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1998

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“Scutulis Dividere Gallia”: Weaving on Tablets in Western Europe

Carolyn Priest-Dorman

Tablet weaving is a structurally intricate, flexible art indigenous to pre-industrial Europe and northwest Asia. It has been used to reinforce the borders of woven textiles as well as to create sturdy, often decorative bands used as strapping, belts, a variety of garment trimmings, and ecclesiastical vestments. To some extent the history of tablet weaving can be correlated with the history of costume.

There are no known early written sources describing how to tablet weave, although a few sources make reference to an art which may be tablet weaving. Historical depictions of tablet weaving are few, and most are fraught with ambiguities. While a few precious pieces have survived the ravages of centuries in sheltered collections, the most reliable information about the methods and uses of early tablet weaving still comes from the discipline of archaeology.

Origins of the Technique

Two thousand years ago, in his Book 8 of his *Natural History*, Pliny credited the Gauls with the development of a specific type of weaving: “*Plurimis vero liciis texere quae polymita appellant, Alexandria instituit, scutulis dividere Gallia*. [Truly Alexandria introduced weaving using a lot of threads that they call ‘polymita,’ Gaul dividing with little shields.]”¹ Experts differ over the meaning of the term “*scutulis*,” offering two possible interpretations. It is clear that the word means “little shields,” but whether the little shields refer to weaving tablets or to checks on the face of a textile is considerably less clear. John-Peter Wild once suggested that it might mean both tablet weaving and a checkered fabric or tartan,² but later stressed the tartan interpretation.³ Peter Collingwood seems to support the tablet weaving interpretation.⁴ Some have since tried to credit the Egyptians with the invention of tablet weaving, on the basis of a single unusual band. However, Collingwood’s careful structural analysis of the so-called Rameses Girdle disproved the notion that it was tablet woven.⁵

In fact, no identifiable remains of tablet woven textiles date back any earlier than some Hallstat Celtic finds from the sixth century BCE.⁶ Further, although the Hallstatt Celts do not seem to have been the first group of people in the world to weave a plaid or checkered fabric,⁷ they do seem to have been the first group in Europe to have woven multicolored plaids, as well as the first group in the world to have woven plaids in any quantity, beginning around three thousand years ago.⁸ Thus, whether he understood “*scutulis dividere*” to mean tablet weaving or tartan weaving, it seems that Pliny may possibly have been correct in a greater historical sense than he knew when he cited the Celts as its inventors.

It is unclear how the technique arose of using a tablet to control sheds. Perhaps someone was searching for a way to mechanize twined work. The only thing that is clear is that from its apparent beginnings the technique of tablet weaving has been linked with the use of the warp-weighted loom. Use of the warp-weighted loom necessitates a header band that is woven separately and then attached to the cloth beam. The weft of the header band hangs down and is weighted, becoming the warp of the larger textile. The earliest known headings consisted of a plain tabby band; the weft was pulled through the band shed in a loop, giving the band a basketweave or half-basket texture.

By the sixth century BCE, weavers in the Hallstatt culture in Austria were incorporating tablet woven headings into their warp-weighted textiles.⁹ Tablet woven headings remained one of the most common features of warp-weighted loom woven textiles north of the Alps, although they never entirely replaced basketwoven headings. In the area around the Baltic the technique was used well into the thirteenth century CE, long after the introduction of the horizontal loom in that area.¹⁰ Among the cultures using the warp-weighted loom, tablet weaving also took a place in the repertoire of selvedge techniques, and sometimes even closing borders were tablet woven. The general tendency to frame textiles with contrasting borders (whether integral or applied) seems to derive from areas where the warp-weighted loom was used,¹¹ and may be due to the influence of tablet weaving.

There is no trace of tentativeness or novelty in the earliest extant pieces. Along with the plain header bands in the earliest finds are found freestanding decorative bands in complex polychrome weaves. The Celtic chieftain's grave from Hochdorf, one of the sixth-century BCE sources for tablet woven textiles, revealed several types of tablet woven structures, including two distinct forms of double-faced weave. Some of the patterned bands were executed in 2-ply wool thread approximately 0.25mm in diameter,¹² about the same thickness as modern all-purpose sewing thread. Surely here is a textile technique that had a long history of use and development before we become aware of its existence in the sixth century BCE.

