

Medieval Scriptorium Glossary of Terms

This Glossary is based on Michele P. Brown. *Understanding Illuminating Manuscripts: A Guide to Technical Terms*. London: The J. Paul Getty Museum, and The British Library Board, 1994. It has been excerpted from the **Medieval Manuscript Manual** website, which is all about books and writings during the middle-ages.

Medieval Manuscript Manual: <http://www.ceu.hu/medstud/manual/MMM/home.html>

A

Antiphonary. Also called *Antiphoner* or *Antiphonal*. Liturgical book containing antiphons, the sung portions of the Divine office, both texts and notation. Such books were often of a large format, to be used by a choir. Often included decorated and historiated initials.

Applied covers. Decorative plaques, generally of metalwork or ivory, which are set into or onto the boards of a [binding](#).

B

Benedictional. Also called *Liber Benedictionalis* or *Liber Benedictionum*. Service book containing blessings delivered during the Mass and arranged according to the liturgical year. Some benedictionals were produced for individual bishops and lavishly decorated.

Bestiary and Physiologus. The Book of Beasts, *bestiarium*, consisted of descriptions and moral interpretations of animals, birds, fantastic creatures and, sometimes, stones and plants. The bestiary was immensely popular during the twelfth and thirteenth century, functioning as a didactic reading, picture book, schoolbook, and a homiletic source material. The text was usually richly illustrated. The *Physiologus*, a predecessor of the bestiary was arranged in a similar way and served the same purposes. The *Physiologus* was compiled in Alexandria in the second century A.D., was translated into almost all Christian languages, and retained its influence over Europe for more than a thousand years.

Biblical concordances. Verbal indexes to the Bible, or lists of biblical words arranged alphabetically with indications to enable the inquirer to find the passages of the Bible where the words occur.

Bifolium. A sheet of writing support material folded in half to produce two leaves (four pages). A number of bifolia folded together form a [quire](#) or [gathering](#).

Binder. A person wholly or partly responsible for sewing a [codex](#) together and supplying it with covers. Although there is evidence that scribes occasionally undertook the preliminary sewing of their own sections of manuscripts, the binder was often another member of [scriptorium](#). Following the rise of universities in the late twelfth century, [binding](#) became the preserve of a [stationer](#). The term binder can also be used of a [binding medium](#).

Binding. The sewing and covering of a book. When the leaves of a [codex](#) had been written and illuminated, they were assembled into [gatherings](#) and sewn together. Generally they were sewn onto supports ([cords](#)). The loose ends of the cords were then attached to [boards](#).

Binding medium. An ingredient on paint or ink that binds pigment and makes it adhere to the surface to be embellished. Clarified egg white (glair) was the principal binding medium used in manuscript illumination. Gum (such as gum arabic from the acacia) glue (such as *ichthyocollon*, a fish glue, casein, a dairy-product glue, and gelatin, made from the [parchment](#) offcuts) were also used for this purpose as well as for [gilding](#).

Blocked. A technique of decorating [bindings](#) in which a design or picture is stamped into the leather cover by a block, into which the image has been carved or incised.

Boards. The stiff covers at the front and back of a book. Wood was the material generally used until the early sixteenth century, preferably oak or another hardwood to minimise worming. These covers could be very thick and often had beveled edges. Pasteboard became popular in the sixteenth century. The boards were attached to the [quires](#) by the [cords](#), which were threaded through the boards and secured. The [boards](#) and [spine](#) were then usually covered with damp leather (although [parchment](#), fabric, or [paper](#) might also be used), which was folded over the edges of the boards (forming what are known as [turn-ins](#)) and glued down, [pastedowns](#) could then be applied to conceal this mechanism.

Bookmarker. A variety of devices for making key openings in a book have survived, most of them dating from the twelfth century on. Tabs or knotted strips of [parchment](#), sometimes coloured, were attached to the [fore edge](#) of the book at appropriate points; ribbons of linen, silk, or parchment could be attached to the headband and descend vertically into the book. Some bookmarkers even carry a device used in conjunction with the text to be marked to assist in relevant chronological or astronomical calculations. Flowers and other pressed organic materials were also used as bookmarkers.

