a third appears just above the outer clay surface); the upper edge has a horizontal herringbone or braided woven patterning, which is perhaps an edge finishing technique (Fig. 2.3; cf. Mason 1904, figs. 131, 133). 'Twined' is used here to mean that a strand is bent or wrapped around another straw. Another interior body fragment from a large jar has the impression of a mat comprised of wrapped twinning formed by twisting the thinner, string-like weft strands (vertical lines) once around thick warp straws (horizontal rows in Fig. 3.1–3.2).[5] In these examples, the straws have parallel linear striations from the monocot reed and grasses used in the original basketry.

Other impressions on pottery that were produced by two-needle knitting (Figs. 5.1–5.2 and possibly 6.1) and cross-knit looping (Fig. 7.1) possibly used woollen yarn; sheep figure prominently in the Early Bronze Age economy of the region. Flax, however, has been identified in similarly dated contexts of the southern Caucasus: traces of flax string have been detected in a barrow burial of Early Bronze Age III (Kvavadze *et al.* 2015) and there was evidence for flax textiles in a Paravani burial mound (Kvavadze and Kakhiani

2010). Actual wool, cotton and flax textiles and threads, as well as pottery impressions of textiles, are also known from the northern Caucasus in Maikop cultural contexts from around 3700–3200 cal BC and in third to second millennium Bronze Age settings (Shishlina *et al.* 2000; 2003).

Impressions of cross-knit looping

Experimental samples replicating the patterns impressed in the ancient pottery fragment in (Fig. 5.1–5.2), with both two-needle knitting and cross-knit looping using wool, have been illustrated here, and impressions were taken with modelling dough when the stitches were relaxed and when they were stretched (Fig. 8.1–8.6).

There are many patterns that can be produced through the various single-element, looping techniques, but it is the cross-knit looping stitch that most closely resembles two-needle knitted fabric and this stitch can be worked as a flat piece (Fig. 8.5); many looping stitches are otherwise worked in the round. Known evidence for the technique representing a few stitch types is limited, but informative. As noted, excellent impressions on pottery come from Cucuteni cultural contexts in Romania. One is of an evenly formed fabric using a simple loop (or buttonhole) stitch, which was found in Frumusica, Neamt County (Marian 2008; Maz [illegible] afe 2011, fig. 1). Another Botoşani County has an open, net-like textile impression made using a loop and twist

stitch that bears no resemblance to knitted fabric, but is closer in appearance to crocheted net (Maz **are 2011, fig. 2). Noneth** continued to experiment with textile techniques.

Actual textiles have been found at Dura Europos in Syria and in Egyptian Coptic contexts; socks made using the cross-knit looped ('Coptic' nalbinding) technique and dated as early as the first to fifth centuries AD survive (Grass 1955; Cardon 2003). The state of preservation indicates the particularly long-wearing qualities of the stitch. Well-made berets, one fashioned in four quadrants using a ribbed design and another in a spiralling design, were found in the burials of Ürümqi, in the Tarim Basin (Xinjiang, China). These graves held astonishing, naturally preserved human mummies, complex loom-woven textiles, felt and other organic remains dated to *c.*1000 BC (Barber 1999). Although both hats were reputedly made using the cross-knit looping technique, the ribbed example, both in the pattern itself and in the manner of progressing to each quadrant by picking up stitches perpendicular to the previous section, strongly resembles two-needle knitting.

Single-element looping uses a thick, single needle made from bone or wood with a large eye. A small length of yarn is threaded onto the needle and during the work, the yarn must be continually joined by splicing the ends of the old and new threads together.

Splicing allows the yarn to pass through the needle eye as the work progresses, whereas knotted yarn would block the eye. Wide needles are well represented in ancient contexts that would be suitable for this craft (Fig. 4.5). In a common technique, shared by a number of single-element looping stitches, the thread passes through a loop over the thumb, picking up one or more loops from the previous row, and it is mostly worked in a closed round forming a cylindrical textile. To produce cross-knit looped stitch, the needle loops a thread directly through stitches made in the previous row (not over the thumb) to form new stitches (Fig. 9.8). One Sos Höyük pottery fragment carries a less well-preserved impression of a needle-made fabric, which is likely to be of cross-knit looping with tightly twisted v-shaped stitches in spaced rows. Sharp oblique lines through the impression hint at joins, pieces or patches of fabric sewn together (indicated by lines in Fig. 7.1). This pottery fragment dates to the Early Bronze Age.

The impressions of two-needle knitted fabric

Two-needle knitting, by contrast, is worked along a number of stitches held on the needles; the knitted item is turned at the end of the row and worked back along the stitches. The knitted fabric grows from a continuous thread that need only be joined at the end of the ball of yarn (Fig. 9.9–9.10). Pieces such as socks can be worked in the round (with three or more needles). Logistically, two-needle knitting is efficient and quick

compared to cross-knit looping, with the added advantage that the yarn does not have to be joined as frequently.

The clearest ancient knitted-textile-impressed pottery fragment was found in area L17D–M17C, locus 4218 in the lowest and earliest levels excavated at Sos Höyük, in 1998 (Fig. 5.1–5.2). The impression appears to be from a two-needle knitted fabric (some 16 rows can be determined), made using finely spun yarn and, significantly, preserving a repeated simple decorative pattern of alternating plain ('V-shaped') and purl rows (raised ridge marked with '—' such as those reproduced in Fig. 8.1) with approximately six stitches per centimetre. There is no doubt that the yarn was thinly spun and well suited to producing fine knitted garments; one fine eyed-needle from the site also indicates that threads could be quite thin (Fig. 4.7). In the pottery impression, there is also the suggestion of four elongated holes where a string or thong might have been threaded which has stretched the stitches in the fabric (Fig. 5.1, in a vertical line above the arrow). A second example, from Chobareti (Area F42; Fig. 6.1), came from a large, stone-walled house (Structure 4) perched on a mountain terrace, which is dated to 3300–3100 cal BC (Kakhiani *et al.* 2013).

