Illuminated manuscripts are some of the most interesting, and aesthetically appealing artifacts to survive from the Middle Ages. They can be studied in a multitude of ways. A broad-brush approach might consider issues such as patronage, and function; or a narrower focus concentrate on the scripts employed, the study of Palaeography, or the style of decoration and illustration, the discipline of Art History. This lecture will explore how an illuminated book was produced, in the belief that an understanding of materials and techniques provides a firm foundation from which to pursue other avenues of investigation.

Analysis of the word “manuscript”, literally meaning “written by hand”, conveys the fact that all the books considered here were hand-made, but their production involved much more than the expert penmanship practiced by scribes such as the man seated at his desk in this mid 12th-century illustration (Plate 1). An 11th-century Anglo-Saxon riddle, from the Exeter Book (Number 26) hints at the variety of skills necessary to transform animal skins into parchment; copy texts; paint and gild decoration and illustration, and bind folios between boards; processes that reveal a great deal about medieval scribal and artistic practice.

"An enemy ended my life, took away
My bodily strength; then he dipped me
In water and drew me out again,
And put me in the sun where I soon shed
All my hair. The knife’s sharp edge
Bit into me once my blemishes had been scraped away;
Fingers folded me and the bird’s feather
Often moved across my brown surface,
Sprinkling useful drops; it swallowed the wood dye
(Part of the stream) and again travelled over me,
Leaving black tracks. Then a man bound me,
He stretched skin over me and adorned me
With gold; thus I am enriched by the wondrous work
Of smiths, wound about with shining metal...."


The riddle has two answers: it obviously refers to a book, but the opening line suggests an alternative solution; an animal of some kind. The vast majority of books produced in Western Europe, prior to the end of the 14th century, when paper was introduced to the West, were made from animal skins, which had been transformed from hairy, slippery, distinctly smelly items, into smooth pages of stable, flat parchment that provided the perfect ground for inks and pigments. This material is variously referred to today as “vellum” or “parchment”. The latter is the more precise and useful term, since it denotes no specific animal and it is sometimes difficult to identify definitively the creature whose skin formed the pages of a book. Strictly speaking “vellum” (the word derives from the Latin for calf, vitulum), should be used only with reference to calf skin. It was, and still is, possible to make parchment from the skin of any animal, whether a mouse, a squirrel, or a sheep, but since animals were expensive in the Middle Ages, they were not reared solely to be transformed into the pages of books. Instead, parchment was made as a by-product from the skins of animals primarily bred for food. In England, Germany and France, this meant that most manuscripts were made from sheep or calf skin. In Italy goat skin was used also.

The process by which animal skin was refined into parchment in the Middle Ages was relatively simple. It began by immersing the skins in fresh running water for a day or so; this was to cleanse them and was usually done by placing them in a shallow stream or river, weighed down by pebbles to prevent them from floating away downstream. Then they were transferred to wooden barrels partially filled with a solution of lime (chalk dust), and water. The lime opened up the pores and loosened the hair, so that after a week it was possible to slough off the unwanted pelt from the outside of the skin with a wooden paddle. The skins were then rinsed in fresh water for two days to remove any traces of lime, and, once clean, were pegged, tightly stretched, onto a rectangular wooden frame. From hereon a mid 13th-century German Bible provides useful insights into the remainder of the process. The Hamburg Bible was made for Hamburg Cathedral in 1255 and contains a series of distinctive historiated initials. Typically illustrations in medieval Bibles were sourced from biblical subject matter, but here, someone made the decision to depart from this norm, and inserted snap-shots from the production of an illuminated manuscript into the initials that preface the opening of the biblical books. On folio 183v the initial shows, in the background, a skin, pegged out onto a rectangular frame (Plate 3). Whilst stretched in this way, the skin was smeared with a paste of chalk dust, which enabled it to be stretched ever tighter, and then scraped and shaved, front and back, with a half-moon shaped knife (lunellum), seen towards the bottom of the frame, designed to minimize the risk of puncturing and tearing. Once dry, the sheet of parchment was removed from
the frame, concluding a process that has remained essentially unchanged to the present day.

