

Ornament on the Edge: Types and Techniques of Edge

Decoration on Medieval Books

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Many medieval books are beautiful objects to behold, with covers of leather or sumptuous velvet, decorated with gold tooling or embroidery and ornamented with elaborate metal corner bosses and clasps. The mix of functional form and complex ornament can be breathtaking, before the reader even considers the design and decoration of the interior pages.

One element frequently overlooked in book decoration, but which greatly adds to the visual impact of the book as object, is edge decoration of the leaves, which together form the *text block*. The term *edge decoration* refers to the decoration of the edges of the pages visible when the book is closed, not the borders that may be painted onto individual pages. This is sometimes called *fore-edge decoration*, but technically *fore-edge* refers to the edge of the book opposite the spine, not to all three visible page edges.¹

From the fourth century, edges of books have been decorated, first with stains or paints, then later with complex painted designs and gold leaf. In this article, we discuss

¹ For a more complete description of the parts of a book binding, refer to Figure 17 on p. 30 of P. J. M. Marks, *The British Library Guide to Bookbinding*. Adams, in “Medical Fore-edge Decorations and Paintings,” further clarifies *decorations* as designs visible when the book is closed and *paintings* as visible when the leaves are fanned or slanted (p. 519). Edge paintings are also referred to as *invisible* or *vanishing* paintings.

the purposes, types, and techniques of edge decoration from the fourth to the sixteenth centuries.

Purposes

In the medieval period, books were frequently stored flat on their covers rather than balanced on their bottom edges; this is the reason their covers often had metal bosses (raised hemispheres) on their corners: the metal bosses protected the book covers from harm. Additionally, frequently the fore-edges of books were displayed outward, rather than the spine.² This edge of the book was easy to mark with ink or other pigments to differentiate one volume from another. Titles, author names, and shelf marks (markings used by libraries and other large collections to organize their books) appear on fore-edges of medieval books. Occasionally, even portraits of the authors were painted onto the edges, so that owners could quickly locate texts written by particular people. In his article “Medical Fore-edge Decorations and Paintings,” Adams includes photographs of fore-edge portraits of Aristotle and other authors. Thus, one of the prime purposes of edge decoration is identification of the book.³

In addition to (and probably more frequently than) the author, the owners of books were identified on page edges. In her essay “Medieval Painted Book Edges,” Mirjam Foot lists several examples of heraldic designs painted onto edges of books from the fourteenth and fifteenth centuries. These are the arms of the person who

² Most of our sources firmly agree on this point, including Pearson, Marks, and Weber. Weber postulates that the flat storage method originated because vellum does not fold as easily as paper and the weight of the book itself helped keep the book closed (p. 4).

³ On p. 519, Adams writes, “This edge afforded the owner an area of the book upon which he could inscribe the title, his initials, name, or a favorite painting for identification without removing the book from the shelf and opening it to find out the nature of the work inside.”

commissioned the volume or perhaps who later owned the volume when it was rebound.⁴ (Rebinding books was a common practice throughout the Middle Ages and subsequent centuries, which makes the study of historical binding more difficult than it would be otherwise. Books were frequently rebound to reflect the latest styles or because the original binding became damaged. In Foot's study, 31 of the 52 books she examined from the medieval period had been rebound at least once.⁵)

Another purpose of edge decoration frequently cited by other authors is protection of the page edges. Pigments and gold may provide some protection from dirty fingers; if nothing else, fancily decorated edges encourage readers to handle the book delicately. Sprinkling, a method in which paint is irregularly sprinkled or splattered onto edges, also disguises dirt or mold. Sprinkling became so common in the sixteenth and seventeenth centuries that Dirk de Bray's bookbinding instructional manual from 1658 includes a "brush for sprinkling red" and a "brush for sprinkling yellow" in his list of required binding tools.⁶ Additionally, one of the premier craftsmen of modern times, John Mitchell, states that gilding will protect the page edges and thus the pages themselves from atmospheric pollution (by making the edges completely smooth and guarded by a barrier of metal, thus preventing air from penetrating the page block as easily).⁷

Finally, aesthetics is a purpose unto itself. From the simple flat color of the fourth century, edge designs become progressively more complicated. After gold leafing of page edges was introduced in the fifteenth century, edges could be gilt and gauffered:

⁴ Foot discusses these examples on pp. 448–452 of her essay.