Both two-needle knitting and cross-knit looping can form plain and purl stitches, but the resemblance between the stitches is superficial, and the production technique is quite

distinct. The plain cross-knit looped stitch appears to be upside-down (Fig. 8.4) compared to two-needle knitting, and tighter, as if the stitch were twisted (Fig. 7.2). A twisted effect, however, can be achieved in two-needle knitting by knitting into the back of the stitch and not through the front (which is the basic technique). Importantly, the stitches of the two techniques (cross-knit looping and two-needle knitting) behave differently when stretched. Two-needle knitting stretches evenly across the fabric (Fig. 9.1), whereas cross-knit looping, when stretched, tightens the inverted 'v' stitches and expands the horizontal threads in between (Fig. 9.5). The appearance of the stretched knitting impression (Fig. 9.2) compared to the stretched cross-knit looping impression (Fig. 9.6), clearly demonstrates their differences.

The closest parallel to the ancient Sos Höyük pottery impression is the relaxed, two-needle knitted fabric sample (Figure 9.3).

Knitting needles could have been made from bone or wood, but metal pins could also be adapted to the craft. Long and thin pins, topped with spiral or other finial designs, which feature in Early Bronze Age cultural contexts, could have served a dual role on clothing and as knitting needles (Fig. 4.8). There is ample evidence of yarn production and thread spinning from the spindle whorls that have been found in Early Bronze Age sites (Fig. 6.2–6.3); these are often made from the rounded end of a long bone, or from recycled and

drilled pottery sherds, or purpose-made from clay. Although the spindles do not survive, the long thin rods are objects that could have doubled as knitting needles. This kind of implement, present in ancient houses, might have triggered the creativity of its occupants.

CONCLUSION

The textile production of the Early Bronze Age people of the highlands of eastern Turkey and the Caucasus was clearly not limited to warp and weft, loom-woven fabrics, though there is ample evidence of such tabby fabrics fossilized in pottery throughout the region (Seiler-Baldinger 1994; Rast-Eicher and Dietrich 2015). From its initial settlement, Sos Höyük had a strong bone tool industry and although much has been made of metalwork finds from the third millennium, the evidence suggests that at certain sites, like Sos Höyük, metallurgy was not an economic mainstay. Instead, the bone implements, fabric impressions and the animal and plant sources of fibres point to a lively and inventive textile industry that has not received the attention warranted. Wide and thick bone-pointed implements have long hinted that some form of needle-made textile was produced, and the Neolithic evidence for cross-knit looping indicates the craft's clear chronological depth in the Levant. Moreover, the possibility that true, two-needle knitting had developed by the Early Bronze Age opens the door onto a new aspect of secondary products in Anatolia and the Caucasus at that time.

Ian Gilligan's detailed study (2010) concerning the development of clothing considers cold climates and the human thermal physiological need for body cover and the corresponding functional advantages of clothing, including aspects of loose ('simple') cover compared to fitting ('complex') garments. Layering of clothing requires inner garments to be snug and shaped close to the body, with the result that 'fitted, multi-layered assemblages offer superior protection from wind chill' (Gilligan 2010, 25). To determine exactly which fabrics were used in Early Bronze Age Anatolia and the Caucasus requires remarkable preservation of the type seen with the Tarim mummies or the mountain traveller, Ötzi. Without such evidence, it can only be suggested that as Sos Höyük and Chobareti are highland locations, which experience harsh winters, the need for warm, close-fitting garments may have prolonged the use of nalbiniding and the development of two-needle knitting. It may be serendipitous that the potters used knitted remnants while they worked, but there is every chance that further evidence for these hand-made textiles — knitting and cross-knit looping— survive in collections of pottery from other locations, but have yet to be recognized for what they are.

Dedication

This paper is in memory of my father, Leslie Smith, who taught me how to knit, which has always served as a reminder to me that textile crafts are not the exclusive purview of women.

Acknowledgements.

I would like to thank Orit Shamir, Head, Department of Museum and Exhibitions in Israel, Curator of Organic Materials, for advice and encouragement; Bronwyn Douglas, our photographer at Sos Höyük; and Antonio Sagona for reading the paper closely.

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FIGURE CAPTIONS

Figure 1

1. Impression of loom-woven fine cloth on the flaked interior surface of a pot wall. From Chobareti, 2013, SPF 112/19; Early Bronze Age; 2. Coil-mat impression on the base of a triangular portable andiron, From Sos Höyük, 2000, M17 [3773], bag 60; Early Bronze Age; 3. Detail of coil impressions from the left side of the andiron base in Fig. 1.2.

Figure 2

1.Resting surface of a pot base with distinct coil basket impression. From Sos Höyük, 1997, L16c, locus 4038, pottery bag 68; Early Bronze Age; 2. Body fragment from a pot with partly flaked exterior wall revealing basketry impression comprised of two techniques: two lower horizontal rows that appear to be wrapped or knotted together; the upper edge has a horizontal herringbone or braided woven patterning. From Sos Höyük, 1999, M16–N16, locus 3645, bag 10b; Early Bronze Age; 3. Detail of the basket impressions in Fig. 2.2.