If the book was intended for a particularly illustrious patron the parchment sheets were sometimes dyed at this point, by dipping them into an immensely costly purple dye extracted from molluscs of the whelk family. Purple books form an elite group, destined for emperors. This 6th-century example, the Sinope Gospels, further embellished with text written in golden ink, chrysography, was probably intended for a Byzantine Emperor (Plate 4). Such dyes alter over the centuries assuming a variety of red or brownish hues.

The Hamburg Bible initial on folio 183v reveals something else about the production of manuscripts, in terms of who produced them (Plate 3). The man on the right, dressed in a cowled, black habit is a Benedictine monk (as well as a saint, probably St Jerome). Prior to the 13th century the majority of manuscripts were produced in monasteries, in many cases by monks, who were responsible for all aspects of a volume’s production. As universities flourished in the early 13th century, across Western Europe, in places such as Oxford, Paris and Bologna, the situation changed. The desire for manuscripts grew as the pool of literate patrons increased, and to meet this demand, manuscript production moved into the places where patrons were concentrated. Increasingly books were made in urban workshops, staffed by laymen, who became increasingly specialized in the tasks they performed; some became parchmenters, others specialist scribes or illuminators and books became commercial commodities produced on what often amounted to a conveyor belt system. The mid 13th-century date of the Hamburg Bible accounts for the halfway house situation illustrated here. The man on the left, identifiable as a layman from the linen coif he wears, seems to be a professional parchmenter. He clutches a sheaf of parchment leaves under his right arm and hands a single sheet to the monk to his left, who is, by implication, involved in the production of books.

It is possible to deduce a great deal about a manuscript from the quality of its parchment, even if it is viewed through a glass-topped case. This version of the Worcester Chronicle, composed by two monks, Florence and John, at Worcester Priory in the 11th and 12th centuries, is a utilitarian volume, and the parchment chosen for it was not therefore of the highest quality (Plate 5). The grayish tone of the parchment suggests that the skin was not very carefully cleaned and the page, if one feels it between finger and thumb, is thick and stiff. A hole with pointed top and rounded sides, intrudes into the illustration at the bottom right hand corner of the page. This is just the sort of hole often found on the skin of an animal that has suffered a boil or insect bite. The scar tissue that heals over the wound is thinner than the rest of the animal’s hide and comes away easily when the skin is stretched and scraped, leaving a hole.

This standard of parchment would have been rejected for a higher status manuscript such as the Munich Psalter (Plate 6). This volume, made for a wealthy lay patron to say his, or her, prayers from, presents a clear contrast with the Worcester Chronicle. The parchment is of very high quality, clean and creamy and carefully scraped to the supple thinness of today’s finest writing paper. No holes mar the surface of this page, and the fact that the miniature is surrounded by a very generous frame of parchment, that does nothing other than set it off to perfection visually, indicates that this was a costly volume. This impression is supported by the use of a wide range of pigments and gilding for the miniature and it’s framing elements.

The less high-quality, more utilitarian Worcester Chronicle is illustrated with drawings, coloured selectively with a restricted palette of pigments and no gold, and the text panel and illustrations fill, almost entirely, the surface of the page, maximizing use of the available parchment.

It is possible also to distinguish, purely by visual observation, whether page surfaces were originally on the hairy (grain), side or flesh side of an animal’s skin. The flesh side is visible on the left hand margin of the Munich Psalter page, where the parchment is slightly buckled. It has a shiny, smooth, reflective surface, which catches the light and appears pale in tone. The hairy side of the skin, seen here on a detail from a manuscript in Hereford (Plate 7), is more like suede, velvety and non-reflective, and sometimes, as in the next example, a mid 13th-century Italian Bible, the follicles that once held dark hairs on the animals’ pelt remain visible as drifts of minute spots scattered over the surface of the page (Plates 8 and 8a).

If one is able to handle a medieval book and feel the front (recto) and back (verso) of each page between index finger and thumb, the pattern of flesh and hair sides is almost always regularly distributed: flesh side faces flesh side, usually appearing cleaner, than the opening which follows, of hair side facing hair side. This regular alternating arrangement results from the way that sheets of parchment were folded to achieve the required format of a book.

