

Enigmatic Beauty

The Decorative Headwear of Lengberg Castle

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Introduction

In Lengberg Castle, East Tyrol, a perplexing textile fragment made of humble fabric but with exquisite detail was found beneath the floorboards among thousands of objects. It is of white linen cloth with a variety of decorative elements in linen thread. These decorative elements include needlelace, loop braids, and most strikingly, sprang. The complex tree of life pattern of the sprang suggests this is a noteworthy garment. It was meant to be seen.

Since the original function of this textile could not be determined with certainty by merely investigating the extant garment, a reconstruction was attempted in order to produce a copy with which wearer trials could be conducted. Thanks to a grant from the Janet Arnold Foundation, new light can now be shed on this mysterious textile, and how it was worn. After frustrating failed attempts, a surprising solution was determined: the textile is headwear.

Archaeological context

In the course of extensive reconstruction at Lengberg Castle (Municipality Nikolsdorf, East Tyrol, Austria) beginning in July 2008, archaeological investigations of several parts of the building were carried out under the direction of Harald Stadler (Institute for Archaeologies, University of Innsbruck). During the project a filled vault was detected in the south wing of the castle in room 2.07 on the second floor. The backfill was taken out by construction company's workers and stored for subsequent sieving, which took place in summer 2009. The fill consisted of dry material in different layers, among them organic matter such as twigs and straw, but also worked wood, leather (mainly shoes) and textiles. The building's history as well as investigations on construction techniques carried out by architectural historians of the Landeskonservatorat Tirol and the archaeological features suggest the finds date to the fifteenth century. This date has now been confirmed by the radiocarbon-dating of five textiles carried out at the ETH-Zurich.

Lengberg is first mentioned in a document from 15 August 1190, in which a donation of Count Heinrich of Lechsgemünd to the monastery of Viktring in Carinthia was confirmed and Volcarth, Caloth and Otto de Legenberch, ministerialis¹ to the House of Lechsgemünd, were named as witnesses. In 1207, Heinrich of Lechsgemünd sold the castle to Archbishop Eberhard of Salzburg. Until 1803, the castle was property of the archbishops of Salzburg who assigned its administration to various nobles².

Two administrative periods are relevant to the Lengberg textiles and therefore deserve closer attention. In 1419, the brothers Andre and Peter Mosheimer received the castle for lifetime care ('Burghut' or 'Pflege'). At first, Peter Mosheimer and his wife Anna inhabited the castle. After Peter's death in 1453 (or 1454), his brother Andre became lord of Lengberg. In turn, Andre's son, also named Peter, was responsible for Lengberg from 1465 to 1480 when Virgil of Graben (†1507), one of the most powerful nobles of his time in the region of Upper Carinthia and East Tyrol, was assigned lifelong lordship of Lengberg³. Virgil of Graben had the old castle "Veste Lengenberch" reconstructed into a new prestigious residence by adding an additional floor. It was during this modification that the vault between the roof of the first floor and the floorboards of the new second storey was filled with waste. This remodelling is mentioned by Paolo Santonino⁴ in his itinerary, where he also gives us a short description of the castle and mentions the consecration of the chapel by Pietro Carlo, Bishop of Caorle (1472–1513), on 13 October 1485.

It may be assumed that the vault was filled with waste during the addition of the second storey in order to level the floor. Taking into consideration that the reconstruction was probably finished by the time the chapel was consecrated, the majority of the finds (except for small pieces that later fell through gaps in or between the wooden floorboards) must predate October 1485. It is unlikely that the

¹ Ministerialis in the Holy Roman Empire were an upper class of originally unfree servants in the court, administrative and military service. They were entrusted by their landlord with a special function, such as the management of a court or of various possessions, such as castles.

² Magdalena Hörmann, "Lengberg," in *Tiroler Burgenbuch* Vol. 9., ed. Wilfried Beimrohr, Magdalena Hörmann-Weingartner and Oswald Trapp (Bolzano, Innsbruck: Athesia, Tyrolia 2003), 545–556.

³ Philipp Plattner, *Schriftfunde aus den Gewölbezwickelfüllungen von Schloss Lengberg in Osttirol*. NEARCHOS Beiheft 14 (Innsbruck 2013), 39–41.

⁴ Paolo Santonino, *Die Reisetagebücher des Paolo Santonino, 1485-1487*. Translated from Latin by Rudolf Egger, 13th ed. (Klagenfurt: Kleinmayr 1947), 34–37.

consecration took place while the construction was still underway, because the chapel and the room with the finds were situated in the same wing of the castle, the chapel was on the first floor, and the room with the filled vault underneath was on the second in the fifteenth century. In addition, Paolo Santonino did not mention ongoing reconstruction work when he described Vigil of Graben's rebuilding project.

Enigmatic linen fragments

Among the thousands of textile fragments, several linen garments have been identified. Some of these garments feature more than one type of decorative needlework or thread manipulation technique including needlelace, fingerloop braiding, and sprang. There are three sprang fragments from Lengberg Castle, all made of undyed, z-spun S-ply two-ply thread, with diameters ranging from 0.5 to 0.7 mm (0.019 to 0.027 inch) and featuring hole designs in patterns.⁵ The largest sprang piece is quite elaborate and is still attached to a plain-weave, undyed linen fabric woven in z-spun threads with a fabric density of fifteen threads per centimeter (thirty-eight threads per inch). With a warp count of 120 threads (= sixty loops), the sprang design is not entirely symmetrical (figs. 2 and 6). The person who made the sprang miscounted the warp threads and made the pattern slightly off-set, so that the design is not centered. This asymmetry is almost indiscernible in the finished piece and was most likely an acceptable imperfection.

In the light of some other finds from Lengberg and with it being impossible to “test-wear” the fragile extant piece, the textile was initially thought to be a supportive undergarment.⁶ Only after several attempts at reconstruction and tryings-on did the original use become apparent. The sprang textile proved difficult to reconstruct as a supportive bust garment because the physical dimensions of the “bra” did not easily match with female anatomy. It would have had fit a woman with a very narrow ribcage and extremely full breasts. The main panels of linen were too small, and the sprang did not

⁵ See: Beatrix Nutz, „Linen Sprang from Lengberg Castle“, in: *Ancient Textiles, Modern Science II*, ed. Heather Hopkins and Katrin Kania (Oxford 2019), 60-72.

⁶ Beatrix Nutz, "Bras in the 15th Century? A Preliminary Report," in *The North European Symposium for Archaeological Textiles XI.*, ed. Johanna Banck-Burgess and Carla Nübold (Rahden/Westf. 2013), 223.

stretch enough to accommodate breasts gracefully. There is no discernable method of fastening, and the placement of the still-tied knot, the location of the fingerloop braid and needlelace edging, and the roughly finished “top edge” of the sprang indicated another possibility: headwear. But what type of headwear? Naming the garment is quite a challenge.

Terms like *Gebende*, *Rise*, *Kruseler*, *Hennin* and the like blend historical and historicizing concepts to seemingly authentic names of precisely defined clothes⁷, and the Lengberg textile does not quite fit the descriptions of what are commonly known as a coif, cap or veil either. Therefore, the term “headwear”, which can be applied to any type of garment meant to be worn on the head, is used throughout this article for the Lengberg find.

Decorative sprang, needlelace, and fingerloop braids

The extant headwear from Lengberg (fig. 1) consists of four pieces of plain-weave natural linen. The main side sections measure approximately thirty-one centimeters (12.2 inches) long, with the width tapering from thirteen centimeters (5.11 inches) at the widest point near the mid-crown to 7.5 centimeters (2.9 inches) wide at the point connecting to the ties. One of the panels is ripped away nearest the needlelace, 3.5 centimeters (1.37 inches) from the fabric edge. These panels are connected with a large central section of patterned sprang, also in natural linen, measuring twenty-seven centimeters (10.6 inches) in length, which makes up the center panel of the headwear and creates an attractive effect from the forehead to the back of the head.

The sprang pattern resembles a tree of life (pattern 1 and 2), repeated one and a half times. The last seven rows approaching the center⁸ were worked by interlinking four warp threads (two pairs), where the sprang was cut and sewn with rough stitches to prevent unravelling, thus narrowing the fabric towards the back of the garment (fig. 1/b). An almost identical tree of life with two birds at

⁷ Jutta Zander-Seidel, „Haubendämmerung. Frauenkopfbedeckungen zwischen Spätmittelalter und Früher Neuzeit,“ in *Fashion and clothing in late Medieval Europe*, ed. Rainer C. Schwinges and Regula Schorta, (Basel 2010), 37.

⁸ Peter Collingwood, *The techniques of sprang: Plaiting on stretched threads*, (New York: Design Books 1999), 32.

the foot of the tree was embroidered in drawn thread work using blue and white linen thread on an *antependium*⁹. This textile from the abbey of the Benedictines in Engelberg, Switzerland, is dated to the 14th century.¹⁰