Book of Hours, also called a *primer* or *horae*. This variation of the [Breviary](#) was mostly used in private devotion. Its central text, the Little Office of the Blessed Virgin, is modelled on the Divine Office and represents a shorter version of the devotions performed in the eight canonical hours. The text, known from the tenth century, entered into lay use by the end of the twelfth century, often being attached to the [Psalter](#).

Bounding lines. The marginal lines supplied during [ruling](#) to guide the justification of the text and its ancillaries.

Breviary. Liturgical book containing the texts, hymns, and notation necessary for daily prayer. Often richly decorated with initials and miniatures.

Burnishing. Enhancing the smoothness and shininess of a surface such as metallic [pigment](#) by polishing with a [burnishing tool](#).

Burnishing tool. Tool used to polish gold once it has been applied to the manuscript page.



Calendar. A list of liturgical feasts.

Canon tables. A Gospel concordance system devised in the fourth century by Eusebius of Caesaria, in which Gospel passages are numbered in the text and correspond to tables, arranged in columnar form, indicating the concordance of passages among the Gospels. Canon tables were usually placed at the beginning of the book and were popular in Gospel books, Bibles, and New Testaments.

Capitulare. A list of biblical passages (*pericope*) with marks indicating on which Sunday or feast they are to be read.

Chalk. Chiefly composed of calcium carbonate, chalk was used for a variety of purposes in manuscript production: as a pounce when preparing the [parchment](#) surface; as a component of [gesso](#) or another [ground](#); as a white [pigment](#); as an alkaline component in pigments (serving to modify the colour of certain organic pigments, such as *folium*, and to lighten and increase the opacity of others); or as a drawing medium.

Channelling. A system of grooves cut into binding boards to carry the [cords](#) that attach the [boards](#) to [quires](#). The use of channels meant that the cords would not stand proud on the inside of the boards.

Chemise. The medieval precursor of the modern dust jacket, a chemise is a slip-on cover of leather or of a textile such as velvet or linen that protected the [binding](#) of a book and its [fore edge](#). Chemises varied in form from high-grade luxurious embellishments for Books of Hours and Prayer Books to functional wrappers for administrative records and library books.

Clasp. A metal fitting attached to the [boards](#) at the [fore edge](#) of a [binding](#) in order to hold the book shut and to preserve the [parchment](#) (unless kept at an appropriate temperature and humidity level, parchment tends to cockle and return to the original shape of the animal skin). Clasps became popular during the fourteenth century initially as a combination of metal fittings and leather straps and then entirely of metal.

Classical texts. Manuscripts, containing classical texts of Greek and Roman Antiquity, normally did not merely reproduce the full text but either presented a compilation or digest of it, or supplied the text with extensive commentaries, to the effect of creating a peculiar layout of such manuscripts.

Clothlet. A piece of cloth impregnated with [pigment](#) (generally a vegetable dye). A portion of such cloth, when soaked in a little [binding medium](#), releases its colourant and produces an artist's pigment. Clothlets were convenient way of carrying or shipping vegetal pigments, and they were especially popular from the fourteenth century on, with the growth of the textile trade. Glazes of vegetal dyes were often used to enhance other colours in a book illumination, since they created a rich, glowing, and transparent effect.

Codex. Originating on the first century, the codex (from *caudex*, the Latin word for the tree bark) is a book composed of folded sheets sewn along one edge, distinct from other writing vehicles such as the [roll](#) or [tablet](#).

Cord. The horizontal supporting band onto which [quires](#) are sewn at the [spine](#) to form the book. cords are generally bands of leather (or sometimes other materials such as hemp) and could appear in single or double form; in the latter, the cords are split along most of their length to allow a double, figure-eight sewing around them for additional strength. The ends of the cords are then threaded into [boards](#) and the structure covered. The cords appear as raised bands when seen through the covering of the spine, but beginning in the later sixteenth century could fit into grooves "sawn-up" to the quire to produce a flatter spine.