Scandinavia, with its pre-existing tradition of band weaving,¹³ seemingly took fire at the adoption of the warp-weighted loom there by approximately the third century CE.¹⁴ This is precisely the time corresponding to the zenith of tablet weaving as an adjunct technique to warp-weighted loom weaving in northern Europe. At that time the *Prachtmantel*, a high-status cloak worn by some Germanic men, stood as the highest form of the warp-weighted weaver's art. Elaborately designed in various color-and-weave twills, it was bordered on at least two and sometimes all sides by wide integral tablet woven borders edged with thick fringes. Given such inspiration, it is not surprising that several centuries of wildly experimental tablet weaving followed in Scandinavia, marked by various types of polychrome weaves executed in fine threads as well as by precious metal brocading.

The tools of tablet weaving are few: a pack of roughly identical tablets, a beater, and some form of tensioning the warp. By the ninth century at least one form of

bandloom had evolved that was specifically used for tablet weaving. It was a simple pair of upright posts, connected at the bottom and reinforced with a second transverse piece partway up. The weaver sat alongside it and stretched her warp between the two posts. The earliest known remains of such a loom were found in the Oseberg ship burial in southeast Norway, dating to 834 CE. Later medieval and early Renaissance depictions from France and the Low Countries show a variety of looms of similar type.¹⁵

Early polychrome bands seem to have been a mark of high status. This suggests that the bands were valued for their decorative effects of color and contrast against the subtly textured twills of the Iron Age. Before the Migration Age very finely spun wool, dyed in bright colors, was the epitome of raw materials; accordingly, the complex figured bands from that period are all gaily colored. Later, the effects of imported materials and their implied higher status on production were great. As they became available, silk and high-quality metallic threads became the elements of higher-status tablet weaves. For example, in fifteenth-century London many working-class girdles were tablet woven of undyed silk thread¹⁶ rather than utilizing the brighter colored, yet lower status, worsted wool that was widely available.

Types of Weaves

Peter Collingwood's *The Techniques of Tablet Weaving*, first published in 1982, introduced a typology of tablet woven structure illustrated with historical pieces. Egon Hansen's work at the Pre-Historic Museum at Moesgaard and his resulting book, the most significant publication on the subject since Collingwood's, focused more on early and medieval techniques in north Europe. Collingwood and Hansen make it crystal clear that early and medieval tablet weavers thoroughly understood and exploited the possibilities inherent in the structure of tablet weaving. Indeed, Collingwood saw in historical weaves "an almost wilful pursuit of complexity."¹⁷ But rather than simply rehash Collingwood's or Hansen's work, it is more appropriate here to focus on a few of the more lasting, widespread, or imitative techniques of early and medieval European tablet weaving.

"Plain weave," or warp twining, is defined as continuous turning of the pack of tablets in the same direction. It can have a number of different textures, depending on the direction in which the tablets are threaded. Standard historical variations of warp twining include alternately threaded, threaded alternately in groups, S-threaded, Z-threaded, and any of the previous with the inclusion of color effect. Alternate threading was the most common for warp twining throughout the period under examination, both for use on the warp-weighted loom and for independent band-woven textiles. This is likely to have been the case because it is the most structurally sound, resisting the corkscrewing effect evident in bands threaded all in the same direction. It also has a pleasant appearance similar to stockinette knitting, which led to some early identification errors in textile collections.¹⁸ Monochrome plain weaves and their variants form the

preponderance of early and medieval tablet weaves, possibly due to the high number of integral borders and simply woven brocaded bands that survive.