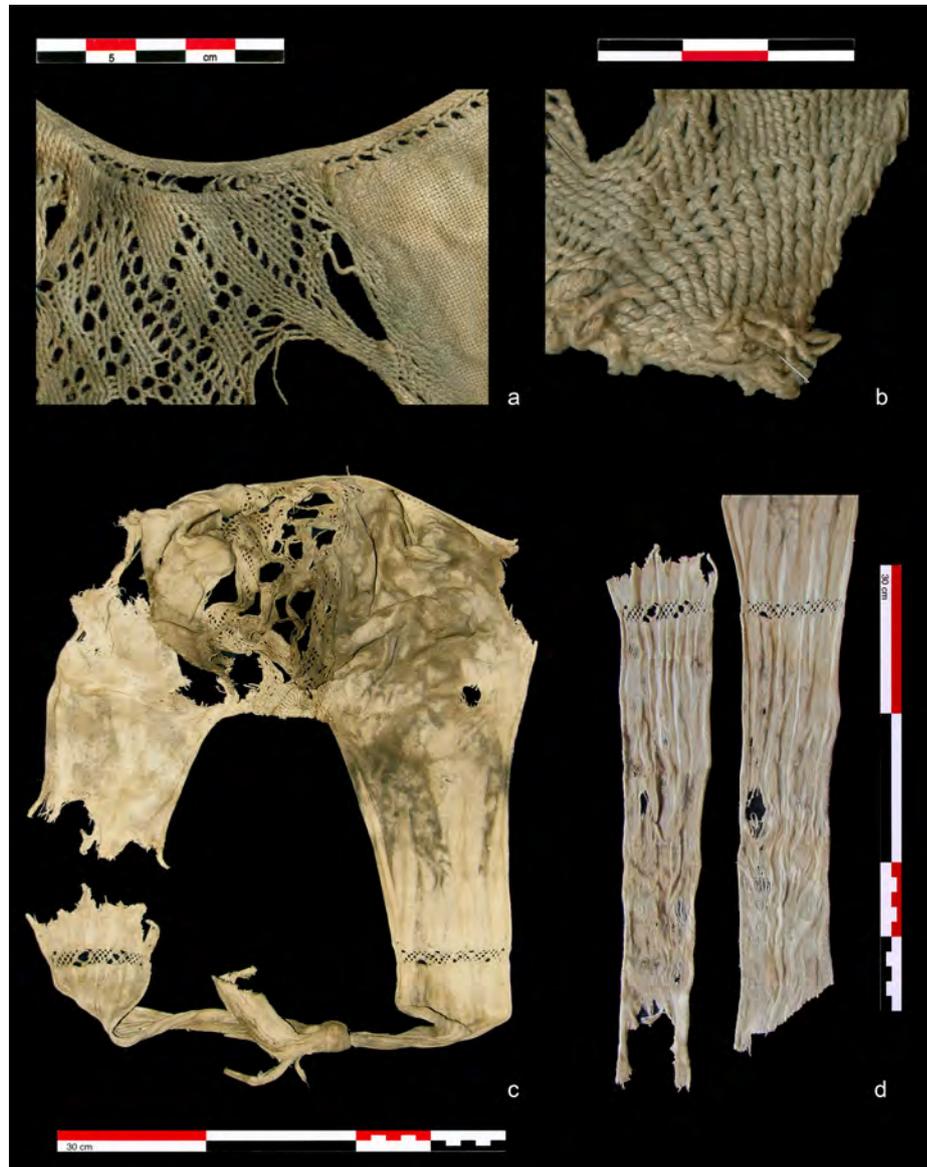


Fig. 1: Paneled sprang headwear from Lengberg Castle; a) detail of sprang with needlelace and loopbraided lace at the bottom; b) the last seven rows approaching the center of the sprang worked by interlinking four warp threads (two pairs); c) sprang headwear as found with ties knotted; d) ties unknotted. Photos: Beatrix Nutz.

⁹ an *antependium* (from Latin *ante-* and *pendere* "to hang before"), also known as a parament or hanging, is a decorative piece, usually of textile, that can adorn a Christian altar.

¹⁰ Brigitta Schmedding, *Mittelalterliche Textilien in Kirchen und Klöstern der Schweiz*. Schriften der Abegg-Stiftung Bern 3 (Bern: Stämpfli 1978), 221-222.

The ties, which were still knotted together when the garment was recovered, are connected to the main body of the headwear in two different needlelace patterns (Fig. 2/b and c), with both the main piece and the ties using the selvages of the fabric. The ties have a preserved length of 29.4 and 32.5 centimeters (11.5 and 12.8 inches) respectively, from the selvedge to which the needlelace is sewn to the torn and narrow ends, with a width of five and 6.35 centimeters (two and 2.5 inches).

A simple decorative loop braid and needlelace (Fig. 2/a) is added to the edge of the main panels and the top (front) of the sprang. The somewhat mysterious placement of needlelace sewn to the selvages of the fabric between the main part of the garment

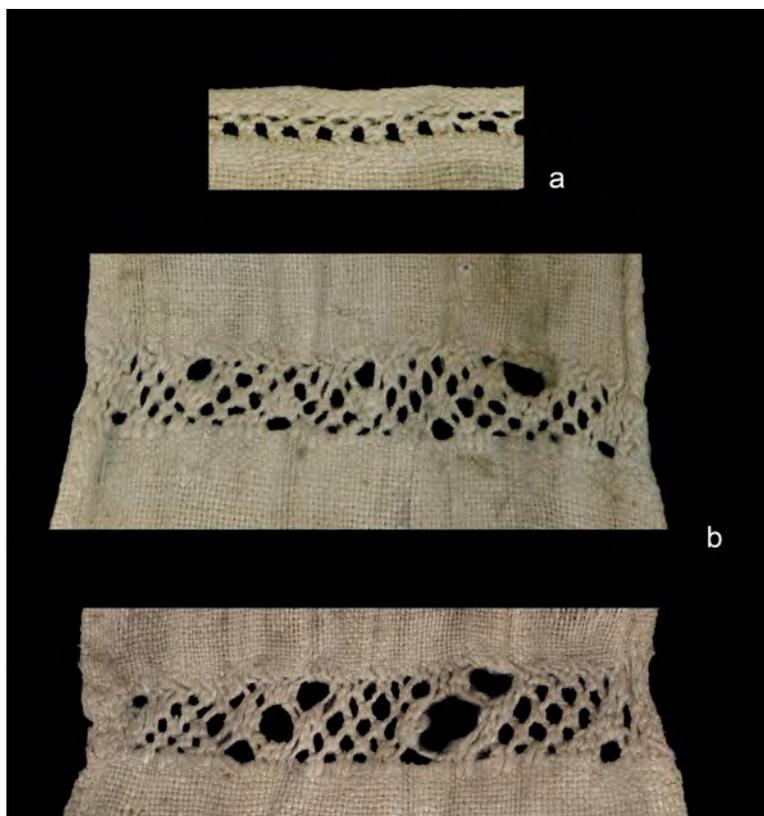


Fig. 2: Needlelace. a) lace and loop braid at the face edge of the headwear; b) lace connecting the main section to the right tie; c) lace connecting the main section to the left tie.

Photo: Beatrix Nutz

and the ties may indicate a limited fabric width, that the maker was working with small scraps of linen in order to reduce fabric use, or simply to add more decorative elements.

A narrow hem (0.5 centimeters/0.019 inch wide) along all the cut edges of the panels and ties is finished with whip stitches.

The reconstruction of the Lengberg headwear

A reconstruction of the garment (fig. 9) from Lengberg castle was made using materials and methods that approximate those of the fifteenth century. Only with the help of the reconstruction that made trial wearings possible, could the original use be determined as headwear.

Antique hand-woven natural linen from Germany with a fabric density of seventeen threads per centimeter (forty-three threads per inch) was used for the side panels and ties, and hand-spun plied linen thread within the range of the thread diameters of the extant headwear was used for the sewing thread, needlelace, and sprang. It is very difficult to find tightly-spun and plied commercial linen thread with a spin/ply angle of c. 45°, so linen thread was commissioned from a spinner, who spun the flax on a spinning wheel and finished it by hand.



Fig. 3: Woman working on a sprang frame.
"Sveta nedelja", fresco at Crngrob, Slovenia,
c. 1460. From: W.F.Schweitzer, Textile
Making Methods Depicted in Frescos, CIBA
Review 1966(1), 10–17.

The sprang pattern chart (Pattern 2) used in the reconstruction is based on Beatrix Nutz's drawing (Pattern 1). The sprang was created on a wooden floor loom, made to resemble and function as a fifteenth-century sprang frame (fig. 3). It was necessary to create a sixty-five centimeters (25.6 inches) warp in order to fit the twenty-seven centimeters (10.6 inches) sprang length for the headwear. Sprang is created at one end of the warp, which results in a mirror image at the other end of it.¹¹ The finished width of the sprang is approximately 8.5 centimeters (3.34 inches); the

original width was difficult to determine due to extensive damage. The central sprang panel is attached to the side panels with whip stitches.

The raw edges of the fabric were turned under twice to the inside of the fabric, and sewn using whip stitches, creating the narrow hem. The needlelace between the main body of the headwear and the ties (Pattern 5/b and c) was created by "casting on" the stitches along the main headpiece and working them from left to right, back and forth, turning the piece over for each row in order keep the stitches uniform in direction. Once the pattern was complete, the lace on each was whip stitched to the

¹¹ For more information about sprang and its methods of construction, see Peter Collingwood, *The techniques of sprang: Plaiting on stretched threads*, (New York: Design Books 1999).

ties. The needlelace along the face edge of the headwear (Pattern 5/a) was a simple one-row pattern worked right to left and whip stitched to an almost flat five-loop fingerloop braid, which in cross-section has one rounded face and one flat face. The pattern for the braid is called a broad lace of five loops, and it is a quite simple and quickly made braid.¹²

Wearing the reconstructed headdress not only revealed the beauty, but also the functionality of the decorative elements. The ties are crossed at the back, covering the somewhat unsightly rough sewing of the sprang end, brought around the front of the head, knotted, and can be tucked under if the ties are kept long; otherwise they are tied with the ends left showing. In several of the images from the visual record, ties can be discerned as a bunched band around the crown of the head. The placement of the still-tied knot on the extant headwear indicates that it too was tied at the front of the head. The sprang panel has stretch, which can expand to accommodate hair, maybe worn in braids wrapped around the crown of the head. Wearing the headdress before and after adding the loop braid and needlelace edging revealed its practical use as it provides the grip needed along the hairline to keep the headwear from shifting during wear and frames the face attractively. The symmetrically worn and ripped areas on the main side panels of the extant textile would have been at the ears, which is a natural place for it to incur damage.

Needlelace and/or loop-braided lace edging on other garments from Lengberg

Several fragments from Lengberg Castle use loop-braided lace and needlelace on the edges, and range from supportive bust garments to headwear and a shirt. The edging seems to be simply decorative in some cases, while providing grip and structure in others. The shirt edge (figs. 4/c and 4/d) is decorative, made along the neckline, and appears to serve no other purpose. The loop-braid and needlelace edges on two fragments thought to be supportive bust garments (figs. 4/a and 4/e; Pattern 6/a and b) may have also provided necessary grip to hold them in place, and perhaps also

¹² Beatrix Nutz, "DRGENS SN WIR VS NVT SCHAME – NO SHAME IN BRAIDING 15TH CENTURY FINGERLOOP BRAIDS FROM LENGBERG CASTLE," *Estonian Journal of Archaeology* 18/2 (2014), 116.

Elizabeth Benns and Gina Barrett, *Tak V Bowes Departed. A 15th Century Braiding Manual Examined*, (London, Soper Lane 2007), 39.

kept them from rolling up along that edge. One garment of as yet undetermined use features a loop-braided lace only (fig. 4/b). The pattern of the decorative edge from Lengberg seen in fig. 4/e can be found on headwear from the visual record too (fig. 4/f - Midwife. Master of the Crucifixion Triptych, Birth of the Virgin, altarpiece. Private collection). There the lace probably served the same purpose of providing grip as it did on the Lengberg headwear.