The monk in another Hamburg Bible initial (fol. 195) has a trimmed down rectangle of parchment on the desk in front of him (Plate 9). All animals, apart perhaps from tortoises, yield rectangular skins, since all animals have rectangular sides, with legs at each corner. Once a finished sheet of parchment was removed from the frame and trimmed down, the resulting rectangle was folded in half, however many times was necessary to achieve the desired scale of the book. For a large, public book each animal skin was folded in half once, producing a bifolium. In such a volume the dimensions of each page were equal to the side of the calf or sheep. For a smaller, more private book, the sheet of parchment was folded three or four times, resulting in a packet of rectangular bifolia. Once the creases at the top and fore-edge of this packet had been cut with a knife, the resulting quire, or gathering, the constituent module of a medieval book, was complete, comprised of a number of bifolia stacked inside one another. If one turns the pages of such a gathering the pattern of hair side facing hair, alternating,
opening by opening, with flesh side facing flesh occurs consistently.

By this point, the parchment had been much handled and may well have become greasy. Its surface may also have been over smoothed, so it was abraded gently with a piece of pumice stone, as shown here in another Hamburg Bible initial (fol. 142v). This operation produced a surface sufficiently roughened for the effective application of ink and pigment (Plate 10). Calligraphers follow the same principle today, although they tend to use pumice dust.

Now it was time to prepare the folios for text. To facilitate writing accurately in straight lines across a sheet of parchment, without the time-consuming necessity of measuring up a repeating grid pattern, page by page, scribes devised an ingenious system, whereby a stack of gatherings were prepared with an identical grid in one go. Evidence of how they accomplished this has often disappeared, since the majority of medieval books were trimmed down when they were rebound in the post-medieval period. Where the pages of a book maintain their original dimensions prick marks often survive; tiny holes, perhaps made by the point of a knife, that punctuate the fore-edges of the pages at regular intervals. This can be seen on a detail from a mid 13th-century copy of a life of St Edward the Confessor in Anglo-Norman verse, possibly produced for Eleanor of Castile, wife of Edward I (Plate 11). The distance between each prick mark corresponds with the space between each line of text. As another Hamburg Bible initial (fol. 137v), demonstrates, the scribe had then only to open his prepared gathering and join up the prick marks on the outer margin of each page with his ruler to produce a grid that was replicated on every opening (Plate 12).

For reasons that are not fully understood the materials used to rule grid patterns changed over time. Prior to the beginning of the 12th century (and again in Italy in the 15th century), most manuscripts were prepared with an almost invisible grid pattern, drawn up by scoring the surface of the parchment with a hard, dry point, probably of bone, ivory or metal. This produced a grid visible only when the page is tilted towards a raking light; a grid that does nothing to distract from the text, as demonstrated in this opening from a late 15th-century Florentine Book of Hours (Plate 13). From the early 12th century onwards it became more usual for scribes to use lead point, to rule out their grids, as shown in the complex tabulated grid necessary for the September calendar page of the Munich Psalter (Plate 14). Although it would have been possible to erase the grid once it was no longer needed, this was rarely done; it was allowed to remain, contributing to the overall design of the page. Manuscripts produced from the 13th century onwards typically have grids ruled in pigments, often magenta coloured, which further enhance the decorative effect of the page, as in an early 16th-century French Book of Hours made by the workshop of Jean Bourdichon (d. 1521) (Plate 15). Now the scribe was ready to write, an appropriate moment to introduce some medieval scribes whose names are known. First two monastic scribes. Eadwine, the scribe you met at the beginning, was a monk at the Benedictine house of Christ Church Priory, Canterbury, in the mid 12th century, who designed and wrote part of the book that bears his name today, the Eadwine Psalter (Plate 16). The image of him tonsured, and wearing the garb of a Benedictine monk was added to the back of the volume not long after its production, perhaps to celebrate his contribution to this textually complex book, or to honour his memory. The frame of the “portrait” contains a Latin versed couplet that proves the high regard in which 12th-century scribes were held:

“The scribe: I am the chief of scribes, and neither my praise nor my fame shall die; shout out, oh my letter, who I may be. The letter: By its fame your script proclaims you, Eadwine, whom the painted figure represents, alive through the ages, whose genius the beauty of this book demonstrates. Receive, O God, the book and its donor as an acceptable gift.” The Eadwine Psalter, ed. M. Gibson et al (London and University Park, 1992)

Eadwine holds the essential tools of all scribes: a quill pen, in his right hand (the majority of medieval scribes are depicted as right-handers) which Theophilus, the Benedictine author of an early 12th-century technical treatise, De Diversis Artibus (On Divers Arts), recommends cutting from the sturdy wing feather of a goose, and a knife, in his left, for sharpening the pen when it became blunt, holding the page flat whilst writing and erasing any mistakes that were noticed quickly. Medieval scribes often wrote with encaustic ink, i.e. ink made from an organic material, perhaps boiled tree bark, to which iron filings had been added. When ink of this sort is applied onto parchment it literally burns itself into the animal skin and can only be removed, if a mistake is made, by scraping away the top layer of the parchment, taking with it the offending ink.

Eadwine is shown writing into a bound book, an artistic convention rather than a reflection of actual scribal practice; the binding of the book took place at the end of the production process, since writing or illustration was most easily done upon a flat unbound page.

It was not only monks that made manuscripts, on occasion nuns were skilled at such work too; Guta, a mid 12th-century member of the convent of Schwartzenthann, near Hamburg, in northern Germany, included a self-portrait in this book, where she bears aloft a scroll that describes her as the sinner who wrote and pinxit, “painted” the book (Plate 17). But since the ideal conditions for a religious house to specialise in manuscript production sprang from a combination of an enthusiastic head of the community and a substantial income, monasteries tended to dominate the world of book production; they were typically endowed with more generous incomes than nunneries.
This later medieval scribe, identifiable by his dress as a layman, is Jean Mielot (d. 1472), scribe to Philip the Good, and Charles the Bold, Valois Dukes of Burgundy (Plate 18). He is busy writing in a domestic setting, in a bedchamber, and close scrutiny of the picture reminds us that medieval scribes rarely composed texts when they sat down to write; rather they copied existing exempla, procured by a variety of means. Here the bound exemplum sits on the upper lectern, kept open by a suspended rectangular weight with a cusped top, whilst below, Jean laboriously copies the text onto an unbound, ruled, bifolium laid open upon a desk pierced with holes, on the right hand side, to accommodate additional pens and an ink pot. It was the tedium of copying large amounts of text that led even the most conscientious scribes to make mistakes.

The execution of a page of text followed a general pattern. First the main body of the text was written in brown/black ink. To speed up the process, or minimise the amount of parchment the text occupied (i.e. if time or money were in short supply), scribes employed a system of abbreviations, akin to modern-day shorthand, that enabled them to contract the text. The text of the Waddesdon Italian Bible is heavily abbreviated, indicating that it was not a luxury volume (Plates 19 and 19a). For example, on a page from Deuteronomy, six lines up from the bottom of the right hand column of text on this page, there is a “P” that stands alone, with a little hook, or spur, projecting from the left of the vertical stroke. This is the commonly used abbreviation for pro: the scribe has reduced by two-thirds, the amount of space the word would otherwise have occupied and contracted the amount of time it took to write. These abbreviations follow a standardised system familiar to scribes and readers alike.

Scribes were careful to leave gaps or indentations in their text for the insertion of initials to mark the beginning of new sections. Medieval books were very rarely supplied with page numbers (the pencil foliation now visible in many manuscripts is the result of 19th or 20th century annotation), so the employment of enlarged, coloured, and decorated initials at the beginning of a new section, was an important means of alerting the reader to the structure of the text. In this Bible every chapter in Deuteronomy is introduced by a blue or red three-line initial, flourished with a contrasting colour. Close scrutiny demonstrates that the coloured elements lie on top of the brown ink of the main text; a principle that is adhered to in most cases.