Figure 3

1. Detail of a thick-walled fragment from a large jar; flaked interior with matting or basket impression of wrapped twinning formed by winding the thinner, string-like weft strands (vertical lines) once around thick warp straws (horizontal rows). From Sos Höyük, 1995, Art 1797, K14 locus 1031, pottery bag 100; Early Bronze Age; 2. The complete pottery fragment with basket impression; see Fig. 3.1.

Figure 4

1.Bone point; fire-hardened tip; high polish. From Sos Höyük 1999, Art 2936, M16-M15d [3715]; Early Bronze Age; 2. Bone point; very smooth and polished horizontal scars. From Sos Höyük, 1999, Art 2934, M16-M15d [3715]; Early Bronze Age; 3.Bone point; very smoothed and polished; scars lengthwise. From Sos Höyük, 1999, Art 2944, M16 [3718]; Early Bronze Age; 4. Bone point; polished. From Sos Höyük, 1995, Art 1669, L17b [1521]; Early Bronze Age; 5. Bone needle. Fom Sos Höyük, 1999, Art 2951, M16-M15d [3715]; Early Bronze Age; 6. Bone point; well-polished needle with hole in wide end. From Sos Höyük, 1999, Art 2918, M16 [3718]; Early Bronze Age; 7.Elongated and fine bone eye from a thin needle; polished from wear. From Sos Höyük, 1997, Art 2714, M17b [3630]; dated to the end of the third millennium; 8. Bronze point with curled end, squared profile rounded near point. From Sos Höyük, 1995, Art 1948, L17a [1533]; Early Bronze Age/Middle Bronze Age.

Figure 5

1. Detail of a small pottery body fragment with partially flaked interior revealing knitted fabric impression of a simple design of alternating plain and purl rows. From Sos Höyük, 1999, L17d–M17c, locus 4218, bag 16a; Period V, dated to 3500 BC; 2. The complete pottery fragment with knitted fabric impression; see Fig. 5.1.

Figure 6

1. An Early Bronze Age body fragment from a pot with flaked interior surface possibly preserving another impression of two-needle knitting. From Chobareti, 2013, inv. no. SPF 114/8, area F42.1/F42.4; 2. Bone spindle whorl; smooth flat underside and top; heat-damaged; straight drilled hole. Sos Höyük 1996, M16 [3602], Art 2297; Early Bronze Age; 3. Bone spindle whorl; very smooth bottom; domed upper; straight drilled hole; Sos Höyük 1996, L17b [1551], Art 2449; Early Bronze III.

Figure 7

1. An impression of plain, single-element, cross-knit looped fabric on a pottery fragment. Possible mends or joins in the fabric are shown by lines. In this example, the tightened, vertical rows of v-shaped stitches with wider gaps between suggest slightly stretched, cross-knit looping rather than two-needle knitting. From Sos Höyük, M16 [773], Art 2417; Early Bronze Age; 2. A plain, cross-knit looped stitch sample comparable to Fig. 7.1.

Figure 8

1. Two-needle knitted sample with alternating plain and purl rows (plain stitch rows are marked with 'v'; purl stitch rows marked with '—'); 2. The technique of taking an impression of the knitted sample; 3. The impression of the knitted stitches; 4. Sample using single-element, cross-knit looped stitch (also known as 'Coptic' nalbinding); the purl-like rows are marked with '—' and the equivalent of plain stitch rows are shown with an inverted 'v'; 5. The process of taking the impression of cross-knit looped sample; 6. Impression of cross-knit looped stitch (all samples made by the author).

Figure 9

1. Stretched two-needle knitting sample in alternating plain and purl row pattern; 2. Impression of *stretched* knitting sample; the lines of the purl rows remain distinct in the impression, and the spacing of and between the stitches expands out evenly; 3. Impression of knitting sample with 'relaxed' stitches; the purl rows form distinct impressed lines separating plain rows comparable to the pottery fragment impression. From Sos Höyük; cf. Fig. 9.4; 5. Detail of the knitted fabric impression on a pottery fragment from Sos Höyük, preserving a simple design of alternating plain and purl rows; see Fig. 5; 8. Single element, cross-knit looped stitch sample *stretched*; the inverted 'v' stitches tighten and the spaces between them open out or widen because of the nature of

the looping technique; 6. Impression of the single element, cross-knit looped stitch when stretched. The inverted v-shaped stitches are no longer apparent and a series of bulges (formed by the widened threads in the spaces in between the stitches) dominates the impression; 7. Impression of 'relaxed' cross-knit looped stitch, which has a different appearance to the impression in the pottery fragment (cf. Fig. 9.4); 8. Schematic representation of single-element, cross-knit looped stitch made with an eyed needle (after Davidson 1935); 9. Schematic representation of the front side of two-needle knitting; the front forms v-shaped rows (after Finch 1991); 10. Schematic representation of the reverse side of two-needle knitting, which forms ridges (shown by '—').