Cornerpiece. Cornerpieces are metal plaques attached to the corners of the [boards](#) of a [binding](#) to protect them, a popular feature from the fifteenth century on. The term also refers to a decorative motif in the corners of miniature or border.

D

Directorium. The same as *Ordo*. Liturgical book prescribing the order of the Mass.

E

Egg glair. White of an egg used as a [binding medium](#) in mixing pigments into paints.

Egg tempera. A paint which uses egg as a [binding medium](#).

Endbands. Endbands are bands placed at the [head](#) and [tail](#) of a [spine](#) of a book in order to consolidate its ends, strengthen the attachment of the [boards](#), and impede the entry of worms. They consist of cores generally of [alum tawed](#) leather, hemp, [parchment](#), or linen [cord](#) (with cane and rolled paper also used at later dates) and are usually covered by silk or thread embroidery, with highly varied patterns and techniques. Ideally, the endbands should be tied

down in the centres of the [quires](#) (often at the same point at the [kettle stitch](#)) and their ends laced into the binding boards (see [channeling](#)). The identification of different details of endband sewing technique and patterning may help us group books together and assign them to specific production centres.

Endpapers. Two or more blank or decorated leaves at the beginning or end of a book that can either line the boards (fulfilling the function of [pastedowns](#) or decorative doublures) or serve as [flyleaves](#).

Epistolary. Liturgical book containing the Epistle readings for the Mass arranged according to the liturgical year. The Epistles were taken from the New Testament Epistles.

Evangelary. Liturgical book containing those portions of the Gospels which are read during Mass or in the public offices of the Church.

Evangelistary. the same as the [Capitulare](#). Tables indicating the biblical passages to be read at the Mass, as well as the Sundays and Holy Days on which they are to be read.

F

Flesh side. The side of a sheet of [parchment](#) that originally faced the animal's flesh. This is generally whiter and softer than the [hair side](#). The two sides are often readily distinguishable.

Flyleaf. Flyleaves at the beginning or end of a book serve to protect the text in the event of worming or damage to the [binding](#). They often carry pen trials and inscriptions concerning provenance. Flyleaves were sometimes used for trying out designs.

Folio. A sheet of writing material, one half of a [bifolium](#). The front and back of a folio are referred to as the [recto](#) and [verso](#), respectively. The numbering of leaves, as opposed to pages, is termed foliation and is commonly found in manuscripts. "Folio" and "folios" (or "folia") are often abbreviated as *f.* and *ff.* The term can also be used to denote a large volume size.

Fore edge. The edge of a book opposite the [spine](#). The fore edge sometimes carries painted decoration or images (fore edge painting) or labeling for shelving purposes.

G

Gallnut. A swelling that forms on the bark of an oak tree after it has been stung by an insect laying its eggs. Tannic and gallic acids contained in gallnuts can be soaked out in water, the gall solution forming the basis of [ink](#). Gall can also be used in tanning processes.

Gathering. The same as [quire](#). Folded section of [parchment](#) or [paper](#) leaves which can be bound together with other [gatherings](#) to form a book.

Gesso. A thick, water-base paint commonly formed of plaster, chalk, or gypsum bound together with a glue. Gesso is used in manuscript illumination as a [ground](#) for some [gilding](#) processes, since it forms a raised surface ideal for [burnishing](#) and tooling. Methods of gesso preparation varied.