Fig. 4: Needlelace and/or loop-braided laces as edging. a – e) extant textiles from Lengberg. f) Midwife. Master of the Crucifixion Triptych, Birth of the Virgin, private collection. Photos: Beatrix Nutz. Painting reproduced in: Otto Benesch, Der Meister des Krainburger Altars, Wiener Jahrbuch für Kunstgeschichte VII (1930), page 191, fig. 56.

The narrow sprang strips from Lengberg

A narrow sprang fabric (fig. 5 and pattern 3a) of which two fragments survive was originally worked with thirty-two warp threads (= sixteen loops), now missing six to seven warp threads due to also being torn lengthwise. The average thread diameter of the S-plyed 2-ply thread is 0.6 mm (0.02 inch). The smaller fragment, which shows the same pattern, is sewn onto a plain woven linen fabric of z-spun single thread with thirteen to fifteen threads per centimeter. The preserved length of the larger fragment is fifteen centimeters (5.6 inches). The pattern has holes worked in five rows combined with holes of twice the length worked in seven rows of interlinking.¹³

The second sprang strip (fig. 6 and pattern 3b) with a non-stretched width of 2.2 centimeters (0,86 inch) and a preserved length of eleven centimeters (4.3 inches) was made with a slightly finer plied thread 0.5 mm (0.019 inch) in diameter. It too was worked in a hole pattern with forty-eight warp threads (= twenty-four loops), the holes arranged in the shape of a flower again worked in seven rows.

The exact purpose of these two narrow sprang fabrics cannot be determined, but considering that the large sprang is part of a headdress, and one of the two narrow sprang pieces was clearly

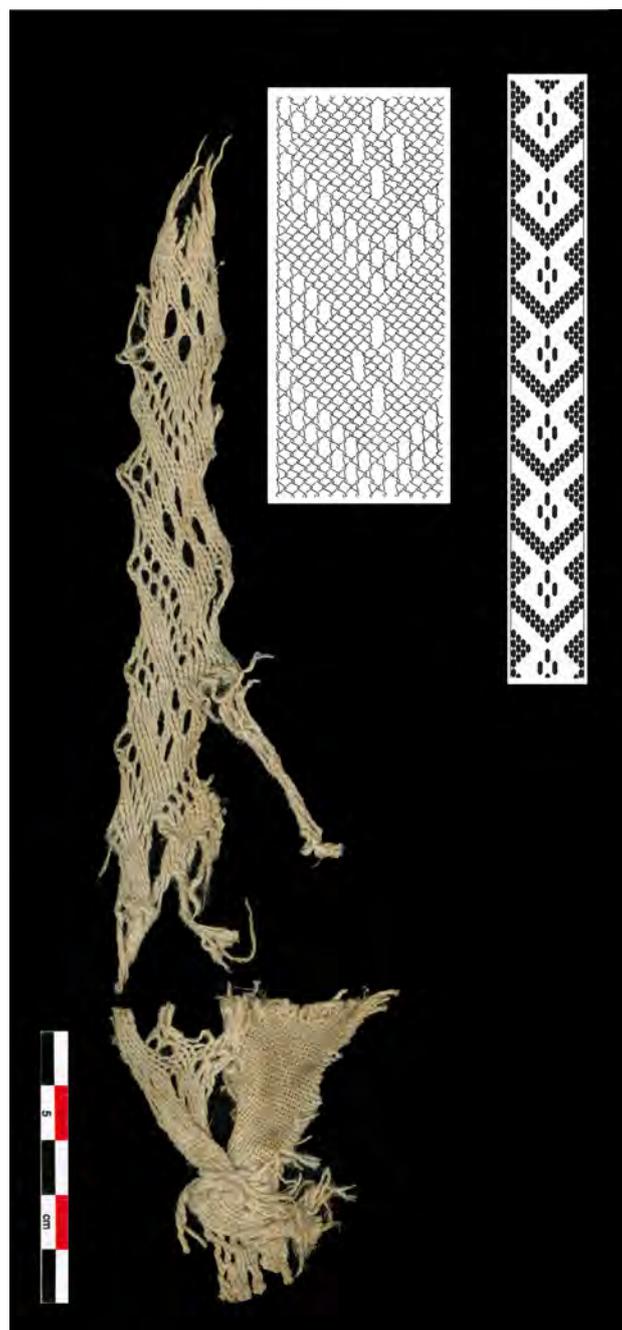


Fig. 5: Narrow strip of sprang possibly for paneled sprang headwear (see fig. 7/1). Photo and drawings: Beatrix Nutz.

¹³ see Peter Collingwood, *The techniques of sprang: Plaiting on stretched threads*, (New York: Design Books 1999), 148-149.

sewn to a woven fabric, their stretchy properties could have been used in a coif or cap to accommodate various head sizes and quantities of hair. Head coverings with narrow netted strips are depicted in the *Landshuter Ringerbuch* (Fig. 7/l).

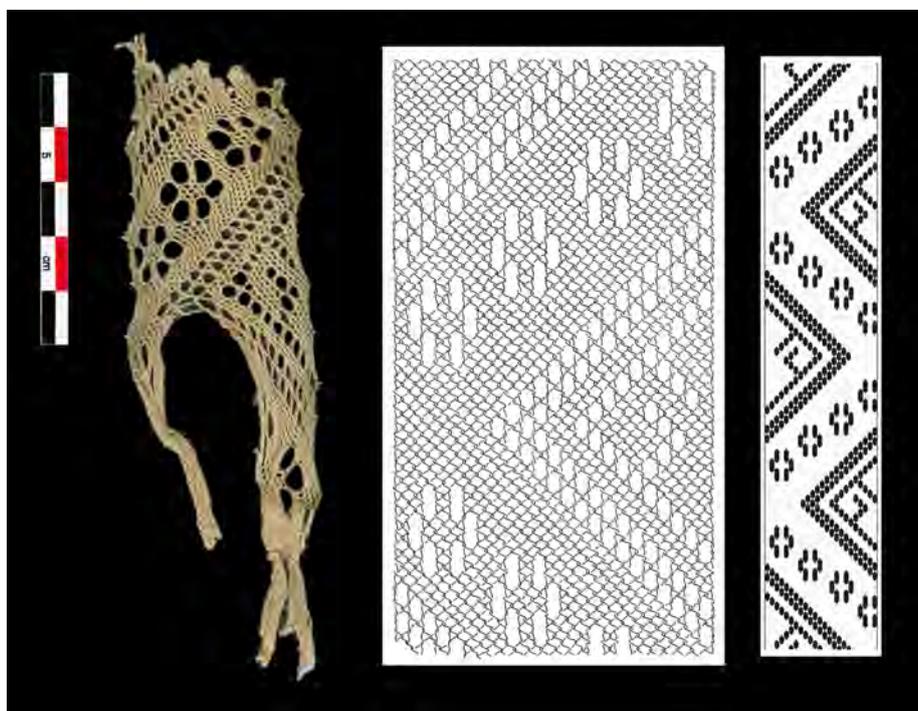


Fig. 6: Narrow strip of sprang possibly for paneled sprang headwear (see fig. 7/l). Photo and drawings: Beatrix Nutz.

Pictorial evidence of netted or sprang headwear

To date no other extant example of this type of headwear is known but several pictorial examples substantiate this interpretation. The earliest image found depicting someone wearing headwear resembling the sprang garment is in an Austrian manuscript from 1435 (fig. 7/a) which shows a woman, probably a nurse, attending a deathbed. This fits with the radiocarbon-dating of the sprang headwear to 1390 to 1450 (86.1% probability, ETH-40538).

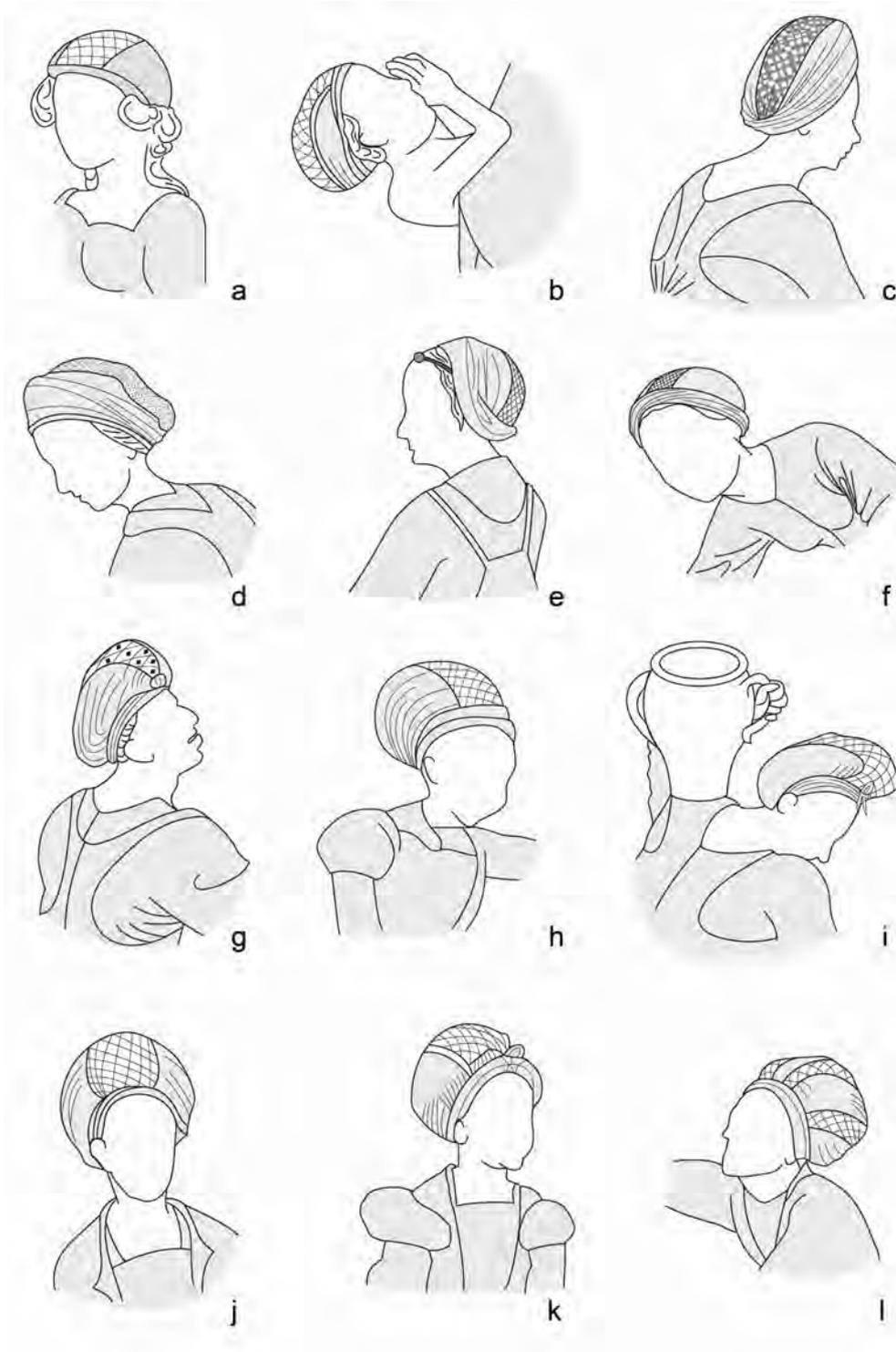


Fig. 7: Images of sprang or net headwear of the Middle Ages. a-f women, g-l men. Drawings: Beatrix Nutz