Freestanding tubular tablet weaves, a small but interesting medieval group, were executed in plain warp twining,¹⁹ some with color effect.²⁰ Integral tubular weaving could also be added to a textile during a finishing phase to reinforce areas where heavy wear was likely. Some medieval garment edges and pouch openings were treated thusly.²¹

A basic but effective modification of monochrome warp twining involved creating a design by reversing the twining of the pattern cords only, producing a pattern twined in one direction with a border of warp floats on a background twined in the other direction. In indirect light this simple form of twist-patterning is quite striking and resembles damask. In the ninth or tenth century the technique was used to weave inscriptions.²² The belt of Philip of Swabia, dated to about the end of the twelfth century, includes areas of textured checks executed in twist-patterning.²³

Threaded-in patterns are occasionally represented among early and medieval tablet weaving. A threaded-in pattern is threaded such that turning in a prescribed order (continuously forward, or four forward, four back, for example) results in the pattern automatically emerging. Such a band may include as many different colors as there are holes in the tablets that created it. Historically, the technique was most commonly evident in selvages. Tiny checkerboard and chevron patterns are simple to execute in warp twining and add a nice little fillip to more complex main motifs.²⁴

Some examples exist of all-over threaded-in tablet weaves. The earliest is a simply-patterned strap end from the early Anglo-Saxon period exhibiting a single repeating lozenge.²⁵ It was woven with half the tablets idling during each pick of the weft, so that one would turn only the even or the odd numbered tablets at any one time. The resultant texture is composed of offset half-chevrons slanted alternately Z- and S-wise.

This general technique of idling tablets was also used later in two or more colors to create simple patterns based on diagonal motifs.²⁶ A similar weave executed in double-cloth is known from around the turn of the fourteenth century.²⁷ In the fifteenth century, the technique was used to make glossy monochrome silk girdles,²⁸ likely in imitation of satin.²⁹

Double-faced weaves were also practiced. In the most common varieties of double-faced weaves, the tablets are threaded in a standard draft of two colors and then turned in a specific repeating sequence to achieve a specific type of textured ground. To create a pattern, selected tablets are turned in the opposite direction from the tablets weaving the ground. The resulting textile displays on its face patterns in one color with floats correctly aligned against a background of the other color; on its reverse the same patterns appear in reverse, with the opposite color scheme and with all floats reversed.

The most difficult but showy of the double-faced weaves is 3/1 broken twill, woven in a turning sequence involving grouped tablets, grouped forward and back turns, and individual tablet manipulation. The first known occurrence of the weave is on Hochdorf Band B. Then there is a gap of some centuries before we know of another band woven in the same technique, the third-century CE band from Setrang, Norway.³⁰ Double-faced bands in the 3/1 broken twill technique then continued to be woven until at least the twelfth century, possibly as a way to mimic the appearance of *samitum*,³¹ a compound silk twill exported from Byzantium. The technique vanished at about the same time *samitum* ceased to be an important luxury textile. Modern tablet weavers have revived interest in this ancient weave, designing new motifs for it as well as copying ancient ones.

A second major type of double-faced weave, commonly called “double-face double-turn,” also dates back to Hochdorf Band B. Woven similarly to 3/1 twill, but with a different method of tablet grouping, it has a more coarse ground weave with a characteristic bricked appearance caused by paired warp floats. Threadings varied and had a minor effect on the ground texture; alternate threading was the most common. Although easier to weave than 3/1 twill, it was apparently somewhat less common, perhaps because it lacked the twill texture. A Scottish seal tag from the late twelfth century³² is the earliest medieval example, and the technique becomes more important later in the Middle Ages. In the fifteenth century the technique was used to produce not just patterned bands,³³ but monochrome ones as well.

The most challenging of all the historic techniques are the ones that require freehand turning sequences for each tablet. They produce complex motifs on the top of the textile by exploiting the regularly repeating color sequences formed by warp twining. Freehand forward and backwards turns affects the twist direction, color sequence, and length of every tablet’s float individually. The most intricate of these techniques involves threading each tablet in four colors and is often colloquially known as the “Snartemo” technique, after the earliest known example from Grave V at Snartemo, Norway, about the late fifth century CE.³⁴ Bands in related weaves were being woven, mostly in Scandinavia, as late as about the thirteenth century.³⁵

A tremendous number of other techniques existed in the Middle Ages, some of which are still commonly practiced today,³⁶ but space considerations preclude further discussion.