Gilding. The application of gold or silver to a surface. Gold could be applied as an [ink](#), in an expensive powdered form, for use in detailed work, but it was more frequently applied in medieval illumination in the form of gold leaf. The gold leaf could simply be laid down on an area to which a [binding medium](#) such as glair or gum (perhaps mixed with honey to prevent it from cracking) had been applied, as was the case during the early Middle Ages; it could also be laid on a raised ground of [gesso](#). In order to enrich the tonality of the gold and to make the areas to which the [ground](#) had been applied more visible, a colorant such as bole (a pink earth colour) was often added to the base. Gesso grounds enabled the gilded surface to be [tooled](#). However it was applied, the gold could be [burnished](#) or left in its slightly duller state. Gilding formed the first state in the painting processes of illumination, since it was a messy activity, the gilded area

often requiring trimming with a knife. The gilding of a manuscript illustration was carried out by the artist or by a specialist.

Gradual. Liturgical book, the same as the [Antiphony](#). The name derives from the practice of singing the gradual on the steps (gradus) of the raised pulpit.

Ground. The writing or painting surface which may already have been covered with a layer of paint, or the base for metallic [pigment](#) such as [gesso](#) or gum.

H

Hair side. The side of a sheet of [parchment](#) that once carried the animal's hair. This side is generally darker and smoother than the flesh side and may carry speckled traces of hair follicles.

Hardpoint. A pointed implement of metal or bone (often a *stylus*) used for [ruling](#), drawing, and annotation. A hardpoint leaves a ridge-and-furrow effect on the writing surface rather than a graphic mark.

Head. The top edge of a manuscript.

I

Ink. The word derives from Latin *encaustum* ("burnt in"), since the gallic and tannic acids in ink and the [oxidation](#) of its ingredients cause it to eat into the writing surface. The basis of medieval ink was a solution of gall (from [gallnuts](#)) and gum, coloured by the addition of carbon (lampblack) and/or iron salts. The ferrous ink produced by iron salts sometimes faded to a red-brown or yellow. Copper salts were occasionally used too, sometimes fading to grey-green. Ink was used for drawing and [ruling](#) as well as for writing and, when diluted, could be applied with a brush as a wash.

K

Kettle stitch. A stitch at or near to the [head](#) and [tail](#) of a manuscript that links a [quire](#) to the preceding one during sewing.

L

Leadpoint see [plummet](#).

Lectionary. The word *lectionarium*, in a wider sense, may be applied to any liturgical book containing passages to be read aloud at the Mass. In a stricter sense, however, the *Lectionarium*, also known as *Comes*, *Liber comitis*, *Liber comicus* (from *comes*, companion), is a liturgical book containing the daily lessons from the Old Testament, the Epistles from the New Testament, and portions of the Gospels to be read during the Mass.

Limp binding. A [binding](#) composed of [parchment](#), [paper](#), or fabric, without [boards](#). Limp bindings were generally used during the later Middle Ages and early modern period for less expensive books.

Lunellum. Crescent-shaped knife for scraping skin during the preparation of [parchment](#).

M

Metal point. A writing implement, made of metal and used for annotation, drawing, and [ruling](#), which leaves a trace element to the metal used (and any alloys present), with a ferrous point leaving a brown mark, silver and lead ([leadpoint](#)) leaving a silver-grey trace, and copper alloys sometimes leaving a grey-green mark. The marks produced are more discreet than those made with [ink](#) but more visible than those made with a [hardpoint](#).

Missal. Liturgical book containing all texts necessary for the performance of the Mass. The first missals appeared in the tenth century; by the thirteenth century, the *Missal* completely replaced such older liturgical books as the [Directorium](#), the [Sacramentary](#), the [Antiphonary](#), the [Evangelary](#), the [Epistolary](#).

O

Oxidation. A chemical reaction resulting from exposure to oxygen. This can cause certain metal-based [pigments](#) (notably silver and white, yellow, or red lead) to fade and/or turn a silver-black and to bleed. A coating of glair (see [binding medium](#)) is thought to reduce such tendencies in certain cases, but the conditions in which a manuscript is stored and the length of exposure to adverse atmospheric conditions seem to determine the extent of oxidation.

P

Palette. The range of colours used in a work. The term derives from the name of the flat surface on which paints are sometimes mixed, although shells were more commonly used to contain prepared [pigments](#) during the Middle Ages.