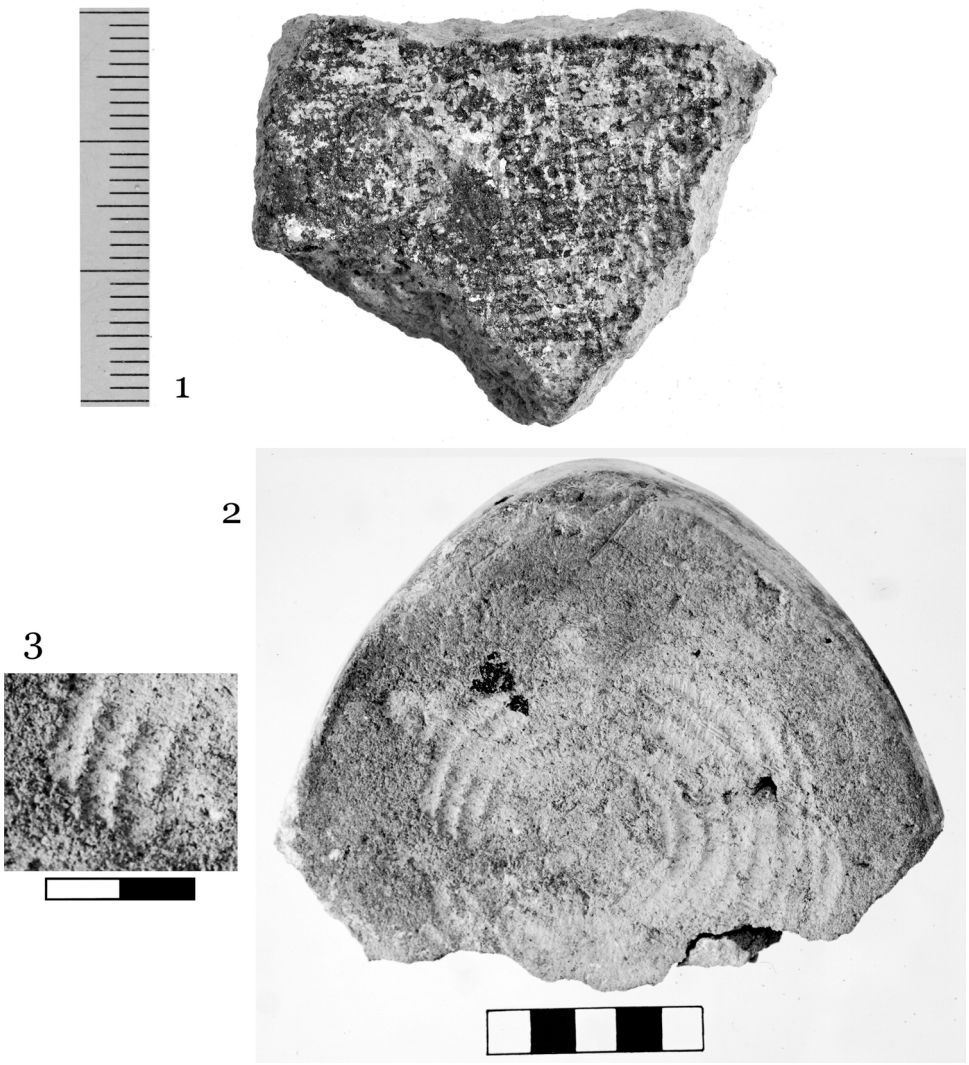
[1] Seiler-Baldinger 1994, 17–18, §9, for encircled looping; nalbinding and Coptic stitch do not figure among the terms listed for this technique; 'half-hitch around half-hitch' is used by Davidson (1935, 121) within the broad category of knotless netting; the term 'Tarim stitch' derives from the Tarim mummy evidence (Barber 1991); see also Claßen-Büttner 2015, for a history of nalbinding.

[2] Examples of knitted socks and of red socks in Coptic nalbinding stitch can be found in the Victoria and Albert Museum: inv. no. T.201-1929, from Egypt, dated 1100–1300 AD, and inv. no. 2085&A-1900, from Egypt, dated 250–420 AD, respectively; more are illustrated in Grass 1955.

[3] Some textile-impressed fragments in Łaszczewska (1966, fig. 9 top, two on the right) could be from knitting or cross-knit looping; also in Maik 2012, 295, fig. 14.1.

[4] Heinsch 2012, 332–6; cf. Mason 1904, 281–2, for illustrations of similar pottery construction by American indigenous groups.

[5] Cf. Vogt 1937, 12–32, for variations.