In some books every new verse was given a painted, gilded and decorated initial to mark it out for attention, and, if money was no object, as was undoubtedly the case when this tiny Psalter was made in Paris in the 1320s, for a member of the French royal family, the stretch of line which remained empty at the end of a passage of text was filled with a strip of decoration known as a line-filler (Plate 20). These performed no specific function but added to the aesthetic pleasure provided by the page. To the medieval eye more was usually preferable to less, where decoration was concerned.

The scribe also left spaces for the insertion of illustrations, if a book was to receive such embellishment, since the pictures were always supplied at the end of the production process. Although decoration and illustration tends to dominate our attention today, it is worth remembering that only roughly five percent of medieval books were lavishly decorated and illustrated, the other ninety-five percent were prized simply for their textual content, and even when a book was illuminated, the text remained, in almost all cases, of primary importance. The term “illuminated” was used initially to refer to books enhanced with gold, which literally lit up when daylight or candlelight fell upon their open pages, but is now more loosely used to describe a book that is decorated and/or richly illustrated.

The artist, who prior to the thirteenth century may well have also been the scribe of the book, will have needed, in many instances, to procure a model for his illustration. Surviving evidence coupled with pragmatic interpretation, suggests that artists learned their craft through first hand experience gained in workshops and that they drew upon a combination of this experience, and available models, to execute their work, rather than owning or compiling copiously illustrated sketch or model books, as was once presumed. When two manuscripts, made in the same place, at roughly the same time, contain images that are noticeably similar to one another it is possible to discern the operation of workshop practise. These two late 15th-century Books of Hours were made in Rouen, Normandy, an important centre of manuscript production at that time (Plates 21 and 22). In both manuscripts the frontispiece to the Gospel Pericopes follows the same pattern; a round arch-topped composition is divided into quadrants, each occupied by a seated Gospel writer or Evangelist, busy composing his Gospel, accompanied by his symbol; Matthew with his angel, Mark his lion, Luke his ox and John his eagle. The writers even occupy exactly the same quadrants in both manuscripts, but there are tiny, instructive differences that indicate how artists, often working within established formulae, possessed some room for individual expression and interpretation. In the Waddesdon book (Plate 21), John’s eagle hops behind his author’s shoulder; in the Playfair Hours (Plate 22) the eagle plays a more dynamic part in the production of the text. He stands in front of John and helpfully proffers an ink-pot and pen-case in his beak. This sort of variation is presumably the result of artistic invention, whereas differences in the content of the page borders may reflect the taste, or spending power of the patron. The Playfair Hours has additional, small, framed compositions set within the borders of most of its frontispiece pages – in this instance John the Baptist holding the Agnus Dei on the right, and John the Evangelist in a vat of oil below. Such compositions will have cost relatively more to produce than the decorative motifs that inhabit the borders of the Waddesdon book, a bird, a butterfly and a hybrid creature hobbling on a pair of crutches. Most surviving illustrated medieval books are complete, making it difficult to discern the various steps taken to produce their pictures. But there are one or two books that survive in varying degrees of completion, providing a wealth of fascinating information. The Douce Apocalypse, is such an example, produced for Edward, son of King Henry III, and his wife Eleanor of Castile, whom he married in
1254. No one knows for certain why the book was never finished, but funding may have run out as a result of Edward's absence from England on crusade from 1270. Whatever the reason, the illustrations demonstrate clearly the steps taken to produce a miniature, the term used to describe an independent illustration. In some instances a lead point sketch is evident, firmed up with the application of a brown ink line, although a straightforward element, the water on page 62 for example, is drawn directly onto the page in ink, without the need for a prior application of lead point (Plate 23). The artist may have been working from a pre-existing model and perhaps sketched out the composition on a wax tablet with a stylus before transferring it freehand to the page.