Supplementary Ornamentation

At around the end of the Roman period in northern Europe, tablet weavers began experimenting with several supplementary weft techniques.³⁷ In Scandinavia during this period some weavers used dyed horsehair in tapestry and weft wrapping techniques over idling tablet warps. It strongly resembled late Roman tapestry weaving³⁸ and may have been a direct imitation of the tapestry woven decorations popular on Roman tunics. The

fact that these Scandinavian bands were also used on garments³⁹ supports such a hypothesis. The technique was short-lived but executed with a high degree of precision: one woman who reproduced some of this type of weave for a museum estimated production time at one millimeter per hour.⁴⁰

Some of the most visually impressive medieval tablet woven bands are the brocaded ones. A rich surface effect similar to embroidery distinguished brocaded tablet weaving, while the ground weave was almost always in a variety of plain warp twining.⁴¹ The main function of the ground weave of a brocaded band is to provide a solid, predictable foundation for the brocading weft. Accordingly, the focus of the weaver's concentration was not on the creation of an elaborate color-and-weave interlacement; instead, the weaver focused on the ancillary technique of inserting the brocading weft or wefts. The methods of brocading themselves were structurally (if not visually) unremarkable, virtually identical to brocading methods used on other types of textiles.⁴²

While it is impossible to know much for certain about how tablet woven or brocaded patterns were designed, remembered, or transmitted, there may be a clue in several brocaded bands found in Scandinavia. The brocading patterns for these bands depended on visual prompting inherent in the ground weaves. In a group of bands found at ninth- and tenth-century Birka, Sweden, two adjacent threads of each tablet's cord were inexpensive bast and the other two were expensive silk. The tablets were arranged so that silk was always adjacent to bast. Brocade wefts were used double, thrown only every second pick of the ground weft, and could only be tied down by any particular tablet when the two silk threads were uppermost on that tablet (i.e., once every four turns of the tablet). The result is a heavily geometric pattern relying on lozenges and other diagonal motifs.⁴³ An English brocaded band of the mid-fifteenth century was also brocaded over intermixed linen and silk threads,⁴⁴ so the idea was not isolated in either location or time.

The Eclipse of Tablet Weaving

In the thirteenth century most of the places that had not yet abandoned the warp-weighted loom were transformed by the revolution in textile technology that swept Europe. In those few areas that retained the warp-weighted loom for specific uses, plain corded or basketweave headers replaced tablet woven headers. As a result tablet weaving was never again practiced as a matter of course in the production of larger textiles.

The adaption of multished looms offered a quicker method of mechanizing complex weaves, reducing the demand for laboriously handwoven patterned bands. Accordingly, after a last gasp of technical virtuosity in the twelfth and thirteenth centuries, freestanding tablet weaving declined somewhat in structural complexity. The wild profusion of experimental, polychrome, and textured structural weaves which had marked the earlier era virtually vanished, and no new weaves were popularized.

Tablet weaving survived this great change by becoming an increasingly rarefied and specialized textile art. Brocading survived due to its elite patronage, while utilitarian forms of tablet weaving, performed as piecework, became the means for urban women to earn an income, along with many other forms of silkwork.⁴⁵ Some of the weave structures common in earlier centuries were abandoned or simplified. Tablet weaves also began to be combined with tabby weave to create silk ribbons for garment trimmings.⁴⁶ Upon the popularization of certain more elaborate forms of passementerie and lace in the sixteenth century, tablet weaving even lost its place as a costume trimming. Although tablet weaving has been practiced as a living art in many parts of the world since then, it has only been in the twentieth century that Europe has become mindful of its long tradition of excellence in tablet weaving.