⁵ See Foot, p. 440.

⁶ The pages are unnumbered in Lake's translation of de Bray's short manual, but the list is entitled "List of that which a Bookbinder has need of" and is the last piece of the manual before the afterword by Ambrosius Vermerck about gilding. The two brushes are items denoted "gg" and "hh."

⁷ See p. 48 in Mitchell, *The Craftsman's Guide to Edge Decoration*.

gauffering is a process in which edges are gilt and then heated tools are applied to create patterns in the gold.⁸ Edge decoration as an art form reached its peak after our period: in the seventeenth century, fanned-out edges became used for detailed paintings visible only when the book was opened, and those pages edges were further protected with gold leaf.

Types and Techniques

Flat Color

Perhaps the oldest form of edge decoration is simple flat color. Beginning as early as the fourth century, books have sported bright colors daubed on their edges. People did this for a variety of reasons, many of which have already been discussed in this article. Colors may have helped hide dirt and grease stains as well as providing aesthetic value. As noted in Pearson (*English Bookbinding*), the rise of the serial pamphlet in the early seventeenth century led to colors used in a more utilitarian manner: Edges of separate pamphlets bound in the same volume were often stained different colors to aid in content identification.⁹

Yellow and pinkish-red are the most common colors adorning the edges of late-fifteenth- to sixteenth-century English books. Bright red steadily became more common during this time, hitting its peak in the first half of the seventeenth century, according to Middleton in his book *A History of English Craft Bookbinding Technique*.¹⁰ Other colors also existed. We can see books with ochre edges throughout our time period, as well as

⁸ The exact time and geographic origin of gilding is a matter of some conjecture. Marks believes it originated in Italy around 1460; Mitchell dates it earlier in that century. Foot describes two fourteenth-century French books (a book of hours and a psalter) with gilt edges (pp. 446 and 448) but is careful to state the difficulty of precisely dating edge decoration: edges could be redecorated with successive bindings and thus may not be contemporary with the original binding.

⁹ See color plate 10.2 in Pearson, *English Bookbinding Styles*.

¹⁰ Middleton, p. 88.

some rare occurrences of olive, green, and violet. Middleton points out that in the early sixteenth century, yellow with red sprinkling was common. Blue was quite unusual but did appear on Irish and English books late in the eighteenth century.

Flat-colored edges existed concurrently with sprinkled edges. However, flat color gradually disappeared by the second half of the seventeenth century, in favor of the more popular sprinkled edge.

The method for staining described by Mitchell is rather simple, certainly the least complicated of the techniques described here. The text block (the pages of the book, treated as one unit) is placed in a vice or press and the edges lightly coated with size. The edges are then planed until smooth. One further burnishes the edge with medium sandpaper, and then fine sandpaper. Once the text block is prepared, the paint is thinned with a starch size and brushed or sponged lightly onto the edge.¹¹ Here Mitchell disagrees with another writer, John Andrews Arnett. Mitchell contends that one should brush the color from the spine toward the fore-edge. According to Arnett in his book *Bibliopogia*, one should start applying color in the *middle* of the edge and work out toward the fore-edge and in toward the spine “to avoid a mass of colour being lodged in the angle of the fore-edge.”¹² The authors of this article have not attempted either method, and experimentation is called for to settle the dispute.