The next step was to apply gilding (p. 94) (Plate 24); this occurred before the application of pigment to avoid spoiling precious painted surfaces when the gold was rubbed vigorously, or burnished (Theophilus advises using a stoat’s tooth), to make it shine. In the Douce Apocalypse gold leaf (gold that has been beaten to a leaf-like thinness between sheets of parchment), has been laid directly onto a layer of gum or glair (clarified egg white), which was applied onto the page surface with a brush. An alternative method involved the application of a layer of a pinkish gesso on the area to be gilded, onto which the gold leaf was then applied, akin to the way in which bole, a greasy red pigment, is laid beneath gold leaf in a panel painting. This endowed the gold with a warm tonality that is lacking when gold leaf is laid directly onto white parchment. If the gesso ground was built up into a raised cushion, it had the virtue of making the layer of leaf on top appear thicker than it actually is and ensured that it caught the light with spectacular effect. This can be seen in an initial E from a late 12th century Worcester Cathedral Library manuscript (Plate 25). Some books, such as the Harley or Ramsey Psalter, produced in the late 10th century for Oswald, Archbishop of York, make use of gold paint, rather than gold leaf; this has a more granular surface and is prodigiously costly (Plate 26). The amount of gold needed to cover four letters of a word, when beaten into leaf, only supplies the dot of a single “i” if ground into powder and mixed with a binding medium to make gold paint.

It was now time to apply colour. Medieval pigment is a fascinating subject in its own right and cannot be treated here in anything but a cursory fashion. There were three main categories of pigments used in manuscript illumination: organic, mineral and manufactured. Organic pigments include many of the same materials as dyestuffs used for colouring fabrics; they were usually derived from plants or trees and tended to be translucent and fugitive in intense light. Mineral pigments were, by contrast, opaque and more granular, made by grinding naturally occurring minerals. Manufactured pigments constituted the largest category and included colours made by subjecting a variety of substances to a variety of processes. In the early Middle Ages artists were dependant upon materials that were native to the area in which they worked, or available via trade. By the mid 13th century when the Douce Apocalypse was made, an artist working in London for a royal patron, would have had access to all three categories of pigments and probably purchased them at an apothecary’s shop of the sort depicted in this 15th century Italian copy of the Tacuinum Sanitatis (Plate 27). Whatever sort of pigment was used, it had to be mixed with a binding medium, as well as water, to encourage it to adhere permanently to the page; otherwise it flaked off the parchment easily. A variety of organic binding media were used: gum, such as gum Arabic from the acacia, or size, made by boiling up scraps of parchment; or glair (clarea), clarified egg-white, which had been whipped stiffly, as when preparing a soufflé, and then allowed to settle into a clear, colourless liquid.

The precise approach to applying pigment depended on the painting style that was current at any given time, but in the Douce Apocalypse it is evident that the process occurred in stages. An unarticulated layer of mid-toned colour was applied first (p. 76) (Plate 28), supplemented later with darker tones to forge shadows and paler hues to accentuate areas of highlight (p. 56) (Plate 29). The production of a miniature was a painstaking business, but the order in which miniatures were executed did not necessarily, as the Douce Apocalypse demonstrates, follow an orderly sequence progressing quire by quire from folio 1 onwards; the miniature on p. 56 is finished, that on p. 76 is not.

In the Douce Apocalypse there is no evidence to indicate whether one person drew the preliminary sketches and applied the pigments, or whether the tasks were divided between a team. In this 12th century copy of the Pauline Epistles, the person who oversaw the design of the initials left helpful notes for whoever was to colour them, indicating a collaborative approach (Plate 30). The colourist obeyed the discreet instructions: on Paul's hip a tiny “a” signals that it should be coloured azure or blue, as it has been, and the red sleeve of the man in the foreground on the right bears a “r” for rubeus.