Notes

1. Citation and Latin quotation from Peter Collingwood, *The Techniques of Tablet Weaving* (London: Watson-Guption, 1982), p. 19; Collingwood's attribution of the quote to Livy is incorrect. English translation mine.
2. J.P. Wild, "The Textile Term *Scutulatus*," *The Classical Quarterly*, New Series, v. XIV, no. 2, 1964, p. 263.
3. J.P. Wild, *Textile Manufacture in the Northern Roman Provinces* (Cambridge: Cambridge University Press, 1970), p. 53, f.n. 5. His argument is based on occurrences of the word *scutulatis* in contemporary descriptions of silk block damask weaves.
4. Collingwood, p. 19.
5. *Ibid.*, pp. 407-411.
6. E.J.W. Barber, *Prehistoric Textiles: The Development of Cloth in the Neolithic and Bronze Ages with Special Reference to the Aegean* (Princeton: Princeton University Press, 1991), p. 119.
7. *Ibid.*, pp. 169, 192.
8. *Ibid.*, pp. 186ff.
9. *Ibid.*, p. 191.
10. Marta Hoffmann, *The Warp-Weighted Loom: Studies in the History and Technology of an Ancient Implement* (McMinnville, Oregon: Robin and Russ Handweavers, 1974), pp. 173ff.
11. Barber, p. 192.
12. Lise Ræder Knudsen, "Analysis and reconstruction of two tabletwoven bands from the celtic burial hochdorf," *Archäologische Textilfunde -- Archaeological Textiles 4. - 7.5.1993*, Textilsymposium Neumünster [NESAT V], (Neumünster: Textilmuseum Neumünster, 1994), p. 57.
13. Barber, p. 183.
14. Lise Bender Jørgensen, *North European Textiles until AD 1000*, trans. Peter Crabb (Aarhus: Aarhus University Press, 1992), p. 122.

15. For a convenient assemblage of visual sources, see Robert L. Wyss, "Die Handarbeiten der Maria: Eine ikonographische Studie unter Berücksichtigung der textilen Techniken," *Artes Minores: Dank an Werner Abegg*, ed. Michael Stettler and Mechthild Lemberg (Bern: Verlag Stämpfli & Cie., A.G., 1973), pp. 133-155.
16. Geoff Egan and Frances Pritchard, *Dress Accessories c. 1150 - c. 1450*, Medieval Finds from Excavations in London, v. 3 (London: HMSO, 1991), p. 49.
17. Collingwood, p. 9.
18. Richard Rutt, *A History of Hand Knitting* (London: B.T. Batsford Ltd., 1987), pp. 11, 53-54.
19. See Dominique Cardon, "Burial Clothing of One of the First Counts of Toulouse," *Archaeological Textiles Newsletter*, no. 21, Autumn 1995, pp. 10-11, for the earliest published tubular tablet weave. These tenth-century tubular silk cords are structurally identical to several silk cords from medieval London; see Elisabeth Crowfoot, Frances Pritchard and Kay Staniland, *Textiles and Clothing c. 1150 - c. 1450*, Medieval Finds from Excavations in London, v. 4 (London: HMSO, 1992), p. 135.
20. Audrey Henshall, "Five Tablet-Woven Seal Tags," *Archaeological Journal*, v. 121, 1964, pp. 161-162.
21. The earliest published instance is on a silk pouch from Viking Age Dublin; see Frances Pritchard, "Aspects of the Wool Textiles from Viking Age Dublin," *Archaeological Textiles in Northern Europe: Report from the 4th NESAT Symposium 1. - 5. May 1990 in Copenhagen*, Tidens Tand 5, ed. Lise Bender Jørgensen and Elisabeth Munksgaard (Copenhagen: Det Kongelige Danske Kunstakademi, 1992), p. 100. See also Crowfoot *et al.*, pp. 135-136 and 161.
22. Sigrid Müller-Christensen, "Textilien," *Suevia Sacra: Frühe Kunst in Schwaben* (Augsburg: International Council of Museums, 1973), pp. 196-197.
23. *Ibid.*, pp. 152-154.
24. See Grace Crowfoot, "The Braids," *The Relics of St. Cuthbert*, ed. C.F. Battiscombe (Oxford: Oxford University Press, 1956), pp. 437 and 439, for "dark squares ... repeating regularly." Tiny chevrons go back as far as the Hochdorf bands; see Knudsen, p. 55. Chevrons are also used in early medieval Egyptian bands along with other simple threaded-in motifs such as the "Coptic arrowhead," a repeating triangle; see Collingwood, p. 114.
25. Grace M. Crowfoot, "Textiles of the Saxon Period in the Museum of Archaeology and Ethnology," *Cambridge Antiquarian Society Proceedings*, v. 44, 1950, pp. 28-30.
26. Collingwood, p. 163.
27. Penelope Walton, "Textiles and Caulking Cords," *Excavations in High Street and Blackfriargate*, ed. Peter Armstrong and Brian Ayers, East Riding Archaeologist, v. 8, 1987/Hull Old Town Report Series, no. 5, p. 228.
28. Crowfoot *et al.*, pp. 137f, catalogue numbers 440 and 423.
29. Egan and Pritchard, p. 48. Related opinions are expressed in Crowfoot *et al.*, p. 134.
30. Nockert, p. 89.
31. Crowfoot *et al.*, p. 134.
32. Henshall, p. 157.
33. Elisabeth Crowfoot, unpublished analysis of catalogue number 143 from Crowfoot *et al.* This document was conveyed to me in a letter from Dr. Frances Pritchard, Museum of London, dated 15 September 1993.
34. Margareta Nockert, *The Högom Find and Other Migration Period Textiles and Costumes in Scandinavia*, Högom Part II, Archaeology and Environment 9 (Umeå, Sweden: University of Umeå Department of Archaeology, 1991), p. 147.