Painted Images

Some of the best known examples of edge decoration are graphic paintings. Arabesques, geometric shapes, even tiny figures and heraldry are often the first images called to mind

¹¹ For a complete description of the process, enumerated into 19 steps, refer to pp. 26–29 in Mitchell, *The Craftsman’s Guide*.

¹² Page 36 in Arnett, *Bibliopogia*.

when one thinks of decorated edges, and these date back to the tenth century. Foot describes many examples in her article on painted edges.

The earliest images were abstract designs, such as interlocking zigzags, circles, or floral patterns. For example, we can see a thirteenth-century book in the British Library, a 1286 set of charters for the Sacristy of the Priory of St. Neots (BL Stowe 941). Red and green painted lines zigzag over the edges. Another thirteenth-century book, *Aurora* (MS Bodley 822), sports green scrollwork with red flowers. An early-thirteenth-century French book of hours in the British Library (BL Yates Thompson MS 37) has a red and green design of flowers and leaves.¹³

Sometimes people would write their names on the edges of their books, as a mark of ownership. However, indicating provenance by a heraldic display was much more popular. A very good example is on display at the British Library. It is an early-fourteenth-century French tome, *Scholastic Miscellany* (Burney 275). The display features the arms of Jean, duc de Berry, who received it as a gift from Pope Clement VII in 1387.¹⁴ Heraldic designs appeared in the fourteenth century and continued to be moderately popular throughout our period.

The subject of the book or a portrait of the author were the most common images depicted on fore-edges. Some of the very best examples are from the Pillone Library collection of fifteenth- and sixteenth-century paintings by Cesare Vecellio, as described by Adams in “Medical Fore-edge Decorations and Paintings.” Vecellio, unlike many book artists, was contemporary with the books he decorated. He painted the authors and

¹³ Foot describes BL Stowe 941 on p. 442, MS Bodley 822 on p. 445, and BL Yates Thompson MS 37 on p. 447.

¹⁴ For a picture of this fore-edge, see <http://www.bl.uk/catalogues/illuminatedmanuscripts/ILLUMIN.ASP?Size=mid&IllID=3288>.

subjects of medical texts. His work includes portraits of Galen, Savonarola, and Junius Maius, each on their own classic text. Vecellio also panted the subjects of books by Aristotle and Pliny.¹⁵

Gilding

Gilding page edges with gold leaf is a very flashy and impressive way to decorate a book. Furthermore, it can be done with a minimum of materials. However, the process can be tricky and very frustrating for the amateur. It was known in Western Europe by the mid-fifteenth century (see note 7) and was a common method of finishing the page edges of high-quality books, as evidenced by the many examples that survive to this day.

Aneira's attempts at edge gilding have all been informed by John Mitchell's detailed discussion of the subject in *The Craftsman's Guide to Edge Decoration*, and we refer the interested reader to this source for more detailed information. Over several attempts, Aneira's success rate for obtaining an acceptable edge has been less than 50%. Even in those attempts defined as successful, the edge has always been marred by small irregularities in the gilt surface. It is important to note that the process described by Mitchell in his 1993 book is virtually the same as those described in Ambrosius Vermerck's 1667 afterword to Dirk de Bray's bookbinding manual. The hand-gilding process appears to have changed very little in the past 300 years.

The gold required for gilding is loose gold leaf in 18, 22, 23, or 23.5 carats. According to Mitchell, 24-carat gold is too soft to beat it to the required thickness for edge gilding, and transfer gold is too thin. He recommends 23.5-carat double loose

¹⁵ You can view these images online by downloading the article from www.chestjournal.org. Refer to Figs. 1–8, pp. 521–522.

gold.¹⁶ The adhesive used is glaire, which is still used by many practitioners today, although there are now petroleum-based alternatives available, such as those manufactured by Sepp Leaf Products (Carlstadt, N.J.). Other helpful supplies are a gilder's tip, a large flat brush used for moving gold; a gilder's cushion, a suede-covered surface to lay the gold; a gilder's knife; and Armenian bole, a red clay pigment used as a base.