Palimpsest. From the Greek *palimpsestos* ("scraped again"), a palimpsest is reused writing support material from which the underlying text has been erased (by washing in the case of [papyrus](#) and by using scraping devices in the case of [parchment](#)). Erasure was not always complete and an underlying text can often be read with the assistance of ultraviolet light.

Panels. In the context of [binding](#), panels are engraved metal blocks used to impress a design on a large part or the whole of a book cover, producing either a blind or gilded impression (see [tooling](#)). Panels were first used in the thirteenth-century Flanders. See also [blocked](#).

Paper. In the mid-eighth century, the Arabs learned techniques of paper manufacture from the Chinese. The oldest Greek paper manuscripts were produced during the ninth century. Paper (*carta* or charter) was made in Muslim Spain beginning in the late eleventh century. During the twelfth and thirteenth centuries, it was used in Italy and the Mediterranean for merchants' notes and by notaries for registers; from the thirteenth century on, paper was actually manufactured in Italy. During the fourteenth and fifteenth centuries, production spread to Switzerland, the Rhineland, and France. In England there was limited production in the fifteenth century; only in the mid-sixteenth century was the paper making industry permanently established. (In the late fifteenth century, the famous publisher William Caxton and his colleagues were still largely importing supplies from Italy and France.) Correspondence was often written on paper beginning in the fourteenth century, and paper was commonly used in low-grade books from c. 1400 and in legal documents from the sixteenth century (although [parchment](#) also continued to be used). [Ruling](#) on paper generally consists of frame ruling only. The humanists revived [hardpoint](#) ruling for a time, but it damaged the paper. In general, [ink](#) or [leadpoint](#) was used for ruling paper [codices](#). In early paper books, [quires](#) are often protected by parchment outer sheets or guards. Paper was traditionally made from cotton or linen rags, although more exotic substances such as silk were often employed in the Orient. The rags were soaked and pulverised until reduced to a pulp and were then placed in a vat with a solution of water and size. A

wooden frame strung with wires (producing horizontal laid lines and vertical chain lines) was dipped into the mixture and agitated until the fibers fused to form a sheet of paper. This was then placed between sheets of blotting paper and pressed. The paper produced was then either trimmed or left with its rough (deckle) edge. Paper frames often incorporated wire devices (in the form of designs or monograms), which leave an image in the paper known as a [watermark](#). There exist reference volumes containing reproductions of watermarks from broadly datable or localisable contexts, and it is frequently possible to identify watermarks by matching them against such reproductions.

Papyrus. A writing support material made from the papyrus plant, a species of water-grown sedge that grew abundantly in ancient Egypt, where it was used from about 3000 BC. The outer skin of the stem of the papyrus plant was peeled off and the rest cut into strips that were laid side by side vertically, with another layer of strips then overlaid horizontally. The whole was dampened and beaten or pressed in the sun. The resin released by the fibers during this process fused them into a sheet that was then trimmed and smoothed with [pumice](#). The next step was to attach the sheets with a flour paste to form a [roll](#). Papyrus was also used for single sheet documents or folded to form [codices](#). The side with the horizontal fibers visible would generally be used for writing with a reed [pen](#): the horizontal fibers guided the writing on the inner surface, while the vertical fibers strengthened the outside. Papyrus was sturdy and plentiful, and it apparently was rarely reused. There is some indication that trade embargoes during Antiquity led to experiments with other materials, such as [parchment](#). In fact, in the fourth century, parchment generally replaced papyrus. But it was the collapse of the western Roman Empire and, more significantly, the spread of Islam from the seventh century on, with a consequent reduction of Mediterranean trade, that led to the abandonment of papyrus as an all-purpose writing material. It continued to be used, however, for documents produced in the chanceries of Merovingian Gaul and Ravenna during the sixth and seventh centuries, and the papal chancery used it as an exotic material until the eleventh century.