Images of headwear with sprang or net inserts

1435	Nurse? "Death of Josiah", <i>Biblia pauperum</i> , fol. 18r, Pierpoint Morgan Library, MS M.0230, (fig. 7/a).
1445-1450	Andromache, "Hector and Andromache in bed", <i>Trojan War</i> , fol. 151r, Austrian National Library cod. 2773, (fig. 7/b).
1460/80	Midwife. Master of Uttenheim, <i>Birth of the Virgin</i> , altarpiece, German National Museum no. Gm1180 (fig. 7/c).
1469-1480	Midwife. Master of the Schottenaltar, <i>Birth of the Virgin</i> , altarpiece, Schottenstift Vienna (fig. 7/f).
1470-1475	Executioner. Ulrich of Richental, "The burning of Jerome of Prague", <i>Council of Constance</i> , fol. 84r, Austrian National Library cod. 3044, (fig. 7/g).
1470s-early 1490s	Midwife. Master of the Crucifixion Triptych, <i>Birth of the Virgin</i> , altarpiece, private collection (fig. 7/d).
1490	Cook. <i>Kuchenmeisterey</i> , woodcut, Wellcome Collection London (fig. 7/h).
1490s-c. 1509	Wrestlers. Hans Wurm, <i>Das ist ain hybsch ring byechlin</i> (Landshut Wrestling Manual), Johann Sittig, Augsburg c. 1509, fol. 1v, 2r, 6r, 7r, 8r, 11r, Bavarian State Library BSB-Ink R-190 - GW 5, (fig. 7/k and l).
1491	Servant serving wine. Stephan Fridolin, <i>Schatzbehalter</i> , fol. 51v, woodcut, University Library Heidelberg, GW 10329, (fig. 7/i).
1491	Executioners. Stephan Fridolin, <i>Schatzbehalter</i> , fol. 34r, 47v, 52r, woodcuts, University Library Heidelberg, GW 10329.
1491	Soldier (?) Stephan Fridolin, <i>Schatzbehalter</i> , fol. 125v, woodcut, University Library Heidelberg, GW 10329.
1493	Executioners. Hartmann Schedel, <i>Das buch der Cronicken vnd gedechtnus wirdigern geschichte[n]</i> , fol. 104r, 104v, woodcuts, Nuremberg, Bavarian State Library BSB-Ink S-197 - GW M40796.
1493	Servant with feather fan. Hartmann Schedel, <i>Das buch der Cronicken vnd gedechtnus wirdigern geschichte[n]</i> , fol. 94v, woodcut, Nuremberg, Bavarian State Library BSB-Ink S-197 - GW M40796.
1495	Midwife. Master of Mariapfarr, <i>Birth of the Virgin</i> , altarpiece, parish church Salzburg (fig. 7/e).

1496/1497	Executioner. Albrecht Dürer, <i>The Martyrdom of St. Catherine</i> , woodcut, Metropolitan Museum of Art, New York, no. 19.73.154.
1496/1498	Executioner. Albrecht Dürer, <i>The Martyrdom of St. John</i> , woodcut, National Gallery of Art, Washington D.C., no. 1941.3.5.
1497	Doctors or medical students. Hieronymus Brunschwig, <i>Dis ist das Buch der Cirurgia, Hantwirckung der Wund Artzney</i> , woodcut, Augsburg, Bavarian State Library BSB-Ink B-931 - GW 5594 (fig. 7/j).
1497	Patient. Hieronymus Brunschwig, <i>Dis ist das Buch der Cirurgia, Hantwirckung der Wund Artzney</i> , woodcut, Augsburg, Bavarian State Library BSB-Ink B-931 - GW 5594.
1500	Moresque dancer. Golden Roof, Innsbruck (fig. 8).
1510	Wrestlers. <i>Hye in disem büchlin findt man die recht kunst vnd art des Ringens</i> , fol. 1v, 1r, 2r, 3r, 4r, 5r, 10v, 11r, Bavarian State Library BSB-Ink R-191.
1512	Wrestlers and fencers. Albrecht Dürer, <i>Όπλοδιδασκαλία sive Armorum Tractandorum Meditatio Alberti Dvreri [Weapon Training, or Albrecht Dürer's Meditation on the Handling of Weapons]</i> , Albertina, Vienna, MS 26-232, fol. 41r, 42r, 48r, 49r, 66v, 77r, 79r, 85r, 87r.
c. 1512	Fencer. Fencing book, Nuremberg (?), State Library Berlin Libr. pict. A 83, fol. 58r.
1516	Cook. <i>Küchenmeisterei</i> , woodcut, Johann Knobloch (publisher), Strasbourg, Bavarian State Library Res/4 Oecon. 209 y.

Most of the depictions of this type of headwear are men, but there are several examples of women wearing headwear with panels of fabric and sprang or netting. Many seem to be workers or laborers not the nobility, but are working class and perhaps middle class. These people, both male and female, are servants, clerks, cooks, nurses or midwives, executioners, athletes (wrestlers and fencers who may be nobles) or doctors. This may be a garment worn to keep hair out of the face, but more elaborate than a coif or kerchief, a kind of formal headwear. It is interesting to note that many examples of the headwear worn by women in the imagery have a smaller profile than those worn by men. In the estate account of Lazarus Holzschuher of 1545 a *guldin Hauben mit sampt dem wulst*

(a golden cap/coif with the wulst) is listed among the other possessions. Jutta Zander-Seidel wrote that this points to men also having worn a wulst under their coifs, similar to woman.¹⁴

Although the extant headwear is made completely of undyed linen fabric and thread, some pictorial examples of this paneled garment seem to indicate that they could have been made with

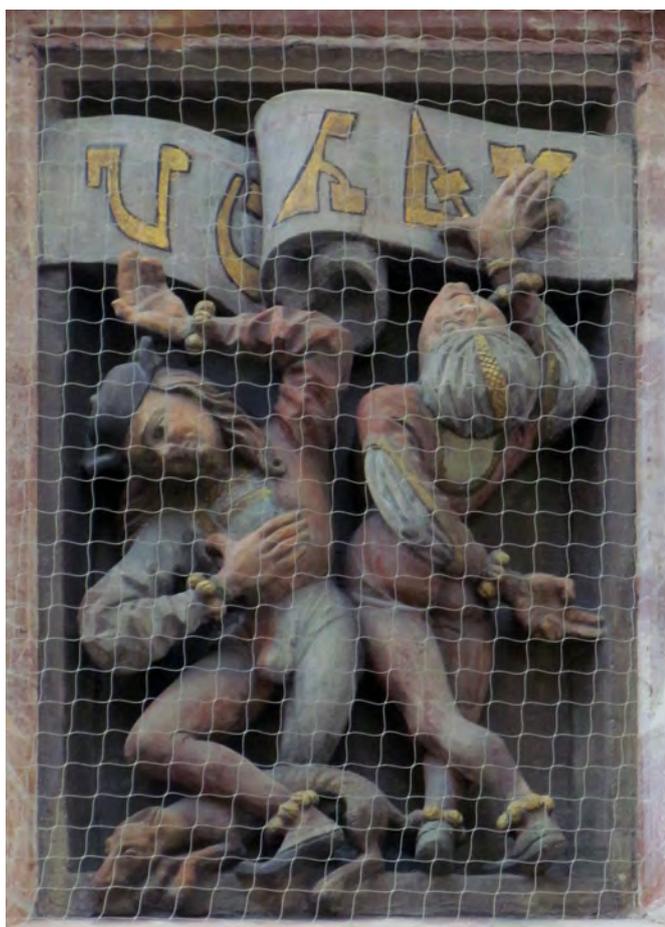


Figure 8: Moresque dancers, Golden Roof, Innsbruck, 1500. On the right a dancer with a headdress with a net or sprang insert. Photo: B. Nutz.

other textiles such as colorful silk or wool in green, red, yellow or black fabric. The central panel could be sprang, but could also be netting made by a different technique or another textile.¹⁵

The paneled headwear seems to be peculiar to Germany and Austria in the fifteenth and early sixteenth century as to date no contemporary images of this type of headwear could be found in sources originating in other areas of Europe. As long as no other extant garment like the one from Lengberg is found, it is necessary to rely on Austrian and German artwork of the period between c. 1435 and 1520 for comparisons.

¹⁴ Jutta Zander-Seidel, *Textiler Hausrat. Kleidung und Haustextilien in Nürnberg von 1500 bis 1650* (München: Dt. Kunstverlag 1990), 230.

¹⁵ e.g. in Hartmann Schedel, Georg Alt and Michael Wolgemut, *Das buch der Cronicken vnd gedechtnus würdigern geschichte[n], vo[n] anbegyn[n] d[er] werlt bis auf dise vnßere zeit Nürnberg*, 1493 GW M40796 Folio NP. <http://daten.digital-sammlungen.de/%7Edb/0005/bsb00059084/images/index.html?seite=232>

Kesselmartyrium des Hl. Johannes Evangelist, altarpiece, 1485-1495, Master of the Fridolfing Altar, Johanneskirche, Fridolfing, Bavaria. <http://tarvos.imareal.oeaw.ac.at/server/images/7001613.JPG>

Hl. Margareta werden die Brüste abgeschnitten, altarpiece, 1490 -1500, Peterkirche, St. Lambrecht, Styria, Austria.