Once the illustration was complete the book was bound. The gatherings were placed in their correct order, a process facilitated in some manuscripts by catchwords, which can still be seen in the bottom margins of books that have not been cut down significantly. In the Parisian Psalter from Waddesdon Manor the phrase written at the very bottom of the page, beginning ides...., signals that this is the verso of the last folio of a gathering; the just visible folio on the opposite side of the opening is the recto of the first folio of the next gathering (Plate 31). The text on the next folio will begin ides.... thereby ensuring that the gatherings could easily be assembled sequentially. This was especially necessary if gatherings had been farmed out to a number of different scribes and artists. The binder then secured the gatherings across their spines with linen thread, before stitching the spine onto the central portion of a series of leather thongs or cords, the thickness of shoe-laces, which had been mounted, spaced at regular intervals, upon a frame. The loose ends of the thongs were threaded through the grooves tunnelled into the rectangular wooden boards that formed the covers of the book. These were often beech or oak, i.e. heavy enough to keep springy parchment leaves flat, and their dimensions were exactly the same as those of the gatherings they covered. The covers of medieval books did not overhang the top, bottom
and fore-edge of the pages in the way they do today, and the spines of medieval books were completely flat, rather than curved.

Lastly the binder considered how best to cover the wooden boards, a decision dictated by the function of the book. Utilitarian volumes, those used for scholarly purposes, for example, were commonly given practical, hardwearing, modestly priced covers; typically leather was stretched over the boards, sometimes embellished with repeating patterns as here, where a hot metal die or punch has been struck onto the leather surface (Plate 32). If the book was to play a role in the Christian liturgy it may have been given a “luxury” binding, which proclaimed, before the front cover was even opened, that it was significant. Gospel Books, volumes used during the celebration of the Mass, were the text most often treated in this sumptuous fashion; they contained the inspired Word of God as communicated via the Evangelists, and were thus felt deserving of special covers adorned with ivory, gem stones and precious metal. This example, made in the Rhineland in the early 12th century, and now in the Treasury of Trier Cathedral, has four copper-gilt repoussé plaques of the Evangelist symbols set within a cross-shaped frame of silver-gilt embellished with filigree work, encrusted with cabuchon, or polished precious stones, and strips of gold cloisonné enamel (Plate 33). Even though many of the stones and enamels are now missing, the overall effect of the cover retains the power to inspire and impress. Both of these volumes retain evidence of the metalwork clasps that were often attached to the fore edges of the boards to ensure that the book could be closed securely when not in use. This protected the parchment, text and illustration within from the dangers of damp and dust.

By the later Middle Ages, chemise bindings were frequently made for books such as Books of Hours, private devotional volumes designed for a lay readership, which were often carried about with their owner, as well as used in interior domestic contexts. These were the medieval precursor of the modern day dust-jacket, usually fashioned from soft leather or fabric. The boards of the book were inserted into the loose cover, the floppy edges of which were then folded protectively around the book once it was closed. Few of these delicate bindings have survived, but this fragment of an altarpiece, painted by the Netherlandish painter, Rogier van der Weyden, shows Mary Magdalene, her identity confirmed by the alabaster jar set beside her on the floor, engrossed in her devotions, poring over what is probably her Book of Hours, which sports a white chemise binding and a pair of gilt clasps bearing figures, probably of saints (Plate 34).

It might be presumed that the advent of printing in Western Europe from the late 15th century onwards spelled the death knell of the hand-made book, but this was not the case. The invention of printing only increased the desirability of hand written and illuminated manuscripts during the sixteenth century; such books proclaimed clearly to viewers the taste and wealth of the patron; and the very same admiration of painstaking craftsmanship and aesthetic beauty displayed in illuminated books, ensured that many of these artifacts survived into the 21st century.

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List of Plates
(Measurements refer to overall dimensions of each book)