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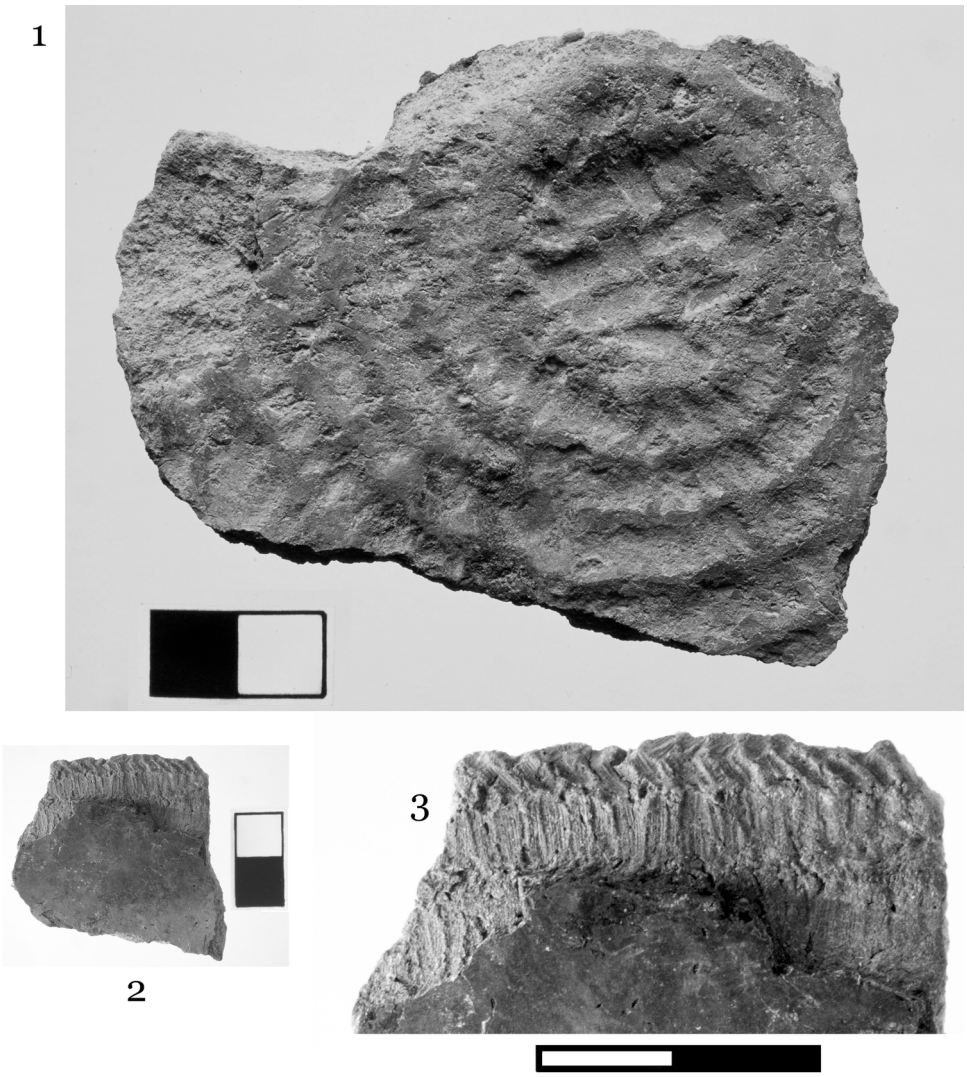

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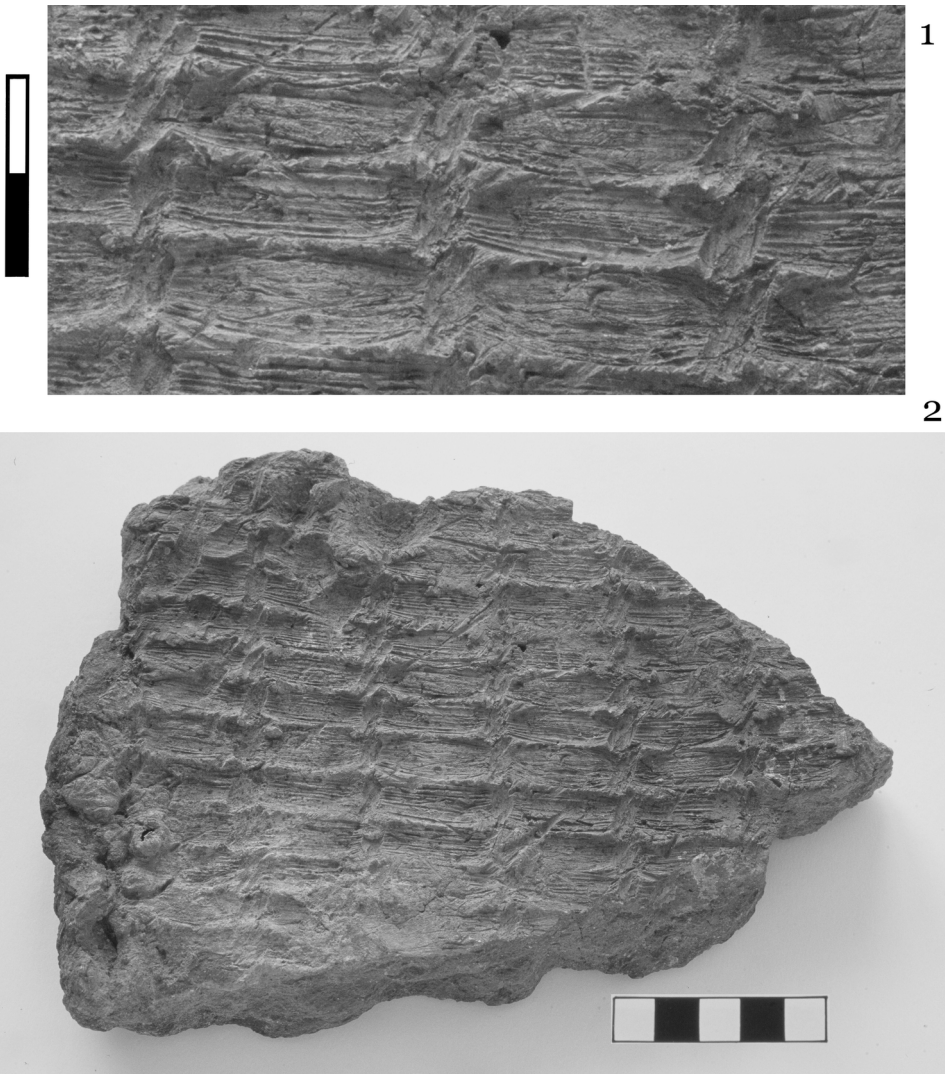