Written sources on sprang headwear

No written sources have been found on sprang headwear to date, although there are documents that mention women's caps in inventories, wills, and laws during the Middle Ages.¹⁶ There are two reasons mainly responsible for the lack of written sources on sprang headwear. First and foremost, we do not know what sprang was called in the fifteenth century in German speaking areas (where the pictorial sources known to date originate) or even if there was a specific term for it. The word "sprang" that we use today is of north European (Scandinavian) origin, meaning an openwork textile. Peter Collingwood lists a number of written records from northern regions from 1328 to 1578 but no central or southern European sources.¹⁷ In a book published in 1800 in Leipzig, the technique is referred to as *Rahmenstricken* (= frame knitting) or *Greifstricken* (= pick knitting) with the latter being used in Switzerland¹⁸, but this may have not been the case several centuries ago. The second reason is that garments and their construction are rarely described in detail in written records, and the modern German words for different types of headwear are rather imprecise. The German term *Haube* probably applies best to the Lengberg headwear, but even that word is ambiguous. The dictionary of the Brothers Grimm defines *Haube* as: male headgear of different shape and for different social ranks. Generally, a men's fashion in the Middle Ages and later.¹⁹ In another lexicon, a *Haube* (French: *coiffe*) is "a light, roundish headgear, depending on fashion and rank of very different styles, at the end of the Middle Ages very baroque shape ... especially in the costume of married women."²⁰ The definition for *Haube* in the current version of the Duden is: "Middle High German: hūbe, Old High

¹⁶ Camilla Luise Dahl and Isis Sturtewagen. "The Cap of St. Birgitta," *Medieval Clothing and Textiles* 4 (2008), 99-142.

¹⁷ Peter Collingwood, *The techniques of sprang: Plaiting on stretched threads* (New York: Design Books 1999), 34 and 44.

¹⁸ Johann Friedrich Netto and Friedrich Leonhard Lehmann, *Die Kunst Zu Stricken in ihrem ganzen Umfange. Oder: Vollständige und gründliche Anweisung alle sowohl gewöhnliche als künstliche Arten von Strickerei nach Zeichnungen zu verfertigen.: Mit dreissig illuminirten und schwarzen Kupfertafeln*, (Leipzig: Voss 1800), 32.

¹⁹ Deutsches Wörterbuch von Jacob Grimm und Wilhelm Grimm, <http://www.woerterbuchnetz.de/DWB?lemma=haube> [Accessed 31.05.2018].

²⁰ Meyers Großes Konversationslexikon, <http://www.woerterbuchnetz.de/Meyers?lemma=haube> [Accessed 31.05.201].

German: *hüba*. 1. Headgear made of soft or starched, often pleated fabric, adapted to the head [covering the ears] for a female person. 2. (southern Germany, Austria) [wool] cap. 3. (History) Headgear of a Warrior; helmet.²¹

That *Haube* was indeed used for male and female headgear in Tyrol in the fifteenth century is documented in inventories. *Haube*, in historical records sometimes also spelled *Hawbe*, as protective headwear was listed in 1446 as being in the armory of Pergine Castle, Trentino-Alto Adige/South Tyrol²² and in 1478 *ein Truchl von Pain mit acht Hawbn* (a chest made of bone with eight coifs/caps) was part of the dowry of Paola Gonzaga when she married Count Leonhard of Görz who resided in Lienz, East Tyrol. As can be seen, German-speaking people do not agree on the gender of the wearers much less on a distinct shape of the garment. To make matters worse, sometimes, the terms *Haubttuch*, *Haupttuch*, *Hawbtuch* appear in wills and inventories. And while *haupt* can be translated as “head” and *haupttuch* as “headcloth” and sounds promising, it is better not to jump to conclusions. *Haupt* can mean “main” too and is used as such to refer to altar or table cloths, or even towels. The estate of Hans of Wehrburg (South Tyrol) lists in 1420 *ain tischlachn, ain genat hanttuch oder haupttuch, VI hanttucher, ain lang tischtuch*²³ (one table sheet, one sewn hand towel or main cloth, six hand towels, one long table cloth). The dowry of Paola Gonzaga contained *zway Haubttucher mit gulden Leisten. Item zway Haubttucher mit weißn seidn Fransn. Item zway Haubttucher mit guldn Fransn. Item zway Haubttucher ausgenait a la morescha*²⁴ (two main cloths with golden borders, two main cloths with white silk fringes, two main cloths with gold fringes, two main cloths sewn a la

²¹ <https://www.duden.de/rechtschreibung/Haube> [Accessed 31.05.2018].

²² ...siben hawben, ain ledigs geheng an ain'hauben, fünf hauben one geheng, zway englisch hauben mit geheng, zway helmlein, vier eysenhüte... (seven caps, one single pendant on a cap, five caps without pendants, two English caps with pendants, two helmets, four iron hats,...). in Oswald von Zingerle, *Mittelalterliche Inventare aus Tirol und Vorarlberg. Mit Sacherklärungen*. (Innsbruck: Wagner 1909), 84.

²³ Oswald von Zingerle, *Mittelalterliche Inventare aus Tirol und Vorarlberg. Mit Sacherklärungen* (Innsbruck: Wagner 1909), 173.

²⁴ Maria Kollreider, "Madonna Paola Gonzaga und ihr Brautschatz," in *Lienzer Buch. Beiträge zur Heimatkunde von Lienz und Umgebung*, ed. Raimund Klebelsberg, Schlern-Schriften 98 (Innsbruck 1952), 146.

morescha²⁵). The fringes very strongly suggest that these were table cloths as caps or coifs did not have fringes. The only obvious conclusion gained from written records is that women must have worn a type of headwear named *Haube* (or *hübe*, *hüba*, *haube*, *hawbe*, *coiffes*) and further research might reveal useful data.

Other extant headwear

Although the Lengberg headwear is a unique find, there are at least two other extant coifs or caps that feature decorative elements using thread manipulation and needlework.

The most well-known example is probably the St Birgitta's cap or *huva* from fourteenth century Sweden. The cap is made from two panels of very fine plain-weave natural linen, with a continuous loop tie that wrapped around the head to secure it. The midline of the two halves of the cap is decorated with intricate open embroidery running from the forehead to the nape of the neck. There is a narrow embroidered strip of fabric along the face edge that continues from the right side nape as a long tie torn off at the end. The tie on the left side, which was sewn on to the binding strip, was broken too, with only a short piece remaining. The line of embroidery is along the face edge of the strip only and does not continue onto the ties. At the back of each panel, tiny pleats allow for fullness in the cap to accommodate the hair. The conservators believed that the ties once formed one long narrow band, and therefore the ends were sewn together. The cap might have been worn with the ties crossed at the back, brought around the top of the head, with the loop resting at the crown of the head. The tie is attached at the back, making it necessary to wrap it around the head to secure it. This method of tying the cap is seen in depictions of women wearing a similar piece of headwear, especially in the Maciejowski Bible (also called the Crusador Bible)²⁶. The cap is quite small, measuring approximately forty-five centimeters (17.5 inches) along the face edge, and would have fitted a small-framed woman

²⁵ Groppo Moreschi. This term appears in a number of sixteenth-century pattern books, including Taglienti's *Opera nuova* of 1527. Although it may refer to Macramé, none of the patterns appear suitable for this technique. It is more likely to refer to designs incorporating Moresque arabesques to be worked in knotted embroidery stitches. Santina M. Levey, *Lace. A History* (London: Victoria and Albert Museum 1990), 121.

²⁶ The Crusador Bible, Old Testament Miniatures with Latin, Persian, and Judeo-Persian inscriptions France, Paris, 1240s. <https://www.themorgan.org/collection/Crusader-Bible/thumbs>

or a girl.²⁷ The open embroidery of the cap of St Birgitta is reminiscent of the needlelace of the Lengberg headwear. The function of the open embroidery may simply be decorative.

Another embellished coif from the Middle Ages is in a private collection. It is part of an assemblage of discarded garments and furnishing fabrics uncovered beneath the floorboards of an Italian castle. It has been determined that the textiles were discarded between 1470 and 1540, but the coif itself may be older. Detailed technical data on this coif, or of any of the other finds, have not been published to date, as investigation into the finds from this collection are still a work in progress.²⁸

The Italian coif is made from a fine plain woven natural linen with a thread density of eighteen threads per centimeter. The thread used to sew the coif and its embellishments appears to be of linen. It is constructed with three panels, each panel connected by decorative “lace” very similar to St Birgitta’s cap. The coif’s face edge also has a decorative element²⁹ similar to that in the Lengberg pieces that also feature loop braids and needlelace. Remnants of braided ties are still attached to the front corners.³⁰ The placement of the ties at the side of the face indicates that they would be tied under the chin or allowed to hang loosely, which appears to fit with depictions of male coifs from the fourteenth and fifteenth centuries in construction, but there is no evidence in pictorial depictions of decorative seams on men’s headwear as in this coif.

²⁷ Camilla Luise Dahl and Isis Sturtewagen, “The Cap of St. Birgitta,” *Medieval Clothing and Textiles* 4 (2008), 99–129.

²⁸ Amica Sundstöm and Maria Neijman <https://historicaltextiles.org/tidskapseln-the-time-capsule-la-capsula-del-tempo/> / [Accessed 24 May 2018].

²⁹ A loop-braided lace sewn onto the coif edge in an as yet undetermined technique. Personal communication with Amica Sundstöm and Maria Neijman, 7 March 2018.

³⁰ Amica Sundström and Maria Neijman, *Coif/ Cuffia*. [online] historical textiles. Available at: <https://historicaltextiles.org/coif-cuffia/> [Accessed 21 May 2018].



Fig. 9: Side, back and top view of the reconstructed headwear compared to a) the extant headwear from Lengberg and b) the midwife in the Master of Uttenheim's Birth of the Virgin altarpiece. Photos: Andreas Blaickner and Rachel Case. Painting reproduced in: Artur Rosenauer (ed.), Michael Pacher und sein Kreis. Ein Tiroler Künstler der europäischen Spätgotik (Verl.-Anst. Athesia, Bolzano 1998) 168.