Parchment A writing support material that derives its name from Pergamon (Bergama in modern Turkey), an early production centre. The term is often used generically to denote animal skin prepared to receive writing, although it is more correctly applied only to sheep and goat skin, with the term *vellum* reserved for calf skin. Uterine vellum, the skin of stillborn or very young calves, is characterised by its small size and particularly fine, white appearance; however, it was rarely used. To produce parchment or vellum, the animal skins were defleshed in a bath of lime, stretched on a frame, and scraped with a [lunellum](#) while damp. They could then be treated with [pumice](#), whitened with a substance such as [chalk](#), and cut to size. Differences in preparation technique seem to have occasioned greater diversity in appearance than did the type of skin used. Parchment supplanted [papyrus](#) as the most popular writing support material in the fourth century, although it was known earlier. Parchment was itself largely replaced by [paper](#) in the sixteenth century (with the rise of printing), but remained in use for certain high-grade books. See also [flesh side](#) and [hair side](#).

Parchmenter. (also Parchment-maker). A person responsible for making [parchment](#). Before around 1200, parchment making was presumably conducted largely within monasteries, the primary producers of books. As lay and commercial production of manuscripts increased, parchmenters often formed a trade group, with shops located in the same part of a town, near the water supply needed for production. See also [stationer](#).

Passional, the same as the *Legendary*. Collection of narratives of variable length, in which are recounted the life, martyrdom, translation of relics, or miracles of the saints.

Pastedown. A leaf pasted onto the inside of a [board](#) to conceal [channeling](#) and [pegging](#) and other mechanics of the [binding](#). Pastedowns are often formed of fragments of earlier manuscripts that were considered dispensable.

Pegging. The securing of [cords](#) to the [boards](#) of a [binding](#) by means of dowels or pegs, generally of wood.

Pen. A split reed, termed calamus in Latin (qalam in Arabic), was used to write on [papyrus](#) during Antiquity; a frayed reed was used as a brush. These were replaced in the sixth century by

the quill pen and animal-hair brushes, which were more flexible and thus better suited for work on [parchment](#), a tougher material than papyrus. A quill is formed of the flight feather (one of the first five feathers) of the wing of a bird, often a goose - the word "pen" derives from the Latin for feather, penna. The feather was first hardened by heating or by soaking it in water and then immersing it in sand. Nibs were often then cut with a knife, the angle of the cuts affecting the appearance of the script produced. Cursive (i. e. more rapidly written) scripts were generally produced with a thin pen and formal bookscripts with a broad pen. A nib cut at an oblique angle to the shaft produces a formal, straight-pen script that has horizontal head to the letter strokes.

Pigment. The colouring agent in paint. The paints used in illumination consist of vegetable, mineral, and animal extracts, ground or soaked out and mixed with glair as a [binding medium](#), perhaps, with some glue and water added. Other additives were also used, including stale urine, honey, and ear wax, to modify colour, texture and opacity; inert whites such as chalk, eggshell, or white lead were added to increase opacity. Some pigments were obtained locally (such as turnsole, or *crozophora tinctoria*); others were exotic imports (such as ultramarine, made from *lapis lazuli* imported from Persia or Afghanistan). During the early Middle Ages, scribes and/or illuminators ground and prepared their own pigments, perhaps, with the aid of an assistant, but with the growth of specialised, more commercial production around 1200, they often purchased their ingredients in prepared form from a [stationer](#) or an apothecary. With the rise of experimental science and international trade in the fourteenth century, many colours were added to the traditional [palette](#), which significantly affected styles of illumination. The production of synthetically manufactured pigments (such as mercury-based vermilion and copper blues) and imports (such as saffron yellow from crocus stamens and red flakes from Brazil woods largely imported from Ceylon) increased at this time. Pigments are difficult to identify precisely without chemical analysis, although other techniques of analysis, such as radiospectroscopy and X-ray fluorescence, as well as reconstructions from medieval recipes, are advancing rapidly. Some pigments also change in a consistent fashion over time: for example, the red lead often used for rubrics frequently fades and turns silver-black through [oxidation](#), and copper-based verdigris green sometimes eats through the support as it corrodes.