1. Cambridge, Trinity College, MS R.17.I, Eadwine Psalter, Canterbury, Christ Church, c. 1150, fol. 283v, Eadwine as scribe (460 x 327 mm)
2. Oxford, Bodleian Library MS Bodley 614, Astrological Manuscript and Marvels of the East, England, c. 1120-40, fol. 18, detail of Taurus (143 x 100 mm)
2a. As for Plate 2. fol. 18v, detail of Aries
3. Copenhagen, Royal Library, MS GKS 4 2°, Hamburg Bible, Hamburg, 1255, folio 183v, detail of initial with parchment and monk (520 x 355 mm)
6. Munich, Bayerische Staatsbibliothek Clm. 835, Munich Psalter, (? ) Oxford, c. 1200-10, fol. 30v, the torments of damned souls in Hell (277 x 195 mm)
7. Hereford Cathedral Library, MS 0.8.iii, Gregory on St Luke, 12th century, detail of initial C, man wrestles a bear
8. Waddesdon Manor, MS 1, Bible, Italy, mid 13th century, fol. 350, Prologue to the Epistle of St James (139 x 105 mm)
8a. Detail of Plate 8
9. Hamburg Bible (see Plate 3), fol. 195, detail of initial with man cutting parchment
10. Hamburg Bible (see Plate 3), fol. 142v, detail of initial with man abrading parchment with pumice stone
11. Cambridge, University Library MS Ee.3.59, La Estoire de Seinte Aedward le Rei, London - Westminster, c. 1255-60, fol. 7, detail of death of King Harthacanute by poison and Bishop Brithwold (280 x 192 mm)
12. Hamburg Bible (see Plate 3), fol. 137v, detail of initial with ruling out of grid pattern
13. Waddesdon Manor, MS 16, Book of Hours, Florence, c. 1490, fols. 117v-118 (152 x 95 mm)
14. Munich Psalter (See Plate 6), fol. 5, September Calendar page
15. Waddesdon Manor, MS 20, Book of Hours, Tours, workshop of Jean Bourdichon, c. 1505 (254 x 173 mm)
16. **Eadwine Psalter** (See Plate 1)  
17. Frankfurt, Stadt und Univ. Bibliothek, MS Barth. 42, Homiliary, Middle Rhine, c. 1150-1200, fol. 110v, detail of initial with Guta  
18. Brussels, Bibliothèque Royale Albert Ier MSS 9278-80, c. 1450, fol. 10, detail of Jean Mielot writing  
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20. Waddesdon Manor, MS 2, Liturgical Psalter, Paris, 1326-1328 (?), workshop of Jean Pucelle (125 x 85 mm)  
21. Waddesdon Manor, MS 12, Book of Hours, Rouen, c. 1470, fol. 13, opening of Gospel Pericopes, Evangelists writing (194 x 135 mm)  
22. London, Victoria & Albert Museum, National Art Library MSL 1918/475, **Playfair Hours**, Rouen, c. 1480, fol. 13, opening of the Gospel Pericopes, Evangelists writing (175 x 120 mm)  
23. Oxford, Bodleian Library, MS Douce 180, **Douce Apocalypse**, London - Westminster, c. 1265-70, p. 62, detail, The first vial poured upon the earth (Rev. 16:2) (312 x 215 mm)  
25. Worcester, Cathedral Library MS, late 12th century, detail of initial with raised gilding  
26. London, British Library Harley MS 2904, **Harley or Ramsey Psalter,** (?) Winchester, 975-1000, fol. 4, Beatus initial (Psalm 1) (285 x 242 mm)  
27. Vienna, Österreichsiche Nationalbibliothek, Cod. Ser. Nov. 2644, Italy, early 15th century, fol. 53v, Apothecary's shop  
28. **Douce Apocalypse** (see Plate 23), p. 76, detail, The lament of shipmasters and mariners (Rev. 18: 17-19)  
29. **Douce Apocalypse** (see Plate 23), p. 56, detail, Blessed are they who die in the Lord (Rev. 14:13)  
30. Oxford, Bodleian Library, MS Auct. D.i.13, Pauline Epistles with gloss, (?) Winchester, mid 12th century, fol.1, detail of initial P with St Paul teaching (298 x 190 mm)  
31. Waddesdon MS 2 (see Plate 20), catchword  
32. Hereford Cathedral Library, MS O.6.iii, Flanders, 12th century, stamped leather binding  
33. Trier, Cathedral Treasury Hs. 139/110/68, Gospelbook Cover, Roger of Helmarshausen, early 12th century, luxury binding, copper-gilt, gold, precious stones, cloisonné enamel (327 x 239 mm)  
34. London, National Gallery, NG 654, c. 1440-50, Rogier van der Weyden, oil, perhaps with some egg tempera; transferred from original panel to mahogany, fragment of altarpiece with St Mary Magdalene (615 x 545 mm).