There are many variations of the recipe for glaire, but the one most recommended by bookbinders specifically for edge gilding (including Ambrosius Vermerck, writing in 1667, and modern practitioners Mitchell and Manley Banister) is simply egg white thinned with water.¹⁷ The egg whites are mixed with an equal amount of water, beaten to stiff peaks—a process that breaks the protein chains in the white—and then refrigerated overnight.

As with most edge-decorating techniques, the pages of the book should be treated with talcum or cornstarch powder before beginning. The powder is rubbed into the fanned pages at each edge and help to prevent the pages from sticking to each other when painted or gilded. The gilding process is roughly as follows (for more details, refer to note 14 of this article): after the page edges have been trimmed, sanded, and scraped perfectly smooth (a time-consuming process in and of itself), a layer of bole can be applied and burnished. Two to three thin coats of glaire are applied and allowed to dry. When the final coat is dry, another thin coat of glaire is applied, and the leaf, precut into properly sized pieces, is carefully laid. In Aneira's experience, it is absolutely crucial that

¹⁶ See Mitchell, p. 48. For more details, including step-by-step instructions for both gilding in the flat (25 steps) and gilding in the round (19 steps), refer to pp. 48–63. We can give only a brief overview of this complicated process in this article.

¹⁷ See Vermerck's afterword in de Bray, *A Short Instruction on the Binding of Books*, as well as p. 22 of Mitchell and pp. 143–144 in Banister, *The Craft of Bookbinding*.

the leaf go on the edge perfectly smooth. Any wrinkles in the leaf will create cracks in the gold. The gold is then pressed into the edge, first with cotton pads, then with a burnisher through silicon paper, and finally by direct burnishing. After drying, ideally you should be able to fan the pages and admire your beautifully gilded surface. But because gold and gilaire are temperamental things and gilding success often depends on humidity and other environmental factors, you may fan the pages and watch with dismay as half the gold vanishes, seemingly into thin air. (Peter Geraty writes of a seventeenth-century gilder's lament: "I take the book out, / Fan open the leaves, / My heart stops still in mid-beat. / Where has all the gold gone, / I look all around / As the leaf flakes onto my feet."¹⁸)

Gauffering

Once you have mastered the art of gilding page edges, you may wish to move on to a bigger challenge: gauffering, a process in which heated tools are impressed into a gilt edge to create a recessed pattern. Again, most of the discussion in this section is based on Mitchell's work. Neither of us has tried gauffering an edge. Aneira has not gilded an edge satisfactorily enough to then gauffer it and also does not possess the tools used for gauffering.

Gauffering was probably introduced to Europe around the same time as gilding; there are certainly many sixteenth-century examples in existence, and it is well worth the time poking around on the Internet to see a few examples.¹⁹ Szirmai cites a 1462 binding

¹⁸ Cited on p. 2 of Geraty, *Edge Gilding and Edge Coloring of Books*.

¹⁹ Try Princeton's website to see a few:

http://libweb5.princeton.edu/visual_materials/hb/cases/edgedecoration/index.html.

that has a gilt and gauffered edge; in fact, of the books he has examined, if edges are gilt, chances are great that they are also gauffered.²⁰

In addition to the supplies required for edge gilding, you will also need finishing tools to impress designs into the surface of the edge. According to Mitchell, in the early days of gauffering, pointille (point or dotted line) tools were used to create the image patterns.²¹ The process is this: after gilding, the edge is washed with more glaire. After this glaire dries, the edge appears dull. A layer of olive or almond oil is applied, then a fresh coat of gold. The finishing tools are heated, which will reactivate the glaire. When the tools are impressed into the edge, the new gold adheres to the recessed area, and the other gold is wiped away. The end result is a dull gold finish with a pattern of bright gold.²²

As an interesting side note, in the *Archaeology of Medieval Bookbinding*, Szirmai mentions that he has found evidence that in some of the earliest examples of gilded and gauffered books, the edge treatment must have been applied after the books were covered, which is not when edge treatments are applied in practice today. This evidence includes gold leaf and marks from pointille tools on the inside of the covers.²³

Sprinkling

Sprinkling is one of the simplest edge-decoration techniques, requiring only pigment, a brush, and something to rub the brush against. There are examples of books with sprinkled edges dating from the sixteenth century (see the Princeton website cited

²⁰ Szirmai, p. 202.