Plummet. A leadpoint, also known as plummet, is a piece of lead alloy, sometimes contained in a holder (the precursor of a pencil), which could be used for drawing, annotation, and [ruling](#). Leadpoint began to be widely used in the eleventh and twelfth centuries. Graphite, derived from carbon, was not generally used before the seventeenth century.

Pontifical. Liturgical manual containing episcopal offices (ordination, consecration of the church, confirmation, etc.)

Pounce. A substance like [chalk](#), ash, powdered bone, bread crumbs, or [pumice](#) is rubbed into a writing surface in order to improve it. Pounce can reduce greasiness, raise the nap, and whiten [parchment](#)). The term is also used for a post-medieval technique employed in the transfer of an image by reproducing a dotted outline on a sheet beneath.

Pricking. The marking of a [folio](#) or [bifolium](#) by a point of a knife to guide [ruling](#). The term also refers to the series of marks that resulted. Pricking was generally conducted before the bifolia were folded to form a [quire](#).

Psalter. Collection of Psalms serving as the main prayer-book for the celebration of the Divine Office.

Pumice. Volcanic glass, used in powdered form as [pounce](#) on [parchment](#); in its consolidated form, it was employed to scrape parchment for reuse as a [palimpsest](#).

Q

Quire. [Gathering](#) or "booklet" of which a book is formed. Quire numeration, which began in the Late Antique period, consists of numbers written on a quire (usually on its final [verso](#)) to facilitate arrangement during [binding](#).

R

Recto. The front side of a [folio](#) or leaf, abbreviated as *r* and sometimes denoted as *a*.

Ritual. Liturgical manual containing the prayers for the administration of all the sacraments except the Eucharist.

Roll. The roll was, along with the [tablet](#), the principal vehicle for writing during Antiquity. Rolls were originally formed of sheet of [papyrus](#) pasted together and were stored in capsae, cylindrical boxes. They were unrolled horizontally from left to right, with about four columns of text visible at any one time. The drawbacks of the roll form in terms of portability and cross-referencing led to its general replacement by the [codex](#) in the fourth century. The roll survived, however, throughout the Middle Ages, fulfilling certain specialised functions -- although it was now made of [parchment](#) (sewn or glued together) and was read vertically. Such forms were useful for storing lengthy records and thus were frequently used for administrative purposes. Rolls also carried genealogies and pedigrees, and some of these manuscripts were finely illuminated. Roll chronicles often accompanied royal genealogies. Illuminated Exultet rolls, with texts for the blessing of the Easter candle, were designed for public viewing, with the text facing the reader and the image placed upside down in relation to the text, to face the congregation over the lectern. Prayer rolls also survive; they may have been carried as amulets.

Ruling. The process by which a frame and/or horizontal lines are produced to guide the hand in writing; the word also refers to the linear guide thus produced. Ruling was guided by [pricking](#). Beginning in the Carolingian period, templates were sometimes used in pricking and ruling. Before the late eleventh century, ruling was generally executed with a [hardpoint](#), producing a ridge-and-furrow effect. Thereafter [leadpoint](#) was used in the layout of individual pages, enabling greater flexibility. When the thin [pen](#) used to produce cursive scripts was revived in the later twelfth century, ruling was also done in [ink](#), especially from the late thirteenth century on. Coloured inks were employed in some manuscripts, such as the pink ruling in fifteenth-century Book of Hours. The Italian humanists revived the use of hardpoint for ruling. When [paper](#) was used as the writing support material, this could result in tears in the paper.

S

Sacramentary. Liturgical book containing the prayers recited by the celebrant during the Mass.

Scriptorium. Room set apart for writing, especially in a monastery.

'Shell' gold. Powdered gold mixed with gum arabic into a kind of gold ink, and applied with pen or brush.

Shoulder. The place where one of the [boards](#) of a book joins the [spine](#).