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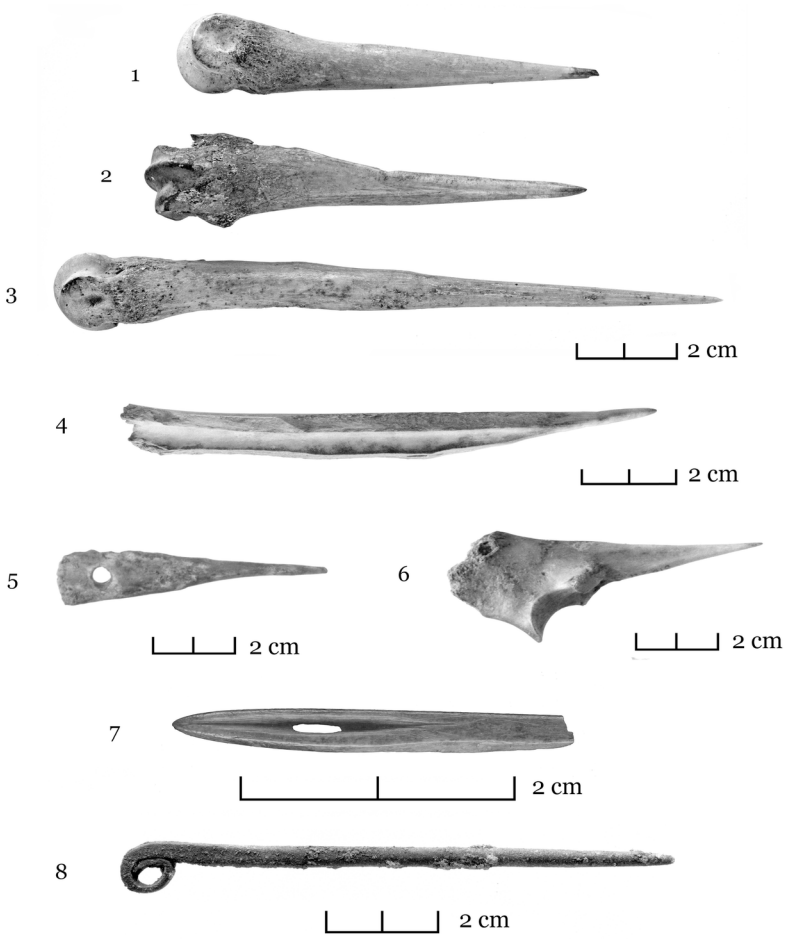

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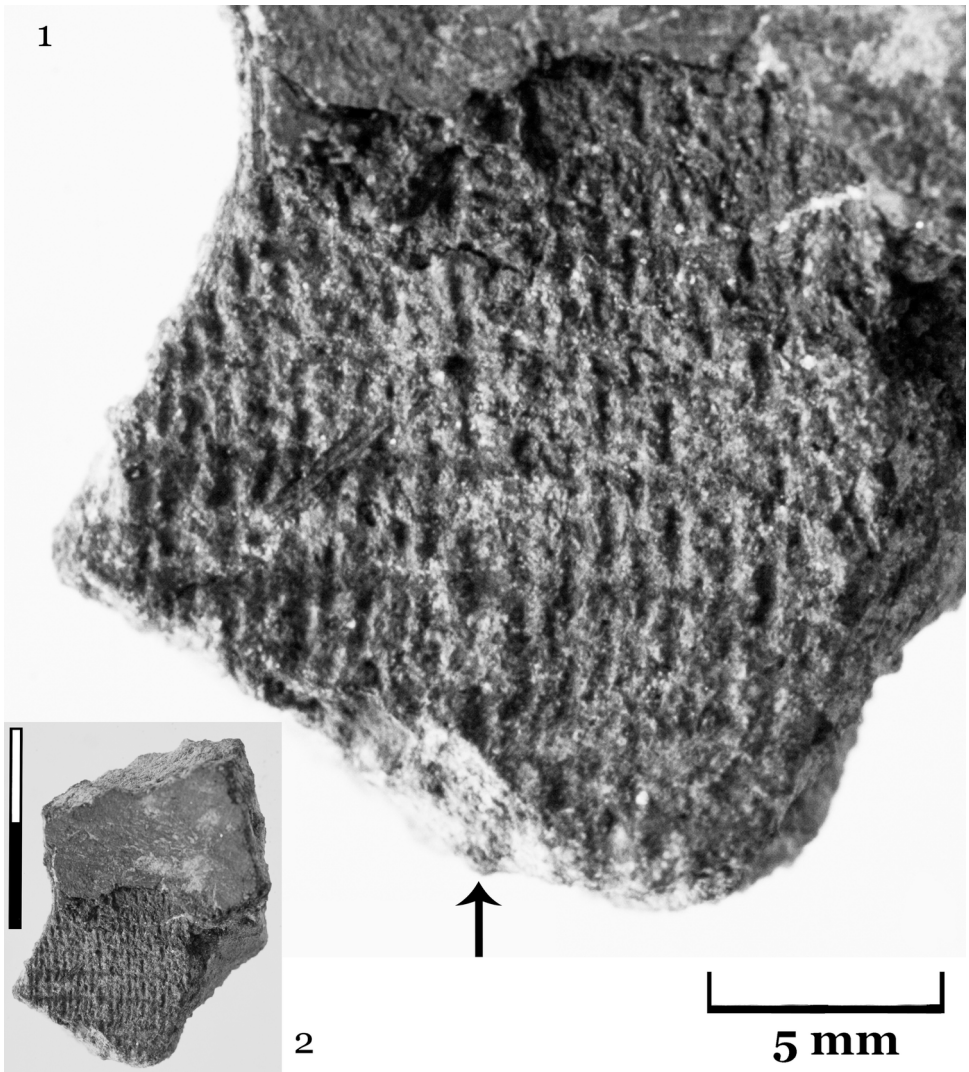