²¹ Mitchell, p. 74.

²² For more details, refer to Mitchell's chapter on gauffering, pp. 74–79.

²³ Szirmai, p. 280, n. 30.

earlier), and de Bray specifically mentions brushes required for edge sprinkling in his manual. Red and yellow appear to be the most common colors used. Szirmai cites a German text from 1612 by Anshelmus Faust, who specifies the pigments used for edge staining, which include indigo and sulfides of arsenic and mercury, so presumably those pigments would also be used for sprinkling.²⁴

For the edge sprinkling Aneira has done, she used red acrylic paint thinned with water. The paint should be thin enough that there is no danger of the pages sticking together. (Naturally, you should still take precautions against this by talcing the pages as described earlier.) Aneira used her finger to rub the bristles and spray the paint onto the edge. This is a messy process, requiring care to protect your work surfaces.

Vanishing Paintings and Marbling

Fore-edge, or invisible, painting is a form of book decoration first practiced in the middle of the seventeenth century.²⁵ Thus, it is out of our period, but worth a mention. It is the more exotic cousin to other edge art like gilding and marbling. The outside of a closed book looks normal and unadorned, with gilded or perhaps with marbled edges. Upon opening the book, however, the pages fall open and an image appears on the beveled edge. The effect is heightened by the glittering facade of gold that fades into a picture as if by magic. Some books have more than one painting on each page. Sometimes the verso sides (back sides of the leaves) are painted as well, and sometimes the top and bottom edges are painted.²⁶

²⁴ Szirmai, p. 202.

²⁵ This is distinguished from edge decoration, as discussed in n. 1 of this article.

²⁶ Early vanishing fore-edge paintings featured simple floral or vine motifs and often included the heraldry of the owner, just as early fore-edge decorations. Early paintings usually were not gilded. The art

Marbling is another form of edge decoration that is slightly out of our period. Marbling of paper is generally understood to have originated in Persia in the sixteenth century. The art form spread to Western Europe through Italy and Spain in the seventeenth century. The first use of marbling to decorate book edges dates to around 1675.²⁷

Pigments

Book edges as painting surfaces are unique. This canvas is made of many fine cracks and fissures that can shift during the painting process. The edges are a cross-section of each individual page, severed and laid bare. The surface area is quite hydrophilic, and paint applied directly to an untreated surface can bleed into the individual pages. Because our time period covers early printed books on paper, this is especially problematic. Normally, the surface of vellum or paper is treated to make it water-resistant. Vellum is rubbed with chalk, and paper is dipped into size.²⁸ However, after the edges are cut, they are without that protection. Edges must be treated with some kind of sealing agent, such as glaire, or planed thoroughly, to restore the surface tension of the raw edge. Once released from the

gained momentum in the late eighteenth century, due in large part to William Edwards of Halifax and his son James, and peaked in the nineteenth century.

The technique of fore-edge painting is simple and does not appear to be an exact science. First, one must clamp the text block tightly in a vise or under weights and assess the edges. If they are uneven or deckled, the text block must be planed. Once the edges are even and square the pages are fanned over a dowel or splint and clamped shut. Generally size (a type of glue; historically egg whites mixed with water or boiled parchment) is then brushed onto the painting surface to keep paint from seeping across the rest of the page or through to the verso, but this was not always done. The artist then uses thin watercolors to create the image. The exact technique for applying paint is up to the artist, though Edith Diehle wrote in her 1946 book *Bookbinding* that the brush was held at a right angle to the surface of the painting and paint applied using downward strokes to keep it from running along the straight edges of the pages. When the paint is dry the book is closed, tightly clamped, and the edges gilded or, rarely, marbled. (This information is cited in Weber, on page 174.)