Spine. The edge at which a book is sewn together. Rounded, glued spines that were hammered into shape were first introduced in the early sixteenth century. Prior to this, spines were flat, apart from the raised [cords](#). Spines sometimes carry protective extensions at either end known as end tabs.

Stationer. Following the rise of the universities around 1200, the growth in secular production and in consumer demand led to increasing specialisation and commercialisation in book production. A group of middlemen, known as [stationers](#) (cartolai in Italy, libraires in France), emerged. They supplied materials to craftsmen and received and subcontracted commissions, often with formal recognition from the universities. This decentralisation stimulated new techniques of book production, such as systematic marking up of leaves and [quires](#) for assembly by the [stationer](#) and the provision of instructions.

T

Tablet. Tablets of wood, or sometimes ivory, were used as writing surfaces in two ways: either [ink](#) was applied on them; or they were hollowed out and filled with wax so that one could write with a stylus. Along with a [roll](#), the tablet was the principal writing vehicle during Antiquity, being used for informal purposes, teaching, letters, drafting, and for records (such as letters of citizenship). The gradual substitution of sheet of [parchment](#) for wood or ivory may well have stimulated the development of the [codex](#) form. Tablets continued to be used into the twelfth century for informal financial accounts (by French fishermen, for example). During the Middle Ages, they fulfilled a variety of functions: drafting texts; trying out artistic designs; recording liturgical commemorations; note taking during study; accounting and legal contexts; as proto-Filofaxes; and as love token filled with amorous poetry. Tablets ranged in format from robust teaching tablets to portable girdle books. Although different colours of wax were used, black and green predominated. A number of tablets were sometimes bound together with leather thongs or within a leather case. Tablets were also made with handles, whose shape could serve as a decorative motif.

Tail. The foot or lower end of a manuscript.

Tanned. Tanning is the process of manufacturing leather by soaking animal skin in tannin, an acidic substance made from tree bark, [gallnuts](#), or a similar plant source. Tanning gives leather a red-brown coloration.

Tooling. Tooling is the decoration of a surface with the aid of metal hand tools and stamps (a technique employing the latter being termed stamped). On [bindings](#), the tools were used to impress the decoration into the leather covering, which was often dampened. The impression or indentation produced is called blind if it remains uncoloured. Gold tooling became popular in the fifteenth century. In this process, gold leaf was laid onto a coating of glair and impressed into the leather with a heated tool, leaving an image in gold after the excess was rubbed away. Gilded surfaces (see [gilding](#)) in illumination were also sometimes tooled.

Turn-ins. The edges of the covering material of a [binding](#), which are folded over the [head](#), [tail](#), and [fore edge](#) of the [boards](#) and secured to their inner sides.

U

Underdrawing. Preliminary drawing that lies under the final painted or inked image. Prior to the eleventh century, underdrawing was often executed with a [hardpoint](#), but thereafter a [metal point](#), especially a [leadpoint](#), or diluted [ink](#) was generally used. Styli, dividers, and compasses were sometimes employed in the laying out of a design throughout the Middle Ages.

V

Vellum. The word has the same origin as veal or *veau* in French (calf, *vitellus* in Latin), and is strictly the writing material made from cow skin.

Verso. The back of a [folio](#) or leaf, abbreviated as *v* and sometimes as denoted as *b*.

W

Watermark. Distinguishing mark or design on [paper](#), visible only when held up to the light, and made when the paper is in a pulp form.

Workshop. As known by the French name atelier, a workshop is a studio in which a number of artists work together, generally under a master, either on regular or ad hoc basis. The term also refers to a group of artists who work together and is sometimes used in this sense to denote the secular equivalent of the monastic [scriptorium](#) during the Gothic and Renaissance periods (and during Antiquity as well). Artists working on the same project need not necessarily have belonged to a workshop, since they frequently lived in the same urban neighbourhood and might join together for a single commission. In the context of attributing a work of art to a particular artist, the term "workshop product" is used when the art is in the style of a master, but is thought to have been executed by an assistant emulating that style.