Conclusion

During extensive reconstruction at Lengberg Castle in East Tyrol, Austria in July 2008, a filled vault was discovered beneath the floorboards of a room on the second floor. Among the thousands of items discovered, several linen fragments were identified. One particular garment with sprang, needlelace and fingerlooped decorative elements was originally identified as a supportive undergarment for the breasts. Several attempts at reconstruction, and clues from the visual record of fifteenth-century Austria and Germany pointed to a possible conclusion: this garment was not a bra, it was headwear.

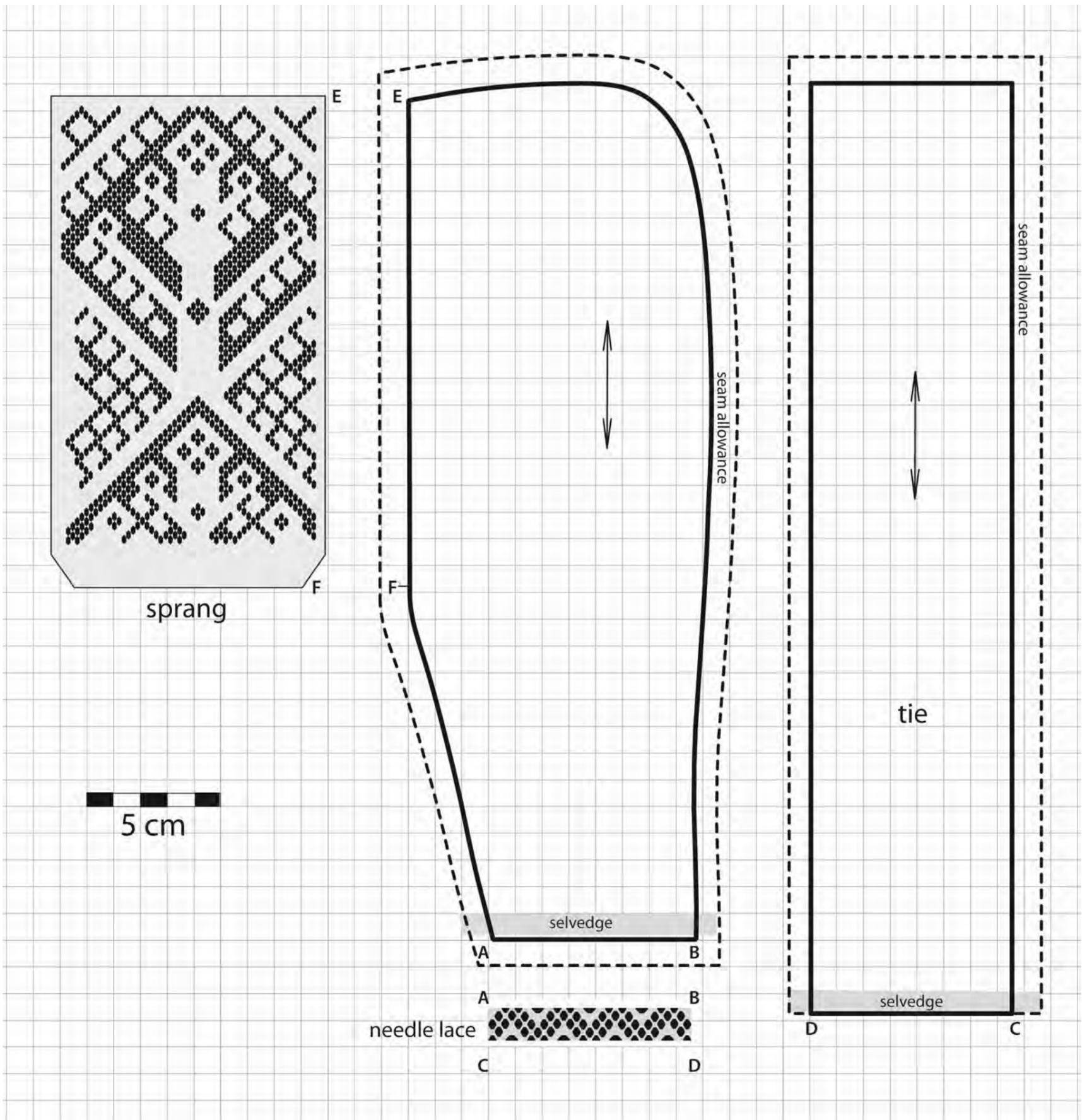
Although no other extant examples of this type of headwear have been found to date, it can be concluded that it did actually exist due to the many examples in the visual record of the fifteenth and sixteenth centuries in Germany and Austria. Both men and women are depicted wearing paneled sprang or netted headwear that very closely resemble the extant Lengberg sprang garment. The size of the headwear from Lengberg indicates that it was worn by someone with a small head, most likely a woman, perhaps even a girl. By Anna, the wife of Peter Mosheimer? Or maybe Andre Mosheimer's wife of whom we have no record? Or someone else, maybe a servant?

Although it is a functional garment, its delicate embellishments are subtly beautiful and graceful in their simplicity of material, yet deceptively complicated in the techniques used to create them. Maybe the headwear was worn as an everyday garment by someone of high standing in the castle.³¹ To which of the female inhabitants of Lengberg Castle it belonged to though will forever remain a mystery.

³¹ Beatrix Nutz, "Dressed to the nines. Kleidung zur Identifikation des sozialen Standes", in: *Mittelalterarchäologie in Österreich. Eine Bilanz*, ed. Nikolaus Hofer, Beiträge zur Mittelalterarchäologie in Österreich 29 (Vienna: Österreichische Gesellschaft für Mittelalterarchäologie 2013), 294–302.

Pattern charts

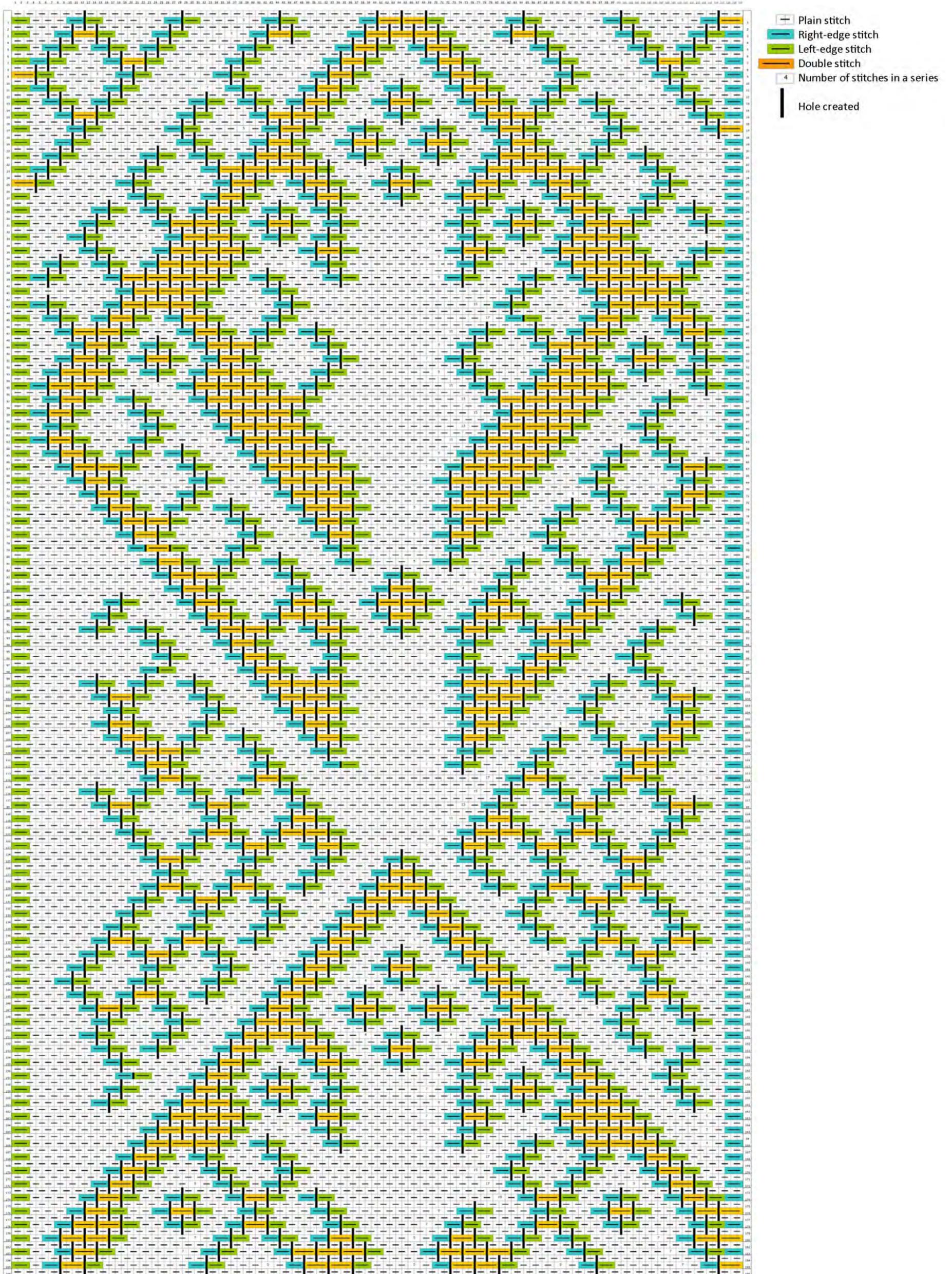
Paneled sprang headwear pattern – Pattern 1



Pattern 1: Drawing: Rachel Case and Beatrix Nutz

This pattern was created according to the extant cap's measurements. It will fit a person with a head measurement of about 57 cm (following the hairline) = 22.44 inches.