²⁷ See pp. 11–19 in Loring, *Decorated Book Papers*.

²⁸ The size used in the paper-making process can create problems when finishing an edge. Some modern shortcuts, such as using a belt sander, can generate enough heat from friction to activate the size in the paper and fuse pages together.

press holding the text block in place, the pages can never be blocked up as precisely as before, so all painting must be done at once.

Another unique quality of a fore-edge is the way in which it is handled. Virtually no other painted surfaces are handled quite so much as the pages of a book. The pigments used must be able to stand up to such abuse without flaking, rubbing, or fading.

Basically, the thinner the paint, the better.

Early vanishing fore-edge decorations and paintings may not have been done with the same materials as painted manuscripts. As previously mentioned, pigments for edge staining included indigo and sulfides of arsenic and mercury (see the section on sprinkling). The pigments used for edge decoration during our time period could be organic—such as madder, saffron, or sepia—or inorganic—such as ultramarine, and red or yellow ochre. Some pigments were artificially produced, like Naples yellow (lead antimonate), vermilion (mercuric sulfide), or verdigris (copper acetate). Many pigments eventually fade or flake at different rates depending on their chemical composition or the method used to apply them to paper. Some can even change color, like lead white and minium, which blacken with time. Few have actual corrosive qualities, however.²⁹

As far as we could deduce, there is not a singular source that discusses the types of pigments used in medieval and Renaissance fore-edge decoration. However, Mitchell and Arnett come pretty close. Both mention liquid pigments, or “spirit colors.” Though

²⁹ These are verdigris, orpiment (arsenic sulfide; a substitute for gold or yellow), and lead white. Verdigris is susceptible to moisture and sulfur gases in the air, as well as alkalis that may be present in the paper or in solvents used to clean the painting. It can turn black or brown over time. It also reacts badly to orpiment, which attacks the copper in the verdigris. In addition to corroding verdigris, orpiment also reacts with lead white and can be corrosive to parchment and binders. Medieval and Renaissance artists were aware of these dangers, however, and did not often mix these three pigments. This information is discussed at length in Thompson, pp. 165, 169, and 178.

Arnett writes from a late-nineteenth-century viewpoint, he gives a thorough reckoning of common pigments used in decorative bookbinding:

Blue (indigo mixed with spirit of salts and oil of vitriol)
Yellow (French berries, saffron, or faustic chips boiled with alum)
Green (yellow and blue, or verdigris mixed with cream of tartar)
Orange (Brazil dust mixed with French berries and alum, then boiled)
Red (Brazil dust mixed with alum and boiled in vinegar and water)
Purple (Logwood chips mixed with alum and copperas, boiled in water)
Brown (Logwood chips and French berries, boiled).³⁰

Mitchell acknowledges these “spirit” colors but avows that modern watercolors, watercolor ink, or gouache will work better and do not bleed as much.³¹ Peter Geraty agrees that gouache, watercolor, ink, and acrylics are all usable for edge decoration.³² In Aneira’s attempts, she has used acrylic paint considerably thinned with water.

Conclusion

Early decorated books are indicative of the revered place books held in medieval and Renaissance society, so very different from today. The late-fourteenth-century abbot Johannes Trithemius once wrote, “As far as possible, manuscripts should be decorated so that their appearance alone will induce perusal.”³³ Though one may never tell a book by its cover, a lovely antecedent to the text will never go amiss.

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³⁰ Arnett, pp. 38–40.

³¹ See Mitchell, p. 26.

³² Geraty, p. 17.

³³ Cited in Arnold, page number unknown.

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