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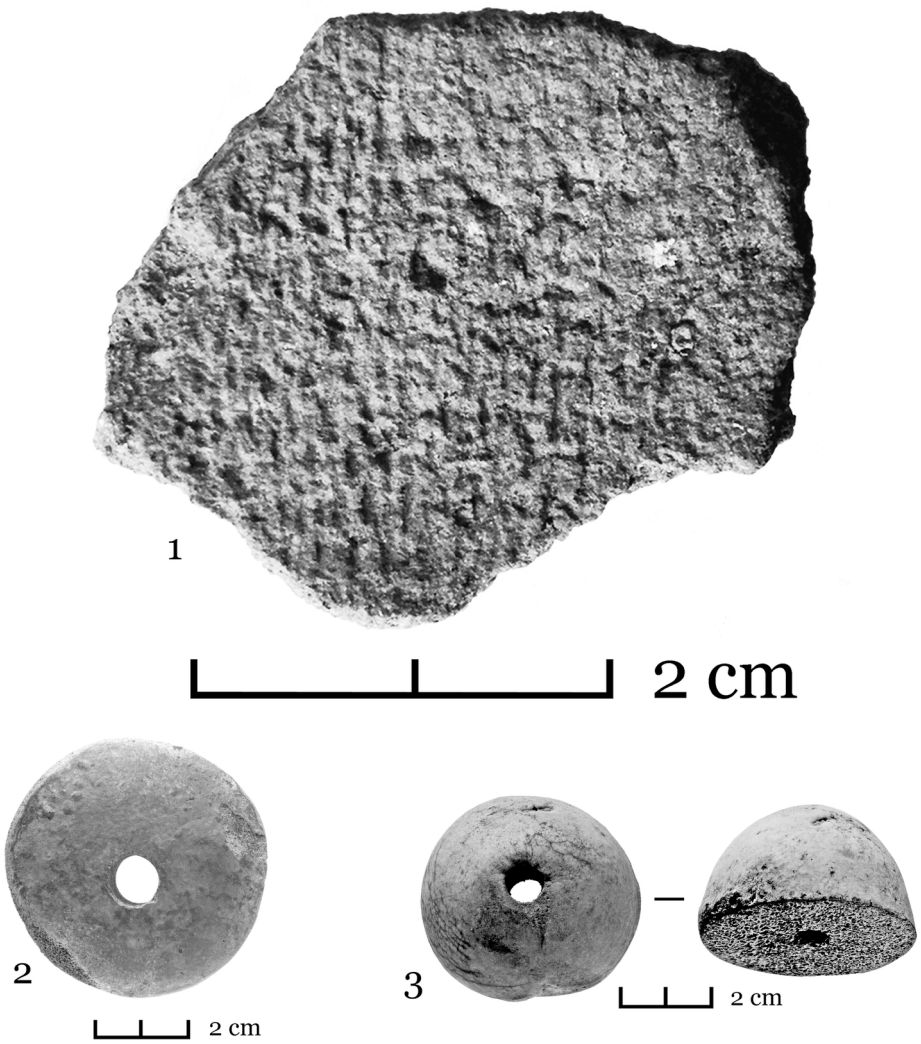

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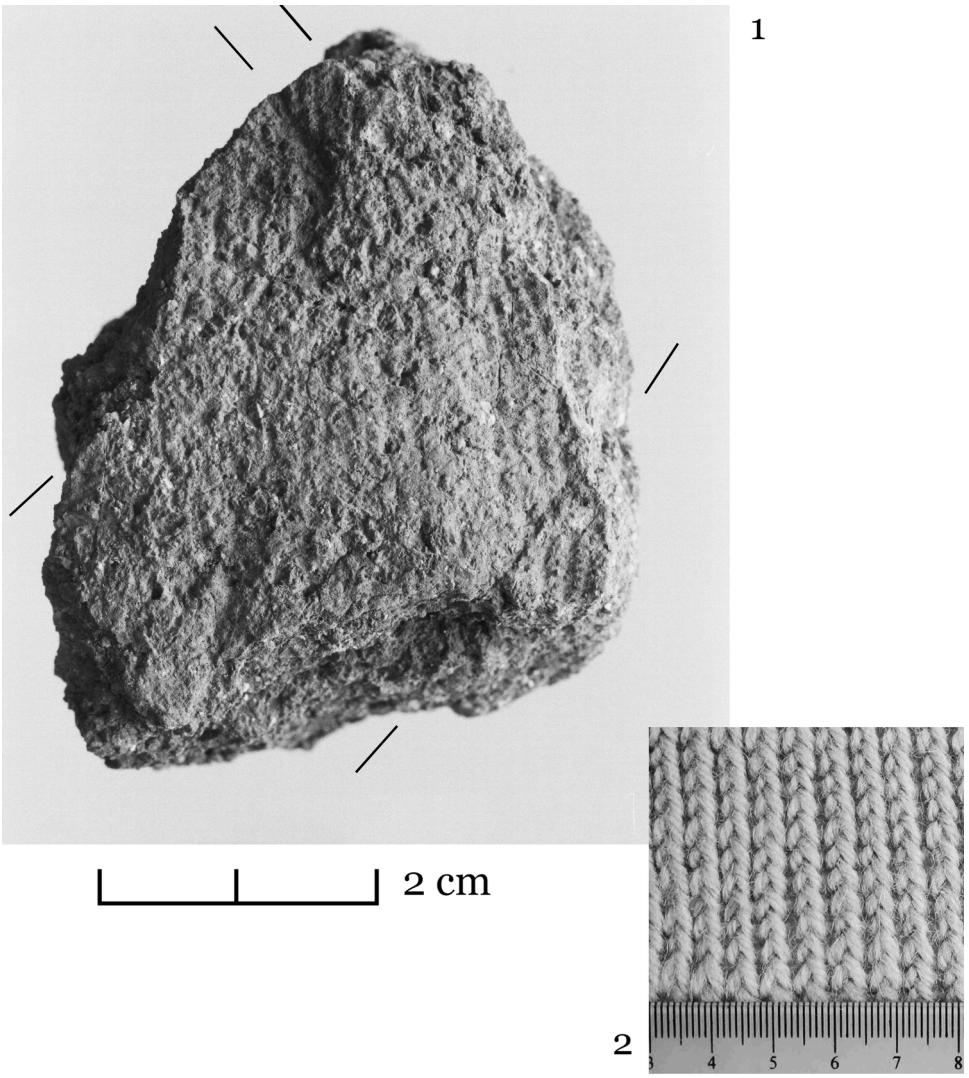