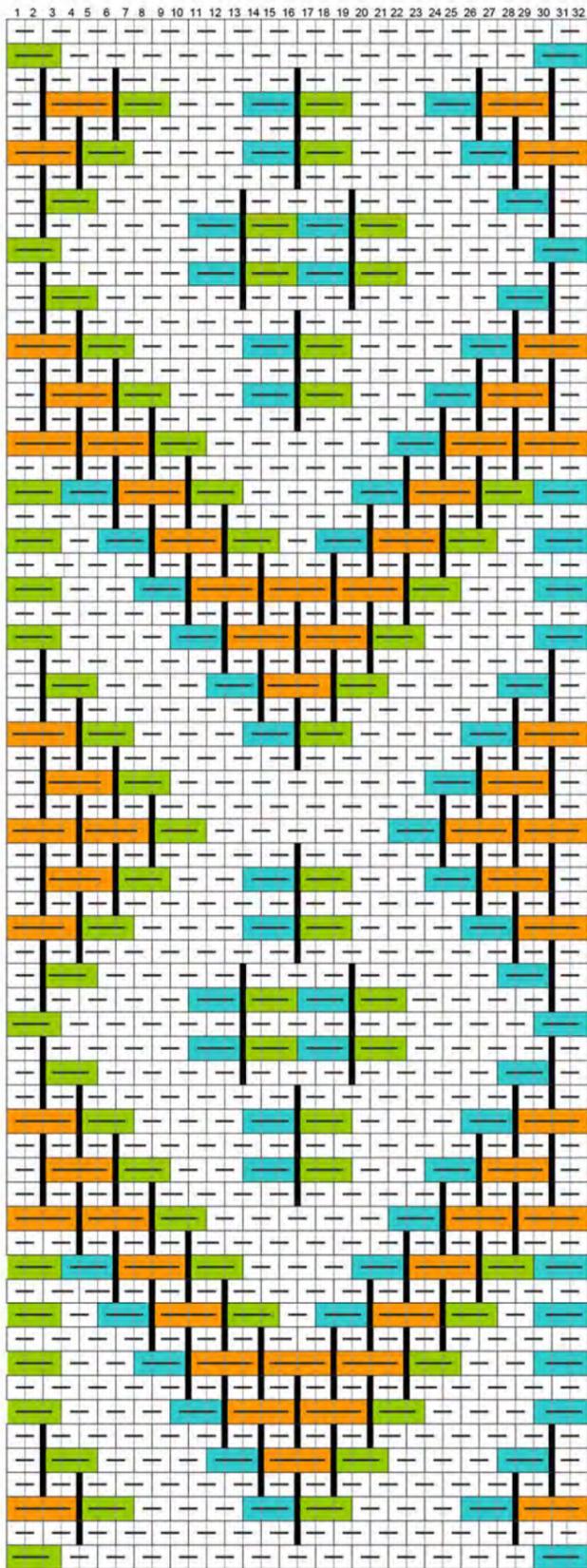
Lengberg – Tree of Life sprang pattern – Pattern 2



Pattern 2: Drafted by Carol James 2018

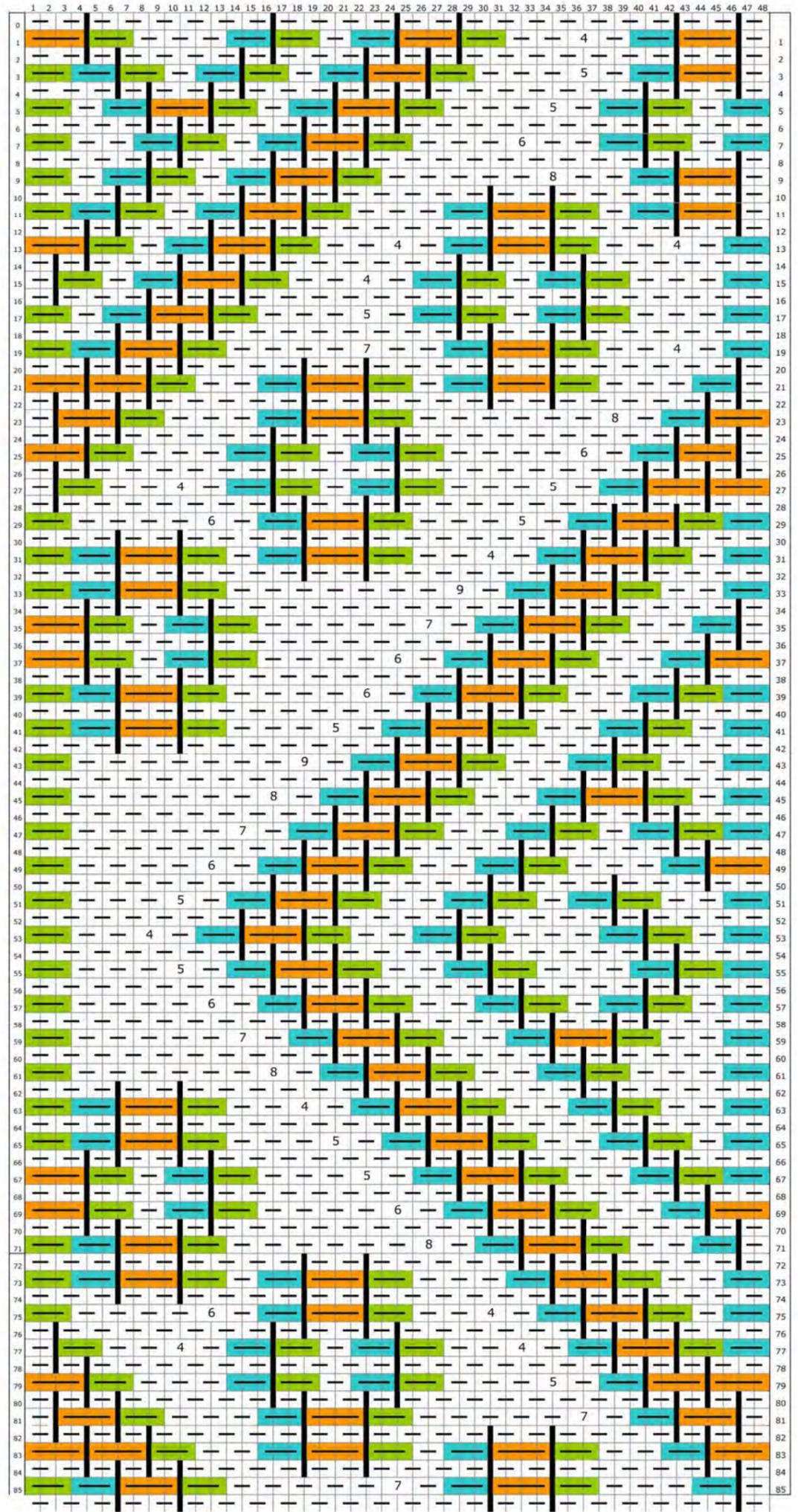
Lengberg – Sprang strips pattern charts – Pattern 3a and 3b

Lengberg - Sprang Strips Pattern Chart



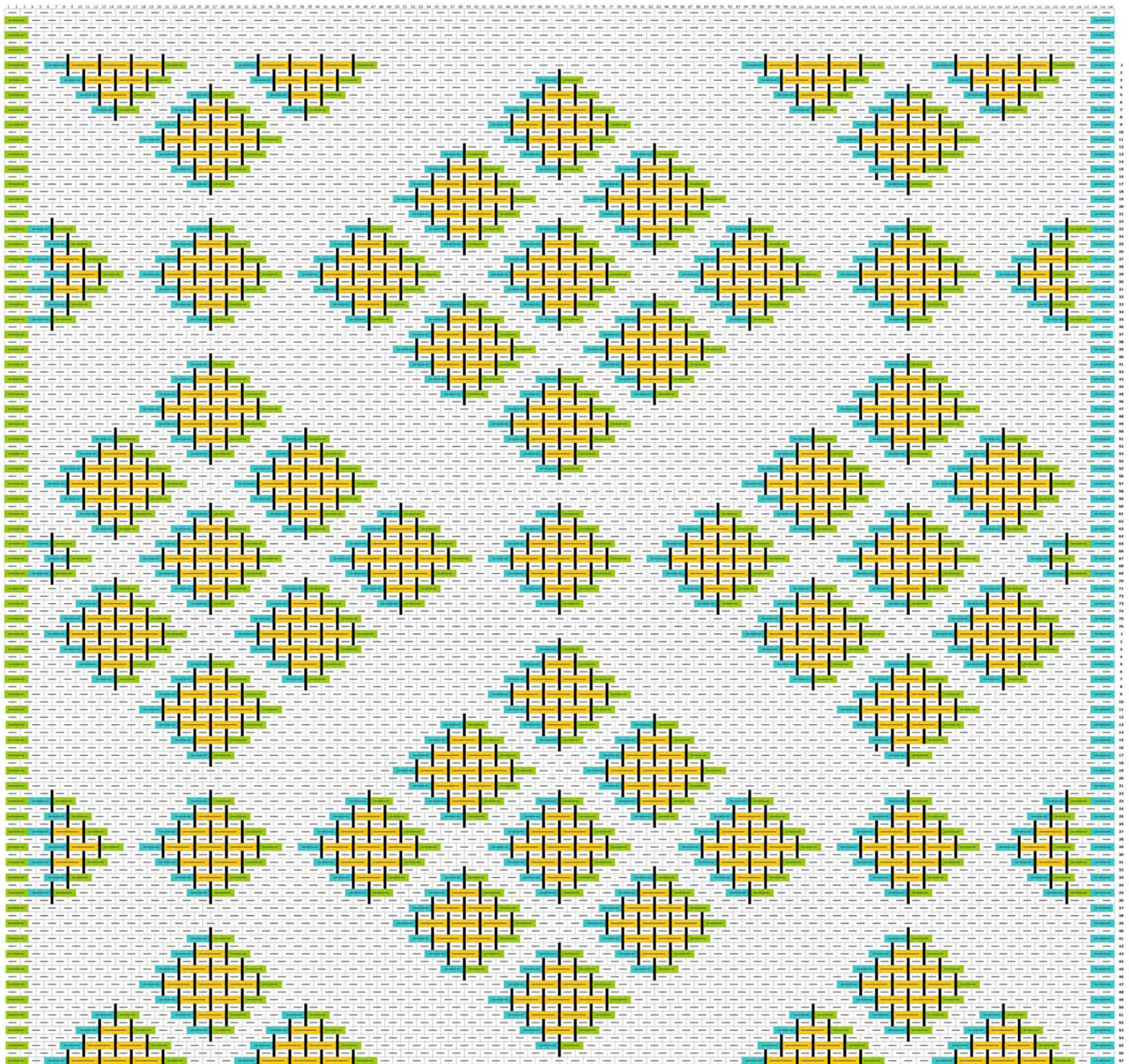
Pattern 3a

-  Plain stitch
-  Right-edge stitch
-  Left-edge stitch
-  Double stitch
-  Number of stitches in a series
-  Hole created



Pattern 3b

Suggested pattern chart for the sprang of the headwear of the midwife in the altarpiece *Birth of the Virgin* by the Master of Uttenheim - Pattern 4