35. The Leksand band is carbon-dated to 1210 CE \pm 120 years; see Margareta Nockert, "A Scandinavian Haberget?," *Cloth and Clothing in Medieval Europe: Essays in Memory of Professor E.M. Carus-Wilson*, ed. N.B. Harte and K.G. Ponting, *Pasold Studies in Textile History*, v. 2 (London: Heinemann Educational Books, The Pasold Research Fund Ltd., 1983), p. 104.
36. For example, the so-called "Egyptian diagonals" technique, rediscovered in this century by Mary Meigs Atwater, was used in the Middle Ages. See Collingwood's Chapter 9, section 3.B, and Egon Hansen, *Tablet Weaving: History, Techniques, Colours, Patterns* (Højbjerg, Denmark: Hovedland Publishers, 1990), pp. 33-35, 53.
37. Nockert, *The Högom Find and Other Migration Period Textiles and Costumes in Scandinavia*, p. 83.
38. *Ibid.*, p. 89.
39. *Ibid.*, p. 86.
40. Amica Sundström, "Reproduction of Horsehair Tablet Braids from Scandinavia's Migration Period," *Archaeological Textiles Newsletter*, no. 21, Autumn 1995, p. 24.
41. Nancy Spies, "Purple Garments and Silks: Precious Gems and Gold, Technical Information from Historical Brocaded Tabletweoven Bands," *Ars Textrina*, v. 27, 1997, p. 34.
42. Collingwood, p. 325.
43. Egon Hansen, "Technical Variations in Pre-Medieval Tablet Weaving," *Archaeological Textiles: Report from the Second NESAT Symposium, 1-4 May 1984*, *Arkaeologiske Skrifter* 2, ed. Lise Bender Jørgensen, Bente Magnus, and Elisabeth Munksgaard (København: Arkaologisk Institut, Københavns Universitet, 1988), p. 266.
44. Henshall, pp. 159-161.
45. For English silkworkers, see Kay Lacey's "The Production of 'Narrow Ware' by Silkwomen in Fourteenth and Fifteenth Century England," *Textile History*, v. 18, no. 2, Fall 1987, pp. 187-204. For some information on Parisian silkworkers, see David Herlihy, *Opera Muliebria: Women and Work in Medieval Europe* (Philadelphia: Temple University Press, 1990), although Herlihy seems to lack sufficient understanding of many of the aspects of textile and silkwork production.
46. Crowfoot *et al.*, pp. 136, catalogue number 142. See also Annaliese Streiter and Erika Weiland, "Brettchengewebte Zierborten an Kostümen der spanischen Mode," *Waffen- und Kostümkunde*, v. XXVII, no. 1, 1985, pp. 13-28.

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A somewhat larger bibliography of sources for information on early and medieval tablet weaves may be found on the World Wide Web at <http://www.cs.vassar.edu/~capriest/tweavebib.html>.