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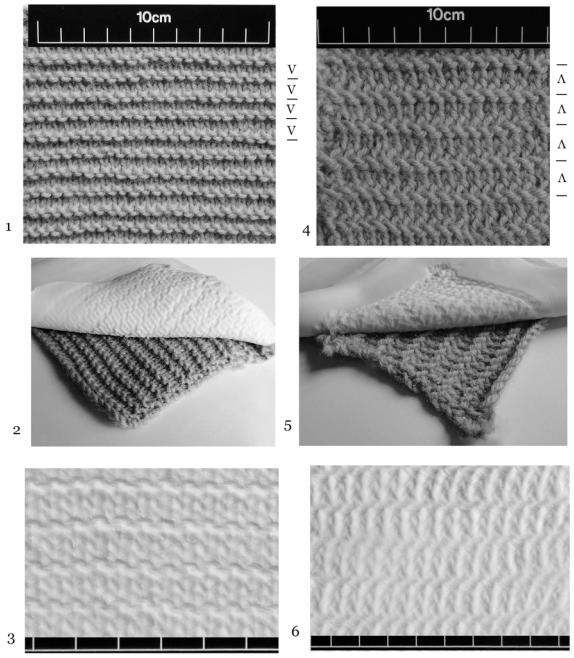

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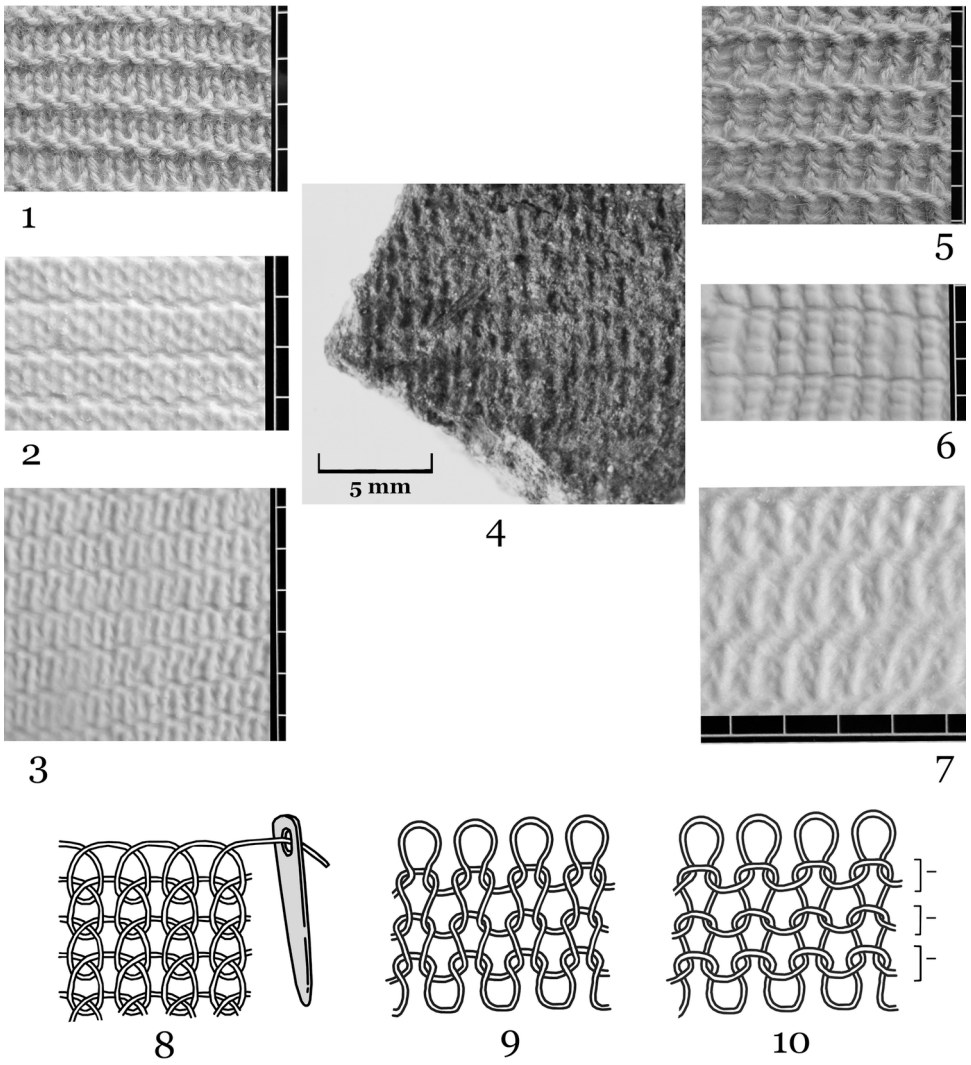

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