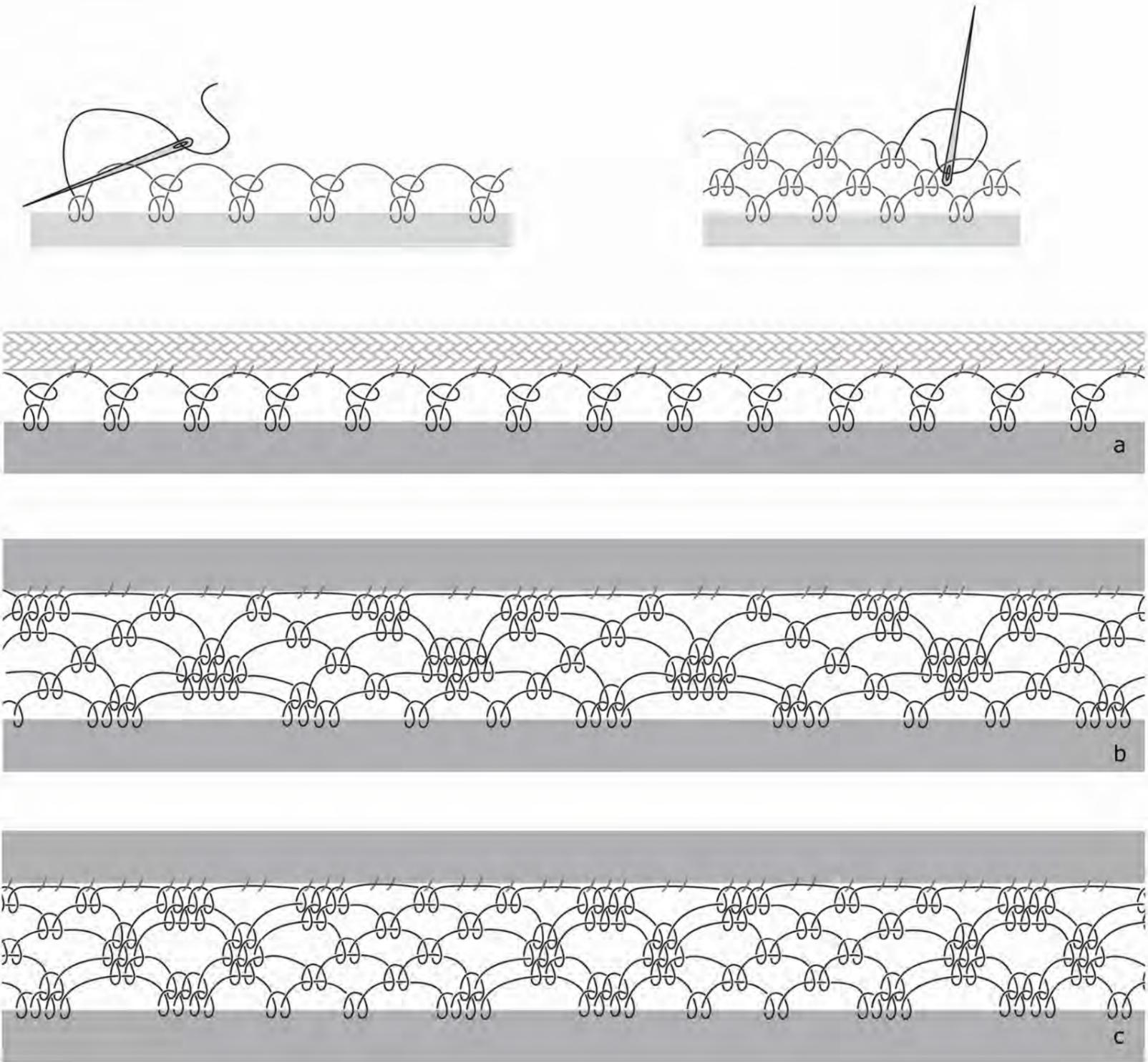


Pattern 4: Drafted by Carol James 2018



Fig. 10: Sprang headwear made by Carol James (left). Pattern reconstructed from the headdress of the midwife in the Master of Uttenheim's *Birth of the Virgin* altarpiece, c. 1460-1780 (right).

Lengberg - needlelace patterns on sprang headwear – Patterns 5a, 5b and 5c

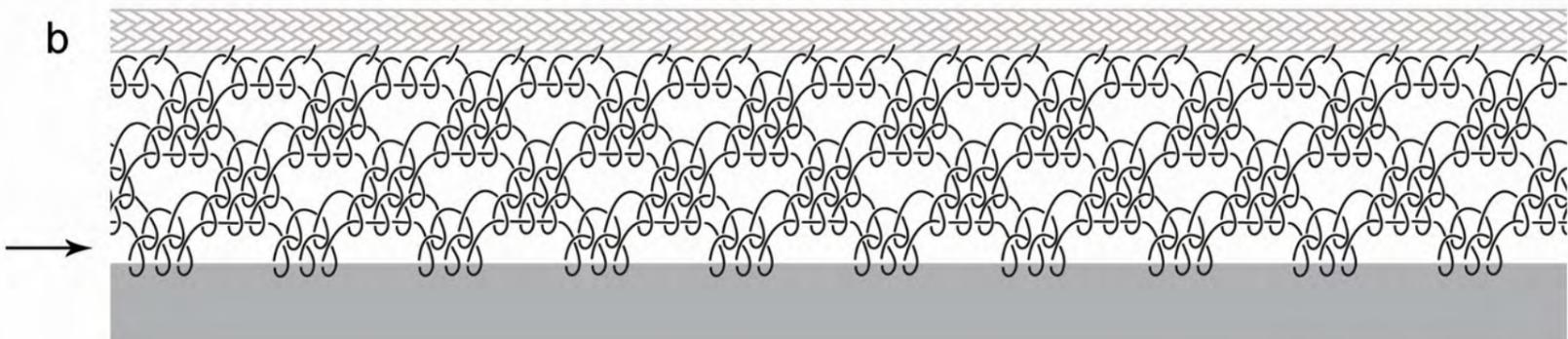
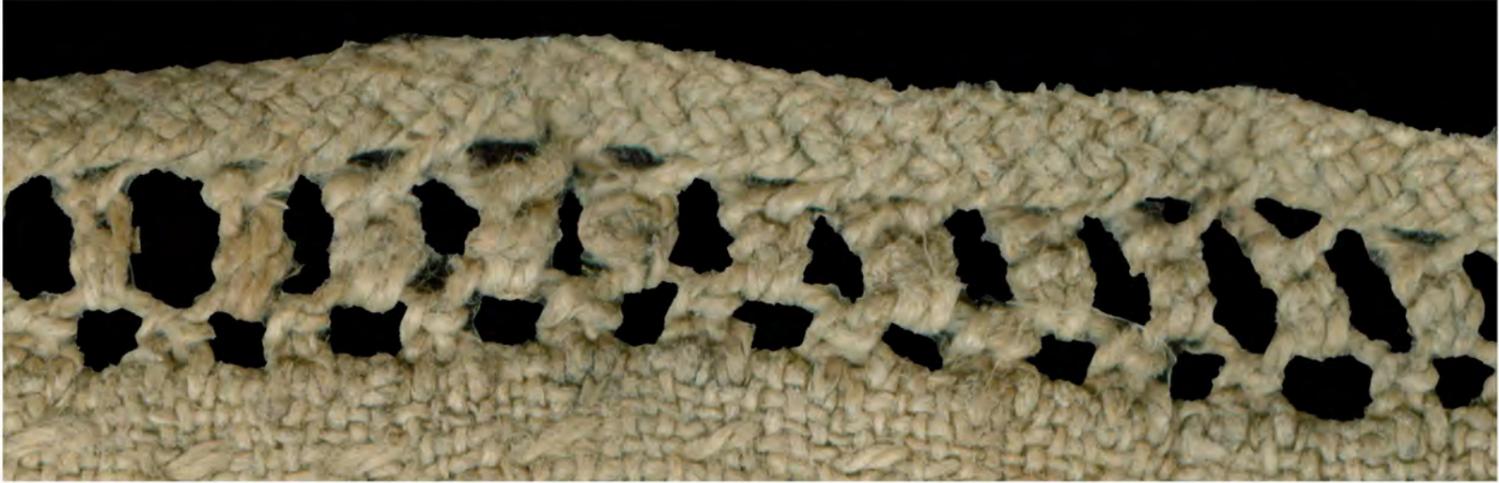
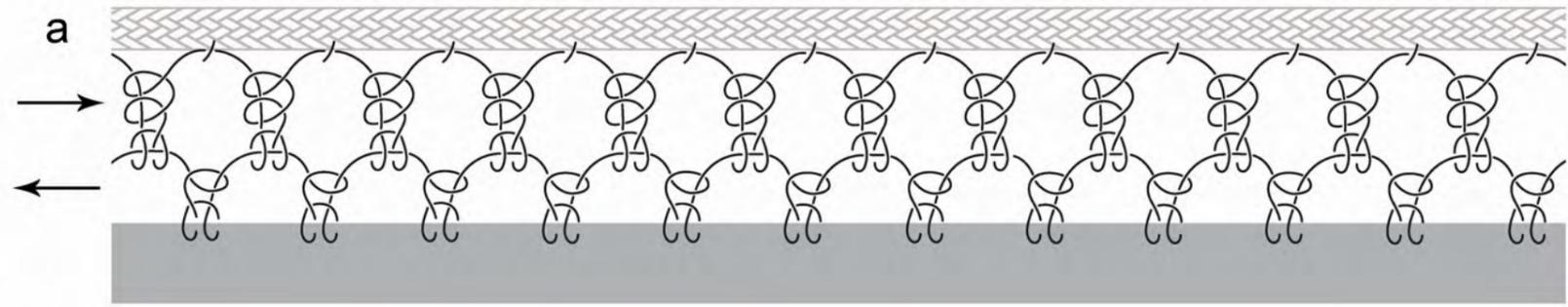


Patterns 5a, 5b and 5c, top: basic stitches. Drawings: Beatrix Nutz

a) One-row pattern worked right to left

b) and c) Work the stitches from left to right, back and forth, turning the piece over for each row in order to keep the stitches uniform in direction.

Lengberg - needlelace edgings – Pattern 6a and 6b



Patterns 6a and 6b: Drawings and photos: Beatrix Nutz

a) Work the stitches of the first row from right to left and the second row from left to right without turning the piece over.

b) Work the stitches of all rows from left to right, back and forth, turning the piece over for each row in order to keep the stitches uniform in direction.